



Construction Solicitation #7346 (BID)

**1188838: WEBSTER AVENUE BRIDGE OVER THE NORTH BRANCH OF THE CHICAGO RIVER**

**Specification Number:1188838**

**Required for use by:** CHICAGO DEPARTMENT OF TRANSPORTATION

**Bid/Proposal Submittal Date and Time:** 11:00 AM Central Time, 17-FEB-2021

**Deadline for Questions:** 04:00 PM Central Time, 02-FEB-2021

**Buyer:** TERRELL, LYNNETTE

**Email Address:** Lynnette.Terrell@cityofchicago.org

**Phone Number:** 3127447664

**Pre-Solicitation Conference Date and Time:** 01:00 PM Central Time, 19-JAN-2021

**Pre-Solicitation Conference Location:** via Conference Call (712)770-5505, CODE 650-260

**Site Visit Date & Time:** N/A

**Site Visit Location:** N/A

***Please submit your response to:***

<http://www.cityofchicago.org/eProcurement>  
iSupplier vendor portal registration is required.  
Allow 3 business days to complete registration.

**LORI E. LIGHTFOOT**  
MAYOR

**SHANNON E. ANDREWS**  
CHIEF PROCUREMENT OFFICER

Specification Number: 1188838

Type of Funding: CITY

Title: 1188838: WEBSTER AVENUE BRIDGE OVER THE NORTH BRANCH OF THE CHICAGO RIVER

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**1 Header Information**

**1.1 General Information**

Title	<b>1188838: WEBSTER AVENUE BRIDGE OVER THE NORTH BRANCH OF THE CHICAGO RIVER</b>		
Description	<b>1188838: WEBSTER AVENUE BRIDGE OVER THE NORTH BRANCH OF THE CHICAGO RIVER</b>		
Preview Date	<b>08-JAN-2021 10:00:00</b>	Open Date	<b>08-JAN-2021 10:00:00</b>
Close Date	<b>11:00 AM Central Time, 17-FEB-2021</b>	Award Date	<b>Not Specified</b>
Time Zone	<b>Central Time</b>	Buyer	<b>TERRELL, LYNNETTE</b>
Quote Style	<b>Sealed</b>	Email	<b>Lynnette.Terrell@cityofchicago.org</b>
Event	<b>Construction</b>	Outcome	<b>Construction Standard PO</b>

**1.2 Terms**

Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>	Bill-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>
Payment Terms	<b>IMMEDIATE</b>	Carrier	
FOB	<b>CITY OF CHICAGO</b>	Freight Terms	<b>Paid</b>

**1.3 Requirements**

<b>&lt;B&gt;AWARD CRITERIA DETERMINATION - CANVASSING FORMULA&lt;/B&gt;</b>
<b>LINE 1. Base Bid, in Figures</b> ..... Value Type <b>Numeric Value only</b> ..... Provide your answer below    
LINE2. Percentage of the total journey worker hours that the Contractor proposes to be worked by minority Journey workers during construction of the Project. <b>(Maximum figure .70)</b> Supplier needs to calculate and enter manually ..... Value Type <b>Numeric Value only</b> ..... Provide your answer below    
LINE3. <b>Multiply Line 2 by Line 1 by 0.04</b> Supplier needs to calculate and enter manually ..... Value Type <b>Numeric Value only</b> .....



<b>&lt;B&gt;AWARD CRITERIA DETERMINATION - CANVASSING FORMULA&lt;/B&gt;</b>
<p>.....</p> <p>Provide your answer below</p>
<p>LINE4. Percentage of the total Apprentice hours that the Contractor proposes to be worked by minority Apprentices during construction of the project. <b>(Maximum figure .70)</b> Supplier needs to calculate and enter manually</p> <p>.....</p> <p>Value Type <b>Numeric Value only</b></p> <p>.....</p> <p>Provide your answer below</p>
<p>LINE5. <b>Multiply Line 4 by Line 1 by 0.03</b> Supplier needs to calculate and enter manually</p> <p>.....</p> <p>Value Type <b>Numeric Value only</b></p> <p>.....</p> <p>Provide your answer below</p>
<p>LINE6. Percentage of the total Laborer hours that the Contractor proposes to be worked by minority Laborers during construction of the project. <b>(Maximum figure .70)</b> Supplier needs to calculate and enter manually</p> <p>.....</p> <p>Value Type <b>Numeric Value only</b></p> <p>.....</p> <p>Provide your answer below</p>
<p>LINE7. <b>Multiply Line 6 by Line 1 by .01</b> Supplier needs to calculate and enter manually</p> <p>.....</p> <p>Value Type <b>Numeric Value only</b></p> <p>.....</p> <p>Provide your answer below</p>

<b>&lt;B&gt;AWARD CRITERIA DETERMINATION - CANVASSING FORMULA&lt;/B&gt;</b>
<p>LINE8. Percentage of the total Journey worker hours that the Contractor proposes to be worked by female Journey workers during construction of the project. (<b>Maximum figure .15</b>) Supplier needs to calculate and enter manually</p> <p>.....</p> <p>Value Type <b>Numeric Value only</b></p> <p>.....</p> <p>Provide your answer below</p>
<p>LINE9. <b>Multiply Line 8 by Line 1 by 0.04</b> Supplier needs to calculate and enter manually</p> <p>.....</p> <p>Value Type <b>Numeric Value only</b></p> <p>.....</p> <p>Provide your answer below</p>
<p>LINE10. Percentage of the total Apprentice hours that the Contractor proposes to be worked by female Apprentices during construction of the project. (<b>Maximum figure .15</b>) Supplier needs to calculate and enter manually</p> <p>.....</p> <p>Value Type <b>Numeric Value only</b></p> <p>.....</p> <p>Provide your answer below</p>
<p>LINE11. <b>Multiply Line 10 by Line 1 by 0.03</b> Supplier needs to calculate and enter manually</p> <p>.....</p> <p>Value Type <b>Numeric Value only</b></p> <p>.....</p> <p>Provide your answer below</p>
<p>LINE12. Percentage of the total Laborer hours that the Contractor proposes to be worked by female Laborers during construction of the project. (<b>Maximum figure .15</b>) Supplier needs to calculate and enter</p>

<b>&lt;B&gt;AWARD CRITERIA DETERMINATION - CANVASSING FORMULA&lt;/B&gt;</b>
manually ..... Value Type <b>Numeric Value only</b> ..... Provide your answer below
LINE13. <b>Multiply Line 12 by Line 1 by 0.01</b> Supplier needs to calculate and enter manually ..... Value Type <b>Numeric Value only</b> ..... Provide your answer below
LINE14. <b>Summation of Lines 3, 5, 7, 9, 11, and 13</b> Supplier needs to calculate and enter manually ..... Value Type <b>Numeric Value only</b> ..... Provide your answer below
LINE15. <b>Subtract Line 14 from Line 1 = Award Criteria Figure</b> Supplier needs to calculate and enter manually ..... Value Type <b>Numeric Value only</b> ..... Provide your answer below
<b>&lt;B&gt;KEY SOLICITATION PARAMETERS&lt;/B&gt;</b>
BID DEPOSIT: 5% OF TOTAL BASE BID ..... Type <b>No Response Required</b>
PERFORMANCE BOND: When required by the Chief Procurement Officer the successful bidder shall furnish a performance bond in the full amount of the contract. .....

<b>&lt;B&gt;KEY SOLICITATION PARAMETERS&lt;/B&gt;</b>
Type <b>No Response Required</b>
CONTRACT SPECIFIC GOALS: MBE 26% WBE 6% VBE 1%
.....
Type <b>No Response Required</b>
FUNDING SOURCE: CITY
.....
Type <b>No Response Required</b>
PRE-BID/PRE-PROPOSAL CONFERENCE: Strongly Suggested
.....
Type <b>No Response Required</b>
<b>&lt;B&gt;COMMODITIES/WORK SERVICES/HEAVY EQUIPMENT/SMALL ORDERS/CONSTRUCTION/JOC CHECKLIST&lt;/B&gt;</b>
This is a checklist of all supporting documents that must be attached to your bid response. Attach all documents specified below. After attaching, click "YES" to indicate that the attachment was completed.
.....
Type <b>No Response Required</b>
- Bid Form properly completed. - (Construction)
.....
Circle one from the response values below: YES NO
- Award Criteria Determination completed. - (Construction)
.....
Circle one from the response values below: YES NO
- Schedule of Prices, completed and totaled. - (Construction)
.....
Circle one from the response values below: YES NO
- Proposal Page completed, signed and notarized - (ALL)
.....
Circle one from the response values below: YES NO
- Proposal To Be Completed By a Corporation - (ALL)
.....
Circle one from the response values below: YES NO
- Proposal To Be Completed By a Partnership - (ALL)
.....
Circle one from the response values below: YES NO
- Proposal To Be Completed By a Joint Venture - (ALL)
.....
Circle one from the response values below: YES NO

<p><b>&lt;B&gt;COMMODITIES/WORK SERVICES/HEAVY EQUIPMENT/SMALL ORDERS/CONSTRUCTION/JOC CHECKLIST&lt;/B&gt;</b></p>
<p>- Proposal To Be Completed By a Sole Proprietor - (ALL)</p> <p>.....</p> <p>Circle one from the response values below:                  YES                  NO</p>
<p>- Bid Execution Page - (ALL)</p> <p>.....</p> <p>Circle one from the response values below:                  YES                  NO</p>
<p>- Request for a reduction or waiver of MBE/WBE goals - (ALL)</p> <p>.....</p> <p>Circle one from the response values below:                  YES                  NO</p>
<p>- Certificate of Filing of Economic Disclosure Statement and Affidavit (EDS) - (ALL)</p> <p>.....</p> <p>Circle one from the response values below:                  YES                  NO</p>
<p>- Certificate of Insurance</p> <p>.....</p> <p>Circle one from the response values below:                  YES                  NO</p>
<p><b>M/W/VBE DOCUMENTS</b></p> <p>.....</p> <p>Type <b>No Response Required</b></p>
<p>- Schedule B - MBE/WBE Affidavit of Joint Venture - (ALL)</p> <p>.....</p> <p>Circle one from the response values below:                  YES                  NO</p>
<p>- Schedule C and C-V - -- MBE/WBE Letter of Intent To Perform As a Subcontractor or Supplier - (ALL)</p> <p>.....</p> <p>Circle one from the response values below:                  YES                  NO</p>
<p>-Schedule D and D-V - Compliance Plan Regarding MBE and WBE Utilization - (ALL)</p> <p>.....</p> <p>Circle one from the response values below:                  YES                  NO</p>
<p>- Schedule F - Report of Subcontractor Solicitations - (Construction)</p> <p>.....</p> <p>Circle one from the response values below:                  YES                  NO</p>
<p>- Schedule H -Documentation of Good Faith Efforts (Construction)</p> <p>.....</p>

<p><b>&lt;B&gt;COMMODITIES/WORK SERVICES/HEAVY EQUIPMENT/SMALL ORDERS/CONSTRUCTION/JOC CHECKLIST&lt;/B&gt;</b></p>
<p>Circle one from the response values below:                  YES                  NO</p>
<p>- Request for Full or Partial Waiver - (ALL)</p> <p>.....</p>
<p>Circle one from the response values below:                  YES                  NO</p>
<p>- Letters of Certification for all M/WBE's - (ALL)</p> <p>.....</p>
<p>Circle one from the response values below:                  YES                  NO</p>
<p><b>BID INCENTIVE / PREFERENCE AFFIDAVIT(S)</b></p>
<p>Type <b>No Response Required</b></p>
<p>- Local Manufacture Affidavit - (ALL)</p> <p>.....</p>
<p>Circle one from the response values below:                  YES                  NO</p>
<p>- Chicago Business Affidavit - (ALL)</p> <p>.....</p>
<p>Circle one from the response values below:                  YES                  NO</p>
<p>- Alternatively Powered Vehicles affidavit - (ALL)</p> <p>.....</p>
<p>Circle one from the response values below:                  YES                  NO</p>
<p><b>&lt;B&gt;OPTIONAL LGBT-OWNED BUSINESS ENTERPRISE SURVEY&lt;/B&gt;</b></p>
<p>Mayor Lori E. Lightfoot introduced a resolution acknowledging LGBT-Owned Business Enterprises (LGBTBEs) and their contributions to Chicago's economy and residents, which passed in City Council on January 15, 2020. In collaboration with the Department of Law, the Department of Procurement Services is tasked with gathering information to assess the activity of LGBTBEs as related to government contracting. In order to assist the City with gathering this information, we ask you to take a moment to fill out the optional LGBT Business Enterprises Survey. For more information, visit <a href="http://www.chicago.gov/lgbtbiz">www.chicago.gov/lgbtbiz</a>. This survey is optional and not a requirement of bidding.</p> <p>.....</p>
<p>Type <b>No Response Required</b></p>

**1.4 Attachments**

Name	Data Type	Description
Attachment 01: eProcurement Appendix	File	Attachment 01: eProcurement Appendix
Attachment 02: Book 1	File	Attachment 02: Book 1
Attachment 03: Book 2	File	Attachment 03: Book 2
Attachment 04: Book 3 and	File	Attachment 04: Book 3 and Appendices

Name	Data Type	Description
Appendices		
Attachment 05: Plans	File	Attachment 05: Plans
Attachment 06: Reference Drawings	File	Attachment 06: Reference Drawings

### 1.5 Response Rules

- Solicitation is restricted to invited suppliers
- Suppliers are allowed to view other suppliers' contract terms, notes and attachments
- Suppliers are allowed to respond to selected lines
- Suppliers are required to respond with full quantity on each line
- Suppliers are allowed to provide multiple responses
- Buyer may close the solicitation before the Close Date
- Buyer may manually extend the solicitation while it is open

**2 Price Schedule****2.1 Line Information**

Display Rank As **No indicator displayed**  
 Ranking **Price Only**  
 Cost Factors **None**

**Retainage**

Retainage Attributes	Negotiable
Maximum Retainage Amount	No
Retainage Rate (%)	No

Line	Item, Rev	Target Quantity	Unit	Unit Price	Amount
1 NON-SPECIAL WASTE DISPOSAL		70	Cubic Yard		
2 SOIL DISPOSAL ANALYSIS		2	Each		
3 REGULATED SUBSTANCES PRE-CONSTRUCTION PLAN		1	Lump Sum		
4 ON-SITE MONITORING OF REGULATED SUBSTANCES		30	Day		
5 REGULATED SUBSTANCES FINAL CONSTRUCTION REPORT		1	Lump Sum		
6 MOBILIZATION		1	Lump Sum		
7 ENGINEER'S FIELD OFFICE		15	Month		
8 TRAINEES		1,000	Allowance		
9 FURNISH AND INSTALL PROJECT SIGN, TYPE A		2	Each		
10 FURNISH AND INSTALL PROJECT SIGN, TYPE B		1	Each		
11 FURNISH AND INSTALL PROJECT SIGN, BANNER		1	Each		
12 ASBESTOS ABATEMENT		35,000	Allowance		
13 LEAD-BASED PAINT ABATEMENT		150,000	Allowance		
14 HAZARDOUS MATERIALS ABATEMENT		30,000	Allowance		
15 EARTH EXCAVATION		70	Cubic Yard		
16 SODDING, SALT TOLERANT		81	Square Yard		
17 INLET FILTERS		4	Each		

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Line	Item, Rev	Target Quantity	Unit	Unit Price	Amount
18 SUBBASE GRANULAR MATERIAL, TYPE B 4"		440	Square Yard		
19 HOT-MIX ASPHALT BASE COURSE, 9"		33	Square Yard		
20 BITUMINOUS MATERIALS (PRIME COAT)		74	Pound		
21 BITUMINOUS MATERIALS (TACK COAT)		576	Pound		
22 HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N50		139	Ton		
23 HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N70		82	Ton		
24 PAVEMENT CONNECTOR (HMA) FOR BRIDGE APPROACH SLAB		48	Square Yard		
25 PAVEMENT REMOVAL		201	Square Yard		
26 HOT-MIX ASPHALT SURFACE REMOVAL, 1 1/2"		15	Square Yard		
27 HOT-MIX ASPHALT SURFACE REMOVAL, 4"		841	Square Yard		
28 COMBINATION CURB AND GUTTER REMOVAL		245	Foot		
29 SIDEWALK REMOVAL		2,903	Square Foot		
30 SIGN PANEL - TYPE 1		11	Square Foot		
31 THERMOPLASTIC PAVEMENT MARKING - LETTERS AND SYMBOLS		69	Square Foot		
32 THERMOPLASTIC PAVEMENT MARKING - LINE 4"		523	Foot		
33 THERMOPLASTIC PAVEMENT MARKING - LINE 24"		516	Foot		
34 POLYUREA PAVEMENT MARKING TYPE I - LETTERS AND SYMBOLS		180	Square Foot		

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Line	Item, Rev	Target Quantity	Unit	Unit Price	Amount
35	POLYUREA PAVEMENT MARKING TYPE I - LINE 4"	906	Foot		
36	POLYUREA PAVEMENT MARKING TYPE I - LINE 6"	201	Foot		
37	POLYUREA PAVEMENT MARKING TYPE I - LINE 12"	20	Foot		
38	POLYUREA PAVEMENT MARKING TYPE I - LINE 24"	23	Foot		
39	PORTLAND CEMENT CONCRETE SIDEWALK 5 INCH	2,507	Square Foot		
40	PORTLAND CEMENT CONCRETE SIDEWALK 8 INCH	419.5	Square Foot		
41	PORTLAND CEMENT CONCRETE ADA RAMP 8 INCH	436	Square Foot		
42	RADIAL DETECTABLE WARNING TILES (CAST IRON)	61.5	Square Foot		
43	CATCH BASINS, TYPE 1, 4'-DIAMETER, TYPE 1 FRAME, OPEN LID (CITY OF CHICAGO)	2	Each		
44	REMOVING CATCH BASINS	2	Each		
45	COMBINATION CURB AND GUTTER TYPE B V.12	265.5	Foot		
46	SEDIMENT CONTROL, SILT CURTAIN	1	Lump Sum		
47	PAVEMENT MARKING REMOVAL - WATER BLASTING	516	Square Foot		
48	REMOVE, STORE AND RE-ERECT SIGN PANEL	8	Each		
49	SIDEWALK REMOVAL (SPECIAL)	805	Square Foot		
50	STORM SEWERS,	5	Foot		

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Line	Item, Rev	Target Quantity	Unit	Unit Price	Amount
TYPE 2, 8-INCH (EXTRA STRENGTH VITRIFIED CLAY PIPE)					
51 TEMPORARY CHAIN LINK FENCE WITH SCREENING, 6'		80	Foot		
52 DETOUR TRAFFIC SIGNAL MODIFICATIONS AND MAINTENANCE		1	Each		
53 TRAFFIC CONTROL AND PROTECTION, (SPECIAL)		1	Lump Sum		
54 POROUS GRANULAR BACKFILL		375	Cubic Yard		
55 PROTECTIVE SHIELD		1,188	Square Yard		
56 STRUCTURE EXCAVATION		86	Cubic Yard		
57 BRIDGE DECK GROOVING		588	Square Yard		
58 FORM LINER TEXTURED SURFACE		2,732	Square Foot		
59 STUD SHEAR CONNECTORS		6,492	Each		
60 NAME PLATES		1	Each		
61 ELASTOMERIC BEARING ASSEMBLY, TYPE I		32	Each		
62 REINFORCEMENT BARS, EPOXY COATED		108,630	Pound		
63 PREFORMED JOINT STRIP SEAL		108	Foot		
64 ANCHOR BOLTS, 1"		64	Each		
65 EPOXY CRACK INJECTION		176	Foot		
66 CONCRETE REMOVAL		253.8	Cubic Yard		
67 HIGH PERFORMANCE CONCRETE STRUCTURES		258	Cubic Yard		
68 HIGH PERFORMANCE CONCRETE SUPERSTRUCTURES		256.3	Cubic Yard		
69 CLASS "SI"		32.6	Cubic		

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Line	Item, Rev	Target Quantity	Unit	Unit Price	Amount
CONCRETE (MISCELLANEOUS)			Yard		
70 PROTECTIVE CONCRETE SEALER		1,100	Square Yard		
71 DECORATIVE STEEL RAILING		210	Foot		
72 STEEL RAILING REMOVAL		206	Foot		
73 STRUCTURAL STEEL REMOVAL		486,420	Pound		
74 CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES NO. 1		1	Lump Sum		
75 STRUCTURAL REPAIR OF CONCRETE (DEPTH EQUAL TO OR LESS THAN 5 INCHES)		589	Square Foot		
76 STRUCTURAL REPAIR OF CONCRETE (DEPTH GREATER THAN 5 INCHES)		99	Square Foot		
77 BALANCING OF BRIDGE AND ALTERATION OF COUNTERWEIGHTS		1	Lump Sum		
78 BRIDGE OPERATION AND MAINTENANCE		1	Lump Sum		
79 CLEANING AND PAINTING EXISTING STEEL STRUCTURES		1	Lump Sum		
80 COUNTERWEIGHT PIT CLEANING		2	Each		
81 DOLPHINS		4	Each		
82 DRAINAGE SYSTEM		1	Lump Sum		
83 FURNISHING AND ERECTING 5-INCH GRATING, HALF CONCRETE FILLED		6,114	Square Foot		
84 FURNISHING AND ERECTING FRP GRATING		3,227	Square Foot		
85 FURNISHING AND ERECTING STRUCTURAL STEEL		1	Lump Sum		
86 FURNISHING AND ERECTING		20,000	Pound		

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Type of Funding: CITY

Title: 1188838: WEBSTER AVENUE BRIDGE OVER THE NORTH BRANCH OF THE CHICAGO RIVER

Line	Item, Rev	Target Quantity	Unit	Unit Price	Amount
STRUCTURAL STEEL, FIELD DISCOVERED CONDITIONS REPAIRED AS DIRECTED BY THE COMMISSIONER					
87 FLOOR ACCESS HATCH		4	Each		
88 METAL LADDERS		4	Each		
89 PIER PROTECTION REPLACEMENT		301	Foot		
90 REMOVAL OF DETERIORATED CONNECTORS AND REPLACEMENT WITH HIGH STRENGTH BOLTS		51	Each		
91 REFURBISHING OF LIVE LOAD BEARINGS		4	Each		
92 REMOVAL OF EXISTING SUPERSTRUCTURES		1	Each		
93 REMOVAL OF EXISTING GRID DECK		1	Lump Sum		
94 STEEL RAILING (BARRIER)		4	Foot		
95 STEEL RAILING (SPECIAL)		506	Foot		
96 STRUCTURAL STEEL REPAIRS		61,620	Pound		
97 TEMPORARY SUPPORT		1	Lump Sum		
98 REMOVE EXISTING BRIDGE HOUSES		2	Each		
99 REMOVE EXISTING CONCRETE RAILINGS		180	Linear Foot		
100 PRECAST CONCRETE WALL		1,500	Square Foot		
101 PRECAST CONCRETE RAILINGS		180	Linear Foot		
102 METAL CLADDED WALL ASSEMBLY		590	Square Foot		
103 PAINT GYPSUM BOARD CEILING		320	Square Foot		
104 LIFE RINGS		2	Each		
105 INTERIOR PAINTING		400	Square Foot		

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Type of Funding: CITY

Title: 1188838: WEBSTER AVENUE BRIDGE OVER THE NORTH BRANCH OF THE CHICAGO RIVER

Line	Item, Rev	Target Quantity	Unit	Unit Price	Amount
106	INSTALL AND PAINT STAIR RAILINGS	100	Foot		
107	PAINT CONCRETE FLOORS AND STAIRS	1,600	Square Foot		
108	ALUMINUM FRAMED WINDOWS	485	Square Foot		
109	STANDING SEAM METAL ROOFING	320	Square Foot		
110	EXTERIOR DOORS	4	Each		
111	BREAKDOWN FOUNDATION	5	Each		
112	BRIDGE HOUSE ELECTRICAL WORK	2	Lump Sum		
113	CHICAGO 2000 LUMINAIRE ARM, 8 FOOT, WITH SCROLL, 8'	4	Each		
114	CHICAGO 2000 MAST HEAD AND FINIAL FOR 10" POLE	7	Each		
115	CHICAGO 2000 POLE BASE	11	Each		
116	CLEAN EXISTING MANHOLE OR HANDHOLE	2	Each		
117	COILABLE CONDUIT, HDPE, SCH# 80, DIRECTIONAL BORING, 2"	473	Linear Foot		
118	COILABLE CONDUIT, HDPE, SCH# 80, DIRECTIONAL BORING, 3"	229	Linear Foot		
119	CONCRETE FOUNDATION, 28" DIAMETER, 1 1/4" ANCHOR RODS, 15" BOLT CIRCLE, 7 FEET	28	Linear Foot		
120	CONTROLLER STREET LIGHTING, RESIDENTIAL, 240V	1	Each		
121	DRILL EXISTING MANHOLE OR HANDHOLE	3	Each		
122	ELECTRICAL CABLE IN CONDUIT, 1/C #10	1,200	Linear Foot		

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Type of Funding: CITY

Title: 1188838: WEBSTER AVENUE BRIDGE OVER THE NORTH BRANCH OF THE CHICAGO RIVER

Line	Item, Rev	Target Quantity	Unit	Unit Price	Amount
123	ELECTRICAL CABLE IN CONDUIT, 1/C #12	600	Linear Foot		
124	ELECTRICAL CABLE IN CONDUIT, 1/C #350 KCMIL	1,410	Linear Foot		
125	ELECTRICAL CABLE IN CONDUIT, 1/C #2/0	840	Linear Foot		
126	ELECTRICAL CABLE IN CONDUIT, TRIPLEX 2 1/C NO.6, 1/C NO.8	1,893	Linear Foot		
127	ELECTRICAL HANDHOLE, 30" DIAMETER WITH 24" FRAME AND LID	2	Each		
128	INSTALL CONDUIT INTO EXISTING HELIX FOUNDATION	1	Each		
129	INTERCEPT EXISTING CONDUIT	2	Each		
130	JUNCTION BOX ATTACHED TO STRUCTURE	1	Each		
131	LED CHANNEL CENTER SIGNAL NAVIGATIONAL LIGHT	2	Each		
132	LED PIER SIGNAL NAVIGATIONAL LIGHT	4	Each		
133	LED RESIDENTIAL LUMINAIRE - 108W	8	Each		
134	LUMINAIRE CHICAGO 2000 PENDANT LED	11	Each		
135	MAINTAIN LIGHTING SYSTEM	1	Lump Sum		
136	MAST ARM STEEL 4'	8	Each		
137	PAINT EXISTING POLE COMPLETE	5	Each		
138	POLE, STEEL, ANCHOR BASE, 7" DIAMETER, 3 GAUGE, 20'	4	Each		
139	POLE, STEEL, ANCHOR BASE, 10" DIAMETER, 7 GAUGE, 34'-6"	2	Each		
140	CONDUIT ATTACHED TO	1,236	Linear Foot		

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Type of Funding: CITY

Title: 1188838: WEBSTER AVENUE BRIDGE OVER THE NORTH BRANCH OF THE CHICAGO RIVER

Line	Item, Rev	Target Quantity	Unit	Unit Price	Amount
STRUCTURE, 1"					
141 CONDUIT ATTACHED TO STRUCTURE, 3"		55	Linear Foot		
142 CONDUIT ATTACHED TO STRUCTURE, 4"		52	Linear Foot		
143 PVC CONDUIT IN TRENCH, 3" PVC, SCH#80		15	Linear Foot		
144 REMOVE ANCHOR BASE POLE		5	Each		
145 REMOVE BRANCH WIRES / CABLES 2#6		1,414	Linear Foot		
146 REMOVE LUMINAIRE		10	Each		
147 REMOVE MAST ARM		10	Each		
148 REMOVE NAVIGATIONAL SIGNAL		6	Each		
149 REMOVE TS HEAD, 1-FACE		1	Each		
150 REMOVE PEDESTRIAN SIGNAL HEAD		1	Each		
151 REMOVE MONOTUBE M.A. 20'		1	Each		
152 REMOVE JUNCTION BOX, TSS 18		1	Each		
153 REINSTALL SIGNAL HEAD, 3 SECTION, MAST ARM MOUNTED		1	Each		
154 REINSTALL PEDESTRIAN SIGNAL, BRACKET MOUNTED		1	Each		
155 REINSTALL MAST ARM, MONOTUBE, 20'		1	Each		
156 REINSTALL JUNCTION BOX		1	Each		
157 ROD AND CLEAN DUCT IN EXISTING DUCT SYSTEM		295	Linear Foot		
158 REMOVE ELECTRICAL BRIDGE HOUSE EQUIPMENT		1	Lump Sum		
159 SERVICE INSTALLATION -		1	Each		

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Type of Funding: CITY

Title: 1188838: WEBSTER AVENUE BRIDGE OVER THE NORTH BRANCH OF THE CHICAGO RIVER



Line	Item, Rev	Target Quantity	Unit	Unit Price	Amount
300A					
160	CLEANING, PAINTING, AND LUBRICATING OPERATING MACHINERY ASSEMBLIES	1	Lump Sum		
161	REPLACEMENT OF CENTER LOCKS	2	Each		
162	FURNISH AND INSTALL NEW SUMP PUMPS	2	Each		

**2.2 Line Details**

**2.2.1 Line 1 NON-SPECIAL WASTE DISPOSAL**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.2 Line 2 SOIL DISPOSAL ANALYSIS**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.3 Line 3 REGULATED SUBSTANCES PRE-CONSTRUCTION PLAN**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.4 Line 4 ON-SITE MONITORING OF REGULATED SUBSTANCES**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.5 Line 5 REGULATED SUBSTANCES FINAL CONSTRUCTION REPORT**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.6 Line 6 MOBILIZATION**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.7 Line 7 ENGINEER'S FIELD OFFICE**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.8 Line 8 TRAINEES**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>0.8</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.9 Line 9 FURNISH AND INSTALL PROJECT SIGN, TYPE A**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.10 Line 10 FURNISH AND INSTALL PROJECT SIGN, TYPE B**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.11 Line 11 FURNISH AND INSTALL PROJECT SIGN, BANNER**

Category	00000..	Start Price (USD)	Not Specified
Need-By Date	Not Specified	Target Price (USD)	Not Specified
Ship-To Address	084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States		

**2.2.12 Line 12 ASBESTOS ABATEMENT**

Category	00000..	Start Price (USD)	Not Specified
Need-By Date	Not Specified	Target Price (USD)	1
Ship-To Address	084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States		

**2.2.13 Line 13 LEAD-BASED PAINT ABATEMENT**

Category	00000..	Start Price (USD)	Not Specified
Need-By Date	Not Specified	Target Price (USD)	1
Ship-To Address	084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States		

**2.2.14 Line 14 HAZARDOUS MATERIALS ABATEMENT**

Category	00000..	Start Price (USD)	Not Specified
Need-By Date	Not Specified	Target Price (USD)	1
Ship-To Address	084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States		

**2.2.15 Line 15 EARTH EXCAVATION**

Category	00000..	Start Price (USD)	Not Specified
Need-By Date	Not Specified	Target Price (USD)	Not Specified
Ship-To Address	084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States		

**2.2.16 Line 16 SODDING, SALT TOLERANT**

Category	00000..	Start Price (USD)	Not Specified
Need-By Date	Not Specified	Target Price (USD)	Not Specified
Ship-To Address	084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States		

**2.2.17 Line 17 INLET FILTERS**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.18 Line 18 SUBBASE GRANULAR MATERIAL, TYPE B 4"**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.19 Line 19 HOT-MIX ASPHALT BASE COURSE, 9"**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.20 Line 20 BITUMINOUS MATERIALS (PRIME COAT)**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.21 Line 21 BITUMINOUS MATERIALS (TACK COAT)**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.22 Line 22 HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N50**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.23 Line 23 HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N70**

Category	00000..	Start Price (USD)	Not Specified
Need-By Date	Not Specified	Target Price (USD)	Not Specified
Ship-To Address	084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States		

**2.2.24 Line 24 PAVEMENT CONNECTOR (HMA) FOR BRIDGE APPROACH SLAB**

Category	00000..	Start Price (USD)	Not Specified
Need-By Date	Not Specified	Target Price (USD)	Not Specified
Ship-To Address	084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States		

**2.2.25 Line 25 PAVEMENT REMOVAL**

Category	00000..	Start Price (USD)	Not Specified
Need-By Date	Not Specified	Target Price (USD)	Not Specified
Ship-To Address	084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States		

**2.2.26 Line 26 HOT-MIX ASPHALT SURFACE REMOVAL, 1 1/2"**

Category	00000..	Start Price (USD)	Not Specified
Need-By Date	Not Specified	Target Price (USD)	Not Specified
Ship-To Address	084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States		

**2.2.27 Line 27 HOT-MIX ASPHALT SURFACE REMOVAL, 4"**

Category	00000..	Start Price (USD)	Not Specified
Need-By Date	Not Specified	Target Price (USD)	Not Specified
Ship-To Address	084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States		

**2.2.28 Line 28 COMBINATION CURB AND GUTTER REMOVAL**

Category	00000..	Start Price (USD)	Not Specified
Need-By Date	Not Specified	Target Price (USD)	Not Specified
Ship-To Address	084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States		

**2.2.29 Line 29 SIDEWALK REMOVAL**

Category	00000..	Start Price (USD)	Not Specified
Need-By Date	Not Specified	Target Price (USD)	Not Specified
Ship-To Address	084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States		

**2.2.30 Line 30 SIGN PANEL - TYPE 1**

Category	00000..	Start Price (USD)	Not Specified
Need-By Date	Not Specified	Target Price (USD)	Not Specified
Ship-To Address	084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States		

**2.2.31 Line 31 THERMOPLASTIC PAVEMENT MARKING - LETTERS AND SYMBOLS**

Category	00000..	Start Price (USD)	Not Specified
Need-By Date	Not Specified	Target Price (USD)	Not Specified
Ship-To Address	084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States		

**2.2.32 Line 32 THERMOPLASTIC PAVEMENT MARKING - LINE 4"**

Category	00000..	Start Price (USD)	Not Specified
Need-By Date	Not Specified	Target Price (USD)	Not Specified
Ship-To Address	084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States		

**2.2.33 Line 33 THERMOPLASTIC PAVEMENT MARKING - LINE 24"**

Category	00000..	Start Price (USD)	Not Specified
Need-By Date	Not Specified	Target Price (USD)	Not Specified
Ship-To Address	084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States		

**2.2.34 Line 34 POLYUREA PAVEMENT MARKING TYPE I - LETTERS AND SYMBOLS**

Category	00000..	Start Price (USD)	Not Specified
Need-By Date	Not Specified	Target Price (USD)	Not Specified
Ship-To Address	084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States		

**2.2.35 Line 35 POLYUREA PAVEMENT MARKING TYPE I - LINE 4"**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.36 Line 36 POLYUREA PAVEMENT MARKING TYPE I - LINE 6"**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.37 Line 37 POLYUREA PAVEMENT MARKING TYPE I - LINE 12"**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.38 Line 38 POLYUREA PAVEMENT MARKING TYPE I - LINE 24"**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.39 Line 39 PORTLAND CEMENT CONCRETE SIDEWALK 5 INCH**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.40 Line 40 PORTLAND CEMENT CONCRETE SIDEWALK 8 INCH**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.41 Line 41 PORTLAND CEMENT CONCRETE ADA RAMP 8 INCH**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.42 Line 42 RADIAL DETECTABLE WARNING TILES (CAST IRON)**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.43 Line 43 CATCH BASINS, TYPE 1, 4'-DIAMETER, TYPE 1 FRAME, OPEN LID (CITY OF CHICAGO)**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.44 Line 44 REMOVING CATCH BASINS**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.45 Line 45 COMBINATION CURB AND GUTTER TYPE B V.12**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.46 Line 46 SEDIMENT CONTROL, SILT CURTAIN**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		



**2.2.47 Line 47 PAVEMENT MARKING REMOVAL - WATER BLASTING**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.48 Line 48 REMOVE, STORE AND RE-ERECT SIGN PANEL**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.49 Line 49 SIDEWALK REMOVAL (SPECIAL)**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.50 Line 50 STORM SEWERS, TYPE 2, 8-INCH (EXTRA STRENGTH VITRIFIED CLAY PIPE)**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.51 Line 51 TEMPORARY CHAIN LINK FENCE WITH SCREENING, 6'**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.52 Line 52 DETOUR TRAFFIC SIGNAL MODIFICATIONS AND MAINTENANCE**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.53 Line 53 TRAFFIC CONTROL AND PROTECTION, (SPECIAL)**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.54 Line 54 POROUS GRANULAR BACKFILL**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.55 Line 55 PROTECTIVE SHIELD**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.56 Line 56 STRUCTURE EXCAVATION**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.57 Line 57 BRIDGE DECK GROOVING**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.58 Line 58 FORM LINER TEXTURED SURFACE**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.59 Line 59 STUD SHEAR CONNECTORS**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.60 Line 60 NAME PLATES**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.61 Line 61 ELASTOMERIC BEARING ASSEMBLY, TYPE I**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.62 Line 62 REINFORCEMENT BARS, EPOXY COATED**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.63 Line 63 PREFORMED JOINT STRIP SEAL**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.64 Line 64 ANCHOR BOLTS, 1"**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.65 Line 65 EPOXY CRACK INJECTION**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.66 Line 66 CONCRETE REMOVAL**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.67 Line 67 HIGH PERFORMANCE CONCRETE STRUCTURES**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.68 Line 68 HIGH PERFORMANCE CONCRETE SUPERSTRUCTURES**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.69 Line 69 CLASS "SI" CONCRETE (MISCELLANEOUS)**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.70 Line 70 PROTECTIVE CONCRETE SEALER**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.71 Line 71 DECORATIVE STEEL RAILING**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.72 Line 72 STEEL RAILING REMOVAL**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.73 Line 73 STRUCTURAL STEEL REMOVAL**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.74 Line 74 CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES NO. 1**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.75 Line 75 STRUCTURAL REPAIR OF CONCRETE (DEPTH EQUAL TO OR LESS THAN 5 INCHES)**

Category	00000..	Start Price (USD)	Not Specified
Need-By Date	Not Specified	Target Price (USD)	Not Specified
Ship-To Address	084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States		

**2.2.76 Line 76 STRUCTURAL REPAIR OF CONCRETE (DEPTH GREATER THAN 5 INCHES)**

Category	00000..	Start Price (USD)	Not Specified
Need-By Date	Not Specified	Target Price (USD)	Not Specified
Ship-To Address	084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States		

**2.2.77 Line 77 BALANCING OF BRIDGE AND ALTERATION OF COUNTERWEIGHTS**

Category	00000..	Start Price (USD)	Not Specified
Need-By Date	Not Specified	Target Price (USD)	Not Specified
Ship-To Address	084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States		

**2.2.78 Line 78 BRIDGE OPERATION AND MAINTENANCE**

Category	00000..	Start Price (USD)	Not Specified
Need-By Date	Not Specified	Target Price (USD)	Not Specified
Ship-To Address	084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States		

**2.2.79 Line 79 CLEANING AND PAINTING EXISTING STEEL STRUCTURES**

Category	00000..	Start Price (USD)	Not Specified
Need-By Date	Not Specified	Target Price (USD)	Not Specified
Ship-To Address	084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States		

**2.2.80 Line 80 COUNTERWEIGHT PIT CLEANING**

Category	00000..	Start Price (USD)	Not Specified
Need-By Date	Not Specified	Target Price (USD)	Not Specified
Ship-To Address	084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States		

**2.2.81 Line 81 DOLPHINS**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.82 Line 82 DRAINAGE SYSTEM**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.83 Line 83 FURNISHING AND ERECTING 5-INCH GRATING, HALF CONCRETE FILLED**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.84 Line 84 FURNISHING AND ERECTING FRP GRATING**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.85 Line 85 FURNISHING AND ERECTING STRUCTURAL STEEL**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.86 Line 86 FURNISHING AND ERECTING STRUCTURAL STEEL, FIELD DISCOVERED CONDITIONS REPAIRED AS DIRECTED BY THE COMMISSIONER**

Category	00000..	Start Price (USD)	Not Specified
Need-By Date	Not Specified	Target Price (USD)	Not Specified
Ship-To Address	084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States		

**2.2.87 Line 87 FLOOR ACCESS HATCH**

Category	00000..	Start Price (USD)	Not Specified
Need-By Date	Not Specified	Target Price (USD)	Not Specified
Ship-To Address	084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States		

**2.2.88 Line 88 METAL LADDERS**

Category	00000..	Start Price (USD)	Not Specified
Need-By Date	Not Specified	Target Price (USD)	Not Specified
Ship-To Address	084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States		

**2.2.89 Line 89 PIER PROTECTION REPLACEMENT**

Category	00000..	Start Price (USD)	Not Specified
Need-By Date	Not Specified	Target Price (USD)	Not Specified
Ship-To Address	084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States		

**2.2.90 Line 90 REMOVAL OF DETERIORATED CONNECTORS AND REPLACEMENT WITH HIGH STRENGTH BOLTS**

Category	00000..	Start Price (USD)	Not Specified
Need-By Date	Not Specified	Target Price (USD)	Not Specified
Ship-To Address	084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States		



**2.2.91 Line 91 REFURBISHING OF LIVE LOAD BEARINGS**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.92 Line 92 REMOVAL OF EXISTING SUPERSTRUCTURES**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.93 Line 93 REMOVAL OF EXISTING GRID DECK**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.94 Line 94 STEEL RAILING (BARRIER)**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.95 Line 95 STEEL RAILING (SPECIAL)**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.96 Line 96 STRUCTURAL STEEL REPAIRS**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.97 Line 97 TEMPORARY SUPPORT**

Category	00000..	Start Price (USD)	Not Specified
Need-By Date	Not Specified	Target Price (USD)	Not Specified
Ship-To Address	084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States		

**2.2.98 Line 98 REMOVE EXISTING BRIDGE HOUSES**

Category	00000..	Start Price (USD)	Not Specified
Need-By Date	Not Specified	Target Price (USD)	Not Specified
Ship-To Address	084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States		

**2.2.99 Line 99 REMOVE EXISTING CONCRETE RAILINGS**

Category	00000..	Start Price (USD)	Not Specified
Need-By Date	Not Specified	Target Price (USD)	Not Specified
Ship-To Address	084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States		

**2.2.100 Line 100 PRECAST CONCRETE WALL**

Category	00000..	Start Price (USD)	Not Specified
Need-By Date	Not Specified	Target Price (USD)	Not Specified
Ship-To Address	084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States		

**2.2.101 Line 101 PRECAST CONCRETE RAILINGS**

Category	00000..	Start Price (USD)	Not Specified
Need-By Date	Not Specified	Target Price (USD)	Not Specified
Ship-To Address	084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States		

**2.2.102 Line 102 METAL CLADDED WALL ASSEMBLY**

Category	00000..	Start Price (USD)	Not Specified
Need-By Date	Not Specified	Target Price (USD)	Not Specified
Ship-To Address	084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States		

**2.2.103 Line 103 PAINT GYPSUM BOARD CEILING**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.104 Line 104 LIFE RINGS**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.105 Line 105 INTERIOR PAINTING**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.106 Line 106 INSTALL AND PAINT STAIR RAILINGS**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.107 Line 107 PAINT CONCRETE FLOORS AND STAIRS**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.108 Line 108 ALUMINUM FRAMED WINDOWS**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.109 Line 109 STANDING SEAM METAL ROOFING**

Category	00000..	Start Price (USD)	Not Specified
Need-By Date	Not Specified	Target Price (USD)	Not Specified
Ship-To Address	084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States		

**2.2.110 Line 110 EXTERIOR DOORS**

Category	00000..	Start Price (USD)	Not Specified
Need-By Date	Not Specified	Target Price (USD)	Not Specified
Ship-To Address	084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States		

**2.2.111 Line 111 BREAKDOWN FOUNDATION**

Category	00000..	Start Price (USD)	Not Specified
Need-By Date	Not Specified	Target Price (USD)	Not Specified
Ship-To Address	084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States		

**2.2.112 Line 112 BRIDGE HOUSE ELECTRICAL WORK**

Category	00000..	Start Price (USD)	Not Specified
Need-By Date	Not Specified	Target Price (USD)	Not Specified
Ship-To Address	084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States		

**2.2.113 Line 113 CHICAGO 2000 LUMINAIRE ARM, 8 FOOT, WITH SCROLL, 8'**

Category	00000..	Start Price (USD)	Not Specified
Need-By Date	Not Specified	Target Price (USD)	Not Specified
Ship-To Address	084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States		

**2.2.114 Line 114 CHICAGO 2000 MAST HEAD AND FINIAL FOR 10" POLE**

Category	00000..	Start Price (USD)	Not Specified
Need-By Date	Not Specified	Target Price (USD)	Not Specified
Ship-To Address	084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States		

**2.2.115 Line 115 CHICAGO 2000 POLE BASE**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.116 Line 116 CLEAN EXISTING MANHOLE OR HANDHOLE**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.117 Line 117 COILABLE CONDUIT, HDPE, SCH# 80, DIRECTIONAL BORING, 2"**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.118 Line 118 COILABLE CONDUIT, HDPE, SCH# 80, DIRECTIONAL BORING, 3"**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.119 Line 119 CONCRETE FOUNDATION, 28" DIAMETER, 1 1/4" ANCHOR RODS, 15" BOLT CIRCLE, 7 FEET**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.120 Line 120 CONTROLLER STREET LIGHTING, RESIDENTIAL, 240V**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.121 Line 121 DRILL EXISTING MANHOLE OR HANDHOLE**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.122 Line 122 ELECTRICAL CABLE IN CONDUIT, 1/C #10**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.123 Line 123 ELECTRICAL CABLE IN CONDUIT, 1/C #12**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.124 Line 124 ELECTRICAL CABLE IN CONDUIT, 1/C #350 KCMIL**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.125 Line 125 ELECTRICAL CABLE IN CONDUIT, 1/C #2/0**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.126 Line 126 ELECTRICAL CABLE IN CONDUIT, TRIPLEX 2 1/C NO.6, 1/C NO.8**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.127 Line 127 ELECTRICAL HANDHOLE, 30" DIAMETER WITH 24" FRAME AND LID**

Category	00000..	Start Price (USD)	Not Specified
Need-By Date	Not Specified	Target Price (USD)	Not Specified
Ship-To Address	084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States		

**2.2.128 Line 128 INSTALL CONDUIT INTO EXISTING HELIX FOUNDATION**

Category	00000..	Start Price (USD)	Not Specified
Need-By Date	Not Specified	Target Price (USD)	Not Specified
Ship-To Address	084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States		

**2.2.129 Line 129 INTERCEPT EXISTING CONDUIT**

Category	00000..	Start Price (USD)	Not Specified
Need-By Date	Not Specified	Target Price (USD)	Not Specified
Ship-To Address	084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States		

**2.2.130 Line 130 JUNCTION BOX ATTACHED TO STRUCTURE**

Category	00000..	Start Price (USD)	Not Specified
Need-By Date	Not Specified	Target Price (USD)	Not Specified
Ship-To Address	084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States		

**2.2.131 Line 131 LED CHANNEL CENTER SIGNAL NAVIGATIONAL LIGHT**

Category	00000..	Start Price (USD)	Not Specified
Need-By Date	Not Specified	Target Price (USD)	Not Specified
Ship-To Address	084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States		

**2.2.132 Line 132 LED PIER SIGNAL NAVIGATIONAL LIGHT**

Category	00000..	Start Price (USD)	Not Specified
Need-By Date	Not Specified	Target Price (USD)	Not Specified
Ship-To Address	084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States		

**2.2.133 Line 133 LED RESIDENTIAL LUMINAIRE - 108W**

Category	00000..	Start Price (USD)	Not Specified
Need-By Date	Not Specified	Target Price (USD)	Not Specified
Ship-To Address	084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States		

**2.2.134 Line 134 LUMINAIRE CHICAGO 2000 PENDANT LED**

Category	00000..	Start Price (USD)	Not Specified
Need-By Date	Not Specified	Target Price (USD)	Not Specified
Ship-To Address	084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States		

**2.2.135 Line 135 MAINTAIN LIGHTING SYSTEM**

Category	00000..	Start Price (USD)	Not Specified
Need-By Date	Not Specified	Target Price (USD)	Not Specified
Ship-To Address	084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States		

**2.2.136 Line 136 MAST ARM STEEL 4'**

Category	00000..	Start Price (USD)	Not Specified
Need-By Date	Not Specified	Target Price (USD)	Not Specified
Ship-To Address	084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States		

**2.2.137 Line 137 PAINT EXISTING POLE COMPLETE**

Category	00000..	Start Price (USD)	Not Specified
Need-By Date	Not Specified	Target Price (USD)	Not Specified
Ship-To Address	084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States		

**2.2.138 Line 138 POLE, STEEL, ANCHOR BASE, 7" DIAMETER, 3 GAUGE, 20'**

Category	00000..	Start Price (USD)	Not Specified
Need-By Date	Not Specified	Target Price (USD)	Not Specified
Ship-To Address	084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States		



**2.2.139 Line 139 POLE, STEEL, ANCHOR BASE, 10" DIAMETER, 7 GAUGE, 34'-6"**

Category	00000..	Start Price (USD)	Not Specified
Need-By Date	Not Specified	Target Price (USD)	Not Specified
Ship-To Address	084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States		

**2.2.140 Line 140 CONDUIT ATTACHED TO STRUCTURE, 1"**

Category	00000..	Start Price (USD)	Not Specified
Need-By Date	Not Specified	Target Price (USD)	Not Specified
Ship-To Address	084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States		

**2.2.141 Line 141 CONDUIT ATTACHED TO STRUCTURE, 3"**

Category	00000..	Start Price (USD)	Not Specified
Need-By Date	Not Specified	Target Price (USD)	Not Specified
Ship-To Address	084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States		

**2.2.142 Line 142 CONDUIT ATTACHED TO STRUCTURE, 4"**

Category	00000..	Start Price (USD)	Not Specified
Need-By Date	Not Specified	Target Price (USD)	Not Specified
Ship-To Address	084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States		

**2.2.143 Line 143 PVC CONDUIT IN TRENCH, 3" PVC, SCH#80**

Category	00000..	Start Price (USD)	Not Specified
Need-By Date	Not Specified	Target Price (USD)	Not Specified
Ship-To Address	084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States		

**2.2.144 Line 144 REMOVE ANCHOR BASE POLE**

Category	00000..	Start Price (USD)	Not Specified
Need-By Date	Not Specified	Target Price (USD)	Not Specified
Ship-To Address	084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States		

**2.2.145 Line 145 REMOVE BRANCH WIRES / CABLES 2#6**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.146 Line 146 REMOVE LUMINAIRE**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.147 Line 147 REMOVE MAST ARM**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.148 Line 148 REMOVE NAVIGATIONAL SIGNAL**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.149 Line 149 REMOVE TS HEAD, 1-FACE**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.150 Line 150 REMOVE PEDESTRIAN SIGNAL HEAD**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.151 Line 151 REMOVE MONOTUBE M.A. 20'**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.152 Line 152 REMOVE JUNCTION BOX, TSS 18**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.153 Line 153 REINSTALL SIGNAL HEAD, 3 SECTION, MAST ARM MOUNTED**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.154 Line 154 REINSTALL PEDESTRIAN SIGNAL, BRACKET MOUNTED**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.155 Line 155 REINSTALL MAST ARM, MONOTUBE, 20'**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.156 Line 156 REINSTALL JUNCTION BOX**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.157 Line 157 ROD AND CLEAN DUCT IN EXISTING DUCT SYSTEM**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.158 Line 158 REMOVE ELECTRICAL BRIDGE HOUSE EQUIPMENT**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.159 Line 159 SERVICE INSTALLATION - 300A**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.160 Line 160 CLEANING, PAINTING, AND LUBRICATING OPERATING MACHINERY ASSEMBLIES**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.161 Line 161 REPLACEMENT OF CENTER LOCKS**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

**2.2.162 Line 162 FURNISH AND INSTALL NEW SUMP PUMPS**

Category	<b>00000..</b>	Start Price (USD)	<b>Not Specified</b>
Need-By Date	<b>Not Specified</b>	Target Price (USD)	<b>Not Specified</b>
Ship-To Address	<b>084- CDOT RM400 30 N. LA SALLE ST. ROOM 400 Chicago, IL 60602 United States</b>		

## **APPENDIX 1 ePROCUREMENT**

This is an eProcurement Bid. Bids are to be submitted through the City's "iSupplier" system, the City's eProcurement computer system for electronic bidding and providing Contractors with access to contract, ordering and payment information for their City contracts. The following provisions apply to this bid and supersede any conflicting provisions in Books 1, 2, and 3.

### **1. Obtaining the Bid Documents**

Bidders are solely responsible for obtaining all Bid Documents, including Clarifications and Addenda. Documents may be downloaded from the Department of Procurement Service's ("DPS") website at the following URL:

<http://www.cityofchicago.org/eProcurement>

Click on "Current Bids."

In order to receive notice of clarifications and addenda, Bidders must be registered for and log-in to iSupplier, search for the solicitation number, open the solicitation for review, and accept the disclaimer. This will sign Bidders up for notifications.

Bid Document Holders are listed on the Bid & Bond Room Opportunity Take Out List. The Opportunity Take Out List is public information and is posted to the DPS web site at [www.cityofchicago.org/TOL](http://www.cityofchicago.org/TOL). To find Opportunity Take Out lists go to "Get Started Online," click "Opportunities" and search by the specification number.

### **2. Clarifications and Addenda**

The City will send an email notification to suppliers who have indicated intent in a Bid that an addendum or clarification has been issued. The Clarifications and Addenda incorporated into the electronic bid document available at the following URL:

<https://www.cityofchicago.org/eProcurement>

Suppliers that have indicated interest in a Bid will receive email notification that an addendum or clarification has been issued. There may be multiple Clarifications and Addenda. Failure to obtain Clarifications and/or Addenda, for whatever cause, will not relieve a Bidder from the obligation to bid according to and comply with any changed or additional terms and conditions contained in the Clarifications and Addenda.

Electronic Acknowledgement of Clarifications and/or Addenda is mandatory to submit an electronic Bid. Any harm to the bidder resulting from failure to obtain all necessary documents, for whatever cause, will not be valid grounds for a protest against award(s) made under this bid solicitation.

### **3. Questions Regarding the Bid Documents; Bidder Inquiry Deadline**

All inquiries regarding the Bid Documents or procurement process may be directed to the Procurement Specialist/Senior Procurement Specialist in iSupplier via online discussion or via email at the email address listed on the front cover of the Bid Documents.

**The Bidder Inquiry Deadline is listed on the front cover of the Bid Documents under "Deadline for Questions."** Inquiries received after the Bidder Inquiry Deadline will not be answered except at the discretion of the Chief Procurement Officer.

Bidders may only rely on written answers in a Clarification or in an Addendum duly issued by the Chief Procurement Officer. Bidders cannot rely on oral or informal responses; such answers will not be binding upon the City.

#### **4. Preparation of Bids & Completion of the Bid Documents**

Each Bidder must complete all of the forms listed on the Bid Submittal Checklist (with the exception of the Proposal Pages) in the Requirements section and scan and upload them as attachments to the electronic bid submission. Bidders may not change any of the Bid Documents. Any changes made by a Bidder to the Bid Documents may result in rejection of the Bid, and will not be binding upon the City.

Bidders must submit their pricing electronically by filling out bid lines in the electronic Price Schedule in the iSupplier system.

Bidders must use the Bid Execution Page that is appropriate for their form of business organization (e.g., sole proprietorship, corporation, partnership, or joint venture). The individual(s) that sign the Bid Execution Page on behalf of the Bidder, by their signature, represents and warrants to the City that such individual is authorized to execute bids and contracts on behalf of the Bidder, and that the Bidder agrees and shall be bound to all of the terms and conditions of the Bid Documents and, upon execution by the City, the Contract Documents. Signatures must be sworn before a Notary Public. The form must be printed, signed, notarized and scanned then uploaded as an attachment to the electronic bid submission.

#### **5. Submission of Bids - Date, Time, and Place**

Bids are to be submitted electronically to the Department of Procurement on the date and prior to the time stated on the Cover Page of the Bid Documents, or any addendum issued by the City to change such Bid Opening Date. No bid will be accepted after the Bid Opening Date. The time of the receipt of the bid will be determined solely by the "Time of Quote" generated by the iSupplier system.

#### **6. Bid Deposit**

5% of the Total Base Bid

When submitting an electronic bid, scan and upload a copy of your bid deposit with your submittal documents. The 1st and 2nd apparent low bidders will be required to deliver their original and properly executed bid deposit to the Bid & Bond Room within 2 business days following the Bid Opening Date.

**BOOK 1  
TERMS AND CONDITIONS FOR CONSTRUCTION**

**CITY OF CHICAGO  
DEPARTMENT OF TRANSPORTATION**

**LORI E. LIGHTFOOT  
MAYOR**



Issued by the  
DEPARTMENT OF PROCUREMENT SERVICES

SHANNON E. ANDREWS  
CHIEF PROCUREMENT OFFICER

City Funding

July 2020  
(The City may from time to time revise these terms and conditions)

**PROJECT TITLE:** WEBSTER AVENUE BRIDGE OVER NORTH BRANCH OF THE CHICAGO RIVER

**CDOT PROJECT NO.:** E-1-525

**SPECIFICATION NO.:** 1188838

**RFQ NO.:** 7346



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## I. GENERAL PROVISIONS

### A. Acronyms

“ACI” - American Concrete Institute  
“AED” - Associated Equipment Distributors  
“AISC” - American Institute of Steel Construction.  
“ANSI” - American National Standards Institute.  
“ASME” - American Society of Mechanical Engineers.  
“ASTM” - American Society for Testing and Materials  
“EDS” - *See Section XXI.S.*  
“CTA” - Chicago Transit Authority  
“FEPC” - Fair Employment Practices Commission.

“IEPA” - Illinois Environmental Protection Agency.  
“IDOT” - Illinois Department of Transportation.  
“NEC” - National Electric Code.  
“NFPA” - National Fire Protection Association  
“NEMA” - National Electrical Manufacturer’s Association.  
“OSHA” - U.S. Occupational Safety and Health Administration

### B. Definitions

1. “Architect/Engineer” means the person designated by the Commissioner to provide the Contract drawings and Detailed Specifications for the Work you are to perform.
2. “Business Days” means Monday through Friday, unless an officially designated City holiday falls on one of those days.
3. “Chief Procurement Officer” means the Chief Procurement Officer for the City of Chicago, and any representative duly authorized in writing to act on his/her behalf.
4. “City” means the City of Chicago, a municipal corporation and home rule unit of government existing under the Constitution of the State of Illinois.
5. “Commissioner” means the head of the Department and any designee duly authorized in writing to act on his/her behalf.
6. “Comptroller” means City Comptroller or his designated representative.
7. “Consultant(s)” refers to the person, firm or corporation awarded a contract by the City to provide professional architectural or engineering design services or construction supervision for the Project.
8. “Contract” means this Contract, including your bid proposal (as accepted by the City), the City’s bid specification, which includes Books 1, 2, and 3, plans and drawings, addenda, all exhibits and schedules that are attached to it and documents incorporated in it by reference; fully executed performance and payments bond(s); and all amendments, modifications, or revisions made from time to time in accordance with its terms.
9. “Contract Completion Date” is the date, determined by the Commissioner, on which the Project is to reach Substantial Completion. The Contract Completion Date will be

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determined based on the duration for the Project set by the Contract as adjusted by any Contract modifications that extend or reduce the duration of the Project.

10. "Contract Modification" means a written modification of the terms and conditions of this Contract, signed by you, the Chief Procurement Officer, the Mayor and the Comptroller.
11. "Contractor" or "you" means the person who is awarded the Contract.
12. "Contract Price" is defined in Section XIII.A.
13. "Contract Time" is the duration of the Work from when the Work is required to begin until the scheduled date for Substantial Completion, including approved time extensions. See I.B.42.
14. "Corporation Counsel" means the head of the City's Department of Law and any Assistant Corporation Counsel duly authorized to act on the Corporation Counsel's behalf.
15. "Day" means calendar day.
16. "Daytime Work" means work performed between the hours of 6:00 a.m. to 6:00 p.m.
17. "Department" means the City Department identified on the cover of this Contract.
18. "Detailed Specifications" means the written requirements for materials and equipment to be used in the Work, including any plans or drawings, and standards of performance for the Work, which are set forth in Book 3 or incorporated by reference.
19. "Environmental Laws" means all applicable Federal, State, and local laws, ordinances, rules, regulations, and executive orders pertaining to environmental matters.
20. "Equipment" means all machinery and equipment, together with the necessary supplies for upkeep and maintenance, and all tools and apparatus necessary for the proper and acceptable completion of the Work.
21. "Field Order" means the written order to you, signed by the Commissioner, unilaterally directing changes in the Work or the Contract Time, or directing you to take corrective action and to adhere to Contract.
22. "Final Completion and Acceptance of the Work " means the last date on which all of the following events have occurred: (i) the Commissioner has determined that all Punch List Work and any other remaining Work have been completed in accordance with the Contract; (ii) final inspections have been completed and operations systems and equipment testing have been completed; (iii) final occupancy certifications have been issued; (iv) all deliverables have been provided to the Commissioner; and (v) all contractual requirements for final payment have been completed.
23. "Hazardous Materials" means asbestos and asbestos-containing materials, polychlorinated biphenyls (PCBs), oil or any other petroleum products, natural gas, special nuclear materials, and by-product materials regulated under the Atomic Energy Act (42 U.S.C. Sec. 2014, *et seq.*), pesticides under the Federal Insecticide, Fungicide and Rodenticide Act (7 U.S.C. Sec. 136, *et seq.*) and any hazardous waste, toxic substance or related material, including any substance defined or treated as "hazardous

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waste," "special waste," or "toxic substance" (or comparable term) in any Environmental Law.

24. "Include" (in all of its forms) means "include without limitation" unless the context clearly indicates otherwise.
25. "Management Consultant" or "Program Manager" means the organization or entity, if any, that the City has retained to oversee the planning, design, and construction of the Project.
26. "Municipal Code" means the Municipal Code of Chicago.
27. "Night Work" means work performed between the hours of 6:00 p.m. and 6:00 a.m. unless otherwise defined in the plans.
28. "Notice to Bidders" means the Advertisement for Bids, the official notice inviting bids for the proposed Work to be done under this Contract.
29. "Notice to Proceed" means written authorization from the Commissioner for you to commence the Work on a specified date.
30. "Product Data" are illustrations, standard schedules, performance charts, instructions, descriptive literature, catalogs and brochures, performance and test data, test certifications, diagrams and other information furnished by you to illustrate a material, product or system for some portion of the Work.
31. "Project" means, collectively, the improvements you are to construct in accordance with the Contract.
32. "Provide" means furnish and install, unless otherwise specified in this Contract.
33. "Punch List" or "Punch List work" means minor adjustments, repairs or deficiencies in the Work, as determined by the Commissioner in his sole discretion.
34. "Record Documents" are all documents pertaining to the completed Work and the Project that the Contract requires you to provide to the City, including Record Drawings, Record Shop Drawings, product data, instructions, parts list, certified payrolls and operations and maintenance manuals.
35. "Record Drawings" means drawings reflecting the final built Project configuration, including approved modifications.
36. "Samples" mean physical examples that illustrate materials, equipment or workmanship. Samples include materials, fabricated items, equipment, devices, appliances, or parts of them, as called for in the Detailed Specifications and any other Samples that may be required by the Commissioner to determine whether the kind, quality, construction, workmanship, finish, color and other characteristics of the materials proposed by you conform to the required characteristics.
37. "Shop Drawings" means drawings, diagrams, schedules and other data specially prepared for the Work by you or any Subcontractor, manufacturer, supplier or distributor to illustrate some portion of the Work. Shop Drawings include: fabrication, erection, layout and setting drawings; manufacturer's standard drawings; schedules; wiring and control diagrams; and other drawings pertaining to materials, equipment and systems

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and methods of construction that may be required to show that the materials, equipment or system conform to the Contract requirements. Shop drawings must establish the actual detail of all manufactured and fabricated items and indicate the proper relation to the adjoining Work.

38. "Special Wastes" means those substances as defined in the Illinois Environmental Protection Act, 415 ILCS 5/3.45, and further defined in Section 809.103 of 35 Illinois Administrative Code, Subtitle G, Ch. 1.
39. "Subcontractor" means any person or entity with whom you contract to provide any part of the Work, and all subcontractors of any tier, including suppliers and material persons, whether or not in privity with you.
40. "Submittal" means Schedule, Shop Drawings, Product Data or Samples and other items that the Contract may require you to submit to the Commissioner.
41. "Substantial Completion Date" is the date upon which you have met the requirements for Substantial Completion in the opinion of the Commissioner.
42. "Substantial Completion of the Project" or "Substantial Completion" means that, in the opinion of the Commissioner, you have completed all Work in accordance with the Contract, except for Punch List Work, and the City is able to occupy and use the Project for the purpose intended.
43. "Work" means all labor, materials, equipment, deliverables, and other incidentals to be provided by you under this Contract that are necessary or convenient to the successful completion of this Project and that are required by, incidental or collateral to the Contract.
44. "You" means "Contractor." See above.

**C. Usage and Contract Interpretation**

1. Unless a contrary meaning is specifically noted elsewhere, words such as, "as required," "as directed," "as permitted," and similar words mean that requirements, directions of, and permission of the Commissioner are intended. The words "approved," "acceptable," "satisfactory," or words of like import, mean "approved by," "acceptable to," or "satisfactory to" the Commissioner. The words "necessary," "proper," or words of like import as used regarding the extent, conduct or character of the Work specified means that Work must be conducted in a manner, to the extent, or be of character that is "necessary" or "proper" in the opinion of the Commissioner. The Commissioner's judgment in these matters is final and you are not permitted to contest it.
2. Where the imperative form of an address is used, such as "perform the excavating," "provide equipment required," "remove obstructions encountered," "furnish and install reinforcing steel bars," etc., that address is directed to you .
3. Any headings in this Contract are for convenience of reference only and do not define or limit its terms or provisions. All article and section references, unless otherwise expressly indicated, are to sections of this Contract. Words importing persons include firms, associations, partnerships, trusts, corporations, joint ventures and other legal entities, including public bodies, as well as natural persons. Words of any gender



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include correlative words of other genders. Words importing the singular number include the plural and vice versa, unless the context otherwise indicates. All references to any exhibit or document include the latest version and all supplements and/or amendments to any such exhibits or documents. All references to any person or entity include any person or entity succeeding to the rights, duties, and obligations of those persons or entities in accordance with the terms and conditions of this Contract.

4. Whenever reference to a law is contained in this Contract, the reference includes any amendments to the law.

**D. Severability**

If any provision of this Contract is inoperative or unenforceable as applied in any particular case in any jurisdiction or jurisdictions because it conflicts with any other provision of this Contract, or of any constitution, statute, ordinance, rule of law, or public policy, or for any other reason, those circumstances will not render the provision in question inoperative or unenforceable in any other case or circumstance, or render any other provision or provisions of this Contract invalid, inoperative, or unenforceable to any extent whatever. The invalidity of any phrases, sentences, clauses, or sections contained in this Contract will not affect the remaining portions of this Contract or any part of it.

**E. Estimates of Quantities**

If an estimate of quantities of Work is listed in the Bid Schedule of Prices, you understand that:

1. the estimate is approximate only;
2. the City does not expressly or by implication represent or warrant that the actual quantities involved will correspond to the estimate;
3. payment to you will be made only for the actual quantities furnished and installed in accordance with the terms of this Contract; and
4. the Chief Procurement Officer and the Commissioner reserve the right to jointly order, in writing, to increase, decrease or delete quantities of Work pursuant to all terms and conditions of the Contract.

**F. Order of Precedence of Component Contract Parts**

The order of precedence of the component contract parts is as follows:

1. Terms and Conditions;
2. Addenda if any;
3. Plans or City Drawings;
4. Detailed Specifications;
5. Standard Specifications of the City, State or Federal Government, if any;
6. Advertisement for Bids (copy of advertisement to be attached to back of cover);
7. Requirements for Bidding and Instructions to Bidders; and

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**8. Performance Bond, if required.**

The foregoing order of precedence governs the interpretation of the Contract in all cases of conflict or inconsistency in it.

**G. Entire Agreement**

The Contract constitutes the entire agreement between the parties with respect to its subject matter, and no other oral or written understandings, representations, inducements, consideration, promises, or interpretations are implied or impressed upon this Contract that are not expressly addressed in it.

**II. PROJECT ORGANIZATION**

**A. The Commissioner**

For the purposes of this Contract, the Commissioner, or any successor office to the Commissioner, will represent the City in all matters relating to the performance of your Work under this Contract and will constitute the point of receipt for all deliverables required under this Contract, unless expressly specified otherwise in this Contract. The Commissioner will decide all questions that arise with regard to the administration of the Contract such as to the quality and acceptability of materials furnished, the Work performed and rate of progress of the Work. The Commissioner will determine the amount and quality of Work performed and materials furnished and their estimates. The Commissioner's estimate will be a condition precedent to your right to receive money due under the Contract, but then only if the modifications or amendments to the Contract are approved in accordance with Article XIV, "Changes in the Work."

**B. The Chief Procurement Officer**

The approval of the Chief Procurement Officer is required to enter this Contract and to modify it.

**C. Contractor**

The Work is under your charge and care until Final Completion and Acceptance of the Work, unless otherwise specified elsewhere in the Contract.

**III. CONTRACTOR'S OBLIGATIONS**

**A. Contractor**

1. Except as may be expressly provided otherwise in the Contract, you are solely responsible for selecting the means, methods, techniques, sequences, and procedures used in performing the Work. The intent of the Detailed Specifications is to describe the completed Work that you must provide to fulfill the requirements of the Contract. The Detailed Specifications are not intended to cover every detail of materials, parts, or activities necessary to complete the Work. You must perform all activities that may be required or necessary to complete the Work in accordance with the Contract. For the Contract Price, you must construct, furnish and install all materials, parts and labor necessary to complete the entire Work, whether or not the Contract particularly specifies or shows the details of Work.

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2. The Work under this Contract has not been completely segregated into divisions of Work to be performed by any trade or Subcontractor. You are responsible for all division of work. However, wherever any provision of any section of the specifications conflicts with any agreements or regulations of any kind at any time in force among members of any trade or craft associations, unions or councils that regulate or distinguish that work is or is not included in the work of any particular trade, you must make all necessary arrangements to reconcile any such conflict without delay, damage, or cost to the City.
3. Before submission of your bid, you must (i) inspect the site of the proposed Work and familiarize yourself with all the site conditions that may affect your performance of the Work; and (ii) review the Detailed Specifications, plans and drawings provided with the bid documents, as required in the "Requirements for Bidding and Instructions to Bidders," in Book 2. If at any time before the bid opening you discover any errors, discrepancies or omissions in the Contract or any discrepancy between the Contract and the physical conditions at the site or in any drawings that may be provided later, you must notify the Chief Procurement Officer immediately, in writing for an interpretation through an Addendum.
4. This written request must be received by the Chief Procurement Officer no later than 10 days before bid opening, or no response will be provided. You will not be allowed to take advantage of your discovery of any such error or omission or discrepancy in the Contract after the award of the Contract. Any Work done after the discovery, unless authorized by the Chief Procurement Officer, will be done at your expense.
5. Except as otherwise expressly provided in the Contract, the Contract Price includes all costs and expenses for which you will be compensated in connection with the Contract, including
  - a. the costs of performing any or all of your obligations and duties under the Contract;
  - b. the costs of all materials, equipment, supplies, tools, machinery, labor, supervision, management and items of any and all kinds that are or may be necessary and incidental to the full and satisfactory completion of the Work, whether or not specified or indicated in the Contract;
  - c. the costs of permits, insurance, bonds and license;
  - d. the costs associated with any risks you assume under the Contract;
  - e. the costs associated with all warranties and guarantees;
  - f. the costs of complying with the directives of the Chief Procurement Officer and/or the Commissioner;
  - g. the costs of complying with all laws applicable to the Contract; and
  - h. all overhead and profit.

No term of the Contract that further specifically indicates that you must bear the costs of an item or that further specifically indicates that an item will be performed at no additional cost to the City will be construed or interpreted to in any way limit the foregoing.

6. You must begin the Work on the date specified in the Notice to Proceed. In addition, upon receipt of the Notice to Proceed, you must assign and maintain during the term of

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the Contract and any extension of it, an adequate staff of competent personnel who are fully equipped, licensed as appropriate, available as needed, and qualified to perform the Work. You must include among your staff such personnel and positions as the Contract may require.

If, in the reasonable opinion of the Commissioner, the performance of your personnel assigned to the Work is at an unacceptable level, or does not comply with the provisions of Section VIII.A, "Competency of Workers," those personnel must cease to be assigned to this Work and must return to you. You must then furnish to the Commissioner the name of a substitute person or persons in accordance with Section III.A.6. Absence of sufficient qualified personnel for the Work constitutes an event of default.

7. You must supervise and direct the Work competently and efficiently, devoting such attention and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract. You are responsible for providing a finished Project that complies fully with the Contract.
8. Risk of Loss. The Work is under your charge and care until Final Completion and Acceptance of the Work by the Commissioner, unless otherwise specified in the Contract. You assume all responsibility for injury or damage to the Work by action of the elements, fire or any other causes whatsoever, including injury or damage arising from the execution or non-execution of the Work. You must rebuild, repair, restore and make good, at no additional cost to the City, all injuries or damages to any portion of your Work before Final Completion and Acceptance of the Work.
9. When the City furnishes equipment or materials to you for use or inclusion in the Work, you must safeguard all such equipment and materials as you would equipment and materials that you furnished.
10. The Work will not be considered to be completed and accepted until you receive written notice from the Commissioner confirming the Final Completion and Acceptance of the Work.
11. If you have any questions or concerns with respect to the Detailed Specifications or Contract drawings, you must raise them with the Commissioner.

**B. Subcontractors**

1. All rights and obligations under this Contract are by and between the City and you. Except as may otherwise be provided in the Contract, there is no privity between Subcontractors and the City. Subcontractors have no rights as third-party beneficiaries under this Contract except as may be provided in Article XXIII. You must implement such measures as may be necessary to ensure that your Subcontractors are bound by all applicable provisions of the Contract.
2. All Subcontractors are subject to the approval of the Chief Procurement Officer. You must not substitute a Subcontractor previously accepted by the Chief Procurement Officer unless the substitution is acceptable to the Chief Procurement Officer. All requests to subcontract must be submitted on a form approved by the Chief Procurement Officer.
3. You are responsible in all aspects and at all times for all Subcontractor Work.

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4. Except as required under Article XXIII, you must upon request furnish the Chief Procurement Officer with one copy of each written subcontract and subsequent modifications signed by you and the Subcontractor evidencing the agreement. All subcontracts must be in writing. All subcontracts must require that (i) all Subcontractors' Work be performed in strict accordance with this Contract; and (ii) the Subcontractor is bound by and subject to the requirements of this Contract, whether or not a particular provision specifically mentions Subcontractors. Subcontracts may contain different provisions than are provided in this Contract with respect to payments, schedules, and matters not affecting the quality or timely completion of the Work under this Contract, but only if the City's rights are not thereby prejudiced. You must require each Subcontractor to enter into similar subcontracts with its Subcontractors. You must make available to each Subcontractor, before the execution of the subcontract, copies of this Contract, to which the Subcontractor will be bound pursuant to the requirements of this Section III.B.4.
5. If a subcontract provided to the City does not comply with these requirements, the City's failure to object is not a waiver of them, and you will remain liable to the City for all damages, costs, fines, losses and claims arising out of the non-compliance.
6. In the case of Work performed by Subcontractors, you must secure warranties from the Subcontractors addressed to and in favor of the City; deliver copies of them to the City upon completion of the Subcontractors' Work and; guarantee and assume full responsibility for the performance of any repair or replacement Work that may be required for the full period of the warranties provided. However, the delivery of the warranties will not relieve you from any obligations assumed under this Contract.
7. Contractor hereby collaterally assigns any or all subcontracts to the City, effective upon the City's exercise, at its sole discretion, of its right to assume such assignment as a remedy for Contractor's default or in the event of early termination. The Contractor must require each of your Subcontractors (including materialmen) to consent to a collateral assignment to the City of their respective subcontract with the Contractor. The Contractor's subcontracts must include language stating:

*Contractor has collaterally assigned this subcontract to the City of Chicago, effective upon written assumption of such assignment by the City in the event of Contractor's default or early termination of Contractor's contract with the City. Subcontractor hereby consents to such assignment and assumption. Subcontractor acknowledges and agrees that, in the event of such an assignment and assumption, the City will have no liability to Subcontractor for work performed by Subcontractor prior to the effective date of the assignment and assumption and that Subcontractor shall look solely to Contractor for any compensation or other obligations arising under the subcontract prior to such date.*
8. The City encourages Contractors to use Subcontractors that are firms owned or operated by individuals with disabilities, as defined by § 2-92-586 of the Municipal Code, where not otherwise prohibited by Federal or State law.
9. Compliance with Multi-Project Labor Agreement (PLA). The City has entered into the PLA with various trades regarding projects as described in the PLA, which is hereby

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incorporated by reference. A copy of the PLA, with appendices, may be found on the City's website at <http://www.cityofchicago.org/PLA>. Contractor acknowledges familiarity with the requirements of the PLA and its applicability to any work under this agreement, and shall comply in all respects with the PLA.

**C. Site Conditions and Inspection**

1. Surveys, soil borings, geotechnical information, data, plans or other materials generally describing the unimproved land or existing structures at the site may be provided to you by the City. Such information is not warranted by the City to be accurate. You are not entitled to rely on it. In signing this Contract you are acknowledging that when such information appears in Contract documents, prepared by the City or its Consultants, the City and its Consultants have not verified the information. Site plans do not constitute any representation by the City to you of site boundaries or characteristics.
2. You must take field measurements, verify field conditions and carefully compare those field measurements and conditions and any other information known to you with the Contract documents before commencing the Work. No allowance will be made to you for any extra labor and/or materials required due to site conditions or discrepancies that might have been discovered by a thorough and proper inspection of the site. If land surveying Work is required under this Contract, you must have the Work performed by a land surveyor that is licensed as such by the State of Illinois.
3. If conditions are encountered at the site which are (i) subsurface or otherwise unknown or concealed physical conditions which differ materially from those indicated in the Contract; or (ii) pre-existing unknown physical conditions of an unusual nature, which differ materially from those ordinarily found to exist and generally recognized as inherent in activities of the character provided for in the Contract, including the presence of unanticipated Hazardous Materials, then you must provide immediate written notice to the Commissioner before proceeding with the work or disturbing those areas.
4. If the conditions differ materially from those indicated in the Contract, and cause a material increase or decrease in your cost or time required for the performance of any part of the Work, an equitable adjustment in the Contract Price or Contract Time, or both, will be made under Article XIV, "Changes in the Work."
5. You must keep on hand at the Work site, for reference, a complete set of Contract documents for the Work, copies of all plans and shop drawings, all additional and revised plans furnished by the City and all orders issued to you by the Commissioner that relate to the Work.

**D. Cleaning Up**

During the construction, you must keep the Work site and adjacent premises as free from material, debris, and rubbish as is practicable and must remove them entirely and at once, if in the opinion of the Commissioner, the material, debris or rubbish constitutes a nuisance, a safety hazard, or is objectionable in any way to the public. Upon verbal and/or written notification of unacceptable work day conditions by the City, you will be responsible for immediate rededication within 48 hours of notification. Your failure to act accordingly will result in completion of remediation work by the City at your expense.

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As a condition of Final Completion and Acceptance of the Work, you must remove from the Work site and adjacent premises all machinery, equipment, surplus materials, falsework, excavated and useless materials, rubbish, temporary buildings, barricades and signs, and must restore the site to the same general conditions that existed before the Work began.

You must clean off all cement streaks or drippings, paint smears or drippings, rust stains, oil, grease, dirt, and any other foreign materials deposited or accumulated on any portion of the Work, or existing work, due to your operations.

You are solely responsible for and must assume all liability associated with off-site disposal of any Hazardous Materials generated as a result of your construction activities.

**E. Contractor's Warranties and Representations**

You warrant and represent that:

1. You have carefully examined and analyzed the provisions and requirements of this Contract; you have inspected the Work site(s) to the extent made available by the City; from your own analysis you have satisfied yourself as to the nature and scope of work, all conditions, any obstructions and requirements needed for the preparation of your bid and the performance of this Contract, the general and local conditions, and all other matters that in any way may affect this Contract or your performance; and the time available for the examination, analysis, inspection and investigation was adequate;
2. This Contract is feasible of performance in accordance with all of its provisions and requirements and that you can and will perform, or cause to be performed, the Work in strict accordance with the provisions and requirements of this Contract;
3. Except for the contents of this Contract, no representation, statement or promise, oral or written, or of any kind whatsoever, by the City, its officials, agents, representatives or employees, has induced you to submit a bid nor have you relied upon any, including any reference to (i) the meaning, correctness, suitability or completeness of any provisions or requirements of this Contract; (ii) the nature, existence, or location of materials, structures, obstructions, utilities or conditions, surface or subsurface, that may be encountered at or on the Work site; (iii) the nature, quantity, quality or size of any materials, equipment, labor and other facilities needed for the performance of this Contract; (iv) the general conditions that may in any way affect this Contract or its performance; (v) the compensation provisions of the Contract; or (vi) any other matter;
4. You were given ample opportunity and time to review the Contract documents before submittal of your bid in order that you might request an addendum to the Contract documents that might correct or clarify them; you did so review the Contract documents, and every such correction or clarification has been included in this Contract or else, if omitted, you expressly relinquish the benefit of them and are willing to perform this Contract in its entirety without claiming reliance on any such omission or making any other claim on account of the omission;
5. In accordance with § 11-4-1600(e) of the Municipal Code, Contractor warrants and represents that it, and to the best of its knowledge, its Subcontractors have not violated and are not in violation of the following sections of the Code (collectively, the Waste Sections):

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- 7-28-390 Dumping on public way;
- 7-28-440 Dumping on real estate without permit;
- 11-4-1410 Disposal in waters prohibited;
- 11-4-1420 Ballast tank, bilge tank or other discharge;
- 11-4-1450 Gas manufacturing residue;
- 11-4-1500 Treatment and disposal of solid or liquid waste;
- 11-4-1530 Compliance with rules and regulations required;
- 11-4-1550 Operational requirements; and
- 11-4-1560 Screening requirements.

During the period while this Contract is executory, Contractor's or any Subcontractor's violation of the Waste Sections, whether or not relating to the performance of this Contract, constitutes a breach of and an event of default under this Contract, for which the opportunity to cure, if curable, will be granted only at the sole discretion of the Chief Procurement Officer. Such breach and default entitles the City to all remedies under the Contract, at law or in equity.

This section does not limit the Contractor's and its Subcontractors' duty to comply with all applicable Federal, State, County and Municipal laws, statutes, ordinances and executive orders, in effect now or later, and whether or not they appear in this Contract.

Non-compliance with these terms and conditions may be used by the City as grounds for the termination of this Contract, and may further affect the Contractor's eligibility for future contract awards.

6. Contractor warrants and represents that neither Contractor nor an Affiliate, as defined below, appears on the Specially Designated Nationals List, the Denied Persons List, the Unverified List, the Entity List, or the Debarred List as maintained by the Office of Foreign Assets Control of the U.S. Department of the Treasury or by the Bureau of Industry and Security of the U.S. Department of Commerce or their successors, or on any other list of persons or entities with which the City may not do business under any applicable law, rule, regulation, order or judgment.

"Affiliate" means a person or entity which directly, or indirectly through one or more intermediaries, controls, is controlled by or is under common control with Contractor. A person or entity will be deemed to be controlled by another person or entity if it is controlled in any manner whatsoever that results in control in fact by that other person or entity, either acting individually or acting jointly or in concert with others, whether directly or indirectly and whether through share ownership, a trust, a contract or otherwise.

7. You understand that the City, in its acceptance of your proposal to perform the Work, materially relied upon your response to the Advertisement for Bids. The information you provided with the bid was accurate at the time it was made and no material changes in the information have occurred since then and will not be made without the express consent of the City.
8. In preparing and submitting your bid for this Contract, you have complied with and given full consideration to the following bidding requirements:



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- a. You obtained for bidding purposes copies of the complete Contract as identified in the Advertisement for Bids and all addenda issued by the City and have become familiar with them and all Contract requirements and conditions described in them;
  - b. You clarified to your satisfaction and complete understanding any doubt as to the true meaning and intent of all parts of the specifications and plans or other portions of the Contract documents;
  - c. You have no claim for relief because of alleged mistakes or omissions in your bid, and you will be held strictly to your bid as presented.
9. You have the capability and financial resources to perform all of the provisions and requirements of this Contract.
10. You can perform all of your obligations under this Contract in accordance with all of the Contract's provisions and requirements.
11. Contractor warrants that no member of the governing body of the City or other units of government and no other officer, employee, or agent of the City or other unit of government who exercises any functions or responsibilities in connection with the Project to which this Contract pertains, has any personal interest, direct, or indirect, in this Contract. In accordance with 41 USC § 22, no member of or delegate to the Congress of the United States will be permitted to any share or part of this Contract or to any financial benefit to arise from it, nor, under applicable laws, will any member of or delegate to the Illinois General Assembly nor any alderman of the City or City employee. Contractor warrants that its officers, directors and employees, and the officers, directors and employees of each of member if a joint venture, and subcontractors, presently have no interest and will acquire no interest, direct or indirect, in the Project that would conflict in any manner or degree with the performance of the Work under this Contract. Contractor further warrants that in the performance of this Contract, no person having any such interest will be employed.

Furthermore, if any federal funds are to be used to compensate or reimburse Contractor under this Contract, Contractor represents that it is in compliance with federal restrictions, and promises to remain so, including federal restrictions on lobbying set forth in § 319 of the Department of the Interior and Related Agencies Appropriations Act for Fiscal Year 1990, 31 USCS 1352, and related rules and regulations set forth at 54 Fed. Reg. 52,309 ff. (1989), as amended. If federal funds are to be used, Contractor must execute a Certification Regarding Lobbying, which is contained in the EDS attached to this Contract as an exhibit.

#### **IV. PROPERTY**

##### **A. Ownership of Property**

The City will be the owner of the Work, including any improvements, equipment and fixtures installed or constructed by Contractor, as part of the Project or for which the City has paid Contractor to store in anticipation of installation or construction. The City's title shall be free and clear of liens, claims, security interests or other encumbrances, upon the earlier of installation, payment therefore or Final Completion of the Project; provided, however, that transfer of title to the City shall not relieve Contractor of any of its responsibilities under this

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Contract with respect to Work in Progress. Nor will the transfer of title constitute acceptance of any portion of the work.

**B. Ownership of Detailed Specifications and Other Contract Documents**

1. The Detailed Specifications, plans and any copies of them furnished by the Commissioner are the property of the City. They are not to be used on other work. The City will provide you the number of Detailed Specifications and plans determined appropriate by the City. The City may provide you with additional copies at your request and at your cost. You are responsible for any loss or damage to the Detailed Specifications and plans while in your care and custody, and you must restore all Detailed Specifications and plans that may be lost or damaged. Contract documents will be furnished as follows:

Contract Plans	2 Sets
Subsequent Details	2 Sets
Specifications and Contract Documents	2 Sets

2. You must obtain specifications issued by organizations other than the City to which reference is made in the City's documents at your own expense. You must also retain them at the Work site and make them accessible to the Commissioner.
3. The City is the owner of the Project. All documents, data, studies, reports, and instruments of service prepared for or by the City under this Contract are the property of the City. During the performance of your Work, you are responsible for any loss or damage to documents while in your possession or the possession of a Subcontractor and you must restore any such document so lost or damaged at your expense.

You must deliver, or cause to be delivered, at any time during the term of this Contract, all documents, including drawings, models, specifications, estimates, reports, studies, maps, and computations, prepared by or for the City, under the terms of this Contract to the City, promptly upon reasonable demand for them or upon termination of the Work. If you fail to deliver them when required, then you must pay the City all damages the City may sustain by reason of the failure, including consequential damages.

**C. Right of Entry**

1. You, and any of your officers, employees, agents, and Subcontractors, are permitted to enter upon any part of the Work site owned by the City in connection with the performance of the Work under this Contract, subject to the terms and conditions contained in this Contract and those rules that may be established by the Commissioner. You must provide advance notice to the City of any such intended entry. Consent to enter upon all or any part of the Work site given by the City will not create, nor be deemed to imply the creation of, any additional responsibilities on the part of the City.
2. Inspections: You acknowledge that the City has a right of access to the Work site at all times and the right to inspect all Work during the Contract period.
3. You must use, and must cause each of your officers, employees, agents, and Subcontractors to use, the highest degree of care when entering upon property owned by the City in connection with the Work. In the case of any property owned by the City,

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or property owned by and leased from the City, you must comply and must cause each of your officers, employees, agents, and Subcontractors to comply, with all instructions and requirements for the use of the property, including any licenses for them, which are incorporated by reference. All claims, suits, judgments, costs, or expenses, including reasonable attorneys' fees, arising from, by reason of, or in connection with any such entry is treated in accordance with the indemnification provisions contained in this Contract.

**D. Damage to City Property**

If you cause damage to City property, you must, at the sole option of the City, either: (i) pay the cost of repair of the damage; or (ii) repair or replace any property so damaged. The City has the right to a set-off against its payments to you under this Contract for the cost of any such repairs. All cost to repair or replace any property so damaged will be completed before any final payment can be made to you by the City.

**E. Right to Occupy Before Substantial Completion**

1. The City may occupy and use the Project or portions of it in advance of Substantial Completion of the Work. If the City desires to exercise partial occupancy and use before Substantial Completion of the Work, the Commissioner will provide written notice to you, and you must cooperate with the Commissioner in making available for the City's use such Project services as heating, ventilating, cooling, water, lighting and telephone for space or spaces to be occupied, and if the equipment required to furnish the services is not entirely completed at the time the City desires to occupy and use the space or spaces, you must make every reasonable effort to complete that Work.
2. When the Commissioner determines that the City will use all or part of the Project before Substantial Completion, the Commissioner will determine:
  - a. The responsibility between the City and you for maintenance, repair, furnishing of utilities and the protection of the public (if required) for that part of the Work to be occupied;
  - b. The list of items remaining to be performed before the Work or portion of it to be occupied will be substantially complete;
  - c. Whether you will need any types of insurance; and
  - d. The effect of the City's use before Substantial Completion on required guarantees and warranties.

**F. Final Completion and Acceptance of the Work**

When you deem the Work to be complete, you must notify the Commissioner, in writing, that the Work will be ready for an inspection and/or test on a date you specify. The notice must be given at least 15 calendar days in advance of the date. If the Commissioner concurs that the Work will be ready for inspection or testing on the date given, the Commissioner will make the inspection within a reasonable period of time. The scheduling of the inspection to determine whether the Work is complete does not relieve you of your responsibilities under the Contract. You must cooperate in all respects in the scheduling and performance of the inspection.

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Final Payment at Final Completion and Acceptance of the Work. Unless expressly stated otherwise in Book 2 or Book 3, final payment will be made only when all Work, including Punch List Work, is complete and you submit to the Commissioner, within 180 calendar days or sooner from the Substantial Completion Date, a sworn affidavit stating the following:

1. All payrolls, invoices for materials and equipment and all other indebtedness connected with the Work for which the City might in any way be responsible have been paid or otherwise satisfied;
2. All waivers of lien required by the Contract have been provided to the Commissioner;
3. As of the date the affidavit is signed, all known claims made by Subcontractors of any tier and others against you, the City, any agents or representatives of the City pertaining to the Work required under this Contract were provided in writing to the Commissioner and have been resolved;
4. The warranties and guarantees required by the Contract have been provided to the Commissioner;
5. All warranties and guarantees are in full force and effect;
6. The surety's written consent, signed by its authorized representative, to final payment being made directly to you is attached to the affidavit;
7. Acceptance of final payment will constitute a general release to the City, its agents, representatives, officials and employees of all other claims of liability for anything done or furnished or relating to the Work or for any act or neglect of the City or its agents, representatives, officials and employees relating to or connected with this Contract;
8. Record Documents, including Record Drawings, Record Shop Drawings and operation and maintenance manuals have been provided to the Commissioner;
9. All other documents requested by the Commissioner have been provided; and
10. Wages paid and classifications for laborers and mechanics, including apprentices and trainees employed on the Project, in the following form:

*FINAL CERTIFICATE*

*The undersigned, Contractor on \_\_\_\_\_ (Specification No: /Contract No. \_\_\_\_\_) certifies that all laborers, mechanics, apprentices and trainees employed by it or by a Subcontractor performing Work under the Contract have been paid wages at rates not less than those required by the Contract provisions, and that the Work performed by each such laborer, mechanic, apprentice or trainee conformed to the classifications set forth in the Contract or training program provisions applicable to the wage rate paid.*

*Signature and Title*

\_\_\_\_\_  
*Name*  
*Authorized Officer*

\_\_\_\_\_  
*Title*

*Contractor:* \_\_\_\_\_

*Project:* \_\_\_\_\_

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**V. SHOP DRAWINGS, PRODUCT DATA, RECORDS AND SAMPLES**

**A. Contractor's Responsibilities and Submittal Procedures**

1. Shop Drawings, Product Data, Samples are part of the Work under this Contract, and if also specified, video tape and/or photographs. You must provide them at your expense to the satisfaction of the Commissioner.
2. You must submit to the Commissioner those Shop Drawings, Product Data, Samples, video tape and photographs required for the Work involved under this Contract in accordance with the Schedule.
3. The Schedule must include a schedule of proposed submittal dates. The dates listed in the Schedule must allow sufficient time for review and processing of Shop Drawings or other data by the City and your re-submittal of them, if necessary, before you will need them to complete your performance of the Work they represent under this Contract. No extensions of time will be granted to you because of your failure to have Shop Drawings, Product Data, Samples, video tape and photographs submitted in time to allow for review, re-submittal and final review. You must also submit a separate submittal schedule (in table format), in addition to the Schedule, identifying all Submittals with submittal dates to the Commissioner for review and approval.
4. You must prepare and submit proper Shop Drawings, Product Data, Samples, video tape and photographs in accordance with your contractual obligations. By submitting them, you represent that you have determined and verified all materials, field measurements, field conditions and quantities, and that you have checked and coordinated the information contained within the Submittal, including your Subcontractors' Submittals, with the requirements of the Work and of the Contract.
5. You must date and stamp all Shop Drawings, Product Data, Samples, video tape and photographs. You must also indicate on them that you have reviewed and checked them before submission and found to be in conformance with the Contract. All Submittals must be transmitted to the Commissioner. You must clearly mark each Shop Drawing, Video Tape, Product Data and Sample, in accordance with the following for purposes of identification and record:

**SUBMITTAL IDENTIFICATION**

Name of Project: \_\_\_\_\_

Contract Name and Number: \_\_\_\_\_

Date of Submittal: \_\_\_\_\_

Submittal Number: \_\_\_\_\_

Re submittal of Submittal Number: \_\_\_\_\_

Identification of Deviations from Contract documents: \_\_\_\_\_

Specification Section, Page, and Paragraph No. and/or Drawing No.: \_\_\_\_\_

Type of Material and Manufacturer: \_\_\_\_\_

Intended use: \_\_\_\_\_

Applicable Standards such as ASTM numbers: \_\_\_\_\_

CHECKED AND SUBMITTED IN ACCORDANCE WITH DRAWINGS AND SPECIFICATIONS.

Contractor: \_\_\_\_\_

By: \_\_\_\_\_ Date: \_\_\_\_\_

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6. Shop Drawings must be submitted with accurate dimensions. The Shop Drawings must represent the actual manner in which the Work is manufactured and installed, and the relation of the Work installed to that of other trades, clearances, and all other pertinent data. Cross-section drawings must indicate minimum clearances and all other pertinent data. Dimensions must be expressed in feet and inches. Designs prepared in the metric system may be submitted with metric units, but the equivalent English units must also be shown. All weights and dimensions must be certified before submission for review.
7. The Commissioner's review and acceptance of Shop Drawings in no way relieves you from responsibility for errors or omissions that may exist in the Work or on the certified Shop Drawings. Where such errors or omissions are discovered, you must correct them at no additional cost to the City. Submittals must be sufficiently complete to allow for proper review. You must submit all Shop Drawings, Product Data, Samples, video tape and photographs to the Commissioner for review with an accompanying transmittal letter containing the above Submittal identification data and a list of items being submitted. You must coordinate Submittals into logical groups or sets to facilitate review of several related items.
8. Any Submittal that in the Commissioner's sole opinion is not complete and in proper form will be returned to you without review. You must not submit as Shop Drawings duplicates or reproductions of any Contract documents issued by the City.
9. You must provide Submittals in the following quantities unless a greater number is specified elsewhere in the Contract or is required by the Commissioner:
  - a. Shop Drawings: Submit one reproducible transparency and six opaque copies of shop drawings;
  - b. Product Data: Submit six copies of Product Data;
  - c. Samples: Submit four samples; and
  - d. Video and photographs (when required under the Contract): Submit two copies of Video and photographs.
10. Before submitting Shop Drawings, Product Data, Samples, video tape and photographs, you must notify the Commissioner in writing of any deviations in the Submittals from the requirements of the Contract. If deviations from the Contract requirements are rejected by the Commissioner or if evaluation of the deviations delays the progress of Work, any delay caused will not be compensable by a time extension.

**B. Review by the Commissioner**

1. Submittals will be reviewed by the Commissioner for compliance with the Contract. In reviewing them the Commissioner will not verify dimensions and field conditions. Any such review does not relieve you, your Subcontractor, manufacturer, fabricator or supplier from responsibility for any deficiency that may exist or from any departures or deviations from the requirements of the Contract, nor does it relieve you or them from responsibility for (i) errors of any sort in Shop Drawings, Samples and Product Data, (ii)

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responsibility for proper fitting of the Work, or (iii) the necessity of furnishing any Work required by the Contract that may not be indicated on Shop Drawings when reviewed. You are solely responsible for any quantities that may be shown on the Shop Drawings. The Commissioner's review of a specific item does not indicate approval of an assembly of which the item is a component.

2. You must not fabricate products, begin Work, order or have delivered any material, equipment or system that requires a reviewed Submittal until return of the Submittal from the Commissioner with a stamp authorizing Work and/or delivery and installation to be performed, as described in Section V.B.3, immediately below.
3. The Commissioner will return Submittals stamped as follows:
  - a. "No Exceptions" means no changes need be made on the reviewed Submittal. You may proceed with the Work for that Submittal.
  - b. "Exceptions as Noted" indicates that the Submittal is accepted subject to the corrections and/or comments noted. You may proceed with the Work for that Submittal but only if you incorporate the Commissioner's comments, and/or corrections. Re-submittal is not required, but the corrections must be reflected in the Record Documents.
  - c. "Revise and Resubmit" means that the Submittal does not meet all the requirements necessary to proceed with the Work associated with the Submittal. You must resubmit in accordance with the reviewer's comments and/or corrections. Submittals marked in this manner must not be released for fabrication, delivery or construction.
4. If the Submittal requires revision, you must notify the Commissioner and all pertinent Subcontractors, in writing, that the reviewed set has been withdrawn.
5. Submittals that require revisions must be corrected and resubmitted to the Commissioner to maintain the approved CPM schedule, but in no event more than five days after receipt of the Commissioner's comments.
6. Shop Drawings: After review by the Commissioner, one reproducible stamped by the Commissioner as previously described in Section V.B.3 above will be returned to you.
7. Submission and Review of Samples: If a considerable range of color, graining, texture or other characteristics may be anticipated in finished products, you must furnish a sufficient number of Samples of the specified materials to indicate the full range of those characteristics that will be present in the finished products. Any product delivered or erected without submission and review of full-range Samples is subject to rejection. Each tag or sticker must have clear space for your stamps and those of the Commissioner. Notice of the result of the review will be provided to you with one of the stamps indicated in Section V.B.3 above. Rejected samples will be returned. Accepted samples will be retained by the Commissioner and become the property of the City. Where color samples are required to be submitted, color samples must be submitted in the actual material that will finally be installed in the Work. The various parts of the Work must be in accordance with the reviewed and approved Samples.
8. Product Data: After review by the Commissioner, two sets of Product Data stamped by the Commissioner as previously described will be returned to you.

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**C. Source of Materials**

You must notify the Commissioner in writing as soon as possible after the Contract has been awarded, but not less than three weeks before the need for inspection and testing of the source (or sources) from which you expect to obtain the various construction materials. The source of supply of each material used must be approved by the Commissioner before delivery is commenced. If sources previously approved are found to be unacceptable at any time and fail to produce materials satisfactory to the Commissioner, you must furnish materials from other approved sources.

**D. Record Documents**

At Substantial Completion, you must deliver to the Commissioner, in suitable transfer cases clearly marked "Record Documents," all Record Drawings, Record Shop Drawings, warranties and guaranties, photographs, video Records (if any are required), Product Data, instructions, parts list, and operations and maintenance manuals arranged in proper order and indexed.

**E. Record Drawings**

1. As the Work progresses, you and the Subcontractor for each trade or division of work, under your direction must keep a complete and accurate record of the following:
  - a. Changes between the Work as shown on the Contract drawings and the Shop Drawings indicating the Work as actually installed;
  - b. The specific location of all infrastructure elements, including piping, valves, ductwork, equipment, driveways, catch basins, sewer lines, waterlines, water mains, and other such elements that were not accurately located or changed location or elevation from that shown on the Contract drawings; and
  - c. Equipment schedules indicating manufacturers' names and model numbers installed.
2. You must record changes neatly and correctly daily on blue line prints of the Contract drawings updated daily. You must keep this record set of Contract drawings at the job site for inspection by the Commissioner. Upon completion of the Work, you must submit a final set of full-size prints to the Commissioner for review and acceptance.
3. At the time Record Drawings are delivered to the Commissioner, you and each Subcontractor must certify, in writing, that the Record Drawings are complete and accurate.

**F. Record Shop Drawings and Product Data**

1. As the work progresses, you must keep a complete and accurate record of the changes and deviations from the Work as shown on the Shop Drawings and Product Data indicating the Work performed. You must furnish Record Shop Drawings in a form and quantity acceptable to the Commissioner. Record Shop Drawings must be submitted for all items reviewed as Shop Drawings. Record Shop Drawings must be legibly drawn on sheets of mylar or such other medium as directed by the Commissioner. Record Shop Drawings must be submitted on the same size sheets as the Contract Document drawings and include an index of all items.



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2. You must furnish six record copies of Product Data in loose leaf binders. Loose leaf binders must be subdivided by Submittal numbers and must contain an index of all items.

**G. Construction Progress Photographs**

You must submit to the Commissioner construction progress photographs consisting of exterior and interior views of the Work, with the date and location of the photographs as selected and directed by the City. If requested at any time by the Commissioner, you must use digital photography, at the resolution specified by the Commissioner. You must provide three prints of each view to the Commissioner within five days of taking the photographs. If digital photography is not requested or until it is requested, then you must provide each photograph on an 8" x 10" smooth surface, glossy, black and white print, on single-weight commercial-grade stock. The 1" wide margin, which is punched for a standard 3-ring binder, will have a left-sided margin for vertical shots and a top-sided margin for horizontal shots. A label will be included on the front bottom margin, which will contain the project name and date that the photograph was taken. On the back of each print, you must provide an applied label or rubber stamp impression with the following information:

1. Name of the Project;
2. Name and address of the photographer;
3. Name of the Architect;
4. Your name;
5. Date the photograph was taken;
6. Description of vantage point, in terms of location, direction (by compass point), and elevation or level of construction.
7. Notation of vantage point marked for location and direction of shot on a key plan of the site and building, with elevation (story height) noted.

The photographs must be taken monthly, coinciding with the cutoff date associated with each application for payment. From time-to-time the City may issue a request for additional photographs, in addition to the periodic photographs specified. Additional photographs are not included in the Contract Price and will be paid for by Change Order.

**H. Instructions, Parts List and Operation and Maintenance Manuals**

You must furnish a complete list of equipment actually installed. The list must include a copy of pertinent nameplate data, name and address of local representative who stocks or furnishes repair or replacement parts, and name, address, and telephone number of the Subcontractor responsible to you for the equipment under the guarantee. You must guarantee any such equipment with respect to the City.

You must submit suitable operating instructions for each major component of equipment and its controls. Instructions must include a schematic diagram accurately showing equipment and controls as installed. Included with each diagram must be a set of simple operating instructions stating how the system is stopped and started, what adjustments are to be made by the operator, and what to do in case of an emergency. Five copies of proposed

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instructions must be submitted to the Commissioner for review and acceptance. Upon acceptance, you must post applicable instructions as directed by the Commissioner.

You must submit maintenance data prepared by the manufacturer of each major component of equipment and its controls. Data must include complete parts list, itemized lists of common purchase items of materials (e.g., bearings, packing, connectors, sealing devices, and other standard items) indicated by their standard trade designation, recommended routine and inspection maintenance, including testing recommendations to evaluate efficiency of performance, lists of special tools and gauges, lubricating instructions, and recommended spare parts lists, tolerances and clearances required for maintenance, and trouble-shooting guides prepared in a simple format to indicate complaint or problem, probable cause, and remedy. You must submit five copies of the proposed maintenance data to the Commissioner for review and acceptance in accordance with Article XIV.

**I. Adjustment of Equipment**

Before the Work is turned over to the City, you must furnish the necessary instruments, test equipment, services, and personnel required to adjust and balance each piece of equipment in order to provide a smoothly functioning, well-integrated system complying with the letter and intent of the Contract.

**J. Project Account Records**

**1. Project Data and Records**

- a. You and each Subcontractor must keep an accurate record showing the names, occupation, and the actual hourly wages paid to all laborers, workers and mechanics employed by them in connection with the Work. The record must be open at all reasonable hours to the inspection of the Commissioner and to the Director of Labor of the State of Illinois and his deputies and agents. You also must furnish the Commissioner and the Chief Procurement Officer with certified copies of the payrolls, in accordance with Section XIII.B.3.d.
- b. You must furnish to the Commissioner upon request a written statement, verified by affidavit, giving the names and addresses of all persons, firms and corporations who have up to that date furnished labor or materials in the performance of the Contract and the amounts due or to become due them.
- c. You and all Subcontractors must furnish the Commissioner with such information as the Commissioner may require relating to labor and materials, including all information necessary to determine the cost of the Work, such as the number of workers employed, their pay, the distribution of labor into Work items, equipment time distribution and any other information that the Commissioner may require. You must, on request, furnish the Commissioner with copies of delivery tickets and invoices, in triplicate, covering the expenditures on the Contract.

**2. Audits**

- a. You and your Subcontractors must furnish the Commissioner such information as he may request regarding the progress, execution, and cost of the Work. You must maintain complete records showing actual time devoted and costs incurred, adopting accounting procedures and practices sufficient to record properly all costs of

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whatever nature claimed to have been incurred and anticipated to be incurred for or in connection with the Work. This system of accounting must accord with generally accepted accounting principles and practices, consistently applied throughout. You must maintain its books, records, documents and other such evidence for five years after final payment.

- b. All books and accounts you and your Subcontractors are required to keep in connection with the Work under this Contract must be open to inspection and audit by authorized representatives of the City at reasonable times during the performance of the Work, and they must be retained in a safe place and available for inspection and audit during the five-year period after final payment, as provided above. No provision in this Contract granting the City a right of access to records and documents is intended to impair, limit, or affect any right of access to such records and documents that the City would have had in the absence of such provisions.
- c. If the City, in its sole discretion, chooses to conduct an audit either during the performance of the Work or in the five-year period after final payment, each audited calendar year or partial calendar year is considered an "audited period." If, as a result of such an audit, it is determined that you or any of your Subcontractors have overcharged the City in the audited period, the City will notify you. You must then promptly reimburse the City for any amounts the City has paid you due to the overcharges and also some or all of the cost of the audit, as follows:
  - (1) If the audit has revealed overcharges to the City representing less than 5% of the total value, based on the Contract Prices, of the goods, work, or services provided in the audited period, then you must reimburse the City for 50% of the cost of the audit and 50% of the cost of each subsequent audit that the City conducts;
  - (2) If, however, the audit has revealed overcharges to the City representing 5% or more of the total value, based on the Contract Prices, of the goods, work, or services provided in the audited period, then you must reimburse the City for the full cost of the audit and of each subsequent audit.
- d. Your failure to reimburse the City in accordance with V.J.2.c above is an event of default under this Contract, and you will be liable for all of the City's cost of collection, including any court cost and attorneys' fees.

**3. Confidentiality**

All of the reports, information, or data, prepared or assembled by or provided to you under this Contract are confidential and except as specifically authorized in this Contract or as may be required by law, you must not make available the reports, information, or data, to any other individual or organization, without the prior approval of the Commissioner. This requirement will survive expiration or termination of this Contract.

**4. Electronic Records**

Upon request by the Commissioner, Contractor shall provide the City electronic versions of any hard-copy record documents that the Contractor is required to prepare by the Contract.

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**VI. ASSIGNMENT**

**A. Assignment of Contract by Contractor**

You must not assign the Contract, in whole or in part, without the prior written consent of the Chief Procurement Officer. The consent of the Chief Procurement Officer will not relieve you from any obligations under this Contract, or in any other way change the terms of this Contract.

**B. Assignment of Funds or Claims by Contractor**

You must not transfer, pledge or assign any Contract funds or claims due or to become due without the prior written consent of the Chief Procurement Officer. The transfer, pledge or assignment of any Contract funds, either in whole or in part, or any interest in the Contract funds, that are due or to become due to you, without the prior written consent of the Chief Procurement Officer, is void with respect to the City.

**C. Assignment of Contract by City**

The City reserves the right to assign or otherwise transfer all or any part of its interests under this Contract without your consent or approval.

**D. Assigns**

All of the terms and conditions of this Contract are binding upon and inure to the benefit of the parties to it and their respective legal representatives, successors, transferees, and assigns.

**E. Requests to Subcontract**

All requests to subcontract must be accompanied by three copies of a written subcontract agreement that sets forth the scope of services to be subcontracted, the lump sum or unit price for the services and the signature of the subcontracting parties. Proposed Subcontractors must not commence Work on any portion of the Project without prior written approval by the Chief Procurement Officer.

**VII. QUALITY OF WORKMANSHIP, EQUIPMENT AND MATERIALS**

**A. Standard of Performance**

In addition to performing the Work in full compliance with the Contract you must perform, or cause to be performed, all Work required of you under the terms and conditions of this Contract with that degree of skill, care, and diligence normally exercised by qualified and experienced contractors in performing work in projects of a scope and magnitude comparable to the Work.

**B. Correction of Work**

1. You must, upon discovery of any defective or non-conforming Work, or when directed in writing by the Commissioner, promptly re-perform, correct or remove all Work identified to be defective or as failing to conform to the standards set forth in, or any requirement of the Contract, whether or not completed. You must bear all costs of correcting the

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defective or non-conforming Work, including costs associated with removing any defective or non-conforming Work, replacing the defective or non-conforming Work with non-defective, conforming Work and any compensation for any additional equipment, materials and/or services made necessary by the removal and replacement.

2. If you do not proceed with re-performance, correction or removal of the defective or non-conforming Work after written notice from the City within the time period designated by the notice, the City may correct or remove it and may store the materials and/or equipment at your expense, then complete the corrective Work. If you do not pay the costs incurred for the removal, storage and correction within 10 days after you receive written notice from the City of the amount of the costs, the City may upon 10 additional days' written notice, sell any such materials and/or equipment at an auction or at a private sale and will account for the net proceeds, after deducting all the costs you are required to bear, including compensation for the City's services. If the proceeds of sale do not cover all costs for removal and correction of the Work, the difference will be charged to you with a deduction of any amounts due you, and an appropriate Contract modification will be issued. If later payments due you are not sufficient to cover the amount, you must pay the difference to the City, or the City may deduct the amount from any other funds due to you, including any amounts due under any other contract between City and you.
3. You must not perform any work without lines and grades or beyond the lines shown on the drawings or outside the scope of the Contract, without the prior written consent or direction of the City. It is not authorized, and if you do so you perform it at your sole expense. Upon direction of the City, work so done must be removed or replaced and those areas restored to their previously existing state at your sole expense.
4. Neither the determination of Final Completion and Acceptance of the Work, nor payment, nor any provisions in the Contract will relieve you of responsibility for defective or non-conforming Work, faulty materials, equipment or workmanship, and unless otherwise specified, you must remedy any defects due to the foregoing and pay for any damage to the Work or other property resulting from defective or non-conforming Work, or faulty materials, equipment or workmanship throughout the Warranty Period, as defined in Section VII.E, "Warranties," below, or such other period of time afforded by industry custom or law, whichever is longer. The City will give you written notice of the observed defects with reasonable promptness.

**C. Materials and Equipment**

1. **Quality of Materials.** Unless otherwise specified in the Contract you must use all new materials for the Project and use them in such a manner as to produce completed Work that conforms with the Contract and is acceptable in every detail to the Commissioner. Only materials that conform to the requirements of these specifications may be incorporated or used in the Work. In the absence of a definite specification, materials must be the best of their respective kind with properties best suited to the Work required.
2. **Materials Inspection and Responsibility.** Before any material is incorporated into the Work, you must submit a "Request for Materials Inspection" to the Commissioner. You are solely responsible for submitting the requests with sufficient time for the City to conduct its inspection. You are not entitled to payment for uninspected materials. The

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City has the right to inspect any material to be used in carrying out this Contract. The City does not assume any responsibility for the availability of any materials or equipment required under this Contract. By performing any tests or accepting any materials, the City in no way relieves you of any of your obligations or responsibility under this Contract. Materials, components or completed Work that do not comply with the Detailed Specifications and other requirements of this Contract may be rejected by the City, and you must replace them at no additional cost to the City. After you receive notice from the City that materials or components have been rejected, you must promptly remove them from the City's premises at no additional cost to the City.

**D. Substitution of Materials**

1. The City will consider your request for substitution in cases of product unavailability or other conditions beyond your control.
2. You must submit each request for substitution separately and each must include:
  - a. Complete data substantiating compliance of proposed substitution with requirements stated in the Contract;
    - (1) Product identification, including manufacturer's name and address
    - (2) Manufacturer's literature identifying:
      - (a) Product description
      - (b) Reference standards
      - (c) Performance and test data
    - (3) Samples, as applicable
    - (4) Names and address of similar projects on which the product has been used, and date of each installation;
  - b. Itemized comparison of the proposed substitution with product specified that lists significant variations;
  - c. Data relating to changes in the Schedule;
  - d. Any effect of substitution on other parts of the Work, any Subcontractors, or any separate contracts;
  - e. List of changes required in other Work or products;
  - f. Accurate cost data comparing proposed substitution with product specified, including the amount of any net change to Contract Price;
  - g. Designation of required license fees or royalties; and
  - h. Designation of availability of maintenance services, sources of replacement materials.
3. When you make a formal request for substitution make you are warranting and representing that:
  - a. The proposed substitution is equivalent to or superior in all respects to the product specified;

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- b. The same warranties and guarantees will be provided for the substitute as for the product specified; and
  - c. You will coordinate the installation of accepted substitutes into the Work and will make such changes as may be required for the Work to be complete in all respects.
4. If evidence you present does not, in the sole opinion of the Commissioner, provide a sufficient basis for reasonable certainty that the proposed substitution or deviations will provide a quality, result, function, and esthetic appearance, among other attributes, at least equal to that attainable by the specified product, the Commissioner may reject the substitution or deviation without further investigation.
  5. The Commissioner will judge the design and appearance of proposed substitutes on the basis of their suitability in relation to the overall design of the Project, as well as for their intrinsic merits. The Commissioner will not approve proposed substitutes as equal to items specified that, in the Commissioner's opinion, would be unharmonious, or otherwise inconsistent with the character, quality or design of the Project.
  6. You must bear any additional cost, or any loss or damage, arising from the substitution of any material or method for those specified, including the cost for damages incurred by other contractors notwithstanding approval or acceptance of the substitution by the Commissioner, unless the substitution was initiated by the written request or direction of the Commissioner.
  7. The investigation review and approval of substitute materials requires a minimum of 30 days beyond that required for specified routine items. No request for a delay or disruption will be allowed whether or not the substitution is granted.
  8. Approval by the Commissioner of a substitution of material will be given in a Contract modification as required in Article XIV, "Changes in the Work."

**E. Warranties**

1. You warrant all Work furnished under this Contract against defective materials and workmanship, improper performance and non-compliance with the Contract for a period of one year after the date of Final Completion and Acceptance of the Work ("Warranty Period"), except as otherwise specifically stated in other parts of the Contract or within such longer periods of time as may be provided by law or by the manufacturer, which periods will then become the Warranty Period as applicable. Your warranty will be in addition to any Manufacturers' Warranties.
2. Your written warranty will include the name of the project as designated in the Contract, be signed by an officer of the company having authority to provide the warranty, and state: "This document serves as a one - year written warranty for the Work performed, and material and equipment installed on the above referenced project. This warranty incorporates all provisions of the Contract that refer or relates to the warranty. This warranty begins on \_\_\_(date)\_\_\_\_\_."
3. During the Warranty Period, you must repair and replace at your own expense, when so ordered by the Chief Procurement Officer or the Commissioner, all Work that may develop defects whether these defects may be inherent in the equipment or materials, in the functioning of the piece of equipment, or in the functioning and operation of pieces of

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equipment operating together as a functional unit. Any equipment or material that is so repaired or replaced will have the Warranty Period extended for a period of one year from the date of the last repair or replacement.

4. You must bear all costs associated with any repair or replacement under this section, including removal, material, transportation, and reinstallation.
5. Manufacturer's Warranties
  - a. You must:
    - (1) ensure that all required Manufacturer's Warranties pass through to the City and the Department;
    - (2) submit all applicable manufacturers' warranties to the Commissioner and ensure that all warranty forms have been completed in the Department's name and registered with the appropriate manufacturers.
  - b. Whenever you make repairs or provide replacements under Section VII.E.3, you must provide a manufacturer's warranty for the repaired or replaced Work, if standard with the manufacturer, in addition to your warranty under Section VII.E.2.

**VIII. PERSONNEL**

**A. Competency of Workers**

You must employ only competent and efficient laborers, mechanics or artisans on the Work, as demonstrated by completion of a specific training program or demonstrated project experience. Whenever, in the opinion of the Commissioner, any worker is careless, incompetent, violates safety or security rules, obstructs the progress of the Work, acts contrary to instructions or acts improperly, or fails to follow the safety requirements of this Contract, you must, upon request of the Commissioner, remove the worker from the Work. You must not permit any person or worker to enter any part of the Work or any buildings connected with it who is under the influence of intoxicating liquors or controlled substances.

**B. Supervision and Superintendence**

While Work is in progress, either by your labor force or that of your Subcontractor, you must have a full-time, experienced and qualified superintendent assigned to the Work. You must superintend the Work and must have a competent superintendent at the job site at all times with authority to act for you as the contact person with the Commissioner.

**C. Contractors Project Personnel**

No separate payment will be made to you for the cost of personnel. Those costs must be included in the Contract Price.

**D. Key Personnel**

Upon award of the Contract, you will submit a project staff organization chart that includes the names and resumes of employees in key positions for this project. All employees in key positions must be approved by the Commissioner.



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Changes in the assignment of any key personnel due to commitments not related to this Contract are prohibited without Commissioner's approval. If any key personnel, selected in accordance with the key personnel provisions under this section of the Contract, should become unable to continue in the performance of the assigned duties for reasons due to death, disability or termination, you must promptly notify the Commissioner and explain the circumstances.

Under a request by Commissioner, you must provide to the Commissioner, within seven days, the name of the person substituting for the individual unable to continue, together with any information the Commissioner may require to judge the experience and competence of the substitute person. Upon approval by the Commissioner, the substitute person will be assigned to the project. If the Commissioner rejects the substitute, you will have seven days after that to provide the name a second substitute person, with any information the Commissioner may require, until a proposed replacement has been approved by the Commissioner.

**E. Prevailing Wage Rates**

In the performance of the Work, you are fully responsible for paying not less than the prevailing rate of wages as determined by the Illinois Department of Labor, which must be paid to all laborers, mechanics, and other workers performing Work under this Contract.

Your attention is called to the generally prevailing hourly rate of wages, as determined by the Illinois Department of Labor, which are bound in Book 2 of these specifications and which are incorporated into the Contract. These wage rates are also the prevailing wage rates for the City of Chicago, as determined by the Department as of the date of publication of these specifications.

The wage rates set forth in these specifications were the rates in effect at the time these specifications were issued. In the performance of the Work, however, you are fully responsible for paying the generally prevailing hourly rate of wages in effect, as determined by the Illinois Department of Labor, at the time the Work is performed. If the Illinois Department of Labor revises the prevailing rate of hourly wages to be paid for the Work before completion of the Project, the revised rate applies to this Contract from the effective date of the revision, but the revision does not entitle you to any increased compensation under the terms of this Contract.

As a condition of making payment to you, the City may require you to submit an affidavit to the effect that not less than the prevailing hourly wage rate is being paid to laborers, mechanics, and other workers employed on this Contract in accordance with Illinois law.

**F. Minimum Wage, Mayoral Executive Order 2014-1**

Mayoral Executive Order 2014-1 provides for a fair and adequate Minimum Wage to be paid to employees of City contractors and subcontractors performing work on City contracts.

If this contract was advertised on or after October 1, 2014, Contractor must comply with Mayoral Executive Order 2014-1 and any applicable regulations issued by the CPO. As of July 1, 2020, the Minimum Wage to be paid pursuant to the Order is \$14.15 per hour. The Minimum Wage must be paid to:

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- All employees regularly performing work on City property or at a City jobsite.
- All employees whose regular work entails performing a service for the City under a City contract.

The Minimum Wage is not required to be paid to employees whose work is performed in general support of contractors operations, does not directly relate to the services provided to the City under the contract, and is included in the contract price as overhead, unless that employee's regularly assigned work location is on City property or at a City jobsite. It is also not required to be paid by employers that are 501(c)(3) not-for-profits.

Except as further described, the Minimum Wage is also not required to be paid to categories of employees subject to subsection 4(a)(2), subsection 4(a)(3), subsection 4(d), subsection 4(e), or Section 6 of the Illinois Minimum Wage Law, 820 ILCS 105/1 et seq., in force as of the date of this Contract or as amended. Nevertheless, the Minimum Wage is required to be paid to those workers described in subsections 4(a)(2)(A) and 4(a)(2)(B) of the Illinois Minimum Wage Law.

Additionally, the Minimum Wage is not required to be paid to employees subject to a collective bargaining agreement that provides for different wages than those required by Mayoral Executive Order 2014-1, if that collective bargaining agreement was in force prior to October 1, 2014 or if that collective bargaining agreement clearly and specifically waives the requirements of the order.

If the payment of a prevailing wage is required and the prevailing wage is higher than the Minimum Wage, then the Contractor must pay the prevailing wage.

Contractors are reminded that they must comply with Municipal Code Chapter 1-24 establishing a minimum wage.

**G. Employment Preferences**

**1. Veterans Preference**

In accordance with the Veterans Preference Act, 330 ILCS 55/0.01 *et seq.*, employment and appointment preference shall be given to veterans when filling positions. This preference may be given only where the individuals are available and qualified to perform the Work. Contractor must ensure that the above provision is inserted in all contracts it enters into with any Subcontractors and any labor organizations that furnish skilled, unskilled and craft union skilled labor, or that may provide any material, labor, or services in connection with this Agreement.

**2. Chicago and Project Area Residency Requirements**

If the funding under this contract is \$100,000 or more, Contractor and all subcontractors that perform work on the site on the construction project undertaken pursuant to this contract shall comply with the minimum percentage of total worker hours performed by actual eligible residents of the City of Chicago as specified in § 2-92-330 of the Municipal Code and rules and regulations adopted thereunder,, unless otherwise prohibited by law. 7.5% of the total work hours must be performed by project area residents and 50% of the total work hours must be performed by city residents unless the Chief Procurement

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Officer determines otherwise. Work hours performed by project area residents are counted as work hours performed by city residents for purposes of calculating the minimum work hour percentage required to be performed by city residents. In addition to complying with this requirement, Contractor and all Subcontractors must make good faith efforts to utilize qualified eligible residents of the City of Chicago in both unskilled and skilled labor positions.

"City residents" means persons domiciled within the city.

"Project area residents" means persons domiciled within that part of the city designated as the project area in the information for bidders issued by the Department of Procurement Services.

"Domicile" means an individual's one and only true, fixed and permanent home and principal establishment.

"Eligible residents" means city residents and project area residents.

"Actual residents of the City of Chicago" shall mean persons domiciled within the City of Chicago. The domicile is an individual's one and only true, fixed and permanent home and principal establishment.

The contractor shall provide for the maintenance of adequate employee residency records to ensure that actual eligible Chicago residents are employed on the project. The contractor and subcontractors shall maintain copies of personal documents supportive of every Chicago employee's actual record of residence.

Certified payroll reports (U.S. Department of Labor Form WH-347 or equivalent) must be submitted weekly to the Commissioner of the supervising department in triplicate, shall identify clearly the actual residence of every employee on each submitted certified payroll. The first time that an employee's name appears on a payroll, the date that the company hired the employee should be written in after the employee's name.

Full access to the contractor's and subcontractors' employment record shall be granted to the Chief Procurement Officer, the Commissioner of the supervising department, the Superintendent of the Chicago Police Department, the inspector general, or any duly authorized representative thereof. The contractor and subcontractors shall maintain all relevant personnel data in records for a period of at least three years after final acceptance of the work.

At the direction of the supervising department, affidavits and other supporting documentation will be required of the contractor to verify or clarify an employee's actual address when doubt or lack of clarity has arisen.

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Good faith efforts on the part of the contractor to provide utilization of actual eligible Chicago residents shall not suffice to replace the actual, verified achievement of the requirements of this section concerning the worker hours performed by actual eligible Chicago residents.

When work is completed, in the event that the City has determined that the contractor failed to ensure the fulfillment of the requirement of this section concerning the worker hours performed by actual eligible Chicago residents or has failed to report in the manner as indicated above, the City will thereby be damaged in the failure to provide the benefit of demonstrable employment to Chicagoans to the degree stipulated in this section. Therefore, in such a case of non-compliance it is agreed that 1/20 of 1 percent (.05%), 0.0005, of the approved contract value for this contract shall be surrendered by the contractor to the City in payment for each percentage of shortfall toward the stipulated residency requirement. Failure to report the residency of employees entirely and correctly shall result in the surrender of the entire liquidated damages as if no Chicago residents were employed in either of the categories. The willful falsification of statements and the certification of payroll date may subject the contractor or subcontractors or employee to prosecution.

Nothing herein provided shall be construed to be a limitation upon the "Notice of Requirements for Affirmative Action to Ensure Equal Employment Opportunity, Executive Order 11246" and "Standard Federal Equal Employment Opportunity, Executive Order 11246," or other affirmative action required for equal opportunity under the provisions of this contract.

**3. Employment of Illinois Laborers on Public Works Projects**

Contractor must use only Illinois laborers in the performance of this Contract to the extent (1) required by the Employment of Illinois Laborers on Public Works Projects Act, 30 ILCS, 570/0.01, as amended from time to time and (2) otherwise permitted by law.

**H. Working hours in city contracts**

Eight hours constitutes a legal day's work under this Contract, in accordance with § 2-92-220 of the Municipal Code of Chicago.

**IX. PERMITS AND LICENSES**

**A. Contractor Obtains Permits**

Except for the three types specified below, you must obtain all permits wherever the Work under this Contract requires them, including from the City of Chicago or other public authorities. You must furnish triplicate copies of the permits to the City before the Work covered by them is started. **NO WORK IS ALLOWED TO PROCEED BEFORE SUCH PERMITS ARE OBTAINED.**

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The City will obtain permits required from the Metropolitan Water Reclamation District of Greater Chicago, the Illinois Division of Waterways and the U.S. Army Corps of Engineers.

**B. Contractor Pays Permit Fees**

The special use of, or removal, alteration or replacement of certain City-owned facilities and appurtenances such as traffic signs, parking meters, trees, sewers, hydrants, bridges and viaducts which are required for you to perform your Work are subject to all applicable Municipal Ordinances. It is your responsibility to obtain all the necessary permits and pay the associated fees. You must furnish copies of the permits to the City before the Work covered is started. Information with regard to the above may be obtained by contacting the appropriate City Departments.

**C. Occupancy Placard and Fees**

You must provide an occupancy placard indicating occupancy and floor plans based upon key plans provided by the Architect. It is your responsibility to pay all fees and expenses related to providing the occupancy placard.

**X. COORDINATION WITH OTHER CITY DEPARTMENTS**

**A. Water System Work and Usage**

If water from a City hydrant is necessary for the execution of the Work, you must obtain a hydrant permit from the City's Department of Water Management. You must obtain a permit from that department also for any construction, repair or adjustment of any water main, branch or service connection. Requests for permits must be made at the **Department of Water Management, City Hall, 121 North LaSalle Street, Room 906, Chicago, Illinois 60602; 312/744-7060.**

**B. Sewer System Work**

If you will be constructing, repairing, adjusting or cleaning any subsurface structure designed to collect or transport storm and/or sanitary waste water, either in private property or in the public way you, through a licensed drainlayer, must obtain a permit issued under this Section X.B. (A licensed drainlayer is a person possessing a current sewer and drain license issued by the Department of Water Management.) Requests for permits must be made at the **Department of Water Management (Sewers and Drains), 333 S. State Street, Room 410, Chicago, IL 60604-3971; 312/747-8117.**

Project plans must be submitted to the Department of Water Management (Sewers and Drains) sufficiently in advance for examination and review. Plans meeting the department's requirements must be submitted with the application for permit at least four days before the issuance of permit. When applying for a permit, you must submit three sets of plans that show all new underground sewer Work inside and around the project with a clear site or location plan together with the estimate of quantities for sewer sizes and sewer structures to be installed.

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A copy of the permit must be on the Work site before the start of construction. Failure to obtain a permit before the start of construction will result in a penalty and could result in the revocation of the drainlayer's license.

You must arrange for sewer inspections at least 48 hours before the start of Work. Inspections may be requested by calling **(312)744-7501 for Plumbing Inspections and (312) 747-7892 for Mason Inspections.**

**C. Parking Meter Removal and Replacement**

The City via the metered parking concessionaire shall close or remove and opened or reinstall any parking meters, including signs indicating pay boxes, as may be required. However, you must pay all fees and lost meter revenues required by § 9-68-050 of the Chicago Municipal Code. You must advise the Department of Transportation, Bureau of Inspections, Construction Compliance Section (Public Way Permits), Room 804, City Hall, Chicago, Illinois 60602, in writing at least two weeks in advance of the closure citing the location and meter number of the meters to be closed or removed. Closures of less than 6 hours on a given day and limited to less than 10 business days are strongly encouraged, and you must be prepared to detail any reason requiring closures of a longer hourly and daily duration.

You may not remove any parking meters without the express written consent of the Commissioner. If you violate this provision, you (a) recognize that the City will suffer damages as a result, including the costs incurred by the City in tracking, retrieving, and repairing damage to the parking meters, and (b) will be liable for liquidated damages in the amount of \$350 for each single-space parking meter or \$10,000 for each pay box you removed. All amounts, including any other debts, will be deducted from any amounts due or that may become due you.

Notification must be provided immediately once meters can be opened or reinstalled. That notification must be e-mailed to the Department of Revenue at [parking-meter-closure@cityofchicago.org](mailto:parking-meter-closure@cityofchicago.org). Please include "REOPEN/REINSTALL" in the subject line and provide details concerning permit numbers, locations, and dates that the meters may be opened or reinstalled.

The City of Chicago Department of Transportation and the Department of Revenue may modify these requirements in the future.

**D. Traffic and Parking Sign Removal and Replacement**

The City will remove and re-install any traffic and parking sign(s) as may be required, however, you will be responsible for all fees relative to the removal and replacement of all of the City's traffic and parking signs. You must inform the Bureau of Signs and Markings, in writing, of the location of each sign to be removed and specify its distance from the property line of the nearest cross street. Each sign legend must also be stated. This information must be provided at least five days before removal. You must also inform the Bureau of Signs and Markings, in writing, of when signs may be reinstalled as soon as this date is known. Contact the **Bureau of Signs and Markings, 3458 S. Lawndale, Chicago, Illinois, 60623, Attn.: Deputy Commissioner, (312)747-2210.**

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**E. Trees**

In accordance with § 10-32-060 *et seq.* of the Municipal Code, you must obtain a permit from the Bureau of Forestry when removing planting, trimming, spraying, or in any way affecting the general health or structure of trees in the public way. There is no fee for this permit. The permit must be obtained from the **Bureau of Forestry Permits Division; 3200 S. Kedzie, Chicago, Illinois 60623; (312/747-2098), fax (312) 747-2178.**

The Bureau of Forestry requires 48 hours' notice before starting Work for all activities with the exception of tree planting, which requires two weeks' prior notice. To obtain tree planting permits, two copies of the site plan must be presented to the Bureau for its review and approval. A Bureau representative must also assist in the selection of those trees to be planted in the public way. Tree planting standards and specifications are outlined in the Bureau of Forestry's "Manual of Tree Planting Standards," which is available upon request from the Bureau of Forestry.

**F. Demolition**

If demolition of a structure or removal of an underground storage tank is required during construction, you must obtain a permit and pay the required fee as set forth in the Municipal Code and its amendments to date. The permit must be obtained from the Department of Construction and Permits, City Hall, 121 North LaSalle Street, Room 900, Chicago, Illinois 60602; (312/744-3400).

**XI. SCHEDULE**

**A. Time**

1. The date for commencement of the Work is the date set forth in the Contract or such other date as may be established at the discretion of the Commissioner in a Notice to Proceed. Within five calendar days after the award and release of the Contract, you must provide the Commissioner, a schedule for the performance of the Work, which complies in all respects with the Contract, within the Contract Time. The schedule may be used as a means of determining the progress of your performance of the Work, but neither the provision of the schedule to the City, nor the City's acceptance or use of the schedule, acts in any way to relieve you of any of your obligations under the Contract.
2. Progress and Completion. **TIME IS OF THE ESSENCE IN THIS CONTRACT.** No time extensions will be allowed unless they are contained in a Contract Modification that has been approved and executed by the City. Liquidated damages will be assessed against you for late completion of the Work and failure to achieve any milestone dates that provide for liquidated damages set forth in the Contract. You must not suspend any Work that may be subject to damage by climatic conditions without the Commissioner's prior written approval. Notwithstanding any other terms contained in this Contract, you must take measures to protect the Work and to minimize the impact of such conditions on the progress of the Work.

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**B. Progress Schedule**

1. You must begin performance of the Work and to prosecute it with all due diligence, so as to complete the entire Work under this Contract within the Contract Time stipulated, after the date of commencement of Work, as specified in the written Notice to Proceed to you. The date for the commencement of Work is not counted as a day, but each day after that, from midnight to midnight, is counted as one day and the last day counted is the date of Final Acceptance and Completion of the Work. You must, when necessary, use overtime, multiple shifts, weekend and/or holiday work to maintain the approved schedule at no additional cost to the City.
2. Except when otherwise specified by the Commissioner, you must provide the progress schedule ("Schedule") for the Work using the Critical Path Method ("CPM") as described in Section XI.D, "Critical Path Method Schedule," below.
3. The Commissioner's approval of your Schedule is done for the sole purpose of insuring that all CPM scheduling documents you prepare are in conformance with the Contract requirements. This approval does not relieve you of the responsibility for the means, methods, procedures and sequence of the construction process nor does it entitle you to additional funds for completing Work in a period that is less than the Contract Time.
4. Daily Progress Reports: You and all Subcontractors must prepare and submit to the Commissioner daily progress reports on the various parts of the Work, including in the report the number of workers and the classification of the trades involved, equipment used and any pertinent information regarding possible delays in the Work.

**C. Construction Operations Plan**

1. You must, within 14 days after Notice to Proceed, submit to the Commissioner for review the order of procedure you propose to follow in performing the Work. Work begins only after your proposed order of procedure in performing the Work and the Schedule have been submitted to and consented upon by the Commissioner, in writing. You understand that a reasonable amount of time is required by the Commissioner for the examination of the procedure and Schedule. As Work progresses, changes or modifications in the procedure and Schedule, may be required by the Commissioner. In that event, upon notice from the Commissioner to you, further Work is performed only in accordance with the changed or modified procedure and Schedule as have been submitted to and consented upon, by the Commissioner, in writing.
2. The Commissioner, in his/her sole discretion, may reject or require modification of any proposed or previously approved order of procedure, that he or she considers to be unsafe for the Work under this Contract, or for other Work being carried on in the vicinity, or for other structures, or for the public, or for workmen, engineers and inspectors employed thereon, or that will not provide for the completion of the Work within the period of time specified in the Schedule, or that is contrary to any other requirement of this Contract.
3. The City's acceptance or approval of any order or procedure or equipment that you submitted or employ does not in any manner relieve you of responsibility for the performance of the Work, or for the safety of the performance of the Work under this Contract, or from any liability whatsoever on account of any procedure employed by you,



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or due to any failure or movement of any structure or equipment furnished by it. Notwithstanding any approval by the Commissioner, should any structure or equipment installed under this Contract afterwards prove insufficient in strength or fail in any manner whatsoever, the insufficiency or failure in no way forms the basis of any claim for extra compensation for delay, or for damages or expenses caused by the insufficiency or failure, or for an extension of time for completion of the Work, or for material, labor or equipment required for repairing or rebuilding the structure or equipment, or for repairing or replacing any other Work that may have been damaged by the movement or insufficiency or failure of any such structure or equipment, respectively.

**D. Critical Path Method (“CPM”) Schedule**

- 1.** You must format the Schedule to show the proposed starting and completion date for the various stages of the Work, including any float time, and must prepare it in such a way that it can be used to plot actual progress against proposed progress. You must update the Schedule and submit it to the Commissioner no less than monthly or as directed by the Commissioner. The Commissioner may request more frequent Submittals. Monthly payment will be withheld for failure to submit updated Schedules. One copy of the Schedule must be submitted to the Commissioner in a reproducible format. A copy of the Schedule must be submitted on a computer diskette in a format acceptable to the Commissioner.
- 2.** You must assure that the Schedule includes, at a minimum:
  - a. Project name, Contract number, Contractor's name, data date and plot date on each separate sheet. If multiple diagrams are prepared, each must, in addition to the above, include a descriptive title of that portion of the Work included in them.
  - b. The order and interdependency of activities, indicating the sequence in which you plan to perform the Work; the Schedule must describe and indicate the critical path; and
  - c. Estimates of man hours and/or crew sizes for each activity.
  - d. The dates for:
    - (1) starting and completing the various stages of the Work, including milestones identified by the City in the Contract;
    - (2) placing material orders, fabrication and delivery of materials and equipment;
    - (3) preparation, submittal and approval of all required submittals to the City;
    - (4) procuring material and equipment furnished by the City;
    - (5) interface activities performed by other contractors or Subcontractors upon which your Schedule depends;
    - (6) all Work activities and field construction operations;
    - (7) equipment installation, testing and balancing.
- 3.** For purposes of the Schedule, “activity” means each logically separate part of the Work defined by an observable start and an observable finish, subject to the following:

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- a. To establish the scope of an activity for Schedule purposes, you must form a single activity from the largest grouping of related operations that permit a continuous and measurable flow of Work;
  - b. The scope of an activity must be small enough to permit a reasonable appraisal of its status or as directed by the Commissioner;
  - c. Each activity on the Schedule must be manpower loaded;
  - d. The activities must be defined so that the average activity has a value of approximately \$25,000, with no activity exceeding \$200,000 without the consent of the Commissioner; and
  - e. Activities of other contractors or companies that must be completed before the start of your Work or portion of Work must be included in the Schedule as milestones and identified with a designation approved by the Commissioner.
4. You must furnish the following information on the Schedule for each activity:
- a. Activity numbers assigned to the related portions of Work in the format of the project specification division and section numbers. You must submit the activity numbers to the Commissioner for review and approval;
  - b. A description of the activity that is sufficiently detailed to permit an evaluation of your performance of the Work described;
  - c. Duration of the activity in days, unless otherwise noted;
  - d. Responsibility code for each activity that is not performed by you, indicating which Subcontractor, supplier, fabricator, or other contractor is to perform the activity;
  - e. Each activity must be identified with early/late start, early/late finish, and total float;
  - f. A breakdown by monthly node of dollar amount and percentage of Contract Price.
5. In addition to the above, any activity whose start or finish dates has been specified elsewhere in the Contract must be shown as the specified dates in the Schedule.
6. The following information must be furnished on the Schedule as summary items:
- a. The projected total percentage complete, on a monthly basis;
  - b. Anticipated total partial payments, on a monthly basis, including Subcontractor payment breakdown; and
  - c. The projected total manpower requirements, on a weekly basis.
  - d. Within 14 days after receipt of the detailed Schedule and supporting documents, the Commissioner will either approve the Schedule or reject it with written comments. If the Schedule is rejected, you must submit a revised Schedule within seven calendar days of the date of rejection. The Commissioner's decision to reject the Schedule is final and you may not dispute it under Article XIX of the Contract.
  - e. You must provide prompt written notice to the Commissioner of any events or other changes that may delay or accelerate the Schedule.

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- f. If you fail to provide the Schedule within the time prescribed and/or updates within the stated time frames, it is an event of default under the Contract, and the Commissioner may, in addition to any other remedies available to the City, withhold monthly partial payments until such time as you submit the required information.
7. Changes to the Schedule
- a. If you propose to make any changes to the Schedule, you must provide the Commissioner notice of the proposed changes, in writing, stating the reasons for the change, identifying each changed activity (including durations and interrelationships between activities) and providing a diskette of the proposed changed Schedule.
- b. The originally approved Schedule will be the Baseline Schedule. The Commissioner, in his sole discretion, may approve or disapprove the proposed change in the Schedule to the extent that the change does not extend the Contract Time. He will provide a decision in writing to you within 10 days of receipt of your submission. All monthly updates must be plotted against the current revision of the Baseline Schedule.
- c. If the Commissioner approves the change to the CPM Schedule you must submit a revised Schedule incorporating the change(s) within 10 days after approval along with a written description of the change(s) to the Schedule.
- d. Any proposed change that would result in an extension of Contract Time requires a written modification of the Contract pursuant to Section XIII.B, "Modifications," of the Contract.
8. Updating. The originally approved CPM will be designated as the Baseline Schedule and will only be changed based on a Contract Modification that extends the Contract duration.
- a. All updates will be plotted against the Baseline Schedule. You must update the CPM Schedule on a monthly basis coincident with the submission of the pay estimate. The updated information must include the Baseline Schedule detail and the following additional information for each activity:
- (1) Actual start dates;
  - (2) Actual finish dates;
  - (3) Actual activity percent complete;
  - (4) Remaining duration of activities in progress; and
  - (5) Critical activities must be identified or highlighted.
- b. The updated information must include the Baseline Schedule detail and the following additional information for each summary item:
- (1) Actual monthly and total-to-date Work percentage complete.
  - (2) Actual monthly partial payments, including Subcontractor partial payments; and
  - (3) Actual weekly and total-to-date manpower utilization.
- c. The City may withhold partial payments if you do not submit updates as required.

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9. Neither an update nor Schedule change may, in itself, extend the term of this Contract. The term of the Contract may only be extended by a written Contract Modification executed pursuant to Section XXIII.B, "Modifications," of the Contract.
10. Narrative Report. As part of the CPM Schedule update, you must prepare a written narrative report, highlighting the progress during the past update period. This written report must include the following information:
  - a. Summary of Work accomplished during the past update period;
  - b. Contract milestone comparison chart;
  - c. Analysis of critical path(s);
  - d. Analysis of time lost/gained during the update period;
  - e. Identification of problem areas; and
  - f. Recommended solutions to current problems.
11. You are required to attend a monthly CPM Schedule review meeting where the Schedule will be reviewed with the Commissioner. The purpose of this meeting is to review past progress, current status, problem areas and future progress. Your narrative report is reviewed at this meeting. Your representatives attending this meeting must have the authority to commit manpower and/or other resources to correct any negative impact to the Schedule. Any possible means of shortening the Schedule at no additional cost will be brought to the attention of the Commissioner. The Updated Progress Schedule will be used as a guide for verifying estimates of work completed for which payment is requested, and must accurately represent the project's current status. None of the information provided in this Section constitutes a request for a time extension.

**E. Recovery Schedule**

1. You must maintain an adequate work force and the necessary materials, supplies and equipment to meet the current approved Schedule. If you, in the sole opinion of the Commissioner, are failing to meet the approved Schedule, including any Contract milestones, you must submit a recovery Schedule (the "CPM Recovery Schedule"). The CPM Recovery Schedule sets forth a plan to eliminate the schedule slippage (negative float). The plan must be specific and show the methods to achieve the recovery of time, e.g., increasing manpower, working overtime, weekend work, employing multiple shifts. You must bear all costs associated with implementing the CPM Recovery Schedule.
2. Upon receipt of the CPM Recovery Schedule, the Commissioner will review it for conformance with the Contract and degree of detail. The Commissioner, within 14 days after receipt of the CPM Recovery Schedule and supporting documents will approve it or reject it with written comments. If the detailed CPM Recovery Schedule is rejected, you must submit a revised CPM Recovery Schedule within seven calendar days after the date of rejection. The Commissioner's decision to reject the CPM Recovery Schedule is final and you may not dispute it.
3. If you refuse to follow the direction of the Commissioner, the Commissioner reserves the right after seven days written notice to you, to procure the materials, equipment and labor to proceed with or to complete the Work or any portion of it and charge the cost to

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you. The Commissioner's rights under this provision are cumulative to rights under any other provisions of the Contract including the City's rights to terminate for default or to early termination.

**F. Time for Completing Punch List**

1. TIME IS OF THE ESSENCE IN CLOSING OUT THE WORK, and you must begin work immediately after receipt of a list of minor miscellaneous or finishing work known as "Punch List Work." Your failure or that of your Subcontractors to begin the Punch List work within three days of receipt of the Punch List is an event of default.
2. You must diligently prosecute the Punch List work once begun and complete it within 30 days from receipt of the Punch List. If you fail to complete Punch List work within the 30 day time period, you must pay the liquidated damages set forth for "Punch List Work" in Book 2.
3. If liquidated damages are assessed, they will be added to the previously determined liquidated damages assessed as of the Substantial Completion Date or the City's beneficial occupancy of the Project, whichever occurs earlier. The City's takeover of the Project under Section XX.C.3.b., however, does not constitute beneficial occupancy for purposes of liquidated damages.

**G. No Damages for Delay; Extensions of Time**

1. Should you be delayed in starting, prosecuting or completing the Work by any act of the City, including a delay, change, addition, deletion or modification in the Work or any omission, neglect or default of the City, or by order of the City, or anyone employed by or acting on behalf of the City, or by any cause beyond your control, none of which are due to any fault, neglect, act or omission on your part, then your relief is limited to an extension of the Contract Time that is no greater than the duration of any such delay. The extension of time releases and discharges the City, its employees, officials, agents and representatives from all claims for damages of whatever character, including any claims you may make on account of disruption, changes in sequence, interference, inefficiency, direct or indirect cost or any other causes of delay.
2. You must notify the Commissioner in writing of the cause within five calendar days after the delay begins. Consideration of a time extension for events beyond your reasonable control will be made if the delay directly impacts the Schedule for completion of the Work. Events considered to be beyond your reasonable control are limited to acts of God, acts of the public enemy, fires, floods, earthquakes, epidemics, quarantine restrictions, labor strikes at the job site, freight embargoes, or weather significantly more severe than the norm, but only if the listed causes were not foreseeable and did not result from your fault or negligence and only if you took reasonable precautions to prevent delays owing to such causes.
3. Unless otherwise provided in the Contract, the Contract Time is based on normal weather conditions. An extension is granted for weather significantly more severe than the norm only if you demonstrate to the satisfaction of the City that any delay in the progress of the Work was due to such weather. The basis used to define normal weather will be the "normal" data as compiled by the United States Department of Commerce, National Oceanic and Atmospheric Administration in their most current

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report entitled "Local Climatological Data, Annual Summary with Comparative Data" for the month for which the time extension is sought. The effects of weather less severe than the norm may be taken into account in considering your requests for time extensions for the effects of more severe weather.

4. No extension of time will be granted under this Section for any delay if you, by your action or inaction, including your fault or negligence or that of your Subcontractors, caused the delay, or for which any remedies are provided under any other provision of the Contract.
5. The grant of an extension of time pursuant to this Section XI.G, "No Damages for Delay and Extension of Time," in no way constitutes a waiver by the City of any rights or remedies existing under this Contract, at law or in equity.
6. You must submit in writing any claim for extension of time to the Commissioner not more than five days after the delay begins, otherwise the claim is waived. Any claim for extension of time must (i) state the cause of the delay; (ii) specifically demonstrate the impact of the delay on the Schedule; and (iii) state the number of extension days requested. If the cause of the delay is continuing, only one claim is necessary, but you must report, in writing, the cessation of the cause for the delay within 10 days after the termination. Any claim for extension of time that does not comply with this provision constitutes a waiver by you of your rights to any such extension.
7. After receipt of a timely and properly completed request for a time extension, the City may (i) grant a time extension for the entire length of the delay; (ii) grant a time extension for a portion of the extent of the delay; or (iii) deny the time extension.
8. If you do not agree with the City's decision on a claim for time extension, you may appeal the ruling to the Chief Procurement Officer under Article XIX, "Claims and Disputes," but only if you have complied with the notice requirements provided in these Terms and Conditions for Construction and the time extension request exceeds five calendar days or the liquidated damages exceed \$10,000. The Commissioner's decision is final whenever the time extension request is for a duration of less than five days or the liquidated damages are less than \$10,000.

**H. Suspension of Work**

The Commissioner has authority to suspend the Work wholly, or in part, for such period of time as the Commissioner may deem necessary due to conditions unfavorable for the satisfactory prosecution of the work, or to conditions that, in the Commissioner's opinion, warrant the action or for such time as is necessary by reason of failure on your part to carry out orders given or to perform any or all provisions of the Contract. No additional compensation will be paid to you because of any costs caused by the suspension when the suspension is ordered for reasons resulting from any action or omission on your part or is related to utility adjustments, railroad work, work by other contractors on or near the Work covered by the Contract, or unforeseeable weather conditions.

**I. Liquidated Damages**

1. If the Work is delayed, you are liable for liquidated damages for every day you fail to achieve the Contract Completion Date (or any milestone completion date that provides

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for liquidated damages), but only if the delay is not the result of an excusable cause permitted under Section XI.G.2, "No Damages for Delay and Extensions of Time." The specific amount of liquidated damages for which you are liable is set forth in Book 2 of this Contract.

2. The City will recover liquidated damages by deducting the amount thereof out of any moneys due or that may become due you. If the moneys are insufficient to cover the damages, then you or your surety must pay the amount due. Nothing contained in this Section is to be construed as limiting the right of the City to recover from you all amounts due or to become due, and all costs and expenses sustained by the City for improper performance under this Contract, repudiation of the Contract, failure to begin work on the date of commencement, or failure to perform the Work with adequate forces, equipment or materials or other resources, or breaches in any other respect, including defective workmanship or materials. In addition to liquidated damages for failure to meet any milestones, you are liable to the City for any other damages sustained as the result of your refusal or failure to perform the Work.
3. If the City permits you to continue to perform Work despite your failure to meet any milestone date set forth in the Contract, the action in no way constitutes a waiver by the City of any rights or remedies that exist under this Contract, at law, or in equity.

**XII. MEETINGS**

**A. Pre-Construction Meeting**

Before beginning Work, the Commissioner may conduct a Pre-Construction meeting. Your representatives and Subcontractors must attend. The purpose of the meeting is to establish lines of authority and communication and the identification of duties and responsibilities of the organizations. Discussion will cover specific contract plans, specifications, unusual conditions, schedules of completion, and other features of the Contract. The Commissioner may conduct additional coordination meetings at his discretion.

**B. Weekly Review Meetings**

The Commissioner may conduct weekly review meetings. At a minimum, your project manager and superintendent must attend. However, you must arrange for Subcontractors to attend the meetings if expressly requested by the Commissioner. The meetings may include the following:

1. Review of Work progress since the previous weekly review meeting;
2. Discussion of field observations, problems and decisions;
3. Review of off-site fabrication problems and other problems affecting in the Contract Time;
4. Review of equipment deliveries;
5. Discussion of corrective measures and procedures to achieve the CPM Schedule;
6. Review of submittal schedules and effect on the CPM Schedule;

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7. Review of proposed Contract changes and effect on the construction schedule;
8. Coordination requirements;
9. Clarifications and decisions required of the Commissioner;
10. Review of your forces on the Work; and
11. Review of Project Record Document status and content.

**C. Monthly Review Meetings**

The Commissioner may conduct monthly review meetings. At a minimum, your project manager and superintendent must attend. However, you must arrange for Subcontractors to attend the meetings if expressly requested by the Commissioner. The meetings may include the following:

1. Review of Work progress since the previous monthly review meeting;
2. Discussion of field observations, problems and decisions;
3. Review of off-site fabrication problems and other problems affecting the CPM Schedule;
4. Review of equipment deliveries;
5. Discussion of corrective measures and procedures to achieve completion in the Contract Time;
6. Review of submittal schedules and effect on the CPM Schedule;
7. Review of proposed Contract changes and effect on the Schedule;
8. Coordination requirements;
9. Clarifications and decisions required of the Commissioner;
10. Review of your forces on the Work; and
11. Review of Project Record Document status and content.

**XIII. PAYMENTS**

**A. Contract Price**

The "Contract Price" is the total dollar amount of your bid accepted by the City, including approved change orders. It includes all labor, equipment, materials, permits, licenses, fees, and taxes necessary to perform the Work. In the case of a lump sum Contract Price or lump sum line item, you must provide the Commissioner with a breakdown that includes a schedule of costs for the various parts of the Work included in the lump sum. The total of these costs must equal the lump sum Contract Price or lump sum line items, as applicable.

The breakdown must be submitted in such form and detail, and supported as to correctness by such data, as the Commissioner may direct. The City will make no payment to you until you have submitted the breakdown and the Schedule required by Article XI, "Schedule," and the Commissioner has approved them. The breakdown may be used for verifying monthly progress payments upon substantiation of the costs detailed and the progress of the Work.



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For unit price line items, measurement and payment is as specified in the Detailed Specifications.

**B. Procedure for Monthly Payment Requests and Final Payment**

1. You and the City will agree upon a payment schedule of at least once per month, or more frequently if appropriate or if specified elsewhere in the Contract. The Commissioner will process payment requests pursuant to that agreement if your payment requests, in the Commissioner's sole judgment, are acceptable in form and content, and if the Work for which payment is being requested has been completed according to the terms and conditions of this Contract. All payment requests are subject to correction by the Commissioner.
2. In cases where you proceed to perform and complete the Work properly under the Contract, progress payments will be processed on a monthly basis unless the amount earned is greater than \$1,000,000, then payments may be made twice a month. The payment period ends on the monthly anniversary date of the Notice to Proceed.
3. Each monthly payment request must include one original and two copies of the following:
  - a. Certified Statement. You must submit certified statement(s) (signed by an authorized individual and notarized) for each payment request; the statement, in the form acceptable to the Commissioner, must list the following for you and for each Subcontractor and supplier for the period for which payment is requested:
    - (1) the name and business address of the particular Subcontractor or supplier;
    - (2) description of the work performed and/or product supplied;
    - (3) indication of whether the Subcontractor or supplier is an MBE, WBE, or a non-certified firm.
    - (4) the total amount of the particular subcontract;
    - (5) the amount previously paid to the Subcontractor and the dates paid;
    - (6) the amount of the monthly pay request you will pay to each individual Subcontractor and/or supplier from payments you receive on the request, and the dates those amounts were invoiced or requested by the Subcontractor or supplier;
    - (7) the balance remaining under the subcontract to complete the Work.
  - b. Partial Waivers of Lien to Date and Affidavit for Payment. Following your first payment request, you must submit Partial Waivers of Lien from all Subcontractors and suppliers that performed services and provided supplies during the month before your previous payment request. The Partial Waivers of Lien must be in a form acceptable to the City and must identify, at a minimum, the payment request number and time period covered. The Partial Wavier of Lien must be in dollar amount equal to the dollar amount of the services performed or supplies provided by the Subcontractor or supplier during the relevant time period. With every payment request, you must also submit an Affidavit for Payment from all Subcontractors and suppliers for whose services or supplies you request payment. The Affidavit for

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payment must be in a form acceptable to the Commissioner and identify, at a minimum, the payment estimate number, the time period covered, and the total amount invoiced by the Subcontractor or supplier, and the total amount paid to the Subcontractor or supplier to date.

- c. Status Report of MBE/WBE Subcontract Payments. A status report of MBE/WBE Subcontractor payments, as required by the Contract documents, must be submitted with each monthly invoice in the form required by the City; and
- d. Certified Payrolls. You and all Subcontractors working on the job site must submit three copies of certified payrolls for the payment period to the Commissioner every week until all Work is completed. All payrolls must be identified with Contractor or Subcontractor's name, as appropriate, Contract name and be sequentially numbered. If there are periods of no Work by you or a Subcontractor, you must submit a payroll labeled "NO WORK." The final payroll must be clearly labeled "FINAL". Certified payrolls are required to assure EEO compliance as well as wage compliance. Race, worker classification, and gender must be clearly marked for each employee on the certified payroll along with all additional information required by the Chief Procurement Officer. An employee's address should appear every time his or her name appears on the payroll. You must submit the certified payrolls and additional information regarding EEO and wage compliance by providing a Payroll Summary Report in the form required by the Chief Procurement Officer. You and each Subcontractor must submit the EEO report forms required by the City and U.S. Department of Labor reflecting fully the periods of Work covered by the partial payment request. When directed, contractor shall be required to submit payrolls electronically using the City certified payroll reporting system.
- e. You must declare subcontractor payments with each invoice submitted to the City. You are required also to inform subcontractor each time you submit an invoice to the City that includes work for which you have been billed by the subcontractor. The Subcontractor Payment Certification Form can be downloaded from the City's website at [www.cityofchicago.org/finance/subcontractorform](http://www.cityofchicago.org/finance/subcontractorform). The information from this form will be recorded in the City's financial system and posted on the City website.

**C. Payment for Stored Material**

- 1. Whether stored on- or off-the job site, the risk of loss for stored material will remain with you, and you must insure the stored materials against the risk of loss, theft or damage until its installment in the Work.
- 2. Payment for material stored on the job site will be 100% of a valid invoice. No payment will be made for materials stored off the job site unless otherwise authorized by the Commissioner in accordance with Section XIII.C.3. If Materials stored on the job site cannot be incorporated in the finished Work within a reasonable period of time you may include them in the monthly progress payment, but only if the following documents are submitted with the request for payment:
  - a. Paid invoices showing the cost of material or equipment;

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- b. Waiver of lien from the supplier indicating that the cost of the material or equipment was paid; and
  - c. Inspection tickets showing that material or equipment had been inspected and accepted by the City.
3. Payment for material stored off-site, if authorized, will be 100% of a valid invoice when you have provided the Commissioner with the documents and assurances listed and complied with the requirements below:
- a. A paid invoice from the supplier showing the unit, quantity, description of the material or equipment and costs;
  - b. A waiver of lien from the supplier for the total amount of the material purchased;
  - c. Inspection for all of the material stored;
  - d. A certified statement giving the exact location of the materials or equipment, stating that:
    - (1) you have inspected all of the material stored and that it is complete and in good condition;
    - (2) the materials are suitably stored and maintained at a bonded, secure and environmentally appropriate location that the Commissioner has agreed upon and subject to the conditions required or established by him;
    - (3) you have complied with procedures satisfactory to the Commissioner to establish the City's title to the materials or otherwise protect the City's interest in them, including, insurance, storage and transportation to the Project site for the materials stored off-site, as the Commissioner may reasonably require;
    - (4) the materials, equipment and associated fabricated components will not be diverted away from the Project;
    - (5) a certificate of insurance coverage for the stored material upon which payment is requested;
  - e. Immediately upon receipt of payment for the material, you must prepare and execute all documents required to transfer title to the City, including, any Uniform Commercial Code documentation necessary to perfect transfer of title; and
  - f. All material and Work covered by payments will thereupon become the sole property of the City, subject to your obligation to insure it until Acceptance of the Work.

**D. Retainage**

- 1. Pursuant to § 2-92-250 of the Municipal Code, no retainage shall be withheld by the City. As a matter of prompt payment to subcontractors as required by Section XIII.E, Contractor must not withhold retainage from subcontractors in any form, including but not limited to administrative fees.

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**E. Prompt Payment to Subcontractors**

1. Payment Within Seven Days. The Contractor must make payment to its Subcontractors **within 7 days** of receipt of payment from the City for each invoice.

Provided the Subcontractor's performance has met the terms of the Contract Documents, and that Subcontractor has submitted its request for payment to the Contractor with such documentation as is reasonably necessary to substantiate such performance, the Contractor shall bill the City for such performance when the Contractor is first authorized under the payment schedule of the Contract to submit an invoice to the City for such performance. Contractor may only invoice the City at the rates contained in the Contract Documents.

2. Liquidated Damages for Failure to Promptly Pay. Much of the City's economic vitality derives from the success of its small businesses. The failure by contractors to pay their subcontractors in a timely manner, therefore, is clearly detrimental to the City. Inasmuch as the actual damages to the City due to such failure are uncertain in amount and difficult to prove, Contractor and City agree that the Chief Procurement Officer may assess liquidated damages against contractors who fail to meet their prompt payment requirements. Such liquidated damages shall be assessed to compensate the City for any and all damage incurred due to the failure of the Contractor to promptly pay its subcontractors, and does not constitute a penalty. Any and all such liquidated damages collected by the City shall be used to improve the administration and outreach efforts of the City's Small Business Program.

3. Reporting Failures to Promptly Pay. The City posts payments to prime contractors on the web at <http://webapps.cityofchicago.org/VCSearchWeb/org/cityofchicago/vcsearch/controller/payments/begin.do?agencyId=city>.

If the Contractor, without reasonable cause, fails to make any payment to its Subcontractors and material suppliers **within 7 days** after receipt of payment under a City contract, the Contractor shall pay to its Subcontractors and material suppliers, in addition to the payment due them, interest in the amount of 2% per month, calculated from the expiration of the 7-day period until fully paid.

In the event that a Contractor fails to make payment to a Subcontractor within the 7-day period required above, the Subcontractor may notify the City by submitting a report form that may be downloaded from the DPS website at: [http://www.cityofchicago.org/content/dam/city/depts/dps/ContractAdministration/StandardFormsAgreements/Failure\\_to\\_Promptly\\_Pay\\_Fillable\\_Form\\_3\\_2013.pdf](http://www.cityofchicago.org/content/dam/city/depts/dps/ContractAdministration/StandardFormsAgreements/Failure_to_Promptly_Pay_Fillable_Form_3_2013.pdf)

The report will require the Subcontractor to affirm that (a) its invoice to the Contractor was included in the payment request submitted by the contractor to the City and (b) Subcontractor has not, at the time of the report, received payment from the contractor for that invoice. The report must reference the payment (voucher) number posted on-line by the City in the notice of the payment to the contractor.

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Subcontractors are hereby reminded that per Chapters 1-21, "False Statements," and 1-22, "False Claims," of the Municipal Code of Chicago, making false statements or claims to the City are violations of law and subject to a range of penalties including fines and debarment.

4. Action by the City. Upon receipt of an electronic report of a failure to pay, the City will issue notice to the contractor, and provide the contractor with an opportunity to demonstrate reasonable cause for failing to make payment within applicable period set forth in the Contract. The Chief Procurement Officer, in his or her sole judgment, shall determine whether any cause for nonpayment provided by a contractor is reasonable. In the event that the contractor fails to demonstrate reasonable cause for failure to make payment, the City shall notify the contractor that it will assess liquidated damages. Any such liquidated damages will be assessed according to the following schedule:

First Unexcused Report:	\$50
Second Unexcused Report:	\$100
Third Unexcused Report:	\$250
Fourth Unexcused Report:	\$500
Fifth and Each Succeeding Unexcused Report:	\$1,000

The liquidated damages set forth above shall be assessed per unexcused report per contract, i.e., each successive report regarding a contractor's failure to pay under this Contract will be assessed liquidated damages, regardless of which subcontractor files the unexcused report(s).

By executing this Agreement, Contractor acknowledges and agrees that the City may collect such damages by deducting any amount due to the City from the next payment to be made to the Contractor. In the event that no further payments are due to Contractor, Contractor agrees to promptly pay such liquidated damages as it may owe to the City. Failure to make such payment within thirty (30) days of receipt of notice of the assessment of liquidated damages may result in Contractor being debarred from participating in City contracts for a period of not less than one year.

Contractors are reminded that each unexcused failure to pay promptly is an event of default under the Contract and, in addition to the liquidated damages provided for in this Section, is subject to the remedies found in Section XX.C of this Contract. Contractors are further reminded that per Section 2-92-270 of the Municipal Code of Chicago, failure to pay subcontractors as required by law and the Contract may result in the City suspending payments to Contractor and making direct payments to such subcontractors. Any such direct payments shall be from funds due and owing to the contractor.

5. Whistleblower Protection. Contractor shall not take any retaliatory action against any subcontractor for reporting non-payment pursuant to this Section E. Any such retaliatory action is an event of default under this Contract and is subject to the remedies set forth in Section XX.C hereof, including termination. In addition to those remedies, any retaliatory action by a contractor may result in a contractor being deemed non-responsible for future

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City contracts or, if, in the sole judgment of the Chief Procurement Officer, such retaliatory action is egregious, the Chief Procurement Officer may initiate debarment proceedings against the contractor. Any such debarment shall be for a period of not less than one year.

6. If the Chief Procurement Officer determines that the circumstances pertaining to a contractor's failure to pay promptly warrant excusing such non-performance, or determines that excusing such non-performance is in the best interests of the City, the Chief Procurement Officer may waive any of the remedies provided in this Section E. Each such waiver is discrete, non-precedential and does not constitute a waiver of any subsequent remedies against a contractor who fails to comply with the terms and conditions set forth herein.

**F. Payments Withheld**

1. The Commissioner may decline a request for payment if, in the Commissioner's sole opinion, the request for payment is not adequately supported. If you and the Commissioner cannot agree on a revised amount, the Commissioner must process the payment in the amount he deems appropriate.
2. The Commissioner may decline to process any payment or may rescind in whole or in part any approval previously made to the extent that may be necessary in his sole opinion because of any failure to perform any obligation under the Contract, including:
  - a. Failure or refusal to provide the City the required initial schedule for the Work or monthly schedule updates and obtain the City's approval for either or both;
  - b. Your failure to remedy defective Work;
  - c. Your failure to make payments to Subcontractors, or employees, or provide partial waivers of lien;
  - d. Your failure to maintain timely progress of the Work as stated in your schedule, or the City's determination that the Work will not be completed within the Contract Time, or your failure to carry out the Work in accordance with the Contract;
  - e. Failure to follow the City, State, Federal, or Contract safety and security requirements;
  - f. Failure to maintain insurance policies as required by the Contract and/or to provide to the Commissioner each evidence of insurance coverage, in the form of current certificates of insurance, as he or she may require;
  - g. Failure to comply with other requirements as referenced in the Contract;
  - h. Failure to provide certified payrolls or other documents required under Section XI.G, "No Damages for Delay and Extensions of Time."
  - i. Failure to provide material inspections as required by the Contract; and
  - j. Failure to provide contract deliverables such as, accurate Record Drawings, warranties, guarantees, manuals, etc.
3. Pursuant to § 2-92-270 of the Municipal Code, the Chief Procurement Officer may, in his sole discretion, direct that no further payments be made, or vouchers or estimates

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issued to you, if he determines that you have failed to pay any Subcontractor, employee or worker for Work performed under this Contract. Failure to submit "Status Report of MBE/WBE Subcontract Payment" or "Certified Statement" as required under Section XIII.B. may result in a determination that you have failed to pay your Subcontractor(s). The City may withhold payment until you demonstrate, to the satisfaction of the Chief Procurement Officer, that payments to the Subcontractors, employees or workers have been made in full.

If the Chief Procurement Officer gives you notice under Section XXIII.H that no further vouchers or estimates will be issued or payments made on the Contract until the Subcontractors, workers, and employees have been paid, and you neglect or refuse for a period of 10 days or more after notice was given to pay those Subcontractors, workers or employees, the Chief Procurement Officer may apply any money due, or that may become due, under the Contract to the payment of those Subcontractors, workers or employees without further notice to you and the effect will be the same, for purposes of payment to you of the Contract Price, as if the City had paid you directly.

The failure of the City, however, to retain and apply any money, or of the Chief Procurement Officer to order or direct that no vouchers or estimates be issued or further payments made, will not, nor will the paying over of the reserved percentage without the Subcontractor, workers, or employees being first paid, in any way affect your liability or that of your sureties to the City, or to any such Subcontractor, worker or employee upon any bond given in connection with this Contract.

**4. Debts; Outstanding Parking Violation Complaints**

In accordance with § 2-92-380 of the Municipal Code, and as otherwise permitted by law, in addition to any other rights and remedies (including any set-off) available to the City under the Contract or permitted at law or in equity, the City is entitled to set off a portion of the Contract price or compensation due under the Contract, in an amount equal to the amount of the fines and penalties for each outstanding parking violation complaint and the amount of any debt owed by the contracting party to the City. For purposes of this provision, the terms "outstanding parking violation complaints" and "debt" are defined in the Municipal Code as are the conditions under which no set-off will be made.

**5. Provisions Relating to Liens**

Contractor will notify Subcontractors that no mechanic's lien under the Illinois Mechanics' Lien Act, 770 ILCS 60/23, *et seq.*, will be permitted to arise, be filed, or maintained against public funds, the Project, or any part of it, or any interest in them, or any improvements on them, or against any monies due or to become due to Contractor on account of any work, labor, services, materials, equipment, or other items performed or furnished for or in connection with the Project to the extent permitted by law. Contractor, for itself and its Subcontractors, expressly waives, releases, and relinquishes such liens and all rights to file or maintain such liens; and Contractor further covenants that this waiver of liens and waiver of the rights to file or maintain such liens is an independent covenant.

If any of Subcontractors, employees, officials, agents, or any other person directly or indirectly acting for, through, or on their behalf files or maintains a lien or claim under the

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Illinois Mechanic's Lien Act, 770 ILCS 60/23, *et seq.*, against public funds or against any monies due or to become due to Contractor on account of any Work, labor, services, materials, equipment, or other items performed or furnished for or in connection with the Project, Contractor must cause such liens and claims to be satisfied, removed, or discharged within 30 days from the date of filing. The City may extend the 30 day period if (i) the City determines that the lien claim cannot be so satisfied, removed, or discharged in such period and (ii) Contractor, in the City's sole determination, is proceeding diligently to cause such liens or claims to be satisfied, removed or discharged. The City has the right, in addition to all other rights and remedies provided under this Contract or by law, to cause such liens or claims to be satisfied, removed, or discharged by any means at Contractor's sole cost, such cost to include reasonable legal fees.

6. The City's rights under this Section XIII.F, "Payments Withheld," are cumulative with any other rights provided for under this Contract. Failure by the City to exercise any such right afforded in this Contract, or at law or in equity, will not constitute a waiver of that right.

**G. Payment for Changes**

1. Payment for Changes. The amount to be paid by the City for changes (additions, deletions or revisions) in the Work or directions to change the Contract Time, will be made in accordance with Sections XIII.G.1.a through XIII.G.1.f below.
  - a. **Unit Price Basis.** Should the changes in the plans result in an increase or decrease in the quantities of unit priced Work to be performed, you will accept payment as follows:
    - (1) All increases in the Work of the type that appears in the Contract as unit price items will, except as provided in Section XIII.G.1.b., "Proposal Basis," be paid for at the Contract unit bid prices. Decreases in quantities included in the Contract will be deducted from the Contract value at the unit bid prices. No allowances will be made for delays or anticipated profits.
    - (2) Quantities in excess of 125% of the bid quantities, when the total dollar value of the unit price item exceeds 5% of the original Contract bid amount, will be paid for at a negotiated unit price based on costs that are demonstrated by you and agreed to by the Commissioner, subject to the approval of the Chief Procurement Officer. The negotiated unit price can be higher or lower than the Bid Unit Price. Quantities in excess of 125% of the bid quantities, when the total dollar value on any unit price item does not exceed 5% of the total value of the original Contract bid amount, will be paid at the bid unit price.
    - (3) Quantities below 75% of the bid quantities, when the total value of the unit price item exceeds 5% of the Contract Price at the time of bid, will be paid for at a negotiated unit price based on costs which are demonstrated by you and agreed to by the Commissioner, subject to the approval of the Chief Procurement Officer. The negotiated unit price can be higher or lower than the Bid Unit Price. Quantities below 75% of the bid quantities, when the total value on any unit price



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item does not exceed 5% of the total value of the Contract Price at the time of bid will be paid at the bid unit price.

- (4) If the Commissioner and you are unable to agree on a negotiated unit price, the Commissioner will determine a unit price, prepare a Contract Modification with the Work so priced, that you will sign. You may, however, timely dispute the amount of the unit price to the Chief Procurement Officer under Article XIX, "Claims and Disputes." This is the only Contract Modification in which the release language required by Section XIV.D., "Contractor's Release," will not be included.
- b. **Proposal Basis.** If there are no unit prices for the changed Work, the payment may be based upon a price agreed to by the City and you. The proposal submitted will be a starting point for negotiation between the City and you. You must submit any proposal for consideration for changed Work in writing, breaking down the Work to be done into segments of cost as follows:
- (1) Labor. For all hourly wage labor and hourly wage foremen in direct charge of the specific operations, you will receive the prevailing rate of wage for every hour that the labor and foremen are actually engaged in the Work. No additional allowance or payment will be made for general superintendence.
- (2) You will receive the actual costs paid to, or in behalf of, workers for health and welfare benefits, pension fund benefits or other benefits, when the amounts are required by collective bargaining agreement or other employment contract generally applicable to the classes of labor employed on the Work.
- (3) An amount not to exceed 30% of XIII.G.1.b.(1) above and an amount not to exceed 10% of XIII.G.1.b.(2) above will also be paid to you.
- (4) Insurance and Payroll Taxes. Cost for property damage, liability, and worker's compensation insurance premiums, unemployment insurance contributions and social security taxes on the extra Work, to which an amount not to exceed 10% of the cost of these items will be added. You must furnish satisfactory evidence of the rates paid for the insurance and taxes.
- (5) Materials. For materials accepted by the Commissioner and used as an integral part of finished Work, you will receive the actual costs of the materials delivered on the job site, including transportation charges that you paid (exclusive of machinery rentals as set forth below), as shown by original receipted bills, to which 15% will be added to the first \$10,000.00 and 10% for any amounts over \$10,000.00.
- (6) Equipment. Number of proposed equipment hours multiplied by the rate as allowed by the latest revision of "Schedule of Average Equipment Ownership Expense With Operating Cost" as issued by IDOT, or in the AED Compilation of Rental Rates if equipment is to be rented, for the period that the machinery and equipment are to be used on the Work, to which no percent will be added. Where machinery and equipment are not listed in these schedules, then the rates will be determined by the Commissioner after reviewing all of your available

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records or other information concerning the expense of operating that type of equipment.

- (7) Cost for Increase in Performance and Payment Bond. You will furnish the Commissioner written documentation from the surety of the rate or rates applicable for additional bonding for this Contract. These rates will be applied to all the changes increasing or decreasing the Contract Price. No bonding costs will be allowed for Subcontractors. In the absence of written documentation from the surety, a percentage of the total change, as determined by the Commissioner, will be added or subtracted to cover the increase or decrease of the cost of the bond.
  - (8) When Work is to be performed by a Subcontractor, the proposal may include as administrative costs for you an amount not to exceed 5% of the first \$10,000.00 and 1% of any amount over \$10,000.00 of the total approved costs of the Work. The Subcontractor, however, is not allowed any additional markup if it sublets its Work. The use of a Subcontractor requires the approval of the Chief Procurement Officer. All subcontracted costs must be supported by proposals from the Subcontractors performing the Work. The Subcontractor's proposal must be broken down into its various parts of Work as described in items XIII.G.1.b.(1) through XIII.G.1.b.(8) above, or as required by the Commissioner.
- c. **Time and Material Basis.** If the Commissioner and you cannot agree on a price based on a proposal, the Work will be paid for on a time and material basis. Work that is done on a time and material basis will be paid for as follows:
- (1) Labor. For all hourly wage labor and hourly wage foremen in direct charge of the specific operations, you will receive the prevailing rate of wage for every hour that the labor and foremen are actually engaged in the Work. No additional allowance or payment will be made for general superintendence.
  - (2) You will receive the actual costs paid to, or in behalf of, workers for health and welfare benefits, pension fund benefits or other benefits, when the amounts are required by collective bargaining agreement or other employment contract generally applicable to the classes of labor employed on the Work.
  - (3) An amount not to exceed 30% of XIII.G.1.c.(1) above and an amount not to exceed 10% of XIII.G.1.c.(2) above will also be paid to you.
  - (4) No payment will be made for labor performed on a time and material basis until you have furnished the Commissioner with itemized statements of the labor cost as follows.
    - (a) Name, classification, date, daily hours, total hours, rate, and extension for each laborer and foreman.
    - (b) Certified payrolls or certified copies of them, pertinent to the Work for which payment is requested. The payroll records will contain the name, address and social security number of each employee, the employees correct classification, rate of pay, daily and weekly number of hours worked, itemized deductions made and actual wages paid. The time and material bills will be

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audited and corrected against the certified payrolls. Falsification of the certified payroll is an offense punishable by law.

- (5) Insurance and Payroll Tax. For property damage, liability, and workers compensation insurance premiums, unemployment insurance contributions and social security taxes on the time and material Work, you will receive the actual costs, to which 10% will be added. No payment will be made for insurance and payroll taxes until you have furnished satisfactory evidence of the rate or rates paid for the insurance and tax.
- (6) Materials. For materials accepted by the Commissioner and used as an integral part of finished Work, you will receive the actual costs of the materials delivered on the job site, including transportation charges paid by him (exclusive of machinery rentals as set forth below), as shown by original receipted bills, to which 15% will be added to the first \$10,000.00 and 10% for any amounts over \$10,000.00.
- (7) You will be reimbursed for any materials used in the construction of the Work, such as sheeting, falsework, form lumber, burlap, or other materials for curing, etc., that are not integral part of the finished Work. The amount of reimbursement will be agreed upon in writing before the Work is begun and no percent will be added. The salvage value of the materials will be taken into consideration in the reimbursement agreed upon.
- (8) No payment will be made for material cost until you have furnished itemized statements of the material costs, which must include:
  - (a) Quantities of materials, prices, and extension;
  - (b) Material transportation costs supported by receipted invoices; and
  - (c) Receipted invoices for all materials used. However, if materials used on the time and material Work are not specifically purchased for the Work but are taken from your stock, then in lieu of the invoices, you will furnish an affidavit certifying that the materials were from your stock, that the quantity claimed was actually used, and that the price and transportation claimed represent the actual cost to you. The price quoted for the material must be reasonable and acceptable as per the normal industry practice.
- (9) Equipment. You will be paid for all machinery and equipment (other than small tools as currently defined by the Illinois Department of Transportation) used on the Work in accordance with the latest revision of "Schedule of Average Annual Equipment Ownership Expense with Operating Cost," as issued by the Illinois Department of Transportation, for the period that the machinery and equipment are in use on the Work, to which no percent will be added. Where machinery and equipment are not listed in this schedule, the rates will be determined by the Commissioner after reviewing all your available records or other information concerning the expense of operating that type of equipment. Where idle time for equipment is authorized by the Commissioner, it will be paid at a rate not to exceed 50% of the rates described above.

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- (10) When equipment is rented, you will receive actual rental cost as shown by original receipted bills to which 5% will be added.
- (11) No payment will be made for equipment unless designations, dates, daily hours, rental rates, and extensions for each unit of machinery and equipment are shown on the itemized statement of time and material Work.
- (12) **Bond.** The City will pay you the actual increase in cost of your performance bond. You will furnish from the bonding company written documentation of the rate or rates applicable for additional bonding for this Contract. These rate/rates will be applied to all the changes increasing or decreasing the Contract value. No bonding costs will be allowed for Subcontractors. In the absence of written documentation from the bonding company, a percentage of the total change, as determined by the Commissioner, will be added or subtracted to cover the increase or decrease of the cost of the bond.
- (13) When Work is performed by Subcontractor, you will receive as administrative costs an amount equal to 10% of the first \$10,000 and 5% of any amount over \$10,000 of the total approved costs of the Work. The Subcontractor, however, is not allowed any additional markup if it sublets its Work. The use of a Subcontractor will require the approval of the Chief Procurement Officer. All subcontracted costs must be supported by invoices from the Subcontractors performing the Work. The Subcontractors' invoices must be submitted in the form described in items (1) through (4) above.
- (14) **Documentation.** For additional Work performed on a time and material basis you will each day submit to the Commissioner detailed and complete records of the labor, material, equipment, and other costs relating to any force account Work performed on the day the Work is performed. You and the Commissioner will sign these daily extra Work reports.
- (15) **Base Contract Work on a Premium Time Basis.**
- (a) For Contract Work performed outside of regularly schedule working hours as defined by the Contract, premium time costs will be paid, only if expressly directed in writing by the Commissioner before you begin the Work. Compensation, when authorized, will cover only the direct cost of the premium portion of the time involved and will be without any charge for insurance. No payment will be made for union fringe benefits on the premium portion of the time unless expressly required by union agreement. Taxes that are attributed to the premium portion of the time will be paid. If you seek to charge taxes, the Commissioner may require you to supply verification that the employees' Social Security Tax, Federal Unemployment Tax, and State Unemployment Tax limits have not been exceeded.
- (b) An amount equal to 7% of the sum of the premium portion of the work plus taxes will also be paid to you to cover job site general conditions, overhead, and profit. All indirect costs are considered part of the overhead, including supervision, engineering, and other technical personnel.

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- (c) If you enter into a subcontract, you will be allowed an additional 2% of the Subcontractor's premium time billing to cover your supervisory and related expense on subcontract operations. The Subcontractor is not allowed the additional 2% if it sublets its Work.
  - (d) You must keep Daily Work Reports for the premium time hours signed by you and the Commissioner. The reports must indicate the time of day when the Work was performed and wage rate differential that will be charged. Billings must reflect hours reported on Daily Work Reports.
  - d. **Changes on Lump Sum Contracts or Lump Sum Items in Unit Priced Contracts.** All increases or decreases in the Work that is listed in the approved schedule of values will be priced, for the purpose of any change, based on the amounts stated for the Work in the approved schedule of values.
  - e. **All invoices for changed work.** You must submit all invoices for changed work within 45 days following completion of the changed work. Failure to provide a complete invoice for the changed work within that period, will authorize the Commissioner, subject to the approval of the Chief Procurement Officer, to determine the final amount for the Contract Modification that may be awarded without your signature.
  - f. **Miscellaneous.**
    - (1) For the purposes of this Section, any business entity which employs field labor and performs Contract Work on the job site is defined as a Subcontractor." (This definition excludes suppliers/deliverers of materials.)
    - (2) When the extra Work involves only supply of material without any field labor at the job site, the supplier, for the purposes of this Section, will be considered a "Materials Subcontractor" and the mark up specified in Section XIII.G.1.c (6), "Materials," will apply.
    - (3) Expenses incurred by the City. Upon written request of the Commissioner, you will pay the costs related to the Work that are the responsibility of the City. You will be reimbursed for the actual amount paid out to which will be added a markup as specified in Section XIII.G.1.c above.
2. **Change Claims:**
- a. If you and Commissioner are unable to agree on the price and/or time extension in connection with a change, you must, within 15 days of completing the changed work, provide written notice to the Commissioner of the amount of money and/or time extension sought by you and the Contractual and factual basis for each. You will designate the document Notice of Claim.
  - b. The Commissioner will, within 30 days from receipt of the Notice of Claim, respond by requesting a meeting with you, making a written request for additional information from you, including a general statement of the basis for the claim, the facts underlying the claim, the notice to the Commissioner of the change that gave rise to the claim, reference to the applicable Contract provisions, and all documentation that describes, relates to and supports the claim; taking other action to attempt to resolve

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the Notice of Claim, and/or advising you in writing that it should file a claim under Article XIX, "Claims and Disputes." Any steps taken by the Commissioner to resolve the Notice of Claim will not exceed 60 days from receipt of the Notice of Claim unless you agree to an additional amount of time in writing.

- c. If the Notice of Claim cannot be resolved as provided for in Section XIII.G.2, you must follow the requirements of Sections XIX.B and C, "Claims" and "Disputes."
- d. If you do not agree with the adjustment for time and/or money proposed by the Commissioner, you must follow the procedures set out by the Contract to file a claim and/or dispute as provided in Article XIX, Failure to follow the procedures set out by the Contract to file a claim and/or dispute as provided in Article XIX, constitutes a waiver of the right to make a claim or file a Dispute to the Chief Procurement Officer. In the event of your waiver, you may file a Dispute under Section XX with the Chief Procurement Officer seeking a final decision as to the adjustment for the changed work.

**H. Night, Sunday and Holiday Work**

Whenever you are permitted to perform Work at night, or on Sundays or State or Federal holidays, or to vary the period of hours during which any work is carried on each day, you must give written notice to the Commissioner, at least 24 hours in advance, so that proper inspection may be provided. The Work will be done under regulations to be furnished in writing by the Commissioner, and no extra compensation will be allowed therefore.

**I. Acceleration**

- 1. If progress falls behind the approved schedule, the Commissioner may direct and authorize you, in writing, to perform premium time work as indicated in TIME OF COMPLETION in the Proposal section of the specifications. No additional compensation will be paid for such premium time work and the cost incurred for inspection and testing during the premium time work will be considered as "extra" inspection, and reimbursement will be provided by you as described in Section XV.C, "Materials and Equipment Testing and Inspection."
- 2. If conditions are encountered where you are specifically directed and authorized in writing by the Commissioner to perform premium time work, on the original contract, to advance an already established completion date of an event or the project, or project milestone, you will be compensated in accordance with Section XIII.G.c (15).
- 3. When the premium time Work is performed by approved subcontractor, you will receive a markup as specified in Section XIII.G.c (15) of the Contract.

**J. Payroll Canvass Reports**

You must submit to the Commissioner with each pay request a Payroll Canvass Reports (PCR) on Exhibits B and C, included in Book 2. You must submit the PCRs to indicate compliance with both your "Award Criteria Determination" commitments made for each trade in Book 2 and the Chicago Residency Ordinance requirements. A pay period canvass report must be prepared separately by you and each of your Subcontractors on Exhibit B to indicate, on a weekly basis, hours of each trade utilized during each pay period by you and

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your Subcontractors on the project. A combined Payroll Canvass Summary Report must be prepared by you on Exhibit C to indicate accumulated hours of each trade you and all of your Subcontractors have utilized, to date, on the Project. You are also responsible for the accuracy of information and all arithmetical calculations made in the Payroll Canvass Reports.

You must submit within five days after the award of the Contract Exhibit A, Anticipated Workforce Projection Form, included in the Contract, to the Chief Procurement Officer.

**K. Electronic Ordering And Invoices**

The Contractor will cooperate in good faith with the City in implementing electronic ordering and invoicing, including but not limited to catalogs, purchase orders, releases, and invoices. Contractor will accept electronic purchase orders and releases upon request of the Chief Procurement Officer. Contractor will provide the City electronic catalogs, copies of invoices and other electronic documents upon request. The electronic ordering and invoice documents will be in a format specified by the City and transmitted by an electronic means specified by the City. Such electronic means may include, but are not limited to, disks, e-mail, EDI, FTP, web sites, and third party electronic services. The Chief Procurement Officer reserves the right to change the document format and/or the means of transmission upon written notice to the Contractor. Contractor will ensure that the essential information, as determined by the Chief Procurement Officer, in the electronic document, corresponds to that information submitted by the Contractor in its paper documents. The electronic documents will be in addition to paper documents required by this Contract, however, by written notice to the Contractor, the Chief Procurement Officer may deem any or all of the electronic ordering and invoice documents the official documents and/or eliminate the requirement for paper ordering and invoice documents.

**XIV. CHANGES IN THE WORK**

**A. City's Right to Change Work**

The Chief Procurement Officer and the Commissioner reserve the right to jointly order, in writing, changes in the Work or the Contract Time without prior notice to your surety. You are obligated to perform in a timely manner the changed Work included in the written notice from the Chief Procurement Officer and Commissioner. These changes may consist of additions, deletions, or other revisions, at the discretion of the City. You must begin the changed work upon receipt of a Field Order, signed by the Commissioner, with the prior written approval of the Chief Procurement Officer, unilaterally directing changes in the Work or Contract Time.

**B. Contractor's Request**

Within 14 days of receipt of the written notice from the Commissioner, you must submit to the Commissioner a written request for adjustment to the Contract Price and/or Contract Time for the revised Work.

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**C. Contract Modification**

The final provisions of the Proposed Contract Modification, including the adjustment in the Contract Sum and/or the Contract time, if any, will be incorporated into a written Contract Modification signed by the City and you.

**D. Contractor's Release**

All Contract Modifications constitute a full release of the City from any liability for any additional compensation or extension of time arising or resulting from the Work performed pursuant to the Contract Modification. By executing a Contract Modification, you accept the compensation and/or time extension provided in it in full accord and satisfaction for that Contract Modification, and you expressly waive, release and relinquish all additional claims and demands relating to or arising out of the matters covered by that Contract Modification, including direct or indirect cost, profit, or damages related to disruptions.

**E. Performance of Changed Work**

You must promptly proceed with any changes in the Work or Contract Time as directed by a written order of the Commissioner ("Field Order"), in accordance with Section XIV.A., "City's Right to Change Work," with or without any Contract Modification. Your refusal or failure to proceed promptly with the changed Work as directed constitutes an event of default under the Contract. No change to the Work by you as directed by the Commissioner will operate to invalidate the Contract or release your surety.

**F. Change Claims and Disputes**

If you and Commissioner are unable to agree on the price and/or time extension in connection with a change, the procedures set forth in Article XIX, "Claims and Disputes," will govern.

**XV. TESTING & INSPECTION**

**A. Material, Inspection and Responsibility**

The City has the right to inspect all materials, equipment and each part or detail of Work, at any time, to be used in carrying out this Contract. The City does not assume any responsibility for the availability of any materials or equipment required under this Contract. You are responsible for all materials, components and completed Work furnished under this Contract. The City may reject materials, components or completed Work not complying with the terms and provisions of this Contract and you must replaced it or them at no additional cost to the City. You must promptly remove any rejected materials or components rejected from the City's premises at no additional cost to the City after you receive notice from the City that the materials or components have been rejected.

**B. Inspection of the Work**

1. All materials and equipment and each part or detail of the Work are subject at all times to inspection by the Commissioner or the Commissioner's authorized representatives. You are held strictly to the requirements of the Contract with respect to quality of materials, workmanship and the diligent execution of the Contract. Inspection may



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include mill, plant, shop and field inspection of any material or equipment furnished and any installation and construction under the Contract. You must allow the Commissioner and his representatives access to all parts of the Work and furnish such information and assistance as may be required to make a complete and detailed inspection.

2. All tests performed by or at the direction of the Commissioner under this Contract are to verify that the materials you are providing meet the Contract requirements. You, at your own expense, may perform or have others perform similar tests for the purpose of maintaining the quality of the material being provided. Payment will not be made for uninspected or unauthorized use of materials incorporated into the Work.
3. You must remove or uncover such portions of the finished Work as the Commissioner may direct before acceptance. After the examination, you must restore the portion of the Work to the standard required by the Contract. If the Work thus exposed or examined proves acceptable, the City will pay the expenses of uncovering, removing and/or replacing the parts as extra work, but if the Work so exposed or examined is unacceptable, you must bear the expense of uncovering, removing and/or replacing of it in accordance with the Contract.
4. Except as may be otherwise specified in other sections of the Contract, the Commissioner will make final inspection of all Work included in the Contract as soon as possible after you notify him that the Work is substantially completed and ready for acceptance. If the Work is not acceptable to the Commissioner at the time of the inspection, he or she will inform you as to the particular defects to be remedied before the Work is accepted as substantially complete.

**C. Materials and Equipment Testing and Inspection**

1. You must provide the Commissioner sufficient notice of placing orders to permit tests to be completed before the materials are incorporated into the Work. You must afford such facilities as the Commissioner may require for collecting and forwarding Samples and making inspections and test. All Samples must be furnished without charge to the Commissioner. You must not make use of or incorporate into the Work the materials represented by the Samples until tests have been made and the materials have been found to be in accordance with the requirements of the Contract.
2. For materials that are integral parts of machinery or equipment or of parts of equipment that you or your Subcontractor normally stock, you must furnish the original and one copy of certified tests made at the time of production. You will keep the original and the Commissioner will retain the copy.
3. You must assure that the Commissioner has free entry, at all times while Work is being performed, to all parts of the manufacturer's works that concern the manufacture of the material or equipment ordered. The Commissioner must be permitted to examine all components and subassemblies. Assemblies and parts must be numbered for identification. You must provide the Commissioner with a detailed production schedule before the first inspection. After review of the schedule, the Commissioner will inform you of the methods, extent of inspection, facilities desired and date of inspection. You will afford the Commissioner without charge, all facilities necessary to determine that the

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material or equipment furnished are in accordance with the Contract. Test and inspection may be at the place of manufacture before shipment.

4. If for any reason, the City elects not to make the tests, the Commissioner may direct you to make the necessary tests. You must furnish a certification of the ordered tests after completion. The Commissioner reserves the right to inspect and reject all materials or equipment that were previously inspected and accepted at the place of manufacture or source of supply, after they were delivered to the Work site, if the materials or equipment do not meet the requirements of the Contract.
5. When an inspection trip is terminated due to insufficient materials, unacceptable quality, Contractor labor problems, or Contractor equipment problems, you must pay the City its costs for any additional inspection trip.
6. The Contract documents may require you to include the cost of travel and living expenses for a specific number of City employees and/or other persons for a specific test. The manufacturer or you must furnish a certification of the ordered tests after completion. The Commissioner reserves the right to reinspect and reject all materials or equipment that have been previously inspected and accepted at the place of manufacture or source of supply, after they have been delivered to the site if the materials or equipment do not meet the requirements of the Contract.
7. Unless otherwise provided, all materials will be sampled and tested in accordance with the latest published standards and methods of the American Society for Testing and Materials (ASTM) and any revisions of them. If there are no ASTM standards that apply, applicable standard methods of other recognized standardizing agencies will be used. You must provide the name and qualifications of any such standardizing agency to the Commissioner for review and approval.

**D. Testing Laboratory Labels**

You must submit all equipment containing electrical wiring to the City for acceptance before installation. All electrical components that you furnished and installed or assemble under this Contract must be approved and so labeled by one of the following Testing Laboratories:

1. Underwriters' Laboratories (UL)
2. Canadian Standards Association (CSA)
3. Electrical Testing Laboratory of New York (ETL)
4. Illinois Institute of Technology research Institute (IITRI)
5. American Gas Association (AGA)
6. Factory Mutual Research Corporation (FMRC)
7. Maintenance and Electrical Testing (MET)
8. American Research Lab (ARL)

Any electrical unit comprised of a number of components, assembled at the factory and considered custom made, must bear one of the above labels for the entire unit as well as for each component.

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You must pay all costs in obtaining a testing laboratory label at no additional cost to the City. Any delays in completion of the Work caused by the manufacturer of equipment in obtaining the required testing laboratory labels and the City approval are not grounds for an extension of time beyond the time of completion indicated in the Contract.

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**XVI. CONTRACTOR PRACTICES AT SITE**

**A. Cooperation Among Contractors**

You must conduct the Work so as not to interfere with or hinder the progress or completion of the work being performed by other contractors within or adjacent to the Work site. You must assume all liability, financial or otherwise, in connection with this Contract, and must protect and save harmless the City from all damages or claims that may arise because of inconvenience, delay, or loss experienced due to the presence and operations of other contractors working within the limits of the Work. You must assume all responsibility for Work not completed or accepted due to the presence and operations of other contractors. You must coordinate and tie-in, where appropriate, your Work with that of others in an acceptable manner and perform the Work in proper sequence to the work of others. When other contractors cause any damage to the Work that you performed, you must file claims with the other contractors, and not against the City, and you must obtain compensation for damage directly from those other contractors.

**B. Protection of Persons and Property**

1. Protection of Existing Structures and Property. You must avoid causing damage to trees, plant life, sidewalks, curbs, streets, alleys, pavements, utilities, adjoining property, the work of other contractors and the property of the City and others, and must, at your own expense, repair any damage that you or any Subcontractor may cause.

You are responsible for loss or damage by fire or theft of equipment, material, or other property of the City, incurred while the equipment, material or other property is located in any field office or on the site of the Work. Further, you must repair or replace any such equipment, material or other property so lost or damaged, to the satisfaction of the Commissioner, at no additional cost to the City.

You must familiarize yourself with the requirements of local and state laws applicable to underpinning, shoring and other Work affecting adjoining property and, wherever and whenever required by law, site conditions or standard industry practice, you must shore-up, brace, underpin, secure and protect all foundations and other parts of existing structures adjacent to, adjoining and in the vicinity of the Work site that may be in any way affected by the excavations or other operations connected with the Work to be performed under this Contract.

You are responsible for the giving of all required notices to any adjacent or adjoining property owner or other potentially affected party. The notice must be served in sufficient time so as not to delay the progress of the Work under this Contract.

You must take such precautions as are necessary to insure the safety of private property owners, lessees, and their invitees against injury caused as a result of settlement or displacement of structures. You must immediately proceed with all shoring or other Work necessary to restore the private property owner's property to a safe condition. If you fail to undertake the Work within 24 hours after written notice by the Commissioner, the City may proceed to repair or restore any such structure to a safe condition, and the cost of it will be deducted from any compensation due, or that may become due to you.

If, in the prosecution of the Work, it is necessary to excavate or occupy any street, alley, or public grounds of the City, you must erect and maintain such barriers, and, during the

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night time, such lights as will effectively prevent the happening of any accidents or damage to life, limb, or property in consequence of such excavation or occupation of such street, alley, or public grounds. You are liable for all damage occasioned by you, your agents, employees or Subcontractors of any tier in the excavation or occupation of any street, alley, or public grounds, and you must indemnify the City pursuant to Article XVIII, "Insurance, Indemnity and Bonds."

Upon Final Completion and Final Acceptance of the Work, you must remove all machinery, equipment, materials, false work, rubbish or temporary structures and leave the Work site and the premises of any private property owners in as good condition as they were before commencement of Work.

Materials and equipment necessary for the performance of the Work may only be placed, stored or allowed to occupy any space in public streets or alleys upon the written consent of the Commissioner. It is the City's intent that the operations under this Contract are conducted as far as practicable without interference with the public use of streets and alleys. All materials or equipment used in the performance of the Work must be placed so as not to impede traffic on streets and alleys adjacent to the site of the Work, and to allow free access to all fire hydrants, water valves and manholes that are a part of electric, telephone and telegraph conduit lines, fire alarms and police call boxes in the vicinity.

In removing existing pavements, sidewalks, curbs, gutters, walls, foundations, vaults and other structures, the use of any type of impact device in a manner that might damage buildings or their foundations, or other underground structures and utilities is not permitted.

You must indemnify and hold the City harmless from any damage due to settlement or the loss of lateral support of adjacent or adjoining property and from all loss or expense and all damages for which the City may become liable in consequence of the injury or damage to adjacent and adjoining structures and their premises. Your indemnity obligations will survive the expiration or termination of this Contract and include and apply to any liabilities and duties placed upon the City as owner or occupant of the property on which the improvements provided for in this Contract are to be constructed, by the provisions of an Act entitled "An Act to Prescribe the Duty of an Owner or Occupant of Lands Upon Which Excavations are Made in Reference to the Furnishing of Lateral and Subjacent Support to Adjoining Lands and Structures Thereon." See of 765 ILCS 140/0.01 *et seq.*

2. Existing and Proposed Utilities. The Contract may show existing utilities lying within the limits of the Work, such as sewers, manholes, catch basins, gas lines, water lines, telephone and electrical duct lines, CTA facilities, and similar structures. The City does not guarantee the completeness or accuracy of the information regarding utilities, whether public or privately owned. You must make your own investigation to determine the existence, nature and location of all utilities at the Work site. You must verify the exact location of all utilities that may interfere with performance of the Work and must report to the Commissioner any differences from the locations shown on the Contract.

You must so arrange and conduct your Work that utilities may be removed, relocated or supported during excavation and maintained in service until the Work is completed. In addition, you must arrange and conduct your Work that utilities may be replaced,

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rearranged or relocated before backfill being placed. You must cooperate with the owners of those utilities in the performance of the Work.

Where existing utilities are abandoned and it is necessary to remove them due to the performance of the Work, you must remove them at no additional cost to the City, and they will become your property.

It is your responsibility to protect those existing utilities that are to remain in operation during and after completion of the Work, and any new utilities installed by others during the performance of the Work. You will be held fully responsible for any damage resulting from your performance of the Work, and will be required to repair, replace or reconstruct any utilities damaged, at your own expense, to the satisfaction of the Commissioner. The protection of the utilities as specified in this Contract must be at no additional cost to the City.

3. **Utilities Outside the Limits of the Work.** You must protect and maintain City-owned water lines, sewers, connections and appurtenances and all City-owned electrical conduits, cables, vaults and appurtenances that are located entirely outside the limits of the Work in a satisfactory manner until the completion of the Work. Whenever in the performance of the Work it is necessary, because of the nature of the Work or because of your method of performing the Work, to support, remove, replace, relocate, rearrange, adjust or repair such City-owned structures located entirely outside of the excavations, you must notify the appropriate City department to perform the Work, and must cooperate with the department in preserving service. You must reimburse the appropriate City department for the cost of performing the Work at no additional cost to the City under the terms of this Contract.
4. **Utility Relocation and Continuance of Service Plan.** You must prepare a Utility Relocation and Continuance of Service Plan, identifying procedures, locations, time frames and affected agencies and private owners. The Plan must be submitted to the Commissioner for review within 14 days after the Notice to Proceed.
5. **Cooperation with Utilities.** You must cooperate with all utility companies involved in connection with the removal, temporary relocation, reconstruction, or abandonment by these agencies of all services or facilities owned or operated by them within the limits of the Work.
6. **Work Performed by Others.** The Work must be performed with a minimum of interference to street traffic in the area. You must coordinate your Work with that of other City contractors, with contractors employed by adjacent property owners, and with contractors employed by any other party or parties for work on utilities to insure the best progress of the Work as a whole.
7. **Preservation and Protection of City Standard Bench Monuments and Survey Controls.** You are responsible for the preservation and protection of all City Standard Bench Monuments, in accordance with the provisions of § 10-4-220 of the Municipal Code and Article 105.09 of the Standard Specifications, and as directed by the Commissioner. Any survey control point that you disturb or remove you must replace or reestablish to the satisfaction of the Commissioner, at no additional cost to the City. **DAMAGE TO ANY OF THE CITY STANDARD BENCH MONUMENTS WILL RESULT IN YOUR BEING PROSECUTED TO THE FULL MEASURE OF THE LAW.** The Department of General

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Services will pursue the matter of compensation for damages incurred by the City resulting from your actions or your failure to act during the execution of Work on this project.

8. **Protection of Streets and Traffic.** You must provide all necessary barricades, signs, flags, lights and reflectors. You must assure that vehicular and pedestrian traffic on all streets, including adjacent streets, bridges, overpass structures and ramps is maintained during the performance of the Work in accordance with the requirements of the Contract.
9. **Temporary Restoration of Trench Cuts.** Failure to maintain the temporary restoration of trench cuts, which causes the surrounding work area to be in an impassable and/or hazardous condition thereby creating undue inconvenience and danger to area residents is an event of default under this Contract.
10. **Temporary Barriers, Signs, Lights and Flaggers.** You must furnish, relocate and remove portable barricades and lights, collision protection, temporary signs (including traffic and project signs) and supports as directed by the Commissioner; and furnishing all necessary flaggers and other protection necessary for the maintenance of traffic flow in a safe and orderly fashion, as required by Article 107.14 of the IDOT Standard Specifications, except as otherwise specified in the Contract.

You must maintain, repair or replace all damaged or destroyed appurtenances referenced in the immediately preceding paragraph throughout the life of the Contract. Maintenance includes cleaning of the barricades and traffic signs by means of clean water. Flaggers must be provided whenever circumstances warrant.

The barricades must be erected, moved, repaired and repainted as required. Upon the completion of the Work, all barricades remain your property and must be promptly removed from the Work site.

11. **Historical and Scientific Specimens.** You must preserve and deliver to the Commissioner any specimens of historical or scientific value encountered in the Work, as directed by the Commissioner.

**C. Protection of Streets, Alleys and Public Grounds**

When excavating or occupying any street, alley or public grounds of the City, you must erect and maintain temporary barriers and, during the night time, lights that will effectively prevent accidents or damage to life, limb or property in consequence of the excavation or occupation of the street, alley or public grounds. You are liable for all damages as a result of the excavation or occupation of any street, alley or public grounds, or by the carelessness of you, your subcontractors, agents, employees or workers and must indemnify and hold harmless the City against all judgments rendered against it by reason thereof.

**D. Protection of Existing Trees in the Right of Way**

1. In accordance with the provisions of Chapter 10-32 of the Municipal Code you must protect all trees and shrubs at the construction site from damage. You must restore all damaged parkways to their original condition and repair or remove and replace any trees and shrubs damaged as a result of construction activity (as determined by the Department of Streets and Sanitation, Bureau of Forestry) at your expense. If any trees or shrubs damaged by construction activity must be removed and replaced, and trees or

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shrubs of comparable size, type, and value are unavailable or the time for planting is unsuitable, the City will charge you their appraised value determined as provided under § 10-32-200 of the Municipal Code, which amount the City will deduct from amounts due you, or, if no amounts are due, then you must promptly pay the City the amounts determined. Any tree greater than 4" D.B.H. that is permanently damaged due to the construction project and not originally marked for removal must be replaced with a new tree as identified by the Bureau of Forestry and must have a minimum of 4" caliper B&B. Any damaged tree smaller than 4" caliper measured 6" above the ground must be replaced in kind, inch for inch.

2. You must install a **protection barrier or temporary fence** of at least 1.2m (4 feet) in height around each tree to be *protected and preserved*. *The tree protection* must be installed before the actual construction starts and maintained for the duration of the project.

Within this protection zone, you must prevent construction materials from being stored, equipment from being operated and temporary storage buildings or work trailers from being placed.

The protection barrier must be constructed of orange snow fencing securely fastened to fence posts spaced a maximum of **1.5 m (5 feet)** on center. Posts are 1.8m (6 feet) in length with 61 cm (2 feet) set into the ground and 1.2m (4 feet) extending above ground. The fencing must be attached to the post with a minimum of four nylon locking ties evenly spaced at each post.

Dimensions of the **protection barrier** are as follows:

**Trees located in Tree Pits:** Where trees are located within Tree Pits, the temporary fencing should be installed at a minimum distance of the inside dimension of the Tree Pit opening with one stake at each corner of the opening.

Trees located in Parkways or Boulevards:

**Small Trees (<9" D.B.H.):** Minimum 1.5m (5 feet) from face of tree along the parkway length. In the dimension bordered by the public sidewalk or curb, the temporary fencing must be the width of the grass parkway with a maximum offset of 30cm (1 foot) from back of curb or edge of sidewalk. In no case must the closure be less than 61cm (2 feet) from the centerline of the tree.

(Example: 6" Tree in a 6' parkway as measured from back of curb to sidewalk. The dimension of the protection fencing would be 1.2m x 3m (4' x 10') with tree in the center). Note: Larger grass parkways (>12') may allow for a ten foot by ten foot (10' x 10'). Thus, the dimension bordered by the sidewalk or curb would not affect fencing distance.

**Medium (10"to 15" D.B.H.):** Minimum of ten (10) feet from face of tree along the parkway length. In the dimension bordered by the public sidewalk or curb, the fencing must be the width of the grass parkway with a maximum offset of one foot from back of curb or edge of sidewalk. In no case must the closure be less than two feet from the centerline of the tree.

**Large (>15" D.B.H.):** Minimum of 15 feet from face of tree along the parkway length. In the dimension bordered by the public sidewalk or curb, the fencing must be the width of



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the grass parkway with a maximum offset of one foot from back of curb or edge of sidewalk. In no case must the closure be less than two feet from the centerline of the tree.

**E. Care of Existing Structures and Property**

1. Property Access Maintenance Plan. You must prepare a Property Access Maintenance Plan consistent with the requirements of the Contract. The plan must be submitted to the Commissioner for review within 14 days after award of the Contract. You must comply with all applicable Federal, State, and local requirements. You must also comply with the following requirements:
  - a. Maintain vehicle and pedestrian access to properties;
  - b. Maintain pedestrian access on both sides of all streets;
  - c. Provide access walkways to all buildings and businesses;
  - d. Sidewalks must remain open to the maximum extent possible;
  - e. Provide temporary relocation of access, where required;
  - f. Provide advisory and temporary signs for pedestrian and vehicle access changes and reroutings; and
  - g. Coordinate delivery locations and timing.
2. Before doing any Work adjacent to or on the site of any buildings or other structures adjoining or in the line of the Work to be performed under the Contract, you must supply written notice of it to the owner or owners that the Work is to be done, and must cooperate with the owner(s) in the maintaining, removing, relocating, rearranging or adjusting wherever necessary, of all basements of buildings, subsidewalk vaults, tunnels, conduits, wires, poles, pipes, gas mains, cables, steam and street railway tracks and equipment, or other appliances and structures located in any portion of the streets, public areas, highways and easements to be occupied or used during the prosecution of the Work.
3. Wherever in the performance of the Work it is necessary to remove, reconstruct, relocate, rearrange, adjust or repair City-owned sewers, catch basins, manholes, inlets, sewers connections and appurtenances by reason of the fact that the structures and appurtenances pass through or are located within the limits of the Work as shown on the plans, or ordered by the Commissioner you must perform the Work necessary to remove, reconstruct, relocate, rearrange, adjust or repair those structures and appurtenances, unless otherwise noted on the plans.
  - a. The Commissioner will, at his sole discretion, direct you to modify your method of Work to interfere as little as possible with the normal conduct of business in or around the portions of the buildings or structures in use.
  - b. The building or structures may be in full time use and operation and will continue in normal use during performance of the Work. Building facilities, including heating, ventilation, and air conditioning, lighting and plumbing, will not be interrupted in the occupied areas, except as required for making connections to power sources as specified below.

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- c. You will serve written notification to the Commissioner requesting any anticipated interruption in facilities at least two weeks before disruption of services. You must provide any temporary facilities deemed necessary by the Commissioner due to a disruption of services. The Commissioner, in his sole discretion, will determine the procedures, times of day and dates you may accomplish the Work and may reject or modify your request.
  - d. Storage of all material and/or equipment must be in areas approved by the Commissioner, in a manner to minimize interference with the normal conduct of business in or around the occupied portions of the building and vehicular areas.
4. You must not perform Work on City-owned water mains, connections and appurtenances or on any City-owned electrical conduits, cables, vaults and appurtenances unless the City has abandoned the structure and the Commissioner has authorized the Work or the Work is included in the Contract. But, you must adjust City-owned water manholes and electric manholes that are shown as "to be adjusted" on the plans.
- a. You must protect and maintain in a manner satisfactory to the Commissioner, protect and maintain all City-owned water mains, connections and appurtenances and all City-owned electrical conduits, cables, vaults and appurtenances that are located entirely outside of the neat lines of the excavation as shown on the plans or as ordered by the Commissioner, until the completion of the Work under the Contract. Whenever in the performance of the Work under the Contract it becomes necessary because of the nature of the Work required by the Contract or because of your method of performing the Work, to support, remove, replace, relocate, rearrange, adjust or repair those City-owned structures located entirely outside of the excavations, you must notify the appropriate City Department to perform the Work, and must cooperate with the Department in preserving service in or through them. You must reimburse the appropriate City Department for the cost of performing the Work, and the cost must be included in the various Contract prices.
  - b. Without cost to you the City will support, protect and maintain all City-owned water mains, connections and appurtenances and all City-owned electrical conduits, cables, vaults and appurtenances, any part of which is located inside of the neat lines of the excavations as shown on the plans or ordered by the Commissioner, or it will remove, replace, relocate, rearrange, adjust, or repair them, both inside and outside of the excavations. You, however, must adjust those City-owned water manholes and electric manholes that are shown as "to be adjusted" on the plans. Whenever in the performance of the Work under the Contract it becomes necessary to support, protect, maintain, remove, replace, relocate, rearrange, adjust or repair such City-owned structures any part of which is located inside of the excavations, you must notify the appropriate City department to perform the Work and must cooperate with the department in preserving service in or through them.
  - c. With the exception of the City-owned water mains, connections and appurtenances and the City-owned electric conduits, cables, vaults and appurtenances described above, and with the exception of City-owned structures that are to be removed or otherwise Worked upon as part of the requirements of the Contract, you must support, protect, maintain or relocate and rebuild all poles, trees, shrubbery, fences, sewers, pipes, conduits, cables, wires, manholes, tunnels, buildings, subways and

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other City-owned structures that pass through and are located within the excavations or that are adjacent to the Work to be constructed under the Contract during the construction and until the completion of the Work under the Contract.

5. You must notify and cooperate with the owners thereof in maintaining, removing, relocating, rearranging, or adjusting wherever necessary, all basements of buildings, subsidewalk vaults, tunnels, conduits, wires, poles, pipes, gas mains, cables, steam and street railway tracks and equipment or other appliances or structures located in any portion of the streets, public areas, highways and easements that are to be occupied or used during the construction of the Work specified under the Contract.
  - a. Wherever in the performance of the Work specified under the Contract it becomes necessary to remove, replace, rearrange, adjust or repair City-owned sewers, catch basins, manholes, inlets, sewer connections and appurtenances by reason of the fact that the structures and appurtenances pass through or are located within the limits of the excavations as shown on the plans or ordered by the Commissioner, you must perform the Work necessary to remove, replace, relocate, rearrange, adjust or repair the structures and appurtenances. The cost of performing the Work must be included in the Contract price.
  - b. Wherever in the performance of the work specified under the Contract it becomes necessary to support and maintain City-owned sewers, catch basins, manholes, inlets, sewer connections and appurtenances or wherever it becomes necessary as a result of your methods of construction during the Work under the Contract, to remove, replace, relocate, rearrange, adjust, or repair City-owned sewers, catch basins, manholes, inlets, sewer connections and appurtenances (other than those specified in the last preceding paragraph) you must perform the Work necessary to support, maintain, remove, replace, relocate, rearrange, adjust or repair the structures and appurtenances, and you must bear the cost of the Work without any additional compensation for it.
  - c. It is the intention of the specifications that you include in the appropriate Contract Price or prices, all necessary cost and expense of supporting, maintaining, removing, replacing, relocating, rearranging, adjusting or repairing all City-owned appliances and structures (other than City-owned water mains, connection and appurtenances and City-owned electrical conduits, cables, vaults and appurtenances described in Section XVI.E.4.b), encountered in or affected by the Work, and that you must also include in the price or prices all necessary cost and expense of removing structures that have been or will be abandoned by their owners and that are necessary to be removed in order to construct work under the Contract, but you must not include in the price or prices the cost or expense of supporting, maintaining, moving, replacing, relocating, rearranging, adjusting or repairing those appliances or structures that are not owned by the City and are not abandoned by their owners, except as may be otherwise specified below in this Section.
6. You must take all reasonable precautions for the protection of buildings, railroad tracks, street railway tracks and appurtenances, and other appliances and structures not owned by the City.

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7. You must determine the methods to be employed, the procedure to be followed, the equipment, plant, falsework, shoring, bracing and other temporary structures and equipment to be used on the Work, subject to the requirements of the Contract and the approval of the Commissioner. Only adequate and safe procedures, methods, structures and equipment must be used.
8. You must provide drawings and calculations for all equipment, falsework, shoring, bracing and other temporary structures required for the Work, designed, signed and sealed by an Illinois licensed structural engineer. You must submit copies of all such drawings and calculations to the Commissioner for information only.
9. Field Check of Dimensions, Cutting and Patching. Where the Work connects to existing structures or appurtenances, you must take complete field measurements affecting all Work under this Contract and are solely responsible for the proper fit between the Work and existing structures or appurtenances. You must perform all cutting, patching, or fitting of Work that may be required to properly fit together the several parts of the Work and the existing structures or appurtenances.
10. Contractor's Layout of the Work. You are responsible for the correct lay-out and accurate fitting of all parts of the Work. You must furnish at your own expense all labor, materials and other expenses necessary for, or incidental to, the setting and maintaining of lines and grades (exclusive of the Work of establishing the original reference base line and bench marks that will be performed by the City). No separate payment to you for the cost of any of the Work specified in this Contract. The cost is included in the Contract unit or lump sum prices.
11. Salvage of Materials. If and whenever City- owned property such as valves, cast iron manholes, catch basin frames and covers, inlet boxes and grates, or any other appurtenance are to be removed and are not to be reused in the Work, you must securely store them at a suitable place on the job Site for possible use by the City (unless otherwise stipulated). You must take care to prevent damage in your handling of these appurtenances. You must deliver all items identified by the City for reuse to a location designated by the Commissioner and must legally dispose of the remaining items.
12. Wherever basements of buildings, subsidewalk vaults, tunnels, sewers, water, gas, telephone, telegraph, electric or other pipes, conduits, cables, wires, manholes, vaults, steam and street railway tracks or other similar structures and appliances not owned by the City are in or cross the excavations for structures to be built under this Contract, you must notify the owners of the structures and appliances to support, move, rearrange or abandon them, and cooperate with the owners of the structures and appliances in preserving the service or services provided by the structures and appliances, except as may be otherwise specified or provided in the Contract. If you have complied with the above requirements and has been notified by the owners of the structures and appliances that any of them have been abandoned, or lacking such notice, if you have made all investigations and has found that any of the above structures or appliances have been abandoned by their owners and if the removal of any such abandoned structure or appliance is necessary in order to construct the Work, you must remove them at no additional cost to the City.

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13. Wherever basements of buildings, subsidewalk vaults, tunnels, sewers, water, gas, telephone, telegraph, electric or other pipes, conduits, cables, wires, manholes, vaults, steam and street railway tracks or other similar structures and appliances are adjacent to, but do not cut through or cross the excavations for structures to be built under the Contract, you must perform the Work in such a manner as to not cause damage to the structures and appliances and not interrupt their use during the progress of the Work.
14. You must arrange to notify the owners of structures and appliances that are to be supported, maintained, removed, reconstructed, relocated, rearranged, adjusted or repaired by reason of the Work in ample time to permit them to do their work. The Commissioner may direct you to suspend your operations on that part of the Work that affects the structures and appliances until their owners have had time to perform the work.
15. You must conduct the Work so that no equipment, material or debris is placed upon private property unless you have first obtained the owner's written consent thereto and provided this written consent to the Commissioner. You must take such means as may be required to prevent the creation of a public nuisance on any part of the Work site or adjacent streets or property.
16. You must thoroughly clean all streets, pavements, sidewalks and parkways and all private property of all surface materials, earth and rubbish and restore them to as good condition as before the commencement of the Work. Where you have removed or killed sod, you must provide new live sod. Where the areas have been seeded, you must replace top soil equivalent to that removed, fertilize it, seed and roll it to the satisfaction of the owner of the land. You must replace all trees, shrubs and plants damaged in the proper season of the year with live, growing stock of the same kind and variety and of the size ordinarily used for planting purposes.

**F. Precautions and Safety**

1. You must take any precautions that may be necessary to render all portions of the Work secure in every respect, to decrease the liability of accidents from any cause and to avoid contingencies that are liable to delay the completion of the Work. You must furnish and install, subject to the approval of the Commissioner, all necessary facilities to provide safe means of access to all points where Work is being performed and make all necessary provisions to insure the safety of workers and of engineers and inspectors during the performance of the Work. You are required to conduct your Work so as not to unnecessarily obstruct the activities of other contractors who also may be engaged in work on this or any other project.
2. Although the Commissioner may observe the performance of the Work and reserves the right to give you opinions and suggestions about safety defects and deficiencies, the City is not responsible for any unsafe working conditions. The Commissioner's suggestions on safety, or lack of it, will in no way relieve you of your responsibility for safety on the Work site. You have sole responsibility for safety and the obligation to immediately notify the Commissioner of all accidents.

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3. Precautions must be exercised at all times for protection of persons (including employees) and property. The safety provisions of applicable laws and building and construction codes must be observed.
4. You must provide completely equipped first aid kits readily accessible at all times on the Work site. You must designate an appropriately trained individual on each shift to be in charge of first aid.
5. You must provide at appropriate locations fire extinguishers or other fire protection equipment that comply in all respects with the Municipal Code and NFPA standards. You must maintain this equipment in proper operating condition at all times and must cause the equipment to be inspected by all appropriate agencies as required by law, but in no event less than monthly. You must comply with the Municipal Code requirements on the use of standpipes, hoses and other fire protection equipment.
6. Only such materials and equipment as are necessary for the construction of the Work under this Contract must be placed, stored or allowed to occupy any such space at the site of the Work. Not more than one day's supply of flammable liquids, including oil, gasoline, paint, or solvent is permitted to be kept on hand at any one time. If gasoline, flammable oils, other highly combustible materials or compressed gas cylinders are to be stored at the site, they must be stored in a secure manner, in compliance with all applicable laws, ordinances and regulations, and all storage places must be clearly marked. The written consent of the Commissioner is required for such storage. That consent in no way limits your liability for the materials.
7. You must prohibit all lighting of fires about the premises and all smoking in restricted areas where posted with "NO SMOKING" signs, and you must diligently enforce this prohibition. You must furnish and post "NO SMOKING" signs. You must not permit any debris or waste materials to be burned at the Work site.

**G. Health, Safety and Sanitation**

1. Clean-Up. During construction, you must keep the Work site and adjacent premises as free from material, debris and rubbish as practicable. Haul roads, streets and public areas must be swept daily. Before Final Completion and Acceptance of the Work, you must remove from the Work site and adjacent premises all machinery, equipment, surplus materials, falsework, excavated and useless materials, rubbish, temporary buildings, barricades and signs and must restore the site to the same general conditions that existed before the commencement of the Work. The cost of final clean-up is included in the unit prices for the various items, or included in the Contract lump sum price, as the case may be. You must clean off all cement streaks or drippings, paint smears or drippings, rust stains, oil, grease, dirt and any other foreign materials deposited or accumulated on any portion of your Work, or existing facilities and structures, due to your performance of the Work.
2. Snow and Ice Removal. You must remove snow and ice that may impair progress of Work, be detrimental to workers, or impair trucking to and from points of delivery at the Work site.

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3. Glass Breakage. You must replace all glass broken or damaged during construction at no additional cost to the City. You must promptly remove all broken glass from the Work site.
4. Noise and Vibration Control. All equipment, vehicles, and Work under this Contract must be conducted in accordance with the City Building Code, Chapter 11-4 of the Municipal Code, "Environmental Protection and Control," Article VII - *Noise and Vibration Control*, so as to cause a minimum of noise, vibration and inconvenience to the activities of the occupants of property and buildings in the vicinity of the Work. When the Commissioner, in his sole discretion, determines that your operations constitute a nuisance, you must immediately proceed to conduct your operations in a manner that abates the nuisance. You must provide all measures, including engine and exhaust mufflers, acoustic casing enclosures, maintaining equipment, or physical barriers along the edges of the construction zone, required to minimize noise and vibration. Noise and vibration levels may be monitored by the Commissioner.
5. Health and Safety. You must comply with the requirements of 29 C.F.R. part 1926 - Safety and Health Regulations for Construction, promulgated under the U.S. Occupational Safety and Health Act of 1970, as amended, 29 U.S.C. 651 *et seq.* (OSHA). Copies may be obtained from the Regional Administrator of the U.S. Department of Labor, Federal Office Building, 230 S. Dearborn, Chicago, Illinois.

You must comply with the requirements of the Illinois Health and Safety Act, 820 ILCS 225/01 *et seq.*, and the rules and regulations promulgated under it by the Director of Labor for the State of Illinois, which are on file with the Illinois Secretary of State.

Whenever a Federal OSHA Compliance Officer arrives at the work site, you must notify the Commissioner immediately. At the conclusion of the inspection, you must report any findings to the Commissioner. Copies of any citations issued and related documents must be submitted to the Commissioner.

You must maintain the following records and make available to the Commissioner for review: (i) all records required by OSHA, including the accident log, Fed/OSHA #200, and posting of the prescribed OSHA poster; (ii) log of safety activities, accident investigation, employee instruction, training, tool-box meetings, and any other pertinent information; and (iii) Material Safety Data Sheets (MSDS) as required for each material you have used at the Work site.

6. You must enforce among your employees such regulations in regard to cleanliness and the disposal of garbage and wastes that are necessary for their health and tend to prevent the inception and spread of contagious and infectious disease among them. You must provide an ample supply of suitable, pure drinking water, and must take such means as the Commissioner may direct to effectively prevent the creation of a nuisance on any part of the Work site or adjacent streets or property. You must construct and maintain necessary sanitary conveniences for the use of the laborers on the Work, properly secluded from public observation, in such manner and at such points as be approved, and their use must be strictly enforced. Whenever manholes have been used for sanitary purposes, they must be thoroughly flushed and cleaned when no longer needed.

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The manner of disposing of waste must be such that all waste is disposed of without creating a public nuisance or health hazard and in accordance with Illinois Department of Public Health Circular No. 815, Educational Health Circular No. 4.001, and all Illinois Environmental Protection Agency rules and regulations.

You must also comply with all rules and regulations of the Federal and State governments and the City Department of Public Health.

**H. Hazardous Operations and Security**

1. During construction, all cutting or welding operations must be carried out with all precautions taken to prevent fires resulting from sparks or hot slag. Extreme care must be exercised to determine that sparks or embers do not fall into any combustible materials, even if such material is stored on lower floors. Sheet metal wind screens must be provided around the lead-melting furnaces whether the Work site is enclosed or not. Portable fire extinguishers must be provided at and below all locations where cutting or welding or melting operations are being performed or, if those operations are extensive, a hose from the stand pipe system or fire hydrant must be placed nearby. You must obtain special permission from the Commissioner of Water and pay all associated connection fees.
2. No welding, flame cutting, or other operations involving use of flame, arcs, or sparking devices, will be allowed without adequate protection. All combustible or flammable material must be removed from the immediate working area. If removal is impossible, flammable or combustible materials must be protected with fire blankets or suitable non-combustible shields to prevent sparks, flames or hot metal from reaching flammable or combustible materials. You must provide necessary personnel and equipment to control incipient fires resulting from welding, flame cutting, or other sources involving use of flame, arcs, or sparking devices.
3. You must immediately report any concentration of gas fumes, and you are responsible for clearing the area and notifying the Commissioner and the appropriate utility company. All operations in the area must be suspended until the source of the fumes has been located and corrected.
4. You must arrange for the installation of necessary fire protection lines and equipment as required by the Chicago Fire Department and as necessary to properly protect the Work site. Permanent fire protection facilities may be used for this purpose as soon as they are installed, tested and approved by the Commissioner for temporary use.
5. Salamander heaters or similar forms of uncontrolled heaters must not be used except with the special written permission of the Commissioner and City fire marshal and then only when each salamander is maintained under constant supervision.
6. Gasoline must be kept in and handled from approved safety cans.
7. All tarpaulins used for any purpose must be made of fire, water and weather-resistant materials.
8. You must furnish such watchmen as may be necessary to protect the public and those who are at or in the vicinity of the Work under this Contract, and to protect all materials, tools, machinery and equipment and all Work you have performed.



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9. You must comply with all Federal and State and local occupational health and safety statutes, and any occupational health and safety standards promulgated thereunder; provide reasonable protection to the lives, health and safety of all persons employed under this Contract; furnish to all such persons a place of employment that is free from recognized hazards that are causing or are likely to cause death or serious physical harm; keep all persons employed under this Contract informed of your protections and obligations under the statutes; and provide all persons employed under this Contract with information regarding hazards in the workplace, including information about suitable precautions, relevant symptoms and emergency treatment. The Federal and State occupational health and safety statutes, and the rules and regulations promulgated thereunder, are considered part of this Contract as though fully set forth in this Contract.
10. You must provide safety instructions and training for all workers. You must conduct weekly craft safety meetings (tool-box type) of reasonable length as an effective means of communicating safety issues to workers. Reports containing tool box discussion topics must be signed-off by all attendees and must be submitted to the Commissioner.

**I. Services and Use of Site**

1. **Work Area.** After receipt of the Notice to Proceed, you must propose a suitable working area subject to approval by the Commissioner. You must secure the space at your own expense.
2. **Temporary Services and Utilities.** If specified in the Contract, you are responsible for arranging for and providing all general services and temporary facilities as specified in the Contract and as required for the proper and expeditious prosecution of the Work. You must pay all costs for those general services and temporary facilities. You must provide temporary connections for water, electricity and heat including installation, maintenance and removal of those facilities. You must pay the cost of all water, telephone, and electricity during the construction period.
  - a. **Water.** You must provide temporary water connections as required for drinking and construction purposes. The Commissioner reserves the right to regulate the use of water and may impose restriction on the use if you are using water carelessly. You must provide water and facilities for obtaining water for sanitary purposes, drinking, mixing concrete and for all other purposes at your expense. You are not permitted to obtain the water from the mains of the Chicago water system, except as may be provided in the Contract. Except with special permission from the Commissioner and the Department of Water, you must not make connections for water to the City's fire hydrants.
  - b. **Light and Power.** You must furnish the electricity and must furnish and install all wiring, electrical services, lighting units, insulated supports for wiring and all other electrical equipment together with all other incidental and collateral Work necessary for the furnishing of the temporary power and lighting facilities for the Work to be done under this Contract, all at no additional cost to the City. Electrical Work must be performed by a licensed electrician.
  - c. **Temporary Heating During Construction.** You must provide temporary closures or enclosures for all exterior door, window, roof or other types of exterior openings as

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required to provide protection from the elements during construction. It is your responsibility to keep water in pipes from freezing and to maintain temporary heat in areas where Work is being performed at not less than 50° Fahrenheit. Finish Work includes, but is not limited to masonry, plastering painting, millwork and other temperature sensitive Work. The Heating period is from approximately October 1 to May 30 unless conditions warrant otherwise. You must furnish, install, operate and maintain all required temporary heating equipment, and must provide and pay all fuel costs.

3. Temporary Construction Facilities. Unless otherwise specified, you must provide and maintain the following temporary construction facilities throughout the construction period and remove them at the completion of the Work:

- a. Field Offices. Unless otherwise specified in Book 3, you must provide a temporary building or mobile type field office of such size and containing such equipment as you deem necessary to conduct the operations. The field office must be provided with a telephone for your superintendent and a pay telephone for use by others during the entire period of construction. The telephone must be removed promptly upon Final Completion and Acceptance of the Work.

Unless otherwise specified in Book 3, you must supply a field office for the City's Superintendent consisting of a separate office facility. It must be of adequate size for efficient operations and be furnished with a desk, three chairs, 4-drawer file cabinet and a plan table. It must be equipped with electric lighting, heating, ventilating and cooling facilities. You must provide a separate telephone for City Superintendent's use.

You must also provide and maintain in clean condition for Superintendent's use, including toilet facilities, having a water closet and laboratory fixture connected to sanitary sewer and water service. Temporary toilet facilities must be located in the City's Superintendent's trailer and comply with City and State regulations relating to health and sanitation. The toilet facility must be serviced twice weekly and kept stocked with toilet paper, soap, and paper towels.

- b. Toilets. You must provide at least one portable chemical toilet for every 20 workers or fraction of that number at the Work site as soon as construction operations commence. Toilet facilities must be serviced, at a minimum, twice weekly, which includes draining tank and refilling and disinfecting the interior of each toilet unit, and keeping each unit stocked with toilet paper. Toilet facilities must be maintained during the term of the construction period and removed upon completion of the Work.
- c. Stove heaters in temporary offices and sheds must be properly installed to protect combustible walls, floors and roof.
- d. Storage of Materials. If it is necessary to store materials, they must be protected in such a manner as to insure the preservation of their quality and fitness for the work. All stored materials will be inspected at the time of use in the Work even though they may have been inspected and approved before being placed in storage. You may store materials in the areas provided as working areas by the Contract. If no areas are provided, or if the areas provided are insufficient, you must provide the space

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required at your expense. Upon completion of the Work, you must clean and restore the storage sites and working areas to their original condition at your expense.

All materials and equipment must be received at the Work undamaged. The Commissioner has the right to reject any method of packing and shipping that, in the Commissioner's opinion, will not adequately protect the materials and equipment against damage while they are in transit or storage or that will damage existing structures.

- e. Storage Sheds. You and each Subcontractor must provide suitable watertight storage sheds for your, or their own, use as needed. You and each Subcontractor are responsible for and must pay for any electric services to your or their storage sheds. However, the electrical Work must be performed by a licensed electrical Subcontractor. You are responsible for materials stored in the open; they must be arranged in an orderly manner and properly protected against the elements and damage.
4. Working Space. You must provide working space for your own use and for each of your Subcontractors. It must provide sufficient space for benches, tools, material storage and for such other purposes as may be required to properly perform and expedite the Work. Allocation of such Work areas is subject to approval by the Commissioner. You must maintain all Work areas in a clean and orderly condition and take whatever precautions as may be necessary adjacent to the new Work. You must clean, repair or replace any damage to Work site due to improper protection at no additional cost to the City.
5. Equipment and Falsework: You must determine the methods to be employed, the procedures to be followed, the equipment, plant, falsework, shoring, bracing, and other temporary structures and equipment to be used on the Work, subject to the requirements of the Contract. Only adequate and safe procedures, methods, structures, and equipment must be used. You must furnish and maintain and are solely responsible for all equipment such as temporary ladders, ramps, runways, hoists, scaffolding, and similar items required for proper execution of Work. All such apparatus, equipment and construction must meet the requirements of Federal, State and local laws concerning the safety and protection of employees. No hoist, scaffolding or other equipment must be erected at such location as will interfere with general construction or progress of other trades. Hoists, scaffolding or other equipment must be located at sufficient distance from exterior walls to prevent staining or marring of any permanent Work. All suspended scaffolding and staging must be lowered to ground level at the end of each work day.
6. Project Signs. You must erect and maintain signs identifying the Project and indicating City, and to the extent applicable, State and Federal participation. Work under this item includes constructing and erecting project signs of the size and material specified in the Contract drawings. These signs must be erected in locations approved by the Commissioner and must be maintained throughout the term of this Contract. You are responsible for the immediate removal of graffiti. If you are notified of graffiti, you must remove such within 24 hours. The signs must not be removed until you receive such notice from the Commissioner. No separate payment will be made for furnishing, erecting and maintaining the project signs; it is incidental to the Contract.

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**J. Reports and Plans**

1. Daily Progress Reports. You and all Subcontractors must prepare and submit to the Commissioner daily progress reports on the various parts of the Work. The report must include the number of workers and the classification of the trades involved, equipment used and any pertinent information regarding possible delays in the Work.
2. Procedures, Methods and Equipment. You will determine the methods to be employed, the procedure to be followed, the equipment, plant, falsework, shoring, bracing and other temporary structures and equipment to be used on the Work, subject to the requirements of the Contract. Only adequate and safe procedures, methods, structures and equipment must be used. Any approval, constructive or otherwise, by the Commissioner of such methods, procedures and equipment in no way relieves you of any of your obligations under this Contract.

**XVII. ENVIRONMENTAL REQUIREMENTS**

**A. Compliance with Environmental Laws**

1. You must comply with all Environmental Laws including those listed in the Economic Disclosure Statement and Affidavit (EDS), which you must execute and have notarized, and any analogous future local, State or Federal ordinance or statute, rule and regulation promulgated under or under the foregoing, and any other present or future law, ordinance, rule, regulation, permit or permit condition, order, or directive which regulates, relates to, imposes liability for or establishes standards of conduct concerning any Hazardous Materials that may be set forth by the Federal government, any state or any political subdivision thereof, or any agency, court or body of the Federal government, any state or any political subdivision thereof exercising executive, legislative, judicial, regulatory or administrative functions.
2. If you are required under any Environmental Laws to file any notice or report of a release or threatened release of Hazardous Materials or Special Wastes on, under, or about any premises you use to perform the Work required under this Contract, you must provide a copy of the report or notice to the City. In the event of a release or threatened release of Hazardous Materials or special waste into the environment, or in the event of any claim, demand, action or notice is made against you regarding your failure or alleged failure to comply with any Environmental Law, you must notify the City pursuant to Section XVIII.C, "Disposal of Waste Materials, Construction Debris, Soils and Waste," below.
3. If you fail to comply with any Environmental Law, the City may terminate this Contract in accordance with the default provisions of this Contract and may adversely affect your eligibility for future contract awards.

**B. Environmental Permits**

1. You must show evidence of, and keep current throughout the term of this Contract, all waste hauling, special waste hauling, disposal permits and insurance certificates required by Federal, State, City or other local governmental body or agency pursuant to any Environmental Law.

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2. When requested by the Chief Procurement Officer, you must submit copies of all hauling permits required by any Environmental Law. Copies of all permits and insurance certificates that require periodic renewal must be forwarded to the Chief Procurement Officer throughout the duration of this Contract. Noncompliance with this requirement may be cause for rejection of the bid and/or termination of this Contract and declaring you non-responsible in future bids.
3. Environmental Records and Reports. You are required to prepare and maintain proper, accurate and complete records of accounts of all transactions related to the performance of this Contract, including:
  - a. Vehicle maintenance records;
  - b. Safety and accident reports;
  - c. IEPA or OSHA manifests;
  - d. Disposal records, including disposal site used, date, truck number and disposal weight, bills of lading, manifests, or other confirmatory receipts signed by a representative of accepting facility for each load of material; and
  - e. Permit documentation and all other documentation and transactions pertaining to all Environmental Laws.

**C. Disposal of Materials, Construction Debris, Soil and Waste**

1. You are responsible for the proper disposal of all materials, construction debris, soil and other waste. Hauling and disposal by a Subcontractor does not relieve you from responsibility for proper disposal. Disposal of all materials, construction debris, soil, and other wastes must be at a disposal site that is properly licensed and permitted to accept the particular materials, construction debris, soil and other wastes delivered to it in accordance with all Environmental Laws. You must identify the disposal site(s) or transfer station(s) to which you have contractual access and for which proper, sanitary landfill permits and/or licenses have been obtained.
2. You must provide the Commissioner or his designated representative with copies of all load tickets, manifests, bills of lading, scale tickets and other pertinent documents. When requested by the Chief Procurement Officer, you must provide copies of all permits and/or licenses for the proposed transfer station and/or landfill. If the transfer station and/or landfill you propose to use does not possess the necessary permits and/or licenses to accept the materials, construction debris, soil or other wastes, you must replace the transfer station and/or landfill submitted as part of their bid proposal at no additional cost to the City. If you dispose of materials, construction debris, soil or other wastes at a site that is not properly permitted, you will be responsible for all costs associated with the removal of the waste to a properly licensed/permitted landfill or disposal site.
3. You must notify the Commissioner, within 24 hours, of receipt of any environmental complaints, fines, citations, violations or notices of violation ("Environmental Claim") by any governmental body or regulatory agency against you by any third party relating to the loading, hauling or disposal of materials, construction debris, soil or other wastes.

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You must provide evidence to the Commissioner that any such Environmental Claim has been addressed to the satisfaction of its issuer or initiator.

4. You must notify the City of any community meetings, media involvement or media coverage related to the loading, hauling or disposal of materials, construction debris, soil and other wastes under this Contract in which you are asked to participate.
5. You must verify, in writing, whenever requested by the Commissioner, that all materials, construction debris, and other waste you accept from the City have been disposed of in compliance with all Environmental Laws.
6. The form for identifying your debris disposal/handling site(s) and acknowledging terms and conditions relating thereto which you have executed and attached to this Contract is incorporated by reference (the "Form"). In addition to the representations and requirements contained in the Form, you acknowledge that unless otherwise authorized in writing by the Commissioner of Environment, you must not continue to use a disposal/handling site identified in the Form that (i) has been cited as being in violation of any environmental law or regulation or of any City ordinance; or (ii) does not have a necessary permit. If only one site was identified in the Form, you must arrange for a substitute disposal/handling site that meets the requirements specified in the Form and provide a revised Form to the Commissioner of Environment. You further acknowledge that any such substitution is at no additional cost to the City, regardless of the reason necessitating such substitution.

**D. Equipment and Environmental Control During Transport**

You must haul materials, construction debris, soil and other wastes in vehicles and/or containers complying with all applicable Environmental Laws. All equipment used to transfer materials, construction debris, soil and other wastes must be designed to prevent spillage during the hauling operation. Your equipment must fully comply with all City, State and Federal Regulations, laws and ordinances pertaining to size, load weight, safety and any Environmental Law.

**E. Environmental Control**

In performing the Work, you must become thoroughly familiar with all Federal, State, and local statutes, ordinances, and directives with respect to the elimination of excessive noise and pollution of air, water, and soil due to construction and other operations. Attention must be given to reduce the noise of heavy construction equipment and to the control of dust, smoke, and fumes from construction equipment and other operations on the Work site, and the dirt and noise created by heavy truck operations over City streets in accordance with ordinances of the City and orders of the Commissioner. The discharge of Hazardous Materials into waterways and City sewers is not permitted.

**F. Open Dumping Prohibited**

The removal of all recyclable material and garbage, refuse or other waste material, including broken concrete, bricks, rock, paving asphalt and incidental debris generated from all construction or demolition activities performed under this Contract, must be transported to a facility that is zoned and permitted to accept the material under Chapter 11-4 of the Municipal Code and all applicable local, State, and Federal regulations.

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You must retain bills of lading, manifests, or other confirmatory receipts signed by a representative of accepting facility for each load of material and make them available to the City upon request

**G. Environmental Protection**

You must comply with, and must cause your Subcontractors to comply with, all Federal environmental and resource conservation laws and regulations, whether existing or promulgated later, as they apply to this Contract. You must include these provisions in all subcontracts. Some, but not all, of the major Federal laws that may affect this Contract include the National Environmental Policy Act of 1969, as amended, 42 USC §§ 4321 *et seq.*; the Clean Air Act, as amended, 42 USC §§ 7401 *et seq.* and scattered sections of 29 USC; the Clean Water Act, as amended, scattered sections of 33 USC and 12 USC; the Resource Conservation and Recovery Act, as amended, 42 USC §§ 6901 *et seq.*; and the Comprehensive Environmental Response, Compensation, and Liability Act, as amended, 42 USC §§ 9601 *et seq.*. You and your Subcontractors must also comply with Executive Order No. 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," 59 Fed. Reg. 7629, Feb. 16, 1994; U.S. DOT statutory requirements on environmental matters at 49 USC § 5324(b); Council on Environmental Quality regulations on compliance with the National Environmental Policy Act of 1969, as amended, 40 CFR Part 1500 *et seq.*; and U.S. DOT regulations, "Environmental Impact and Related Procedures," 23 CFR Part 771 and 49 CFR Part 622.

1. Air Quality. You must comply with all applicable standards, orders, or regulations issued pursuant to the Clean Air Act, as amended, 42 USC §§ 7401 *et seq.* Specifically, you must comply with applicable requirements of U.S. EPA regulations, "Conformity to State of Federal Implementation Plans of Transportation Plans, Programs, and Projects Developed, Funded or Approved Under Title 23 USC or the Federal Transit Act," 40 CFR Part 51, Subpart T; and "Determining Conformity of Federal Actions to State or Federal Implementation Plans," 40 CFR Part 93; and National Emission Standards for Hazardous Air Pollutants (NESHAP), 40 CFR § 61.145. You further must report and require each Subcontractor at any tier to report any violation of these requirements resulting from any Contract implementation activity to the City and the appropriate U.S. EPA Regional Office.
2. Clean Water. You must comply with all applicable standards, orders, or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 USC §§ 1251 *et seq.* You further must report and require each Subcontractor at any tier to report any violation of these requirements resulting from any Contract implementation activity to the City and the appropriate U.S. EPA Regional Office.
3. List of Violating Facilities. You acknowledge that any facility to be used in the performance of the Contract or to benefit from the Contract must not be listed on the U.S. EPA List of Violating Facilities ("List"), and you must promptly notify the City if you receive any communication from the U.S. EPA that such a facility is under consideration for inclusion on the List.
4. Preference for Recycled Products. To the extent practicable and economically feasible and to the extent that it does not reduce or impair the quality of the Work, you must use

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recycled products in performance of the Contract pursuant to U.S. Environment Protection Agency (U.S. EPA) guidelines at 40 CFR Parts 247-253, which implement section 6002 of the Resource Conservation and Recovery Act, as amended, 42 USC § 6962.

**H. Clean Diesel Fleet: Emissions Reduction (MCC 2-92-595) (where applicable)**

If this Contract is for construction, demolition, restoration, repair, renovation, environmental remediation or environmental abatement of any building, structure, tunnel, excavation, roadway, bridge, transit station or parcel of land and the estimated value of this Contract is \$2,000,000 or more:

Contractor must comply with the Clean Diesel Contracting Ordinance, MCC Section 2-92-595.

2. Contractor and any Subcontractor(s) must utilize Ultra Low Sulfur Diesel Fuel (ULSD) for any heavy-duty diesel-powered vehicle, non-road vehicle or non-road equipment used in the performance of the Contract.
3. Contractor and any Subcontractor(s) must minimize idling of motor vehicles and non-road vehicles used in the performance of the Contract during periods of inactivity, and must comply with the anti-idling requirements imposed by any applicable federal, state, or local law.
4. Contractor and any Subcontractor(s), may not use any of the following vehicles and equipment in the performance of the contract:
  - (i) any heavy-duty diesel vehicle not meeting or exceeding the US EPA's emission standards for heavy-duty diesel vehicles for the 1998 engine model year, unless such vehicle is fitted with a verified diesel emission control retrofit device; or
  - (ii) any non-road vehicle or non-road equipment not meeting or exceeding the US EPA's Tier 1 Non-road Diesel Standards, unless such vehicle or equipment is fitted with a verified diesel emission control retrofit device.
5. Any heavy-duty diesel vehicles, non-road vehicles and non-road equipment used in the performance of this Contract must incorporate such engine or retrofit technology so that the Contractor, through such engine or retrofit technology used directly by the Contractor and all subcontractors, shall have a minimum of 3.0 clean fleet score per a reporting period, as calculated by using the methodology described in MCC subsection 2-92-595(c)(5). Contractor may exclude from the calculation of the clean fleet score up to fifty percent of all of the heavy-duty diesel vehicles, non-road vehicles and non-road equipment used in the performance of the contract during a reporting period that are owned or leased by any firm that the CPO has granted a clean fleet score annual waiver certificate pursuant to MCC subsection 2-92-595 (f). However, pursuant to MCC subsection 2-92-595(b)(6), if this contract is advertised after January 1, 2020, the minimum clean fleet score is increased to 4.0, and Contractor may exclude from the calculation up to only twenty five percent of vehicles owned or leased by a firm that has received a clean fleet score waiver certificate instead of fifty percent.



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6. The City may conduct an audit of the Contractor or inspect any vehicle or equipment used in the performance of the Contract to ensure compliance with the requirements specified above. In the event that Contractor or any Subcontractor fails to utilize ULSD or fails to minimize idling or comply with antiidling requirements, Contractor will be subject to liquidated damages of \$5,000 per day for each violation and each day of noncompliance will be a separate violation; provided, however, the damages will not exceed \$50,000 for any one vehicle or piece of equipment, as specified in MCC Section 2-92-595(e). Such liquidated damages are imposed not as a penalty but as an estimate of the damages that the City will sustain from delay in completion of the project and inspection and other enforcement costs, as well as the resultant damages to the public health of its citizens, which damages by their nature are not capable of precise proof. The City is authorized to withhold and deduct from monies otherwise payable to the contractor the amount of liquidated damages due to the City.
  
7. Contractor understands that pursuant to MCC subsection 2-92-595(e)(6), any person knowingly making a false statement of material fact to any City department with respect to compliance with the contract provisions specified in MCC subsection 2-92-595(e) Chicago may be fined not less than \$1,000 or more than \$5,000 for each statement.

**XVIII. INSURANCE, INDEMNITY AND BONDS**

**A. Indemnity**

1. You must protect, defend, indemnify, and hold the City, its officers, officials, representatives, and employees (collectively the "Indemnitees"), harmless from and against any and all claims, damages, demands, injury or death, in consequence of granting this Contract or arising out of or being in any way connected with your performance under this Contract except for matters shown by final judgment to have been caused by or attributable to the negligence of Indemnitees. This indemnification obligation is effective to the maximum extent permitted by applicable law. This indemnity extends to all legal costs, including attorney fees, costs, liens, judgments, settlements, penalties, professional fees, and other expenses incurred by the City, including fines and penalties imposed by public bodies, and the reasonable settlement of such claims. This indemnification obligation is not limited by any amount of insurance required under this Contract. Further, the indemnification obligation contained in this section will survive the expiration or termination of this Contract.
  
2. You will be solely responsible for the defense of any and all claims, demands, or suits against Indemnitees, including claims by your employees, subcontractors, agents, or servants even though the claimant may allege that the Indemnitees were in charge of the Work or alleged negligence on the part of Indemnitees. The City will have the right, at its sole option, to participate in the defense of any such suit, without relieving you of your obligations under this section.
  
3. "Injury" or "damage" as these words are used in this section will be construed to include injury or damage consequent upon the failure of or use or misuse by you, your Subcontractors, agents, servants, or employees, of any scaffolding, hoist cranes, stays,

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ladders, supports, rigging, blocking or any and all other kinds of items of equipment, whether or not they are owned, furnished, or loaned by the Indemnitees.

4. You will promptly provide, or cause to be provided, to the Commissioner and City Corporation Counsel copies of all notices that you may receive of any claims, actions, or suits that may be given or filed in connection with your performance or the performance of any Subcontractor and for which the Indemnitees are entitled to indemnification under this Contract and to give the Indemnitees authority, information and assistance for the defense of any claim or action.

**B. Contribution**

To the extent permissible by law, you waive any limits on your liability that you would otherwise have by virtue of the Worker's Compensation Act or any other related law or judicial decision (such as *Kotecki v. Cyclops Welding Corporation*, 146 Ill. 2d 155 (1991)). The City, however, does not waive any limitations it may have on its liability under the Worker's Compensation Act, the Illinois Pension Code or any other statute.

**C. Admiralty**

In addition, you waive the right to receive the benefits of or to invoke the protection afforded by all maritime statutory limitations of liability, including the Limitation of Vessel Owner's Liability Act, 48 U.S.C. § 183 *et seq.*, that could act to diminish your liability for any harm or damage arising from your performance of your obligations under the Contract in any manner or for all claims or other costs arising from or occasioned by your operations on any waterways, including Lake Michigan and the Chicago River. This provision is not intended to avoid or waive Federal jurisdiction under the applicable admiralty laws. This waiver extends only to the Indemnitees, and not to third parties seeking recovery for claims solely against you.

1. Without limiting your waiver, you specifically consent to pay all sums in respect of any claims against the Indemnitees and other costs suffered by the Indemnitees arising from or occasioned by your operations in or on waterways, including the following:
  - a. Loss or damage to any other ship, vessel or boat caused proximately or otherwise by your vessel, or loss of the cargo or the other ship, vessel or boat;
  - b. Loss of life or personal injury, or for any cost of life salvage;
  - c. Loss or damage to any harbor, dock, building, graving or otherwise, slipway, pontoon, pier, quay, tunnel, jetty, stage, buoy, cables of any kind, or other fixed or movable object or property whatsoever;
  - d. The cost of the removal, raising or destruction of the wreck of any vessel you employ in performing your obligations under the Contract;
  - e. If a vessel is disabled or otherwise, the cost of towage or other salvage of any vessel you employ in performing your obligations under the Contract;
  - f. Loss or damage to the bottom, banks, or shoreline of the waterway.

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**D. Performance and Payment Bonds**

You must, before award of the Contract, deliver to the Chief Procurement Officer a performance and payment bond in the amount set forth in Book 2. Any performance bond that you provide must comply with the provisions of 30 ILCS 550/1 *et seq.*, as amended, and of § 2-92-030 of the Municipal Code, as amended. It must also be in the form of the performance and payment bond form included in Book 2. The surety or sureties issuing the bond must be acceptable to the Comptroller and must have a Best's Key Rating Guide of "B+," Class XI or greater and be listed in the most recently published "Listing of Approved Sureties" of the U.S. Department of the Treasury Circular 570, with underwriting limitations in excess of the Contract Price. The bond must cover the warranty period required by the Contract.

In case of your neglect, failure, or refusal to provide satisfactory sureties when so directed within 10 days after such notification, pursuant to § 2-92-040 of the Municipal Code the Chief Procurement Officer may declare this Contract forfeit, but such forfeiture will not release you or your surety or sureties from any liability that may have accrued before the date of the forfeiture.

If at any time the surety or sureties, or any one of them, upon the bond become insolvent, or are, in the sole opinion of the Chief Procurement Officer, unsatisfactory, or unable to respond to damages in case of liability on such bond, the Chief Procurement Officer will notify you and direct that you furnish a bond issued by a satisfactory surety or sureties forthwith.

**E. Insurance**

You must procure and maintain at all times, at your own expense, through the completion of the warranty period, the types of insurance specified in Book 2 of the Contract, with insurance companies authorized to do business in the State of Illinois, covering all operations under this Contract, whether performed by you or by Subcontractors. Upon written request by the Commissioner, you must allow the Commissioner to review and copy any original insurance policies you are obligated to maintain under this policy.

You waive any and every claim or right of recovery from the City for all injuries and losses arising under this Contract or in any way related to the Work, including any claim for loss of or damage to the Work or to the contents of it, which injury, loss or damage is covered or is required to be covered by valid and collectible insurance policies, to the extent that such injury, loss or damage is recoverable under the insurance policies. As this waiver will preclude the assignment of any claim by subrogation (or otherwise) to an insurance company (or any other person), you must give each insurance company that has issued, or in the future may issue, your policies of insurance, written notice of the terms of this waiver, and to have the insurance policies properly endorsed, if necessary, to prevent the invalidation of insurance coverage by reason of the waiver. You must require each Subcontractor to include similar waivers of subrogation in favor of the City.

The City reserves the right to change, modify or delete insurance requirements set forth in the Contract, including the right to request that you provide additional types of insurance.

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**XIX. CLAIMS AND DISPUTES**

**A. General**

Compliance with the provisions in this Article XIX is a precondition to seeking judicial review of an adverse decision of the Chief Procurement Officer. **You must not withhold performance of and must prosecute any Work required by the Commissioner while your claim, including judicial resolution, if any, is pending. You must prosecute all of your Work including any disputed Work with the same diligence and effort as if no dispute existed.** Neither the Chief Procurement Officer's determination (see Section XIX.C.3 below), nor the continued performance by either party, constitutes an admission as to any factual and/or legal position in connection with the dispute or a waiver of any rights under the Contract.

**B. Claims**

1. This provision applies to all claims under this Contract, including those for time, money, or both.
2. Procedures. Within 14 days after a basis for claim arises, you must submit your claim in writing to the City's resident engineer or its project manager ("Commissioner's Representative). This written claim to the Commissioner's Representative will constitute "notice" to the City for purposes of determining initial timeliness of the claim; oral notice is insufficient. If you and the Commissioner's Representative are unable promptly (depending upon the complexity of the matter) to resolve the claim, you must forward your claim in writing to the Commissioner together with the documents listed in (a) through (d) below (collectively, "your documents"). You must include:
  - a. A general statement of the basis for the claim,
  - b. Reference to the applicable Contract provisions,
  - c. All records that support the claim, and
  - d. All documents that relate to it, such as correspondence, and that are reasonably necessary for the Commissioner's understanding to resolve the claim.

It is your responsibility to furnish your documents to the Commissioner at the time you forward the claim to him, as, with or without the supporting documentation, the Commissioner has 30 days to respond in writing to you after he has received the claim. Incomplete information may result in an adverse response. The response may be in the form of a contract modification.

If within the 30 days the Commissioner neither responds nor forwards the claim to the Chief Procurement Officer in lieu of responding, the claim will be considered denied, unless you and the Commissioner have agreed to extend the time for him to complete his response. The Commissioner may, at his sole option, forgo the opportunity to respond directly to your claim by referring it with all your documentation and a Request for Resolution of Dispute to the Chief Procurement Officer and supplying such additional documentation as the Chief Procurement Officer may require of him.

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**C. Disputes**

1. Invoking Dispute Resolution Procedures. If you dispute the Commissioner's resolution or denial of your claim, or if your claim is deemed denied, you have 10 days to forward your claim and your documentation to the Chief Procurement Officer indicating to him that you are requesting resolution of a dispute and showing that you have complied with the preceding claims procedures. Your 10-day period to invoke dispute resolution by the Chief Procurement Officer is counted from the date the Commissioner's written resolution was sent to you, or, if he has not responded or forwarded the claim, from the date on which the time for the Commissioner's response lapsed.
2. Waiver. If you fail to file a Request for Resolution of Dispute with the Chief Procurement Officer within the 10-day period you will have waived your claim, the right to make the claim later, and the right to dispute its resolution or denial.
3. Dispute Procedures. Once the dispute resolution procedures are invoked, the Chief Procurement Officer will proceed to a final and binding decision under such rules and regulations as he from time to time promulgates. A copy of those rules and/or regulations is available through the Department of Procurement Services. The Chief Procurement Officer's decision will be implemented through a Contract Modification, if required, that will be made a part of the Contract with your signature or without it should you refuse to sign the Contract Modification. If either you or the Commissioner disagree(s) with the decision of the Chief Procurement Officer, the exclusive remedy is judicial review by a common law *writ of certiorari*. Unless such review is sought within 35 days of receipt of the Chief Procurement Officer's decision, all rights to seek judicial review are waived.

**XX. EVENTS OF DEFAULT AND TERMINATION**

**A. Chief Procurement Officer's Right**

1. The Chief Procurement Officer may, at his sole discretion, exercise the right to send you notice under Sections XX.C.1 or XX.C.2. Whether to declare you in default is within the sole discretion of the Chief Procurement Officer and neither that decision nor the factual basis for it is subject to review or challenge under Article XIX, "Claims and Disputes."
2. If the Chief Procurement Officer terminates this Contract under the provisions of Section XX.C.1 or XX.C.2, the Commissioner may use the material and equipment, whether owned or leased, that is within the scope of the Work or necessary for completion of the Work paid for by the City (whether located on or off the Work site), to complete the Work and you will receive no further payment until the Work is completed. If, however, the cost of completion exceeds the unpaid balance of the Contract, you must pay the difference to the City immediately upon demand.

**B. Events of Default**

Your failure to perform any of your obligations under the Contract, including one or more of the following, is an event of default:

1. Failure to begin the Work at the time specified;

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2. Failure to perform the Work with sufficient workers and equipment or with sufficient materials to insure the completion of Work or any part of the Work within the time specified by the Contract;
3. Failure to perform the Work in accordance with the Contract;
4. Failure to promptly remove materials, repair, or replace Work that was or were rejected as defective or unsuitable;
5. Unauthorized discontinuation of the Work;
6. Insolvency, bankruptcy or assignment for the benefit of creditors that impairs your ability to pay Subcontractors or perform the Work;
7. Failure to pay Subcontractors or material suppliers;
8. Failure to carry on the Work in a manner acceptable to the Commissioner;
9. Failure to observe Federal, State, or local laws or regulations governing safety and security requirements, including all environmental requirements;
10. Failure to comply with any other term of this Contract that states an event of default or failure to comply with any term of this Contract in any material respect; and
11. Failure to identify disposal site(s) for materials, construction debris, soil and other wastes or to submit such information when requested by the Chief Procurement Officer.
12. Disqualification as a MBE or WBE of the Contractor or any joint venture partner, subcontractor or supplier if its status as an MBE or WBE was a factor in the award of the Contract and such status was misrepresented by the Contractor.
13. Failure to notify City of change in information submitted in Contractor's original Economic Disclosure Statement ("EDS") and to submit a new EDS;
14. Default under any other City contract;
15. Violation of any City ordinance, even if unrelated to contract performance.
16. Failure to comply with the Child Support Arrearage Ordinance, § 2-92-415 of the Municipal Code;

**C. Remedies**

If an event of default occurs, the Chief Procurement Officer, at his sole discretion, may send you notice of his intent to exercise remedies pursuant to the following:

1. **Opportunity to Cure:** The Chief Procurement Officer may provide you the opportunity to cure the default. If he does so, you must cure the default within 10 days after notice from the Chief Procurement Officer is given. If the Chief Procurement Officer receives written notification from the Commissioner that you have not cured the default within the 10-day cure period, the Chief Procurement Officer may at any time after that terminate the Contract, in which event the termination of the Contract is final and effective.
2. **Termination:** The Chief Procurement Officer may terminate the Contract. Written notification of the default and termination of the Contract will be provided to you and the

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bond company by the Chief Procurement Officer. The Chief Procurement Officer's decision and declaration of termination is final and effective.

3. In addition to the foregoing, upon an event of default as defined in Section XX.B, "Events of Default," the City may invoke any or all of the following remedies:
- a. The right of set-off against any payments due or to become due to you;
  - b. The right to take over and complete the Work, or any part of it, either directly or through others. The City may use your Subcontractors, materials and equipment to complete the Work. If the City notifies you that it is invoking this remedy, all rights you may have in or under your subcontracts are assigned to the City, subject to the City's right to take assignment of all or only selected subcontracts, at the City's discretion. The sole obligation accepted by the City under such subcontracts is to pay for Work satisfactorily performed after the date of the assignment. In the event a conditional assignment has not been executed, you must execute, or cause to be executed, any assignment, agreement, or other document that may be necessary, in the sole opinion of the Corporation Counsel, to evidence or effect compliance with this provision. You must promptly deliver such documents upon the City's request. In the case of any subcontract so assigned and accepted by the City, you remain liable to the Subcontractors for any payment already invoiced to and paid by the City, and for any claim, suit, or cause of action based on or resulting from any error, omission, negligence, fraud, willful or intentionally tortious conduct, or any other act or omission, or breach of Contract, by you, your officers, employees, agents, and other Subcontractors, arising before the date of assignment to the City, when such claim, suit, or cause of action has not been discharged, disposed of, or otherwise resolved as of that date. You must notify your Subcontractors of these requirements;
  - c. In the event of termination, all costs and changes incurred by the City, together with the cost of completing the Work, are deducted from any moneys due or that may become due to you. When the expense incurred by the City exceeds the sum that would have been payable under the Contract, you and the surety are liable and must pay to the City the amount of the excess;
  - d. The right to terminate the Contract as to any or all of the Work yet to be performed;
  - e. The right of specific performance, an injunction, or any other appropriate equitable remedy, as may be applicable;
  - f. The right to money damages, including all expert witness or other consultant fees, court costs, and attorneys' fees that the City may incur in connection with any claim, suit, or action based upon, related to, or arising from, directly or indirectly, an event of default under this Contract;
  - g. The right to withhold all or any part of your compensation;
  - h. The right to terminate any or all of any other contracts that you may have with the City; and
  - i. The right to deem you non-responsible in future contracts to be awarded by the City.

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**D. Nonexclusivity of Remedies**

The remedies under the terms of this Contract are not intended to be exclusive of any other remedies provided, but each and every such remedy is cumulative and is in addition to any other remedies, existing now or hereafter, at law, or in equity. No delay or omission to exercise any right or power accruing upon any event of default impairs any such right or power, nor constitutes a waiver of any event of default or acquiescence in it, and every such right and power may be exercised from time to time and as often as may be deemed expedient.

**E. Adjudication of Termination**

If the Contract is terminated by the City for cause and it is subsequently determined by a court of competent jurisdiction that the termination was without cause, the termination will thereupon be deemed under Section XX.F, "Early Termination," and the provisions of Section XX.F, "Early Termination," apply.

**F. Early Termination**

1. The City, through the Chief Procurement Officer, may terminate your Work by written notice stating the effective date of the termination. Immediately upon receipt of the notice, you must provide similar written notice to the affected Subcontractor(s), whereupon you and Subcontractor(s) must, except for services necessary for the orderly termination of the Work.
  - a. Stop all Work and place no further order or subcontracts for materials, services, equipment or supplies;
  - b. Assign to the City, in the manner and to the extent directed, all of your rights under Work orders, purchase orders and subcontracts relating to the portion of the Work that has been completed;
  - c. Terminate Work orders, purchase orders and subcontracts outstanding to the extent that they relate to the Work and are not assigned to the City;
  - d. Take any action necessary to protect property in your possession in which the City has or may acquire an interest; and
  - e. Take any other action toward termination of the Work that the City may direct.
2. If all or a portion of your Work is terminated under this Section, "Early Termination," you are entitled to payment of those costs relating to the completed portion of the Work. No payment will be made for Work not actually performed. Deductions will be made by the City for any amounts previously paid to you and for any amounts that may be due the City, or that the City may offset or withhold by the terms of this Contract. Thus, the City will pay you, subject to the limitations set forth in this Contract, the sum of the following costs:
  - a. That portion of the Contract Price related to the Work you completed immediately before notice of termination less the payments for progress or changes previously made; and



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- b. Expenses incurred for which you are liable as the result of your termination of respective Work orders, purchase orders or subcontracts related to the notice of termination. The total amount of all payments to you must not, in any event, exceed the proportion that the Work actually performed (including materials delivered to the Project site minus credits for returned goods or canceled orders) at the date of termination bears to the entire Work to be performed under this Contract. Any payment to you under this subsection will be made in accordance with the provisions of Article XIII, "Payments."
3. After receipt of a notice of termination under this Section XX.F, "Early Terminations," you must submit to the Commissioner your final invoice in the form required, with supporting documentation. The Commissioner may require certified payrolls, receipts and other proof of expenditures. The final invoice must be submitted promptly, but in no event more than 60 days after the effective date of termination. Failure to submit the final invoice within 60 days after the effective date of termination constitutes a waiver of the final invoice.

**G. Non-Appropriation**

If no funds or insufficient funds are appropriated and budgeted in any fiscal period of the City for payments to be made under this Contract, then the City will notify you of that occurrence and this Contract will terminate on the earlier of the last day of the fiscal period for which sufficient appropriation was made or whenever the funds appropriated for payment under this Contract are exhausted. No payments will be made to you under this Contract beyond those amounts appropriated and budgeted by the City to fund payments under it.

**XXI. COMPLIANCE WITH ALL LAWS**

**A. Contractor Must Comply with All Laws**

Contractor must observe and comply with all Applicable Laws, in effect now or later and whether or not they appear in the Agreement, including those specifically referenced herein or in any of the Contract Documents. Contractor must pay all taxes and obtain all licenses, certificates and other authorizations required in connection with the performance of its obligations hereunder, and Contractor must require all subcontractors to do so. Contractor is fully responsible for ascertaining and complying with all agency and code requirements applicable to the Work.

By entering into this Contract with the City, Contractor certifies to the best of its knowledge and belief that it, its principals and any subcontractors used in the performance of this contract, meet City requirements and have not violated any City or sister agency policy, codes, state, federal, or local laws, rules or regulations and have not been subject to any debarment, suspension or other disciplinary action by any government agency. Additionally, if at any time the contractor becomes aware of such information, it must immediately disclose it to the City.

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**B. Civil Rights Act of 1964, Title VI, Compliance With Nondiscrimination Requirements**

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "contractor") agrees as follows:

**1. Compliance with Federal Nondiscrimination Requirements**

The contractor will comply with federal nondiscrimination laws, regulations, and authorities, as they may be amended from time to time (Acts and Regulations), which include:

- Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d et seq., 78 stat. 252), (prohibits discrimination on the basis of race, color, national origin);
- 49 CFR part 21 (Non-discrimination In Federally-Assisted Programs of The Department of Transportation—Effectuation of Title VI of The Civil Rights Act of 1964);
- Section 504 of the Rehabilitation Act of 1973, (29 U.S.C. § 794 et seq.), as amended, (prohibits discrimination on the basis of disability); and 49 CFR part 27;
- The Age Discrimination Act of 1975, as amended, (42 U.S.C. § 6101 et seq.), (prohibits discrimination on the basis of age);
- The Civil Rights Restoration Act of 1987, (PL 100-209), (Broadened the scope, coverage and applicability of Title VI of the Civil Rights Act of 1964, The Age Discrimination Act of 1975 and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms “programs or activities” to include all of the programs or activities of the Federal-aid recipients, sub-recipients and contractors, whether such programs or activities are Federally funded or not);
- Titles II and III of the Americans with Disabilities Act of 1990, which prohibit discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities (42 U.S.C. §§ 12131 – 12189) as implemented by Department of Transportation regulations at 49 CFR parts 37 and 38;
- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which ensures non-discrimination against minority populations by discouraging programs, policies, and activities with disproportionately high and adverse human health or environmental effects on minority and low-income populations;
- Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination under Title VI includes discrimination because of limited English proficiency (LEP). (70 Fed. Reg. at 74087 to 74100);

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- Title IX of the Education Amendments of 1972, as amended, prohibits discrimination because of sex in education programs or activities (20 U.S.C. 1681 et seq);
- The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 U.S.C. § 4601), (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects);
- Airport and Airway Improvement Act of 1982, (49 USC § 471, Section 47123), as amended, (prohibits discrimination based on race, religion, color, national origin, or sex in any activity carried out with a grant from the FAA).

**2. Non-discrimination**

The contractor, with regard to the work performed by it during the contract, will not discriminate on the grounds of race, color, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The contractor will not participate directly or indirectly in the discrimination prohibited by the Acts and the Regulations, including employment practices when the contract covers any activity, project, or program set forth in Appendix B of 49 CFR part 21 (Nondiscrimination in Federally-Assisted Programs of the US Department of Transportation).

**3. Solicitations for Subcontracts, Including Procurements of Materials and Equipment**

In all solicitations, either by competitive bidding, or negotiation made by the contractor for work to be performed under a subcontract, including procurements of materials, or leases of equipment, each potential subcontractor or supplier will be notified by the contractor of the contractor's obligations under this contract and the Acts and the Regulations relative to Non-discrimination on the grounds of race, color, or national origin.

**4. Information and Reports**

The contractor will provide all information and reports required by the Acts, the Regulations, and directives issued pursuant thereto and will permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the City or applicable federal agency (e.g. Federal Aviation Administration, Federal Highway Administration, Federal Transit Authority, Transportation Security Administration, Department of Housing and Urban Development, etc.) providing funding to the City department(s) on this contract to be pertinent to ascertain compliance with such Acts, Regulations, and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish the information, the contractor will so certify to the sponsor or the federal agency, as appropriate, and will set forth what efforts it has made to obtain the information.

**5. Sanctions for Noncompliance**

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In the event of a contractor's noncompliance with the Non-discrimination provisions of this contract, the City will impose such contract sanctions as it or the relevant federal funding agency may determine to be appropriate, including, but not limited to:

- A. Withholding payments to the contractor under the contract until the contractor complies; and/or
- B. Cancelling, terminating, or suspending a contract, in whole or in part.

**6. Incorporation of Provisions**

The contractor will include the provisions of above paragraphs 1, "Compliance with Federal Nondiscrimination Requirements" through 6 "Incorporation of Provisions" in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Acts, the Regulations and directives issued pursuant thereto. The contractor will take action with respect to any subcontract or procurement as the sponsor or the applicable federal agency may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, that if the contractor becomes involved in, or is threatened with litigation by a subcontractor, or supplier because of such direction, the contractor may request the sponsor to enter into any litigation to protect the interests of the sponsor. In addition, the contractor may request the United States to enter into the litigation to protect the interests of the United States.

**7. Other Non-Discrimination Requirements**

**A. ILLINOIS HUMAN RIGHTS ACT**

**1. GENERALLY**

Contractor must comply with the Illinois Human Rights Act, 775 ILCS 5/1-1 01 et seq., as amended and any rules and regulations promulgated in accordance therewith, including, but not limited to the Equal Employment Opportunity Clause, 44 Ill. Admin. Code 750 Appendix A, and as further described below.

Contractor must comply with the Public Works Employment Discrimination Act, 775 ILCS 10/0.01 et seq., as amended; and all other applicable state laws, rules, regulations and executive orders.

**2. STATE OF ILLINOIS DUTIES OF PUBLIC CONTRACTORS (44 ILL. ADMIN. CODE 750 ET SEQ.)**

Contractor shall comply with its obligations for public contractors under state law. These rules require that contractor examine all its job classifications to determine whether minorities or women are underutilized, and if underutilization exists in any job classification, the contractor must take appropriate affirmative action. 44 Ill. Admin. Code 750.110. Underutilization means "having fewer minority/female workers in a particular job classification than would reasonably be expected by their availability." 44 Ill. Admin. Code 750.120.

When required by the state rules, contractors shall develop and implement written affirmative action plans to overcome underutilization of

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minorities and/or women, including, at minimum, a description of the contractor's workforce analysis and goals and timetables for recruitment efforts, per 44 Ill. Admin. Code 750.130. Contractors shall also state in all solicitations that all applicants be afforded equal employment opportunity without discrimination ("because of race, color, religion, sex, marital status, national origin or ancestry, citizenship status, age, physical or mental disability unrelated to ability, sexual orientation, military status, order of protection status or unfavorable discharge from military service," 44 Ill. Admin. Code 750.150), and advise in writing their personnel, referral sources, and labor organizations of the contractor's obligations under state law and any affirmative action plan.

**3. STATE OF ILLINOIS EQUAL EMPLOYMENT OPPORTUNITY CLAUSE**

In the event of the Contractor's non-compliance with the provisions of this Equal Employment Opportunity Clause or the Illinois Human Rights Act, the Contractor may be declared ineligible for future contracts or subcontracts with the State of Illinois or any of its political subdivisions or municipal corporations, and the contract may be cancelled or voided in whole or in part, and other sanctions or penalties may be imposed or remedies invoked as provided by statute or regulation. During the performance of this contract, the Contractor agrees as follows:

A) That Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, marital status, order of protection status, national origin or ancestry, citizenship status, age, physical or mental disability unrelated to ability, military status or an unfavorable discharge from military service; and, further, that he or she will examine all job classifications to determine if minority persons or women are underutilized and will take appropriate affirmative action to rectify any underutilization.

B) That, if Contractor hires additional employees in order to perform this contract or any portion of this contract, Contractor will determine the availability (in accordance with 44 Ill. Admin. Code Part 750) of minorities and women in the areas from which Contractor may reasonably recruit and Contractor will hire for each job classification for which employees are hired in a way that minorities and women are not underutilized.

C) That, in all solicitations or advertisements for employees placed Contractor or on Contractor's behalf, Contractor will state that all applicants will be afforded equal opportunity without discrimination because of race, color, religion, sex, sexual orientation, marital status, order of protection status, national origin or ancestry, citizenship status, age, physical or mental disability unrelated to ability, military status or an unfavorable discharge from military service.

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D) That Contractor will send to each labor organization or representative of workers with which Contractor has or is bound by a collective bargaining or other agreement or understanding, a notice advising the labor organization or representative of the Contractor's obligations under the Illinois Human Rights Act and 44 Ill. Admin. Code Part 750. If any labor organization or representative fails or refuses to cooperate with the Contractor in Contractor's efforts to comply with the Act and this Part, the Contractor will promptly notify the Illinois Department of Human Rights and the City and will recruit employees from other sources when necessary to fulfill its obligations under the contract.

E) That Contractor will submit reports as required by 44 Ill. Admin. Code Part 750, furnish all relevant information as may from time to time be requested by the Illinois Department of Human Rights or the City, and in all respects comply with the Illinois Human Rights Act and 44 Ill. Admin. Code Part 750.

F) That Contractor will permit access to all relevant books, records, accounts and work sites by personnel of the City and the Illinois Department of Human Rights for purposes of investigation to ascertain compliance with the Illinois Human Rights Act and the Illinois Department of Human Rights's Rules and Regulations.

G) That Contractor will include verbatim or by reference the provisions of this clause in every subcontract awarded under which any portion of the contract obligations are undertaken or assumed, so that the provisions will be binding upon the subcontractor. In the same manner as with other provisions of this contract, the Contractor will be liable for compliance with applicable provisions of this clause by subcontractors; and further it will promptly notify the City and the Illinois Department of Human Rights in the event any subcontractor fails or refuses to comply with the provisions. In addition, the Contractor will not utilize any subcontractor declared by the Illinois Human Rights Commission to be ineligible for contracts or subcontracts with the State of Illinois or any of its political subdivisions or municipal corporations.

**B. CHICAGO HUMAN RIGHTS ORDINANCE MCC CH. 2-160**

Contractor must comply with the Chicago Human Rights Ordinance, MCC Ch. 2-160, Sect. 2-160-010 et seq., as amended; and all other applicable municipal code provisions, rules, regulations and executive orders.

Contractor must furnish or shall cause each of its Subcontractors to furnish such reports and information as requested by the Chicago Commission on Human Relations.

**C. CITY OF CHICAGO EQUAL EMPLOYMENT OPPORTUNITY GOALS  
MCC 2-92-390**

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The City has established by ordinance equal employment opportunity goals for construction projects with an estimated contract value of \$100,000 or more. The City's yearly goals, as a percentage of construction aggregated work hours per category of worker, are as follows:

- A) 25% by minority journeyworkers and apprentices;
- B) 7% by women journey workers and apprentices;
- C) 40% by minority laborers; and
- D) 10% by women laborers.

The Contractor is encouraged to meet or exceed these goals. Contractor shall also comply with the State of Illinois equal employment opportunity requirements, as set forth above.

**D. BUSINESS ENTERPRISES OWNED BY PEOPLE WITH DISABILITIES (BEPD)**

Pursuant to MCC 2-92-586, Contractor is strongly encouraged to subcontract with businesses certified as business enterprises owned or operated by people with disabilities ("BEPD") as defined in that section or MCC 2-92-337, and to use BEPD businesses as suppliers.

**C. Business Relationships with Elected Officials**

Pursuant to MCC Sect. 2-156-030(b), it is illegal for any elected official, or any person acting at the direction of such official, to contact either orally or in writing any other City official or employee with respect to any matter involving any person with whom the elected official has any business relationship that creates a financial interest on the part of the official, or the domestic partner or spouse of the official, or from whom or which he has derived any income or compensation during the preceding twelve months or from whom or which he reasonably expects to derive any income or compensation in the following twelve months. In addition, no elected official may participate in any discussion in any City Council committee hearing or in any City Council meeting or vote on any matter involving the person with whom the elected official has any business relationship that creates a financial interest on the part of the official, or the domestic partner or spouse of the official, or from whom or which he has derived any income or compensation during the preceding twelve months or from whom or which he reasonably expects to derive any income or compensation in the following twelve months. Violation of MCC Sect. 2-156-030 by any elected official with respect to this contract will be grounds for termination of this contract. The term financial interest is defined as set forth in MCC Chapter 2-156.

**D. Chicago Inspector**

As required by § 2-56 of the Municipal Code, it is the duty of every Contractor, all subcontractors, every applicant for certification of eligibility for a City contract or program, and all officers, directors, agents, partners and employees of any bidder, Contractor, subcontractor or such applicant to cooperate with the Inspector General in any investigation or hearing undertaken pursuant to Chapter 2-56 of the Municipal Code. Contractor must

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abide by all provisions of Chapter 2-56 of the Municipal Code. All subcontracts must inform subcontractors of the provision and require understanding and compliance.

**E. Governmental Ethics Ordinance**

As required by § 2-156-120 of the Municipal Code, no payment, gratuity or offer of employment shall be made in connection with any city contract, by or on behalf of a subcontractor to the prime contractor or higher-tier subcontractor or any person associated therewith, as an inducement for the award of a subcontract or order.

**F. False Statements**

False statements made in connection with this Agreement, including statements in, omissions from and failures to timely update the EDS, as well as in any other affidavits, statements or contract documents constitute a material breach of the Agreement (each a "Disclosure Misrepresentation"). Any such Disclosure Misrepresentation renders the Agreement voidable at the option of the City, notwithstanding any prior review or acceptance by the City of any materials containing a Disclosure Misrepresentation. In addition, the City may debar Contractor, assert any contract claims or seek other civil or criminal remedies as a result of a Disclosure Misrepresentation (including costs of replacing a terminated Contractor pursuant to Chicago Municipal Ordinance 1-21-010).

**G. Americans with Disabilities Act**

Contractor must perform all construction or alteration that Contractor undertakes in connection with this Contract in compliance with all federal, state and local laws and regulations regarding accessibility standards for disabled or environmentally limited persons including: Americans with Disabilities Act, P.L. 101-336 (1990) and the Uniform Federal Accessibility Standards ("UFAS") or the American with Disabilities Act ("ADA") and; the Illinois Environmental Barriers Act, 410 ILCS 25/1 *et seq.* (1991), and the regulations promulgated with them. If the above cited standards are inconsistent, Contractor must comply with the standard providing greater accessibility.

**H. MacBride Principles Ordinance**

If the Contractor conducts any business operations in Northern Ireland, it is hereby required that the contractor shall make all reasonable and good faith efforts to conduct any business operations in Northern Ireland in accordance with the MacBride Principles for Northern Ireland as defined in Illinois Public Act 85-1390 (1988 Ill. Law 3220).

**I. Prohibition on Certain Contributions – Mayoral Executive Order No. 2011-4**

During the Term of this Agreement, or during any period when an extension of this Agreement is being sought or negotiated, neither the Contractor nor any party with a beneficial interest or ownership interest in the Contractor of more than 7.5%, nor any subcontractor of the Contractor or any owner of a subcontractor with more than 7.5% interest in the subcontractor, nor any person with a familial or domestic relationship, including domestic partners, with any of the above may make themselves, may coerce or compel any employee to make or reimburse any employee for any amount, or otherwise



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participate in the solicitation of amounts contributed to the Mayor or to the Mayor's political fundraising committee.

Contractor's violation of Mayoral Executive Order No. 2011-4 constitutes an Event of Default for which no opportunity to cure will be granted. Such breach and default entitles the City to all remedies (including without limitation termination for default) under this Agreement, under Other Contract, at law and in equity.

**J. Licensing of General Contractors**

Important: The failure to comply with the provisions of Chapter 4-36 of the Municipal Code ("Chapter 4-36") may result in ineligibility to bid, inability to perform (or continue) to work, imposition of substantial fines, and/or in the City's revoking the Bidder's "general contractor" license. Information about Chapter 4-36 and application forms are available on the City's website, [www.cityofchicago.org](http://www.cityofchicago.org). A copy of the entire ordinance is provided in Book 2 of this contract.

As stated elsewhere in the specification, the City reserves the right to reject any or all bids.

Bidder must be in compliance with the requirements of Chapter 4-36, in the appropriate license class commensurate with the size of this project, if the license is required for the scope of work, **at the time Bidder submits its bid** and, if it is awarded a contract, throughout the term of the contract.

Contractor's failure to be licensed as a "general contractor" at all times throughout the term of the contract, if the license is required for the scope of work, is an **event of default** under the Agreement and the City may exercise any and all rights and remedies permitted under the contract, at law, or in equity.

**K. Buy America**

Contractor must ensure that, to the extent applicable, Work provided under this Contract complies with any Buy America provisions of the federal government and/or any similar provisions of the State or City.

**L. Steel Products**

Unless otherwise provided in the Steel Products Procurement Act, 30 ILCS 565/1 *et seq.*, steel products used or supplied in the performance of this contract or any subcontract to this contract must be manufactured or produced in the United States. Knowing violation of this law may result in the filing and prosecution of a complaint by the Attorney General of the State of Illinois and will subject violators to a fine of the greater of \$5,000 or the payment price received as a result of such violation.

**M. Wastes**

As required by § 11-4-1600(e) of the Municipal Code, violation of §§ 7-28-390 Dumping on public way; 7-28-440 Dumping on real estate without permit; 11-4-1410 Disposal in waters prohibited; 11-4-1420 Ballast tank, bilge tank or other discharge; 11-4-1450 Gas manufacturing residue; 11-4-1500 Treatment and disposal of solid or liquid waste; 11-4-1530 Compliance with rules and regulations required; 11-4-1550 Operational requirements;

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and 11-4-1560 Screening requirements by the Contractor or any subcontractor during the term of the Agreement, whether or not in the performance of the Agreement, constitutes an event of default. Non-compliance with these terms and conditions may be used by the City as grounds for the termination of the Agreement, and may further affect Contractor's eligibility for future contract awards. The opportunity to cure, if curable, will be granted only at the sole discretion of the Chief Procurement Officer. Such breach and default entitles the City to all remedies under the Contract, at law or in equity.

**N. Duty to Report Corrupt Activity**

Pursuant to MCC 2-156-018, it is the duty of the Contractor to report to the Inspector General, directly and without undue delay, any and all information concerning conduct which it knows to involve corrupt activity. "Corrupt activity" means any conduct set forth in Subparagraph (a)(1), (2) or (3) of Section 1-23-020 of the MCC. Knowing failure to make such a report will be an event of default under this Contract. Reports may be made to the Inspector General's toll free hotline, 866-IG-TIPLINE (866-448-4754).

**O. Equal Pay**

The Contractor will comply with all applicable provisions of the Equal Pay Act of 1963, 29 U.S.C. 206(d) and the Illinois Equal Pay Act of 2003, 820 ILCS 112/1, et seq., as amended, and all applicable related rules and regulations including but not limited to those set forth in 29 CFR Part 1620 and 56 Ill. Adm. Code Part 320.

**P. 2014 Hiring Plan Prohibitions**

1. The City is subject to the June 16, 2014 "City of Chicago Hiring Plan" (the "2014 City Hiring Plan") entered in *Shakman v. Democratic Organization of Cook County*, Case No 69 C 2145 (United States District Court for the Northern District of Illinois). Among other things, the 2014 City Hiring Plan prohibits the City from hiring persons as governmental employees in non-exempt positions on the basis of political reasons or factors.
2. Contractor is aware that City policy prohibits City employees from directing any individual to apply for a position with Contractor, either as an employee or as a subcontractor, and from directing Contractor to hire an individual as an employee or as a Subcontractor. Accordingly, Contractor must follow its own hiring and contracting procedures, without being influenced by City employees. Any and all personnel provided by Contractor under this Contract are employees or Subcontractors of Contractor, not employees of the City of Chicago. This Contract is not intended to and does not constitute, create, give rise to, or otherwise recognize an employer-employee relationship of any kind between the City and any personnel provided by Contractor.
3. Contractor will not condition, base, or knowingly prejudice or affect any term or aspect of the employment of any personnel provided under this Contract, or offer employment to any individual to provide services under this Contract, based upon or because of any political reason or factor, including, without limitation, any individual's political affiliation, membership in a political organization or party, political support or activity, political financial contributions, promises of such political support, activity or financial

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contributions, or such individual's political sponsorship or recommendation. For purposes of this Contract, a political organization or party is an identifiable group or entity that has as its primary purpose the support of or opposition to candidates for elected public office. Individual political activities are the activities of individual persons in support of or in opposition to political organizations or parties or candidates for elected public office.

4. In the event of any communication to Contractor by a City employee or City official in violation of paragraph 2 above, or advocating a violation of paragraph 3 above, Contractor will, as soon as is reasonably practicable, report such communication to the Hiring Oversight Section of the City's Office of the Inspector General, and also to the head of the relevant City Department utilizing services provided under this Contract. Contractor will also cooperate with any inquiries by OIG Hiring Oversight.

**Q. Contractor's liability – Safety barriers and lights**

Whenever any work or improvement shall require the digging up, use, or occupancy of any public way or other public place in the city, substantial covenants requiring such Contractor to put up and maintain such barriers and lights during the night time as will effectually prevent the happening of any accident for which the City might be liable in consequence of such digging up, use, or occupancy of any public way or other public place, shall be inserted in the contract and also such other covenants and conditions as experience may prove necessary to save the City harmless from damages. The chief procurement officer shall also provide in such contract that the party contracting with the City shall be liable for all damages occasioned by the digging up, use, or occupancy of such public way or other public place, or which may result therefrom.

**R. Electronic Mail Communication**

Electronic mail communication between Contractor and City employees must relate only to business matters between Contractor and the City.

**S. Disclosure of Ownership Interest in Entities (Electronic Disclosure Statement)**

The Contractor understands and will abide by the terms of Section 2-154-020 of the Municipal Code of Chicago regarding disclosure of ownership interest in entities.

**T. EDS Update Obligation**

Contractor is required to notify the City and update the EDS whenever there is a change in circumstances that makes any certification or information provided in an EDS inaccurate, obsolete or misleading. Failure to notify the City and update the EDS is grounds for declaring the Contractor in default, termination of the Contract for default, and declaring that the Contractor is ineligible for future contracts.

**U. Wheel Tax (City Sticker)**

Contractor must pay all Wheel Tax required by Chapter 3-56 of the MCC, as amended from time to time. Contractor should take particular notice of MCC 3-56-020 and MCC 3-56-125 which relate to payment of the tax for vehicles that are used on City streets or on City property by City residents. For the purposes of Chapter 3-56, any business that owns, leases or otherwise controls a place of business within the City wherein motor vehicles or

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semi-trailers are stored, repaired, serviced, or loaded or unloaded in connection with the business is also considered to be a City resident.

**V. Safety Enhancing Vehicle Equipment Contracting (MCC 2-92-597)**

**1. Definitions**

For purposes of this section, the following definitions shall apply:

"Commissioner of 2FM" means the City's Commissioner of Fleet and Facility Management.

"Conventional cab" means a large vehicle configuration in which the driver is behind the front axle and the engine is in front of the axle under a discrete hood.

"Convex mirrors" means wide-angle mirrors that enable the operator of a large vehicle to see along the left and right sides of the vehicle by allowing a view of all points on an imaginary horizontal line which is: (i) three feet above the road; and (ii) one foot outside the plane defined by the outer face of the wheels.

"Crossover mirror" means a fender-mounted or hood-mounted mirror that enables the operator of a large vehicle with a conventional cab to see: (i) any person or object at least three feet tall passing one foot in front of the vehicle; and (ii) the area from the front bumper to where direct vision is possible.

"Large vehicle" means any motor vehicle with a gross vehicle weight rating exceeding 10,000 pounds, except an ambulance, fire apparatus, low-speed vehicle with maximum speed under 15 mph, or agricultural tractor.

"Lateral protective device" or "vehicle side guard" means an apparatus installed between the front and rear wheels of a large vehicle that is designed to prevent road users from falling underneath the vehicle.

"Subcontractor" means any person that enters into any tier subcontract to perform work on this Contract.

"Volpe side guard standard" means the United States Department of Transportation's Volpe side guard standard published and referred to as US DOT Standard DOT-VNTSC-OSTR-16-05, as amended; or a functionally equivalent national vehicle side guard standard, as determined by the Commissioner of 2FM.

**2. Safety Enhancing Requirements**

Contractor and any Subcontractor must comply with MCC 2-92-597. Contractor and any Subcontractor must retrofit large vehicles used in the performance of the contract, in accordance with the Phase-In Period provided below, with:

- (A) Lateral protective devices. This requirement shall be considered satisfied if: (i) the vehicle is equipped with vehicle side guards in accordance with the requirements of the Volpe side guard standard; or (ii) the vehicle is so designed or equipped at the side that, by virtue of its shape and characteristics, its component parts can be regarded as replacing or functioning as vehicle side guards in accordance with the Volpe side guard standard; or (iii) the vehicle cannot be retrofitted with lateral protective devices as attested by the contractor or the subcontractor in a

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statement accompanied by certification from two manufacturers of such devices.

- (B) Left and right side convex mirrors; and
- (C) At least one crossover mirror on the passenger side.

**3. Phase-In Period**

Except when a Contractor or a Subcontractor is granted a waiver pursuant to MCC 2-92-597(g), the Safety Enhancing Requirements set forth above shall apply to:

- (A) one-fourth of a Contractor's or a Subcontractor's large vehicles used in the performance of the Contract on or after July 1, 2018 but before July 1, 2019;
- (B) one-half of a Contractor's or a Subcontractor's large vehicles used in the performance of the Contract on or after July 1, 2019 but before July 1, 2020;
- (C) three-fourths of a Contractor's or a Subcontractor's large vehicles used in the performance of the Contract on or after July 1, 2020 but before July 1, 2021;
- (D) all of a Contractor's or a Subcontractor's large vehicles used in the performance of the Contract on or after July 1, 2021.

**4. Compliance**

Contractor shall submit a written compliance plan to the Commissioner of 2FM with respect to compliance with MCC 2-92-597 within 14 days following the notice to proceed or the placing of the first order under the contract, as applicable.

Every twelve-month period following the notice to proceed or the placing of the first order under the contract, as applicable, or when requested by the Commissioner of 2FM, the contractor must submit to the Commissioner of 2FM, in a form and manner provided by the CPO, a report that includes the following:

- (A) the number of large vehicles used in the performance of the Contract by the Contractor and any Subcontractor;
- (B) the number of large vehicles used in the performance of the Contract by the Contractor and any Subcontractor that are retrofitted with safety enhancing equipment as required as specified above and MCC 2-92-597(b);
- (C) one or more photographs of each large vehicle used in the performance of the Contract by the Contractor and any Subcontractor that is retrofitted with required safety enhancing equipment as specified above and set forth in MCC 2-92-597(b). The photographs must show the large vehicle's license plate number with the safety enhancing equipment fitted on the vehicle; and

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- (D) a certification that the Contractor and any Subcontractor in the contract have met the requirements MCC 2-92-597 and the terms of the contract specified pursuant to that section.

**5. Time Extension and Annual Waiver Requests**

Upon a written request, accompanied by a compliance plan, of a Contractor or Subcontractor of a Contract entered on or before December 31, 2018, the CPO, in consultation with the Department, may grant a time extension of not more than six months for compliance with the requirements of MCC 2-92-597 with regard to the Contract.

Contractor and any Subcontractors may apply to the CPO for an annual waiver from the requirements of MCC 2-92-597. See MCC 2-92-597(g).

**6. Costs**

All costs that the contractor or any subcontractor may incur to comply with contract requirements imposed pursuant to this section are incidental to the overall contract. No additional time or monies shall be granted to the contractor for compliance with these requirements.

**7. Enforcement**

The CPO or Commissioner is authorized to inspect or to have inspected any large vehicle used in the performance of this Contract in order to ensure compliance with Safety Enhancing Equipment requirements and MCC 2-92-597.

In addition to other remedies provided by law or specified in the Contract, any person who knowingly makes a false statement of material fact to any city agency with respect to compliance with any contract requirements specified pursuant to MCC 2-92-597 or rules promulgated thereunder shall be fined not less than \$1,000.00 nor more than \$5,000.00 for each such false statement. For purposes of MCC 2-92-597, a person knowingly makes a false statement of material fact when such person makes a false statement of material fact as provided in subsection (d) of Section 1-21-010.

**W. Policy Prohibiting Sexual Harassment (Section 2-92-612 of the Chicago Municipal Code)**

For purposes of this section, the following definitions shall apply:

“Contract” means any contract, purchase order, construction project, or other agreement (other than a delegate agency contract or lease of real property or collective bargaining agreement) awarded by the city and whose cost is to be paid from funds belonging to or administered by the city.

“Contractor” means the person to whom a contract is awarded.

“Sexual harassment” means any unwelcome sexual advances or requests for sexual favors or conduct of a sexual nature when (i) submission to such conduct is made either explicitly or implicitly a term or condition of an individual's employment; or (ii) submission to or rejection of such conduct by an individual is used as the basis for any employment decision affecting the individual; or (iii) such conduct has the purpose or effect of

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substantially interfering with an individual's work performance or creating an intimidating, hostile or offensive working environment.

“Subcontractor” means any person that enters into a contract with a contractor to perform work on a contract.

As a condition of contract award, Contractor shall, as prescribed by the Chief Procurement Officer, attest by affidavit that Contractor has a written policy prohibiting sexual harassment that shall include, at a minimum, the following information: (i) the illegality of sexual harassment; (ii) the definition of sexual harassment; and (iii) the legal recourse available for victims of sexual harassment. Contractor’s affidavit is included in Book 2 in the form titled “Sexual Harassment Policy Affidavit”.

Contractor’s failure to have a written policy prohibiting sexual harassment as provided above shall constitute an event of default. In the event of default, the Chief Procurement Officer shall notify Contractor of such noncompliance and may, as appropriate: (i) issue Contractor an opportunity to cure consistent with the default provisions in this Agreement; (ii) terminate the contract; or (iii) take any other action consistent with the default provisions in the contract. This section shall not be construed to prohibit the City from prosecuting any person who knowingly makes a false statement of material fact to the city pursuant to Chapter 1-21 of this Code, or from availing itself of any other remedies under contract or law.

**X. Policy on Non-Disclosure of Salary History (Section 2-92-385 of the Chicago Municipal Code)**

For purposes of this section, the following definitions shall apply:

“Contract” means any Agreement or transaction pursuant to which a contractor (i) receives City funds in consideration for services, work or goods provided or rendered, including contracts for legal or other professional services, or (ii) pays the City money in consideration for a license, grant or concession allowing it to conduct a business on City premises, and includes any contracts not awarded or processed by the Department of Procurement Services.

“Contractor” means the person to whom a contract is awarded.

As a condition of contract award, Contractor shall, as prescribed by the Chief Procurement Officer, attest by affidavit that Contractor has a policy that conforms to the following requirements:

- (1) Contractor shall not screen job applicants based on their wage or salary history, including by requiring that an applicant’s prior wages, including benefits or other compensation, satisfy minimum or maximum criteria; or by requesting or requiring an applicant to disclose prior wages or salary, either (i) as a condition of being interviewed, (ii) as a condition of continuing to be considered for an offer of employment, (iii) as a condition of an offer of employment or an offer of compensation, or (iv) as a condition of employment

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- (2) Contractor shall not seek an applicant's wage or salary history, including benefits or other compensation, from any current or former employer.

Contractor's affidavit is included in Appendix C to Contractor's Economic Disclosure Statement.

If Contractor violates the above requirements, Contractor may be deemed ineligible to contract with the City; any contract, extension, or renewal thereof awarded in violation of the above requirements may be voidable at the option of the City. Provided, however, that upon a finding of a violation by Contractor, no contract shall be voided, terminated, or revoked without consideration by the Chief Procurement Officer of such action's impact on the Contractor's MBE or WBE subcontractors.

**Y. Deemed Inclusion**

Provisions required by Applicable Law to be inserted in the Agreement are deemed inserted in the Agreement whether or not they appear in the Agreement or, upon application by either party, the Agreement will be amended to make the insertion; however, in no event will the failure to insert the provisions before or after the Agreement is signed prevent its enforcement.

**XXII. STATUTORY ADJUSTMENTS TO THE BID**

**A. City-based Businesses (Chicago Business Preference)**

For purposes of this section only, the following definitions shall apply:

"City-based business" means a person who (i) conducts meaningful day-to-day business operations at a facility located within the city and reports such facility to the Internal Revenue Service as a place of employment for the majority of its regular, full-time workforce; (ii) holds all appropriate city licenses; and (iii) is subject to applicable city taxes. These taxes may include the City Wheel Tax as provided at Chapter 3-56 of the MCC.

"City residents," as defined in Section 2-92-330 of the MCC, means persons domiciled within the city.

"Contract" means any contract, purchase order or agreement awarded by the city and whose cost is to be paid from funds belonging to or administered by the city; provided that the term "contract" does not include: (i) a delegate agency contract; (ii) a lease of real property; or (iii) a collective bargaining agreement.

"Prime Contractor" means a person who is a city-based business and the primary contractor on a contract. A "Prime Contractor" does not include any subcontractors.

"City resident employee" means an individual who resides in the City and who is employed by a prime contractor in a permanent, full-time employment and whose work is not counted towards the work hours required by Section 2-92-330.

"Socio-economically disadvantaged area" means an area within the City that meets the criteria for designation as a socio-economically disadvantaged area as set forth in rules



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promulgated by the City's Commissioner of Planning and Development pursuant to Section 2-92-390.

If these Bid Documents pertain to a Contract having an estimated contract value of \$100,000 or more, the CPO may apply a bid preference ("City Based Business Preference") of: (i) four percent of the contract base bid; or (ii) six percent of the contract base bid, if the majority of such prime contractor's employees are city resident employees; or (iii) eight percent of the contract base bid, if such prime contractor is eligible for an incentive under subsection (ii) and the majority of such contractor's city resident employees are residents of a socio-economically disadvantaged area, in accordance with section 2-92-412 of the MCC, to any qualified bidder that is a Prime Contractor. If the CPO has determined that a City Based Business Preference may be applied, it will be indicated on the cover page of the Bid Documents.

If a City Based Business Preference is applied to a Bidder's Bid, the Local Goods Incentive pursuant to Section 2-92-410 of the MCC will not be applied to that same Bid.

Bidders desiring to take advantage of the City Based Business Preference must submit documentation with their Bid that Bidder is a City-Based Business.

**B. Locally Manufactured Goods**

For purposes of this section only, the following definitions shall apply:

"City-based manufacturer" means a person who: (i) holds any appropriate city license; (ii) is subject to applicable city taxes; and (iii) owns, operates, or leases a manufacturing facility within the city.

"Contract for goods" means any contract, purchase order or agreement for the purchase of goods awarded by the city and whose cost is to be paid from funds belonging to or administered by the city; provided that a "contract" does not include: (i) a delegate agency contract; (ii) a lease of real property; (iii) a collective bargaining agreement; or (iv) a construction contract as defined in Section 2-92-670.

"Locally manufactured goods" means goods whose value, either in whole or in part, is derived from growing, producing, processing, assembling, or manufacturing activities that occur within a city-based manufacturer's facility located within the city.

"Manufacture" means to produce tangible goods for use from raw or prepared materials by giving the materials new forms, qualities, properties or combinations, whether by hand-labor or machines.

If these Bid Documents pertain to a Contract for Goods having an estimated contract value of \$100,000 or more, the CPO may allocate a bid incentive ("Local Goods Incentive") in accordance with section 2-92-410 of the MCC. If the CPO has determined that a Local Goods Incentive will be allocated, it will be indicated on the cover page of the Bid Documents and shall consist of the following:

Total Dollar Value of Locally Manufactured Goods Provided in the Contract	Bid Incentive
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25% to 49%	1% of the contract base bid
50% to 74%	1.5% of the contract base bid
75% or greater	2% of the contract base bid

Bidders desiring to take advantage of the Local Goods Incentive, if allocated, must submit documentation with their bid that the goods to be provided will be locally manufactured goods.

Upon completion of the work, any contractor that has failed to supply the required percentage of locally manufactured goods for which the Local Goods Incentive was allocated shall be fined in an amount equal to three times the amount of the difference between the bid incentive allocated and the bid incentive that would have been allocated to that contractor for the amount of locally manufactured goods actually supplied under the contract, unless the contractor can demonstrate that due to circumstances beyond the contractor's control, the contractor for good cause was unable to provide the required percentage of locally manufactured goods.

**C. Alternatively Powered Vehicles Bid Incentive**

**1. Definitions for Alternatively Powered Vehicles Bid Incentive**

For purposes of this Section XXII.C only, the following definitions apply:

"Alternative fuel" has the meaning ascribed to that term in the Energy Policy Act of 1992, and the rules promulgated by the United States Department of Energy pursuant to that Act. The term "alternative fuel" includes but is not limited to natural gas, liquefied petroleum gas, hydrogen, ethanol E85 or electricity;

"Alternatively powered vehicle" means a vehicle that:

(i) is fueled by alternative fuel; provided that if a vehicle is capable of being powered by alternative fuel and traditional petroleum-based gasoline or petroleum-based diesel fuel, the vehicle must be powered by the alternative fuel for no less than 80% BTUs consumed during the three months prior to the submission of the bid; or

(ii) is commonly referred to as a hybrid vehicle that is capable of being powered by a combination of any fuel and an alternative power source and the alternative power source includes an energy storage system to store generated or accumulated energy which substantially reduces the fuel use and emissions when compared to a standard vehicle of the same age, type and size; or

(iii) is fueled by a biodiesel blend; provided that the vehicle is powered by the biodiesel blend for no less than 80% of the gallons consumed during the three months prior to the submission of the bid; or

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(iv) is fueled by traditional petroleum-based gasoline or petroleum-based diesel fuel, but powered by an engine substantially more efficiently designed than a standard vehicle of the same age, type and size; provided that the vehicle is rated by the United States Environmental Protection Agency in the top 5% for fuel efficiency for similar vehicles.

An "alternatively powered vehicle" does not include any vehicle which is: (i) primarily used in a warehouse or similar type of enclosed structure; (ii) required to use, or given credit for using, alternative fuel by any federal, state or local law; or (iii) subject to Section 2-92-595 of the Municipal Code of Chicago.

"Bid incentive" means an amount deducted, for bid evaluation purposes only, from the contract base bid in order to calculate the bid price to be used to evaluate the bid on a competitively bid contract.

"Biodiesel blend" has the meaning ascribed to that term in Section 2-92-595 of the Municipal Code of Chicago.

"Construction project" has the meaning ascribed to that term in Section 2-92-335 of the Municipal Code of Chicago.

"Contract" means any contract, purchase order, construction project, or other agreement (other than a delegate agency contract or lease of real property or collective bargaining agreement) awarded by the city and whose cost is to be paid from funds belonging to or administered by the city.

"Contract base bid" means the total dollar amount a contractor bids on a contract without factoring any bid incentive or percentage reductions in the bid amount.

"Eligible business" means a business located within the counties of Cook, DuPage, Kane, Lake, McHenry or Will in the State of Illinois (the "Six County Region"), and as to which: (1) a majority of the business' fleet is located and used within the Six County Region; and (2) a majority of those vehicles located and used within the Six County Region are alternatively powered vehicles.

"Fleet" means 10 or more vehicles that are owned, operated, leased or otherwise controlled by a business.

"Vehicle" means every device powered by a motor or engine and by, upon, or in which any person or property is or may be transported or drawn upon a street or highway, except a "vehicle" shall not include motorized wheelchairs, golf carts, neighborhood electric vehicles, as that term is defined in Section 9-4-010 of the Municipal Code of Chicago, devices moved solely by human power, devices used exclusively upon stationary rails or tracks, or snowmobiles, as defined in the Snowmobile Registration and Safety Act of Illinois.

**2. Eligibility for Alternatively Powered Vehicles Bid Incentive**

- a. Unless otherwise prohibited by any federal, state or local law, for any contract having an estimated contract value of \$100,000 or more advertised, or if not advertised awarded, the chief procurement officer may allocate a bid incentive of 1/2% of the contract base price to a qualified bidder when the qualified bidder is an eligible business. If the CPO has determined that an

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Alternatively Powered Vehicles Preference may be applied, it will be indicated on the cover page of the Bid Documents.

- b. The bid incentive is used only to calculate an amount to be used in evaluating the bid to determine the low bidder, and it does not affect the contract price.
- c. For purposes of this section the total dollar value of a construction project contract includes both materials and labor.
- d. As a condition of being awarded the bid incentive, the eligible business shall continue to meet the definition of an eligible business during the term of the contract.
- e. The contractor shall maintain adequate records necessary to monitor compliance with this section and shall submit such reports as required by the chief procurement officer. Full access to the contractor's and subcontractors' records shall be granted to the chief procurement officer, the commissioner of the supervising department, the inspector general, or any duly authorized representative thereof. The contractor and subcontractors shall maintain all relevant records for a period of no less than seven years after final acceptance of the work.
- f. A bidder desiring to receive an incentive pursuant to this section shall include with its bid submission the Affidavit of Eligible Business for Bid Incentive for Alternative Powered Vehicles, which affirms that the bidder satisfies all pertinent requirements as an eligible business.
- g. Upon completion of the work, any eligible business that receives a bid preference but that fails to meet the definition as an eligible business during the term of the contract shall be fined in an amount equal to three times the amount of the bid incentive awarded.
- h. This section shall not apply to any contract to the extent that the requirements imposed by this section are inconsistent with procedures or standards required by any law or regulation of the United States or the State of Illinois to the extent such inconsistency is not permitted under law or the home rule powers of the city.

**D. Bid Incentives for Veteran-Owned Small Local Businesses and Eligible Joint Ventures**

**(1) Definitions**

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For purposes of this section only, the following definitions shall apply:

"Bid incentive" means an amount deducted, for bid evaluation purposes only, from the contract base bid in order to calculate the bid price to be used to evaluate the bid on a competitively bid contract.

"Contract base bid" means the total dollar amount a contractor bids on a contract without factoring any bid incentive or percentage reductions to the bid amount.

"Eligible joint venture" means an association of one or more small local business enterprises in combination with one or more veteran-owned business enterprises, proposing to perform as a single for-profit business enterprise, in which each joint venture partner contributes property, capital, efforts, skill and knowledge. Joint ventures must have an agreement in writing specifying the terms and conditions of the relationship between the partners and their respective roles in the contract.

"Local business enterprise" means a business entity located within the counties of Cook, DuPage, Kane, Lake, McHenry or Will in the State of Illinois (the "Six County Region"), which has the majority of its regular, full time work force located within the Six County Region.

"Owned" means having all of the customary incidents of ownership, including the right of disposition, and sharing in all of the risks, responsibilities and profits commensurate with the degree of ownership.

"Prime contractor" means a person who is the primary contractor on a contract.

"Small business enterprise" means: (i) for a construction business enterprise, a small business enterprise, as the term is defined in MCC 2-92-670; or (ii) for a non-construction business enterprise, a business enterprise which is not an established business, as the term is defined in MCC 2-92-640.

"Small local business enterprise" ("SBE") means a local business enterprise which is also a small business enterprise.

"Veteran-owned business enterprise" means an enterprise which: (1) is at least 51 percent owned by one or more veterans, or in the case of a publicly held corporation, at least 51 percent of all classes of the stock of which is owned by one or more veterans, whose management, policies, major decisions and daily business operations are independently managed and controlled by one or more veterans; and (2) has been: (i) certified by the City as a veteran-owned small local business pursuant to MCC 2-92-930; (ii) certified by the County of Cook as a veteran business enterprise; (iii) certified by the State of Illinois as a qualified service-disabled veteran-owned small business or a qualified veteran-owned small business pursuant to 30 ILCS 500/45-57; or (iv) verified and approved by the United States Department of Veterans Affairs as a service-disabled veteran-owned small business or a veteran-owned small business.

"Veteran-owned small local business" ("VBE") means a business that is both a veteran-owned business enterprise and a small local business enterprise, and which has been certified by the City as a veteran-owned small local business pursuant to MCC 2-92-930.

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"Veteran" means a person who has served in the United States armed forces and was discharged or separated under honorable conditions.

**(2) Bid Incentive**

Unless otherwise prohibited by any federal, state or local law, the CPO shall allocate a bid incentive of 5% of the contract base price, in accordance with section 2-92-950 of the MCC, to any qualified bidder that is a veteran-owned small local business or an eligible joint venture.

The bid incentive is used only to calculate an amount to be used in evaluating the bid to determine the low bidder, and it does not affect the contract price.

Bidders desiring to receive this incentive must submit an affidavit and other supporting documents demonstrating that the bidder satisfies all pertinent requirements as a veteran-owned small local business or an eligible joint venture. Bidders should consult the DPS regulations regarding this incentive and be prepared to comply with the self-performance requirements, which in some circumstances affect the calculation of MBE and WBE participation toward contract goals when a small business enterprise involved in receiving this incentive is also a certified MBE or WBE.

As a condition of being awarded the bid incentive, the veteran-owned small local business or eligible joint venture shall continue to meet the definition of a veteran-owned small local business or an eligible joint venture. If a contract is awarded to the veteran-owned small local business or eligible joint venture, upon completion of the work, any veteran-owned small local business or eligible joint venture that receives a bid preference but fails to meet the definition of a veteran-owned small local business or eligible joint venture during the term of the contract for which the bid incentive was awarded shall be fined in an amount equal to three times the amount of the bid incentive awarded.

The contractor shall maintain adequate records necessary to ensure compliance with this section and shall submit such reports as required by the chief procurement officer. Full access to the contractor's and subcontractors' records shall be granted to the chief procurement officer, the commissioner of the supervising department, the inspector general, or any duly authorized representative thereof. The contractor and subcontractor shall maintain all relevant records a period that is the longer of seven years or as after final acceptance of the work in accordance with the Local Records Act.

**E. Bid Incentive for Utilization of Veteran-Owned Subcontractors**

"Bid incentive" means an amount deducted, for bid evaluation purposes only, from the contract base bid in order to calculate the bid price to be used to evaluate the bid on a competitively bid contract.

"Construction project" means any project to be paid for by the city, but which is not funded in whole or part by any federal or state funds, to construct, remodel or reconstruct any public works, public buildings, public structures, roadways, parkways,

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bridges, parking facilities or parks, or any portion of any of the same, belonging to the city within its geographical boundaries as they exist or shall exist in the future.

"Contract base bid" means the total dollar amount a contractor bids on a contract without factoring any bid incentive or percentage reductions to the bid amount.

"Prime contractor" means a person who is the primary contractor on a contract.

"Veteran-owned subcontractor" means a subcontractor that: (i) is a veteran-owned small local business, as the term is defined in MCC Section 2-92-920; (ii) holds all appropriate city licenses; and (iii) is subject to applicable city taxes; provided that a veteran-owned subcontractor shall not include the prime contractor.

Pursuant to MCC Section 2-92-940, unless otherwise prohibited by any federal, state or local law, the CPO shall allocate to any qualified bidder on any construction project the following bid incentive for utilization of veteran-owned subcontractors in the performance of the contract.

Total Dollar Value of Work Performed by Veteran-Owned Subcontractors as a Percentage of the Total Contract Value	Bid Incentive
1 to 16%	0.5% of the contract base bid
17 to 32%	1% of the contract base bid
33 to 49%	1.5% of the contract base bid
50% or greater	2% of the contract base bid

If a veteran-owned subcontractor subcontracts part of the work to another contractor, only the value of work performed by the veteran-owned subcontractor's employees shall count towards the bid incentive, unless the sub-subcontractor is a veteran-owned subcontractor.

The bid incentive is used only to calculate an amount to be used in evaluating the bid to determine the low bidder, and it does not affect the contract price.

A contractor shall not be eligible to receive in one contract bid, the bid incentive allocated pursuant to this Section 2-92-940 and that allocated pursuant to Section 2-92-410 (bid incentive for certain city-based manufacturers). This bid incentive may not be combined with any other procurement set-aside benefit for a veteran-owned business enterprise under the MCC.

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If a veteran-owned subcontractor is also an MBE/WBE, any participation on the contract that is utilized toward MBE/WBE goals on the prime contractor's compliance plan shall not count toward the total dollar value of work performed by veteran-owned subcontractors for purposes of this Bid Incentive.

The prime contractor shall maintain records adequate to monitor compliance with this section and shall submit such reports as required by the CPO. Full access to the prime contractor's records shall be granted to the CPO, the commissioner of the supervising department, the inspector general, or any duly authorized representative thereof. The prime contractor and subcontractors shall maintain all relevant records for at least three years after the expiration of the contract.

The CPO may require, at the time of submission of a bid or at any time during the term of the contract, that the bidder or veteran-owned subcontractor submit an affidavit and other supporting documents demonstrating that a subcontractor is a veteran-owned subcontractor.

Upon completion of the work, any prime contractor that has failed to retain the percentage of veteran-owned subcontracts for which a bid incentive was taken into consideration in awarding of a contract shall be fined an amount equal to three times the amount of the bid incentive allocated, unless the prime contractor can demonstrate that due to circumstances beyond the prime contractor's control, the prime contractor for good cause was unable to retain the percentage of veteran-owned subcontractors throughout the duration of the contract period.

**F. Graduates of Chicago Schools Apprentices Utilization**

(a) For purposes of this section the following definitions apply:

"Apprentice" means any person who (1) is sponsored into an apprenticeship training program by a contractor that is authorized by a union to sponsor apprentices; and (2) has graduated from a Chicago Public Schools high school or is enrolled in, or has graduated from, a construction technology training program administered by the City Colleges of Chicago. The union's apprenticeship training program must be registered with the United States Department of Labor, or approved or recognized by the State of Illinois.

"Bid incentive" means an amount deducted, for bid evaluation purposes only, from the contract base bid in order to calculate the bid price to be used to evaluate the bid on a competitively bid construction project.

"Construction project" means any project to be paid for by-D.P.S., but which is not funded in whole or part by any federal funds, to construct, remodel or reconstruct any public works, public buildings, public structures, roadways, parkways, bridges, parking



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facilities or parks, or any portion of any of the same, belonging to the City within its geographical boundaries as they exist or shall exist in the future.

“Contract base bid” means the total dollar amount a contractor bids on a construction project without factoring any bid incentive or percentage reductions to the bid amount.

“Earned credit” means the amount of the bid incentive allocated to a contractor upon completion of a construction project in which the contractor met or exceeded his or her goals for the utilization of apprentices in performance of the total labor hours performed under the contract.

“Earned credit certificate” means a certificate issued by the chief procurement officer evidencing the amount of earned credit a contractor has been awarded.

“Labor hours” means the total hours of workers receiving an hourly wage who are directly employed at the work site. “Labor hours” shall include hours performed by workers employed by the contractor and all subcontractors working at the work site. “Labor hours” shall not include hours worked by non-working foremen, superintendents, owners and workers who are not subject to prevailing wage requirements.

(b) (1) For any construction project advertised having an estimated contract value of \$100,000.00 or more, and where not otherwise prohibited by federal, state or local law, the chief procurement officer shall allocate to any qualified bidder the following bid incentive for utilization of apprentices in performance of the total labor hours performed under contract.

Percentage of Total Labor Hours Performed By Apprentices	Bid Incentive
5 to 10%	1/2% of bid price
11 to 15%	1% of bid price

The bid incentive shall be calculated and applied in accordance with subsection (b)(2). The bid incentive is used only to calculate an amount to be used in evaluating the bid. The bid incentive does not affect the contract price.

(2) As part of the contract close-out procedure, if the chief procurement officer determines that the contractor has successfully met its apprentice utilization goals, the chief procurement officer shall issue an earned credit certificate that evidences the amount of earned credits allocated to the contractor. The contractor may apply the earned credits as the bid incentive for any future construction project contract bid of equal or greater dollar value.

The earned credit certificate is valid for three years from the date of issuance and shall not be applied towards any future contract bid after the expiration of that period.

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The contractor may apply the earned credit certificate on multiple future construction project contract bids during the three-year period in which the certificate is valid, but may only receive one bid incentive for bid evaluation purposes on one construction project contract award. If the contractor applies the earned credit certificate on multiple construction project bids and is the lowest responsive and responsible bidder on more than one construction project bid, the earned credit certificate shall be applied to the construction project first to be advertised by D.P.S., or if multiple construction project bids were advertised on the same date, the earned credit certificate shall be applied only to the construction project with the greatest dollar value.

(c) The contractor shall maintain accurate and detailed books and records necessary to monitor compliance with this section and shall submit such reports as required by the chief procurement officer, or the commissioner of the supervising department.

Full access to the contractor's and subcontractors' records shall be granted to the chief procurement officer, the commissioner of the supervising department, or any duly authorized representative thereof. The contractor and subcontractors shall maintain all relevant records for a period of at least three years after final acceptance of the work.

(d) The chief procurement officer is authorized to adopt, promulgate and enforce reasonable rules pertaining to the administration and enforcement of this section.

**G. Ex-Offender Apprentices Utilization**

(a) For purposes of this section the following definitions apply:

“Apprentice” means any person who is: (1) sponsored into an apprenticeship training program by a contractor that is authorized by a union to sponsor apprentices; (2) participating in a workforce development program of a delegate agency that receives funding from the Department Of Family and Support Services; and (3) an ex-offender. The union's apprenticeship training program must be registered with the United States Department of Labor, or approved or recognized by the State of Illinois. For purposes of this definition, “participating in” means the duration of the pertinent contract or one year, whichever is less.

“Bid incentive” means an amount deducted, for bid evaluation purposes only, from the contract base bid in order to calculate the bid price to be used to evaluate the bid on a competitively bid construction project.

“Construction project” means any project to be paid for by the City, but which is not funded in whole or part by any federal or state funds, to construct, remodel or reconstruct any public works, public buildings, public structures, roadways, parkways, bridges, parking facilities or parks, or any portion of any of the same, belonging to the City within its geographical boundaries as they exist or shall exist in the future.

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“Contract base bid” means the total dollar amount a contractor bids on a construction project without factoring any bid incentive or percentage reductions to the bid amount.

“Earned credit” means the amount of the bid incentive allocated to a contractor upon completion of a construction project in which the contractor met or exceeded his or her goals for the utilization of apprentices in performance of the total labor hours performed under the contract.

“Earned credit certificate” means a certificate issued by the chief procurement officer evidencing the amount of earned credit a contractor has been awarded.

“Ex-offender” means a resident of the City of Chicago who has been convicted of an imprisonable offense under the Illinois Criminal Code or another state's penal statute.

“Labor hours” means the total hours of workers receiving an hourly wage who are directly employed at the work site. “Labor hours” shall include hours performed by workers employed by the contractor and all subcontractors working at the work site. “Labor hours” shall not include hours worked by non-working foremen, superintendents, owners and workers who are not subject to prevailing wage requirements.

(b)(1) For any construction project advertised after the effective date of this section having an estimated contract value of \$100,000.00 or more, and where not otherwise prohibited by federal, state or local law, the chief procurement officer shall allocate to any qualified bidder the following bid incentive for utilization of apprentices in performance of the total labor hours performed under the contract.

(2) The Chief Procurement Officer is authorized to limit or preclude the use of apprentices for a particular contract if she determines, following consultation with the Commissioner of Family and Support Services, that the nature of the underlying offense raises concerns of suitability for that contract.

Percentage of Total Labor Hours Performed By Ex-Offender Apprentices	Bid Incentive
5 to 10%	1/2% of bid price
11 to 15%	1% of bid price

The bid incentive shall be calculated and applied in accordance with subsection (c)(2). The bid incentive does not affect the contract price and is used only to calculate an amount to be used in evaluating the bid.

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(c)(1) For all construction projects advertised after the effective date of this section, the chief procurement officer shall include the bid incentive provision in all such advertisements, unless the limitation or preclusion of subsection (b)(2) applies.

(2) As part of the contract close-out procedure, if the chief procurement officer determines that the contractor has successfully met its apprentice utilization goals, the chief procurement officer shall issue an earned credit certificate that evidences the amount of earned credits allocated to the contractor. The contractor may apply the earned credits as the bid incentive for any future construction project contract bid of equal or greater dollar value.

The earned credit certificate is valid for three years from the date of issuance and shall not be applied towards any future contract bid after the expiration of that period.

The contractor may apply the earned credit certificate on multiple future construction project contract bids during the three-year period in which the certificate is valid, but may only receive one bid incentive for bid evaluation purposes on one construction project contract award. If the contractor applies the earned credit certificate on multiple construction project bids and is the lowest responsive and responsible bidder on more than one construction project bid, the earned credit certificate shall be applied to the construction project first to be advertised by D.P.S., or if multiple construction project bids were advertised on the same date, the earned credit certificate shall be applied only to the construction project with the greatest dollar value.

(d) The contractor shall maintain accurate and detailed books and records necessary to monitor compliance with this section and shall submit such reports as required by the chief procurement officer, or the commissioner of the supervising department.

Full access to the contractor's and subcontractors' records shall be granted to the chief procurement officer, the commissioner of the supervising department, or any duly authorized representative thereof. The contractor and subcontractors shall maintain all relevant records for at least three years after final acceptance of the work.

(e) The chief procurement officer is authorized to adopt, promulgate and enforce rules pertaining to the administration and enforcement of this section.

**H. Mentoring Program Bid Preference**

For purposes of this section only, the following definitions shall apply:

"Mentoring agreement" means a written mentor-protégé agreement approved by the CPO with MBEs and WBEs to develop their capacity in becoming self-sufficient, competitive and profitable business enterprises, as defined in Section 2-92-535.

"Subcontractor-to-subcontractor mentoring agreement" means a subcontractor's written mentor-protégé agreement approved by the CPO to develop the capacity of MBE or WBE subcontractors, as defined in Section 2-92-535.

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Unless otherwise prohibited by any federal, state or local law, the CPO shall allocate a bid incentive of 1% of the contract base price, in accordance with Section 2-92-535 of the MCC, to any prime contractor that has entered into a mentoring agreement or whose subcontractor has entered into a subcontractor-to-subcontractor mentoring agreement.

Bidders desiring to receive this incentive must submit an affidavit and other supporting documents demonstrating that the bidder satisfies all pertinent requirements as a veteran-owned small local business or an eligible joint venture at the time of bid submission and at any time during the term of the Contract, as requested by the CPO.

As a condition of being awarded the bid preference, the Contractor shall maintain records adequate to monitor compliance with MCC Section 2-92-535 and shall submit such reports as required by the CPO. Full access to the Contractor's records shall be granted to the CPO, the Commissioner of the supervising department, the Inspector General, or any duly authorized representative thereof. The Contractor and subcontractors shall maintain all relevant records for a period of no less than three years after the expiration of the Contract.

Upon completion of the work, any Contractor that has failed to maintain a mentoring agreement or a subcontractor that has a subcontractor-to-subcontractor mentoring agreement, for which a bid preference was taken into consideration in awarding of a contract, shall be fined in an amount equal to three times the amount of the bid preference allocated, unless the Contractor can demonstrate that due to circumstances beyond the Contractor's control, the Contractor for good cause was unable to maintain a mentoring agreement or a subcontractor that has a subcontractor-to-subcontractor mentoring agreement throughout the duration of the Contract period.

**I. Commitment Regarding Business Enterprises Owned By People With Disabilities (BEPD)**

**(a) Policy and Terms.** It is the policy of the City that businesses certified as Business Enterprises owned by People with Disabilities (BEPD) in accordance with MCC 2-92-337 et seq., *Regulations Governing Certification of Business Enterprises owned by People with Disabilities*, and all other Regulations promulgated under the aforementioned sections of the Municipal Code; shall have the full and fair opportunities to participate fully in the performance of this Contract. Therefore, the Bidder or Contractor shall not discriminate against any person or business on the basis of disability, and shall take affirmative actions to ensure BEPDs shall have full and fair opportunities to compete for and perform subcontracts for supplies or services.

Failure to carry out the commitments and policies set forth herein shall constitute a material breach of the Contract and may result in the termination of the Contract or such remedy as the City deems appropriate.

**(b) Definitions.**

For purposes of this section only, the following definitions apply:

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(1)“Business Enterprises owned or operated by People with Disabilities” or “BEPD” has the same meaning ascribed to it in section 2-92-586.

(2)“Bid incentive” means an amount deducted, for bid evaluation purposes only, from the contract base bid in order to calculate the bid price to be used to evaluate the bid on a competitively bid contract.

(3)“Contract base bid” means the total dollar amount a contractor bids on a contract without factoring any bid incentive or percentage reductions to the bid amount.

**(c) Commitments.** Where not otherwise prohibited by federal, state, or local law, the CPO shall allocate to any qualified bidder the following bid incentive for utilization of a BEPD as a prime contractor or subcontractor in the performance of the contract.

<b>% of total dollar contract amount performed by BEPD</b>	<b>Bid incentive</b>
2 to 5%	1% of the contract base bid
6 to 9%	2% of the contract base bid
10 to 13%	3% of the contract base bid
14% or more	4% of the contract base bid

The bid incentive shall be calculated and applied in accordance with the provisions of this section. The bid incentive is used only to calculate an amount to be used in evaluating the bid. The bid incentive does not affect the contract price.

Upon completion of the work, any Contractor that has failed to retain the percentage of BEPD subcontractors for which a bid incentive was taken into consideration in awarding of a contract shall be fined an amount equal to three times the amount of the bid incentive allocated, unless the Contractor can demonstrate that due to circumstances beyond the Contractor's control, the Contractor for good cause was unable to retain the percentage of BEPD participants throughout the duration of the contract period.

**(d) Records and Reports.** The Contractor shall maintain accurate and detailed books and records necessary to monitor compliance with this section and shall submit such reports as required by the CPO, or the commissioner of the supervising department.

Full access to the Contractor’s and Subcontractor’s records shall be granted to the CPO, the commissioner of the supervising department, or any duly authorized representative thereof. The Contractor and Subcontractors shall maintain all relevant records for a period of at least three years after final acceptance of the work.

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(Revised July 2020)

**J. Commitment to Encourage Diverse Workforce and Management**

For purposes of this section only, the following definitions shall apply:

“Contract” means the contract, purchase order or agreement awarded by the City and whose cost is to be paid from funds belonging to or administered by the City; provided that the term “Contract” does not include: (i) a delegate agency contract; (ii) a lease of real property; or (iii) a collective bargaining agreement.

“Diverse” means any of the following racial or ethnic groups:

African-Americans or Blacks (persons having origins in any of the Black racial groups of Africa);

Hispanics (persons of Spanish culture with origins in Mexico, South or Central America or the Caribbean Islands, regardless of race);

Asian-Americans (persons having origins in any of the original peoples of East Asia, Southeast Asia, the Indian subcontinent, or the Pacific Islands); and

Other groups, or other individuals, found by the board to be socially and economically disadvantaged and to have suffered actual racial, ethnic or gender discrimination and decreased opportunities to compete in Chicago area markets or to do business with the City.

“Prime Contractor” means the Contractor and does not include any subcontractors.

“Management” means business owners, partners and any others who have a fiduciary duty to the business.

“Workforce” means all who are employed by Contractor in a permanent, full-time employment capacity.

Unless otherwise prohibited by any federal, state or local law, for any contract having an estimated contract value of \$100,000 or more advertised, or if not advertised awarded by competitive bid, the CPO shall allocate to any qualifying bidder the following bid incentive for diverse management and diverse workforce:

<b>Total % Of Contractor Management That Is Diverse</b>	<b>Bid Incentive</b>
10% To 20%	0.5% Of The Contract Base Bid
Greater Than 20% Up To 40%	2% Of The Contract Base Bid
Greater Than 40%	4% Of The Contract

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	Base Bid
<b>Total % Of Contractor Workforce That Is Diverse</b>	<b>Bid Incentive</b>
10% To 20%	2% Of The Contract Base Bid
Greater Than 20% Up To 40%	4% Of The Contract Base Bid
Greater Than 40%	6% Of The Contract Base Bid

A Prime Contractor may qualify for and apply both the diverse management and diverse workforce bid incentives.

The bid incentive is used only to calculate an amount to be used in evaluating the bid to determine the low bidder, and it does not affect the Contract price.

The Prime Contractor shall maintain records adequate to monitor compliance with this section and shall submit such reports as required by the CPO. Full access to the Prime Contractor's records shall be granted to the CPO, the Commissioner of the supervising department, the Inspector General, or any duly authorized representative thereof. The Prime Contractor shall maintain all relevant records for a period of no less than three years after the expiration of the Contract.

The CPO may require, at the time of submission of a bid or at any time during the term of the Contract, that the bidder of Prime Contractor submit an affidavit and other supporting documents demonstrating that the bidder or Prime Contractor is eligible for the diverse management and/or diverse workforce bid incentives.

Upon completion of the work, any Prime Contractor that has failed to retain the percentage of diverse management and/or diverse workforce for which a bid incentive was taken into consideration in awarding of a contract shall be fined in an amount equal to three times the amount of the bid incentive allocated, unless the Prime Contractor can demonstrate that due to circumstances beyond the Prime Contractor's control, the Prime Contractor for good cause was unable to retain the percentage of diverse management and/or diverse workforce throughout the duration of the Contract period.

**K. Project Area Subcontractor Bid Preference**

For purposes of this section only, the following definitions shall apply:

"Construction project" means any project to be paid for by the city, but which is not funded in whole or part by any federal or state funds, to construct, remodel or reconstruct any public works, public buildings, public structures, roadways, parkways, bridges, parking facilities or



parks, or any portion of any of the same, belonging to the city within its geographical boundaries as they exist or shall exist in the future.

"Department" means the Department of Procurement Services.

"Project-area subcontractor" means a person who: (i) conducts meaningful day-to-day business operations at a facility located within that part of the city designated as the project area in the information for bidders issued by the department and that facility is the place of employment for the majority of that person's regular, full-time workforce; (ii) holds all appropriate city licenses; (iii) is a small business enterprise; and (iv) is subject to applicable city taxes; provided that a project-area subcontractor shall not include the prime contractor.

"Prime Contractor" means a person who is the primary contractor on a contract.

"Small business enterprise" means a small business as defined by the U.S. Small Business Administration, pursuant to the business size standards found in 13 C.F.R. Part 121, relevant to the scope of work the business seeks to perform on city contracts. A business is not an eligible small business enterprise in any city fiscal year in which its gross receipts, averaged over the firm's previous five fiscal years, exceed the size standards of 13 C.F.R. Part 121.

### **Application of Project Area Subcontractor Bid Preference**

- A. For any construction project advertised after the effective date of this section and where not otherwise prohibited by federal, state or local law, the Chief Procurement Officer shall allocate to any qualified bidder the following bid incentive for utilization of project-area subcontractors in the performance of the contract.

<b>Total dollar value of work performed by project-area subcontractors as a percentage of the total contract value</b>	<b>Bid Incentive</b>
1 to 16%	0.5% of the contract base bid
17 to 32%	1% of the contract base bid
33 to 49%	1.5% of the contract base bid
50% or greater	2% of the contract base bid

If a project-area subcontractor subcontracts part of the work to another contractor, only the value of work performed by the project-area subcontractor's employees shall count towards the bid incentive, unless the sub-subcontractor is a project-area subcontractor.

The bid incentive is used only to calculate an amount to be used in evaluating the bid to determine the low bidder, and it does not affect the contract price.

Bidders desiring to receive this incentive must submit an affidavit and other supporting documents demonstrating that the bidder satisfies all pertinent requirements.

- B. The Chief Procurement Officer may determine not to allocate a bid incentive under this section, under the following conditions:

- (i) an emergency exists;
  - (ii) for cooperative purchasing or cooperative construction contracts;
- or
- (iii) the chief procurement officer otherwise concludes that the allocation of a bid incentive is not in the city's best interest.

**Record-Keeping**

The prime contractor shall maintain records adequate to monitor compliance with this section and shall submit such reports as required by the Chief Procurement Officer. Full access to the prime contractor's records shall be granted to the Chief Procurement Officer, the commissioner of the supervising department, the inspector general, or any duly authorized representative thereof. The prime contractor and subcontractors shall maintain all relevant records for a period of at least three years after the expiration of the contract, unless the contract generally requires records to be preserved for a longer period.

**Affidavit Required**

The Chief Procurement Officer may require, at the time of bidding, at any time during bid evaluation or at any time during the term of the contract, that bidder/contractor and/or project area subcontractor submit affidavits and other supporting documents demonstrating that a subcontractor is a project-area subcontractor.

**Failure to Retain Project Area Subcontractors**

Upon completion of the work, any prime contractor that has failed to retain the percentage of project-area subcontracts for which a bid incentive was taken into consideration in awarding of a contract shall be fined an amount equal to three times the amount of the bid incentive allocated, unless the prime contractor can demonstrate that due to circumstances beyond the prime contractor's control, the prime contractor for good cause was unable to retain the percentage of project-area subcontractors throughout the duration of the contract period.

**XXIII. MISCELLANEOUS**

**A. Counterparts**

This Contract is comprised of several identical counterparts, each to be fully executed by the parties and each to be deemed an original having identical legal effect.

**B. Modifications**

No changes, modifications, cancellation, or discharge of this Contract, or any part of it, is valid unless in writing and signed by the parties to it, or their respective successors and assigns.

**C. No Waiver of Legal Rights**

1. The City will not be precluded or estopped from showing the true amount and character of the Work performed and materials furnished by you, or from showing that any measurement, estimate, or certificate is untrue or incorrectly made, or that the Work or materials do not conform in fact to the Contract. The City will not be precluded or estopped from recovering from you and your sureties such damages as the City may sustain by reason of your failure to comply with the terms of the Contract.
2. Neither the acceptance by the City, or any representative of the City, nor any payment for or acceptance of the whole or any part of the Work, nor any extension of time, nor any possession taken by the City, will operate as a waiver by the City of any portion of the Contract, or of any power reserved in it or any right of the City to damages provided in it. A waiver of any breach of the Contract does not constitute a waiver of any other or subsequent breach.

3. **Miscellaneous Provisions:** Whenever under this Contract, the City by a proper authority waives your performance in any respect or waives a requirement or condition to either the City's or your performance, the waiver so granted, whether express or implied, only applies to the particular instance and is not deemed a waiver forever or for subsequent instance of the performance, requirement, or condition. No such waiver may be construed as a modification of this Contract regardless of the number of times the City may have waived the performance, requirement, or condition.

**D. Governing Law**

This Contract is governed in accordance with the laws of the State of Illinois without regard to choice of law principles. You irrevocably submit, and will cause your Subcontractors to submit, to the original jurisdiction of those State or Federal courts located within the County of Cook, State of Illinois, with regard to any controversy arising out of, relating to, or in any way concerning the execution or performance of this Contract. You consent to service of process on you, at the option of the City, either by registered or certified mail addressed to the applicable office as provided for in this Contract, by registered or certified mail addressed to the office actually maintained by you, or by personal delivery on any of your officers, directors, or managing or general agents.

**E. Consent to Service of Process and Jurisdiction**

All judicial proceedings brought against you with respect to this Contract may be brought in (i) any court of the State of Illinois of competent jurisdiction; and (ii) any Federal court of competent jurisdiction located within the boundaries of the Federal court district of the Northern District of Illinois, and by execution and delivery of this Contract, you accept, for yourself and in connection with your properties, generally and unconditionally, the exclusive jurisdiction of those courts, and irrevocably agree to be bound by any final judgment rendered by them from which no appeal has been taken or is available. You designate and appoint the representative identified on the signature page to this Contract under the heading "Designation of Agent for Service Process" as your agent in Chicago, Illinois to receive on your behalf service of all process in any such proceedings in the court (which representative must be available to receive the service at all times), the service being acknowledged by the representative to effective and binding service in every respect. The agent may be changed only upon the giving of written notice by you to the City of the name and address of a new Agent for Service of Process who works within the geographical boundaries of the City of Chicago and is retained or employed by you. You irrevocably waive any objection (including any objection of the laying of venue or based on the grounds of *forum non conveniens*) which you may now or later have to bring any action or proceeding with respect to this Contract in the jurisdiction set forth above. Nothing in this section affects the right to serve process in any other manner permitted by law or limits the right of the City to bring proceedings against you in the courts of any other jurisdiction.

**F. Contractor Cooperation**

You must act in good faith in the performance of this Contract and co-operate with the City and any other City contractors at the site to assure timely completion of the Work. You must implement such measures as may be necessary to ensure that your staff and your Subcontractors are bound by the provisions of this Contract.

**G. Joint and Several Liability**

If you, or your successors or assigns, if any, are comprised of more than one individual or other legal entity (or a combination of them), then each and every obligation or undertaking stated in this Contract that you are to fulfill or perform is the joint and several obligation or undertaking of each such individual or other legal entity.

**H. No Third Party Beneficiaries**

Except as may otherwise be provided in this Contract, this Contract is solely for the benefit of the parties and nothing in this Contract is intended to create any third party beneficiary rights for Subcontractors or other third parties.

**I. Notices**

Notices, unless expressly provided for otherwise in this Contract, must be in writing and must be delivered personally or by placing in the United States mail, first class and certified, return receipt requested, with postage prepaid and addressed as follows:

1. If to the City: Commissioner, (Addresses of Department set forth in Book Two)
2. With Copies to: The Chief Procurement Officer, City Hall, 121 North LaSalle, Room 403, Chicago, IL 60602;
3. If to you: The address identified on your Proposal; and
4. With Copies to: Your bonding company.

Notices delivered by mail are deemed effective three days after mailing in accordance with this Section. Notices delivered personally are deemed effective upon receipt. Refusal to accept notice has the same effect as if notice were delivered. The addresses stated in this Contract may be revised without need for modification or amendment of this Contract, as long as written notification is given in accordance with this Section.

**J. Authority**

1. Contractor: Your execution of this Contract is authorized and signature(s) of each person signing on your behalf has been made with complete and full authority to commit you to all terms and conditions of this Contract, including every representation, certification, and warranty contained in it, attached to it and collectively incorporated by reference in it, or that may be required by the terms and conditions of this Contract. If other than a sole proprietorship, you must provide satisfactory evidence that the execution of the Contract is authorized in accordance with the business entities rules and procedures.
2. Consents and Approvals: Unless otherwise expressly stated in this Contract, any consents and approvals to be given by the City are made by the Commissioner.

**K. Software License Agreements**

The City reserves the right to negotiate software license agreements directly with the software supplier.

## **XXIV. SPECIAL CONDITIONS REGARDING MINORITY-OWNED BUSINESS ENTERPRISE, WOMEN-OWNED BUSINESS ENTERPRISE, AND VETERAN-OWNED BUSINESS ENTERPRISE COMMITMENT IN CONSTRUCTION CONTRACTS**

### **I. Policy and Terms**

As set forth in 2-92-650 *et seq.* of the Municipal Code of Chicago (MCC) it is the policy of the City of Chicago that businesses certified as Minority-owned Business Enterprises (MBEs) and Women-owned Business Enterprises (WBEs) in accordance with Section 2-92-420 *et seq.* of the MCC and Regulations Governing Certification of Minority and Women-owned Businesses, and all other Regulations promulgated under the aforementioned sections of the Municipal Code, as well as MBEs and WBEs certified by Cook County, Illinois, shall have full and fair opportunities to participate fully in the performance of this contract. Therefore, bidders shall not discriminate against any person or business on the basis of race, color, national origin, or sex, and shall take affirmative actions to ensure that MBEs and WBEs shall have full and fair opportunities to compete for and perform subcontracts for supplies or services.

Under the City's MBE/WBE Construction Program as set forth in MCC 2-92-650 *et seq.*, the program-wide aspirational goals are 26% Minority Owned Business Enterprise participation and 6% Women Owned Business Enterprise participation.

Pursuant to Section 2-92-955 of the Municipal Code of Chicago, the Chief Procurement Officer is authorized to establish a contract-specific participation goal to veteran-owned small local businesses certified by the City (VBEs) if the contract has an estimated value in excess of \$10,000, and there are least three VBEs in each of one or more areas of specialty germane to the contract, and the contract-specific goal is not more than 1% of the contract's value.

Pursuant to MCC 2-92-535, the prime contractor may apply be awarded an additional 0.5 percent credit, up to a maximum of a total of 5 percent additional credit, for every 1 percent of the value of a contract self-performed by MBEs or WBEs, or combination thereof, that have entered into a mentoring agreement with the contractor or subcontractor-to-subcontractor mentoring agreement. This up to 5% may be applied to the Contract Specific Goals, or it may be in addition to the Contract Specific Goals.

As provided in Section 2-92-720(e), Diversity Credit Program credits awarded by the City's affirmative action advisory board may also be applied to the contract specific goals.

Failure to carry out the commitments and policies set forth herein shall constitute a material breach of the contract and may result in the termination of the contract or such remedy as the City of Chicago deems appropriate.

#### **Contract Specific Goals and Bids**

A bid may be rejected as non-responsive if it fails to submit one or more of the following with its bid demonstrating its good faith efforts to meet the Contract Specific Goals by reaching out to MBEs, WBEs, and VBEs to perform work on the contract:

- A. An MBE/WBE compliance plan demonstrating how the bidder plans to meet the Contract Specific Goals (Schedule D);
- B. A VBE compliance plan demonstrating how the bidder plans to meet the VBE Contract Specific Goals (Schedule D-V); and/or
- C. Documentation of Good Faith Efforts (Schedule H).

If a bidder's compliance plan falls short of the Contract Specific Goals, the bidder must include either a Schedule H demonstrating that it has made Good Faith Efforts to find MBE, WBE, and VBE firms to participate or a request for a reduction or waiver of the goals.

Accordingly, the bidder or contractor commits to make good faith efforts to expend at least the following percentages of the total contract price (inclusive of any and all modifications and amendments), if awarded the contract:

**MBE Contract Specific Goal: [SEE BOOK 2]**  
**WBE Contract Specific Goal: [SEE BOOK 2]**  
**VBE Contract Specific Goal: [SEE BOOK 2]**

This Contract Specific Goal provision shall supersede any conflicting language or provisions that may be contained in this document.

For purposes of evaluating the bidder's responsiveness, the MBE, WBE, and VBE Contract Specific Goals shall be percentages of the bidder's total base bid. However, the MBE, WBE, and VBE Contract Specific Goals shall apply to the total value of this contract, including all amendments and modifications.

### **Contract Specific Goals and Contract Modifications**

1. The MBE, WBE, and VBE Contract Specific Goals established at the time of contract bid shall also apply to any modifications to the Contract after award. That is, any additional work and/or money added to the Contract must also adhere to these Special Conditions requiring Contractor to (sub)contract with MBEs, WBEs, and VBEs to meet the Contract Specific Goals.
  - a. Contractor must assist the Construction Manager or user Department in preparing its "proposed contract modification" by evaluating the subject matter of the modification and determining whether there are opportunities for MBE, WBE, or VBE participation and at what rates.
  - b. Contractor must produce a statement listing the MBEs/WBEs/VBEs that will be utilized on any contract modification. The statement must include the percentage of utilization of the firms. If no MBE/WBE/VBE participation is available, an explanation of good faith efforts to obtain participation must be included.
2. The Chief Procurement Officer shall review each proposed contract modification and amendment that by itself or aggregated with previous modification/amendment requests, increases the contract value by ten percent (10%) of the initial award, or \$50,000, whichever is less, for opportunities to increase the participation of MBEs or WBEs already involved in the Contract.

## **II. Definitions**

"Area of Specialty" means the description of a MBE's, WBE's, or VBE's activity that has been determined by the Chief Procurement Officer to be most reflective of the firm's claimed specialty or expertise. Each MBE, WBE, and VBE letter of certification contains a description of the firm's Area of Specialty. Credit toward the Contract Specific Goals shall be limited to the participation of firms performing within their Area of Specialty. The Department of Procurement Services does not make any representation concerning the ability of any MBE, WBE, or VBE to perform work within its Area of Specialty. It is the responsibility of the bidder or contractor to determine the capability and capacity of MBEs, WBEs, and VBEs to perform the work proposed.

"B.E.P.D." means an entity certified as a Business enterprise owned or operated by people with disabilities as defined in MCC 2-92-586.

"Broker" means a person or entity that fills orders by purchasing or receiving supplies from a third party supplier rather than out of its own existing inventory and provides no commercially useful function other than acting as a conduit between his or her supplier and his or her customer.

“Chief Procurement Officer” or “CPO” means the chief procurement officer of the City of Chicago or his or her designee.

“Commercially Useful Function” means responsibility for the execution of a distinct element of the work of the contract, which is carried out by actually performing, managing, and supervising the work involved, evidencing the responsibilities and risks of a business owner such as negotiating the terms of (sub)contracts, taking on a financial risk commensurate with the contract or its subcontract, responsibility for acquiring the appropriate lines of credit and/or loans, or fulfilling responsibilities as a joint venture partner as described in the joint venture agreement.

“Construction Contract” means a contract, purchase order or agreement (other than lease of real property) for the construction, repair, or improvement of any building, bridge, roadway, sidewalk, alley, railroad or other structure or infrastructure, awarded by any officer or agency of the City, other than the City Council, and whose cost is to be paid from City funds.

“Contract Specific Goals” means the subcontracting goals for MBE, WBE, and VBE participation established for a particular contract.

“Contractor” means any person or business entity that has entered into a construction contract with the City, and includes all partners, affiliates and joint ventures of such person or entity.

“Directory” means the Directory of Certified Firms maintained and published by the Chief Procurement Officer. The Directory identifies firms that have been certified as MBEs, WBEs, and VBEs, and includes the date of their last certifications and the areas of specialty in which they have been certified. Bidders and contractors are responsible for verifying the current certification status of all proposed MBE, WBE, and VBE firms.

“Good Faith Efforts” means actions undertaken by a bidder or contractor to achieve a Contract Specific Goal that, by their scope, intensity, and appropriateness to the objective, can reasonably be expected to fulfill the program’s requirements.

“Joint venture” means an association of a MBE, WBE, or VBE firm and one or more other firms to carry out a single, for-profit business enterprise, for which each joint venture partner contributes property, capital, efforts, skills and knowledge, and in which the MBE, WBE, or VBE is responsible for a distinct, clearly defined portion of the work of the contract and whose share in the capital contribution, control, management, risks, and profits of the joint venture are commensurate with its ownership interest.

“Mentor-Protégé Agreement” means an agreement between a prime and MBE or WBE subcontractor (“Mentoring Agreement”), or an agreement between a prime’s subcontractor and MBE or WBE subcontractor (“Subcontractor-to-Subcontractor Mentoring Agreement”), pursuant to MCC 2-92-535, that is approved by the City of Chicago and complies with all requirements of MCC 2-92-535 and any rules and regulations promulgated by the Chief Procurement Officer.

“Minority-owned Business Enterprise” or “MBE” means a firm awarded certification as a small, local minority owned and controlled business in accordance with City Ordinances and Regulations as well as a firm awarded certification as an MBE by Cook County, Illinois. However, it does not mean a firm that has been found ineligible or which has been decertified by the City or Cook County.

“Supplier” or “Distributor” refers to a company that owns, operates, or maintains a store, warehouse or other establishment in which materials, supplies, articles or equipment are bought, kept in stock and regularly sold or leased to the public in the usual course of business. A regular distributor or supplier is a firm that owns, operates, or maintains a store, warehouse, or other

establishment in which the materials or supplies required for performance of the Contract are bought, kept in stock, and regularly sold to the public in the usual course of business. To be a regular distributor the firm must engage in, as its principal business and in its own name, the purchase and sale of the products in question. A regular distributor in such bulk items as steel, cement, gravel, stone, and petroleum products need not keep such products in stock if it owns or operates distribution equipment.

“Veteran-owned Business Enterprise” or “VBE” means a firm awarded certification as a veteran-owned small local business in accordance with the City ordinances and Regulations. It does not mean a firm that has been found to be ineligible or which has been decertified by the City.

“Women Business Enterprise” or “WBE” means a firm awarded certification as a small, local women owned and controlled business in accordance with City Ordinances and Regulations as well as a firm awarded certification as a WBE by Cook County, Illinois. However, it does not mean a firm that has been found ineligible or which has been decertified by the City or Cook County.

### **III. Joint Ventures**

The formation of joint ventures to provide MBEs, WBEs, and VBEs with capacity and experience at the prime contracting level, and thereby meet Contract Specific Goals (in whole or in part) is encouraged. A joint venture for MBE or WBE credit may consist of any combination of MBEs, WBEs, and non-certified firms as long as one member is an MBE or WBE. A joint venture for VBE credit may consist of any combination of VBEs and non-certified firms as long as one member is a VBE.

- A. The joint venture may be eligible for credit towards the Contract Specific Goals only if:
1. The MBE, WBE, or VBE joint venture partner’s share in the capital contribution, control, management, risks and profits of the joint venture is equal to its ownership interest;
  2. The MBE, WBE, or VBE joint venture partner is responsible for a distinct, clearly defined portion of the requirements of the contract for which it is at risk;
  3. Each joint venture partner executes the bid to the City; and
  4. The joint venture partners have entered into a written agreement specifying the terms and conditions of the relationship between the partners and their relationship and responsibilities to the contract, and all such terms and conditions are in accordance with the conditions set forth in Items 1, 2, and 3 above in this Paragraph A.
- B. The Chief Procurement Officer shall evaluate the proposed joint venture agreement, the Schedule B submitted on behalf of the proposed joint venture, and all related documents to determine whether these requirements have been satisfied. The Chief Procurement Officer shall also consider the record of the joint venture partners on other City of Chicago contracts. The decision of the Chief Procurement Officer regarding the eligibility of the joint venture for credit towards meeting the Contract Specific Goals, and the portion of those goals met by the joint venture, shall be final.

The joint venture may receive MBE or WBE credit for work performed by the MBE or WBE joint venture partner(s) or VBE credit for work performed by VBE joint venture partners equal to the value of work performed by the MBE or WBE with its own forces for a distinct, clearly defined portion of the work.



Additionally, if employees of the joint venture entity itself (as opposed to employees of the MBE, WBE, or VBE partner) perform the work then the value of the work may be counted toward the Contract Specific Goals at a rate equal to the MBE, WBE, or VBE firm's percentage of participation in the joint venture as described in Schedule B.

The Chief Procurement Officer may also count the dollar value of work subcontracted to other MBEs, WBEs, and VBEs. Work performed by the forces of a non-certified joint venture partner shall not be counted toward the Contract Specific Goals.

#### C. Schedule B: MBE/WBE/VBE Affidavit of Joint Venture

Where the bidder's Compliance Plan includes the participation of any MBE, WBE, or VBE as a joint venture partner, the bidder must submit with its bid the appropriate Schedule B and the proposed joint venture agreement. These documents must both clearly evidence that the MBE, WBE, or VBE joint venture partner(s) will be responsible for a clearly defined portion of the work to be performed, and that the MBE's, WBE's, or VBE's responsibilities and risks are proportionate to its ownership percentage. The proposed joint venture agreement must include specific details related to:

1. The parties' contributions of capital, personnel, and equipment and share of the costs of insurance and bonding;
2. Work items to be performed by the MBE's, WBE's, or VBE's own forces and/or work to be performed by employees of the newly formed joint venture entity;
3. Work items to be performed under the supervision of the MBE, WBE, or VBE joint venture partner; and
4. The MBE's, WBE's, or VBE's commitment of management, supervisory, and operative personnel to the performance of the contract.

**NOTE:** Vague, general descriptions of the responsibilities of the MBE, WBE, or VBE joint venture partner do not provide any basis for awarding credit. For example, descriptions such as "participate in the budgeting process," "assist with hiring," or "work with managers to improve customer service" do not identify distinct, clearly defined portions of the work. Roles assigned should require activities that are performed on a regular, recurring basis rather than as needed. The roles must also be pertinent to the nature of the business for which credit is being sought. For instance, if the scope of work required by the City entails the delivery of goods or services to various sites in the City, stating that the MBE, WBE, or VBE joint venture partner will be responsible for the performance of all routine maintenance and all repairs required to the vehicles used to deliver such goods or services is pertinent to the nature of the business for which credit is being sought.

#### **IV. Counting MBE, WBE, and VBE Participation Towards the Contract Specific Goals**

Refer to this section when preparing the MBE/WBE and VBE compliance plans and completing Schedule D-1 and D-V for guidance on what value of the participation by MBEs, WBEs, and VBEs will be counted toward the stated Contract Specific Goals. The "Percent Amount of Participation" depends on whether and with whom an MBE, WBE, or VBE subcontracts out any portion of its work and other factors.

**Firms that are certified as both MBE and WBE, MBE and VBE, WBE and VBE, or any combination thereof may only be listed on a bidder's compliance plan as either a MBE, WBE, or a VBE to demonstrate compliance with the Contract Specific Goals.** For example,

a firm certified as both a MBE and a WBE may only listed on the bidder's compliance plan under one of the categories, but not both. Additionally, if a firm that is certified as both a MBE and a WBE, MBE and VBE, WBE and VBE or any combination thereof could not self-perform 100% of a contract, it would have to show good faith efforts to meet the Contract Specific Goals by including in its compliance plan work to be performed by another MBE, WBE, or VBE firm, depending on which certification that dual-certified firm chooses to count itself as.

- A. Only expenditures to firms that perform a **Commercially Useful Function** as defined above may count toward the Contract Specific Goals.
  - 1. The CPO will determine whether a firm is performing a commercially useful function by evaluating the amount of work subcontracted, whether the amount the firm is to be paid under the contract is commensurate with the work it is actually performing and the credit claimed for its performance of the work, industry practices, and other relevant factors.
  - 2. A MBE, WBE, or VBE does not perform a commercially useful function if its participation is only required to receive payments in order to obtain the appearance of MBE, WBE, or VBE participation. The CPO may examine similar commercial transactions, particularly those in which MBEs, WBEs, or VBEs do not participate, to determine whether non-MBE, non-WBE, and non-VBE firms perform the same function in the marketplace to make a determination.
- B. Only the value of the dollars paid to the MBE, WBE, or VBE firm for work that it performs in its **Area of Specialty** in which it is certified counts toward the Contract Specific Goals.

**Only payments made to MBE, WBE, and VBE firms that meet BOTH the Commercially Useful Function and Area of Specialty requirements above will be counted toward the Contract Specific Goals.**

- C. If the MBE, WBE, or VBE performs the work itself:
  - 1. 100% of the value of work actually performed by the MBE's, WBE's, or VBE's own forces shall be counted toward the Contract Specific Goals, including the cost of supplies purchased or equipment leased by the MBE, WBE, or VBE from third parties or second tier subcontractors in order to perform its (sub)contract with its own forces. 0% of the value of work at the project site that a MBE, WBE, or VBE subcontracts to a non-certified firm counts toward the Contract Specific Goals
- D. If the MBE, WBE, or VBE is a manufacturer:
  - 1. 100% of expenditures to an MBE, WBE, or VBE manufacturer for items needed for the Contract shall be counted toward the Contract Specific Goals. A manufacturer is a firm that operates or maintains a factory or establishment that produces on the premises the materials or supplies obtained by the bidder or contractor.
- E. If the MBE, WBE, or VBE is a distributor or supplier:
  - 1. 60% of expenditures for materials and supplies purchased from an MBE, WBE, or VBE that is certified as a regular dealer or supplier shall be counted toward the Contract Specific Goals.
- F. If the MBE, WBE, or VBE is a broker:
  - 1. 0% of expenditures paid to brokers will be counted toward the Contract Specific Goals.

2. As defined above, Brokers provide no commercially useful function.
- G. If the MBE, WBE, or VBE is a member of the joint venture contractor/bidder:
1. A joint venture may count the portion of the total dollar value of the contract equal to the distinct, clearly defined portion of the work of the contract that the MBE, WBE, or VBE performs with its own forces toward the Contract Specific Goals.
    - i. OR if employees of this distinct joint venture entity perform the work then the value of the work may be counted toward the Contract Specific Goals at a rate equal to the MBE, WBE, or VBE firm's percentage of participation in the joint venture as described in Schedule B.
  2. Note: a joint venture may also count the dollar value of work subcontracted to other MBEs, WBEs, and VBEs, however, work subcontracted out to non-certified firms may not be counted.
- H. If the MBE, WBE, or VBE subcontracts out any of its work:
1. 100% of the value of the work subcontracted to other MBEs, WBEs, or VBEs performing work in its Area of Specialty may be counted toward the Contract Specific Goals.
  2. 0% of the value of work that a MBE, WBE, or VBE subcontracts to a non-certified firm counts toward the Contract Specific Goals (except for the cost of supplies purchased or equipment leased by the MBE or WBE from third parties or second tier subcontractors in order to perform its (sub)contract with its own forces as allowed by C.1. above).
  3. The fees or commissions charged for providing a *bona fide* service, such as professional, technical, consulting or managerial services or for providing bonds or insurance or the procurement of essential personnel, facilities, equipment, materials or supplies required for performance of the Contract, may be counted toward the Contract Specific Goals, provided that the fee or commission is determined by the Chief Procurement Officer to be reasonable and not excessive as compared with fees customarily allowed for similar services.
  4. The fees charged for delivery of materials and supplies required on a job site (but not the cost of the materials and supplies themselves) when the hauler, trucker, or delivery service is not also the manufacturer of or a regular dealer in the materials and supplies, provided that the fee is determined by the Chief Procurement Officer to be reasonable and not excessive as compared with fees customarily allowed for similar services.
  5. The fees or commissions charged for providing any bonds or insurance, but not the cost of the premium itself, specifically required for the performance of the Contract, provided that the fee or commission is determined by the Chief Procurement Officer to be reasonable and not excessive as compared with fees customarily allowed for similar services.

**V. Procedure to Determine Bid Compliance**

The following Schedules and requirements govern the bidder's or contractor's MBE/WBE and VBE proposal:

- A. Schedule B: MBE/WBE/VBE Affidavit of Joint Venture

1. Where the bidder's Compliance Plan includes the participation of any MBE, WBE, or VBE as a joint venture partner, the bidder must submit with its bid the appropriate Schedule B and the proposed joint venture agreement. See Section III above for detailed requirements.

B. Schedule C: MBE/WBE Letter of Intent to Perform as a Subcontractor or Supplier

The bidder must submit the appropriate Schedule C with the bid for each MBE and WBE included on the Schedule D. Suppliers must submit the Schedule C for Suppliers, first tier subcontractors must submit a Schedule C for Subcontractors to the Prime Contractor and second or lower tier subcontractors must submit a Schedule C for second tier Subcontractors. Each Schedule C must accurately detail the work to be performed by the MBE or WBE and the agreed upon rates/prices. Each Schedule C must also include a separate sheet as an attachment on which the MBE or WBE fully describes its proposed scope of work, including a description of the commercially useful function being performed by the MBE or WBE in its Area of Specialty. If a facsimile copy of the Schedule C has been submitted with the bid, an executed original Schedule C must be submitted by the bidder for each MBE and WBE included on the Schedule D within five (5) business days after the date of the bid opening.

C. Schedule D: Compliance Plan Regarding MBE and WBE Utilization

The bidder must submit a Schedule D with the bid. An approved Compliance Plan is required before a contract may commence.

The Compliance Plan must commit to the utilization of each listed MBE and WBE. The bidder is responsible for calculating the dollar equivalent of the MBE and WBE Contract Specific Goals as percentages of the total base bid. All Compliance Plan commitments must conform to the Schedule Cs.

A bidder or contractor may not modify its Compliance Plan after bid opening except as directed by the Department of Procurement Services to correct minor errors or omissions. Bidders shall not be permitted to add MBEs or WBEs after bid opening to meet the Contract Specific Goals, however, contractors are encouraged to add additional MBE/WBE vendors to their approved compliance plan during the performance of the contract when additional opportunities for participation are identified. Except in cases where substantial, documented justification is provided, the bidder or contractor shall not reduce the dollar commitment made to any MBE or WBE in order to achieve conformity between the Schedule Cs and Schedule D. All terms and conditions for MBE and WBE participation on the contract must be negotiated and agreed to between the bidder or contractor and the MBE or WBE prior to the submission of the Compliance Plan. If a proposed MBE or WBE ceases to be available after submission of the Compliance Plan, the bidder or contractor must comply with the provisions in Section VII.

D. Letters of Certification

A copy of each proposed MBE's and WBE's Letter of Certification from the City of Chicago or Cook County, Illinois, must be submitted with the bid.

A Letters of Certification includes a statement of the MBE's or WBE's area(s) of specialty. The MBE's or WBE's scope of work as detailed in the Schedule C must conform to its area(s) of specialty. Where a MBE or WBE is proposed to perform work not covered by its Letter of Certification, the MBE or WBE must request the addition of a new area at least 30 calendar days prior to the bid opening.

E. The following Schedules and described documents constitute the bidder's VBE proposal, and must be submitted in accordance with the guidelines stated:

- (1) Schedule C-V: Letter of Intent from VBE to Perform as Subcontractor, Supplier and/or Consultant.

The bidder must submit the appropriate Schedule C-V with the bid for each VBE included on the Schedule D-V. Suppliers must submit the Schedule C-V for Suppliers, first tier subcontractors must submit a Schedule C-V for Subcontractors to the Prime Contractor and second or lower tier subcontractors must submit a Schedule C-V for second tier Subcontractors. Each Schedule C-V must be executed by each VBE and accurately detail the work to be performed by the VBE and the agreed upon rates/prices. Each Schedule C must also include a separate sheet as an attachment on which the VBE fully describes its proposed scope of work, including a description of the commercially useful function being performed by the VBE in its Area of Specialty. If a facsimile copy of the Schedule C-V has been submitted with the bid, an executed original Schedule C-V must be submitted by the bidder for each VBE included on the Schedule D-V within five business days after the date of the bid opening.

Failure to submit a completed Schedule C-V in accordance with this section shall entitle the City to deem the bid/proposal non-responsive and therefore reject the bid/proposal.

- (2) Letters of Certification.

A copy of each proposed VBE firm's current VBE Letter of Certification from the City must be submitted with the bid/proposal. All VBE Letters of Certification issued by the City of Chicago include a statement of the VBE firm's Area of Specialty. The VBE firm's scope of work, as detailed by their Schedule C-V, must conform to their stated Area of Specialty. Letters of Certification for VBEs that the City has found to be ineligible or decertified will not be accepted.

- (3) Schedule B: Affidavit of Joint Venture, and Joint Venture Agreements (if applicable).

If the bidder's VBE proposal includes the participation of a VBE as joint venture on any tier (either as the bidder or as a subcontractor), the bidder must provide a copy of the joint venture agreement and a Schedule B along with all other requirements listed in Article III, "Joint Ventures," above. In order to demonstrate the VBE partner's share in the ownership, control, management responsibilities, risks and profits of the joint venture, the proposed joint venture agreement must include specific details related to: (1) contributions of capital and equipment; (2) work responsibilities or other performance to be undertaken by the VBE; and (3) the commitment of management, supervisory and operative personnel employed by the VBE to be dedicated to the performance of the contract. The joint venture agreement must also clearly define each partner's authority to contractually obligate the joint venture and each partner's authority to expend joint venture funds (e.g., check signing authority).

- (4) Schedule D-V: Required Schedules Regarding VBE Utilization

Bidders must submit, together with the bid, a completed Schedule D-V committing them to the utilization of each listed VBE firm. Except in cases where the bidder has submitted a request for a complete waiver of or variance from the VBE commitment in accordance with the provisions herein, the bidder must commit to the expenditure of a specific dollar amount of participation by each VBE firm included on their Schedule D-V. The total dollar commitment to proposed VBEs must at least equal the VBE goal. Bidders are responsible for calculating the dollar equivalent of the VBE goals as percentages of their total base bids or in the case of Term Agreements, depends upon requirements agreements and blanket

agreements, as percentages of the total estimated usage. All commitments made by the bidder's Schedule D-V must conform to those presented in the submitted Schedule C-V. If Schedule C-V is submitted after the opening, the bidder may submit a revised Schedule D-V (executed and notarized to conform with the Schedules C-V). Bidders shall not be permitted to add VBEs after bid opening to meet the Contract Specific Goals, however, contractors are encouraged to add additional VBE vendors to their approved compliance plan during the performance of the contract when additional opportunities for participation are identified. Except in cases where substantial and documented justification is provided, as determined by the Chief Procurement Officer in her sole discretion, bidders will not be allowed to reduce the dollar commitment made to any VBE in order to achieve conformity between the Schedules C-V and D-V.

All commitments for joint venture agreements must be delineated in the Schedule B.

F. Schedule F: Report of Subcontractor Solicitations

A Schedule F must be submitted with the bid, documenting all subcontractors and suppliers solicited for participation on the contract by the bidder. Failure to submit the Schedule F may render the bid non-responsive.

G. Schedule H: Documentation of Good Faith Efforts

1. If a bidder determines that it is unable to meet the Contract Specific Goals, it must document its good faith efforts to do so, including the submission of its Schedule H.
2. If the bidder submits a Compliance Plan indicating that the bidder will meet the Contract Specific Goals, and, after review of the bidder's Compliance plan, the City determines that the bidder has not met the Contract Specific Goals, in full or in part, the bidder must submit its Schedule H no later than three business days after notification by the Chief Procurement Officer of its status as the apparent lowest bidder. Failure to submit a complete Schedule H will cause the bid to be rejected as non-responsive.
3. Documentation must include but is not necessarily limited to:
  - a. A detailed statement of efforts to identify and select portions of work identified in the bid solicitation for subcontracting to MBEs, WBEs, and VBEs;
  - b. A listing of all MBEs, WBEs, and VBEs contacted for the bid solicitation that includes:
    - i. Names, addresses, emails and telephone numbers of firms solicited;
    - ii. Date and time of contact;
    - iii. Person contacted;
    - iv. Method of contact (letter, telephone call, facsimile, electronic mail, etc.).
  - c. Evidence of contact, including:
    - i. Project identification and location;
    - ii. Classification/commodity of work items for which quotations were sought;
    - iii. Date, item, and location for acceptance of subcontractor bids;
    - iv. Detailed statements summarizing direct negotiations with appropriate MBEs, WBEs, and VBEs for specific portions of the work and indicating why agreements were not reached.
    - v. Bids received from all subcontractors.

- d. Documentation of bidder or contractor contacts with at least one of the Assist Agencies on Attachment A.
- H. Agreements between a bidder or contractor and an MBE, WBE, or VBE in which the MBE, WBE, or VBE promises not to provide subcontracting quotations to other bidders or contractors are prohibited.
- I. Prior to award, the bidder agrees to promptly cooperate with the Department of Procurement Services in submitting to interviews, allowing entry to places of business, providing further documentation, or soliciting the cooperation of a proposed MBE, WBE, or VBE. Failure to cooperate may render the bid non-responsive.
- J. If the City determines that the Compliance Plan contains minor errors or omissions, the bidder or contractor must submit a revised Compliance Plan within five (5) business days after notification by the City that remedies the minor errors or omissions. Failure to correct all minor errors or omissions may result in the determination that a bid is non-responsive.
- K. No later than three (3) business days after receipt of the executed contract, the contractor must execute a complete subcontract agreement or purchase order with each MBE and WBE listed in the Compliance Plan, and provide copies of each subcontract agreement or purchase order to the Department of Procurement Services upon request.
- L. Any applications for City approval of a Mentor Protégé agreement must be included with the bid. If the application is not approved, the bidder must show that it has made good faith efforts to meet the contract specific goals.

**VI. Demonstration of Good Faith Efforts**

- A. In evaluating the Schedule H to determine whether the bidder or contractor has made good faith efforts, the performance of other bidders or contractors in meeting the goals may be considered.
- B. The Chief Procurement Officer shall consider, at a minimum, the bidder's efforts to:
  - 1. Solicit through reasonable and available means at least 50% (or at least five when there are more than eleven certified firms in the commodity area) of the appropriate MBE/WBE/VBE firms certified in the anticipated scopes of subcontracting of the contract, as documented by the Schedule H. The bidder or contractor must solicit MBEs and WBEs within seven (7) days prior to the date bids are due. The bidder or contractor must take appropriate steps to follow up initial solicitations with interested MBEs, WBEs, or VBEs.
  - 2. Advertise the contract opportunities in media and other venues oriented toward MBEs, WBEs, and VBEs.
  - 3. Provide interested MBEs, WBEs, or VBEs with adequate information about the plans, specifications, and requirements of the contract, including addenda, in a timely manner to assist them in responding to the solicitation.
  - 4. Negotiate in good faith with interested MBEs, WBEs, or VBEs that have submitted bids. That there may be some additional costs involved in soliciting and using MBEs, WBEs, and VBEs is not a sufficient reason for a bidder's failure to meet the Contract Specific Goals, as long as such costs are reasonable.

5. Not reject MBEs, WBEs, or VBEs as being unqualified without sound reasons based on a thorough investigation of their capabilities. The MBE's, WBE's, or VBE's standing within its industry, membership in specific groups, organizations, or associations and political or social affiliations are not legitimate causes for rejecting or not soliciting bids to meet the Contract Specific Goals.
  6. Make a portion of the work available to MBE, WBE, or VBE subcontractors and suppliers and selecting those portions of the work or material consistent with the available MBE, WBE, or VBE subcontractors and suppliers, so as to facilitate meeting the Contract Specific Goals.
  7. Make good faith efforts, despite the ability or desire of a bidder or contractor to perform the work of a contract with its own organization. A bidder or contractor who desires to self-perform the work of a contract must demonstrate good faith efforts unless the Contract Specific Goals have been met.
  8. Select portions of the work to be performed by MBEs, WBEs, or VBEs in order to increase the likelihood that the goals will be met. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate MBE, WBE, or VBE participation, even when the bidder or contractor might otherwise prefer to perform these work items with its own forces.
  9. Make efforts to assist interested MBEs, WBEs, or VBEs in obtaining bonding, lines of credit, or insurance as required by the City or bidder or contractor.
  10. Make efforts to assist interested MBEs, WBEs, or VBEs in obtaining necessary equipment, supplies, materials, or related assistance or services; and
  11. Effectively use the services of the City; minority or women community organizations; minority or women assistance groups; local, state, and federal minority or women business assistance offices; and other organizations to provide assistance in the recruitment and placement of MBEs, WBEs, or VBEs.
- C. If the bidder disagrees with the City's determination that it did not make good faith efforts, the bidder may file a protest pursuant to the Department of Procurement Services Solicitation and Contracting Process Protest Procedures within 10 business days of a final adverse decision by the Chief Procurement Officer.

## **VII. Changes to Compliance Plan**

- A. No changes to the Compliance Plan or contractual MBE, WBE, and VBE commitments or substitution of MBE, WBE, or VBE subcontractors may be made without the prior written approval of the Chief Procurement Officer. Unauthorized changes or substitutions, including performing the work designated for a subcontractor with the contractor's own forces, shall be a violation of these Special Conditions and a breach of the contract with the City, and may cause termination of the executed Contract for breach, and/or subject the bidder or contractor to contract remedies or other sanctions. The facts supporting the request for changes must not have been known nor reasonably could have been known by the parties prior to entering into the subcontract. Bid shopping is prohibited. The bidder or contractor must negotiate with the subcontractor to resolve the problem. If requested by either party, the Department of Procurement Services shall facilitate such a meeting. Where there has been a mistake or disagreement about the scope of work, the MBE, WBE, or VBE can be substituted only where an agreement cannot be reached for a reasonable price for the correct scope of work.



- B. Substitutions of a MBE, WBE, or VBE subcontractor shall be permitted only on the following basis:
1. Unavailability after receipt of reasonable notice to proceed;
  2. Failure of performance;
  3. Financial incapacity;
  4. Refusal by the subcontractor to honor the bid or proposal price or scope;
  5. Mistake of fact or law about the elements of the scope of work of a solicitation where a reasonable price cannot be agreed;
  6. Failure of the subcontractor to meet insurance, licensing or bonding requirements;
  7. The subcontractor's withdrawal of its bid or proposal; or
  8. De-certification of the subcontractor as an MBE, WBE, or VBE. (Graduation from the MBE/WBE or VBE program does not constitute de-certification.)
  9. Termination of a Mentor Protégé Agreement.
- C. If it becomes necessary to substitute an MBE, WBE, or VBE or otherwise change the Compliance Plan, the procedure will be as follows:
1. The bidder or contractor must notify the Chief Procurement Officer in writing of the request to substitute a MBE, WBE, or VBE or otherwise change the Compliance Plan. The request must state specific reasons for the substitution or change. A letter from the MBE, WBE, or VBE to be substituted or affected by the change stating that it cannot perform on the contract or that it agrees with the change in its scope of work must be submitted with the request.
  2. The City will approve or deny a request for substitution or other change within 15 business days of receipt of the request.
  3. Where the bidder or contractor has established the basis for the substitution to the satisfaction of the Chief Procurement Officer, it must make good faith efforts to meet the Contract Specific Goal by substituting an MBE, WBE, or VBE subcontractor. Documentation of a replacement MBE, WBE, or VBE, or of good faith efforts, must meet the requirements in sections V and VI. If the MBE, WBE, or VBE Contract Specific Goal cannot be reached and good faith efforts have been made, as determined by the Chief Procurement Officer, the bidder or contractor may substitute with a non-MBE, non-WBE, or non-VBE.
  4. If a bidder or contractor plans to hire a subcontractor for any scope of work that was not previously disclosed in the Compliance Plan, the bidder or contractor must obtain the approval of the Chief Procurement Officer to modify the Compliance Plan and must make good faith efforts to ensure that MBEs, WBEs, or VBEs have a fair opportunity to bid on the new scope of work.

5. A new subcontract must be executed and submitted to the Chief Procurement Officer within five business days of the bidder's or contractor's receipt of City approval for the substitution or other change.
- D. The City shall not be required to approve extra payment for escalated costs incurred by the contractor when a substitution of subcontractors becomes necessary to comply with MBE/WBE/VBE contract requirements.

## **VIII. Reporting and Record Keeping**

- A. During the term of the contract, the Contractor and its non-certified subcontractors must submit partial and final waivers of lien from MBE, WBE, and VBE subcontractors that show the accurate cumulative dollar amount of subcontractor payments made to date. Upon acceptance of the Final Quantities from the City of Chicago, FINAL certified waivers of lien from the MBE, WBE, and VBE subcontractors must be attached to the contractor's acceptance letter and forwarded to the Department of Procurement Services, Attention: Chief Procurement Officer.
- B. The Contractor will be responsible for reporting payments to all subcontractors on a monthly basis in the form of an electronic audit. Upon the first payment issued by the City of Chicago to the contractor for services performed, on the first day of each month and every month thereafter, email and/or fax audit notifications will be sent out to the contractor with instructions to report payments that have been made in the prior month to each MBE, WBE, and VBE. The reporting of payments to all subcontractors must be entered into the Certification and Compliance Monitoring System (C2), or whatever reporting system is currently in place, on or before the fifteenth (15<sup>th</sup>) day of each month.
- C. Once the prime contractor has reported payments made to each MBE, WBE, and VBE, including zero dollar amount payments, the MBE, WBE, or VBE will receive an email and/or fax notification requesting them to log into the system and confirm payments received. All monthly confirmations must be reported on or before the 20<sup>th</sup> day of each month. Contractor and subcontractor reporting to the C2 system must be completed by the 25<sup>th</sup> of each month or payments may be withheld.
- D. All subcontract agreements between the contractor and MBE/WBE/VBE firms or any first tier non-certified firm and lower tier MBE/WBE/VBE firms must contain language requiring the MBE/WBE/VBE to respond to email and/or fax notifications from the City of Chicago requiring them to report payments received for the prime or the non-certified firm.

Access to the Certification and Compliance Monitoring System (C2), which is a web based reporting system, can be found at: <http://chicago.mwdb.com>

- E. The Chief Procurement Officer or any party designated by the, Chief Procurement Officer shall have access to the contractor's books and records, including without limitation payroll records, tax returns and records and books of account, to determine the contractor's compliance with its commitment to MBE, WBE, and VBE participation and the status of any MBE, WBE, or VBE performing any portion of the contract. This provision shall be in addition to, and not a substitute for, any other provision allowing inspection of the contractor's records by any officer or official of the City for any purpose.
- F. The contractor shall maintain records of all relevant data with respect to the utilization of MBEs, WBEs, and VBEs, retaining these records for a period of at least five years after final acceptance of the work. Full access to these records shall be granted to City, federal or state authorities or other authorized persons.

**IX. Non-Compliance**

- A. Without limitation, the following shall constitute a material breach of this contract and entitle the City to declare a default, terminate the contract, and exercise those remedies provided for in the contract at law or in equity: (1) failure to demonstrate good faith efforts; and (2) disqualification as a MBE, WBE, or VBE of the contractor or any joint venture partner, subcontractor or supplier if its status as an MBE, WBE, or VBE was a factor in the award of the contract and such status was misrepresented by the contractor.
- B. Payments due to the contractor may be withheld until corrective action is taken.
- C. Pursuant to 2-92-740, or 2-92-955, as applicable, remedies or sanctions may include disqualification from contracting or subcontracting on additional City contracts for up to three years, and the amount of the discrepancy between the amount of the commitment in the Compliance Plan, as such amount may be amended through change orders or otherwise over the term of the contract, and the amount paid to MBEs or WBEs. The consequences provided herein shall be in addition to any other criminal or civil liability to which such entities may be subject.
- D. The contractor shall have the right to protest the final determination of non-compliance and the imposition of any penalty by the Chief Procurement Officer pursuant to 2-92-740 of the Municipal Code of the City of Chicago, within 15 business days of the final determination.

**X. Arbitration**

If the City determines that a contractor has not made good faith efforts to fulfill its Compliance Plan, the affected MBE, WBE, or VBE may recover damages, suffered by such entity as a result of being underutilized, from the contractor.

Disputes between the contractor and the MBE, WBE, or VBE shall be resolved by binding arbitration before the American Arbitration Association (AAA), with reasonable expenses, including attorney's fees and arbitrator's fees, being recoverable by a prevailing MBE, WBE, or VBE. Participation in such arbitration is a material provision of the Construction Contract to which these Special Conditions are an Exhibit. This provision is intended for the benefit of any MBE, WBE, or VBE affected by the contractor's failure to fulfill its Compliance Plan and grants such entity specific third party beneficiary rights. These rights are non-waivable and take precedence over any agreement to the contrary, including but not limited to those contained in a subcontract, suborder, or communicated orally between a contractor and an MBE, WBE, or VBE. Failure by the Contractor to participate in any such arbitration is a material breach of the Construction Contract.

An MBE, WBE, or VBE seeking arbitration shall serve written notice upon the contractor and file a demand for arbitration with the AAA in Chicago, IL. The dispute shall be arbitrated in accordance with the Commercial Arbitration Rules of the AAA. All arbitration fees are to be paid *pro rata* by the parties; however, as noted above, reasonable expenses, including the arbitrator's fees, may be recoverable by a prevailing MBE, WBE, or VBE.

The MBE, WBE, or VBE must copy the City on the Demand for Arbitration within 10 business days after filing with the AAA. The MBE, WBE, or VBE must copy the City on the arbitrator's decision within 10 business days of receipt of the decision. Judgment upon the arbitrator's award may be entered in any court of competent jurisdiction.

**XI. Equal Employment Opportunity**

Compliance with the requirements set forth in these Regulations will not diminish or supplant equal employment opportunity and civil rights provisions as required by law related to bidder or contractor and subcontractor obligations.

Assist Agencies are comprised of not-for-profit agencies and/or chamber of commerce agencies that represent the interest of small, minority and/or women owned businesses.

<p><b>Chatham Business Association Small Business Dev. *</b> 800 E. 78<sup>th</sup> Street Chicago, IL 60619 773-994-5006 773-855-8905 <a href="mailto:admin@cbaworks.org">admin@cbaworks.org</a> <a href="http://www.cbaworks.org">www.cbaworks.org</a> Maintains list of certified firms: Yes Provides training for businesses: Yes</p>	<p><b>Chicago Minority Supplier Development Council Inc. *</b> 105 W. Adams, Suite 2300 Chicago, IL 60603-6233 312-755-8880 312-755-8890 Fax <a href="mailto:cjordan@chicagomsgdc.org">cjordan@chicagomsgdc.org</a> <a href="http://www.chicagomsgdc.org">www.chicagomsgdc.org</a> Maintains list of certified firms: Yes Provides training for businesses: Yes</p>
<p><b>Chicago Urban League *</b> 4510 S. Michigan Ave. Chicago, IL 60653 773-285-5800 <a href="mailto:jjohnson@chiul.org">jjohnson@chiul.org</a> Maintains list of certified firms: Yes Provides training for businesses: Yes</p>	<p><b>Chicago Women in Trades (CWIT)</b> 2444 W. 16<sup>th</sup> Street Chicago, IL 60608 312-942-1444 Jayne Vellinga, Executive Director <a href="mailto:jvellinga@cwit2.org">jvellinga@cwit2.org</a> <a href="http://www.chicagowomenintrades2.org">www.chicagowomenintrades2.org</a> Maintains list of certified firms: No Provides training for businesses: Yes</p>
<p><b>Contractor Advisors Business Development Corp. *</b> 1507 E. 53<sup>rd</sup> Street, Suite 906 Chicago, IL. 60615 312-436-0301 <a href="mailto:info@contractoradvisors.us">info@contractoradvisors.us</a> <a href="http://www.contractoradvisors.us">www.contractoradvisors.us</a> Maintains list of certified firms: Yes Provides training for businesses: Yes</p>	<p><b>Cosmopolitan Chamber of Commerce</b> 1631 S. Michigan Avenue Unit 101 Chicago, IL. 60616 312-971-9594 <a href="mailto:eroper@cosmochamber.org">eroper@cosmochamber.org</a> <a href="http://www.cosmochamber.org">www.cosmochamber.org</a> Maintains list of certified firms: Yes Provides training for businesses: Yes</p>
<p><b>Council of Black Architecture and Engineering Companies (Formally NOME) *</b> 1 South Wacker, Suite 2650 Chicago, IL 60606 312-960-1239 <a href="mailto:msutton@infrastructure-eng.com">msutton@infrastructure-eng.com</a> Maintains list of certified firms: Yes Provides training for businesses: Yes</p>	<p><b>Do For Self Community Development Co. *</b> 8659 S. Ingleside Ave., Chicago, IL 60619 773-356-7661 <a href="mailto:dennis@doforself.org">dennis@doforself.org</a> <a href="http://www.doforself.org">www.doforself.org</a> Maintains list of certified firms: No Provides training for businesses: Yes</p>
<p><b>Elite Service Disabled Veteran Owned Business Network</b> 420 Lake Cook Rd, Ste 104 Deerfield, IL 60015 847-453-8890 <a href="mailto:jscifers@scigon.com">jscifers@scigon.com</a> <a href="http://www.elitesdvob.org">www.elitesdvob.org</a> Maintains list of certified firms: Yes Provides training for businesses: Yes</p>	<p><b>Far South Community Development Corporation</b> 9923 S. Halsted Street, Suite D Chicago, IL 60628 773-941-4833 773-941-5252 <a href="mailto:lacy@farsouthcdc.org">lacy@farsouthcdc.org</a> <a href="http://www.farsouthcdc.org">www.farsouthcdc.org</a> Maintains list of certified firms: No Provides training for businesses: Yes</p>

*\*Prime Contractors should contact agency with subcontracting opportunities to connect certified firms.*

Assist Agencies are comprised of not-for-profit agencies and/or chamber of commerce agencies that represent the interest of small, minority and/or women owned businesses.

<p><b>Federation of Women Contractors *</b> 4210 W. Irving Park Road, Chicago, IL 60641 312-360-1122 info@fwcchicago.com <a href="http://www.fwcchicago.com">www.fwcchicago.com</a> Maintains list of certified firms: Yes Provides training for businesses: No</p>	<p><b>Fresh Start Home Community Development Corp.</b> 5168 S. Michigan Avenue, 4N Chicago, IL 60615 773-312-3797 855-270-4175 <a href="mailto:Info@FreshStartNow.us">Info@FreshStartNow.us</a> <a href="http://www.FreshStartNow.us">www.FreshStartNow.us</a> Maintains list of certified firms: Yes Provides training for businesses: Yes</p>
<p><b>Greater Southwest Development Corporation</b> 2601 W. 63<sup>rd</sup> Street Chicago, IL 60629 773-362-3373 <a href="mailto:c.james@greatersouthwest.org">c.james@greatersouthwest.org</a> <a href="http://www.greatersouthwest.org">www.greatersouthwest.org</a> Maintains list of certified firms: Yes Provides training for businesses: Yes</p>	<p><b>Hispanic American Construction Industry Association (HACIA) *</b> 650 W. Lake St., Unit 415 Chicago, IL 60661 312-575-0389 312-575-0389 perez@haciaworks.org <a href="http://www.haciaworks.org">www.haciaworks.org</a> Maintains list of certified firms: Yes Provides training for businesses: Yes</p>
<p><b>Illinois State Black Chamber of Commerce *</b> 411 Hamilton Blvd., Suite 1404 Peoria, Illinois 61602 309-740-4430 309-672-1379 <a href="mailto:finance@ILBCC.org">finance@ILBCC.org</a> <a href="http://www.ilbcc.org">www.ilbcc.org</a> Maintains list of certified firms: Yes Provides training for businesses: Yes</p>	<p><b>Illinois Hispanic Chamber of Commerce *</b> 222 Merchandise Mart Plaza, Suite 1212 c/o 1871 Chicago, IL 60654 312-425-9500 info@ihccbbusiness.net <a href="http://www.ihccbbusiness.net">www.ihccbbusiness.net</a> Maintains list of certified firms: Yes Provides training for businesses: Yes</p>
<p><b>JLM Business Development Center*</b> 2622 W. Jackson Boulevard Chicago, IL 60612 773-826-3064 773-359-4021 Fax <a href="mailto:lady930@prodigy.net">lady930@prodigy.net</a> <a href="http://www.jlmcenter.org">www.jlmcenter.org</a> Maintains list of certified firms: Yes Provides training for businesses: Yes</p>	<p><b>LGBT Chamber of Commerce of Illinois *</b> 3179 N. Clark St., 2nd Floor Chicago, IL 60657 773-303-0167 773-303-0168 <a href="mailto:admin@lgbtcc.com">admin@lgbtcc.com</a> <a href="http://www.lgbtcc.com">www.lgbtcc.com</a> Maintains list of certified firms: Yes Provides training for businesses: Yes</p>

*\*Prime Contractors should contact agency with subcontracting opportunities to connect certified firms.*

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<p><b>Native American Chamber of Commerce of Illinois</b> 100 N. Riverside Plaza, Suite 1670 Chicago, IL 60606 630-926-1700 <a href="mailto:info@nacc-il.org">info@nacc-il.org</a> <a href="http://www.nacc-il.org">www.nacc-il.org</a> Maintains list of certified firms: Yes Provides training for businesses: Yes</p>	<p><b>NDIGO Foundation</b> 329 W. 18<sup>th</sup> Street, Ste 613 Chicago, IL 60616 312-264-6272 <a href="mailto:hhartman@ndigo.com">hhartman@ndigo.com</a> <a href="http://www.ndigo.com">www.ndigo.com</a> Maintains list of certified firms: No Provides training for businesses: Yes</p>
<p><b>Rainbow/PUSH Coalition *</b> 930 E. 50<sup>th</sup> Street Chicago, IL 60615 773-255-9067 773-256-2768 <a href="mailto:jmitchell@rainbowpush.org">jmitchell@rainbowpush.org</a> <a href="http://www.rainbowpush.org">www.rainbowpush.org</a> Maintains list of certified firms: Yes Provides training for businesses: Yes</p>	<p><b>RTW Veteran Center *</b> 7415 E. End, Suite 120 Chicago, IL 60649 800-974-2808 866-873-2494 Fax <a href="mailto:rtwvetcenter@yahoo.com">rtwvetcenter@yahoo.com</a> <a href="http://www.rtwvetcenter.org">www.rtwvetcenter.org</a> Maintains list of certified firms: Yes Provides training for businesses: Yes</p>
<p><b>South Shore Chamber, Inc. *</b> 1750 E. 71<sup>st</sup> Street Chicago, IL 60649-2000 773-955- 9508 773-955-9554 Tonya Trice, Executive Director <a href="mailto:info@southshorechamberinc.org">info@southshorechamberinc.org</a> <a href="http://www.southshorechamberinc.org">www.southshorechamberinc.org</a> Maintains list of certified firms: Yes Provides training for businesses: Yes</p>	<p><b>Sustainable Options for Urban Living, Inc. (SOUL)</b> 11603 S. Throop Street Chicago, IL 60643 773-250-1770 Ext 702 773 250-1770 <a href="mailto:Cyndi@soul-program.com">Cyndi@soul-program.com</a> <a href="http://www.soul-program.com">www.soul-program.com</a> Maintains list of certified firms: Yes Provides training for businesses: Yes</p>
<p><b>The Monroe Foundation</b> 1547 South Wolf Road Hillside, Illinois 60162 773-315-9720 <a href="mailto:omonroe@themonroefoundation.org">omonroe@themonroefoundation.org</a> <a href="http://www.themonroefoundation.org">www.themonroefoundation.org</a> Maintains list of certified firms: No Provides training for businesses: Yes</p>	<p><b>Turn 2 Growth</b> 15475 S. Park South Holland, IL 60473 708-913-4700 <a href="mailto:info@turn2growth.org">info@turn2growth.org</a> <a href="http://www.turn2growth.org">www.turn2growth.org</a> Maintains list of certified firms: Yes Provides training for businesses: Yes</p>

*\*Prime Contractors should contact agency with subcontracting opportunities to connect certified firms.*

Assist Agencies are comprised of not-for-profit agencies and/or chamber of commerce agencies that represent the interest of small, minority and/or women owned businesses.

<p><b>US Minority Contractors Association, Inc. *</b> 1250 S. Grove Ave. Suite 200 Barrington, IL 60010 847-352-5010 847-382-1787 <a href="mailto:larry.bullock@usminoritycontractors.org">larry.bullock@usminoritycontractors.org</a> <a href="http://www.USMinorityContractors.org">www.USMinorityContractors.org</a> Maintains list of certified firms: Yes Provides training for businesses: Yes</p>	<p><b>Women's Business Development Center *</b> 8 S. Michigan Ave., Suite 400 Chicago, IL 60603 312-853-3477x220 312-853-0145 <a href="mailto:edimenco@wbdc.org">edimenco@wbdc.org</a> <a href="http://www.wbdc.org">www.wbdc.org</a> Maintains list of certified firms: Yes Provides training for businesses: Yes</p>
<p><b>Women Construction Owners &amp; Executives (WCOE) *</b> Chicago Caucus 308 Circle Avenue Forest Park, IL 60130 708-366-1250 <a href="mailto:mkm@mkmservices.com">mkm@mkmservices.com</a> <a href="http://www.wcoeusa.org">www.wcoeusa.org</a> Maintains list of certified firms: Yes Provides training for businesses: No</p>	

*\*Prime Contractors should contact agency with subcontracting opportunities to connect certified firms.*



**BOOK 2  
INSTRUCTIONS AND EXECUTION DOCUMENTS**

**PROJECT TITLE:** WEBSTER AVENUE BRIDGE OVER NORTH BRANCH OF THE CHICAGO RIVER

**CDOT PROJECT NO.:** E-1-525

**SPECIFICATION NO.:** 1188838

**RFQ NO.:** 7346

**CITY OF CHICAGO**



**LORI E. LIGHTFOOT  
MAYOR**

Prepared by  
**Department of Transportation (CDOT)**  
Contracts Section

**GIA BIAGI**  
Commissioner of Department of Transportation  
30 North LaSalle Street, Suite 1100  
Chicago, Illinois 60602-2570

Issued by the  
**DEPARTMENT OF PROCUREMENT SERVICES**

**SHANNON E. ANDREWS**  
CHIEF PROCUREMENT OFFICER

Document Printed September 2020

**All Signatures To Be Sworn To Before A Notary Public**

*Any contract entered into as a result of this bid process is governed by the terms and conditions set forth in Book 1 "Terms and Conditions for Construction" for CDOT projects funded by the City, as amended and incorporated as if fully set forth here by this reference; and by Book 2, Book 3 (if applicable), plans, drawings, exhibits, and attachments as appropriate.*

**BOOK 2 - INSTRUCTIONS AND EXECUTION DOCUMENTS**

**ADVERTISEMENT FOR BIDS**

ATTACH  
LEGAL  
ADVERTISEMENT  
HERE

**BOOK 2 - INSTRUCTIONS AND EXECUTION DOCUMENTS  
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## DOCUMENT SUBMITTAL CHECKLIST

**This checklist is intended to assist you. Missing forms may invalidate your bid. Please ensure that you have completed the forms and indicate such by placing an "X" next to each completed item:**

1.		Schedule of Prices
2.		Submit the Appropriate Proposal: Proposal To Be Completed By a Corporation (if applicable); or Proposal To Be Completed By A Partnership; or Proposal To Be Completed By a Joint Venture; or Proposal To Be Completed By a Sole Proprietor
3.		Affidavit of Uncompleted Work
4.		Department of Procurement Services Bid Bond
5.		Contractor's Affidavit Regarding Removal of all Waste Materials and Identification of All Legal Dump Sites
6.		Schedule B – MBE/WBE Affidavit of Joint Venture
7.		Schedule C – MBE/WBE Letter of Intent to Perform as a Subcontractor or a Supplier
		Schedule C-V - VBE Letter of Intent to Perform as a Subcontractor to the Prime Contractor
8.		Schedule D – Compliance Plan Regarding MBE and WBE Utilization
		Schedule D-V - Compliance Plan Regarding VBE Utilization Affidavit of Prime Contractor
9.		Schedule F – Report of Subcontractor Solicitations
10.		Schedule H – Documentation of Good Faith Efforts
11.		City of Chicago On-Line Economic Disclosure Statement and Affidavit and Appendix A
12.		Affidavit of Chicago Business (If Applicable)
13.		Affidavit re Alternatively Powered Vehicle Bid Incentive (If Applicable)
14.		Veteran-Owned Small Local Businesses and Eligible Joint Ventures Affidavit
15.		Bidder's Commitment to Utilize Veteran-Owned Subcontractors Affidavit
16.		Bidder's Commitment to Utilize Apprentices that are Graduates of Chicago Schools
17.		Request to Apply Bid Incentive: Chicago Graduates Apprentice Utilization (MCC 2-92-335)
18.		Bidder's Commitment to Utilize Ex-Offender Apprentices
19.		Request to Apply Bid Incentive: Ex-Offender Apprentice Utilization (MCC 2-92-336)
20.		Mentoring Program Bid Preference Affidavit
21.		Bidder's Commitment to Utilize Business Enterprises Owned by People With Disabilities (BEPD)
22.		Bidder's Commitment to Utilize Project Area Subcontractors
23.		Sexual Harassment Policy Affidavit (2-92-612)
24.		Bidder's Commitment to Encourage Diverse Management And Workforce (MC 2-92-407)

# SECTION ONE

## PROJECT INFORMATION

The following Specifications supplement the “Requirements for Bidding and Instructions for Bidders” found in Section Two of this document.

Proposals will be received by the Chief Procurement Officer of the City of Chicago for:

Webster Avenue Bridge over the North Branch of the Chicago River, Project No. E-1-525

all in accordance with Contract Documents set forth below.

The work for which proposals are invited consist of the rehabilitation of the Webster Avenue Bridge. The Webster Avenue Bridge (S.N. 016-6057) is located on the east side of Bucktown neighborhood just east of Ashland Avenue. It crosses over the North Branch of the Chicago River at 1600 W. Webster Ave. The project limits begin at the Ashland Avenue intersection and ends at the N. Dominick Street intersection. The Webster Avenue Bridge is a double-leaf trunnion type bascule bridge with an overall length of 287 feet and a deck width of 60 feet. The bridge is currently inoperable and rated in poor condition. The bridge will be closed during construction and vehicular traffic will be detoured via local roads. Pedestrian traffic will be maintained during construction.

This includes but is not limited to the rehabilitation of the main span superstructure and substructure. It involves the replacement of the deck and floor system for the main and approach spans, structural repairs to the trusses, replacement of the approach slabs, and roadway improvements necessary to improve the serviceability at the Ashland Avenue intersection. The following is a summary of the scope of work that is not limited to:

- Removal and replacement of the open steel grid deck with a new steel grid deck half-filled with lightweight concrete.
- Removal and replacement of concrete filled steel grid sidewalk deck with FRP sidewalk grating.
- Removal and replacement of the fixed span concrete deck and sidewalks.
- Selective removal and replacement of steel stringers in the fixed span.
- Removal and replacement of the existing ornamental concrete railing in the fixed span with a new concrete ornamental railing.
- Removal of all the jackbeams in the bascule span.
- Rehabilitation of the existing structure including electrical, mechanical and structural work to the bascule bridge.
- Removal and replacement of the floorbeams, stringers, lateral bracing, sidewalk stringers, and curbs of the bascule span.
- Performing structural steel repairs to main trusses, anchor columns, anchor girders, trunnion trusses, and girders.

## Project Information

- Cleaning and painting the entire steel superstructure and substructure (anchor columns) which involve containment and disposal of any existing lead based paint.
- Cleaning and painting existing ornamental railing in the bascule span.
- Repairing and adjusting live load bearings.
- Performing bridge balance or counterweight adjustments to account for dead load changes on the bridge.
- Dewatering and clearing debris from counterweight pits followed by structural repair of concrete and epoxy crack injection to the pit walls and floor slab.
- Performing concrete repairs to River Piers and Abutments.
- Removing and reconstructing broken machine room walls above East River Pier.
- Removing existing dolphins and fender system and replacing with new approved pier protection system.
- Performing repairs to the northeast and southeast retaining walls. Removing and replacing the existing concrete railing on top of the retaining walls with an ornamental railing.
- Removal and replacement of bearings at the abutments.
- Removal and replacement the existing backwall at the East Abutment with a semi-integral backwall.
- Repairing machine room enclosure walls, tuckpointing where required, and removing all graffiti.
- Rehabilitation of the bridge houses including removal and replacement of roof, reconstruction of upper portion of third level, repairs to existing, and removal and disposal of hazardous materials.
- Cleaning and painting existing mechanical equipment, except for the center lock which will be rehabilitated.
- Striping bridge deck for new traffic configuration.
- Installing a drainage system for new deck.
- Installing electrical connection to the bridge.
- Removal and replacement of the navigational/obstruction lights.
- Installing arterial street light poles and luminaires near the east end of the bridge.
- Coordination with adjacent construction projects.
- Coordination with adjacent property owners and community groups.
- Coordination with various City, State and Federal departments.
- Coordination with Coast Guard and U.S Army Corps of Engineers.

## Project Information

All work shall be completed as described in the detail specifications, including all appurtenant work and accessories, to the complete satisfaction of, approval and acceptance by the City.

This description of work is intended to be general in nature and is neither a complete description nor a limitation on the work to be performed. Contractor shall perform all Work described in the Contract Documents or reasonably inferable as necessary to produce the results specified therein, except to the extent specifically indicated in the Contract Documents to be the responsibility of others.

**Fund Source:** Tax Increment Financing (City/TIF)

**Bid Deposit:** 5% of Total Base Bid

**MBE/WBE/VBE Participation Goal:** 26% (MBE), 6% (WBE), and 1% (VBE)

**Project Area Participation Goal:** 7.5%

Pursuant to Municipal Code Section 2-92-330 the City has established that the Project Area for this contract will include Community Areas 5 through 8, 21, 22, and 24 as indicated on the map incorporated herein. See following page for Project Area Definition map.

### **Award of Contract**

Proposals will be compared based on the **Award Criteria Figure**, correctly computed, and a contract, if awarded, will be awarded to the lowest responsive and responsible bidder, in the amount of the Total Base Bid.

The City reserves the right to check all calculations and to correct all extensions in case of error.

### **Inspection of Site**

The Bidder is expected to inspect the site of the Work. No allowance will be made for any difficulties that may be encountered in executing the Work due to a failure of the bidder to inspect the site. Site inspection shall be arranged through the Project Manager at the office of the Division of Engineering, 30 North LaSalle Street, Suite 400, Chicago, IL. (Telephone 312-742-3244).

### **Document Deposit**

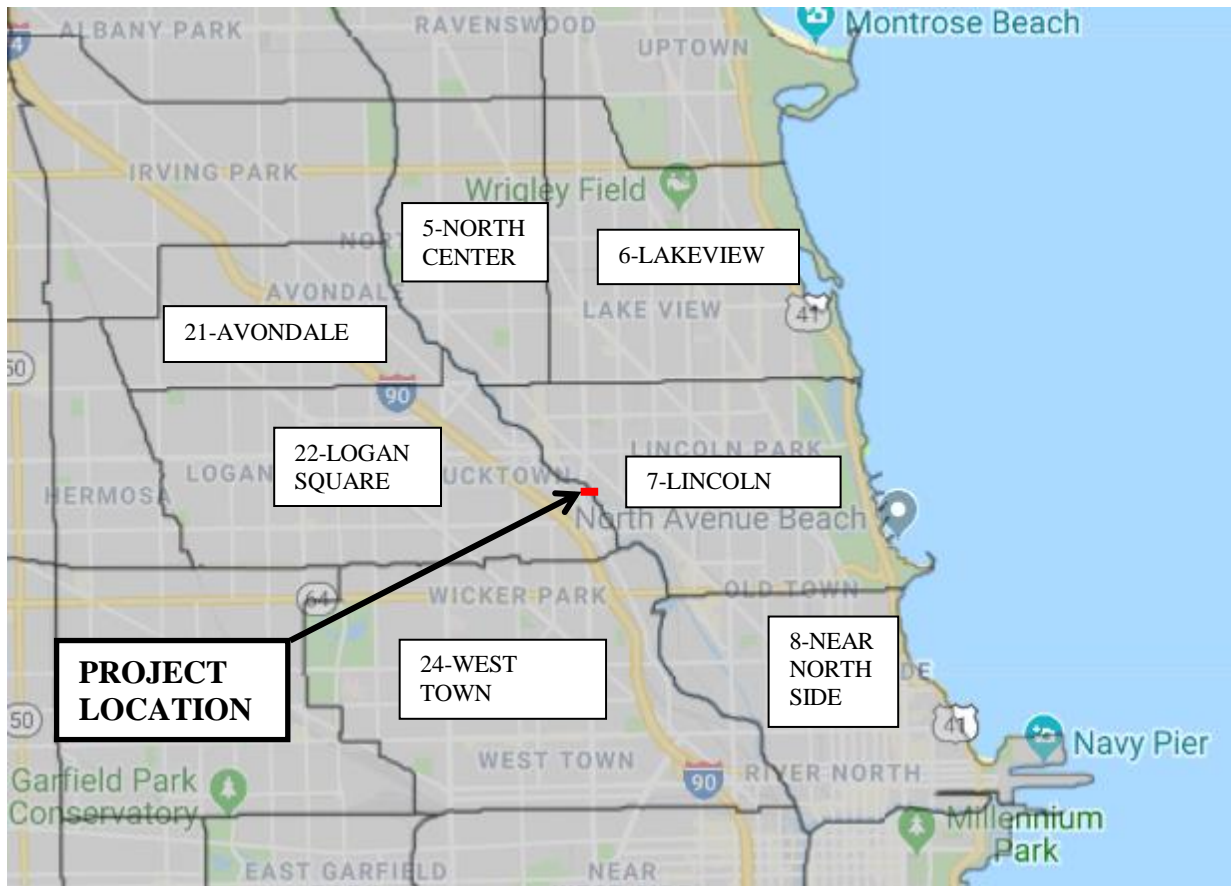
\$0.00 first set per bidder on CD-ROM

\$50.00 each subsequent set per bidder CD-ROM

## Project Information

### Project Area Definition Map

**Webster Avenue Bascule Bridge over the North Branch of the Chicago River  
Rehabilitation  
CDOT Project No.: E-1-525  
Community Area Recommendations**



#### Recommended Community Areas:

5 - North Center	7 - Lincoln Park	21 - Avondale	24 - West Town
6 - Lakeview	8 - Near North Side	22 - Logan Square	



## Project Information

### **Pre Bid Conference**

A pre bid conference will be held at the date, time and location indicated in the advertisement for bids. All interested parties are **strongly encouraged** to attend. The City may answer questions or clarify the terms of the bid documents at the conference. Written answers may be provided following the conference. Questions and requests for clarification may be submitted in writing, or may be raised at the conference; however, verbal questions and requests for clarification will be accepted only at the conference. All written questions or requests for clarification must be sent by electronic mail and directed to the attention of the Contract Administrator, Department of Procurement Services, Room 806 of City Hall, 121 N. LaSalle, Chicago IL 60602. The City will not accept any questions for the ten (10) day period preceding the bid opening date.

### **On-Line EDS**

The Bidder shall complete an online EDS prior to the bid due date. A bidder who does not file an electronic EDS prior to the bid due date may be found non-responsive and its bid rejected. If you are unable to complete the online EDS and print a Certificate of Filing prior to the response due date, the City will accept a paper EDS provided written justification is provided explaining the Bidders good faith efforts to complete it before the response due date and the reasons why it could not be completed.

#### *ONLINE EDS FILING REQUIRED PRIOR TO BID OPENING*

The Bidder must complete an online EDS prior to the bid opening date.

**A Bidder that does not file an electronic EDS prior to the bid opening will be found non-responsive and its bid will be rejected unless a paper EDS and written justification is submitted with the bid as explained in the above paragraph.**

#### *ONLINE EDS WEB LINK*

The web link for the Online EDS is <https://webapps.cityofchicago.org/EDSWeb>

## CONTRACT INSURANCE REQUIREMENTS

Chicago Department of Transportation  
Webster Avenue Bridge over the North Branch of Chicago River Rehabilitation

The Contractor shall provide and maintain at Contractor's own expense, until Contract completion and during the time period following final completion if Contractor is required to return and perform any additional work, the insurance coverages and requirements specified below, insuring all operations related to the Contract.

### A. INSURANCE TO BE PROVIDED

- 1) Workers Compensation and Employers Liability (Primary and Umbrella)  
Workers Compensation Insurance, as prescribed by applicable law covering all employees who are to provide a work, services or operations under this Contract and Employers Liability coverage with limits of not less than \$1,000,000 each accident, \$1,000,000 disease-policy limit, and \$1,000,000 disease-each employee, or the full per occurrence limits of the policy, whichever is greater. Coverage must include but not be limited to, the following: other state endorsement, United States Long Shore and Harbor Worker and Jones Act, alternate employer and voluntary compensation endorsement, when applicable.

Contractor may use a combination of primary and excess/umbrella policy/policies to satisfy the limits of liability required herein. The excess/umbrella policy/policies must provide the same coverages/follow form as the underlying policy/policies.

- 2) Commercial General Liability (Primary and Umbrella)  
Commercial General Liability Insurance or equivalent must be maintained with limits of not less than \$2,000,000 per occurrence, or the full per occurrence limits of the policy, whichever is greater, for bodily injury, personal injury, and property damage liability. Coverages must include but not be limited to, the following: All premises and operations, products/completed (for a minimum of two (2) years following project completion) explosion, collapse, underground, separation of insureds, defense, contractual liability (not to include endorsement CG 21 39 or equivalent), no exclusion for damage to work performed by Subcontractors, any limitation of coverage for designated premises or project is not permitted (not to include endorsement CG 21 44 or equivalent) and any endorsement modifying or deleting the exception to the Employer's Liability exclusion is not permitted. If a general aggregate limit applies, the general aggregate must apply per project/location and once per policy period if applicable, or Contractor may obtain separate insurance to provide the required limits which will not be subject to depletion because of claims arising out of any other work or activity of Contractor. If a general aggregate applies to products/completed operations, the general aggregate limits must apply per project and once per policy period.

The City must be provided additional insured status with respect to liability arising out of Contractor's work, services or operations and completed operations performed on behalf of the City. Such additional insured coverage must be provided on ISO form CG 2010 10 01 and CG 2037 10 01 or on an endorsement form at least as broad for ongoing operations and completed operations. The City's additional insured status must apply to liability and defense of suits arising out of Contractor's acts or omissions, whether such

## Contract Insurance Requirements

liability is attributable to the Contactor or to the City. The full policy limits and scope of protection also will apply to the City as an additional insured, even if they exceed the City's minimum limits required herein. Contractor's liability insurance must be primary without right of contribution by any other insurance or self-insurance maintained by or available to the City.

Contractor may use a combination of primary and excess/umbrella policy/policies to satisfy the limits of liability required herein. The excess/umbrella policy/policies must provide the same coverages/follow form as the underlying policy/policies.

3) Automobile Liability (Primary and Umbrella)

Contractor must maintain Automobile Liability Insurance with limits of not less than \$2,000,000 per occurrence, or the full per occurrence limits of the policy, whichever is greater, for bodily injury and property damage. Coverage must include but not be limited to, the following: ownership, maintenance, or use of any auto whether owned, leased, non-owned or hired used in the performance of the work or devices, both on and off the Project site including loading and unloading. If applicable, coverage extension must include an MCS-90 endorsement where required by the Motor Carrier Act of 1980. The City is to be named as an additional insured on a primary, non-contributory basis.

Contractor may use a combination of primary and excess/umbrella policy/policies to satisfy the limits of liability required herein. The excess/umbrella policy/policies must provide the same coverages/follow form as the underlying policy/policies.

4) Excess/Umbrella

Excess/Umbrella Liability Insurance must be maintained with limits of not less than \$15,000,000 per occurrence, or the full per occurrence limits of the policy, whichever is greater. The policy/policies must provide the same coverages/follow form as the underlying Commercial General Liability, Automobile Liability, Employers Liability and Completed Operations coverage required herein and expressly provide that the excess or umbrella policy/policies will drop down over reduced and/or exhausted aggregate limit, if any, of the underlying insurance. If a general aggregate limit applies the general aggregate must apply per project/location. The Excess/Umbrella policy/policies must be primary without right of contribution by any other insurance or self-insurance maintained by or available to the City.

Contractor may use a combination of primary and excess/umbrella policies to satisfy the limits of liability required in sections A.1, A.2, A.3 and A.4 herein.

5) Builders Risk

When Contractor undertakes any construction, including improvements, betterments, and/or repairs, the Contractor must provide All Risk Builders Risk Insurance at replacement cost for materials, supplies, equipment, machinery and fixtures that are or will be part of the project permanent/facility. Coverages must include but are not limited to, the following: material stored off-site and in-transit, water including overflow, leakage, sewer backup or seepage, damage to adjoining and existing property, collapse, debris removal, damage resulting from faulty workmanship or materials, extra expense, mechanical- electrical breakdown or failure and testing. The City of Chicago is to be named as an additional insured and loss payee.

## Contract Insurance Requirements

The Contractor is responsible for all loss or damage to personal property (including materials, equipment, tool and supplies) owned, rented or used by Contractor.

- 6) Owner's and Contractor's Protective Liability  
With respect to the operations performed by Contractor, an Owner's and Contractor's Protective Liability policy designating the City of Chicago as named insured must be provided with limits of not less than \$2,000,000 per occurrence, combined single limit, for losses arising out of bodily injuries to or death of all persons and for damage to or destruction of property.
- 7) Professional Liability  
When any architects, engineers, construction managers or other professional consultants perform work, services, or operations in connection with this Contract, Professional Liability Insurance covering acts, errors, or omissions must be maintained with limits of not less than \$2,000,000. Coverage must include but not be limited to, pollution liability if environment site assessments will be done. When policies are renewed or replaced, the policy retroactive date must coincide with, or precede, start of work on the Contract. A claims-made policy which is not renewed or replaced must have an extended reporting period of two (2) years.
- 8) Contractors Pollution Liability  
When any work, services, or operations performed involves a potential pollution risk that may arise from the operations of Contractor's scope of services Contractors Pollution Liability must be provided or caused to be provided, covering bodily injury, property damage and other losses caused by pollution conditions with limits of not less than \$2,000,000 per occurrence. Coverage must include but not be limited to completed operations, contractual liability, defense, excavation, environmental cleanup, remediation and disposal and if applicable, include transportation and non-owned disposal coverage. When policies are renewed or replaced, the policy retroactive date must coincide with or precede, start of work on the Contract. A claims-made policy which is not renewed or replaced must have an extended reporting period of two (2) years. The City is to be named as an additional insured.
- 9) Marine Protection & Indemnity  
When Contractor undertakes any marine operation in connection with this Contract, Contractor must provide or cause to be provided, Marine Protection & Indemnity coverage with limits of not less than \$1,000,000. Coverage must include property damage and bodily injury to third parties, injuries to crew members if not provided through other insurance; damage to wharves, piers and other structures, and collision. The City of Chicago is to be named as an additional insured.

## Contract Insurance Requirements

### B. ADDITIONAL REQUIREMENTS

Evidence of Insurance. Contractor must furnish the City, Department of Procurement Services, 121 N. LaSalle Street, Room 806, Chicago, IL 60602, original certificates of insurance and additional insured endorsement, or other evidence of insurance, to be in force on the date of this Contract, and renewal certificates of Insurance and endorsement, or such similar evidence, if the coverages have an expiration or renewal date occurring during the term of this Contract. Contractor must submit evidence of insurance prior to execution of Contract. The receipt of any certificate does not constitute agreement by the City that the insurance requirements in the Contract have been fully met or that the insurance policies indicated on the certificate are in compliance with all requirements of Contract. The failure of the City to obtain, nor the City's receipt of, or failure to object to a non-complying insurance certificate, endorsement or other insurance evidence from Contractor, its insurance broker(s) and/or insurer(s) will not be construed as a waiver by the City of any of the required insurance provisions. Contractor must advise all insurers of the Contract provisions regarding insurance. The City in no way warrants that the insurance required herein is sufficient to protect Contractor for liabilities which may arise from or relate to the Contract. The City reserves the right to obtain complete, certified copies of any required insurance policies at any time.

Failure to Maintain Insurance. Failure of the Contractor to comply with required coverage and terms and conditions outlined herein will not limit Contractor's liability or responsibility nor does it relieve Contractor of its obligation to provide insurance as specified in this Contract. Nonfulfillment of the insurance conditions may constitute a violation of the Contract, and the City retains the right to suspend this Contract until proper evidence of insurance is provided, or the Contract may be terminated.

Notice of Material Change, Cancellation or Non-Renewal. Contractor must provide for sixty (60) days prior written notice to be given to the City in the event coverage is substantially changed, canceled or non-renewed and ten (10) days prior written notice for non-payment of premium.

Deductibles and Self-Insured Retentions. Any deductibles or self-insured retentions on referenced insurance coverages must be borne by Contractor.

Waiver of Subrogation. Contractor hereby waives its rights and its insurer(s)' rights of subrogation and agrees to require their insurers to waive their rights of subrogation against the City under all required insurance herein for any loss arising from or relating to this Contract. Contractor agrees to obtain any endorsement that may be necessary to affect this waiver of subrogation, but this provision applies regardless of whether or not the City received a waiver of subrogation endorsement for Contractor's insurer(s).

Contractors Insurance Primary. All insurance required of Contractor under this Contract must be endorsed to state that Contractor's insurance policy is primary and not contributory with any insurance carrier by the City.

No Limitation as to Contractor's Liabilities. The coverages and limits furnished by Contractor in no way limit the Contractor's liabilities and responsibilities specified within the Contract or by law.

No Contribution by City. Any insurance or self-insurance programs maintained by the City do not contribute with insurance provided by Contractor under this Contract.

## **Contract Insurance Requirements**

Insurance not Limited by Indemnification. The required insurance to be carried is not limited by any limitations expressed in the indemnification language in this Contract or any limitation placed on the indemnity in this Contract given as a matter of law.

Insurance and Limits Maintained. If Contractor maintains higher limits and/or broader coverage than the minimums shown herein, the City requires and must be entitled the higher limits and/or broader coverage maintained by Contractor. Any available insurance proceeds in excess of the specified minimum limits of insurance and coverage must be available to the City.

Joint Venture or Limited Liability Company. If Contractor is a joint venture or limited liability company, the insurance policies must name the joint venture or limited liability company as a named insured.

Other Insurance obtained by Contractor. If Contractor desires additional coverages, the Contractor will be responsible for the acquisition and cost.

Insurance required of Subcontractors. Contractor must name Subcontractor(s) as a named insured(s) under Contractor's insurance or Contractor will require each Subcontractor(s) to provide and maintain Commercial General Liability, Commercial Automobile Liability, Worker's Compensation and Employers Liability Insurance and when applicable Excess/Umbrella Liability Insurance with coverage at least as broad as in outlined in Section A, Insurance Required. The limits of coverage will be determined by Contractor. Contractor must determine if Subcontractor(s) must also provide any additional coverage or other coverage outlined in Section A, Insurance Required. Contractor is responsible for ensuring that each Subcontractor has named the City as an additional insured where required and name the City as an additional insured under the Commercial General Liability on ISO form CG 2010 10 01 and CG 2037 10 01 for ongoing operation and completed operations on an endorsement form at least as broad and acceptable to the City. Contractor is also responsible for ensuring that each Subcontractor has complied with the required coverage and terms and conditions outlined in this Section B, Additional Requirements. When requested by the City, Contractor must provide to the City certificates of insurance and additional insured endorsements or other evidence of insurance. The City reserves the right to obtain complete, certified copies of any required insurance policies at any time. Failure of the Subcontractors to comply with required coverage and terms and conditions outlined herein will not limit Contractor's liability or responsibility.

City's Right to Modify. Notwithstanding any provisions in the Contract to the contrary, the City, Department of Finance, Risk Management Office maintains the right to modify, delete, alter or change these requirements.

## Contract Insurance Requirements

### INSURANCE CERTIFICATE OF COVERAGE

Named Insured: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 \_\_\_\_\_  
 (City) (State) (Zip)

Specification #: \_\_\_\_\_  
 RFP: \_\_\_\_\_  
 Project#: \_\_\_\_\_  
 Contract#: \_\_\_\_\_

Description of Operation/Location	
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The insurance policies and endorsements indicated below have been issued to the designated named insured with the policy limits as set forth herein covering the operation described within the contract involving the named insured and the City of Chicago. The Certificate issuer agrees that in the event of cancellation, non-renewal or material change involving the indicated policies, the issuer will provide at least sixty (60) days prior written notice of such change to the City of Chicago at the address shown on this Certificate. This certificate is issued to the City of Chicago in consideration of the contract entered into with the named insured, and it is mutually understood that the City of Chicago relies on this certificate as a basis for continuing such agreement with the named insured:

Type of Insurance	Insurer Name	Policy Number	Expiration Date	Limits of Liability All Limits in Thousands
General Liability <input type="checkbox"/> Claims made <input type="checkbox"/> Occurrence <input type="checkbox"/> Premise-Operations <input type="checkbox"/> Explosion/Collapse Underground <input type="checkbox"/> Products/Completed Operations <input type="checkbox"/> Blanket Contract <input type="checkbox"/> Broad Form <input type="checkbox"/> Independent Contractors <input type="checkbox"/> Personal Injury <input type="checkbox"/> Pollution				CSL Per Occurrence \$ _____ General \$ _____ \$ _____ \$ _____
Automobile Liability				CSL Per Occurrence \$ _____
<input type="checkbox"/> Excess Liability <input type="checkbox"/> Umbrella Liability				Each Occurrence \$ _____
Worker's Compensation and Employer's Liability				Statutory/Illinois Employers Liability \$ _____
Builders Risk/Course of Construction				Amount of Contract
Professional Liability				\$ _____
Owner Contractors Protective				\$ _____
Other				\$ _____

Specimen

- a) Each Insurance policy required by this agreement, excepting policies for worker's compensation and professional liability, will read: "The City of Chicago is an additional insured as respects operations and activities of, or on behalf of the named insured, performed under contract with or permit from the City of Chicago."
- b) The General, Automobile and Excess/Umbrella Liability Policies described provide for severability of Interest (cross liability) applicable to the named insured and the City.
- c) Workers Compensation and Property Insurers shall waive all rights of subrogation against the City of Chicago.
- d) The receipt of this certificate by the City does not constitute agreement by the City that the insurance requirements in the contract have been fully met, or that the insurance policies indicated by this certificate are in compliance with all contract requirements.

Name and Address of Certificate Holder and Recipient of Notice	
Certificate Holder/Additional Insured	Signature of Authorized Rep.: _____
City of Chicago	Agency/Company: _____
Department of Procurement Services	Address: _____
121 N. LaSalle St., #806	Telephone: _____
Chicago, IL 60602	

**For City use only**  
 Name of City Department requesting certificate: (Using Dept.) \_\_\_\_\_  
 Address: \_\_\_\_\_ ZIP Code: \_\_\_\_\_  
 Attention: \_\_\_\_\_

**Proposal Pages**

**PROPOSAL PAGES**



## **PROPOSAL**

The undersigned proposes to construct

### **Webster Avenue Bridge over the North Branch of the Chicago River**

CDOT Project No. E-1-525

as required by this Contract, to perform all Work required, and to provide and furnish the required performance and payment bond and all of the labor, materials, tools, equipment, expendable and otherwise, and all accessories and transportation services necessary to perform and complete the Work required in a workmanlike manner and within the specified time the Work required, all in accordance with the Contract Documents, at the unit and lump sum prices hereinafter set forth in the Schedule of Prices; and

Further, the undersigned agrees that upon receipt of written notice of acceptance of this Proposal, he will furnish a satisfactory Performance Bond within seven (7) calendar days; and

Further, the undersigned declares that he has carefully examined the Contract Documents, Addenda (if any), and Exhibits on file at the Department of Transportation; that he has inspected in detail the site of the proposed Work; that he has familiarized himself with all of the conditions affecting the Contract; that he has familiarized himself as to the Work to be done and the conditions under which it must be carried out; that he understands that in making this Proposal he waives all rights to plead any misunderstanding regarding the same; and

Further, the undersigned declares that he has filled out and signed the "Economic Disclosure Statement" form and all other forms requiring Bidders' signature; and

Further, the undersigned understands that he shall be prepared to provide the satisfactory documentation to the Chief Procurement Officer relating to his performance ability and possession of necessary facilities, pecuniary resources and adequate insurance as called for in Article 6 entitled "Competency of Bidder" of the "Requirements for Bidding and Instructions for Bidders"; and

Further, the undersigned firm certifies that it is not barred from contracting with any unit of State or local government as a result of a conviction for the violation of State laws prohibiting bid-rigging or bid-rotating; and

Further, the undersigned understands that he must show the lump sum price, and the Award Criteria Figure and that if not so made, his Proposal may be rejected as irregular; and

Further, the undersigned understands that he must show in the Schedule of Prices the unit or lump sum price, as the case may be for which he proposes to perform each item of work, and that all extensions and the summation for the base bid amount must be made by him, and that if not so made his Proposal may be rejected as irregular; and

Further, the undersigned declares that the price stated for each item is based on the projected cost of that item at the time that the Work is to be performed, and also includes a proportionate amount of the total cost of the entire Work in full compliance with the Contract Documents and the requirements of the Commissioner and City Chief Procurement Officer, and constitutes compensation in full for performing and completing the work pertaining to said item, free of all claims, liens and charges whatsoever; and

## Proposal Pages

Further, the undersigned declares that the prices herein are in compliance with all applicable laws, ordinances, regulations and codes of the Federal, State and City government having jurisdiction.

**NOTE:** THE BIDDER SHOULD NOT ADD ANY CONDITIONS OR QUALIFYING STATEMENTS TO HIS PROPOSAL, AS SUCH ADDITIONS MAY CAUSE THE PROPOSAL TO BE DECLARED INFORMAL AND AS NOT BEING RESPONSIVE TO THE ADVERTISEMENT FOR BIDS.

Further, the undersigned declares that he has filled in the required percentages in the “Award Criteria” Determination forms.

### **TIME OF COMPLETION**

It is understood and agreed that TIME IS OF THE ESSENCE IN THIS CONTRACT, and the Contractor agrees to begin actual work covered by this Contract after notification by the Commissioner to commence work and to prosecute the same with all due diligence so as to complete the entire work under the Contract within **275 calendar days**. It is understood that “Completion” shall mean completion to the point of acceptance by the Commissioner, i.e. substantial completion/beneficial occupancy.

### **Project Milestones:**

- Milestone 1A:** Submittal of CPM schedule (including submittal dates for shop drawings, and other required submittals) for construction work within 14 calendar days after the Notice to Proceed.
- Milestone 1B:** Submit revised CPM schedule within 7 calendar days after receipt of comments.
- Milestone 2:** Substantial completion of all work 275 calendar days after Notice To Proceed.
- Milestone 3:** Completion of all Punch List work 30 calendar days after issuance.

The Contractor may prosecute the work through two shifts each day if he deems such action necessary in order to complete the work within the specified time period. However, no work will be permitted between the hours of 9:00 p.m. and 8:00 a.m. Any variation from these restricted working hours to include extended shift hours and daytime work, if any, can only be permitted with the written approval of the Commissioner.

In the event that progress falls behind the approved schedule, work shall proceed on a twenty-four (24) hour per day basis without additional compensation, if so ordered by the Commissioner, to comply with the requirements of this Section.

### **PUNCH LIST TIME OF COMPLETION**

It is also understood and agreed that TIME IS OF THE ESSENCE IN CLOSING OUT THE JOB SITE WORK OF THIS CONTRACT, and the Contractor agrees to begin work immediately after receipt of formal comprehensive list of minor miscellaneous or finishing work also known as “Punch List” work.

Further, upon physical completion of the Work and final inspection of same, a final “Punch List” will be transmitted to the Contractor from the Commissioner. This final “Punch List” will consist of not only physical work items requiring corrective action, but will also include all

## Proposal Pages

applicable Contractor submittals as may be required by the Contract. It is understood and agreed that **all** final “Punch List” work will be prosecuted expeditiously and completed, in total, within thirty (30) calendar days of the date of the transmittal to the Contractor. Failure to complete **all** final “Punch List” items within the thirty (30) calendar day time limit shall be construed as failure to prosecute work of the contract and, as such, will subject the Contractor to the assessment of project liquidated damages in the amount(s) specified under the “Liquidated Damages” section of this proposal. These damages will be assessed continuously from the time of the expiration of the thirty (30) calendar day time limit until such time as **all** final “Punch List” items are completed to the satisfaction of the Commissioner.

## **LIQUIDATED DAMAGES**

Failure of the Contractor to complete the Work under this Contract within the specified completion time will result in the incurrence by the City of additional construction and engineering costs, including but not limited to supervision and inspection, together with other tangible and intangible losses. Therefore, if any work shall remain uncompleted after the time specified for the completion of the work or after any authorized extension of such stipulated time, the Contractor shall pay to the City the sum listed below for each and every day that such work remains uncompleted, and such moneys shall be paid as liquidated damages, not a penalty, to partially cover costs and losses by the City.

Completion of all Milestone 1A:	\$1,000 per calendar day
Completion of all Milestone 1B:	\$1,000 per calendar day
Completion of all Milestone 2:	\$ 6,775 per calendar day
Completion of "Punch List" Work:	\$1,000 penalty per calendar day

The City shall recover said liquidated damages by deducting the amount thereof out of any moneys due or that may become due, and if said moneys are insufficient to cover said damages, then the Contractor or the Surety shall pay the amount due.

Nothing herein contained shall be construed as limiting the right of the City to recover from the Contractor any and all amounts due or to become due, and any and all costs and expenses sustained by the City for improper performance hereunder, repudiation of the Contract by the Contractor, failure to perform or breach or breaches in any other respect, including but not limited to defective workmanship or materials.

The date for commencement of work will not be counted as a calendar day but each subsequent day thereafter from midnight to midnight will be counted as one calendar day and the last day counted will be the day on which the Contractor shall have completed and the Commissioner shall have accepted the entire work under this Contract.

## **UNIT PRICES**

Unit prices will be used to determine the amount to ADD TO or DEDUCT FROM contract price for any properly authorized additional or omitted work. Unit prices shall be inclusive of the cost of materials, work, layout, drafting, balancing and testing, tools and sundries, overhead and profit, supervision and any and all other costs of whatsoever nature in connection therewith for work in place and accepted or omitted as the case may be. The calculation for determining the number of units of work shall be actual surface, volume, length, hours and number of individual items listed for the class of work complete in place and accepted or omitted. No allowance for waste, loss, breakage, damage or difficulties shall be made.

Unit Schedule of Prices for all applicable materials related to the Work under this Contract shall be inserted in the spaces provided, in this proposal.

The Chief Procurement Officer reserves the right to make corrections, after receiving the bids, to any clerical error apparent on the Line Items, including but not limited to obviously incorrect units or misplaced decimal points, or arithmetic error. The Bidder must bid all line items set forth on the Proposal Pages, except to the extent that the Specifications expressly allows

## **Proposal Pages**

otherwise. In the event that a comparison of the Bidder's "Unit Price" and "Total Price" submitted for any line item reveals a calculation error or other discrepancy, the Unit Price will prevail.

### **SPECIAL CONDITIONS**

The contractor is directed to comply with the adjacent property owner requirements for limited temporary access to complete the retaining wall work.

For compliance to access the Metropolitan Water Reclamation District of Greater Chicago (MWRDGC) property to the southwest of the bridge, the contractor must provide a certificate of insurance evidencing general liability, property damage and environmental contamination insurance in an amount of not less than \$4,000,000.00. The MWRDGC, with its Commissioners, officers, agents, and employees, to be named as additional insured for the face values under the stated certificate of insurance. The contractor shall comply prior to coordinating work on the MWRDGC property.

## **SCHEDULE OF PRICES**

- SCHEDULE OF PRICES -

**CDOT Project No. E-1-525 – Specification No. 1188838**

**Webster Avenue Bridge over the North Branch of the Chicago River**

Bidder's pricing for each line item should carry its share of the costs of work, plus its share of overhead and profit.

Bidders should avoid nominal pricing for some lines and enhanced pricing for other lines. Bids that the Chief Procurement Officer considers in his/her opinion to be materially unbalanced will be rejected.

ITEM NO.	CODE NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE	TOTAL PRICE
1	66900200	NON-SPECIAL WASTE DISPOSAL	CU YD	70		
2	66900530	SOIL DISPOSAL ANALYSIS	EACH	2		
3	66901001	REGULATED SUBSTANCES PRE-CONSTRUCTION PLAN	LUMP SUM	1		
4	66901002	ON-SITE MONITORING OF REGULATED SUBSTANCES	CAL DA	30		
5	66901003	REGULATED SUBSTANCES FINAL CONSTRUCTION REPORT	LUMP SUM	1		
6	67100100	MOBILIZATION	LUMP SUM	1		
7	CDOT6700010	ENGINEER'S FIELD OFFICE	CAL MO	15		
8	Z0076600	TRAINEES	ALLOWANCE	1,000	\$0.80	\$800.00
9	*****	FURNISH AND INSTALL PROJECT SIGN, TYPE A	EACH	2		
10	*****	FURNISH AND INSTALL PROJECT SIGN, TYPE B	EACH	1		
11	*****	FURNISH AND INSTALL PROJECT SIGN, BANNER	EACH	1		

- SCHEDULE OF PRICES -

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ITEM NO.	CODE NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE	TOTAL PRICE
12	*****	ASBESTOS ABATEMENT	ALLOWANCE	35,000	\$1.00	\$35,000.00
13	*****	LEAD-BASED PAINT ABATEMENT	ALLOWANCE	150,000	\$1.00	\$150,000.00
14	*****	HAZARDOUS MATERIALS ABATEMENT	ALLOWANCE	30,000	\$1.00	\$30,000.00
15	20200100	EARTH EXCAVATION	CU YD	70		
16	25200110	SODDING, SALT TOLERANT	SQ YD	81		
17	28000510	INLET FILTERS	EACH	4		
18	31101200	SUBBASE GRANULAR MATERIAL, TYPE B 4"	SQ YD	440		
19	35501320	HOT-MIX ASPHALT BASE COURSE, 9"	SQ YD	33		
20	40600275	BITUMINOUS MATERIALS (PRIME COAT)	POUND	74		
21	40600290	BITUMINOUS MATERIALS (TACK COAT)	POUND	576		
22	40603080	HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N50	TON	139		



- SCHEDULE OF PRICES -

**CDOT Project No. E-1-525 – Specification No. 1188838**

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ITEM NO.	CODE NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE	TOTAL PRICE
23	40603340	HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N70	TON	82		
24	42000070	PAVEMENT CONNECTOR (HMA) FOR BRIDGE APPROACH SLAB	SQ YD	48		
25	44000100	PAVEMENT REMOVAL	SQ YD	201		
26	44000155	HOT-MIX ASPHALT SURFACE REMOVAL, 1 1/2"	SQ YD	15		
27	44000165	HOT-MIX ASPHALT SURFACE REMOVAL, 4"	SQ YD	841		
28	44000500	COMBINATION CURB AND GUTTER REMOVAL	FOOT	245		
29	44000600	SIDEWALK REMOVAL	SQ FT	2,903		
30	72000100	SIGN PANEL - TYPE 1	SQ FT	11		
31	78000100	THERMOPLASTIC PAVEMENT MARKING - LETTERS AND SYMBOLS	SQ FT	69		
32	78000200	THERMOPLASTIC PAVEMENT MARKING - LINE 4"	FOOT	523		
33	78000650	THERMOPLASTIC PAVEMENT MARKING - LINE 24"	FOOT	516		

- SCHEDULE OF PRICES -

**CDOT Project No. E-1-525 – Specification No. 1188838**

**Webster Avenue Bridge over the North Branch of the Chicago River**

Bidder's pricing for each line item should carry its share of the costs of work, plus its share of overhead and profit.

Bidders should avoid nominal pricing for some lines and enhanced pricing for other lines. Bids that the Chief Procurement Officer considers in his/her opinion to be materially unbalanced will be rejected.

ITEM NO.	CODE NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE	TOTAL PRICE
34	78008200	POLYUREA PAVEMENT MARKING TYPE I - LETTERS AND SYMBOLS	SQ FT	180		
35	78008210	POLYUREA PAVEMENT MARKING TYPE I - LINE 4"	FOOT	906		
36	78008230	POLYUREA PAVEMENT MARKING TYPE I - LINE 6"	FOOT	201		
37	78008250	POLYUREA PAVEMENT MARKING TYPE I - LINE 12"	FOOT	20		
38	78008270	POLYUREA PAVEMENT MARKING TYPE I - LINE 24"	FOOT	23		
39	CDOT4240010	PORTLAND CEMENT CONCRETE SIDEWALK 5 INCH	SQ FT	2,507		
40	CDOT4240020	PORTLAND CEMENT CONCRETE SIDEWALK 8 INCH	SQ FT	419.5		
41	CDOT4240040	PORTLAND CEMENT CONCRETE ADA RAMP 8 INCH	SQ FT	436		
42	CDOT4240065	RADIAL DETECTABLE WARNING TILES (CAST IRON)	SQ FT	61.5		
43	CDOT6020010	CATCH BASINS, TYPE 1, 4'-DIAMETER, TYPE 1 FRAME, OPEN LID (CITY OF CHICAGO)	EACH	2		
44	CDOT6050020	REMOVING CATCH BASINS	EACH	2		

- SCHEDULE OF PRICES -

**CDOT Project No. E-1-525 – Specification No. 1188838**

**Webster Avenue Bridge over the North Branch of the Chicago River**

Bidder's pricing for each line item should carry its share of the costs of work, plus its share of overhead and profit.

Bidders should avoid nominal pricing for some lines and enhanced pricing for other lines. Bids that the Chief Procurement Officer considers in his/her opinion to be materially unbalanced will be rejected.

ITEM NO.	CODE NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE	TOTAL PRICE
45	CDOT6060020	COMBINATION CURB AND GUTTER TYPE B V.12	FOOT	265.5		
46	X0326243	SEDIMENT CONTROL, SILT CURTAIN	LUMP SUM	1		
47	X0327980	PAVEMENT MARKING REMOVAL - WATER BLASTING	SQ FT	516		
48	*****	REMOVE, STORE AND RE-ERECT SIGN PANEL	EACH	8		
49	*****	SIDEWALK REMOVAL (SPECIAL)	SQ FT	805		
50	*****	STORM SEWERS, TYPE 2, 8-INCH (EXTRA STRENGTH VITRIFIED CLAY PIPE)	FOOT	5		
51	CDOT6640010	TEMPORARY CHAIN LINK FENCE WITH SCREENING, 6'	FOOT	80		
52	X1400347	DETOUR TRAFFIC SIGNAL MODIFICATIONS AND MAINTENANCE	EACH	1		
53	X7010218	TRAFFIC CONTROL AND PROTECTION, (SPECIAL)	LUMP SUM	1		
54	20900110	POROUS GRANULAR BACKFILL	CU YD	375.0		
55	50157300	PROTECTIVE SHIELD	SQ YD	1,188		

– SCHEDULE OF PRICES –

**CDOT Project No. E-1-525 – Specification No. 1188838**

**Webster Avenue Bridge over the North Branch of the Chicago River**

Bidder's pricing for each line item should carry its share of the costs of work, plus its share of overhead and profit.

Bidders should avoid nominal pricing for some lines and enhanced pricing for other lines. Bids that the Chief Procurement Officer considers in his/her opinion to be materially unbalanced will be rejected.

ITEM NO.	CODE NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE	TOTAL PRICE
56	50200100	STRUCTURE EXCAVATION	CU YD	86.0		
57	50300260	BRIDGE DECK GROOVING	SQ YD	588		
58	50300285	FORM LINER TEXTURED SURFACE	SQ FT	2,732		
59	50500505	STUD SHEAR CONNECTORS	EACH	6,492		
60	51500100	NAME PLATES	EACH	1		
61	52100010	ELASTOMERIC BEARING ASSEMBLY, TYPE I	EACH	32		
62	50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	108,630		
63	52000110	PREFORMED JOINT STRIP SEAL	FOOT	108		
64	52100520	ANCHOR BOLTS, 1"	EACH	64		
65	59000200	EPOXY CRACK INJECTION	FOOT	176		
66	CDOT5010030	CONCRETE REMOVAL	CU YD	253.8		

- SCHEDULE OF PRICES -

**CDOT Project No. E-1-525 – Specification No. 1188838**

**Webster Avenue Bridge over the North Branch of the Chicago River**

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ITEM NO.	CODE NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE	TOTAL PRICE
67	CDOT5030020	HIGH PERFORMANCE CONCRETE STRUCTURES	CU YD	258.0		
68	CDOT5030030	HIGH PERFORMANCE CONCRETE SUPERSTRUCTURES	CU YD	256.3		
69	CDOT5030050	CLASS "SI" CONCRETE (MISCELLANEOUS)	CU YD	32.6		
70	CDOT5870010	PROTECTIVE CONCRETE SEALER	SQ YD	1,100		
71	X0323444	DECORATIVE STEEL RAILING	FOOT	210		
72	X0326519	STEEL RAILING REMOVAL	FOOT	206		
73	Z0001903	STRUCTURAL STEEL REMOVAL	POUND	486,420		
74	Z0007101	CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES NO. 1	LUMP SUM	1		
75	Z0012754	STRUCTURAL REPAIR OF CONCRETE (DEPTH EQUAL TO OR LESS THAN 5 INCHES)	SQ FT	589		
76	Z0012755	STRUCTURAL REPAIR OF CONCRETE (DEPTH GREATER THAN 5 INCHES)	SQ FT	99		
77	*****	BALANCING OF BRIDGE AND ALTERATION OF COUNTERWEIGHTS	LUMP SUM	1		

- SCHEDULE OF PRICES -

**CDOT Project No. E-1-525 – Specification No. 1188838**

**Webster Avenue Bridge over the North Branch of the Chicago River**

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ITEM NO.	CODE NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE	TOTAL PRICE
78	*****	BRIDGE OPERATION AND MAINTENANCE	LUMP SUM	1		
79	*****	CLEANING AND PAINTING EXISTING STEEL STRUCTURES	LUMP SUM	1		
80	*****	COUNTERWEIGHT PIT CLEANING	EACH	2		
81	*****	DOLPHINS	EACH	4		
82	*****	DRAINAGE SYSTEM	LUMP SUM	1		
83	*****	FURNISHING AND ERECTING 5-INCH GRATING, HALF CONCRETE FILLED	SQ FT	6,114		
84	*****	FURNISHING AND ERECTING FRP GRATING	SQ FT	3,227		
85	*****	FURNISHING AND ERECTING STRUCTURAL STEEL	LUMP SUM	1		
86	*****	FURNISHING AND ERECTING STRUCTURAL STEEL, FIELD DISCOVERED CONDITIONS REPAIRED AS DIRECTED BY THE COMMISSIONER	POUND	20,000		
87	*****	FLOOR ACCESS HATCH	EACH	4		

- SCHEDULE OF PRICES -

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ITEM NO.	CODE NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE	TOTAL PRICE
88	*****	METAL LADDERS	EACH	4		
89	*****	PIER PROTECTION REPLACEMENT	FOOT	301		
90	*****	REMOVAL OF DETERIORATED CONNECTORS AND REPLACEMENT WITH HIGH STRENGTH BOLTS	EACH	51		
91	*****	REFURBISHING OF LIVE LOAD BEARINGS	EACH	4		
92	*****	REMOVAL OF EXISTING SUPERSTRUCTURES	EACH	1		
93	*****	REMOVAL OF EXISTING GRID DECK	LUMP SUM	1		
94	64300240	IMPACT ATTENUATORS (FULLY REDIRECTIVE, NARROW), TEST LEVEL 2	EACH	4		
95	*****	STEEL RAILING (SPECIAL)	FOOT	506		
96	*****	STRUCTURAL STEEL REPAIRS	POUND	61,620		
97	*****	TEMPORARY SUPPORT	LUMP SUM	1		
98	*****	REMOVE EXISTING BRIDGE HOUSES	EACH	2		

- SCHEDULE OF PRICES -

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ITEM NO.	CODE NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE	TOTAL PRICE
99	*****	REMOVE EXISTING CONCRETE RAILINGS	LINEAR FOOT	180		
100	*****	PRECAST CONCRETE WALL	SQ FT	1,500		
101	*****	PRECAST CONCRETE RAILINGS	LINEAR FOOT	180		
102	*****	METAL CLADDED WALL ASSEMBLY	SQ FT	590		
103	*****	PAINT GYPSUM BOARD CEILING	SQ FT	320		
104	*****	LIFE RINGS	EACH	2		
105	*****	INTERIOR PAINTING	SQ FT	400		
106	*****	INSTALL AND PAINT STAIR RAILINGS	FOOT	100		
107	*****	PAINT CONCRETE FLOORS AND STAIRS	SQ FT	1,600		
108	*****	ALUMINUM FRAMED WINDOWS	SQ FT	485		
109	*****	STANDING SEAM METAL ROOFING	SQ FT	320		



- SCHEDULE OF PRICES -

**CDOT Project No. E-1-525 – Specification No. 1188838**

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ITEM NO.	CODE NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE	TOTAL PRICE
110	*****	EXTERIOR DOORS	EACH	4		
111	*****	BREAKDOWN FOUNDATION	EACH	5		
112	*****	BRIDGE HOUSE ELECTRICAL WORK	LUMP SUM	2		
113	*****	CHICAGO 2000 LUMINAIRE ARM, 8 FOOT, WITH SCROLL, 8'	EACH	4		
114	*****	CHICAGO 2000 MAST HEAD AND FINIAL FOR 10" POLE	EACH	7		
115	*****	CHICAGO 2000 POLE BASE	EACH	11		
116	*****	CLEAN EXISTING MANHOLE OR HANDHOLE	EACH	2		
117	*****	COILABLE CONDUIT, HDPE, SCH# 80, DIRECTIONAL BORING, 2"	LINEAL FOOT	473		
118	*****	COILABLE CONDUIT, HDPE, SCH# 80, DIRECTIONAL BORING, 3"	LINEAL FOOT	229		
119	*****	CONCRETE FOUNDATION, 28" DIAMETER, 1 1/4" ANCHOR RODS, 15" BOLT CIRCLE, 7 FEET	LINEAL FOOT	28		
120	*****	CONTROLLER STREET LIGHTING, RESIDENTIAL, 240V	EACH	1		

- SCHEDULE OF PRICES -

**CDOT Project No. E-1-525 – Specification No. 1188838**

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ITEM NO.	CODE NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE	TOTAL PRICE
121	*****	DRILL EXISTING MANHOLE OR HANDHOLE	EACH	3		
122	*****	ELECTRICAL CABLE IN CONDUIT, 1/C #10	LINEAL FOOT	1,200		
123	*****	ELECTRICAL CABLE IN CONDUIT, 1/C #12	LINEAL FOOT	600		
124	*****	ELECTRICAL CABLE IN CONDUIT, 1/C #350 KCMIL	LINEAL FOOT	1410		
125	*****	ELECTRICAL CABLE IN CONDUIT, 1/C #2/0	LINEAL FOOT	840		
126	*****	ELECTRICAL CABLE IN CONDUIT, TRIPLEX 2 1/C NO.6, 1/C NO.8	LINEAL FOOT	1,893		
127	*****	ELECTRICAL HANDHOLE, 30" DIAMETER WITH 24" FRAME AND LID	EACH	2		
128	*****	INSTALL CONDUIT INTO EXISTING HELIX FOUNDATION	EACH	1		
129	*****	INTERCEPT EXISTING CONDUIT	EACH	2		
130	*****	JUNCTION BOX ATTACHED TO STRUCTURE	EACH	1		
131	*****	LED CHANNEL CENTER SIGNAL NAVIGATIONAL LIGHT	EACH	2		

- SCHEDULE OF PRICES -

**CDOT Project No. E-1-525 – Specification No. 1188838**

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ITEM NO.	CODE NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE	TOTAL PRICE
132	*****	LED PIER SIGNAL NAVIGATIONAL LIGHT	EACH	4		
133	*****	LED RESIDENTIAL LUMINAIRE - 108W	EACH	8		
134	*****	LUMINAIRE CHICAGO 2000 PENDANT LED	EACH	11		
135	*****	MAINTAIN LIGHTING SYSTEM	LUMP SUM	1		
136	*****	MAST ARM STEEL 4'	EACH	8		
137	*****	PAINT EXISTING POLE COMPLETE	EACH	5		
138	*****	POLE, STEEL, ANCHOR BASE, 7" DIAMETER, 3 GAUGE, 20'	EACH	4		
139	*****	POLE, STEEL, ANCHOR BASE, 10" DIAMETER, 7 GAUGE, 34'-6"	EACH	2		
140	*****	CONDUIT ATTACHED TO STRUCTURE, 1"	LINEAL FOOT	1,236		
141	*****	CONDUIT ATTACHED TO STRUCTURE, 3"	LINEAL FOOT	55		
142	*****	CONDUIT ATTACHED TO STRUCTURE, 4"	LINEAL FOOT	52		

- SCHEDULE OF PRICES -  
**CDOT Project No. E-1-525 – Specification No. 1188838**  
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ITEM NO.	CODE NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE	TOTAL PRICE
143	*****	PVC CONDUIT IN TRENCH, 3" PVC, SCH#80	LINEAL FOOT	15		
144	*****	REMOVE ANCHOR BASE POLE	EACH	5		
145	*****	REMOVE BRANCH WIRES / CABLES 2#6	LINEAR FOOT	1,414		
146	*****	REMOVE LUMINAIRE	EACH	10		
147	*****	REMOVE MAST ARM	EACH	10		
148	*****	REMOVE NAVIGATIONAL SIGNAL	EACH	6		
149	*****	REMOVE TS HEAD, 1-FACE	EACH	1		
150	*****	REMOVE PEDESTRIAN SIGNAL HEAD	EACH	1		
151	*****	REMOVE MONOTUBE M.A. 20'	EACH	1		
152	*****	REMOVE JUNCTION BOX, TSS 18	EACH	1		
153	*****	REINSTALL SIGNAL HEAD, 3 SECTION, MAST ARM MOUNTED	EACH	1		

- SCHEDULE OF PRICES -

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ITEM NO.	CODE NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE	TOTAL PRICE
154	*****	REINSTALL PEDESTRIAN SIGNAL, BRACKET MOUNTED	EACH	1		
155	*****	REINSTALL MAST ARM, MONOTUBE, 20'	EACH	1		
156	*****	REINSTALL JUNCTION BOX	EACH	1		
157	*****	ROD AND CLEAN DUCT IN EXISTING DUCT SYSTEM	LINEAR FOOT	295		
158	*****	REMOVE ELECTRICAL BRIDGE HOUSE EQUIPMENT	LUMP SUM	1		
159	*****	SERVICE INSTALLATION - 300A	EACH	1		
160	*****	CLEANING, PAINTING, AND LUBRICATING OPERATING MACHINERY ASSEMBLIES	LUMP SUM	1		
161	*****	REPLACEMENT OF CENTER LOCKS	EACH	2		
162	*****	FURNISH AND INSTALL NEW SUMP PUMPS	EACH	2		
<b>TOTAL BASE BID:</b>						

## AWARD CRITERIA DETERMINATION

In accordance with Chapter 2-92 of the Municipal Code of Chicago, and in order to promote equality of opportunity for minority and female personnel on this project, the City of Chicago has established the following canvassing formula for the purpose of evaluating proposals and awarding the contract.

Each bidder is invited to propose the minority and female employee utilization goals for the project, as percentages of the journeyworker and apprentice and laborer hours to be expended in the construction of the project. Lines 2, 4, and 6 in the formula shall not be greater than 70 percent in each category, for the purpose of canvassing only. The 70 percent limit shall not deter or restrict the fuller utilization of minority employees for the project, but shall only serve as a limiting figure for use in the formula. Similarly, lines 8, 10, and 12 shall not be greater than 15 percent in each category, for the purpose of canvassing only. Actual amounts of minority and female work will be measured for the total hours of construction workers employed on the projects within each of the categories of journeyworkers, apprentice, laborers by the contractor and all of the worksite subcontractors.

### Canvassing Formula

- |         |   |       |
|---------|---|-------|
| Line 1. | <b>Base Bid, in figures</b>   | _____ |
| Line 2. | Percentage of the total journeyworker hours that the Contractor proposes to be worked by minority Journeyworkers during construction of the Project.<br><br><b>(Maximum figure .70)</b> | _____ |
| Line 3. | <b>Multiply Line 2 by Line 1 by 0.04</b>  | _____ |
| Line 4. | Percentage of the total Apprentice hours that the Contractor proposes to be worked by minority Apprentices during construction of the project.<br><br><b>(Maximum figure .70)</b>       | _____ |
| Line 5. | <b>Multiply Line 4 by Line 1 by 0.03</b>  | _____ |
| Line 6. | Percentage of the total Laborer hours that the Contractor proposes to be worked by minority Laborers during construction of the project.<br><br><b>(Maximum figure .70)</b>             | _____ |
| Line 7. | <b>Multiply Line 6 by Line 1 by .01</b>   | _____ |
| Line 8. | Percentage of the total Journeyworker hours that the Contractor proposes to be worked by female Journeyworkers during construction of the project.<br><br><b>(Maximum figure .15)</b>   | _____ |
| Line 9. | <b>Multiply Line 8 by Line 1 by 0.04</b>  | _____ |

Award Criteria Determination

- Line 10. Percentage of the total Apprentice hours that the Contractor proposes to be worked by female Apprentices during construction of the project.  
**(Maximum figure .15)**
- Line 11. **Multiply Line 10 by Line 1 by 0.03**
- Line 12. Percentage of the total Laborer hours that the Contractor proposes to be worked by female Laborers during construction of the project.  
**(Maximum figure .15)**
- Line 13. **Multiply Line 12 by Line 1 by 0.01**
- Line 14. **Summation of Lines 3, 5, 7, 9, 11, and 13**
- Line 15. **Subtract Line 14 from Line 1 = Award Criteria Figure**

The bidder shall complete the Canvassing Formula and transfer the final Award Criteria Figure, Line 15, to the space provided on the itemized Proposal Sheet. A contract in the amount of the Total Base Bid will be awarded to the responsible bidder with the lowest Award Criteria Figure. The City reserves the right to revise all arithmetic calculations for correctness.

The Contractor is obliged during the construction of the Project to fulfill every numerical commitment made under the Canvassing Formula categories. Therefore, every limiting condition of circumstance which may affect referral, hiring, or deployment of construction trades employees must be taken into account by the bidder before the commitment is proposed. Limits imposed by the policies or circumstances of labor organizations or other referral resources, for example, should be anticipated by the bidder, since relief from the contractor's obligations as established under the Canvassing Formula is not available due to such circumstances found to exist during Construction. Also, if Journeyworkers will not be employed in the project, or Apprentices, or Laborers, then the proposal made in the appropriate Lines, Lines 2 and 8, or Lines 4 and 10, or 6 and 12, should be entered as "0 percent" since no Journeyworker or Apprentice or Laborer hours are reported after construction, this will be computed by the City as "0 percent," minority/female hours achieved.

If commitments are made in the Apprentice category, Lines 4 and 10, the total apprentice hours to be employed on the projects should be anticipated to be a substantial number of hours; since it is the intention of the City that where a commitment for a percentage of minority or female Apprentices has been made, the percentage may be counted as fulfilled only as long as there were provided at least 40 actual hours of minority or female employment as Apprentices. For this reason, where a minority or female percentage commitment has been made, if in the final audit of the performance of the Contract there are less than 40 actual hours of minority or female Apprentice work performed, then the number of minority or female apprentice hours will be counted by the City as "0" for the purpose of measuring the achievement towards the apprentice canvassing formula goal.

Therefore, notice that when the Contractor is performing at a level under a minority or female Apprentice goal, Line 4 or Line 10 above, the Contractor will be subject to the full amount of

## Award Criteria Determination

liquidated damages, see Lines 5 and 11, if at least 40 actual hours of minority or female Apprenticeship work are not achieved. When the bidder foresees that this minimum amount of apprenticeship is not available to the project, then "0" should be put in Lines 4 and 10 as the percentage commitment for apprentices.

The Contractor is obligated to meet the total commitment made in each category, subject to liquidated damages as described below for noncompliance. The Contractor hereby consents and agrees that, in the event of failure to comply with each of the minimum commitments submitted with the proposal on Lines 2, 4, 6, 8, 10, and 12 of the canvassing formula, covering Journeyworkers, Apprentices, and Laborers, respectively, the following shall apply to determine a monetary sum to be withheld from the final payment to the Contractor.

In calculating the aggregated work hours toward the utilization goal for construction Journeyworkers, Apprentices, or Laborers under this Canvassing Formula, the Contractor shall be given 150% credit for every work hour performed by a minority or woman worker residing within a socio-economically disadvantaged area. The criteria for designation of an area as socio-economically disadvantaged will be set forth in rules promulgated by the Commissioner of Planning and Development. Such criteria shall include, but not be limited to, the median family income of an area.

### **Liquidated Damages**

For each one percent (1%) deficiency of minority journeyworkers not utilized toward the goal (Line 2), four cents for each hundred dollars of the base bid, calculated as follows:

Line 1	X	.04
100		

Each one percent (1%) deficiency of shortfall toward the goal line (Line 8) for female Journeyworkers shall be computed in the same way.

For each one percent (1%) deficiency of minority Apprentices not utilized toward the goal (Line 4), three cents per each hundred dollars on the base bid, calculated as follows:

Line 1	X	.03
100		

Each one percent (1%) of shortfall toward the goal (Line 10) for female Apprentices shall be computed in the same way.

For each one percent (1%) deficiency of minority Laborers not utilized towards the goal (Line 6), one cent per each hundred dollars of the Base Bid, calculated as follows:

Line 1	X	.01
100		

Each one percent shortfall toward the goal (Line 12) for female Laborers shall be computed in the same way.



## Award Criteria Determination

### **Reporting**

The Contractor shall submit to the City on a timely basis a completed weekly certified payroll, (U.S. Department of Labor Form WH-347, Illinois Department of Transportation Form RE-48, or equivalent) with race and gender of employees clearly named or coded each week. The Contractor is responsible for forwarding every worksite Subcontractor's weekly certified payroll. Supportive information regarding an employee's race, gender or work classification of such is required by the City. Failure to report fully all required workforce information will subject the contractor to liquidated damages in the total amount listed in Line 14 above.

In the weekly payroll reports, the following ethnic categories should be used to indicate minority personnel for purposes of the canvassing formula:

Black	—	Persons having origins in any of the Black racial groups of Africa.
Hispanic	—	Persons of Mexican, Puerto Rican, Cuban, Central American, or other Spanish culture or origin, regardless of race.
Native American	—	Persons who are American Indians, Eskimos, Aleuts or Native Hawaiians.
Asian Pacific	—	Persons whose origins are from Japan, China, Taiwan, Korea, Vietnam, Laos, Cambodia, the Philippines, Samoa, Guam, the U.S. Trust Territories or the Northern Marianas.
Asian Indian	—	Persons whose origins are from India, Pakistan, or Bangladesh.

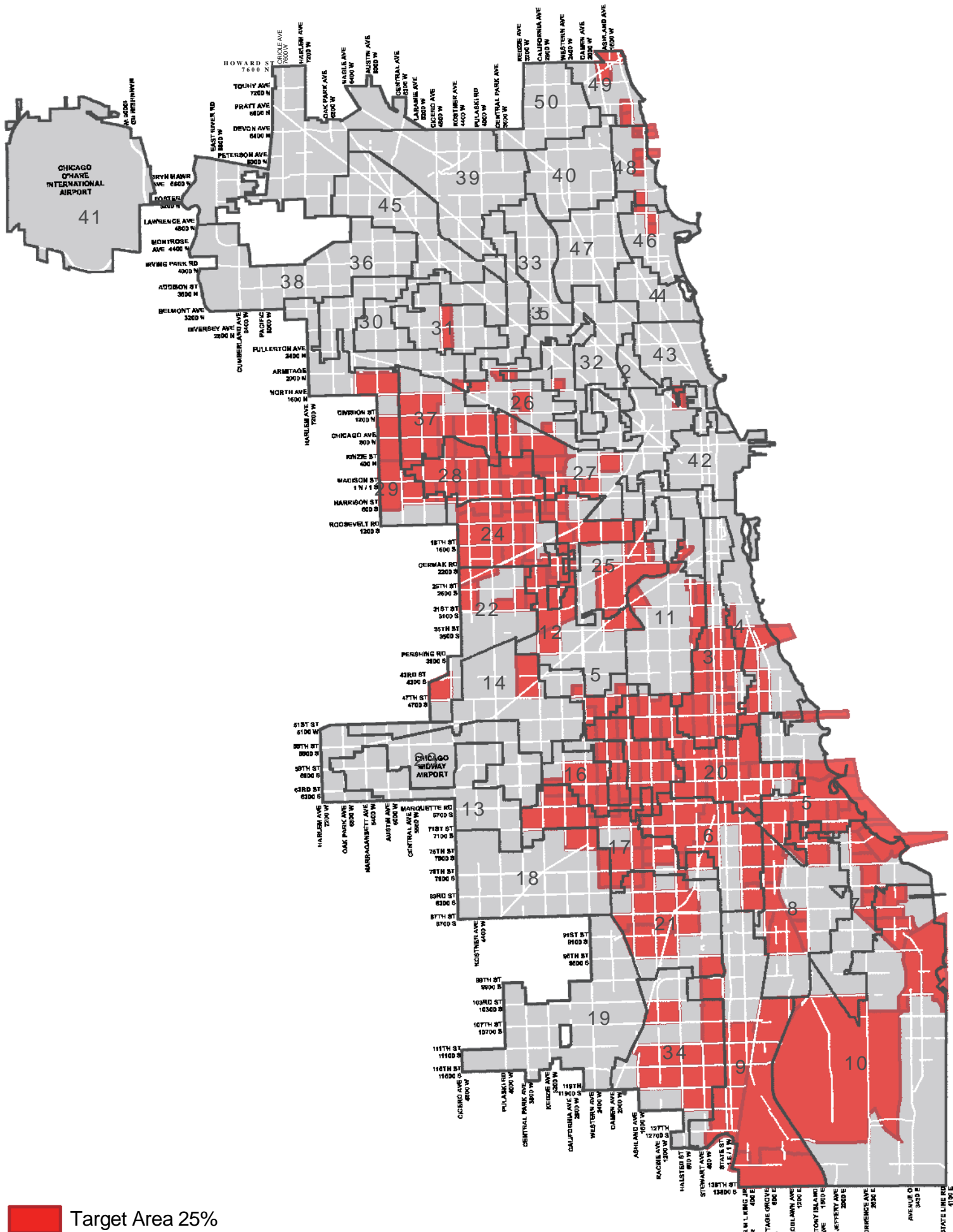
Included in the canvassing formula as "Journeyworkers" are the construction site Journeyworkers from the major trades including, without limitation, truck drivers, electrical groundsmen, and elevator construction helpers. Other "Helpers," watchmen, custodial workers, clerical workers, and salaried superintendents are not creditable in the formula. Hourly wage "Foremen" and "General Foremen" will be counted as journeyworkers for purposes of the canvassing formula.

Included in the canvassing formula as "Apprentices" are only bona fide Apprentices currently in a training program certified by the U.S. Department of Labor — Bureau of Apprenticeship and Training, and for the hours employed at the construction site. Other categories of trainees are not creditable in the formula. Individual workers who are both minority and female will have their hours counted towards both a minority goal and any female goal.

### **Other Regulations**

The adherence to the canvassing formula does not abrogate other responsibilities of the contractor to comply with equal employment opportunity requirements under federal or state law, municipal ordinance, prevailing government regulations or terms contained elsewhere in this contract.

**See Map of Socioeconomically Disadvantaged Areas on following page.**



Target Area 25%

## **SECTION TWO**

## **REQUIREMENTS FOR BIDDING AND INSTRUCTIONS FOR BIDDERS**

### **Contract for Work**

Proposals are received by the Chief Procurement Officer of the City of Chicago in accordance with Contract Documents as set forth herein.

#### **1. Examination by Bidder**

The bidder shall, before submitting its bid, carefully examine the proposal, plans, specifications, contract documents and bonds. The bidder shall inspect in detail the site of the proposed work and familiarize itself with all of the local conditions affecting the contract and the detailed requirements of construction. If at any time prior to the bid opening, the Bidder discovers any errors, discrepancies or omissions in the Contract Documents, or any discrepancy between the Contract Documents and the physical conditions at the site or in any subsequent drawings that may be provided thereafter, the Bidder must notify the Chief Procurement Officer immediately, in writing, for an interpretation through an Addendum. The Chief Procurement Officer reserves the right to establish a date by which any written request must be submitted before bid opening. No response will be given for inquiries beyond that date. If its bid is accepted, the bidder will be responsible for all errors in its proposal resulting from failure or neglect to comply with these instructions. The City will, in no case, be responsible for any change in anticipated profits resulting from such failure or neglect.

Unless otherwise provided in the Contract, when the plans or specifications include information pertaining to subsurface exploration, borings, test pits, and other preliminary investigation, such information represents only the opinion of the City as to the location, character, or quantity of the materials encountered and is only included for the convenience of the bidder. The City assumes no responsibility with respect to the sufficiency or accuracy of the information, and there is no guaranty, either expressed or implied, that the conditions indicated are representative of those existing throughout the work, or that unanticipated developments may not occur.

#### **2. Bid Deposit**

Bid deposit shall be required for all competitive sealed bidding for contracts when required in the legal advertisement. The bid deposit must be a bond, or the equivalent in cashier's check, money order or certified check. Any bond must be executed by a surety authorized to do business in the State of Illinois. And, it must be in the form provided by the Chief Procurement Officer, an example of which is bound herein. All certified checks must be drawn on a bank doing business in the United States, and shall be made payable to the order of the City of Chicago. CASH IS NOT AN ACCEPTABLE FORM OF BID DEPOSIT.

Bid deposits shall be in the amount shown in the advertisement or as may be prescribed herein, but not in excess of 10% of the bid. Should the amount of the bid deposit shown in the advertisement prove to be more than 10% of the bid, then the bidder may submit, in lieu of the foregoing, an amount equal to 10% of his bid. When the legal advertisement requires a deposit, noncompliance requires rejection of the bid. Compliance with the provisions

## **Requirements for Bidding and Instructions for Bidders**

herewith shall be determined in all cases by the Chief Procurement Officer and his determination shall be final.

After bids are opened, deposits shall be irrevocable for the period specified herein. If a bidder is permitted to withdraw its bid before award, no action shall be taken against the bidder or the bid deposit.

### **3. Preparation of Proposal**

The bidder shall prepare its proposal on the attached proposal forms. Unless otherwise stated, all blank spaces on the proposal page or pages, applicable to the subject specification, must be correctly filled in. Either a unit price or a lump sum price, as the case may be, must be stated for each and every item, either typed in or written in ink, in figures, and, if required, in words.

If bidder is a corporation, the President and Secretary must execute the bid and the corporate seal must be affixed. In the event that this bid is executed by other than the President, attach hereto a certified copy of that section of Corporate By-Laws or other authorization by the Corporation which permits the person to execute the offer for the corporation.

If bidder is a partnership, all partners must execute the bid, unless one partner has been authorized to sign for the partnership, in which case, evidence of such authority satisfactory to the Chief Procurement Officer shall be submitted.

If bidder is a sole proprietorship, the sole proprietorship must execute the bid. A "Partnership", "Joint Venture" or "Sole Proprietorship" operating under an Assumed Name must be registered with the Illinois county in which located, as provided in 805ILCS 405 (1992).

### **4. Submission of Proposals**

All prospective bidders shall submit sealed proposals with applicable bid deposit enclosed in envelopes provided for that purpose by the DEPARTMENT OF PROCUREMENT SERVICES, Room 103, City Hall. If proposals are submitted in envelopes other than those so provided for this purpose, then the sealed envelope submitted by the prospective bidder shall carry the following information on the face of the envelope: bidder's name, address, subject matter of proposal, advertised date of bid opening and the hour designated for bid opening as shown on the legal advertisement.

Where proposals are sent by mail to the DEPARTMENT OF PROCUREMENT SERVICES, the bidders shall be responsible for their delivery to the Chief Procurement Officer before the advertised date and hour for the opening of bids. If the mail is delayed beyond the date and hour set for the bid opening, proposals thus delayed will not be accepted.

Proposals must be submitted with original signatures in the space provided on the appropriate Proposal Execution Page. Proposals not properly signed shall be rejected.

### **5. Withdrawal of Proposals**

Bidders may withdraw their proposals at any time prior to the time specified in the advertisement as the closing time for the receipt of bids. However, no bidder shall withdraw or cancel his proposal for a period of 60 calendar days after said advertised closing time for the receipt of proposals nor shall the successful bidder withdraw or cancel or modify his

## Requirements for Bidding and Instructions for Bidders

proposal after having been notified by the Chief Procurement Officer that said proposal has been accepted by the City. The City reserves the right to withhold and deposit, as liquidated damages and not a penalty, the bid deposit of any bidder requesting withdrawal, cancellation or modification of its proposal prior to the stated period for acceptance of proposal.

Where this contract shall be approved by another agency, such as the Federal Government or State of Illinois, then the bidder shall not withdraw or cancel or modify his proposal for a period of 90 calendar days after said advertised closing time for the receipt of proposals.

### 6. Competency of Bidder

The Chief Procurement Officer reserves the right to refuse to award a Contract to any person, firm or corporation that is in arrears or is in default to the City of Chicago upon any debt or contract, or that is a defaulter, as surety or otherwise, upon any obligation to said City, or had failed to perform faithfully any previous contract with the City.

The bidder, if requested, must present within a reasonable time, as determined by the Chief Procurement Officer, evidence satisfactory to the Chief Procurement Officer of performance ability and possession of necessary facilities, pecuniary resources and adequate insurance to comply with the terms of these specifications and contract documents.

### 7. Compliance with Child Support Orders Ordinance

The Child Support Arrearage Ordinance, § 2-92-415 of the Municipal Code, furthers the City's interest in contracting with entities that demonstrate financial responsibility, integrity and lawfulness, and finds that it is especially inequitable for Contractors to obtain the benefits of public funds under City contracts while owners fail to pay court-ordered child support, and shift the support of their dependents onto the public treasury.

In accordance with § 2-92-415 of the Municipal Code, if the Circuit Court of Cook County or an Illinois court of competent jurisdiction has issued an order declaring one or more Substantial Owner(s) in arrearage on their child support obligations and: (1) such Substantial Owner has not entered into a court-approved agreement for the payment of all such child support owed, or (2) such Substantial Owner is not in compliance with a court-approved agreement for the payment of all such child support owed, (see Certification of Compliance with Child Support Orders in EDS), then:

For those bidders in competitive bid contracts, the City will assess an 8% penalty. This penalty will increase their bid price for the purpose of canvassing the bids in order to determine the lowest responsible bidder. This penalty will apply only for purposes of comparing bid amounts and will not affect the amount of any contract payment.

For purposes of this Section only, "SUBSTANTIAL OWNER" means any person who owns or holds a 10% or more interest in the bidder; where the bidder is an individual or sole proprietorship, substantial owner means that individual or sole proprietorship.

"PERCENTAGE OF INTEREST" includes direct, indirect and beneficial interests in the Contractor. Indirect or beneficial interest means that interest in a Contractor held by a corporation, joint venture, trust, partnership, association, estate or other legal entity, in which the individual holds an interest, or by agent(s) or nominee(s) on behalf of an individual or entity. For example, if Corporation B holds or owns a 20% interest in Contractor, and an individual or entity has a 50% or more percentage of interest in Corporation B, then such

## **Requirements for Bidding and Instructions for Bidders**

individual or entity indirectly has a 10% or more interest in Contractor. If Corporation B is held by another entity, then this analysis similarly must be applied to that next entity.

The provisions of this Section will only apply where not otherwise prohibited by federal, state or local law.

### **8. Consideration of Proposals**

The Chief Procurement Officer represents and acts for the City in all matters pertaining to this proposal and contract in conjunction therewith. The Chief Procurement Officer reserves the right to reject any or all proposals and to disregard any informality in the bids and bidding, when in his opinion the best interest of the City will be served by such action. The proposal is contained in these contract documents and **MUST NOT BE DETACHED HERE FROM** by any bidder when submitting a proposal. Incomplete proposals are subject to rejection.

### **9. Balanced Bids**

Bidder's pricing for each line item should carry its share of the cost of work, plus its share of overhead and profit. Bidders should avoid nominal pricing for some lines and enhanced pricing for other lines. Bids that the Chief Procurement Officer considers in his sole opinion to be materially unbalanced will be rejected.

### **10. Acceptance of Proposals**

The Chief Procurement Officer will accept in writing one of the proposals or reject all proposals, within 60 calendar days, or within 90 calendar days where approval by other agencies is required, from the date of opening of bids, unless the lowest responsible bidder, upon request of the City, extends the time of acceptance to the City.

### **11. Performance Bond**

When required by the Chief Procurement Officer the successful bidder or bidders shall, within seven (7) calendar days of receipt of notice from the City, furnish a performance bond in the full amount of the contract on Form P.W.O. 62, a specimen of which is bound herein.

Receipt of written notice from the City to furnish a bond constitutes tentative notice of pending award and proposal acceptance. Release of the contract shall be withheld pending receipt and approval of a satisfactory bond.

Attention is called to the provisions of 30 ILCS 550/1, et. seq. and to the provisions of Section 2-92-030 of the Municipal Code of Chicago.

### **12. Failure to Furnish Bond**

In the event that the bidder fails to furnish the performance bond in said period of seven (7) calendar days, then the bid deposit of the bidder shall be retained by the City as liquidated damages and not as a penalty.

### **13. Interpretation of Contract Documents**

If any person contemplating submitting a proposal is in doubt as to the true meaning of any part of the specifications or other contract documents, a written request for an interpretation thereof may be submitted to the Chief Procurement Officer. The person submitting the request will be responsible for its prompt delivery. Any interpretation of the proposed

## **Requirements for Bidding and Instructions for Bidders**

documents will be made only by an addendum duly issued by the Chief Procurement Officer. A copy of such addendum will be mailed, electronically mailed or delivered to each person receiving a set of such contract documents and to such other prospective bidders as shall have requested that they be furnished with a copy of each addendum. Failure on the part of the prospective bidder to receive a written interpretation prior to the time of the opening of bids will not be grounds for withdrawal of proposal. Bidder will acknowledge receipt of each addendum issued in space provided on proposal page. Oral explanations will not be binding.

### **14. Catalogs**

Each bidder must submit, where necessary, or when requested by the Chief Procurement Officer, catalogs, descriptive literature, and detailed drawings, fully detailing features, designs, construction, appointments, finishes and the like not covered in the specifications, necessary to fully describe the material or work he proposes to furnish.

### **15. Substitution**

The Bidder must, if awarded the Contract, provide the items specified in the Contract Documents when those items are specified by manufacturer's trade name in Book-Three, unless equivalent alternatives have been proposed as described below. Reference to a specific manufacturer, trade name, or catalog is intended to be descriptive but not restrictive and only to indicate to the prospective bidder items that will be satisfactory. The Bidder may bid another product(s) provided that the alternative product is on a separate sheet of paper designated as such and is supported by the type of information listed in Section VII.D.1.a.,b.,e.,g.,h., and Section VII.D.2., of the Terms and Conditions for Construction, in order to facilitate the Chief Procurement Officer's evaluation of such product. The Chief Procurement Officer may, in his sole discretion, accept an alternate bid for a specified item, provided the alternate item so bid is, in the Chief Procurement Officer's sole opinion, the equivalent of the item specified in the Contract Documents. An alternate that is not equivalent to the specified item may render the bid non-responsive. Unless the alternate item is so identified, it is understood that the Bidder proposes, and will be required to provide, the specific item described in the Contract Documents. No substitution of specified items will be allowed thereafter except as provided in Section VII.D.2., of the Terms and Conditions for Construction.

### **16. Return of Bid Deposit**

The bid deposit of all except the two lowest bidders on each contract will be returned shortly after the bid opening. The Chief Procurement Officer reserves the right to hold all bid deposits, if the intent is to award multiple contracts for a requirement and/or if the two lowest responsible bidders cannot be readily determined based on price until all proposals have been evaluated.

The remaining bid deposits on each contract will be returned with the exception of the accepted bidder, after the Chief Procurement Officer has awarded the contract. The bid deposit of the accepted bidder will be returned after the contract has been awarded and a satisfactory performance bond has been approved, where such bond is required.



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### **17. Taxes**

With few exceptions, Federal Excise Tax does not apply to materials purchased by the City of Chicago. The Illinois Retailers' Occupation Tax, Use Tax, and Municipal Retailers' Occupation Tax also do not apply to materials or services purchased by the City of Chicago. The price or prices quoted herein shall include all other Federal and/or State, direct and/or indirect taxes which apply. The prices quoted herein shall agree with all Federal Laws and Regulations.

### **18. Contractor's Financial Statement**

Each bidder must either (1) submit with the bid a current and valid Illinois Department of Transportation (IDOT) 'Certificate of Eligibility' issued by IDOT as a result of filing an application with IDOT for PREQUALIFICATION STATEMENT OF EXPERIENCE, EQUIPMENT AND FINANCIAL CONDITION showing prequalification in the required work categories, or (2) if the bidder has not been issued an applicable IDOT 'Certificate of Eligibility,' bidder must have on file in the office of the Chief Procurement Officer prior to bid opening a CONTRACTOR'S STATEMENT OF EXPERIENCE AND FINANCIAL CONDITION dated not earlier than the end of the Contractor's last fiscal year period. This Statement shall be kept on file by the Chief Procurement Officer as a representative statement for a period of one year only. Forms are available at the office of the Bid and Bond Section, DEPARTMENT OF PROCUREMENT SERVICES, Room 103 City Hall, 121 North LaSalle Street, Chicago, Illinois, 60602, 312-744-9773 or may be obtained online:

[http://www.cityofchicago.org/city/en/depts/dps/provdrs/contract/svcs/forms\\_and\\_standardagreements.html](http://www.cityofchicago.org/city/en/depts/dps/provdrs/contract/svcs/forms_and_standardagreements.html)

Failure to submit an IDOT 'Certificate of Eligibility' or alternatively to have a current financial statement on file in the DEPARTMENT OF PROCUREMENT SERVICES at time of bid opening may be cause for the rejection of Contractor's Proposal.

### **19. Notices**

All communications and notices to the City herein provided for shall be delivered personally, electronically mailed or mailed first class, postage prepaid, to the Commissioner of the using department by name and address listed on the cover hereof, and to the Chief Procurement Officer, Room 806, City Hall, 121 N. LaSalle Street, Chicago, Illinois 60602. All communications and notices to the bidder, unless otherwise provided for, shall be delivered personally, electronically mailed or mailed first class, postage prepaid, to the bidder by name and address listed on the proposal hereof.

### **20. Acknowledgment of Receipt of Addenda**

The bidder must acknowledge the receipt of all formally issued addenda in the space provided on the signature pages of the Proposal.

### **21. Economic Disclosure Statement and Affidavit (EDS)**

The Contractor is required to complete an online Economic Disclosure Statement and Affidavit, (EDS), including the Disclosure of Retained Parties as required by Executive

## Requirements for Bidding and Instructions for Bidders

Order 97-1 prior to the bid due date. Refusal to execute such disclosure will result in the CPO declaring the bidder non-responsible and the City retaining the bid deposit. Moreover, if a bidder is deemed non-responsible under this provision, the bidder's status as a non-responsible bidder may apply to the bidders subsequent bids. See the attached instructions for completing the on-line EDS: The web link for the on-line EDS is:

[http://www.cityofchicago.org/city/en/depts/dps/provdrs/comp/svcs/economic\\_disclosurestate\\_mentseds.html](http://www.cityofchicago.org/city/en/depts/dps/provdrs/comp/svcs/economic_disclosurestate_mentseds.html).

The Contractor or each joint venture partner shall be required to submit with their bid, proposal or response, a fully executed Economic Disclosure Statement and Affidavit, which includes a Disclosure for Retained Parties, on the form attached herein, signed by an authorized officer of the company before a notary which includes a certification that the Contractor or each joint venture partner, its agents, employees, officers and any subcontractors have not been engaged in or been convicted of bidrigging or bid-rotating activities as defined in the Economic Disclosure Statement and Affidavit. The certification is required in accordance with the Illinois Criminal Code.

### **22. Minority-owned Business Enterprise, Women-owned Business Enterprise, and Veteran-owned Business Commitment**

The attention of bidders is directed to the Special Conditions Regarding Minority-owned Business Enterprise, Women-owned Business Enterprise, and Veteran-owned Business Enterprise Commitment and the Proposal Schedules that precede the Proposal form. If awarded the Contract, the bidder agrees to expend at least the percentage of the contract price indicated on bidder's Proposal Schedules for participation by bona fide Minority-owned Business Enterprises, Women-owned Business Enterprises, and Veteran-owned Business Enterprises. Appropriate Schedules must be completed and executed by the bidder in submitting a proposal. Refer to Book 1.

### **23. Protests**

The bidder shall submit any protests or claims regarding this solicitation to the office of the City's Chief Procurement Officer located at City Hall, 121 North LaSalle Street, Room 806, Chicago, Illinois 60602. A pre-bid protest must be filed no later than the five (5) working days before the bid opening date, a pre-award protest must be filed no later than 10 working days after the bid opening date, and a post-award protest must be filed no later than 10 working days after the award of the contract.

All protests or claims must set forth the name and address of the protester, the specification number, the grounds for the protest or claim, and the course of action that the protesting party desires that the Chief Procurement Officer take.

Copies of the Bid Protest Procedures are available at the Bid and Bond Room.

### **24. Multi-Project Labor Agreement (PLA)**

The City has entered into the PLA with various trades regarding projects as described in the PLA, which is hereby incorporated by reference. A copy of the PLA, with appendices, may be found on the City's website at:

[https://www.cityofchicago.org/city/en/depts/dps/provdrs/comp/svcs/multi-project\\_laboragreementplaandplassignatoryunions.html](https://www.cityofchicago.org/city/en/depts/dps/provdrs/comp/svcs/multi-project_laboragreementplaandplassignatoryunions.html).

## **Requirements for Bidding and Instructions for Bidders**

Contractor acknowledges familiarity with the requirements of the PLA and its applicability to any work under this agreement, and shall comply in all respects with the PLA

### **25. Prevailing Wage Rates**

When engaged in construction of a “public work,” within the meaning of Illinois Prevailing Wage Act, 820 ILCS 130/.01 et seq. (“the Act”), the Act requires Contractors and Subcontractors to pay laborers, workers and mechanics performing services on public works projects no less than the “prevailing rate of wages” (hourly wages plus fringe benefits) in the county where the work is performed.

For information regarding current prevailing wage rates, please refer to the Illinois Department of Labor’s website at: [www.state.il.us/agency/idol/rates/rates.HTM](http://www.state.il.us/agency/idol/rates/rates.HTM). All Contractors and Subcontractors rendering services under a Contract for the construction of a public work must comply with all requirements of the Act, including but not limited to, all wage, notice and record keeping duties.

The term general prevailing hourly rate, when used in this requirement will mean the hourly cash wages plus fringe benefits for health and welfare, insurance, vacations and pensions paid generally, in the locality in which the work is being performed, to employees engaged in work of a similar character on public works.

As a condition of making payment to the Contractor, the City may require the Contractor to submit an affidavit to the effect that not less than the prevailing hourly wage rate is being paid to laborers, mechanics and other workmen employed on this Contract in accordance with Illinois or federal law, as applicable.

### **26. Title VI Solicitation Notice**

The City, in accordance with the provisions of Title VI of the Civil Rights Act of 1964 (78 Stat. 252, 42 U.S.C. §§ 2000d to 2000d-4) and the Regulations, hereby notifies all bidders that it will affirmatively ensure that for any contract entered into pursuant to this advertisement, business enterprises owned by disadvantaged individuals will be afforded full and fair opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, or national origin in consideration for an award.

### **27. Policy Prohibiting Sexual Harassment**

In accordance with Section 2-92-612, Bidder shall, as prescribed by the Chief Procurement Officer, attest by affidavit (in the form of the “Sexual Harassment Policy Affidavit” included in Book 2) that Bidder has a written policy prohibiting sexual harassment that shall include, at a minimum, the following information: (i) the illegality of sexual harassment; (ii) the definition of sexual harassment; and (iii) the legal recourse available for victims of sexual harassment. Bidder shall include its “Sexual Harassment Policy Affidavit” with its bid submission.

### **28. Policy Regarding Non-Disclosure of Salary History**

In accordance with Section 2-92-385 of the Municipal Code of Chicago, Bidder shall, as prescribed by the Chief Procurement Officer, attest by affidavit (in Appendix C to Bidder’s Economic Disclosure Statement) that Bidder has a written policy (i) against screening job applicants based on their wage or salary history and (ii) seeking an applicant’s wage or salary history.

## Licensing of General Contractors

### MUNICIPAL CODE OF CHICAGO

#### CHAPTER 4-36 LICENSING OF GENERAL CONTRACTORS

##### LICENSING OF GENERAL CONTRACTORS

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##### **4-36-010 Definitions.**

As used in this chapter:

“Act related to general contracting” means: (1) any activity requiring a license under this chapter; or (2) any conduct regulated by this chapter; or (3) any activity requiring a building permit issued under Chapter 14A-4 of this Code or a sign permit under Article XIII of Chapter 13-20 of this Code; or (4) any duty or other requirement imposed by this chapter; or (5) any inspection of a building or premises or performance of other legal or work-related duty by a city inspector, city personnel or other government official in connection with: (i) the issuance of a general contractor license under this chapter, or (ii) the issuance of a building permit under

## Licensing of General Contractors

Chapter 14A-4 of this Code, or (iii) for the purpose of enforcing the requirements of the building code, zoning code or any other law regulating building construction or the health or safety of construction site workers, of the current or eventual users or occupants of a building or premises or of the general public.

“Building code” has the meaning ascribed to the term in Section 1-4-090.

“City” means the City of Chicago.

“City personnel” means any person employed by the City of Chicago.

“City inspector” means any person authorized by the City of Chicago to conduct an inspection.

“Department” means the department of buildings.

“Commissioner” means the commissioner of buildings.

“Controlling person” means any person who: (1) is an officer, director, partner, general partner, limited partner, manager, managing member or member of any entity seeking or holding a license under this chapter; or (2) owns, directly or indirectly through one or more intermediate ownership entities, 25 percent or more of the interest in the licensee or applicant, as applicable.

“General contractor” means any person who, as an investment or for compensation or with the intent to sell or to lease, (i) arranges or submits a bid or offers to undertake or purports to have the capacity to undertake or undertakes, through himself or through others, to erect, construct, alter, repair, move, install, replace, convert, remodel, rehabilitate, modernize, improve or make additions to any building as defined in Chapter 14B-2 or to any appurtenance thereto attached to real estate and located on the same lot as the building, including, but not limited to, driveways, swimming pools, porches, decks, garages, fences, fallout shelters and other accessory objects or uses; and (ii) retains for himself control over the means, method and manner of accomplishing the desired result; and (iii) whose business operations, in whole or in part, require the hiring or supervision of one or more persons from any building trade or craft, including, but not limited to, plumbing, masonry, electrical, heating, air-conditioning or carpentry. The term includes nonresident general contractors who do business within the city and developers of conversion condominiums as defined in the Condominium Property Act, as amended. “Knowingly”, with respect to a material fact, means (i) having actual knowledge of the material fact; or (ii) being aware of facts or information that would cause a reasonable person to have actual knowledge of the material fact; or (iii) acting in deliberate ignorance or reckless disregard of the truth or falsity of the material fact.

“Knowingly”, with respect to a material fact, means (i) having actual knowledge of the material fact; or (ii) being aware of facts or information that would cause a reasonable person to have actual knowledge of the material fact; or (iii) acting in deliberate ignorance or reckless disregard of the truth or falsity of the material fact.

“Licensee” means any person licensed or required to be licensed under this chapter.

“Nonresident general contractor” means any general contractor who is not domiciled in the city and has not maintained a permanent place of business or residence in the city for at least six months.

“Zoning code” has the meaning ascribed to the term in Section 1-4-150.

## Licensing of General Contractors

### 4-36-020 License – Required.

(A) No person shall own, operate, conduct, manage, engage in, maintain or carry on the business of general contractor without first having obtained a general contractor license. The general contractor license shall be in addition to any other license required by law, including, but not limited to, the excavators license issued pursuant to Chapter 4-196 of this Code, if applicable.

(B) The following persons are not general contractors within the meaning of this section:

(1) Any subcontractor, employee or agent working for or under the supervision of a general contractor licensed or required to be licensed under this chapter and acting within the scope of his contract, employment or agency;

(2) Any person who merely furnishes materials or supplies for use at a construction site without fabricating them into, or consuming them in the performance of, the work of a general contractor;

(3) Any person licensed by the City of Chicago as a mason contractor, plumbing contractor or electrical contractor and acting within the scope of his license;

(4) Any licensed architect or engineer acting within the scope of his license;

(5) Any person who does general contracting work on property that constitutes his primary residence, if the primary residence is (i) a single-family residential building or (ii) a multiple-family residential building that does not exceed three stories above grade plane in height and contains six or fewer dwelling units as defined in Section 14B-2\* of this Code. This exception is limited to one such property during a calendar year;

\* Editor's note – As set forth in Coun. J. 4-10-19, p. 100029, Art. II, § 28. Reference should likely be “Chapter 14B-2”; future legislation will correct if needed.

(6) Any person who hires a general contractor licensed under this chapter to do general contracting work on the person's property;

(7) Any property owner, or employee or agent thereof, who does minor nonstructural repairs on the owner's property; and

(8) A governmental entity for work upon premises owned by the governmental entity and performed by employees of the governmental entity.

### 4-36-030 License classifications.

General contractor licenses shall be divided into the classifications which follow. The holders of such licenses shall be entitled to engage in the business of general contractor within the city subject to the following limitations:

*Class A license:* The holder of a Class A license is subject to no limitation as to the value of any single contract project.

*Class B license:* The holder of a Class B license is not entitled to engage in the construction of any single contract project of a value in excess of \$10,000,000.00.

## Licensing of General Contractors

*Class C license:* The holder of a Class C license is not entitled to engage in the construction of any single contract project of a value in excess of \$5,000,000.00.

*Class D license:* The holder of a Class D license is not entitled to engage in the construction of any single contract project of a value in excess of \$2,000,000.00.

*Class E license:* The holder of a Class E license is not entitled to engage in the construction of any single contract project of a value in excess of \$500,000.00.

### **4-36-040 License – Posting – Nontransferability.**

Each license issued pursuant to this chapter shall be posted in a conspicuous place near the entrance of the licensee's chief place of business. A photocopy of the license shall be posted in a conspicuous place at each construction site maintained by the licensee. No transfer of ownership shall be allowed on any license issued under this chapter.

### **4-36-050 License – Application.**

An application for a license under this chapter shall be made in writing to the commissioner on a form provided by the department of buildings, and shall be accompanied by the following:

- (A) If the applicant is an individual:
  - (1) The applicant's full name, residence address, business address, business e-mail address and business telephone number;
  - (2) Proof that the applicant is at least 18 years of age;
- (B) If the applicant is a corporation:
  - (1) The corporate name, address, e-mail address and telephone number of the applicant's principal office or place of business;
  - (2) The date and state of incorporation;
  - (3) The full name, title, residence address, e-mail address and residence telephone number of all controlling persons;
  - (4) Proof that all corporate officers and controlling persons are at least 18 years of age;
  - (5) Proof that the corporation is in good standing under the laws of the State of Illinois;
- (C) If the applicant is a partnership or limited liability company:
  - (1) The name, address, e-mail address and telephone number of the applicant's principal office or place of business;
  - (2) The full name, title, residence address, e-mail address and residence telephone number of all partners, if a general partnership; of all general and limited partners, if a limited partnership; of all managers, managing members and members, if a limited liability company; and of all controlling persons;
  - (3) Proof that all partners, managers, managing members, members and controlling persons are at least 18 years of age;

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- (D) The class of license for which application is being made;
- (E) The license fee;
- (F) A description of the work and services the applicant will provide;
- (G) A statement verified by affidavit as to whether the applicant and each controlling person is financially solvent;
- (H) The name and address of the principal location from which the applicant has engaged in the business of general contracting at any time within the last five years;
- (I) If the applicant is not a sole proprietor, proof that the applicant is authorized to do business in the State of Illinois;
- (J) Proof of insurance as required by Section 4-36-090;
- (K) The date of birth, and social security number or other acceptable identifier, of each natural person named in the license application;
- (L) A statement as to whether the applicant or any controlling person has ever been convicted, in custody, under parole or under any other non-custodial supervision resulting from a conviction in a court of any jurisdiction for the commission of a felony or criminal offense of whatever degree involving bribery, and if so, the details surrounding each such conviction;
- (M) A statement as to whether the applicant or any controlling person is currently under indictment or has been charged under any State or Federal law with the crime of bribery; and
- (N) Any other information that the commissioner may require.

It is a condition of the license that all information in the application be kept current. Any change in required information shall be reported to the department of buildings within 14 business days after such change has occurred.

For purposes of this section, a post office box shall not suffice as an address.

### **4-36-060 License issuance and renewal prohibited when.**

No general contractor license shall be issued to the following persons:

- (A) Any person whose license under this chapter has been revoked for cause at any time within the last four years;
- (B) Any person whose permit privileges have been suspended pursuant to Section 4-36-130 until such time that the suspension is lifted by the department of buildings;
- (C) Any person who is under the age of 18;
- (D) Any person who has been convicted, in custody, under parole or under any other non-custodial supervision resulting from a conviction in a court of any jurisdiction for the commission of a felony or criminal offense of whatever degree involving bribery, unless, upon request of such person, the commissioner determines that such person has been substantially rehabilitated to warrant the public trust. The burden of proof of substantial rehabilitation shall be on the person seeking such rehabilitation; and



## Licensing of General Contractors

(E) Any person who is currently under indictment or has been charged under any State or Federal law with the crime of bribery.

The above prohibitions and requirements shall apply to the licensee and to all controlling persons.

Eligibility for issuance of a license under this chapter shall be a continuing requirement for maintaining a license under this chapter. Failure to maintain such eligibility may result in license suspension or revocation in accordance with the requirements of Section 4-4-280 of this Code.

### **4-36-070 License – Fee – Termination.**

The license fee set forth in Section 4-5-010 of this Code shall be payable annually. The general contractor license shall expire on the date indicated on the face of the license.

### **4-36-080 License number to be printed where.**

The licensee shall print his general contractor license number legibly on the front page of every estimate, contract and subcontract, and in any advertisement placed by or on behalf of a general contractor. The general contractor license number, and the class of general contractor license obtained, shall appear on every application for a building permit. The licensee shall affix his name and general contractor license number on all vehicles used in the course of his business.

### **4-36-090 Proof of insurance – Required.**

Prior to the issuance of a general contractor license, each applicant shall furnish a certificate of insurance, issued by an insurer authorized to insure in Illinois with a credit rating of B+ or higher by A.M. Best Company, evidencing commercial general liability insurance, as follows:

(A) If the applicant is applying for a Class A license: limits of not less than \$5,000,000.00 per occurrence (primary or umbrella) for bodily injury and property damage and completed operations arising in any way from the issuance of the license or activities conducted pursuant to the license;

(B) If the applicant is applying for a Class B license: limits of not less than \$3,000,000.00 per occurrence (primary or umbrella) for bodily injury or property damage arising in any way from the issuance of the license;

(C) If the applicant is applying for a Class C license: limits of not less than \$1,000,000.00 per occurrence, \$2,000,000.00 in the aggregate for bodily injury, personal injury, property damage and completed operations arising in any way from the issuance of the license or activities conducted pursuant to the license;

(D) If the applicant is applying for a Class D license: limits of not less than \$1,000,000.00 per occurrence, \$2,000,000.00 in the aggregate for bodily injury, personal injury, property damage and completed operations arising in any way from the issuance of the license or activities conducted pursuant to the license;

(E) If the applicant is applying for a Class E license: limits of not less than \$1,000,000.00 per occurrence for bodily injury personal injury, property damage and completed operations arising in any way from the issuance of the license or activities conducted pursuant to the license.

## Licensing of General Contractors

Each policy of insurance required under this section shall include a provision requiring 30 days advance notice to the commissioner prior to cancellation or lapse of the policy. The licensee shall maintain the insurance required under this section in full force and effect for the duration of the license period. A single violation of this section shall result in suspension or revocation of the general contractor license in accordance with Section 4-4-280 of this Code.

Each policy of insurance required under this section shall name the City of Chicago as additional insured on a primary, noncontributory basis arising directly or indirectly from the licensee's operations.

### **4-36-100 Reserved.**

### **4-36-110 Unlawful acts.**

It shall be unlawful for any licensee or for any person requiring a license under this chapter to engage in any of the following conduct:

(A) Knowingly to allow any person to use the licensee's name or license identification on a building permit application unless the licensee will be performing the work attributed to the licensee in the permit application. Any person who violates this subsection shall be punished by a fine of \$1,000.00 for the first offense; \$1,500.00 and a 90-day license suspension for the second offense; and \$2,000.00 and license revocation for the third offense;

(B) To do work or to direct, permit, encourage, assist, aid, abet or cause others to do work without first having obtained any permit required by this Code, or in violation of Section 14A-4-401.1 of this Code, or in violation of Section 13-20-590 of this Code;

(C) To violate or to direct, permit, encourage, assist, aid, abet or cause others to violate any stop work order issued under this Code;

(D) To hire any subcontractor or to direct, permit, encourage, assist, aid, abet or cause others to hire any subcontractor who lacks a valid license to perform the work for which the subcontractor is hired;

(E) To submit any bid on general contracting work without a valid license issued under this chapter;

(F) To fail to allow the department of buildings or the department of business affairs and consumer protection to examine pursuant to Section 4-36-120(B) the financial books and records of the business within three business days of the time a written request for such an examination is made by the commissioner of buildings or the department of business affairs and consumer protection;

(G) To fail to comply with the Workers' Compensation Act, as amended;

(H) To fail to maintain any insurance required by law, including but not limited to workers' compensation insurance and automobile liability insurance;

(I) To knowingly make or cause to be made a false statement of material fact on or in connection with a building permit application;

(J) To knowingly submit or cause to be submitted in support of a building permit application any document containing false or fraudulent information;

## Licensing of General Contractors

(K) To knowingly affix or cause to be affixed a false signature on a building permit application;

(L) To bribe or attempt to bribe or cause others to bribe or attempt to bribe any building inspector, government official, city personnel or other person in connection with an act related to general contracting as defined in Section 4-36-010.

(M) To knowingly engage or cause others to engage in any conduct in connection with a building permit application in violation of the Illinois Architecture Practice Act, the Illinois Professional Land Surveyor Act, the Illinois Professional Engineering Practice Act or the Illinois Structural Engineering Act, as amended.

(N) To do work or to direct, permit, encourage, assist, aid, abet or cause others to do work in violation of the zoning code or in a manner that fails to conform to the minimum standards of health or safety set forth in this Code or in any other applicable law or that otherwise endangers the health or safety of construction site workers, or the current or eventual users or occupants of a building or premises or the general public.

(O) To fail to comply with any requirement applicable to the contractor on a project as set forth in Article XIV of Chapter 11-4 of this Code.

The prohibitions set forth in subsections (A) through (O) of this section shall apply to the licensee and to all controlling persons.

### **4-36-120 Duties.**

A licensee under this chapter shall have the following duties:

(A) To maintain a list that includes information about all permits obtained and all contractors or subcontractors performing work on any project permitted or requiring a permit, under this Code, including the contractor's or subcontractor's name and address, and if applicable, their license number. If requested by the commissioner, the general contractor shall produce this list within 72 hours of the commissioner's request.

(B) To maintain sufficient and proper personnel, financial ability and facility to coordinate, develop, provide management expertise and complete in its entirety any proposed work for which a permit has been issued or is required to be issued under this Code. If the commissioner of buildings or the department of business affairs and consumer protection receives a complaint, or otherwise has reasonable cause to believe, that a licensee or any person requiring a license under this chapter is not financially solvent, the commissioner and the department of business affairs and consumer protection are authorized to examine that licensee's or person's financial books and records in order to determine whether the person's past and current financial solvency and expectations for financial solvency in the future give rise to a reasonable expectation that the person can successfully do business as a general contractor without jeopardizing the public health, safety or welfare, and can carry through to completion any project permitted or requiring a permit under this Code. Financial solvency is a continuing requirement for maintaining a license under this chapter. Any financial books and records submitted pursuant to this subsection, and all information contained therein, shall be deemed confidential, shall be used for purposes of enforcing this subsection only, and shall not be divulged to any person or agency, except to the United States Attorney, the Illinois Attorney General, the State's Attorney of Cook County or to the extent required by law. Any person who uses or divulges confidential information in violation of the requirements of this subsection shall

## Licensing of General Contractors

be subject to incarceration for a term not to exceed six months or a fine not to exceed \$500.00 or both.

(C) To assure compliance with the building code by its employees, agents and subcontractors in the performance of a project.

(D) To comply with all reasonable requests made by any authorized city official necessary or appropriate to implement the requirements of this chapter;

(E) To cooperate fully with any authorized city official in any inquiry, inspection or investigation necessary or appropriate to implement the requirements of this chapter;

(F) To keep a copy of proof of insurance, as required under Section 4-36-090, at the following locations: (1) the licensee's principal office or place of business, as identified in the license application; and (2) each construction site within the city managed or controlled by the licensee. Upon request, proof of insurance shall be made available for inspection by any city inspector or other authorized city official.

The duties set forth in this section shall apply to the licensee and to all controlling persons.

(G) If the licensee is engaged at a specific job site in the business of home repair, as defined in Section 4-6-280(a), to comply with the requirements set forth in paragraphs (2) through (6), inclusive, of Section 4-6-280(d) and in paragraphs (1) through (4), inclusive, of Section 4-6-280(c).

### **4-36-130 Permit privileges – Suspension.**

The Commissioner of Buildings may suspend the ability of any person licensed or required to be licensed under this chapter to submit new applications or complete pending applications for a building permit or other permit issued by the Department of Buildings for cause as set forth in Section 14A-3-304 of this Code.

### **4-36-140 License – Immediate suspension based upon a pattern of substantial code violations.**

If the commissioner of buildings determines that a licensee is engaging in or has engaged in a pattern of substantial code violations, the commissioner may order the temporary suspension of any license issued pursuant to this chapter for a period not to exceed ten days. Notice of the temporary suspension and the grounds for that suspension shall be immediately sent or delivered to the licensee. The licensee shall have an opportunity for a hearing before the department of business affairs and consumer protection prior to the expiration of the ten day temporary suspension. If the department of business affairs and consumer protection determines by a preponderance of the evidence that a pattern of substantial code violations exists, nothing in this section shall prevent the department of business affairs and consumer protection from suspending the licensee's general contractor license for a longer period of time or from revoking the license in accordance with Section 4-4-280 of this Code.

For purposes of this subsection, the term “pattern of substantial code violations” means five or more violations of the building code which imperil the public health, safety or welfare, or two or more violations of any stop work order issued pursuant to this Code, or any combination thereof involving five or more violations of this Code, within any six-month period, at one or more construction sites within the city managed or controlled by the licensee.

## Licensing of General Contractors

### **4-36-145 License suspension pending final adjudication of a bribery charge.**

If the commissioner has knowledge that a licensee under this chapter or any controlling person has been indicted or charged with any offense set forth in item (L) of Section 4-36-110 or with a similar offense under any State or Federal law and the commissioner determines that continued operation of the licensed business or activity may pose a threat to the public health, safety or welfare or may threaten to impair public confidence in the licensed business or activity, the commissioner may suspend the general contractor license of such licensee, in accordance with the requirements of Section 4-4-280, until final adjudication is made with respect to such offense. The subject matter of any hearing conducted under Section 4-4-280 shall be limited to determining (1) whether the licensee or any controlling person has, in fact, been indicted or charged with any offense set forth in item (L) of Section 4-36-110 or with a similar offense under any State or Federal law; and (2) whether such offense is connected in any way with an act related to general contracting; and (3) whether continued operation of the licensed business or activity may pose a threat to the public health, safety or welfare or may threaten to impair public confidence in the licensed business or activity. The burden of proving that continued operation of the licensed business or activity does not pose a threat to the public health, safety or welfare and does not threaten to impair public confidence in the licensed business or activity shall be on the licensee.

### **4-36-150 License – Suspension or revocation.**

Any violation of this chapter or of the building code or of any regulation promulgated thereunder may result in license suspension or revocation in accordance with Section 4-4-280 or Section 14A-3-305 of this Code.

### **4-36-160 License revocation – Four-year wait for new license.**

No person whose license under this chapter is revoked for any cause shall be granted another general contractor license under the same or a different name for a period of four years after the date of revocation.

### **4-36-170 Regulations.**

The commissioner of buildings shall have the authority to promulgate rules and regulations necessary to implement the requirements of this chapter.

### **4-36-180 Enforcement.**

The commissioner of buildings shall (i) enforce the requirements of this chapter; (ii) investigate complaints regarding violations of this chapter; and (iii) maintain a roster of all licensees under this chapter and of all persons whose general contractor license has been suspended or revoked within the previous four years.

### **4-36-190 Violation – Penalty.**

Except as otherwise provided in this chapter, any person violating any of the requirements of this chapter shall be fined, as follows:

(A) If the person holds or requires a Class A license under this chapter: not less than \$1,000.00, nor more than \$5,000.00, for each offense;

(B) If the person holds or requires a Class B license under this chapter: not less than \$750.00, nor more than \$3,500.00, for each offense;

## **Licensing of General Contractors**

(C) If the person holds or requires a Class C license under this chapter: not less than \$500.00, nor more than \$2,500.00, for each offense;

(D) If the person holds or requires a Class D license under this chapter: not less than \$400.00, nor more than \$2,000.00, for each offense;

(E) If the person holds or requires a Class E license under this chapter: not less than \$250.00, nor more than \$1,000.00, for each offense.

Each day that a violation continues shall constitute a separate and distinct offense.

**EXHIBIT A  
ANTICIPATED WORKFORCE PROJECTION FORM  
AFFIRMATIVE ACTION EMPLOYMENT PROGRAM AND LOCAL EMPLOYMENT PROGRAM**

DATE OF SUBMITTAL:							
<b>TRADE OR WORK CLASS</b>				<b>ETHNIC CLASS</b>			
KEY:	J	-	JOURNEYMAN	B	BLACK		DATE:
	L	-	LABORER	H	HISPANIC		NAME OF FIRM:
	A	-	APPRENTICE	A	ASIAN		SIGNATURE:
	EMPL	-	EMPLOYED	NA	NATIVE AMERICAN		SPECIFICATION NO.:
	RES	-	RESIDENT	O	OTHER:		NAME OF PROJECT:

TRADE OR WORK CLASS	EST. DATES OF EMPL. FROM-TO	WAGE RATE	NO. OF EMPL.	ETHNIC CLASS	MALE		FEMALE		CHICAGO RESIDENTS		PROJECTED NEW HIRES	
					TOTAL PERSON HOURS	% OF TOTAL	TOTAL PERSON HOURS	% OF TOTAL	TOTAL PERSON HOURS	% OF TOTAL	TOTAL PERSON HOURS	% OF TOTAL

Indicate above the number of employees, permanent, temporary or otherwise for each of the categories anticipated to be hired during the term of this contract and the date(s) for which the employee(s) are expected to be hired.

The developer or contractor shall submit this form with copies of W4's within five (5) working days after award of contract to the Attention of: Department of Procurement Services, Division of Contract Monitoring and Compliance, City Hall, Room 806, 121 North LaSalle Street, Chicago, IL 60602.

**EXHIBIT B  
PAY PERIOD CANVASS REPORT**

<b>Contractor:</b>	
<b>Title:</b>	

<b>Specification #:</b>	
<b>Award Amount:</b>	

Week Number	Week Ending	Journeyworker			Apprentice			Laborer			Chicago Residents
		Total	Minority	Female	Total	Minority	Female	Total	Minority	Female	
<b>TOTALS</b>											

Note: The Contract’s General Conditions require that this “Pay Period Canvass Report” be submitted by the Contractor for its own firm and all of its subcontractor(s) with each pay request. The report must be completed on a weekly basis for each pay period.



**EXHIBIT C  
PAYROLL CANVASS SURVEY REPORT**

<b>Contractor:</b>										
<b>Project Title:</b>										
<b>Specification #:</b>										
<b>Award Amount:</b>										
							<b>Total Potential Damages</b>	<b>EEO</b>		
								<b>Residency</b>		
<b>Contractor</b>	<b>Journeyworker</b>			<b>Apprentice</b>			<b>Laborer</b>			<b>Chicago Residents</b>
	<b>Total</b>	<b>Minority</b>	<b>Female</b>	<b>Total</b>	<b>Minority</b>	<b>Female</b>	<b>Total</b>	<b>Minority</b>	<b>Female</b>	
<b>TOTALS</b>										

	<b>Journeyworker</b>			<b>Apprentice</b>			<b>Laborer</b>		<b>Chicago Residents</b>
	<b>Minority</b>	<b>Female</b>		<b>Minority</b>	<b>Female</b>		<b>Minority</b>	<b>Female</b>	
GOALS									
ACHIEVED									
DEFICIENCY									
Damages									

## AFFIDAVIT OF UNCOMPLETED WORK

(Complete this form by either typing or using black ink.)

### PART I. WORK UNDER CONTRACT

List below all work you have under contract as either a prime contractor or a subcontractor, including all pending low bids not yet awarded or rejected.

	1	2	3	4	5	Awards Pending	
PROJECT							
CONTRACT WITH							
ESTIMATED COMPLETION DATE							
TOTAL CONTRACT PRICE							TOTAL
UNCOMPLETED DOLLAR VALUE							

### PART II. UNCOMPLETED WORK TO BE DONE WITH YOUR OWN FORCES.

List below the uncompleted dollar value of work for each contract to be completed with your own forces including all work indicated as awards pending. All work subcontracted TO others will be listed on PART III of this form.

In a joint venture, list only that portion of the work to be done by your company.

							TOTALS
EXCAVATING & GRADING							
PCC BASE, C&G PAVING							
BIT CONCRETE PAVING							
STABILIZED BASE (BAM, CAM, PAM)							
AGGREGATE BASE AND FILL							
FOUNDATION (CAISSON & PILE)							
HIGHWAY STRUCTURES							
SEWER & DRAIN STRUCTURES							
PAINTING							
PAVEMENT MARKING							
SIGNING							
LANDSCAPING							
DEMOLITION							
FENCING							

## AFFIDAVIT OF UNCOMPLETED WORK

	1	2	3	4	5	Awards Pending
OTHERS (LIST)						
STRUCT. STEEL (BLDG. CONST.)						
ORNAMENTAL STEEL (BLDG. CONST.)						
MISCELLANEOUS CONCRETE						
FIREPROOFING						
MASONRY						
H.V.A.C.						
MECHANICAL						
ELECTRICAL						
PLUMBING						
ROOFING & SHEET METAL						
FLOORING & TILE WORK						
DRYWALL AND PLASTER WORK						
CEILING CONST.						
HOLLOW METAL AND HARDWARE						
GLAZING AND CAULKING						
MISCELLANEOUS ARCH. WORK						
OTHERS (LIST)						
<b>TOTALS</b>						

REMARKS: \_\_\_\_\_

## AFFIDAVIT OF UNCOMPLETED WORK

**PART III. WORK SUBCONTRACTED TO OTHERS.** List below the work, according to each contract on the preceding page, which you have a subcontracted to others. **DO NOT** include work to be performed by another prime contractor in a joint venture. No work may be indicated as subcontracted to others on awards pending. If no work is subcontracted to others, show NONE.

	1	2	3	4	5
SUBCONTRACTOR					
TYPE O F WORK					
SUBCONTRACT PRICE					
AMOUNT UNCOMPLETED					
SUBCONTRACTOR					
TYPE OF WORK					
SUBCONTRACT PRICE					
AMOUNT UNCOMPLETED					
SUBCONTRACTOR					
TYPE OF WORK					
SUBCONTRACT PRICE					
AMOUNT UNCOMPLETED					
SUBCONTRACTOR					
TYPE OF WORK					
SUBCONTRACT PRICE					
AMOUNT UNCOMPLETED					

**AFFIDAVIT OF UNCOMPLETED WORK**

	1	2	3	4	5
SUBCONTRACTOR					
TYPE OF WORK					
SUBCONTRACT PRICE					
AMOUNT UNCOMPLETED					

I, being duly sworn do hereby declare that this affidavit is a true and correct statement relating to ALL uncompleted contracts of the undersigned for Federal, State, County, City and private work including ALL subcontract work, ALL pending low bids not yet awarded or rejected, and ALL estimated completion dates.

Subscribed and sworn to before me Signed \_\_\_\_\_  
 this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_ Company \_\_\_\_\_  
 Address \_\_\_\_\_

My commission expires \_\_\_\_\_

State of \_\_\_\_\_

County of \_\_\_\_\_

This instrument was acknowledged before me on this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_ by \_\_\_\_\_  
 as President (or other authorized officer) and \_\_\_\_\_ as Secretary of \_\_\_\_\_  
 (Corporation Name).  
 (Seal)

\_\_\_\_\_  
 Notary Public Signature  
 Commission Expires: \_\_\_\_\_

**PROPOSAL TO BE EXECUTED BY A CORPORATION**

The undersigned, hereby acknowledges having received **Specification No. 1188838** containing a full set of Contract Documents, including, but not limited to, 1) Instructions to Bidders (Proposers), 2) General Conditions, 3) Special Conditions, 4) Contract Plans or Drawings (if applicable) 5) Detailed Specifications or Scope of Services, Evaluation/Selection Criteria and Submittal Requirements (If RFP/RFQ), 6) Proposal Pages, 7) Certifications and 8) Addenda Nos. **(none unless indicated here)** \_\_\_\_\_, and affirms that the corporation shall be bound by all the terms and conditions contained in the Contract Documents, regardless of whether a complete set thereof is attached to this proposal, except only to the extent that the corporation has taken express written exception thereto in the sections of this specification designated for that purpose.

Under penalty of perjury, the undersigned: (1) warrants that he/she was authorized to submit an EDS on behalf of the Disclosing Party on-line; (2) warrants that all certifications and statements contained in the EDS are true, accurate and complete as of the date the EDS was submitted on-line; and (3) further warrants that, as of the date of submission of this proposal or bid, there have been no changes in Circumstances since the date that the EDS was submitted that would render any certification in the EDS false, inaccurate or incomplete.

Further, the undersigned being duly sworn deposes and says on oath that no disclosures of ownership interests have been withheld and the information provided therein to the best of its knowledge is current and the undersigned has not entered into any agreement with any other bidder (proposer) or prospective bidder (proposer) or with any other person, firm or corporation relating to the price named in this proposal or any other proposal, nor any agreement or arrangement under which any act or omission in restraint of freedom of competition among bidders (proposers) and has not disclosed to any person, firm or corporation the terms of this bid (proposal) or the price named herein.

Proposals must be submitted with original signatures in the space provided. Proposals not properly signed will be rejected.

NAME OF CORPORATION: \_\_\_\_\_  
(Print or Type)

SIGNATURE OF PRESIDENT\*:  
(Or Authorized Officer) \_\_\_\_\_  
(Signature)

TITLE OF SIGNATORY: \_\_\_\_\_  
(Print or Type)

BUSINESS ADDRESS: \_\_\_\_\_  
(Print or Type)

\*Note: In the event that this bid (proposal) is signed by other than the President, attach hereto a certified copy of that section of Corporate By-Laws or other authorization, such as a resolution by the Board of Directors, which permits the person to sign the offer for the Corporation.

ATTEST: \_\_\_\_\_  
(Corporate Secretary Signature)  
(Affix Corporate Seal)

State of \_\_\_\_\_  
County of \_\_\_\_\_

This instrument was acknowledged before me on this \_\_\_\_ day of \_\_\_\_\_, 20\_\_ by \_\_\_\_\_ as President (or other authorized officer) and \_\_\_\_\_ as Secretary of \_\_\_\_\_ (Corporation Name).  
(Seal)

\_\_\_\_\_  
Notary Public Signature  
Commission Expires: \_\_\_\_\_

## PROPOSAL TO BE EXECUTED BY A JOINT VENTURE

The undersigned, hereby acknowledges having received **Specification No. 1188838** containing a full set of Contract Documents, including, but not limited to, 1) Instructions to Bidders (Proposers), 2) General Conditions, 3) Special Conditions, 4) Contract Plans or Drawings (if applicable) 5) Detailed Specifications or Scope of Services, Evaluation/Selection Criteria and Submittal Requirements (If RFP/RFQ), 6) Proposal Pages, 7) Certifications and 8) Addenda Nos. **(none unless indicated here)** \_\_\_\_\_, and affirms that the Joint Venture shall be bound by all the terms and conditions contained in the Contract Documents, regardless of whether a complete set thereof is attached to this proposal, except only to the extent that the Joint Venture has taken express written exception thereto in the sections of this specification designated for that purpose.

Under penalty of perjury, the undersigned: (1) warrants that he/she was authorized to submit an EDS on behalf of the Disclosing Party on-line; (2) warrants that all certifications and statements contained in the EDS are true, accurate and complete as of the date the EDS was submitted on-line; and (3) further warrants that, as of the date of submission of this proposal or bid, there have been no changes in Circumstances since the date that the EDS was submitted that would render any certification in the EDS false, inaccurate or incomplete.

Further, the undersigned being duly sworn deposes and says on oath that no disclosures of ownership interests have been withheld and the information provided therein to the best of its knowledge is current and the undersigned has not entered into any agreement with any other bidder (proposer) or prospective bidder (proposer) or with any other person, firm or corporation relating to the price named in this proposal or any other proposal, nor any agreement or arrangement under which any act or omission in restraining of free competition among bidders (proposers) and has not disclosed to any person, firm or corporation the terms of this bid (proposal) or the price named herein.

Proposals must be submitted with original signatures in the space provided. Proposals not properly signed will be rejected.

**JOINT VENTURE NAME:**

\_\_\_\_\_  
(Print or Type)

**JOINT VENTURE ADDRESS:**

\_\_\_\_\_  
(Print or Type)

If you are operating under an assumed name, provide County registration number herein under as provided in the Illinois Revised Statutes 1965 Chapter 96 Sec. 4 et seq.

Registration Number: \_\_\_\_\_

**SIGNATURES AND ADDRESSES OF ALL MEMBERS OF THE JOINT VENTURE**

(If all members of the Joint Venture do not sign, indicate authority of signatories by attaching copy of Joint Venture agreement or other authorizing document):

SIGNATURE OF Authorized Party: \_\_\_\_\_

(Signature)

TITLE OF SIGNATORY: \_\_\_\_\_

(Print or Type)

BUSINESS ADDRESS: \_\_\_\_\_

(Print or Type)

ATTEST: \_\_\_\_\_

(Joint Venture Secretary Signature)

(Affix Joint Venture Seal)

OR

Joint Venturer Signature: \_\_\_\_\_

(Signature)

Address: \_\_\_\_\_

(Print or Type)

Joint Venturer Signature: \_\_\_\_\_

(Signature)

Address: \_\_\_\_\_

(Print or Type)

Joint Venturer Signature: \_\_\_\_\_

(Signature)

Address:

\_\_\_\_\_ (Print or Type)

State of \_\_\_\_\_

County of \_\_\_\_\_

This instrument was acknowledged before me on this \_\_\_\_ day of \_\_\_\_\_, 20\_\_ by \_\_\_\_\_ as President (or other authorized officer) and \_\_\_\_\_ as Secretary of \_\_\_\_\_ (Corporation Name).  
(Seal)

\_\_\_\_\_  
Notary Public Signature

Commission Expires: \_\_\_\_\_



**PROPOSAL TO BE EXECUTED BY A PARTNERSHIP**

The undersigned, hereby acknowledges having received **Specification No. 1188838** containing a full set of Contract Documents, including, but not limited to, 1) Instructions to Bidders (Proposers), 2) General Conditions, 3) Special Conditions, 4) Contract Plans or Drawings (if applicable) 5) Detailed Specifications or Scope of Services, Evaluation/Selection Criteria and Submittal Requirements (If RFP/RFQ), 6) Proposal Pages, 7) Certifications and 8) Addenda Nos. **(none unless indicated here)** \_\_\_\_\_, and affirms that the partnership shall be bound by all the terms and conditions contained in the Contract Documents, regardless of whether a complete set thereof is attached to this proposal, except only to the extent that the partnership has taken express written exception thereto in the sections of this specification designated for that purpose.

Under penalty of perjury, the undersigned: (1) warrants that he/she was authorized to submit an EDS on behalf of the Disclosing Party on-line; (2) warrants that all certifications and statements contained in the EDS are true, accurate and complete as of the date the EDS was submitted on-line; and (3) further warrants that, as of the date of submission of this proposal or bid, there have been no changes in Circumstances since the date that the EDS was submitted that would render any certification in the EDS false, inaccurate or incomplete.

Further, the undersigned being duly sworn deposes and says on oath that no disclosures of ownership interests have been withheld and the information provided therein to the best of its knowledge is current and the undersigned has not entered into any agreement with any other bidder (proposer) or prospective bidder (proposer) or with any other person, firm or corporation relating to the price named in this proposal or any other proposal, nor any agreement or arrangement under which any act or omission in restraining of free competition among bidders (proposers) and has not disclosed to any person, firm or corporation the terms of this bid (proposal) or the price named herein.

Proposals must be submitted with original signatures in the space provided. Proposals not properly signed will be rejected.

**BUSINESS NAME:** \_\_\_\_\_  
(Print or Type)

**BUSINESS ADDRESS:** \_\_\_\_\_  
(Print or Type)

If you are operating under an assumed name, provide County registration number herein under as provided in the Illinois Revised Statutes 1965 Chapter 96 Sec. 4 et seq.

Registration Number: \_\_\_\_\_

**SIGNATURES AND ADDRESSES OF ALL MEMBERS OF THE PARTNERSHIP**

(If all General Partners do not sign, indicate authority of partner signatories by attaching copy of partnership agreement or other authorizing document):

Partner Signature: \_\_\_\_\_  
(Signature)

Address: \_\_\_\_\_  
(Print or Type)

Partner Signature: \_\_\_\_\_  
(Signature)

Address: \_\_\_\_\_  
(Print or Type)

Partner Signature: \_\_\_\_\_  
(Signature)

Address: \_\_\_\_\_  
(Print or Type)

State of \_\_\_\_\_  
County of \_\_\_\_\_

This instrument was acknowledged before me on this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_ by \_\_\_\_\_ as President (or other authorized officer) and \_\_\_\_\_ as Secretary of \_\_\_\_\_ (Corporation Name).  
(Seal)

\_\_\_\_\_  
Notary Public Signature  
Commission Expires: \_\_\_\_\_

**PROPOSAL TO BE EXECUTED BY A SOLE PROPRIETOR**

The undersigned, hereby acknowledges having received **Specification No. 1188838** containing a full set of Contract Documents, including, but not limited to, 1) Instructions to Bidders (Proposers), 2) General Conditions, 3) Special Conditions, 4) Contract Plans or Drawings (if applicable) 5) Detailed Specifications or Scope of Services, Evaluation/Selection Criteria and Submittal Requirements (If RFP/RFQ), 6) Proposal Pages, 7) Certifications and 8) Addenda Nos. **(none unless indicated here)** \_\_\_\_\_, and affirms that the sole proprietor shall be bound by all the terms and conditions contained in the Contract Documents, regardless of whether a complete set thereof is attached to this proposal, except only to the extent that the sole proprietor has taken express written exception thereto in the sections of this specification designated for that purpose.

Under penalty of perjury, the undersigned: (1) warrants that he/she was authorized to submit an EDS on behalf of the Disclosing Party on-line; (2) warrants that all certifications and statements contained in the EDS are true, accurate and complete as of the date the EDS was submitted on-line; and (3) further warrants that, as of the date of submission of this proposal or bid, there have been no changes in Circumstances since the date that the EDS was submitted that would render any certification in the EDS false, inaccurate or incomplete.

Further, the undersigned being duly sworn deposes and says on oath that no disclosures of ownership interests have been withheld and the information provided therein to the best of its knowledge is current and the undersigned has not entered into any agreement with any other bidder (proposer) or prospective bidder (proposer) or with any other person, firm or corporation relating to the price named in this proposal or any other proposal, nor any agreement or arrangement under which any act or omission in restraining of free competition among bidders (proposers) and has not disclosed to any person, firm or corporation the terms of this bid (proposal) or the price named herein.

Proposals must be submitted with original signatures in the space provided. Proposals not properly signed will be rejected.

**SIGNATURE OF PROPRIETOR:** \_\_\_\_\_  
(Signature)

**DOING BUSINESS AS:** \_\_\_\_\_  
(Print or Type)

Business Address: \_\_\_\_\_  
(Print or Type)

If you are operating under an assumed name, provide County registration number herein under as provided in the Illinois Revised Statutes 1965 Chapter 96 Sec. 4 et seq.

Registration Number: \_\_\_\_\_  
(Print or Type)

State of \_\_\_\_\_  
County of \_\_\_\_\_

This instrument was acknowledged before me on this \_\_\_\_ day of \_\_\_\_\_, 20\_\_ by \_\_\_\_\_ as President (or other authorized officer) and \_\_\_\_\_ as Secretary of \_\_\_\_\_ (Corporation Name).  
(Seal)

\_\_\_\_\_  
Notary Public Signature  
Commission Expires: \_\_\_\_\_

## PROPOSAL ACCEPTANCE

**Contract No.:** \_\_\_\_\_

**Specification No.:** \_\_\_\_\_

**Vendor Name:** \_\_\_\_\_

**Total Amount (Value):** \_\_\_\_\_

**Fund Chargeable:** \_\_\_\_\_

The undersigned, on behalf of the CITY OF CHICAGO, a municipal corporation of the State of Illinois, hereby accept the foregoing bid items as identified in the proposal.

CITY OF CHICAGO

\_\_\_\_\_  
Mayor Date

\_\_\_\_\_  
Comptroller Date

\_\_\_\_\_  
Chief Procurement Officer Date

**SCHEDULE B: MBE/WBE/VBE Affidavit of Joint Venture**

1) All information requested on this schedule must be answered in the spaces provided. Do not refer to your joint venture agreement except to expand on answers provided on this form. If additional space is required, attach additional sheets. **In all proposed joint ventures, each MBE, WBE, and/or VBE venturer must submit a copy of its current Letter of Certification.**

I. Name of joint venture: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 Telephone number of joint venture: \_\_\_\_\_

II. Email address: \_\_\_\_\_  
 Name of non-MBE/WBE/VBE venturer: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 Telephone number: \_\_\_\_\_  
 Email address: \_\_\_\_\_  
 Contact person for matters concerning MBE/WBE/VBE compliance: \_\_\_\_\_

III. Name of MBE/WBE/VBE venturer: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 Telephone number: \_\_\_\_\_  
 Email address: \_\_\_\_\_  
 Contact person for matters concerning MBE/WBE/VBE compliance: \_\_\_\_\_

IV. Describe the role(s) of the MBE, WBE, and/or VBE venturer(s) in the joint venture: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

V. Attach a copy of the joint venture agreement.

In order to demonstrate the MBE, WBE, and/or VBE joint venture partner’s share in the capital contribution, control, management, risks and profits of the joint venture is equal to its ownership interest, the proposed joint venture agreement must include specific details related to: (1) the contributions of capital, personnel and equipment and share of the costs of bonding and insurance; (2) work items to be performed by the MBE/WBE/VBE’s own forces; (3) work items to be performed under the supervision of the MBE/WBE/VBE venturer; and (4) the commitment of management, supervisory and operative personnel employed by the MBE/WBE/VBE to be dedicated to the performance of the project.

VI. Ownership of the Joint Venture.

A. What is the percentage(s) of MBE/WBE/VBE ownership of the joint venture?  
 MBE/WBE/VBE ownership percentage(s) \_\_\_\_\_  
 Non-MBE/WBE/VBE ownership percentage(s) \_\_\_\_\_

B. Specify MBE/WBE/VBE percentages for each of the following (provide narrative descriptions and other details as applicable):

1. Profit and loss sharing: \_\_\_\_\_

2. Capital contributions:  
 a. Dollar amounts of initial contribution: \_\_\_\_\_  
 b. Dollar amounts of anticipated on-going contributions: \_\_\_\_\_

3. Contributions of equipment (Specify types, quality and quantities of equipment to be provided by each venturer):

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

4. Other applicable ownership interests, including ownership options or other agreements which restrict or limit ownership and/or control: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

5. Costs of bonding (if required for the performance of the contract):

\_\_\_\_\_

6. Costs of insurance (if required for the performance of the contract):

\_\_\_\_\_

C. Provide copies of all written agreements between venturers concerning this project.

D. Identify each current City of Chicago contract and each contract completed during the past two years by a joint venture of two or more firms participating in this joint venture:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

VII. Control of and Participation in the Joint Venture.

Identify by name and firm those individuals who are, or will be, responsible for, and have the authority to engage in the following management functions and policy decisions. Indicate any limitations to their authority such as dollar limits and co-signatory requirements:

A. Joint venture check signing:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

B. Authority to enter contracts on behalf of the joint venture:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

C. Signing, co-signing and/or collateralizing loans:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

D. Acquisition of lines of credit:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

E. Acquisition and indemnification of payment and performance bonds:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

F. Negotiating and signing labor agreements:

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

G. Management of contract performance. (Identify by name and firm only):

1. Supervision of field operations: \_\_\_\_\_
2. Major purchases: \_\_\_\_\_
3. Estimating: \_\_\_\_\_
4. Engineering: \_\_\_\_\_

VIII. Financial Controls of joint venture:

A. Which firm and/or individual will be responsible for keeping the books of account?

\_\_\_\_\_

B. Identify the "managing partner," if any, and describe the means and measure of his/her compensation:

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

C. What authority does each venturer have to commit or obligate the other to insurance and bonding companies, financing institutions, suppliers, subcontractors, and/or other parties participating in the performance of this contract or the work of this project?

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

IX. State the approximate number of operative personnel by trade needed to perform the joint venture's work under this contract. Indicate whether they will be employees of the non-MBE/WBE/VBE firm, the MBE/WBE/VBE firm, or the joint venture.

Trade	Non-MBE/WBE/VBE Firm (Number)	MBE/WBE/VBE (Number)	Joint Venture (Number)

X. If any personnel proposed for this project will be employees of the joint venture:

A. Are any proposed joint venture employees currently employed by either venturer?

Currently employed by non-MBE/WBE/VBE venturer (number) \_\_\_\_

Employed by MBE/WBE/VBE venturer \_\_\_\_\_

B. Identify by name and firm the individual who will be responsible for hiring joint venture employees:

C. Which venturer will be responsible for the preparation of joint venture payrolls:

XI. Please state any material facts of additional information pertinent to the control and structure of this joint venture.

The undersigned affirms that the foregoing statements are correct and include all material information necessary to identify and explain the terms and operations of our joint venture and the intended participation of each venturer in the undertaking. Further, the undersigned covenant and agree to provide to the City current, complete and accurate information regarding actual joint venture work and the payment therefore, and any proposed changes in any provision of the joint venture agreement, and to permit the audit and examination of the books, records and files of the joint venture, or those of each venturer relevant to the joint venture by authorized representatives of the City or the Federal funding agency.

Any material misrepresentation will be grounds for terminating any contract that may be awarded and for initiating action under federal or state laws concerning false statements.

Note: If, after filing this Schedule B and before the completion on the joint venture’s work on the project, there is any change in the information submitted, the joint venture must inform the City of Chicago, either directly or through the prime contractor if the joint venture is a subcontractor.

Name of MBE/WBE/VBE Partner Firm

Name of Non-MBE/WBE/VBE Partner Firm

Signature of Affiant

Signature of Affiant

Name and Title of Affiant

Name and Title of Affiant

Date

Date

On this \_\_ day of \_\_\_\_\_, 20 \_\_\_\_, the above-signed officers

(names of affiants)

personally appeared and, known to me be the persons described in the foregoing Affidavit, acknowledged that they executed the same in the capacity therein stated and for the purpose therein contained.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

Signature of Notary Public

My Commission Expires: \_\_\_\_\_(Seal)



**FOR  
CONSTRUCTION  
PROJECTS ONLY**

**SCHEDULE C: MBE/WBE Letter of Intent to  
Perform as a Subcontractor to the Prime Contractor**

**NOTICE: THIS SCHEDULE MUST BE AUTHORIZED AND SIGNED BY THE MBE/WBE SUBCONTRACTOR FIRM.  
FAILURE TO COMPLY MAY RESULT IN THE BID BEING REJECTED AS NON-RESPONSIVE.**

Project Name: \_\_\_\_\_ Specification No.: \_\_\_\_\_

From: \_\_\_\_\_  
(Name of MBE/WBE Firm)

To: \_\_\_\_\_ and the City of Chicago.  
(Name of Prime Contractor)

The MBE or WBE status of the undersigned is confirmed by the attached City of Chicago or Cook County Certification Letter. 100% MBE or WBE participation is credited for the use of a MBE or WBE "manufacturer." 60% participation is credited for the use of a MBE or WBE "regular dealer."

The undersigned is prepared to perform the following services in connection with the above named project/contract. If more space is required to fully describe the MBE or WBE proposed scope of work and/or payment schedule, attach additional sheets as necessary. The description must establish that the undersigned is performing a commercially useful function:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

The above described performance is offered for the following price and described terms of payment:

<u>Pay Item No./Description</u>	<u>Quantity/Unit Price</u>	<u>Total</u>

Subtotal: \$ \_\_\_\_\_

Total @ 100%: \$ \_\_\_\_\_

Total @ 60% (if the undersigned is performing work as a regular dealer): \$ \_\_\_\_\_

**NOTICE: THIS SCHEDULE AND ATTACHMENTS REQUIRE ORIGINAL SIGNATURES ON EACH PAGE.**

\_\_\_\_\_  
(If not the undersigned, signature of person who filled out this Schedule C) (Date)

\_\_\_\_\_  
(Name/Title-Please Print) (Company Name-Please Print)

\_\_\_\_\_  
(Signature of President/Owner/CEO or Authorized Agent of MBE/WBE) (Date)

\_\_\_\_\_  
(Name/Title-Please Print)



**Schedule C: MBE/WBE Letter of Intent to Perform as a Subcontractor to the Prime Contractor**

**Partial Pay Items**

For any of the above items that are partial pay items, specifically describe the work and subcontract dollar amount(s):

<u>Pay Item No./Description</u>	<u>Quantity/Unit Price</u>	<u>Total</u>

Subtotal: \$ \_\_\_\_\_

Total @ 100%: \$ \_\_\_\_\_

Total @ 60% (if the undersigned is performing work as a regular dealer): \$ \_\_\_\_\_

**SUB-SUBCONTRACTING LEVELS**

A zero (0) must be shown in each blank if the MBE or WBE will not be subcontracting any of the work listed or attached to this schedule.

\_\_\_\_\_ % of the dollar value of the MBE or WBE subcontract that will be subcontracted to non MBE/WBE contractors.

\_\_\_\_\_ % of the dollar value of the MBE or WBE subcontract that will be subcontracted to MBE or WBE contractors.

**NOTICE: If any of the MBE or WBE scope of work will be subcontracted, list the name of the vendor and attach a brief explanation, description and pay item number of the work that will be subcontracted. MBE/WBE credit will not be given for work subcontracted to Non-MBE/WBE contractors, except for as allowed in the Special Conditions Regarding Minority Business Enterprise Commitment and Women Business Enterprise Commitment in Construction Contracts.**

The undersigned will enter into a formal written agreement for the above work with you as a Prime Contractor, conditioned upon your execution of a contract with the City of Chicago, within three (3) business days of your receipt of a signed contract from the City of Chicago.

One or more owners or principals of the Prime Contractor ( ) does / ( ) does not have an ownership interest in the undersigned. Provide names of such individuals and their respective ownership percentages, or indicate "none." Attach additional sheets if necessary: \_\_\_\_\_

The undersigned has entered into a formal written mentor protégé agreement as a subcontractor/protégé with you as a Prime Contractor/mentor. ( ) Yes ( ) No

**NOTICE: THIS SCHEDULE AND ATTACHMENTS REQUIRE ORIGINAL SIGNATURES ON EACH PAGE.**

\_\_\_\_\_  
(If not the undersigned, signature of person who filled out this Schedule C) (Date)

\_\_\_\_\_  
(Name/Title-Please Print) (Company Name-Please Print)

\_\_\_\_\_  
(Email & Phone Number)

\_\_\_\_\_  
(Signature of President/Owner/CEO or Authorized Agent of MBE/WBE) (Date)

\_\_\_\_\_  
(Name/Title-Please Print)

\_\_\_\_\_  
(Email & Phone Number)



**SCHEDULE C**  
MBE/WBE Letter of Intent to Perform as a  
2<sup>nd</sup> Tier Subcontractor to the Prime Contractor

**FOR  
CONSTRUCTION  
PROJECTS ONLY**

**NOTICE: THIS SCHEDULE MUST BE AUTHORIZED AND SIGNED BY THE MBE/WBE SUBCONTRACTOR FIRM. FAILURE TO COMPLY MAY RESULT IN THE BID BEING REJECTED AS NON-RESPONSIVE.**

Project Name: \_\_\_\_\_ Specification No.: \_\_\_\_\_

From: \_\_\_\_\_  
 (Name of MBE/WBE Firm)

To: \_\_\_\_\_  
 (Name of 1<sup>st</sup> Tier Contractor)

To: \_\_\_\_\_ and the City of Chicago.  
 (Name of Prime Contractor)

The MBE or WBE status of the undersigned is confirmed by the attached City of Chicago or Cook County Certification Letter. 100% MBE or WBE participation is credited for the use of a MBE or WBE "manufacturer." 60% participation is credited for the use of a MBE or WBE "regular dealer."

The undersigned is prepared to perform the following services in connection with the above named project/contract. If more space is required to fully describe the MBE or WBE proposed scope of work and/or payment schedule, attach additional sheets as necessary. The description must establish that the undersigned is performing a commercially useful function:

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

The above described performance is offered for the following price and described terms of payment:

<u>Pay Item No./Description</u>	<u>Quantity/Unit Price</u>	<u>Total</u>

Subtotal: \$ \_\_\_\_\_

Total @ 100%: \$ \_\_\_\_\_

Total @ 60% (if the undersigned is performing work as a regular dealer): \$ \_\_\_\_\_

**NOTICE: THIS SCHEDULE AND ATTACHMENTS REQUIRE ORIGINAL SIGNATURES ON EACH PAGE.**

\_\_\_\_\_  
 (If not the undersigned, signature of person who filled out this Schedule C) (Date)

\_\_\_\_\_  
 (Name/Title-Please Print) (Company Name-Please Print)

\_\_\_\_\_  
 (Signature of President/Owner/CEO or Authorized Agent of MBE/WBE) (Date)

\_\_\_\_\_  
 (Name/Title-Please Print)

**Schedule C: MBE/WBE Letter of Intent to Perform as a 2<sup>nd</sup> Tier Subcontractor to the Prime Contractor**

**Partial Pay Items**

For any of the above items that are partial pay items, specifically describe the work and subcontract dollar amount(s):

<u>Pay Item No./Description</u>	<u>Quantity/Unit Price</u>	<u>Total</u>

Subtotal: \$ \_\_\_\_\_

Total @ 100%: \$ \_\_\_\_\_

Total @ 60% (if the undersigned is performing work as a regular dealer): \$ \_\_\_\_\_

**SUB-SUBCONTRACTING LEVELS**

A zero (0) must be shown in each blank if the MBE or WBE will not be subcontracting any of the work listed or attached to this schedule.

\_\_\_\_\_ % of the dollar value of the MBE or WBE subcontract that will be subcontracted to non MBE/WBE contractors.

\_\_\_\_\_ % of the dollar value of the MBE or WBE subcontract that will be subcontracted to MBE or WBE contractors.

**NOTICE: If any of the MBE or WBE scope of work will be subcontracted, list the name of the vendor and attach a brief explanation, description and pay item number of the work that will be subcontracted. MBE/WBE credit will not be given for work subcontracted to Non-MBE/WBE contractors, except for as allowed in the Special Conditions Regarding Minority Business Enterprise Commitment and Women Business Enterprise Commitment in Construction Contracts.**

The undersigned will enter into a formal written agreement for the above work with you as a Prime Contractor, conditioned upon your execution of a contract with the City of Chicago, within three (3) business days of your receipt of a signed contract from the City of Chicago.

One or more owners or principals of the Prime Contractor ( ) does / ( ) does not have an ownership interest in the undersigned. Provide names of such individuals and their respective ownership percentages, or indicate “none.” Attach additional sheets if necessary: \_\_\_\_\_

The undersigned has entered into a formal written mentor protégé agreement as a subcontractor/protégé with you as a Prime Contractor/mentor: ( ) Yes ( ) No

**NOTICE: THIS SCHEDULE AND ATTACHMENTS REQUIRE ORIGINAL SIGNATURES ON EACH PAGE.**

\_\_\_\_\_  
 (If not the undersigned, signature of person who filled out this Schedule C) (Date)

\_\_\_\_\_  
 (Name/Title-Please Print) (Company Name-Please Print)

\_\_\_\_\_  
 (Email & Phone Number)

\_\_\_\_\_  
 (Signature of President/Owner/CEO or Authorized Agent of MBE/WBE) (Date)

\_\_\_\_\_  
 (Name/Title-Please Print)

\_\_\_\_\_  
 (Email & Phone Number)

**SCHEDULE C (Construction): MBE/WBE Letter of Intent to Perform as a SUPPLIER**

Project Name: \_\_\_\_\_ Specification Number: \_\_\_\_\_

From: \_\_\_\_\_  
(Name of MBE or WBE Firm)

To: \_\_\_\_\_ and the City of Chicago:  
(Name of Prime Contractor)

The MBE or WBE status of the undersigned is confirmed by the attached City of Chicago or Cook County Certification Letter. 100% MBE or WBE participation is credited for the use of a MBE or WBE "manufacturer". 60% participation is credited for the use of a MBE or WBE "regular dealer". The undersigned is prepared to supply the following goods in connection with the above named project/contract. On a separate sheet, fully describe the MBE or WBE proposed scope of work and/or payment schedule, including a description of the commercially useful function being performed. Attach additional sheets as necessary:

Pay Item No. / Description	Quantity / Unit Price	Total
_____	_____	_____
_____	_____	_____
_____	_____	_____
Line 1: Sub Total:		\$ _____
Line 2: Total @ 100%:		\$ _____
Line 3: Total @ 60%:		\$ _____

**Partial Pay Items.**

For any of the above items that are partial pay items, specifically describe the work and subcontract dollar amount(s):

Pay Item No. / Description	Quantity / Unit Price	Total
_____	_____	_____
_____	_____	_____
_____	_____	_____
Line 1: Sub Total:		\$ _____
Line 2: Total @ 100%:		\$ _____
Line 3: Total @ 60%:		\$ _____

**SUB-SUBCONTRACTING LEVELS** - A zero (0) must be shown in each blank if the MBE or WBE will not be subcontracting any of the work listed or attached to this schedule.

\_\_\_\_\_ % of the dollar value of the MBE or WBE subcontract that will be subcontracted to non-MBE/WBE contractors.

\_\_\_\_\_ % of the dollar value of the MBE or WBE subcontract that will be subcontracted to MBE or WBE contractors.

**NOTICE: If any of the MBE or WBE scope of work will be subcontracted, list the name of the vendor and attach a brief explanation, description and pay item number of the work that will be subcontracted. MBE/WBE credit will not be given for work subcontracted to non-MBE/WBE contractors, except for as allowed in the Special Conditions Regarding Minority Business Enterprise Commitment and Women Business Enterprise Commitment in Construction Contracts.**

The undersigned will enter into a formal written agreement for the above work with you as a Prime Contractor, conditioned upon your execution of a contract with the City of Chicago, within three (3) business days of your receipt of a signed contract from the City of Chicago.

One or more owners or principals of the Prime Contractor ( ) does / ( ) does not have an ownership interest in the undersigned. Provide names of such individuals and their respective ownership percentages, or indicate "none." Attach additional sheets if necessary: \_\_\_\_\_

The undersigned has entered into a formal written mentor protégé agreement as a subcontractor/protégé with you as a Prime Contractor/mentor: ( ) Yes ( ) No

**NOTICE: THIS SCHEDULE AND ATTACHMENTS REQUIRE ORIGINAL SIGNATURES.**

\_\_\_\_\_  
Signature of Owner, President or Authorized Agent of MBE or WBE Date

\_\_\_\_\_  
Name /Title (Print)

\_\_\_\_\_  
Phone Number

\_\_\_\_\_  
Email Address



# SCHEDULE C-V

**FOR  
CONSTRUCTION  
PROJECTS ONLY**

## VBE Letter of Intent to Perform as a Subcontractor to the Prime Contractor

**NOTICE: THIS SCHEDULE MUST BE AUTHORIZED AND SIGNED BY THE VBE SUBCONTRACTOR FIRM.  
FAILURE TO COMPLY MAY RESULT IN THE BID BEING REJECTED AS NON-RESPONSIVE.**

Project Name: \_\_\_\_\_ Specification No.: \_\_\_\_\_

From: \_\_\_\_\_  
(Name of VBE Firm)

To: \_\_\_\_\_ and the City of Chicago.  
(Name of Prime Contractor)

The VBE status of the undersigned is confirmed by the attached City of Chicago Certification Letter. 100% VBE participation is credited for the use of a VBE "manufacturer." 60% participation is credited for the use of a VBE "regular dealer."

The undersigned is prepared to perform the following services in connection with the above named project/contract. If more space is required to fully describe the VBE proposed scope of work and/or payment schedule, attach additional sheets as necessary. The description must establish that the undersigned is performing a commercially useful function:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

The above described performance is offered for the following price and described terms of payment:

<u>Pay Item No./Description</u>	<u>Quantity/Unit Price</u>	<u>Total</u>

Subtotal: \$ \_\_\_\_\_

Total @ 100%: \$ \_\_\_\_\_

Total @ 60% (if the undersigned is performing work as a regular dealer): \$ \_\_\_\_\_

**NOTICE: THIS SCHEDULE AND ATTACHMENTS REQUIRE ORIGINAL SIGNATURES ON EACH PAGE.**

\_\_\_\_\_  
(If not the undersigned, signature of person who filled out this Schedule C-V) (Date)

\_\_\_\_\_  
(Name/Title-Please Print) (Company Name-Please Print)

\_\_\_\_\_  
(Signature of President/Owner/CEO or Authorized Agent of VBE) (Date)

\_\_\_\_\_  
(Name/Title-Please Print)

**Schedule C-V: VBE Letter of Intent to Perform as a Subcontractor to the Prime Contractor**

**Partial Pay Items**

For any of the above items that are partial pay items, specifically describe the work and subcontract dollar amount(s):

<u>Pay Item No./Description</u>	<u>Quantity/Unit Price</u>	<u>Total</u>

Subtotal: \$ \_\_\_\_\_

Total @ 100%: \$ \_\_\_\_\_

Total @ 60% (if the undersigned is performing work as a regular dealer): \$ \_\_\_\_\_

**SUB-SUBCONTRACTING LEVELS**

A zero (0) must be shown in each blank if the VBE will not be subcontracting any of the work listed or attached to this schedule.

\_\_\_\_\_ % of the dollar value of the VBE subcontract that will be subcontracted to non-VBE contractors.

\_\_\_\_\_ % of the dollar value of the VBE subcontract that will be subcontracted to VBE contractors.

**NOTICE: If any of the VBE scope of work will be subcontracted, list the name of the vendor and attach a brief explanation, description and pay item number of the work that will be subcontracted. VBE credit will not be given for work subcontracted to Non-VBE contractors, except for as allowed in the Special Conditions Regarding Minority-owned Business Enterprise, Women-owned Business Enterprise, and Veteran-owned Business Enterprise Commitment in Construction Contracts.**

The undersigned will enter into a formal written agreement for the above work with you as a Prime Contractor, conditioned upon your execution of a contract with the City of Chicago, within three (3) business days of your receipt of a signed contract from the City of Chicago.

One or more owners or principals of the Prime Contractor ( ) does / ( ) does not have an ownership interest in the undersigned. Provide names of such individuals and their respective ownership percentages, or indicate "none." Attach additional sheets if necessary: \_\_\_\_\_

**NOTICE: THIS SCHEDULE AND ATTACHMENTS REQUIRE ORIGINAL SIGNATURES ON EACH PAGE.**

\_\_\_\_\_  
(If not the undersigned, signature of person who filled out this Schedule C-V) (Date)

\_\_\_\_\_  
(Name/Title-Please Print) (Company Name-Please Print)

\_\_\_\_\_  
(Email & Phone Number)

\_\_\_\_\_  
(Signature of President/Owner/CEO or Authorized Agent of VBE) (Date)

\_\_\_\_\_  
(Name/Title-Please Print)

\_\_\_\_\_  
(Email & Phone Number)



# SCHEDULE C-V

## VBE Letter of Intent to Perform as a 2<sup>nd</sup> Tier Subcontractor to the Prime Contractor

**FOR  
CONSTRUCTION  
PROJECTS ONLY**

**NOTICE: THIS SCHEDULE MUST BE AUTHORIZED AND SIGNED BY THE VBE SUBCONTRACTOR FIRM. FAILURE TO COMPLY MAY RESULT IN THE BID BEING REJECTED AS NON-RESPONSIVE.**

Project Name: \_\_\_\_\_ Specification No.: \_\_\_\_\_

From: \_\_\_\_\_

(Name of VBE Firm)

To: \_\_\_\_\_

(Name of 1<sup>st</sup> Tier Contractor)

To: \_\_\_\_\_ and the City of Chicago.

(Name of Prime Contractor)

The VBE status of the undersigned is confirmed by the attached City of Chicago or Cook County Certification Letter. 100% VBE participation is credited for the use of a VBE "manufacturer." 60% participation is credited for the use of a VBE "regular dealer."

The undersigned is prepared to perform the following services in connection with the above-named project/contract. If more space is required to fully describe the VBE proposed scope of work and/or payment schedule, attach additional sheets as necessary. The description must establish that the undersigned is performing a commercially useful function:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

The above described performance is offered for the following price and described terms of payment:

<u>Pay Item No./Description</u>	<u>Quantity/Unit Price</u>	<u>Total</u>

Subtotal: \$ \_\_\_\_\_

Total @ 100%: \$ \_\_\_\_\_

Total @ 60% (if the undersigned is performing work as a regular dealer): \$ \_\_\_\_\_

**NOTICE: THIS SCHEDULE AND ATTACHMENTS REQUIRE ORIGINAL SIGNATURES ON EACH PAGE.**

\_\_\_\_\_  
(If not the undersigned, signature of person who filled out this Schedule C-V) (Date)

\_\_\_\_\_  
(Name/Title-Please Print) (Company Name-Please Print)

\_\_\_\_\_  
(Signature of President/Owner/CEO or Authorized Agent of VBE) (Date)

\_\_\_\_\_  
(Name/Title-Please Print)

Schedule C-V: VBE Letter of Intent to Perform as a 2nd Tier Subcontractor to the Prime Contractor

Partial Pay Items

For any of the above items that are partial pay items, specifically describe the work and subcontract dollar amount(s):

Table with 3 columns: Pay Item No./Description, Quantity/Unit Price, Total

Subtotal: \$ \_\_\_\_\_

Total @ 100%: \$ \_\_\_\_\_

Total @ 60% (if the undersigned is performing work as a regular dealer): \$ \_\_\_\_\_

SUB-SUBCONTRACTING LEVELS

A zero (0) must be shown in each blank if the VBE will not be subcontracting any of the work listed or attached to this schedule.

\_\_\_\_\_ % of the dollar value of the VBE subcontract that will be subcontracted to non-VBE contractors.

\_\_\_\_\_ % of the dollar value of the MBE or WBE subcontract that will be subcontracted to VBE contractors.

NOTICE: If any of the VBE scope of work will be subcontracted, list the name of the vendor and attach a brief explanation, description and pay item number of the work that will be subcontracted. VBE credit will not be given for work subcontracted to Non-VBE contractors, except for as allowed in the Special Conditions Regarding Minority-owned Business Enterprise, Women-owned Business Enterprise, and Veteran-owned Business Enterprise Commitment in Construction Contracts.

The undersigned will enter into a formal written agreement for the above work with you as a Prime Contractor, conditioned upon your execution of a contract with the City of Chicago, within three (3) business days of your receipt of a signed contract from the City of Chicago.

One or more owners or principals of the Prime Contractor ( ) does / ( ) does not have an ownership interest in the undersigned. Provide names of such individuals and their respective ownership percentages, or indicate "none." Attach additional sheets if necessary: \_\_\_\_\_

NOTICE: THIS SCHEDULE AND ATTACHMENTS REQUIRE ORIGINAL SIGNATURES ON EACH PAGE.

\_\_\_\_\_  
(If not the undersigned, signature of person who filled out this Schedule C-V) (Date)

\_\_\_\_\_  
(Name/Title-Please Print) (Company Name-Please Print)

\_\_\_\_\_  
(Email & Phone Number)

\_\_\_\_\_  
(Signature of President/Owner/CEO or Authorized Agent of VBE) (Date)

\_\_\_\_\_  
(Name/Title-Please Print)

\_\_\_\_\_  
(Email & Phone Number)





# SCHEDULE C-V (Construction)

VBE Letter of Intent to Perform as a SUPPLIER

**FOR  
CONSTRUCTION  
PROJECTS ONLY**

Project Name: \_\_\_\_\_ Specification Number: \_\_\_\_\_

From: \_\_\_\_\_  
(Name of VBE Firm)

To: \_\_\_\_\_ and the City of Chicago:  
(Name of Prime Contractor)

The VBE status of the undersigned is confirmed by the attached City of Chicago or Cook County Certification Letter. 100% VBE participation is credited for the use of a VBE "manufacturer". 60% participation is credited for the use of a VBE "regular dealer". The undersigned is prepared to supply the following goods in connection with the above-named project/contract. On a separate sheet, fully describe the VBE proposed scope of work and/or payment schedule, including a description of the commercially useful function being performed. Attach additional sheets as necessary:

Pay Item No. / Description	Quantity / Unit Price	Total
_____	_____	_____
_____	_____	_____
_____	_____	_____
	Line 1: Sub Total:	\$ _____
	Line 2: Total @ 100%:	\$ _____
	Line 3: Total @ 60%:	\$ _____

**Partial Pay Items.**

For any of the above items that are partial pay items, specifically describe the work and subcontract dollar amount(s):

Pay Item No. / Description	Quantity / Unit Price	Total
_____	_____	_____
_____	_____	_____
_____	_____	_____
	Line 1: Sub Total:	\$ _____
	Line 2: Total @ 100%:	\$ _____
	Line 3: Total @ 60%:	\$ _____

**SUB-SUBCONTRACTING LEVELS** - A zero (0) must be shown in each blank if the VBE will not be subcontracting any of the work listed or attached to this schedule.

\_\_\_\_\_ % of the dollar value of the VBE subcontract that will be subcontracted to non-VBE contractors.

\_\_\_\_\_ % of the dollar value of the VBE subcontract that will be subcontracted to VBE contractors.

**NOTICE:** If any of the VBE scope of work will be subcontracted, list the name of the vendor and attach a brief explanation, description and pay item number of the work that will be subcontracted. VBE credit will not be given for work subcontracted to non-VBE contractors, except for as allowed in the Special Conditions Regarding Minority-owned Business Enterprise, Women-owned Business Enterprise, and Veteran-owned Business Enterprise Commitment in Construction Contracts.

The undersigned will enter into a formal written agreement for the above work with you as a Prime Contractor, conditioned upon your execution of a contract with the City of Chicago, within three (3) business days of your receipt of a signed contract from the City of Chicago.

One or more owners or principals of the Prime Contractor ( ) does / ( ) does not have an ownership interest in the undersigned. Provide names of such individuals and their respective ownership percentages, or indicate "none." Attach additional sheets if necessary: \_\_\_\_\_

**NOTICE: THIS SCHEDULE AND ATTACHMENTS REQUIRE ORIGINAL SIGNATURES.**

\_\_\_\_\_  
Signature of Owner, President or Authorized Agent of VBE Date

\_\_\_\_\_  
Name /Title (Print)

\_\_\_\_\_  
Phone Number

\_\_\_\_\_  
Email Address



**FOR  
CONSTRUCTION  
PROJECTS ONLY**

**SCHEDULE D: Compliance Plan Regarding MBE & WBE Utilization  
Affidavit of Prime Contractor**

**MUST BE SUBMITTED WITH THE BID. FAILURE TO SUBMIT THE SCHEDULE D WILL CAUSE THE BID TO BE REJECTED. DUPLICATE AS NEEDED.**

Project Name: \_\_\_\_\_

Specification No.: \_\_\_\_\_

In connection with the above captioned contract, I HEREBY DECLARE AND AFFIRM that I am the

\_\_\_\_\_ and a duly authorized representative of  
(Title of Affiant)

\_\_\_\_\_  
(Name of Prime Contractor)

and that I have personally reviewed the material and facts set forth in the attached Schedule Cs regarding Minority Business Enterprise and Women Business Enterprise (MBE/WBE) to perform as subcontractor, Joint Venture Agreement, and Schedule B (if applicable). All MBEs and WBEs must be certified with the City of Chicago or Cook County in the area(s) of specialty listed.

Name of MBE	Type of Work to be Performed in accordance with Schedule Cs	Total MBE Participation in dollars	MBE Participation in percentage	Mentor Protégé Program Credit Claimed	Total MBE Participation in percentage
		\$	%	%	%
		\$	%	%	%
		\$	%	%	%
		\$	%	%	%
		\$	%	%	%
		\$	%	%	%
		\$	%	%	%
		\$	%	%	%
		\$	%	%	%
		\$	%	%	%
		\$	%	%	%
		\$	%	%	%
		\$	%	%	%
		\$	%	%	%
		\$	%	%	%

Name of WBE	Type of Work to be Performed in accordance with Schedule Cs	Total WBE Participation in dollars	WBE Participation in percentage	Mentor Protégé Program Credit Claimed	Total WBE Participation in percentage
		\$	%	%	%
		\$	%	%	%
		\$	%	%	%
		\$	%	%	%
		\$	%	%	%
		\$	%	%	%
		\$	%	%	%
		\$	%	%	%
		\$	%	%	%
		\$	%	%	%
		\$	%	%	%
		\$	%	%	%
		\$	%	%	%
		\$	%	%	%
		\$	%	%	%
		\$	%	%	%

Check here if the following is applicable: The Prime Contractor intends to enter into mentor protégé agreements with certain MBEs/WBEs listed above as indicated by entries in the "Mentor Protégé Program Credit Claimed" column. Copies of each proposed mentoring program, executed by authorized representatives of the Prime Contractor and respective subcontractor, are attached to this Schedule D. The Prime Contractor may claim an additional 0.5 percent participation credit (up to a maximum of five (5) percent) for every one (1) percent of the value of the contract performed by the MBE/WBE protégé firm.

Total MBE Participation \$ \_\_\_\_\_

Total MBE Participation % (including any Mentor Protégé Program credit) \_\_\_\_\_

Total WBE Participation \$ \_\_\_\_\_

Total WBE Participation % (including any Mentor Protégé Program credit) \_\_\_\_\_

**Total Bid \$** \_\_\_\_\_

To the best of my knowledge, information and belief the facts and representations contained in the aforementioned attached Schedules are true, and no material facts have been omitted.

One or more owners or principals of the Prime Contractor ( ) does / ( ) does not have an ownership interest in any MBE or WBE listed in this Schedule D. Provide names of such individuals and their respective ownership percentages, and identify the MBE/WBE firms in which such ownership is held, or indicate "none." Add additional sheets if necessary:

\_\_\_\_\_

The Prime Contractor designates the following person as its MBE/WBE Liaison Officer:

\_\_\_\_\_  
 (Name- Please Print or Type) (Phone)

**I DO SOLEMNLY DECLARE AND AFFIRM UNDER PENALTIES OF PERJURY THAT THE CONTENTS OF THE FOREGOING DOCUMENT ARE TRUE AND CORRECT, AND THAT I AM AUTHORIZED ON BEHALF OF THE PRIME CONTRACTOR TO MAKE THIS AFFIDAVIT.**

\_\_\_\_\_  
(Name of Prime Contractor – Print or Type)

State of: \_\_\_\_\_

\_\_\_\_\_  
(Signature)

County of: \_\_\_\_\_

\_\_\_\_\_  
(Name/Title of Affiant – Print or Type)

\_\_\_\_\_  
(Date)

On this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, the above signed officer \_\_\_\_\_  
(Name of Affiant)

personally appeared and, known by me to be the person described in the foregoing Affidavit, acknowledged that (s)he executed the same in the capacity stated therein and for the purposes therein contained.

IN WITNESS WHEREOF, I hereunto set my hand and seal.

\_\_\_\_\_  
(Notary Public Signature)

SEAL:

Commission Expires: \_\_\_\_\_



**SCHEDULE D-V**

**Compliance Plan Regarding VBE Utilization  
Affidavit of Prime Contractor**

**MUST BE SUBMITTED WITH THE BID. FAILURE TO SUBMIT THE SCHEDULE D WILL CAUSE THE BID TO BE REJECTED. DUPLICATE AS NEEDED.**

Project Name: \_\_\_\_\_

Specification No.: \_\_\_\_\_

In connection with the above captioned contract, I HEREBY DECLARE AND AFFIRM that I am the

\_\_\_\_\_ and a duly authorized representative of  
(Title of Affiant)

\_\_\_\_\_  
(Name of Prime Contractor)

and that I have personally reviewed the material and facts set forth in the attached Schedule C-Vs regarding VBEs to perform as subcontractors, Joint Venture Agreement, and Schedule B (if applicable). All VBEs must be certified with the City of Chicago in the area(s) of specialty listed.

<u>Name of VBE</u>	<u>Type of Work to be Performed in accordance with Schedule C-Vs</u>	<u>Total VBE Participation in dollars</u>	<u>VBE Participation in percentage</u>
		\$	%
		\$	%
		\$	%
		\$	%
		\$	%
		\$	%
		\$	%
		\$	%
		\$	%
		\$	%
		\$	%
		\$	%
		\$	%
		\$	%
		\$	%

Total VBE Participation \$ \_\_\_\_\_

Total VBE Participation % \_\_\_\_\_

**Total Bid \$** \_\_\_\_\_

To the best of my knowledge, information and belief the facts and representations contained in the aforementioned attached Schedules are true, and no material facts have been omitted.

One or more owners or principals of the Prime Contractor ( ) does / ( ) does not have an ownership interest in any VBE listed in this Schedule D-V. Provide names of such individuals and their respective ownership percentages, and identify the VBE firms in which such ownership is held, or indicate "none." Add additional sheets if necessary:

\_\_\_\_\_

The Prime Contractor designates the following person as its VBE Liaison Officer:

\_\_\_\_\_  
(Name- Please Print or Type) (Phone)

**I DO SOLEMNLY DECLARE AND AFFIRM UNDER PENALTIES OF PERJURY THAT THE CONTENTS OF THE FOREGOING DOCUMENT ARE TRUE AND CORRECT, AND THAT I AM AUTHORIZED ON BEHALF OF THE PRIME CONTRACTOR TO MAKE THIS AFFIDAVIT.**

\_\_\_\_\_  
(Name of Prime Contractor – Print or Type) State of: \_\_\_\_\_

\_\_\_\_\_  
(Signature) County of: \_\_\_\_\_

\_\_\_\_\_  
(Name/Title of Affiant – Print or Type)

\_\_\_\_\_  
(Date)  
On this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, the above signed officer \_\_\_\_\_  
(Name of Affiant)

personally appeared and, known by me to be the person described in the foregoing Affidavit, acknowledged that (s)he executed the same in the capacity stated therein and for the purposes therein contained.

IN WITNESS WHEREOF, I hereunto set my hand and seal.

\_\_\_\_\_  
(Notary Public Signature)

SEAL:

Commission Expires: \_\_\_\_\_

**SCHEDULE F: REPORT OF SUBCONTRACTOR SOLICITATIONS FOR CONSTRUCTION CONTRACTS**

**Submit Schedule F with the bid. Failure to submit the Schedule F may cause the bid to be rejected.**

Duplicate sheets as needed.

Project Name: \_\_\_\_\_

Specification #: \_\_\_\_\_

I, \_\_\_\_\_ on behalf of \_\_\_\_\_  
(Name of reporter) (Prime contractor)

(A) have either personally solicited, or permitted a duly authorized representative of this firm to solicit, work for this contract from the following subcontractors which comprise all MBE/WBE/VBE and non-MBE/WBE/VBE subcontractors who bid or quoted price information on this contract

**Company Name** \_\_\_\_\_

**Business Address** \_\_\_\_\_

**Contact Person** \_\_\_\_\_

**Date of contact** \_\_\_\_\_

**Method of contact** \_\_\_\_\_

**Response to solicitation** \_\_\_\_\_

**Type of Work Solicited** \_\_\_\_\_

**Please circle each classification that applies:**

MBE Certified WBE Certified VBE Certified Non- Certified

**Company Name** \_\_\_\_\_

**Business Address** \_\_\_\_\_

**Contact Person** \_\_\_\_\_

**Date of contact** \_\_\_\_\_

**Method of contact** \_\_\_\_\_

**Response to solicitation** \_\_\_\_\_

**Type of Work Solicited** \_\_\_\_\_

**Please circle each classification that applies:**

MBE Certified WBE Certified VBE Certified Non- Certified

**Company Name** \_\_\_\_\_

**Business Address** \_\_\_\_\_

**Contact Person** \_\_\_\_\_

**Date of contact** \_\_\_\_\_

**Method of contact** \_\_\_\_\_

**Response to solicitation** \_\_\_\_\_

**Type of Work Solicited** \_\_\_\_\_

**Please circle each classification that applies:**

MBE Certified WBE Certified VBE Certified Non- Certified

**Company Name** \_\_\_\_\_

**Business Address** \_\_\_\_\_

**Contact Person** \_\_\_\_\_

**Date of contact** \_\_\_\_\_



Method of contact \_\_\_\_\_  
Response to solicitation \_\_\_\_\_  
Type of Work Solicited \_\_\_\_\_  
Please circle each classification that applies:  
MBE Certified WBE Certified VBE Certified Non- Certified

Company Name \_\_\_\_\_  
Business Address \_\_\_\_\_  
Contact Person \_\_\_\_\_  
Date of contact \_\_\_\_\_  
Method of contact \_\_\_\_\_  
Response to solicitation \_\_\_\_\_  
Type of Work Solicited \_\_\_\_\_  
Please circle each classification that applies:  
MBE Certified WBE Certified VBE Certified Non- Certified

Company Name \_\_\_\_\_  
Business Address \_\_\_\_\_  
Contact Person \_\_\_\_\_  
Date of contact \_\_\_\_\_  
Method of contact \_\_\_\_\_  
Response to solicitation \_\_\_\_\_  
Type of Work Solicited \_\_\_\_\_  
Please circle each classification that applies:  
MBE Certified WBE Certified VBE Certified Non- Certified

Company Name \_\_\_\_\_  
Business Address \_\_\_\_\_  
Contact Person \_\_\_\_\_  
Date of contact \_\_\_\_\_  
Method of contact \_\_\_\_\_  
Response to solicitation \_\_\_\_\_  
Type of Work Solicited \_\_\_\_\_  
Please circle each classification that applies:  
MBE Certified WBE Certified VBE Certified Non- Certified

Company Name \_\_\_\_\_  
Business Address \_\_\_\_\_  
Contact Person \_\_\_\_\_  
Date of contact \_\_\_\_\_  
Method of contact \_\_\_\_\_  
Response to solicitation \_\_\_\_\_  
Type of Work Solicited \_\_\_\_\_  
Please circle each classification that applies:  
MBE Certified WBE Certified VBE Certified Non- Certified

Company Name \_\_\_\_\_  
Business Address \_\_\_\_\_  
Contact Person \_\_\_\_\_  
Date of contact \_\_\_\_\_  
Method of contact \_\_\_\_\_

**Response to solicitation** \_\_\_\_\_

**Type of Work Solicited** \_\_\_\_\_

**Please circle each classification that applies:**

MBE Certified   WBE Certified   VBE Certified   Non- Certified

I DO SOLEMNLY DECLARE AND AFFIRM UNDER PENALTIES OF PERJURY THAT THE CONTENTS OF THE FOREGOING DOCUMENT ARE TRUE AND CORRECT, AND THAT I AM AUTHORIZED ON BEHALF OF THE PRIME CONTRACTOR TO MAKE THIS AFFIDAVIT.

\_\_\_\_\_  
(Name of Prime Contractor - Print or Type)

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Name/Title of Affiant) - Print or Type)

\_\_\_\_\_  
(Date)

On this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_,

the above signed officer, \_\_\_\_\_,  
(Name of Affiant)

personally appeared and, known by me to be the person described in the foregoing Affidavit, acknowledged that (s)he executed the same in the capacity stated therein and for the purposes therein contained.

IN WITNESS WHEREOF, I hereunto set my hand and seal.

\_\_\_\_\_  
Notary Public Signature

(Seal)

Commission Expires: \_\_\_\_\_

## SCHEDULE H: DOCUMENTATION OF GOOD FAITH EFFORTS TO UTILIZE MBEs AND WBEs, and VBEs ON CONSTRUCTION CONTRACT

Project Name: \_\_\_\_\_

Specification # \_\_\_\_\_

The Department of Procurement Services reserves the right to audit and verify all Good Faith Efforts as a condition of award. Material misrepresentations and omissions shall cause the bid to be rejected.

(B) The following is documentation and explanation of the bidder’s Good Faith Efforts to meet the contract specific goals as described in the Good Faith Efforts Checklist as part of Schedule D. The Schedule D cannot be modified without the written approval of DPS.

I, \_\_\_\_\_ on behalf of \_\_\_\_\_  
(Name of reporter) (Prime contractor)

have determined that it is unable to meet the contract specific goals in full or in part as set forth in the Special Conditions Regarding Minority Owned Business Enterprise, Women Business Enterprise, and Veteran Owned Business Enterprise Commitment in Construction Contracts. I hereby declare and affirm that the following good faith efforts were undertaken by the Bidder/Contractor to meet the MBE, WBE, and/or VBE contract specific goals of this project.

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### Good Faith Efforts Checklist from Schedule D Attach additional sheets as needed.

\_\_\_ Solicited through reasonable and available means at least 50% (or at least 5 when there are more than 11 certified firms in the commodity area) of MBEs, WBEs, and VBEs certified in the anticipated scopes of subcontracting of the contract, within sufficient time to allow them to respond, as described in the Schedule F.  
**Attach copies of written notices sent to MBEs, WBEs, and VBEs.**

\_\_\_ Provided timely and adequate information about the plan, specifications and requirements of the contract.  
**Attach copies of contract information provided to MBEs, WBEs, and VBEs.**

\_\_\_ Advertised the contract opportunities in media and other venues oriented toward MBEs, WBEs, and VBEs.  
**Attach copies of advertisements.**

\_\_\_ Negotiated in good faith with interested MBEs, WBEs, or VBEs that have submitted bids and thoroughly investigated their capabilities.  
**Attach Schedule F, Report of Subcontractor Solicitations for Construction Contracts.**

\_\_\_ Selected those portions of the work or material consistent with the available MBE, WBE, or VBE subcontractors and suppliers, including, where appropriate, breaking out contract work items into economically feasible units to facilitate MBE, WBE, or VBE participation.  
**Describe selection of scopes of work solicited from MBEs, WBEs, and VBEs and efforts to break out work items.**

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SCHEDULE H: DOCUMENTATION OF GOOD FAITH EFFORTS  
TO UTILIZE MBEs, WBEs, AND VBEs ON CONSTRUCTION CONTRACT

\_\_\_ Made efforts to assist interested MBEs, WBEs, or VBEs in obtaining bonding, lines of credit, or insurance as required by the City or bidder or contractor.

**Describe assistance efforts.**

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\_\_\_ Made efforts to assist interested MBEs, WBEs, or VBEs in obtaining necessary equipment, supplies, materials, or related assistance or services.

**Describe assistance efforts.**

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\_\_\_ Effectively used the services of the City; minority or women community organizations; minority or women assistance groups; local, state, and federal minority or women business assistance offices; and other organizations to provide assistance in the recruitment and placement of MBEs, WBEs, or VBEs as listed on Attachment A.

**Describe efforts to use agencies listed on Attachment A.**

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SCHEDULE H: DOCUMENTATION OF GOOD FAITH EFFORTS  
TO UTILIZE MBES, WBES, AND VBEs ON CONSTRUCTION CONTRACT

I DO SOLEMNLY DECLARE AND AFFIRM UNDER THE PENALTIES OF PERJURY THAT THE CONTENTS OF THE FOREGOING DOCUMENT ARE TRUE AND CORRECT, AND THAT I AM AUTHORIZED, ON BEHALF OF THE CONTRACTOR, TO MAKE THIS AFFIDAVIT.

Name of Contractor: \_\_\_\_\_  
(Print or Type)

Signature: \_\_\_\_\_  
(Signature of Affiant)

Name of Affiant: \_\_\_\_\_  
(Print or Type)

Date: \_\_\_\_\_  
(Print or Type)

State of \_\_\_\_\_

County (City) of \_\_\_\_\_

This instrument was acknowledged before me on \_\_\_\_\_ (date)  
by \_\_\_\_\_ (name/s of person/s)  
as \_\_\_\_\_ (type of authority, e.g., officer, trustee, etc.)  
of \_\_\_\_\_ (name of party on behalf of whom instrument  
was executed).

\_\_\_\_\_  
Signature of Notary Public

(Seal)

## STATUS REPORT OF MBE/WBE/VBE (SUB) CONTRACT PAYMENTS

Specification No.: \_\_\_\_\_

Department Project No.: \_\_\_\_\_

Date: \_\_\_\_\_

Voucher No.: \_\_\_\_\_

STATE OF: \_\_\_\_\_)

COUNTY (CITY) OF: \_\_\_\_\_)

In connection with the above-captioned contract:

I HEREBY DECLARE AND AFFIRM that I am the \_\_\_\_\_  
(Title - Print or Type )

and duly authorized representative of \_\_\_\_\_  
(Name of Company - Print or Type )

\_\_\_\_\_  
(Address of Company)                      ( \_\_\_\_\_ ) \_\_\_\_\_  
(Phone)

and that the following Minority Owned, Women Owned, and Veteran Owned Business Enterprises (MBE/WBE/VBEs) have been contracted with, and have furnished, or are furnishing and preparing materials for, and have done or are doing labor on the above referenced project; that there is due and to become due them, respectively the amounts set opposite their names for material or labor as stated; and that this a full, true and complete statement of all such MBE/WBE/VBEs and of the amounts paid, due, and to become due to them:

MBE/WBE/VBE	GOODS/SERVICES PROVIDED	AMOUNT OF CONTRACT	AMOUNT PAID TO DATE
		\$	\$
		\$	\$
		\$	\$
		\$	\$
		\$	\$
		\$	\$

TOTAL AMOUNT PAID TO MBEs TO DATE:                      \$ \_\_\_\_\_

TOTAL AMOUNT PAID TO WBEs TO DATE:                      \$ \_\_\_\_\_

TOTAL AMOUNT PAID TO VBEs TO DATE:                      \$ \_\_\_\_\_

**I DO SOLEMNLY DECLARE AND AFFIRM UNDER THE PENALTIES OF PERJURY THAT THE CONTENTS OF THE FOREGOING DOCUMENT ARE TRUE AND CORRECT, AND THAT I AM AUTHORIZED, ON BEHALF OF THE CONTRACTOR, TO MAKE THIS AFFIDAVIT.**

Name of Contractor: \_\_\_\_\_  
(Print or Type)

Signature: \_\_\_\_\_  
(Signature of Affiant)

Name of Affiant: \_\_\_\_\_  
(Print or Type)

Date: \_\_\_\_\_  
(Print or Type)

State of \_\_\_\_\_

County (City) of \_\_\_\_\_

This instrument was acknowledged before me on \_\_\_\_\_ (date)

by \_\_\_\_\_ (name/s of person/s)

as \_\_\_\_\_ (type of authority, e.g., officer, trustee, etc.)

of \_\_\_\_\_ (name of party on behalf of whom instrument was executed).

\_\_\_\_\_  
Signature of Notary Public

(Seal)

## INSTRUCTIONS FOR COMPLETING ECONOMIC DISCLOSURE STATEMENT AND AFFIDAVIT (EDS) ON-LINE

**The Bidder shall complete an online EDS prior to the bid due date. A Bidder who does not file an electronic EDS prior to the bid due date may be found non-responsive and its bid rejected. If you are unable to complete the online EDS and print a Certificate of Filing prior to the response due date, the City will accept a paper EDS provided written justification is provided explaining the Bidders good faith efforts to complete it before the response due date and the reasons why it could not be completed.**

### 1.1. ***ONLINE EDS FILING REQUIRED PRIOR TO BID OPENING***

The Bidder must complete an online EDS prior to the bid opening date.

**A Bidder that does not file an electronic EDS prior to the bid opening will be found non-responsive and its bid will be rejected unless a paper EDS and written justification is submitted with the bid as explained in the above paragraph).**

### 1.2. ***ONLINE EDS WEB LINK***

The web link for the Online EDS is <https://webapps.cityofchicago.org/EDSWeb>

### 1.3. ***ONLINE EDS NUMBER***

Upon completion of the online EDS submission process, the Proposer will be provided an EDS number. Bidders should provide this number here:

EDS Number: \_\_\_\_\_

### 1.4. ***ONLINE EDS CERTIFICATION OF FILING***

Upon completion of the online submission process, the Proposer will be able to print a hard copy Certificate of Filing. The Proposer should submit the signed Certificate of Filing with its bid. Please insert your Certification of Filing following this page.

A Proposer that does not include a signed Certificate of Filing with its bid must provide it upon the request of the Chief Procurement Officer.

### 1.5. ***PREPARATION CHECKLIST FOR REGISTRATION***

To expedite and ease your registration process, we recommend that you collect the following information prior to registering for an Online EDS user account:

	1. Invitation number, if you were provided an invitation number.
	2. EDS document from previous years, if available.
	3. Email address to correspond with the Online EDS system.
	4. Company Information:
	a. Legal Name



	b. FEIN/SSN
	c. City of Chicago Vendor Number, if available.
	d. Address and phone number information that you would like to appear on your EDS documents.
	e. EDS Captain. Check for an EDS Captain in your company - this maybe the person that usually submits EDS for your company, or the first person that registers for your company.

**1.6. PREPARATION CHECKLIST FOR EDS SUBMISSION**

To expedite and ease your EDS submission, we recommend that you collect the following information prior to updating your EDS information online.

Items #1 through #7 are needed for both EDS information updates and contract related EDS documents:

- \_\_\_\_\_ 1. Invitation number, if you were provided with an invitation number.
- \_\_\_\_\_ 2. Site address that is specific to this EDS.
- \_\_\_\_\_ 3. Contact that is responsible for this EDS.
- \_\_\_\_\_ 4. EDS document from previous years, if available.
- \_\_\_\_\_ 5. Ownership structure, and if applicable, owners' company information:
  - \_\_\_\_\_ a. % of ownership
  - \_\_\_\_\_ b. Legal Name
  - \_\_\_\_\_ c. FEIN/SSN
  - \_\_\_\_\_ d. City of Chicago Vendor Number, if available.
  - \_\_\_\_\_ e. Address
- \_\_\_\_\_ 6. List of directors, officers, titleholders, etc. (if applicable).
- \_\_\_\_\_ 7. For partnerships/LLC/LLP/Joint ventures, etc.:
  - \_\_\_\_\_ a. List of controlling parties (if applicable).

Items #8 and #9 are needed ONLY for contract related EDS documents:

- \_\_\_\_\_ 8. Contract related information (if applicable):
  - \_\_\_\_\_ a. City of Chicago contract package
  - \_\_\_\_\_ b. Cover page of City of Chicago bid/solicitation package
  - \_\_\_\_\_ c. If EDS is related to a mod, then cover page of your current contract with the City.
- \_\_\_\_\_ 9. List of subcontractors and retained parties:
  - \_\_\_\_\_ a. Name
  - \_\_\_\_\_ b. Address
  - \_\_\_\_\_ c. Fees – Estimated or paid

**1.7. EDS FREQUENTLY ASKED QUESTIONS**

**Q: Where do I file?**

A: The web link for the Online EDS is <https://webapps.cityofchicago.org/EDSWeb>

**Q: How do I get help?**

A: If there is a question mark on a page or next to a field, click on the question mark for help filling out the page or field. You may also consult the User Manual and the Training Videos available on the left menu.

**Q: Why do I have to submit an EDS?**

A: The Economic Disclosure Statement (EDS) is required of applicants making an application to the City for action requiring City Council, City department or other City agency approval. For example, all bidders seeking a City contract are required to submit an EDS. Through the EDS, applicants make disclosures required by State law and City ordinances and certify compliance with various laws and ordinances. An EDS is also required of certain parties related to the applicant, such as owners and controlling parties.

**Q: Who is the Applicant?**

A: “Applicant” means any entity or person making an application to the City for action requiring City Council or other City agency approval. The applicant does not include owners and parent companies.

**Q: Who is the Disclosing Party?**

A: “Disclosing Party” means any entity or person submitting an EDS. This includes owners and parent companies.

**Q: What is an entity or legal entity?**

A: “Entity” or “Legal Entity” means a legal entity (for example, a corporation, partnership, joint venture, limited liability company or trust).

**Q: What is a person for purposes of the EDS?**

A: “Person” means a human being.

**Q: Who must submit an EDS?**

A. An EDS must be submitted in any of the following three circumstances:

<b>Applicants:</b>	An Applicant must always file this EDS. If the Applicant is a legal entity, state the full name of that legal entity. If the Applicant is a person acting on his/her own behalf, state his/her name.
<b>Entities holding an interest:</b>	Whenever a legal entity has a beneficial interest (E. G. direct or indirect ownership) of more than 7.5% in the Applicant, each such legal entity must file an EDS on its own behalf.
<b>Controlling entities:</b>	Whenever a Disclosing Party is a general partnership, limited partnership, limited liability company, limited liability partnership or joint venture that has a general partner, managing member, manager or other entity that can control the day-to-day management of the Disclosing Party, that entity must also file an EDS on its own behalf.

	Each entity with a beneficial interest of more than 7.5% in the controlling entity must also file an EDS on its own behalf.
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**Q: What information is needed to submit an EDS?**

A: The information contained in the Preparation Checklist for EDS submission.

**Q: I don't have a user ID & password. Can I still submit an Online EDS?**

A: No. You must register and create a user ID and password before submitting an Online EDS.

**Q: What information is needed to request a user ID & password for Online EDS?**

A: The information contained in the Preparation Checklist for Registration is needed to request a login for the Online EDS.

**Q: I already have a username and password from another City web site (City Web Portal, Department of Construction and Permits, Department of Consumer Services, etc.). Can I log-in the Online EDS with that account?**

A: Usually not. The Online EDS uses a user ID and password system that is shared by the Public Vehicle Advertising and Water Payment web sites. You may use a username and password from those sites by answering "Yes" to "Is this an existing City of Chicago user ID?" when registering. Other usernames and passwords will not be automatically recognized. However, you may choose to create an identical username for the Online EDS if it is not already taken.

**Q: I don't have an email address. How do I submit an Online EDS?**

A: You cannot get an account to submit an online EDS without an email address. If you need an e-mail address, we suggest that you use a free internet email provider such as [www.hotmail.com](http://www.hotmail.com) or [www.yahoo.com](http://www.yahoo.com) or [gmail.com](http://gmail.com) to open an account. The City does not endorse any particular free internet email provider. Public computers are available at all Chicago Public Library branches.

**Q: I forgot my user ID. Can I register again?**

A: No. If you are the EDS Captain of your organization, please contact the Department of Procurement Services at 312-744-4900. If you are an EDS team member, contact your EDS Captain, who can look up your user ID.

**Q: Who is the EDS Captain?**

A: The EDS Captain is a person who performs certain administrative functions for an organization which files an EDS. Each organization registered with the Online EDS has at least one EDS Captain. There may be co-captains, who are all equal. EDS Captains approve new users, change contact information for an organization, and de-active accounts of employees who have left the organization. Please see the User Manual for more information.

**Q: Why do we need EDS Captains?**

A: The Online EDS is designed to be a self-service web application which allows those doing or seeking to do business with the City to perform as many routine functions as possible without City intervention. Because many organizations have multiple staff filing an EDS, the EDS Captain role allows those organizations to self-manage the contact information and users.

**Q: Who is the EDS team?**

A: The EDS team for an organization is everyone who is registered to file an EDS on behalf of the organization.

**Q: I forgot my password. What should I do?**

A: To retrieve a temporary password, click the “Forgot your password?” link on the login page. Enter your user ID that you provided when you registered your account. The system will automatically generate a temporary password and send it to you. When you log-in with your temporary password, you will be asked to create a new password.

**Q: How do I complete an Online EDS?**

A: Click on “Create New” after logging in. The Online EDS system will walk you through the EDS questions. Please see the User Manual for details.

**Q: How do I fill out a Disclosure of Retained Parties?**

A: There is no longer a separate Disclosure of Retained Parties filing. After logging in, click on “Create New”. Answer (click) “Contract” to “Is this EDS for a contract or an EDS information update?” Click “Fill out EDS”, and click on the “Retained Parties” tab. When finished, click on “Ready to Submit.”

**Q: How do I attach documents?**

A: Attachments are discouraged. If at all possible, please provide a concise explanation in the space provided in the online form. Attachments with pages of officers are not acceptable. Names of officers must be typed into the system. If you must provide an attachment for another reason, please send it to your City of Chicago contact (contract administrator or negotiator for procurements) and they will attach it for you. Documents can be sent in PDF (preferred), Word, or paper format.

**Q: Who can complete an Economic Disclosure Statement online?**

A: Any authorized representative of your business with a user ID and password can complete your EDS online. One person, such as an assistant, can fill in the information and save it, and another person can review and electronically sign the Online EDS.

**Q: What are the benefits of filing my Economic Disclosure statement electronically?**

A: Filing electronically reduces the chance of filing an incomplete EDS and speeds up the processing of contract awards. A certificate of filing can be printed at the completion of the process and inserted into your bid package. The biggest benefit for those who frequently do business with the City is that after the first EDS, each EDS is much easier to fill out because non-contract specific information is pre-filled from the last submitted EDS.

**Q: Will my information be secure?**

A: Yes. When making your internet connection to our Web Server, you will connect through a Secure Socket Layer (SSL for short) to the “Online EDS” login page. All information you type will be protected using strong encryption. Within the login page, you will provide us with a user ID, password, and secret question for user authentication, only you will have knowledge of this unique identification information.

**Q: I am filing electronically. How do I sign my EDS?**

A: Once you have completed the EDS, you will be prompted to enter your password and answer to your secret question. Together, these will serve as your electronic signature. Although you will also print and physically sign an EDS certification of filing as a notice that your EDS was filed, your EDS is complete as a legal document with only the electronic filing.

**Q: My address has changed. How can I update my information?**

A: You must be an EDS Captain for your organization to update this. Log-in and click on “Vendor Admin, Site Administration.” Select the appropriate site and click edit.

**Q: I have more questions. How can I contact the Department of Procurement Services?**

A: Please contact the contract administrator or negotiator assigned to your solicitation or contract. You may call DPS at

312-744-4900 between 8:30 AM and 5:00 PM Central Time.

**Q: Can I save a partially complete EDS?**

A: Yes. Click “Save”. To avoid data loss, we recommend you save your work periodically while filling out your EDS.

**Q: Do I have to re-type my information each time I submit an EDS?**

A: No. The system will remember non-contract specific information from your last submitted EDS for one year. This information will be filled-in for you in your new EDS. You will have an opportunity to correct it if it has changed since your last filing. When you submit your new EDS, the information is saved and the one-year clock begins running anew.

**Q: What are the system requirements to use the Online EDS?**

A: The following are minimum requirements to use the Online EDS:

- A PDF viewer such as Adobe Reader is installed and your web browser is configured to display PDFs automatically. You may download and install Adobe Reader free at <http://get.adobe.com/products/reader/>
- Your web browser is set to permit running of JavaScript.
- Your web browser allows cookies to be set for this site. Please note that while we use cookies in the Online EDS, we do not use them to track personally identifiable information, so your privacy is maintained.
- Your monitor resolution is set to a minimum of 1024 x 768.
- While not required to submit an EDS, if you wish to view the training videos, you must have Adobe Flash Plug in version 9 or higher, speakers, and sound. Please note that very old computers may not be able to run Adobe Flash and will not be able to play the training videos. In that case, we encourage you to seek help using the Online EDS Manuals. You may download and install Adobe Flash Plug in free at <http://get.adobe.com/flashplayer>

The Online EDS has been tested on Internet Explorer 6.0 and 7.0 and Firefox 2.0 and 3.0 on Windows XP and Mac OS X. Although it should work on other browsers and operating systems, the City of Chicago cannot guarantee compatibility.

**CITY-BASED BUSINESS AFFIDAVIT**

The City-Based Business bid preference of 4%, 6%, or 8%, as described in Section 2-92-412 of the Municipal Code of Chicago ("MCC"), is applicable to competitively bid Contracts funded in whole by City funds. Bidder must complete this form, and provide a copy of its Chicago business license(s) if applicable, if it desires to be considered for this preference. Bidders that do not complete this page will not be regarded as City-Based Businesses. Bidder understands that it may be required to produce records to the chief procurement officer to verify the information provided. If bidder's operations are at multiple locations in the City of Chicago, use additional sheets if necessary. If this preference is allocated, the Local Goods Incentive described in MCC 2-92-410 will not be allocated to the same bid.

1. Of the three following bid preference options from 2-92-412, check the one option that Bidder qualifies for and wishes to apply to this Bid:  
 4% Bidder is a City-based business.  
 6% Bidder meets 4% requirements and majority of Prime Contractor's employees are City resident employees and if applicable are not counted towards work hours required by Section 2-92-330.  
 8% Bidder meets 6% requirements and majority of Prime Contractor's City resident employees are residents of a socio-economically disadvantaged area and are not counted towards work hours required by Section 2-92-330.
2. Is bidder a "City-Based Business" as defined in the Requirements for Bidding and Instructions for Bidders portion of this bid solicitation and in MCC 2-92-412?     Yes                       No
3. Does the bidder report to the Internal Revenue Service that the place of employment for the majority (more than 50%) of its regular, full-time workforce is a facility within the City of Chicago?     Yes                       No
3. Does the bidder conduct meaningful day-to-day business operations at a facility within the City of Chicago?  
 Yes                       No
4. Street address of business location within the City of Chicago (P.O. address not accepted):  
\_\_\_\_\_
5. Describe the business activities are carried out at the location listed above: \_\_\_\_\_  
\_\_\_\_\_
6. How many full-time regular employees are currently employed at the location listed above? \_\_\_\_\_
7. How many full-time regular employees at the location listed above are "City resident employees," as that term is defined in this bid solicitation and MCC 2-92-412? \_\_\_\_\_(for 6% and 8% preferences only)
8. How many of Bidder's full-time City resident employees identified above are residents of a socio-economically disadvantaged area, as that term is defined in this bid solicitation and MCC 2-92-412? \_\_\_\_\_ (for 8% preference only)
9. Total number of full-time regular employees employed at all locations worldwide? \_\_\_\_\_
10. List City of Chicago business license(s) held; attach copies. If none are required, indicate "none required":  
\_\_\_\_\_

Under penalty of perjury the person signing below: (1) warrants that he/she is authorized to execute this Affidavit on behalf of bidder, and (2) warrants that all certifications and statements contained in this Affidavit are true, accurate, and complete as of the date of execution.

Name of Bidder (Print or Type): \_\_\_\_\_

Signature of Authorized Officer (Sign): \_\_\_\_\_ Date: \_\_\_\_\_

Title of Signatory (Print or Type): \_\_\_\_\_

State of \_\_\_\_\_; County of \_\_\_\_\_; Signed and sworn (or affirmed) to before me on \_\_\_\_\_ (date) by \_\_\_\_\_ (name/s of person/s making statement)

\_\_\_\_\_  
(Signature of Notary Public)

(seal)

**ELIGIBLE BUSINESS FOR BID INCENTIVE FOR ALTERNATIVELY POWERED VEHICLES AFFIDAVIT**

If this is a competitively bid Contract funded in whole by City funds, an Eligible Business preference for alternatively powered vehicles may be applicable. Bidder must complete this form if it desires to be considered for this preference. Bidders who do not complete and submit this form with their bid will be deemed to be non-Eligible Businesses.

1. Is bidder a business located within the counties of Cook, DuPage, Kane, Lake, McHenry or Will in the State of Illinois (the "Six County Region")? ( ) Yes ( ) No

2. Street address of principal place of business: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

3. How many total vehicles, as defined in the Terms and Conditions, "Bid Incentive for Alternately Powered Vehicles," are currently owned, operated, leased or otherwise controlled by bidder?

**Line 3(a):** \_\_\_\_\_

4. How many of bidder's vehicles are located and used within the Six County Region?

**Line 4(a): number of vehicles** \_\_\_\_\_

**Line 4(b): percentage of fleet (line 4(a) divided by line 3(a))**

\_\_\_\_\_ %

5. How many of bidder's vehicles located and used within the Six County Region are alternatively powered vehicles, as defined in the Terms and Conditions, Bid Incentive for Alternately Powered Vehicles?

**Line 5(a): number of vehicles** \_\_\_\_\_

**Line 5(b): percentage of Six County fleet (line 5(a) divided by line 4(a))**

\_\_\_\_\_ %

Bidder understands that it may be required to produce records to the chief procurement officer to verify the information provided.

Under penalty of perjury the person signing below: (1) warrants that he/she is authorized to execute this Affidavit on behalf of bidder, and (2) warrants that all certifications and statements contained in this Affidavit are true, accurate, and complete as of the date of execution.

Name of Bidder: \_\_\_\_\_  
(Print or Type)

Signature of Authorized Officer: \_\_\_\_\_  
(Signature)

Title of Signatory: \_\_\_\_\_  
(Print or Type)

State of \_\_\_\_\_

County of \_\_\_\_\_

Signed and sworn (or affirmed) to before me on \_\_\_\_\_ (date) by  
\_\_\_\_\_ (name/s of person/s making statement).

\_\_\_\_\_  
(Signature of Notary Public)  
(Seal)

**VETERAN-OWNED SMALL LOCAL BUSINESSES AND ELIGIBLE JOINT VENTURES AFFIDAVIT**

Bidder must complete this form if it desires to be considered for the bid incentive as described in Section 2-92-950 of the Municipal Code of Chicago ("MCC") for Veteran-Owned Small Local Businesses and Eligible Joint Ventures. Bidders that do not complete this page will not be regarded as veteran-owned small local businesses or eligible joint ventures. In some circumstances application of this incentive will affect counting MBE or WBE participation when the small local business involved in claiming the incentive is an MBE or WBE, please consult DPS regulations. Please use additional sheets if necessary. Attach all relevant certifications and/or support documents.

1. Is bidder a "veteran-owned small local business" as defined in Book 1, Section XXII.D. of this bid solicitation and in MCC 2-92-920?  
( ) Yes ( ) No If Yes, attach the bidder's current City of Chicago VBE certification letter and skip to #7 below.

2. Is bidder an "eligible joint venture" as defined in Book 1, Section XXII.D. of this bid solicitation and in MCC 2-92-920?  
( ) Yes ( ) No

3. Is at least one member of the eligible joint venture a "small business enterprise" as defined in MCC 2-92-920?  
( ) Yes ( ) No

4. Is at least one member of the eligible joint venture a "veteran-owned business enterprise" as that term is defined in MCC 2-92-920?  
( ) Yes ( ) No

5. Is the veteran-owned business identified in #4 above an enterprise which is at least 51 percent owned by one or more veterans, or in the case of a publicly held corporation, at least 51 percent of all classes of stock of which are owned by one or more veterans?  
( ) Yes ( ) No

If yes, please list all owners, their percentage of ownership interest, and provide appropriate documentation demonstrating status as veteran, as that term is defined in MCC 2-92-920.

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6. Is the veteran-owned business identified in #4 above certified by either: (i) the City as a veteran-owned small local business pursuant to MCC 2-92-930; (ii) the County of Cook as a veteran business enterprise; (iii) the State of Illinois as a qualified service-disabled veteran-owned small business or a qualified veteran-owned small business pursuant to 30 ILCS 500/45-57; or (iv) verified and approved by the United States Department of Veterans Affairs as a service-disabled veteran-owned small business or a veteran-owned small business? If yes to any of the above, please provide appropriate documentation.  
( ) Yes ( ) No

7. List City of Chicago business license(s) held. If none are required, indicate "none required": \_\_\_\_\_

8. Provide address of the veteran-owned business, including the County in which it is located. \_\_\_\_\_

County: \_\_\_\_\_

Bidder understands that it may be required to produce records to the chief procurement officer to verify the information provided.

Under penalty of perjury the person signing below: (1) warrants that he/she is authorized to execute this Affidavit on behalf of bidder, and (2) warrants that all certifications and statements contained in this Affidavit are true, accurate, and complete as of the date of execution.

*Bidder must complete the applicable signature line(s) on the following page.*



Veteran-Owned Small Local Businesses and Eligible Joint Ventures Affidavit – signature page

**Required Signature for All Applicants**

Name of Veteran-Owned Business: \_\_\_\_\_  
(Print or Type)

Signature of Authorized Officer for Veteran-Owned Business: \_\_\_\_\_  
(Signature)

Title of Signatory: \_\_\_\_\_  
(Print or Type)

**Additional Required Signatures for Eligible Joint Venture Applicants**

Name of Joint Venture (for eligible joint ventures only): \_\_\_\_\_  
(Print or Type)

Name of SBE (for eligible joint ventures only): \_\_\_\_\_  
(Print or Type)

Signature of Authorized Officer for SBE (for eligible joint ventures only): \_\_\_\_\_  
(Signature)

Title of Signatory: \_\_\_\_\_  
(Print or Type)

State of \_\_\_\_\_

County of \_\_\_\_\_

Signed and sworn (or affirmed) to before me on \_\_\_\_\_ (date) by  
\_\_\_\_\_ (name/s of person/s making statement).

\_\_\_\_\_  
(Signature of Notary Public)

(Seal)

**BIDDER'S COMMITMENT TO UTILIZE VETERAN-OWNED SUBCONTRACTORS AFFIDAVIT**

The Veteran-Owned Subcontractors Incentive as described in Section 2-92-940 of the Municipal Code of Chicago ("MCC") is applicable to competitively bid construction projects funded in whole by City funds. Bidder must submit this form with the bid if it desires to be considered for this bid incentive. Bidders that do not submit this page with their bid will not be eligible for this bid incentive. Bidders must attach a copy of each veteran-owned subcontractor's City of Chicago VBE certification letter. No other certification letters will be accepted for purposes of determining eligibility for this bid incentive. If this incentive is allocated, neither the Bid Incentive for Certain City-Based Manufacturers described in MCC 2-92-410, nor any other procurement set-aside benefit for a veteran-owned business enterprise under the MCC, will be allocated to the same bid.

*Note: The CPO may request additional information or documentation before determining to apply the preference.*

1. Contract title: \_\_\_\_\_

Specification #: \_\_\_\_\_

2. The value of work performed by veteran-owned subcontractors (as defined in MCC 2-92-920 and the applicable bid solicitation) that Bidder commits to provide will be what percentage of the total dollar value of the contract?

( ) 1% to 16%-- 0.5% incentive      ( ) 17% to 32%-- 1% incentive

( ) 33% to 49%-- 1.5% incentive      ( ) 50% or greater-- 2% incentive

Bidder understands that if it fails to utilize the committed percentage of veteran-owned subcontractors, under MCC 2-92-940 it may be fined in an amount equal to three times the amount of the bid incentive allocated, unless the prime contractor can demonstrate that due to circumstances beyond the prime contractor's control, the prime contractor for good cause was unable to retain the percentage of veteran-owned subcontractors throughout the duration of the contract period.

Bidder understands that it may be required to produce records to the CPO to verify the information provided.

Bidder understands that if a veteran-owned subcontractor is also an MBE/WBE, any participation on the contract that is utilized toward MBE/WBE goals on the prime contractor's compliance plan shall not count toward the total dollar value of work performed by veteran-owned subcontractors for purposes of this Bid Incentive.

***Signature page follows.***

**BIDDER'S COMMITMENT TO UTILIZE VETERAN-OWNED SUBCONTRACTORS AFFIDAVIT –  
SIGNATURE PAGE**

Under penalty of perjury the person signing below: (1) warrants that he/she is authorized to execute this Affidavit on behalf of bidder, and (2) warrants that all certifications and statements contained in this Affidavit are true, accurate, and complete as of the date of execution.

Name of Bidder: \_\_\_\_\_  
(Print or Type)

Signature of Authorized Officer: \_\_\_\_\_  
(Signature)

Title of Signatory: \_\_\_\_\_  
(Print or Type)

State of \_\_\_\_\_

County of \_\_\_\_\_

Signed and sworn (or affirmed) to before me on \_\_\_\_\_ (date) by  
\_\_\_\_\_ (name/s of person/s making statement).

\_\_\_\_\_  
(Signature of Notary Public)

(Seal)

**BIDDER'S COMMITMENT TO UTILIZE APPRENTICES THAT ARE GRADUATES OF CHICAGO SCHOOLS**

The Apprentice Ordinance Bid Incentive as described in Section 2-92-335 of the Municipal Code of Chicago ("MCC") is applicable to competitively bid construction projects funded in whole by City funds with an estimated contract value of \$100,000.00 or more.

Bidder must submit this form with the bid if it desires to be considered for this bid incentive on a future eligible construction project. Bidders that do not submit this page with their bid may still be eligible for this future bid incentive if it is awarded a contract under this specification and submits this affidavit to the CPO during the contract term. Attach additional sheets if necessary.

*Note: The CPO may request additional information or documentation before determining to award an earned credit certificate for use on a future eligible construction project bid following contract close-out.*

1. Contract title: \_\_\_\_\_  
Specification #: \_\_\_\_\_

2. The percentage of total labor hours for which Bidder commits to utilize apprentices (as defined in MCC 2-92-335 and the applicable bid solicitation) will be what percentage of the total hours performed under the contract?
- ( ) 5% to 10%-- 0.5% incentive
- ( ) 11% to 15%-- 1.0% incentive

Bidder understands that, pursuant to MCC 2-92-335, unless it meets or exceeds its apprentice utilization goals upon completion of this construction project, Bidder will not receive the above bid incentive for future construction project contracts.

Name of Bidder: \_\_\_\_\_  
(Print or Type)

Signature of Authorized Officer: \_\_\_\_\_  
(Signature)

Title of Signatory: \_\_\_\_\_  
(Print or Type)

**REQUEST TO APPLY BID INCENTIVE: CHICAGO GRADUATES APPRENTICE UTILIZATION**

The Apprentice Ordinance Bid Incentive as described in Section 2-92-335 of the Municipal Code of Chicago ("MCC") is applicable to competitively bid construction projects funded in whole by City funds with an estimated contract value of \$100,000.00 or more.

Bidder must submit this form with the bid if it desires to use a previously obtained earned credit certificate bid incentive on its bid for this contract. Bidders that do not submit this page with their bid will not be eligible for this bid incentive. Attach additional sheets if necessary.

*Note: The CPO may request additional information or documentation before determining to award this bid incentive.*

1. Current Contract title: \_\_\_\_\_  
Current Specification #: \_\_\_\_\_
2. Value of previously earned credit certificate for application to this contract bid:  
\$ \_\_\_\_\_  
Previous Contract title: \_\_\_\_\_  
Previous Specification #: \_\_\_\_\_

Attach a copy of the earned credit certificate for verification.

Under penalty of perjury the person signing below: (1) warrants that he/she is authorized to execute this Affidavit on behalf of bidder; (2) warrants that all certifications and statements contained in this Affidavit are true, accurate, and complete as of the date of execution; and (3) warrants that bidder did in fact employ those apprentices on the identified previous contract and take all other actions that were required to qualify for this bid incentive.

Name of Bidder: \_\_\_\_\_  
(Print or Type)

Signature of Authorized Officer: \_\_\_\_\_  
(Signature)

Title of Signatory: \_\_\_\_\_  
(Print or Type)

State of \_\_\_\_\_  
County of \_\_\_\_\_  
Signed and sworn (or affirmed) to before me on \_\_\_\_\_ (date) by  
\_\_\_\_\_ (name/s of person/s making statement).

\_\_\_\_\_  
(Signature of Notary Public)  
(Seal)

## **BIDDER'S COMMITMENT TO UTILIZE EX-OFFENDER APPRENTICES**

The Ex-Offender Apprentice Ordinance Bid Incentive as described in Section 2-92-336 of the Municipal Code of Chicago ("MCC") is applicable to competitively bid construction projects funded in whole by City funds with an estimated contract value of \$100,000.00 or more.

Bidder must submit this form with the bid if it desires to be considered for this bid incentive on a future eligible construction project. Bidders that do not submit this page with their bid may still be eligible for this future bid incentive if it is awarded a contract under this specification and submits this affidavit to the CPO during the contract term. Attach additional sheets if necessary.

*Note: The CPO may request additional information or documentation before determining to award an earned credit certificate for use on a future eligible construction project bid following contract close-out.*

1. Contract title: \_\_\_\_\_  
Specification #: \_\_\_\_\_
  
2. The percentage of total labor hours for which Bidder commits to utilize ex-offender apprentices (as defined in MCC 2-92-336 and the applicable bid solicitation) will be what percentage of the total hours performed under the contract?  
 5% to 10%-- *0.5% incentive*  
 11% to 15%-- *1.0% incentive*

Bidder understands that, pursuant to MCC 2-92-336, unless it meets its ex-offender apprentice utilization goals upon completion of this construction project, Bidder will not receive the above bid incentive for future construction project contracts.

Name of Bidder: \_\_\_\_\_  
(Print or Type)

Signature of Authorized Officer: \_\_\_\_\_  
(Signature)

Title of Signatory: \_\_\_\_\_  
(Print or Type)

**REQUEST TO APPLY BID INCENTIVE: EX-OFFENDER APPRENTICE  
UTILIZATION**

The Ex-Offender Apprentice Ordinance Bid Incentive as described in Section 2-92-336 of the Municipal Code of Chicago ("MCC") is applicable to competitively bid construction projects funded in whole by City funds with an estimated contract value of \$100,000.00 or more.

Bidder must submit this form with the bid if it desires to use a previously obtained earned credit certificate bid incentive on its bid for this contract. Bidders that do not submit this page with their bid will not be eligible for this bid incentive. Attach additional sheets if necessary.

*Note: The CPO may request additional information or documentation before determining to award this bid incentive.*

1. Current Contract title: \_\_\_\_\_  
Current Specification #: \_\_\_\_\_

2. Value of previously earned credit certificate for application to this contract bid:  
\$ \_\_\_\_\_  
Previous Contract title: \_\_\_\_\_  
Previous Specification #: \_\_\_\_\_

Attach a copy of the earned credit certificate for verification.

Under penalty of perjury the person signing below: (1) warrants that he/she is authorized to execute this Affidavit on behalf of bidder; (2) warrants that all certifications and statements contained in this Affidavit are true, accurate, and complete as of the date of execution; and (3) warrants that bidder did in fact employ those apprentices on the identified previous contract and take all other actions that were required to qualify for this bid incentive.

Name of Bidder: \_\_\_\_\_  
(Print or Type)

Signature of Authorized Officer: \_\_\_\_\_  
(Signature)

Title of Signatory: \_\_\_\_\_  
(Print or Type)

State of \_\_\_\_\_

County of \_\_\_\_\_

Signed and sworn (or affirmed) to before me on \_\_\_\_\_ (date) by

\_\_\_\_\_ (name/s of person/s making statement).

\_\_\_\_\_  
(Signature of Notary Public)  
(SEAL)

**BIDDER'S COMMITMENT TO UTILIZE BUSINESS ENTERPRISES OWNED BY PEOPLE WITH DISABILITIES (BEPD)**

The BEPD Incentive as described in Section 2-92-337 of the Municipal Code of Chicago ("MCC") is applicable to competitively bid contracts funded in whole by City funds. Bidder must submit this form with the bid if it desires to be considered for this bid incentive. Bidders that do not submit this page with their bid will not be eligible for this bid incentive. Attach additional sheets if necessary.

*Note: The CPO may request additional information or documentation before determining to apply the preference.*

1. Contract title: \_\_\_\_\_  
Specification #: \_\_\_\_\_

2. The value of work performed by BEPD prime contractors or subcontractors (as defined in MCC 2-92-586 and the applicable bid solicitation) that Bidder commits to provide will be what percentage of the total dollar value of the contract?

- ( ) 2% to 5%-- 1% incentive                      ( ) 6% to 9%-- 2% incentive  
( ) 10% to 13%-- 3% incentive      ( ) 14% or greater-- 4% incentive

Bidder understands that if it fails to utilize the committed percentage of BEPD subcontractors, under MCC 2-92-337 it may be fined in an amount equal to three times the amount of the bid incentive allocated, unless the prime contractor can demonstrate that due to circumstances beyond the prime contractor's control, the prime contractor for good cause was unable to retain the percentage of BEPD subcontractors throughout the duration of the contract period.

Bidder understands that it may be required to produce records to the CPO to verify the information provided.

Under penalty of perjury the person signing below: (1) warrants that he/she is authorized to execute this Affidavit on behalf of bidder, and (2) warrants that all certifications and statements contained in this Affidavit are true, accurate, and complete as of the date of execution.

Name of Bidder: \_\_\_\_\_  
(Print or Type)

Signature of Authorized Officer: \_\_\_\_\_  
(Signature)

Title of Signatory: \_\_\_\_\_  
(Print or Type)

State of \_\_\_\_\_  
County of \_\_\_\_\_

Signed and sworn (or affirmed) to before me on \_\_\_\_\_ (date) by  
\_\_\_\_\_ (name/s of person/s making statement).

\_\_\_\_\_  
(Signature of Notary Public)  
(Seal)



## MENTORING PROGRAM BID PREFERENCE AFFIDAVIT

The Mentoring Program bid preference as described in Section 2-92-535 of the Municipal Code of Chicago (“MCC”) is applicable to contracts having an estimated value of \$100,000 or more.

A bid preference of **1 percent** of the contract base bid is available to qualified bidders that are prime contractors that have entered into a mentoring agreement or whose subcontractor has entered into a subcontractor-to-subcontractor mentoring agreement. The bid preference is used only to calculate an amount to be used in evaluating the bid to determine the low bidder, and it does not affect the contract price.

Bidder must submit this form, and a copy of either its mentoring agreement or a subcontractor-to-subcontractor mentoring agreement, with the bid if it desires to be considered for this bid preference. Bidders that do not submit this page with their bid will not be eligible for this bid preference. Attach additional sheets if necessary.

*Note: The CPO may request additional information or documentation before determining to apply the preference.*

Contract title: \_\_\_\_\_

Specification #: \_\_\_\_\_

Bidder understands that if it fails to maintain a mentoring agreement or a subcontractor that has a subcontractor-to-subcontractor mentoring agreement, for which this bid preference was taken into consideration in awarding of a contract, Bidder shall be fined in an amount equal to three times the amount of the bid preference allocated, unless the Bidder can demonstrate that due to circumstances beyond the Bidder’s control, Bidder for good cause was unable to maintain a mentoring agreement or a subcontractor that has a subcontractor-to-subcontractor mentoring agreement throughout the duration of the contract period.

Bidder understands that it may be required to produce records to the CPO to verify the information provided.

Under penalty of perjury the person signing below: (1) warrants that he/she is authorized to execute this Affidavit on behalf of bidder, and (2) warrants that all certifications and statements contained in this Affidavit are true, accurate, and complete as of the date of execution.

Name of Bidder: \_\_\_\_\_

(Print or Type)

Signature of Authorized Officer: \_\_\_\_\_

(Signature)

Title of Signatory: \_\_\_\_\_

(Print or Type)

State of \_\_\_\_\_

County of \_\_\_\_\_

Signed and sworn (or affirmed) to before me on \_\_\_\_\_ (date) by \_\_\_\_\_  
(name/s of person/s making statement).

\_\_\_\_\_  
(Signature of Notary Public)

(Seal)

**AFFIDAVIT  
 BIDDER'S COMMITMENT TO UTILIZE PROJECT AREA SUBCONTRACTORS**

Bidder must complete and execute this affidavit ("Affidavit") if it desires to be considered for the bid incentive described in Section 2-92-405 (the "Ordinance") of the Municipal Code of Chicago ("MCC") for the utilization of eligible Project Area Subcontractors or Suppliers in the performance of this contract (the "Incentive"). Bidder must also submit with its bid a Subcontractor Affidavit for each project area subcontractor which the Bidder commits to utilize in the performance of the contract. The value of the work a project area subcontractor intends to provide will not be counted towards this Incentive if the Bidder does not submit an affidavit completed by such project area subcontractor. Bidders that do not submit this affidavit and the relevant Lower Tier Affidavit(s) with their bid will not be considered for the Incentive. Attach additional sheets if necessary.

For purposes of this Affidavit, "project area subcontractor" means a person or entity that is a subcontractor or sub-subcontractor to the bidder and that (i) conducts meaningful day-to-day business operations at a facility located within that part of the City designated as the project area in the Specification listed below and that facility is the place of employment for the majority of that person's regular, full-time workforce; (ii) holds all appropriate city licenses; (iii) is a small business enterprise; and (iv) is subject to applicable city taxes; provided that a project-area subcontractor shall not include the prime contractor. Terms used in this Affidavit whether or not capitalized that are not defined herein but are defined in the Contract or in the Ordinance have the meaning ascribed to such terms therein. This Affidavit is subject to and should be construed in accordance with the terms of the Contract.

1. Contract title: \_\_\_\_\_  
 Specification #: \_\_\_\_\_

2. **The value of the work to be performed by project area subcontractors that the Bidder commits to provide will be what percentage of the total dollar value of the contract:**  
 \_\_\_\_\_%

Also check the % incentive that would apply below:

( ) 1% to 16%-- 0.5% of contract base bid	( ) 33% to 49%-- 1.5% of contract base bid
( ) 17% to 32%-- 1% of contract base bid	( ) 50% or greater-- 2% of contract base bid

*Note: contract self-performance by the bidder cannot be counted toward the percentage commitment made above. To the extent the project area subcontractor subcontracts part of the subcontract, only that part of the subcontract or of the work performed by it can be counted toward the percentage commitment above unless the sub-subcontractor is also a project area subcontractor.*

3. Identify the bid lines under which the bidder intends to utilize project area subcontractors in the performance of the contract and their respective value, based on the bid specification's estimated quantities (attach additional sheets if necessary):

<u>Type of Work to be Performed by project area subcontractors</u>	Project Area Subcontractor	Value of work	% of total contract value
	Total % of total contract value to be performed by all project area subcontractors		

\*Bidder must provide *Project Area Subcontractor Affidavit* for each subcontractor listed.

Bidder understands that (i) it may be required, as requested by the Chief Procurement Officer ("CPO"), to produce such records and documents related to this Incentive to verify the information provided herein, and (ii) failure to do so may result in the denial of the Incentive by the CPO.

Bidder also understands that (i) if this Incentive, whether by itself or in conjunction with any or all other bid incentive(s) applied for by the Bidder, results in the Bidder being awarded the contract, this Affidavit becomes part of the contract; and (ii) if the Bidder fails to utilize the committed percentage of project-area subcontractors, the bidder will be subject to the consequences set forth in the Contract, including a fine in equal to three times the amount of the bid incentive allocated.

Under penalty of perjury the person signing below: (1) warrants that he/she is authorized to execute this Affidavit on behalf of bidder, and (2) warrants that all certifications and statements contained in this Affidavit and the Lower Tier Affidavits are true, accurate, and complete as of the date of execution.

Name of Bidder (Print or Type): \_\_\_\_\_

Signature of Authorized Officer (Sign): \_\_\_\_\_ Date: \_\_\_\_\_

Title of Signatory (Print or Type): \_\_\_\_\_

Name of Signatory (Print or Type): \_\_\_\_\_

State of \_\_\_\_\_

County of \_\_\_\_\_

Signed and sworn (or affirmed) to before me on \_\_\_\_\_ (date) by:

\_\_\_\_\_ (name/s of person/s making statement).

\_\_\_\_\_  
(Signature of Notary Public)

(Seal)

## PROJECT AREA SUBCONTRACTOR AFFIDAVIT

The Project Area Subcontractor Utilization Incentive as described in Section 2-92-405 of the Municipal Code of Chicago ("MCC") may be available to the Bidder. Bidder must submit this Project Area Subcontractor Affidavit ("Affidavit") for each Project Area Subcontractor the bidder intends to utilize. The value of the work a project area subcontractor intends to provide will not be counted towards this Incentive if the Bidder does not submit an affidavit completed by such project area subcontractor. Attach additional sheets if necessary.

1. Contract Title: \_\_\_\_\_ Specification #: \_\_\_\_\_  
Bidder Name: \_\_\_\_\_
2. Is Affiant a person or entity who: (i) conducts meaningful day-to-day business operations at a facility located within that part of the City designated as the project area in the Specification listed above (ii) holds all appropriate city licenses, and (iii) is subject to applicable city taxes?  
( ) Yes ( ) No
3. Is Affiant a "Small Business Enterprise" as defined by the U.S. Small Business Administration, pursuant to the business size standards found in 13 C.F.R. Part 121, relevant to the scope of work the business seeks to perform on the contract?  
( ) Yes ( ) No
4. What percentage of the number of Affiant's full-time regular workforce work at Affiant's facility located in the City of Chicago project area designated for this contract?  
(a) Total number of Affiant's regular full-time employees at all locations: \_\_\_\_\_.  
(b) Number of employees at project area facility: \_\_\_\_\_  
(c) Percentage of subcontractor's regular full-time employees whose place of employment project area facility: \_\_\_\_\_%  
*If the answer to 2 or 3 is No, or the answer to 4(c) is not more than 50%, the Affiant participation cannot be counted towards fulfilling Bidder's project area subcontractor participation commitment.*
5. Street address of the facility located within the part of the city designated by City of Chicago as project area for this Contract (P.O. address not accepted):  
\_\_\_\_\_
6. Does the Affiant intend to sub-subcontract any portion of its subcontract?  
( ) Yes ( ) No
7. If the answer to 6 is Yes, is the intended sub-subcontractor also a project area subcontractor as defined in Section 2-92-405 of the MCC?  
( ) Yes ( ) No  
*Submit a Project Area Subcontractor Affidavit for each such sub-subcontractor. If any sub-subcontractor is not also a project area subcontractor, the portion of the work such sub-subcontractor will perform may not be counted by the Bidder for this Incentive.*
8. List the work to be performed by subcontractor for the Bidder and the estimated value of such work (attach additional pages as necessary):

<u>Type of Work to be Performed</u>	Project Area Sub-Subcontractor, if applicable	Expected value of the work

9. List City of Chicago business license(s) held. If none are required, indicate "none required":  
\_\_\_\_\_

The bidder understands that it may be required to produce records to the chief procurement officer to verify the information provided herein and that its failure to do so as required by the CPO may result in the intended performance by the Affiant not being taken into account for Incentive purposes.

Under penalty of perjury the person signing below: (1) warrants that he/she is authorized to execute this Affidavit on behalf of bidder, and (2) warrants that all certifications and statements contained in this Affidavit are true, accurate, and complete as of the date of execution.

Name of Name of Project Area Subcontractor (Print or Type): \_\_\_\_\_

Signature of Authorized Officer (Sign): \_\_\_\_\_ Date: \_\_\_\_\_

Title of Signatory (Print or Type): \_\_\_\_\_

Name of Signatory (Print or Type): \_\_\_\_\_

State of \_\_\_\_\_

County of \_\_\_\_\_

Signed and sworn (or affirmed) to before me on \_\_\_\_\_ (date) by:

\_\_\_\_\_ (name/s of person/s making statement).

\_\_\_\_\_  
(Signature of Notary Public)

(Seal)

**SEXUAL HARASSMENT POLICY AFFIDAVIT**

The policy prohibiting sexual harassment as described in Section 2-92-612 of the Municipal Code of Chicago ("MCC") is applicable to contracts paid from funds belonging to or administered by the City.

Contract title: \_\_\_\_\_  
Specification #: \_\_\_\_\_

In accordance with requirements set forth in Section 2-92-612 of the MCC, Contractor hereby attests that Contractor has a written policy prohibiting sexual harassment that includes, at a minimum, the following information:

- (i) the illegality of sexual harassment;
- (ii) the definition of sexual harassment; and
- (iii) the legal recourse available for victims of sexual harassment.

Contractor understands that it may be required to produce records to the CPO to verify the information provided.

Under penalty of perjury the person signing below: (1) warrants that he/she is authorized to execute this Affidavit on behalf of Contractor, and (2) warrants that all certifications and statements contained in this Affidavit are true, accurate, and complete as of the date of execution.

Name of Contractor: \_\_\_\_\_

(Print or Type)

Signature of Authorized Officer: \_\_\_\_\_

(Signature)

Title of Signatory: \_\_\_\_\_

(Print or Type)

State of \_\_\_\_\_

County of \_\_\_\_\_

Signed and sworn (or affirmed) to before me on \_\_\_\_\_ (date) by

\_\_\_\_\_ (name/s of person/s making statement).

\_\_\_\_\_

(Signature of Notary Public)

(Seal)

**BIDDER'S COMMITMENT TO ENCOURAGE DIVERSE MANAGEMENT AND WORKFORCE**

The Bid Incentive to Encourage Diverse Management and Workforce as described in Section 2-92-407 of the Municipal Code of Chicago ("MCC") is applicable to competitively bid contracts funded in whole by City funds. Bidder must submit this form with the bid if it desires to be considered for this bid incentive. Bidders that do not submit this page with their bid will not be eligible for this bid incentive. Attach additional sheets if necessary.

*Note: The CPO may request additional information or documentation before determining to apply the preference.*

1. Contract title: \_\_\_\_\_  
Specification #: \_\_\_\_\_
  
2. The total percentage of Diverse Management (as defined in MCC 2-92-407 and the applicable bid solicitation) that Bidder commits to retain will be what percentage of the total Management?  
 10% to 20% -- 0.5% incentive  
 Greater than 20% to 40% -- 2% incentive  
 Greater than 40% -- 4% incentive
  
3. The total percentage of Diverse Workforce (as defined in MCC 2-92-407 and the applicable bid solicitation) that Bidder commits to retain will be what percentage of the total Workforce?  
 10% to 20% -- 2% incentive  
 Greater than 20% to 40% -- 4% incentive  
 Greater than 40% -- 6% incentive

Bidder may qualify for and apply both the diverse management and diverse workforce bid incentives.

Bidder understands that if it fails to retain the committed percentage of Diverse Management and/or Workforce, under MCC 2-92-407 it may be fined in an amount equal to three times the amount of the bid incentive allocated, unless the prime contractor can demonstrate that due to circumstances beyond the prime contractor's control, the prime contractor for good cause was unable to retain the percentage of Diverse Management and/or Workforce throughout the duration of the contract period.

Bidder understands that it may be required to produce records to the CPO to verify the information provided.

***Signature page follows.***

***Signature Page For Bidder's Commitment To Encourage Diverse Management And Workforce***

Under penalty of perjury the person signing below: (1) warrants that he/she is authorized to execute this Affidavit on behalf of bidder, and (2) warrants that all certifications and statements contained in this Affidavit are true, accurate, and complete as of the date of execution.

Name of Bidder: \_\_\_\_\_  
(Print or Type)

Signature of Authorized Officer: \_\_\_\_\_  
(Signature)

Title of Signatory: \_\_\_\_\_  
(Print or Type)

State of \_\_\_\_\_

County of \_\_\_\_\_

Signed and sworn (or affirmed) to before me on \_\_\_\_\_ (date) by  
\_\_\_\_\_ (name/s of person/s making statement).

\_\_\_\_\_  
(Signature of Notary Public)  
(Seal)



**CONTRACTOR'S AFFIDAVIT REGARDING REMOVAL OF ALL WASTE MATERIALS AND IDENTIFICATION OF ALL LEGAL DUMP SITES**

Contractor to show here the name and location of the ultimate disposal site he/she is proposing to use for the subject project:

SPECIFY THE TYPE OF MATERIALS TO BE DISPOSED OF:

---

---

LEGAL NAME OF LANDFILL/DISPOSAL SITE:

---

(The Contractor must provide to the commissioner of his/her designated representative with copies of all dump tickets, manifests, etc.)

LOCATION ADDRESS: \_\_\_\_\_

PHONE: (\_\_\_\_\_) \_\_\_\_\_

CONTACT PERSON: \_\_\_\_\_

Disposal site submitted shall be of sufficient capacity as to insure acceptance of the volume of Construction and/or Demolition Debris received for the period of this contract. These disposal sites must meet all zoning and other requirements that may be necessary.

If requested by the Chief Procurement Officer, the Contractor shall submit copies of all contractual agreements, sanitary landfill permits and/or licenses for these disposal site(s) proposed by the Contractor.

(Revised 6/30/2000)



## BID BOND

*For use when bidding on City of Chicago projects. See instructions following.*

PRINCIPAL (Legal name and business address)

State of incorporation or organization:

SURETY (Legal name and business address)

State of incorporation:

### BID IDENTIFICATION

BID OPENING DATE:

SPECIFICATION NUMBER:

SPECIFICATION TITLE (AND PROJECT NUMBER IF AVAILABLE):

### PENAL SUM OF BOND

\_\_\_\_\_ %, \_\_\_\_\_ PERCENT OF BASE BID

Surety Bond No.:

#### **Obligation:**

We, the Principal and Surety, are firmly bound to the City of Chicago (hereinafter called the City) in the above penal sum. For payment of the penal sum, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally.

#### **Conditions:**

The Principal has submitted the bid identified above.

#### **Therefore:**

The above obligation is void if the City accepts the bid identified above and the Principal enters into a Contract with the City in accordance with the terms of such bid, executes such further contractual documents that may be required by the terms of the bid or contract documents, and gives such bond(s) as may be specified in the bidding or contract documents with surety acceptable to the City.

The Surety executing this instrument agrees that its obligation is not impaired by any extension(s) of the time for acceptance of the bid that the Principal may grant to the City. Notice to the surety of extension(s) is waived.

In the event the City brings suit upon this bond, Surety will pay reasonable attorney's fees and costs incurred by the City in such suit.

**Witness:**

The Principal and Surety executed this bid bond and affixed their seals on the below dates. The person signing below on behalf of the Principal warrants that he or she is authorized to execute this document on behalf of the Principal.

**PRINCIPAL**

PRINCIPAL NAME		<i>Corporate Seal</i>
PRINCIPAL SIGNATURE		
SIGNER'S NAME & TITLE		
DATE		

**SURETY**

SURETY NAME		<i>Corporate Seal</i>
ATTORNEY-IN-FACT SIGNATURE		
ATTORNEY-IN-FACT NAME		
DATE		

**NOTARY**

STATE OF \_\_\_\_\_, COUNTY OF \_\_\_\_\_  
 I, \_\_\_\_\_, a Notary Public in the County and State aforesaid, do hereby certify that \_\_\_\_\_ of the \_\_\_\_\_ who is personally known to be the same person whose name he/she subscribed in the foregoing instrument as such Attorney-in-Fact, appeared before me this day in person and acknowledged that he/she signed, sealed, and delivered the said instrument of writing as his/her free and voluntary act, and as the free and voluntary act of the said \_\_\_\_\_ for the uses and purposes therein set forth, and caused the corporate seal of said company to be thereto attached.

GIVEN UNDER MY HAND AND NOTARIAL SEAL THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 20 \_\_\_\_\_

\_\_\_\_\_  
 NOTARY PUBLIC

*Notary Seal*

*The signature of the Surety's attorney-in-fact must be notarized, and an original power of attorney granting him or her authority to sign this document must be attached to this document.*

## **INSTRUCTIONS FOR CITY OF CHICAGO BID BOND FORM**

Bidders/Proposers: Give these instructions to your surety.

- 1.** The Bond must be on the City's form. No substitutions will be acceptable.
- 2.** Copies of the form are acceptable. However, copies of the Bond must be double sided, with page 1 on one side of the paper, and page 2 on the opposite side of the paper.
- 3.** The amount of the Bond must be that stated in the Legal Advertisement. Unless otherwise specified, the amount of the bond should be expressed as a percentage of the bid amount.
- 4.** All blank spaces to be filled in must be completed using a typewriter or legible hand printing unless otherwise indicated. Determinations of legibility will be in the sole discretion of the Chief Procurement Officer. Photocopied insertions will not be accepted, nor will any Bond form on which there is any evidence of correction fluid ("white-out").
- 5.** Insert the full legal name and business address of the Principal in the space designated "Principal" on the face of the form. If the Bidder/ Proposer is bidding under an assumed name ("d/b/a") the assumed name must be separately stated in the same space as the full legal name for identification purposes.
- 6.** The address of the Principal must be complete. If a different mailing address should be used, it should be included as well, as bonds to be returned will be mailed to address shown on the bond.
- 7.** The Bond must include the Surety's name, the state in which the Surety was incorporated, and the Surety's address.
- 8.** The specification number must appear on the Bond.
- 9.** The Surety executing the bond must appear on the Department of the Treasury's list of approved sureties (available at <http://www.fms.treas.gov/c570/c570.html>) and must act within the limitations listed therein.
- 10.** The names and titles of the people signing the bond must be given in the spaces provided.
- 11.** Corporations executing the bond shall affix their corporate seals if required. If a seal is not required, please indicate "seal not required" in the space where the seal would otherwise be affixed.
- 12.** A person authorized to bind the Bidder/Proposer as the Principal must sign the bond.
- 13.** The Bond must be signed by an attorney-in-fact of the surety company. An original Power of Attorney that identifies the surety company's signatory as an attorney-in-fact must be attached.
- 14.** The date on which the Surety's Power of Attorney was certified should be the same or later than the date on which the bond was signed by the Surety.
- 15.** In its application to negotiated contracts, the terms "bid" and "bidder" shall include "proposal" and "offeror."

# CONTRACTOR'S PERFORMANCE & PAYMENT BOND

**Know All Men by these Presents,** That we,

Principal, hereinafter referred to as Contractor, and

, Surety

of the County of Cook and State of Illinois, are held and firmly bound unto the CITY OF CHICAGO in the penal sum of  
lawful money of the United States, for the payment of which sum of money, well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

**Sealed** with our seals and dated this \_\_\_\_\_ day of \_\_\_\_\_ A.D., 20

**The Condition of the Above Obligation is such,**

That whereas the above bounden Contractor has entered into a certain contract with the CITY OF CHICAGO, bearing Contract No. \_\_\_\_\_ and Specification No. \_\_\_\_\_ all in conformity with said contract, for,

The said contract is incorporated herein by reference in its entirety, including without limitation, any and all indemnification provisions.

Now, if the said Contractor shall in all respects well and truly keep and perform the said contract on its part, in accordance with the terms and provisions of all of the Contract Documents comprising said contract, and in the time and manner therein prescribed, and further shall save, indemnify, and keep harmless the City of Chicago against all loss, damages, claims, liabilities, judgements, costs and expenses which may in anywise accrue against said City of Chicago, in consequence of the granting of said contract, or which may in anywise result therefrom, or which may result from strict liability, or which may in anywise result from any injuries to, or death of, any person, or damage to any real or personal property, arising directly or indirectly from or in connection with, work performed or to be performed under said contract by said Contractor, its Agents, Employees or Workmen, assignees, subcontractors, or anyone else, in any respect whatever, or which may result on account of any infringement of any patent by reason of the materials, machinery, devices or apparatus used in the performance of said contract, and moreover, shall pay to said City any sum or sums of money determined by the Purchasing Agent, and/or by a court of competent jurisdiction, to be due said City by reason of any failure or neglect in the performance of the requirements of said contract, wherefore the said Purchasing Agent shall have elected to suspend or cancel the same, and shall pay all claims and demands whatsoever, which may accrue to each and every materialman and subcontractor, and to each and every person who shall be employed by the said Contractor or by its assignees and subcontractors, in or about the performance of said contract, and with wages paid at prevailing wage rates if so required by said contract, and shall insure its liability to pay the compensation, and shall pay all claims and demands for compensation which may accrue to each and every person who shall be employed by them or any of them in or about the performance of said contract, or which shall accrue to the beneficiaries or dependents of any such person, under the provisions of the Workers' Compensation Act, 820 ILCS 305, as amended, and the Workers' Occupational Disease Act, 820 ILCS 310, as amended (hereinafter referred to as "Acts") then is this obligation to be null and void, otherwise to remain in full force and effect.

And it is hereby expressly understood and agreed, and made a condition hereof, that any judgement rendered against said City in any suit based upon any loss, damages, claims, liabilities, judgements, costs or expenses which may in anywise accrue against said City as a consequence of the granting of said contract, or which may in anywise result therefrom, or which may in anywise result from any injuries to, or death of, any person, or damage to any real or personal property, arising directly or indirectly from, or in connection with, work performed, or to be performed under said contract by said Contractor or its agents, employees or workmen, assignees, subcontractors, or anyone else and also any decision of the Industrial Commission of the State of Illinois, and any order of court based upon such decision, or judgement thereon, rendered against said City of Chicago in any suit or claim arising under the aforementioned Acts when notice of the pendency or arbitration proceedings or suit shall have been given said Contractor, shall be conclusive against each and all parties to this obligation, as to amount, liability and all other things pertaining thereto.

Every person furnishing material or performing labor in the performance of said contract, either as an individual, as a subcontractor, or otherwise, shall have the right to sue on this bond in the name of the City of Chicago for his use and benefit and in such suit said person as plaintiff, shall file a copy of this bond, certified by the party or parties in whose charge this bond shall be, which copy shall be, unless execution thereof be denied under oath, prima facie evidence of the execution and delivery of the original; provided, that nothing in this bond contained shall be taken to make the City of Chicago liable to any subcontractor, materialman, laborer or to any other person to any greater extent than it would have been liable prior to the enactment of the Public Construction Bond Act, 30 ILCS 550, as amended; provided further, that any person having a claim for labor and materials furnished in the performance of this contract shall have no right of action unless he shall have filed a verified notice of such claim with the Clerk of the City of Chicago within 180 days after the date of the last item of work or the furnishing of the last item of materials, and shall have furnished a copy of such verified notice to the contractor within 10 days of the filing of the notice with the City of Chicago. Such claim shall be verified and shall contain the name and address of the claimant, the business address of the claimant within the State of Illinois, if any, or if the claimant be a foreign corporation having no place of business with the State the principal place of business of said corporation, and in all cases of partnership the names and residences of each of the partners, the name of the contractor for the City of Chicago, the name of the person, firm or corporation by whom the claimant was employed or to whom such claimant furnished materials, the amount of the claim and a brief description of the public improvement for the construction or installation of which the contract is to be performed. Provided, further, that no defect in the notice herein provided for shall deprive the claimant of his right of action under the terms and provisions of this bond unless it shall affirmatively appear that such defect has prejudiced the rights of an interested party asserting the same; provided, further, that no action shall be brought until the expiration of one hundred twenty (120) days after the date of the last item of work or of the furnishing of the last item of material, except in cases where the final settlement between the City of Chicago and the Contractor shall have been made prior to the expiration of the 120 day period in which case action may be taken immediately following such final settlement, and provided, further, that no action of any kind shall be brought later than six (6) months after the acceptance by the City of Chicago of the completion of work. Any suit upon this bond shall be brought only in a circuit court of the State of Illinois in the judicial district in which the contract shall have been performed.

The said Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of any of the Contract Documents comprising said contract, or to the work to be performed thereunder, shall in anywise affect the obligations on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of said Contract Documents or to the work.

Approved \_\_\_\_\_, 20\_\_\_\_ (Seal)

\_\_\_\_\_ (Seal)

\_\_\_\_\_ (Seal)

**Purchasing Agent** \_\_\_\_\_ (Seal)

\_\_\_\_\_ (Seal)

Approved as to form and legality: \_\_\_\_\_ (Seal)

\_\_\_\_\_ (Seal)

**Assistant Corporation Counsel**

PRINCIPAL  
IF CORPORATION

STATE OF ILLINOIS, }  
COUNTY OF COOK, } ss.

I, \_\_\_\_\_, a Notary Public in and for the County and State  
aforesaid, DO HEREBY CERTIFY that \_\_\_\_\_ President and  
\_\_\_\_\_ Secretary of the \_\_\_\_\_  
who are personally known to me to be the same persons whose names are subscribed in the foregoing instrument as  
such \_\_\_\_\_ President and \_\_\_\_\_ Secretary, appeared  
before me this day in person and acknowledged that they signed, sealed and delivered the said instrument of writing as  
their free and voluntary act, and as the free and voluntary act of the said \_\_\_\_\_  
for the uses and purposes therein set forth, and caused the corporate seal of said Company to be thereto attached.

GIVEN under my hand and Notarial Seal this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_

\_\_\_\_\_  
Notary Public

SURETY, IF CORPORATE

STATE OF ILLINOIS, }  
COUNTY OF COOK, } ss.

I, \_\_\_\_\_, a Notary Public in and for the County and State  
aforesaid, DO HEREBY CERTIFY that \_\_\_\_\_  
\_\_\_\_\_ of the \_\_\_\_\_ who \_\_\_\_\_ personally known  
to be the same person \_\_\_\_\_ whose name \_\_\_\_\_ subscribed in the foregoing instrument as such \_\_\_\_\_  
\_\_\_\_\_, appeared before me this day in person and acknowledged that \_\_\_\_\_  
signed, sealed and delivered the said instrument of writing as \_\_\_\_\_ free and voluntary act, and as the free  
and voluntary act of the said \_\_\_\_\_  
for the uses and purposes therein set forth, and caused the corporate seal of said Company to be thereto attached.

GIVEN under my hand and Notarial Seal this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_

\_\_\_\_\_  
Notary Public

PRINCIPAL  
IF INDIVIDUAL

STATE OF ILLINOIS, }  
COUNTY OF COOK, } ss.

I, \_\_\_\_\_, a Notary Public in and for the County and State  
aforesaid, DO HEREBY CERTIFY that \_\_\_\_\_  
who \_\_\_\_\_ personally known to me to be the same persons whose name \_\_\_\_\_ subscribed in the foregoing  
instrument, appeared before me this day in person and acknowledged that \_\_\_\_\_ he \_\_\_\_\_ signed, sealed and delivered the  
said instrument of writing as \_\_\_\_\_ free and voluntary act, for the uses and purposes therein set forth.

GIVEN under my hand and Notarial Seal this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_

\_\_\_\_\_  
Notary Public

**BOOK 3  
DETAIL SPECIFICATIONS, STANDARDS, AND DETAILS**

**TITLE: WEBSTER AVENUE BRIDGE OVER THE NORTH BRANCH OF THE CHICAGO RIVER**

**CDOT PROJECT NO.: E-1-525**

**SPECIFICATION NO.: 1188838**

**RFQ NO.: 7346**

**CITY OF CHICAGO**



**LORI LIGHTFOOT  
MAYOR**

**GIA BIAGI**

Commissioner - Department of Transportation  
Suite 1100, 30 North LaSalle  
Chicago, Illinois 60602-2570

Issued by the  
**DEPARTMENT OF PROCUREMENT SERVICES**

**SHANNON E. ANDREWS**

Chief Procurement Officer

Document Printed January 2021

**All Signatures To Be Sworn To Before A Notary Public**



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**SPECIAL PROVISION (SP)**

**NOTE:**

"Y" DENOTES ITEMS WITH CONTRACT OR PROJECT SPECIFIC SPECIAL PROVISIONS, AND/OR CONFORMS TO IDOT RECURRING SPECIAL PROVISIONS AND IDOT BUREAU OF DESIGN & ENVIRONMENT (BDE) SPECIAL PROVISIONS.

"N" DENOTES ITEMS WHICH CONFORM TO THE ILLINOIS DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION", ADOPTED APRIL 1, 2016 OR THE LATEST EDITION OF THE SUPPLEMENTAL SPECIFICATIONS.

**IDOT Standard Specifications Coded Pay Item Index**

No. 201	-----	To No. 672	-----	Road and Bridge Construction Items
No. 701	-----	To No. 783	-----	Traffic Control, Signing, Pavement Marking
No. 801	-----	To No. 895	-----	Electric Requirements
No. Z	-----	To No. Z	-----	Special Pay Items
No. XX	-----	To No. X895	-----	Local Roads Temporary Pay Items
No. XZ	-----	To XZ	-----	Design Temporary Pay Items

**Typical Example and Digit Breakdown of a Coded Pay Item**

<b>Code No.</b>	<b>Description</b>
20100110	Tree Removal (6 TO 15 Units Diameter)
201	- First 3 digits indicate the section in the Standard Specifications
00110	- Last 5 digits indicate the numerical sequence the item has in that section.

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17	N	28000510	INLET FILTERS	
18	N	31101200	SUBBASE GRANULAR MATERIAL, TYPE B 4"	
19	N	35501320	HOT-MIX ASPHALT BASE COURSE, 9"	
20	N	40600275	BITUMINOUS MATERIALS (PRIME COAT)	
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22	N	40603080	HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N50	
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32	N	78000200	THERMOPLASTIC PAVEMENT MARKING - LINE 4"	
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## DETAILED SPECIFICATIONS

FOR

### **WEBSTER AVENUE BRIDGE OVER THE NORTH BRANCH OF THE CHICAGO RIVER C.D.O.T. PROJECT NO. E-1-525**

#### LOCATION OF PROJECT

The Webster Avenue Bridge (S.N. 016-6057) is located on the east side of Bucktown neighborhood just east of Ashland Avenue. It crosses over the North Branch of the Chicago River at 1600 W. Webster Ave. The project limits begin at the Ashland Avenue intersection and ends at the N. Dominick Street intersection.

#### DESCRIPTION OF PROJECT

The Webster Avenue Bridge is a double-leaf trunnion type bascule bridge with an overall length of 287 feet and a deck width of 60 feet. The bridge is currently inoperable and rated in poor condition. This project includes the rehabilitation of the main span superstructure and substructure. It involves the replacement of the deck and floor system for the main and approach spans, structural repairs to the trusses, replacement of the approach slabs, and roadway improvements necessary to improve the serviceability at the Ashland Avenue intersection. The bridge will be closed during construction and vehicular traffic will be detoured via local roads. Pedestrian traffic will be maintained during construction.

#### GENERAL DESCRIPTION OF WORK

The following scope of work for this project includes but is not limited to:

- Removal and replacement of the open steel grid deck with a new steel grid deck half-filled with lightweight concrete.
- Removal and replacement of concrete filled still grid sidewalk deck with FRP sidewalk grating.
- Removal and replacement of the fixed span concrete deck and sidewalks.
- Selective removal and replacement of steel stringers in the fixed span.
- Removal and replacement of the existing ornamental concrete railing in the fixed span with a new ornamental concrete railing.
- Removal of all the jackbeams in the bascule span.
- Rehabilitation of the existing structure including electrical, mechanical and structural work to the bascule bridge.
- Removal and replacement of the floorbeams, stringers, lateral bracing, sidewalk stringers, and curbs of the bascule span.
- Performing structural steel repairs to main trusses, anchor columns, anchor girders, trunnion trusses, and girders.
- Cleaning and painting the entire steel superstructure and substructure (anchor columns) which involve containment and disposal of any existing lead-based paint.
- Cleaning and painting existing ornamental railing in the bascule span.

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- Repairing and adjusting live load bearings.
- Performing bridge balance or counterweight adjustments to account for dead load changes on the bridge.
- Dewatering and clearing debris from counterweight pits followed by structural repair of concrete and epoxy crack injection to the pit walls and floor slab.
- Performing concrete repairs to River Piers and Abutments.
- Removing and reconstructing broken machine room walls above East River Pier.
- Removing existing dolphins and fender system and replacing with new approved pier protection system.
- Performing repairs to the northeast and southeast retaining walls. Removing and replacing the existing concrete railing on top of the retaining walls with an ornamental railing.
- Removal and replacement of bearings at the abutments.
- Removal and replacement the existing backwall at the East Abutment with a semi-integral backwall.
- Repairing machine room enclosure walls, tuckpointing where required, and removing all graffiti.
- Rehabilitation of the bridge houses including removal and replacement of roof, reconstruction of upper portion of third level, repairs to existing, and removal and disposal of hazardous materials.
- Cleaning and painting existing mechanical equipment, except for the center lock which will be rehabilitated.
- Striping bridge deck for new traffic configuration.
- Installing a drainage system for new deck.
- Installing electrical connection to the bridge.
- Removal and replacement of the navigational/obstruction lights.
- Installing arterial street light poles and luminaires near the east end of the bridge.
- Coordination with adjacent construction projects.
- Coordination with adjacent property owners and community groups.
- Coordination with various City, State and Federal departments.
- Coordination with Coast Guard and U.S Army Corps of Engineers.

This description of work is intended to be general in nature and is neither a complete description nor a limitation on the work to be performed. Contractor shall perform all work described in the Contract Documents or reasonably inferable as necessary to produce the results specified therein, except to the extent specifically indicated in the Contract Documents to be the responsibility of others.

## GENERAL REQUIREMENTS

The following Detailed Specifications supplement the following documents, which shall govern the construction of this project:

- Illinois Department of Transportation (IDOT) "Standard Specifications for Road and Bridge Construction," adopted April 1, 2016 (hereafter referred to as the Standard Specifications or SSRBC).
- IDOT "Supplemental Specifications and Recurring Special Provisions", adopted January 1, 2020 (applicable Special Provisions are indicated on the Check Sheet included herein in Appendix E).
- IDOT Bureau of Design & Environment (BDE) Special Provisions, Local Roads and Streets Special Provisions, and District 1 (D1) Special Provisions (applicable Special Provisions are indicated in the Check Sheet included herein in Appendix E).
- IDOT "Guide Bridge Special Provisions" (GBSP) (applicable Special Provisions are indicated in the Check Sheet included herein in Appendix E).
- The latest edition of the "Illinois Manual of Uniform Traffic Control Devices for Streets and Highways" in effect on the date of invitation for bid.
- "Manual of Test Procedures for Materials" in effect on the date of invitation for bid.
- The Chicago Division of Electrical Operations specifications (applicable Special Provisions are included herein in Appendix D).
- The City of Chicago Department of Water Management latest edition of the Standard Specification for Sewer Construction.
- City of Chicago Department of Transportation "Rules and Regulations for Construction in the Public Way" (including Section 3.3 – Office of Underground Coordination (OUC) Submittal Guidelines and Procedures and Appendix B – ADA Standards) in effect on date of invitation for bids. The latter document is available on the City of Chicago Department of Transportation's web site:

[http://www.cityofchicago.org/city/en/depts/cdot/provdrs/construction\\_information/svcs/view\\_constructionstandards.html](http://www.cityofchicago.org/city/en/depts/cdot/provdrs/construction_information/svcs/view_constructionstandards.html)

In case of conflict with any part or parts of said specifications, these Detailed Specifications will take precedence and will govern.

Unless otherwise specified, the Description, General Requirements, Method of Measurements and Basis of Payment for the following items shall be as stated in the appropriate Sections of the Standard Specifications.

Any references in these Detailed Specifications to "the Commissioner" will be read "the Commissioner, Department of Transportation, City of Chicago" (Commissioner), and any reference to the "Department" will be read "Chicago Department of Transportation, Division of Engineering" (CDOT).

These Detailed Specifications and the referenced standard specifications will govern the construction of this project.

## GENERAL CONSTRUCTION REQUIREMENTS

### **General**

The Contractor shall complete all construction operations according to the Contract Plans, applicable Standard Specifications, Detailed Specifications, and as directed by the Commissioner. The Contractor shall not commence with construction operations until the required obligations for structural stability, verification of dimensions, and procedure requirements as detailed in these specifications are fulfilled to the satisfaction of the Commissioner. The existing bridge is currently load posted and has limited reserve capacity due to the poor condition of the floor system. The Contractor's means and methods shall take into account the existing conditions and weight limits on the bridge.

### **Structural Stability**

The Contractor shall be responsible for the stability of the movable spans in all phases of construction. Prior to the replacement of steel members detailed on the Structural Drawings, the Contractor shall submit a construction procedure showing each step of the removal and replacement process. The Contractor shall also submit calculations sealed by a Licensed Structural Engineer registered in the state of Illinois showing that all members will remain stable and not become overstressed during any step of the removal and replacement process. All submittals shall be approved by the Commissioner prior to replacement of steel members. For additional requirements refer to IDOT GBSP 67, "Structural Assessment Reports for Contractor's Means and Methods". The cost of complying with the requirements of this section shall be included in the cost of the applicable items as noted in the Detailed Specifications.

### **Verification of Dimensions**

Plan dimensions and details relative to the existing site conditions are subject to nominal construction variations. The Contractor shall verify such dimensions and details in the field and make the necessary approved adjustments prior to construction or ordering of materials. Such variations will not be cause for additional compensation for a change in Scope of Work and no additional time will be granted. However, the Contractor will be paid for the quantity actually furnished at the unit price bid for the Work. Any costs associated in complying with the requirements of this section shall be considered as included in the contract unit prices bid for the various items of work involved and no additional compensation will be allowed.

### **Bridge Maintenance**

For the duration of the project, it will be the Contractor's responsibility to maintain the entire bridge and all its systems, by a qualified electrician to facilitate construction requirements. Currently, the City of Chicago Department of Transportation (CDOT) maintains the bridge. At the onset of the project, a maintenance transfer will be conducted between the Contractor, the Commissioner and the City of Chicago. At that time, the City will cease maintenance responsibility and turn it over to the Contractor. The Contractor will maintain the entire bridge structure as specified in specification for BRIDGE OPERATION AND MAINTENANCE and as directed by the Commissioner until the project is accepted by CDOT. The maintenance responsibility shall include, but not be limited to, greasing, adjusting, resetting breakers, protection of open gearing from debris, balancing, structural stability, etc. The cost of complying with the requirements of this section shall be included in the cost of BRIDGE OPERATION AND MAINTENANCE.

### **Marine Operations**

As required by the U.S. Coast Guard, the North Branch of the Chicago River shall remain navigable at all times. Accordingly, marine traffic shall not be interrupted by this project. The Contractor will be responsible for maintaining a navigable channel through the project area at all

times. If the Contractor desires to restrict channel temporarily, the Commissioner shall be notified and appropriate filings and requests shall be applied for with the U.S. Coast Guard. Temporary channel restrictions may be allowed by the U.S. Coast Guard and Commissioner. This work is included in this Contract and shall be considered incidental to BRIDGE OPERATION AND MAINTENANCE.

### **Record Existing Conditions**

The Contractor shall document all existing conditions with photos or video prior to starting construction and provide a copy of this documentation to the Commissioner prior to starting construction. Existing damaged areas shall be documented in writing. This work is included in this Contract and shall be considered included in the cost of MOBILIZATION.

### **Construction Layout**

Construction layout shall be in accordance with the IDOT Recurring Special Provision Check Sheet "Construction Layout Stakes", except that, in accordance with the provisions of Book 1, XVI.E.10, any costs associated in complying "Construction Layout Stakes" shall be considered as included in the contract unit prices bid for the various items of work involved and no additional compensation will be allowed.

### **Construction Schedule and Sequence**

Work shall be completed in accordance with the Book 2 PROPOSAL Pages and Maintenance of Traffic Plan Drawings or Special Provisions. It is understood that "completion" shall mean completion to the point of acceptance by the Commissioner, i.e. substantial completion/beneficial occupancy.

### **Submittals**

The Contractor shall submit Shop Drawings, Product Data, and Samples in accordance with Section V of Book 1.

The Contractor shall submit a Schedule of Submittals along with the Construction and Progress Schedule (Time Schedule) specified in Section V of Book 1. The Contractor shall directly correlate the submittals schedule to the Construction Progress Schedule. The Contractor shall routinely update each schedule as specified. Failure to submit a Schedule of Submittals prior to the start of Work and as specified will subject the Contractor to liquidated damages in accordance with the Book 2 PROPOSAL pages.

At the preconstruction meeting, the Contractor shall submit a written listing of manufacturers for all major material and equipment items applicable to the project.

The List of Manufacturers will be binding except by written request for change by the Contractor and approval by the Commissioner. Any request for change shall include acceptable reasons for allowing the change with documentation.

Where certifications are specified, the information submitted for approval shall incorporate certification information. Certifications involving inspection and/or test of material/equipment shall be complete with all test data, dates, and times.

Shop Drawings for long lead items shall be submitted within 3 weeks of Notice-to-Proceed. No additional compensation will be paid for delay in obtaining these items. The Contractor's invoices will not be paid until the Schedule of Submittals has been approved by the Commissioner.

**Winter Work**

It is expected work will take place during winter. No adjustment will be made in the contract unit prices for any concrete if winter work is necessary to meet the schedule requirements specified in the contract. All concrete work shall be protected according to the specifications contained or referenced herein at no additional cost to the contract.

## PERMITS

The Contractor shall be responsible for obtaining all construction permits that may be necessary for access to the job site, for storage of materials and equipment and for construction operation. The cost of complying with the requirements of this section shall be considered included in the cost of MOBILIZATION.

In accordance with Section IX of Book 1 and Article 107.04 – Permits and Licenses, of the Standard Specifications for Road and Bridge Construction dated April 1, 2016, the Contractor shall procure all permits and licenses, pay all charges and fees, and give all notices necessary and incidental to the due and lawful prosecution of the work. These permits may include but are not limited to the Chicago Department of Transportation’s Public Right of Way Permits, Office of Underground Coordination (OUC), U.S. Coast Guard, adjacent property owners, and others.

CDOT’s Public Right of Way Permit Office is responsible for issuing permits for the use or work in the public way.

The CDOT Office of Underground Coordination (OUC) is responsible for all requests regarding existing utility information and the review/approval of construction work in or adjacent to the Public Way. This also includes large projects with deep excavations and penetrations, such as foundations (piles, caisson, etc.), earth retention systems or major piping installations. The work in this contract shall follow the Office of Underground Coordination (OUC) submittal guidelines and procedures outlined in Section 3.3 of the Chicago Department of Transportation (CDOT) “Rules and Regulation for Construction in the Public Way” manual in effect on the date of invitation of bids.

The North Cook County Soil and Water Conservation District (SWCD) is responsible for reviewing the soil erosion and sediment control (SESC) plan. The Contractor shall submit for review and approval an SESC plan to the SWCD. Strict adherence to best management practices for soil erosion and sediment control shall be used by the Contractor to minimize the possibility of any adverse impact to the Chicago River and the vicinity listed species, which include but is not limited to the Banded Killifish. The Contractor is responsible for determining which best management practices will be utilized during construction for soil erosion and sediment control. Best management practices shall be listed in the SESC plan. Additional information on best management practices can be found on the Chapter 41 of the IDOT Bureau of Design and Environment Manual and the Illinois Urban Manual. Work may not start until the SESC plan is approved. Additional information and guidance on submitting the SESC plan can be obtained at the SWCD website: <http://www.northcookswcd.org/sesc.htm>.

The Contractor may not start work on any element of work requiring a City of Chicago or any other permit until such permit has been received. A U.S. Coast Guard permit is not required but Contractor shall provide notification to the U.S. Coast Guard prior to initiating mobilization/construction activities. As built plans shall also be submitted to the Ninth Coast Guard District office at the conclusion of the project.

All costs related to the permit requirements will be included in the cost of MOBILIZATION and no request for additional time will be considered for failure to allow adequate time to receive the required permits.



### ADJACENT CONTRACTS AND PROPERTY OWNER COORDINATION

**Description.** The Contractor shall coordinate construction staging and traffic control operations with adjoining, adjacent or overlapping construction contracts, including barricade placement necessary to provide a uniform traffic detour pattern prior to and throughout the duration of the project. This includes, but is not limited to, the following along with any other construction contract that may impact the staging operations of this contract:

The Contractor shall coordinate the maintenance of traffic with lane closures of concurrent projects. This effort is to help provide the most safe and effective staging environment throughout the project and at locations where adjacent projects impact the limits of staging.

**General Requirements.** The Contractor is responsible for coordinating the Work with the owners and their tenants when private property areas are to be reconstructed and/or otherwise disturbed due to construction activities. The Contractor shall maintain access at all times. The Contractor shall submit procedures and protection plans to the Commissioner prior to any work. The Contractor shall define the limits of any proposed disturbance and the location of improvements at each individual location in consultation with the building owners/occupants prior to demolition and construction. The Contractor shall provide flaggers as directed by the Commissioner to ensure uninterrupted access is maintained during construction activities.

Other separate contracts are, or may be, in force that intersects the limits of this project. The Contractor shall cooperate with the other Contractors in the staging and performance of this work so as not to delay, interrupt, or hinder the progress or completion of the work being performed by other Contractors. The Contractor will be required to provide and maintain access to all private and commercial property within the work areas during the construction period, which may include the installation and removal of temporary aggregate in the work zone to allow trucks to turn into or out of private property. No additional payment will be made for the temporary aggregate. The cost shall be included with TRAFFIC CONTROL AND PROTECTION.

**Basis of Payment.** Adjacent Contract and Property Owner Coordination shall be included in the cost of TRAFFIC CONTROL AND PROTECTION which includes any adjustments to traffic control devices, maintenance of access to abutting property and/or staging needed to accommodate adjacent construction contract staging operations.

## TRAFFIC CONTROL PLAN

Traffic Control will be according to the applicable sections of the Standard Specifications for Road and Bridge Construction, the guidelines contained in the Illinois Manual on Uniform Traffic Control Devices for Streets and Highways, the Supplemental Specifications and the Recurring Special Provisions, the Specifications and any special details and highway standards contained herein and in the Plans.

Special attention is called to Articles 107.09 and 107.14 and Section 701 of the Standard Specifications for Road and Bridge Construction and the following traffic control related to payment of temporary aggregate not being an extra as noted on Article 107.09, (1) Highway Standards; (2) Supplemental Specifications and Recurring Special Provisions; and (3) Other Specifications contained herein except where provisions in this specification conflict at which time the provisions detailed in this document supersede:

1. Standards:

HIGHWAY STANDARDS: 701101-05, 701601-09, 701701-10, 701801-06, 701901-07 and 704001-08.

DETAILS: Maintenance of Traffic – General Notes, Narrative, Plans, and District One Standards, TC-10, TC-21, TC-22.

2. Special Provisions:

PUBLIC CONVENIENCE AND SAFETY (D1)

MAINTENANCE OF ROADWAYS (D1)

PAVEMENT MARKING REMOVAL (BDE)

TEMPORARY PAVEMENT MARKING (BDE)

TEMPORARY INFORMATION SIGNING (D1)

3. Traffic:

Traffic to be maintained in Ashland Avenue. One off peak lane closure is allowed in Ashland during non-peak hours.

4. Detours:

Detours are specified for Webster Avenue. The proposed detour shall be implemented as detailed in the Plans and included in the contract unit price for TRAFFIC CONTROL AND PROTECTION.

### STAGING RESTRICTIONS

Lane closures and barricade systems, including barricades, drums, cones, lights, signs, flaggers etc. shall be provided in accordance with details in the Plans and these Special Provisions and as approved by the Commissioner. The cost of this work will not be paid for separately but shall be considered included in the contract lump sum price for TRAFFIC CONTROL AND PROTECTION.

### **LANE CLOSURES/RESTRICTIONS**

All lane closure requests along Ashland Avenue shall be coordinated with nearby stakeholders and permitted by the Public Right of Way Permit Office.

Single lane closures are allowed between  
Weekdays: 9:30 am - 3:30 pm and 7:00 pm – 5:00 am.

### **Non-Permitted Weekdays and Weekends**

Special closures along Ashland Avenue will not be allowed during the holiday periods stated in Article 107.09 and amended by PUBLIC CONVENIENCE AND SAFETY (D-1) and the weekdays and weekends containing the events or holidays listed under Special Requirements.

The Contractor shall submit to the Commissioner four (4) weeks ahead of time, in writing, a traffic control plan and starting date for each lane closures along Northbound and Southbound Ashland Avenue. Approval from the Commissioner is required prior to closing the lanes. Should the Contractor fail to complete the work and reopen the ramp or mainline lanes to traffic within the allowable time limit, the Contractor shall be liable for liquidated damages as noted under FAILURE TO OPEN TRAFFIC LANES TO TRAFFIC.

### **Special Event Coordination and Staging**

The Contractor will coordinate the proposed construction staging and sequence of construction operations with the Commissioner to present an effective and timely schedule for successful completion of the project while maintaining access and minimizing disruptions to the daily operations and special event schedules of the adjacent developments.

Coordination efforts with adjacent developments, providing the required traffic control to maintain access to the adjacent developments, pedestrian protection and special event staging shall be included in the contract lump sum price for TRAFFIC CONTROL AND PROTECTION.

### COOPERATION WITH UTILITIES AND OTHERS

The Contractor is responsible for verifying the nature and status of all utility relocation work prior to preparation of the Detailed Progress Schedule. The Contractor will take appropriate measures to ensure that construction operations do not interfere with utility facilities and relocation work. The Detailed Progress Schedule will reflect construction sequencing which coordinates with all utility relocation work. The Contractor will be required to adjust the order of work from time to time, to coordinate with utility relocation work, and will prepare revised Progress Schedule(s) in compliance therewith as directed by the Commissioner. The Commissioner will be notified in writing by the Contractor at least 48 hours prior to the start of any operation requiring cooperation with others. All other agencies, unless otherwise noted, will be notified in writing by the Contractor ten (10) days prior to the start of any such operation.

Where the Contractor is constructing new facilities for a utility, the utility will be notified at least five (5) days prior to the start of this work. All known data from these agencies has been incorporated into the Plans. It is, however, the Contractor's responsibility to confirm or establish the existence of all utility facilities and their exact locations, whether contained in the data submitted by these agencies or not, and to safely schedule all utility relocations.

<b>ITEM 1</b>	<b>66900200</b>	<b>NON-SPECIAL WASTE DISPOSAL</b>
<b>ITEM 2</b>	<b>66900530</b>	<b>SOIL DISPOSAL ANALYSIS</b>
<b>ITEM 3</b>	<b>66901001</b>	<b>REGULATED SUBSTANCES PRE-CONSTRUCTION PLAN</b>
<b>ITEM 4</b>	<b>66901002</b>	<b>ON-SITE MONITORING OF REGULATED SUBSTANCES</b>
<b>ITEM 5</b>	<b>66901003</b>	<b>REGULATED SUBSTANCES FINAL CONSTRUCTION REPORT</b>

**General.** Work under this item(s) shall be in accordance with Section 669 of the Standard Specifications, IDOT BDE Special Provisions (see Appendix E), and as amended below.

Qualifications. The term environmental firm shall mean an environmental firm with at least five (5) documented leaking underground storage tank (LUST) cleanups or that is pre-qualified in hazardous waste by the Department. Documentation includes but not limited to verifying remediation and special waste operations for sites contaminated with gasoline, diesel, or waste oil in accordance with all Federal, State, or local regulatory requirements and shall be provided to the Commissioner for approval. The environmental firm selected shall not be a former or current consultant or have any ties with any of the properties contained within and/or adjacent to this construction project.

General. This Special Provision will likely require the Contractor to subcontract for the execution of certain activities.

All contaminated materials shall be managed as either “uncontaminated soil” or special waste. This work shall include monitoring and potential sampling, analytical testing, and management of a material contaminated by regulated substances. The Environmental Firm shall continuously monitor all soil excavation for worker protection and soil contamination. Phase I Preliminary Engineering information is available through the City of Chicago Department of Transportation. Soil samples or analysis without the approval of the Commissioner will be at no additional cost to the Department. The lateral distance is measured from centerline and the farthest distance is the offset distance or construction limit whichever is less.

The Contractor shall manage any excavated soils and sediment within the following areas:

- Station 13+15 to Station 13+50 33 feet LT to 33 feet RT. This material meets the criteria of Article 669.05(a)(5) and shall be managed in accordance to Article 669.05. Contaminants of concern sampling parameters: Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Dibenz(a,h)anthracene, Indeno(1,2,3-c,d)pyrene, Arsenic, Chromium, Lead, and Mercury.

**Method of Measurement.** Removal and Disposal of Regulated Substances shall be measured for payment in accordance with Section 669 of the Standard Specifications.

**Basis of Payment.** Removal and Disposal of Regulated Substances will be paid for at the contract unit price per cubic yard for NON-SPECIAL WASTE DISPOSAL, per each SOIL DISPOSAL ANALYSIS, per lump sum REGULATED SUBSTANCES PRE-CONSTRUCTION PLAN, per calendar day ON-SITE MONITORING OF REGULATED SUBSTANCES, and per lump sum REGULATED SUBSTANCES FINAL CONSTRUCTION REPORT, which price shall include the tasks and requirements as outlined in Article 669.11 of the Standard Specifications.

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**ITEM 7      CDOT6700010    ENGINEER'S FIELD OFFICE**

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Effective: August 1, 2008

Revised: July 22, 2015

**Description.** Work under this item shall consist of supplying engineer's field offices. Work under this item shall be performed according to Section 670 of the IDOT Standard Specifications for Road and Bridge Construction, except as herein modified.

**General Requirements.** Field offices shall comply with the requirements for Engineer's Field Office, except as herein modified.

Field offices shall have a ceiling height of not less than seven (7) ft. and a floor space of not less than 800 sq. ft.

Adequate all-weather parking space shall be available to accommodate a minimum of 10 vehicles.

Solid waste disposal consisting of two waste basket(s) and an outside trash container of sufficient size to accommodate a weekly pick-up service shall be provided by the Contractor.

In addition, the following equipment and furniture meeting the approval of the Commissioner shall be furnished:

- (a) Five desk(s) with minimum working surface 42"x30" each and five non-folding office chairs with upholstered seats and backs and with wheels.
- (b) One four-drawer legal size file cabinets.
- (c) Eight folding chairs and one 36"x96" folding table.
- (d) One office style frostless refrigerator with a minimum size of eight cubic feet with a separate freezer unit.
- (e) One microwave oven with a minimum capacity of one cubic feet.
- (f) One electric desk type tape printing calculators.
- (g) One telephone(s) with multiline capability touch tone and voice mail (for exclusive use by the Commissioner). One phone line(s), one for voice, one (1) for fax, and *one for security*. One high speed broadband internet connection with unlimited access and wireless networking capabilities for multiple users (for exclusive use of the Commissioner).
- (h) One desktop color laser multifunction fax-printer-scanner-copier with network connectivity, including maintenance, paper supply and toner. The machine shall have a minimum of 600 dpi resolution, and shall be capable of reproducing, sorting and stapling prints up to size 11"x17".
- (i) The computer equipment shall fulfill the following minimum requirements, in conformance with the latest technology in use in the City of Chicago: The computers shall have proper connection to the City of Chicago database.
- (j) One case of approximately twelve cans of aerosol marking paint, of the color chosen by the Commissioner.
- (k) Accessible potable water.

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**Basis of Payment.** The building or buildings fully equipped will be paid for at the contract unit price per calendar month or fraction thereof for ENGINEER'S FIELD OFFICE, according to Article 670.07 of the IDOT Standard Specifications for Road and Bridge Construction.

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<b>ITEM 8</b>	<b>Z0076600</b>	<b>TRAINEES</b>
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**Description.** Work under this item shall be performed according to the Bureau of Design and Environment Special Provision 20338 (Training Special Provisions) included in appendices of this book.

**Method of Measurement.** The unit of measurement is the actual hours worked by the TRAINEES. For every 500 hours indicated, the Contractor will supply a minimum of one (1) trainee.

**Basis of Payment.** This work will be paid for at the Contract Unit Price of 80 cents per hour for TRAINEES. The estimated total number of hours, unit price and total price has been included in the Schedule of Prices. For the purposes of bidding, the Contractor shall include an allowance of \$800.00 for this pay item.



<b>ITEM 9</b>	<b>*****</b>	<b>FURNISH AND INSTALL PROJECT SIGN, TYPE A</b>
<b>ITEM 10</b>	<b>*****</b>	<b>FURNISH AND INSTALL PROJECT SIGN, TYPE B</b>
<b>ITEM 11</b>	<b>*****</b>	<b>FURNISH AND INSTALL PROJECT SIGN, BANNER</b>

**Description.** Work under this item shall consist of furnishing and installing signs at the project site. Work under this item shall be according to Section 720 of the IDOT Standard Specifications for Road and Bridge Construction, except as herein modified. Work also includes removal of signs as directed by the Commissioner.

**General Requirements.** The sign size, composition and wording for the “Building A New Chicago” (BANC) signs shall be as shown in the following image and as specified by the Commissioner.



**SITE SIGN SPECIFICATIONS**

- Size:** Sign A: 4' x 8' x 1-7/8"  
Sign B: 4' x 4' x 3/4"
- Materials:** Face: Sign A – 1/4" tempered Masonite  
Sign B – 3/4" or greater shop sanded (exterior) plywood (one side only)
- Framing:** Sign A: 2" x 4" nominal on four sides and center cross bracing  
Sign B: 2" x 4" center cross bracing only
- Supports:** 4" x 4" 12' nominal post
- Assembly:** Sign A: 2" x 4" frame to fit 4' x 8' board with 2" x 4" cross braces  
Sign B: To be mounted directly to the 4" x 4" post, with cross bracing
- Mounting:** Signs A and B are to be mounted to the 4" x 4" post with 3/8" minimum bolt and nut, four on each side of the sign. Each bolt is to have two washers, one between the sign and the head of the bolt and the other between the post and the nut.
- Erection:** 4" x 4" posts are to be set three to four feet deep into concrete 12" in diameter.
- Colors:** Background – White  
Striping – Black or Blue (As Noted)  
Lettering – Red (stars), White or Blue

A minimum of one sign (either Type A or B) at each end of the construction zone shall be provided. BANC Banners: Provide 3' x 33' banners depicting the BANC imagery. The sign material shall be a flexible windscreen type material.

The signs shall be mounted as directed by the Commissioner. The bottom of the sign shall be seven (7) feet above the sidewalk.

The signs shall be erected prior to the beginning of construction and shall be removed within forty-eight (48) hours of notice by the Commissioner.

**Method of Measurement.** Work under this item will be measured for payment per each sign.

**Basis of Payment.** Work under this item will be paid at the contract unit price per each for FURNISH AND INSTALL PROJECT SIGN, TYPE A, FURNISH AND INSTALL PROJECT SIGN, TYPE B, or FURNISH AND INSTALL PROJECT SIGN, BANNER.

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**ITEM 12**

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**ASBESTOS ABATEMENT**

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**Description.** This work consists of providing all labor, materials and equipment to perform abatement of all asbestos materials in the Northwest and Southeast Bridge Houses. This work shall include inspection, identification of materials to be removed, containment, removal and disposal of all materials as designated on the drawings and in these specifications. All work shall be performed in accordance with the current OSHA, EPA, State of Illinois Department of Public Health (IDPH) and the City of Chicago regulations, procedures and certifications.

A limited survey report was previously prepared which outlined Asbestos Containing Materials (ACM) test results for several locations outside and within the bridge houses and on the bridge steel members. The results indicated the presence of asbestos in the interior of the Bridge Houses. The Contractor is alerted that only accessible areas at the time of survey were tested for ACM. A copy of the survey report is attached to these specifications in Appendix A which provides additional information concerning the ACM survey. The Contractor shall be responsible for the identification of the hazardous materials in the bridge houses, electrical, and mechanical rooms, and shall view the survey reports as preliminary reports that were limited in scope of survey to identify suspect ACM that could potentially be disturbed by construction activities.

**Execution.** To determine the extent of asbestos abatement, the Contractor shall be responsible to obtain bids from at least two testing agencies and submit the proposals to the Commissioner for approval prior to the start of the testing work. The proposed areas to be tested shall include all rooms of the Northwest and Southeast Bridge Houses and adjacent areas that include work as shown in the Drawings.

Upon approval of the Commissioner, the Contractor shall procure the services of the testing agency. Once the level of asbestos abatement has been identified, the Contractor shall obtain bids from at least three asbestos abatement contractors and submit the proposals to the Commissioner for approval prior to the start of the abatement work.

Upon approval of the Commissioner, the Contractor shall procure the services of an asbestos abatement contractor and commence with the appropriate abatement operations.

Work performed under this pay item shall be performed according to the following architectural detailed specifications; Section 028213 – ASBESTOS ABATEMENT.

**Submittals.** The Contractor shall submit a testing report, a containment plan, and a removal and disposal plan to the Commissioner for review that identifies the extents and limits of the abatement, and abatement plan, and proposed disposal sites of the hazardous materials.

**Method of Measurement.** Work under this item will not be measured for payment.

**Method of Payment.** This work under this section will be paid for at the actual costs incurred by the Contractor for ASBESTOS ABATEMENT. For the purposes of bidding, the Contractor shall include an allowance of \$35,000.00 for this pay item.

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**ITEM 13**

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**LEAD-BASED PAINT ABATEMENT**

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**Description.** This work consists of providing all labor, materials and equipment to perform testing and abatement of all lead-based paint materials in the Northwest and Southeast Bridge Houses. The components of the bridge house that are part of this work shall include, but not be limited to; steel stair and roof framing, steel jambs, steel and/or iron security doors, interior and exterior doors, window components, steel and/or wooden railings, painted ceilings, walls and floors, and all other miscellaneous items, such as electrical conduit, switch boxes, or other electrical and mechanical components that are identified as having lead-based paint in the bridge houses, electrical rooms, and mechanical rooms.

This work shall include inspection, identification of materials to be removed, containment, removal, and disposal of all materials as designated on the drawings and in these specifications. All work shall be performed in accordance with the current OSHA, EPA, State of Illinois Department of Public Health (IDPH) and the City of Chicago regulations, procedures and certifications.

A limited survey report was previously prepared which outlined Lead-Based Paint (LBP) test results for several locations outside and within the bridge houses and on the bridge steel members. The results indicated the presence of lead-based paint in mechanical and electrical equipment, doors, windows, walls, columns, and stringers. The Contractor is alerted that only accessible areas at the time of survey were tested for LBP. A copy of the survey report is attached to these specifications in Appendix A which provides additional information concerning the LBP survey. The Contractor shall be responsible for the identification of the hazardous materials in the bridge houses, electrical, and mechanical rooms, and shall view the survey reports as preliminary reports that were limited in scope of survey to identify suspect LBP that could potentially be disturbed by construction activities.

**Execution.** To determine the extent of lead-based paint abatement, the Contractor shall be responsible to obtain bids from at least two testing agencies and submit the proposals to the Commissioner for approval prior to the start of the testing work. The proposed areas to be tested shall include all rooms of the Northwest and Southeast Bridge Houses and adjacent areas that include work as shown in the Drawings. All elements of the Bridge Houses that have been previously painted shall be subject to tests.

Upon approval of the Commissioner, the Contractor shall procure the services of the testing agency. Once the level of lead-based paint abatement has been identified, the Contractor shall obtain bids from at least three lead-based abatement contractors and submit the proposals to the Commissioner for approval prior to the start of the abatement work.

Upon approval of the Commissioner, the Contractor shall procure the services of a lead-based paint abatement contractor and commence with the appropriate abatement operations.

Work performed under this pay item shall also be performed according to the following architectural detailed specification; Section 028319 – LEAD-BASED PAINT ABATEMENT.

**Submittals.** The Contractor shall submit a testing report, a containment plan, and a removal and disposal plan to the Commissioner for review that identifies the extents and limits of the abatement, and abatement plan, and proposed disposal sites of the hazardous materials.

**Method of Measurement.** Work under this item will not be measured for payment.

WEBSTER AVENUE BRIDGE OVER THE NORTH BRANCH OF THE CHICAGO RIVER  
CDOT PROJECT NO.: E-1-525

**Method of Payment.** This work under this section will be paid for at the actual costs incurred by the Contractor for LEAD-BASED PAINT ABATEMENT. For the purposes of bidding, the Contractor shall include an allowance of \$150,000.00 for this pay item.

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**ITEM 14**

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**HAZARDOUS MATERIALS ABATEMENT**

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**Description.** This work consists of providing all labor, materials and equipment to perform testing and abatement of all hazardous materials at all levels in the Northwest and Southeast Bridge Houses, other than lead-based paint and asbestos. This work shall include inspection, identification of materials to be removed, containment, removal and disposal of all materials as designated on the drawings and in these specifications. All work shall be performed in accordance with the current OSHA, EPA, State of Illinois Department of Public Health (IDPH) and the City of Chicago regulations, procedures and certifications.

**Execution.** To determine the extent of hazardous material abatement, the Contractor shall be responsible to obtain bids from at least two testing agencies and submit the proposals to the Commissioner for approval prior to the start of the testing work. The proposed areas to be tested shall include all rooms of the Northwest and Southeast Bridge Houses and adjacent areas that include work as shown in the Drawings. Specifically excluded from the work are hazardous materials in rooms adjacent to the Bridge House towers, including the mechanical rooms, equipment rooms, bridge pits, and other supporting areas that are not specifically part of the bridge house towers as indicated in the Plans.

Upon approval of the Commissioner, the Contractor shall procure the services of the testing agency. Once the level of hazardous material abatement has been identified, the Contractor shall obtain bids from at least three hazardous material abatement contractors and submit the proposals to the Commissioner for approval prior to the start of the abatement work.

Upon approval of the Commissioner, the Contractor shall procure the services of a hazardous material abatement contractor and commence with the appropriate abatement operations.

Work performed under this pay item shall be performed according to the following architectural detailed specification; Section 028416 – HAZARDOUS MATERIALS ABATEMENT.

**Submittals.** The Contractor shall submit a testing report, a containment plan, and a removal and disposal plan to the Commissioner for review that identifies the extents and limits of the abatement, and abatement plan, and proposed disposal sites of the hazardous materials.

**Method of Measurement.** Work under this item will not be measured for payment.

**Method of Payment.** This work under this section will be paid for at the actual costs incurred by the Contractor for HAZARDOUS MATERIALS ABATEMENT. For the purposes of bidding, the Contractor shall include an allowance of \$30,000.00 for this pay item.

<b>ITEM 39</b>	<b>CDOT4240010</b>	<b>PORTLAND CEMENT CONCRETE SIDEWALK 5 INCH</b>
<b>ITEM 40</b>	<b>CDOT4240020</b>	<b>PORTLAND CEMENT CONCRETE SIDEWALK 8 INCH</b>

Effective: December 1, 2008  
Revised: July 1, 2010

**Description.** Work under this item shall be performed according to Section 424 of the IDOT Standard Specifications for Road and Bridge Construction, except as herein modified.

**Construction Requirements.** This work shall be constructed according to current City of Chicago Department of Transportation ADA Standards. Construction of ADA ramps will be paid for separately.

**Basis of Payment.** This work will be paid for at the contract unit price per square foot for PORTLAND CEMENT CONCRETE SIDEWALK 5 INCH and PORTLAND CEMENT CONCRETE SIDEWALK 8 INCH.

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**ITEM 41    CDOT4240040 PORTLAND CEMENT CONCRETE ADA RAMP 8 INCH**

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Effective:     December 1, 2008  
Revised:       July 1, 2010

**Description.** Work under this item shall be performed according to Section 424 of the IDOT Standard Specifications for Road and Bridge Construction, except as herein modified.

**Construction Requirements.** This work shall be constructed according to current City of Chicago Department of Transportation ADA standards.

**Method of Measurement.** This work will be measured for payment in place in square feet. It will include the side curbs, side flares, level landing area, ramps and the sidewalk constructed between adjacent ramps within the corner radius.

**Basis of Payment.** This work will be paid for at the contract unit price per square foot for PORTLAND CEMENT CONCRETE ADA RAMP 8 INCH. Detectable warning tiles required for this work will be paid for separately.



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**ITEM 42    CDOT4240065    RADIAL DETECTABLE WARNING TILES (CAST IRON)**

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Effective:                      May 21, 2012

**Description.** Work under this item shall consist of installing cast iron detectable warning tiles on ADA curb ramps as shown on the plans and according to the latest Chicago Department of Transportation ADA Standards. Work shall be performed according to Section 424 of the IDOT Standard Specifications for Road and Bridge Construction, except as herein modified.

**Materials.** Detectable warning tiles shall be cast gray iron and shall be provided by a Manufacturer approved by the City of Chicago Department of Transportation. A list of approved Manufacturers of cast iron detectable warning tiles is available on the City of Chicago Department of Transportation website under Construction Guidelines/Standards.

The cast iron detectable warning tiles shall be of uniform quality, free from surface defects and shall be provided with an untreated, natural surface finish as directed by the Commissioner.

**Construction Requirements.** The detectable warning system shall be installed in fresh concrete and shall comply with the City of Chicago Department of Transportation Regulations for Openings, Construction and Repair in the Public Way, Appendix B, ADA Standards. The equipment and installation procedures shall be according to the Manufacturer's specifications.

The contractor shall install the detectable warning system flush with adjacent concrete, and resulting in a snug fit between tiles to limit water infiltration around the perimeter of the system and between tiles, as directed by the Commissioner.

**QC/QA Requirements.** A Manufacturer's written certification that the material complies with these specifications shall be provided to the Commissioner.

**Method of Measurement.** This work will be measured for payment in place in square feet.

**Basis of Payment.** This work will be paid for at the contract unit price per square foot for RADIAL DETECTABLE WARNING TILES (CAST IRON).

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**ITEM 43    CDOT6020010    CATCH BASINS, TYPE A, 4 FT DIAMETER, TYPE 1 FRAME,  
OPEN LID (CITY OF CHICAGO)**

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Effective: July 15, 2009

**Description.** Work under this item shall be performed according to Section 602 of the IDOT Standard Specifications for Road and Bridge Construction and the City of Chicago Department of Water Management Standard Specifications for Water and Sewer Main Construction, except as herein modified.

**Basis of Payment.** This work will be paid at the contract unit per each for CATCH BASINS, TYPE A, 4 FT DIAMETER, TYPE 1 FRAME, OPEN LID (CITY OF CHICAGO).

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**ITEM 44    CDOT6050020    REMOVING CATCH BASINS**

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Effective:     May 15, 2009  
Revised:      August 8, 2016

**Description.** Work under this item shall be performed according to Section 605 of the IDOT Standard Specifications for Road and Bridge Construction, except as herein modified.

**General Requirements.** The Contractor shall deliver all old frames to the City at a facility designated by the Commissioner. A signed and dated receipt for the delivery of the old frames shall be given to the Commissioner.

**Method of Measurement.** All work associated with the salvage of the frames and lids shall be incidental to this item.

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**ITEM 45    CDOT6060020    COMBINATION CURB AND GUTTER, TYPE B-V.12**

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Effective: December 1, 2008

**Description.** Work under this item shall be performed according to Section 606 of the IDOT Standard Specifications for Road and Bridge Construction, and to the City of Chicago Department of Transportation Regulations for Openings, Construction and Repair in the Public Way.

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**ITEM 46    X0326243    SEDIMENT CONTROL, SILT CURTAIN**

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**Description.** This work shall consist of furnishing, installing, maintaining, and removal of a flotation silt curtain assembly, designed to collect sediment/debris from in-river work areas at locations determined by the Contractor based on anticipated construction operations and as directed by the Commissioner, and to preserve the water quality of the river and protect the vicinity listed species, which include but are not limited to the Banded Killifish.

**Equipment.** The silt curtain should be of appropriate size to perform the required function of isolating the work area from the rest of the river, with length of the curtain extending at least 1 ft. greater than the elevation of water at all locations. The silt curtain assembly shall consist of the silt barrier with flotation segments and weighing devices and all required anchorage devices. The curtain shall be in good working condition and shall meet the approval of the Commissioner. A typical detail drawing is included in the Plans depicting a typical curtain assembly.

The silt curtain shall meet the specifications of the silt curtain manufacturer and the following physical and performance properties:

	<u>Testing Method</u>	<u>Requirement</u>
Grab tensile warp strength	ASTM D-4632	≥240 lbs.
Elongation @ Break	ASTM D-4632	≥60%
Trapezoidal Tear	ASTM D-4533	≥90 lbs.
Puncture Strength	ASTM D-4833	≥65 lbs.
UV Stability @ 500 hrs	ASTM D-4355	≥70%
Permittivity	ASTM D-4491	≥0.1 sec <sup>-1</sup>
Water Flow Rate	ASTM D-4491	≥11 gpm/ft <sup>2</sup>
AOS (US sieve #)	ASTM D-4751	≥140 sieve
Material construction		Nonwoven

All values are minimum average roll values.

**Installation.** The silt curtains shall be installed according to the manufacturer specifications, and in a manner approved by the Commissioner prior to the start of construction within the body of water. Additional anchorage may be required based on the river characteristics and manufactures specifications. Additional anchorage may consist of steel or timber driven piles to insure proper installation & anchoring.

**Requirements.** The Contractor shall inspect the work site to review the river characteristics where the work is to occur.

The silt curtain assembly shall be installed in the river in a configuration that prevents silt from traveling beyond the work area, but does not cause flooding upstream of the work area. The silt curtain shall be installed in a manner sufficient to withstand ten-year flood water level frequency. The silt curtain shall not be installed across the entire width of the river.

A maximum of 1/3 of the width of the river may be isolated at any one time. The width of river shall be defined as the linear measurement of the river width at normal-level flow as shown on

the Plans or from bank to bank. Silt curtains shall not be installed at an angle greater than 45° from parallel with the direction of flow.

Routine maintenance includes continually maintaining a properly working silt curtain. Also included is the regular removal and disposal of excess sediment in contact with either side of the curtain, as directed by the Commissioner.

Excess sediment shall be removed between 48 and 72 hours prior to the removal of the silt curtain. Excess sediment is a sediment depth of four inches or greater. The Contractor shall remove the silt curtain in a manner that will prevent turbidity within the waterway.

Pumping of water contained within the silt curtain or any other structure shall be done in a manner approved by the Commissioner. Direct pumping of water back into the stream shall not be permitted. All water pumping operations/procedures shall be approved by the Commissioner.

The silt curtain assembly shall remain in place until the Commissioner directs the Contractor for removal. The silt curtain assembly shall remain the property of the Contractor.

**Method of Measurement.** The item of work will be measured on lump sum basis for furnishing, installing, maintaining, replacing, relocating, and removing the perimeter erosion barriers and floatation silt curtain assembly(ies) and as required based on river characteristics and manufactures specifications and all other related appurtenances. Only properly working silt curtains will be measured for payment.

**Basis of Payment.** This work will be paid for as a lump sum price for SEDIMENT CONTROL, SILT CURTAIN. This price shall be payment in full for all labor, materials, transportation, handling, and related work necessary to furnish, install, maintain, replace, relocate, and remove the floatation silt curtain assembly(ies) as required to complete all the contractual work.

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**ITEM 48**

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**REMOVE, STORE AND RE-ERECT SIGN PANEL**

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**Description:** This work shall consist of removing and salvaging of the existing sign panels, posts, metal bases and sign brackets as shown in the Plans or otherwise directed by the Commissioner. After removal, the contractor shall safely store the sign panels, posts, metal base and brackets for reinstallation.

**Construction Requirements:** This work shall be done in accordance with the applicable portions of Sections 723 and 724 of the Standard Specifications. No removal work shall be completed without the approval of the Commissioner. The existing sign panels, posts metal bases, and brackets shall be removed, protected and stored for reinstallation. Any sign panel, post or sign base that is damaged during removal and storage shall be repaired or replaced by the Contractor at his expense, as directed by the Commissioner.

**Method of Measurement:** The existing sign panels to be removed, stored and re-erected will be measured for payment per each sign panel, removed, stored and reinstalled.

**Basis of Payment:** This work will be paid for at the contract unit price per each for REMOVE, STORE AND RE-ERECT SIGN PANEL, which price shall include all equipment, labor, and materials necessary to remove, store and reinstall the sign panels and their posts, metal base and metal brackets.

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**ITEM 49      \*\*\*\*\*      SIDEWALK REMOVAL (SPECIAL)**

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**Description:** This work shall consist of the removal and disposal of the existing sidewalk including the steel plate attached to the sidewalk face.

**Method of Measurement:** This work will be measured for payment in square feet

**Basis of Payment:** This work will be paid for at the contract unit price per foot for SIDEWLAK REMOVAL SPECIAL. The unit price shall include all equipment, materials and labor required to remove and dispose of the curb and steel plate.



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**ITEM 50**      \*\*\*\*\*      **STORM SEWERS, TYPE 2, 8-INCH (EXTRA STRENGTH  
VITRIFIED CLAY PIPE)**

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**Description.** Work under these items shall be performed according to Section 550 of the IDOT Standard Specifications for Road and Bridge Construction, the current City of Chicago Department of Water Management Standard Specifications for Water and Sewer Main Construction and the Detail Construction Standards, except as herein modified.

**General Requirements.** Construct all Storm Sewers, Type 2, smaller than 21-inch of vitrified clay socket pipe conforming with the specifications for Extra Strength Clay Pipe, ASTM Designation C 700, unless otherwise noted on the plans or directed by the Commissioner.

Where less than three feet of cover exists, use ductile iron pipe, Class 52, at no increase in cost unless a separate item is provided for ductile iron pipe of the diameter required.

All joints for vitrified clay pipe shall conform to ASTM Designation C425 for Compression Joints for Vitrified Clay Bell and Spigot Pipe.

Place all pipe on a foundation of bedding material consisting of well compacted, moist fine aggregate of at least four inches in depth below the pipe and so placed that at least the lower half of the pipe will be uniformly supported for its entire length. The cost of furnishing, placing and compacting bedding material will be considered as incidental work, and no additional compensation will be allowed.

After installing the sewer pipe, trenches shall be backfilled in accordance with Article 550.07 of the Standard Specifications. The method chosen will be subject to the approval of the Commissioner. Backfill material shall be sand or washed limestone conforming to Section 1003 of the Standard Specifications and have a gradation meeting FA-6. The cost of furnishing, placing and compacting trench backfill material will be considered as incidental work, and no additional compensation will be allowed.

Unless otherwise directed by the Commissioner, legally dispose of all excavated material not needed within the limits of the improvement in accordance with subsection 202.03 of the Standard Specifications. Stockpiling of spoils on City or State right-of-way is not permitted. Under no circumstance may debris be left in the street over night.

**Construction Requirements.** Where a storm sewer or drain connection is to be made to a proposed E.S.V.C.P. storm sewer, a manufactured "Y" or "T" branch shall be installed in the sewer at this junction. Where a storm sewer or drain connection is to be made to a proposed R.C.P. storm sewer, install a pipe section with a pre-drilled hole of the proper diameter at this junction. Construct the junction of the proposed storm sewers as shown on the Detail Construction Standards.

When a storm sewer or drain connection is to be made to an existing sewer, a "T" or "Y", install a saddle per the Detail Construction Standards. The circular opening in the existing storm sewer shall be core drilled to the same size as the external diameter of the proposed storm sewer or drain connection. The protrusion of the proposed sewer into the existing sewer shall not exceed a maximum of 1 inch. Edge of core holes shall be a minimum of 1.5 feet from the edge of pipe

and a minimum distance of 5 feet horizontally between holes. Do not drill holes higher than 10 and 2 o'clock.

Completely seal the joint between the existing storm sewer and the proposed storm sewer with brick and mortar as shown in the Detail Construction Standards.

If the existing sewer pipe is cracked, broken or otherwise damaged by the Contractor in making this cored opening, replace this section of pipe with a pipe equal to and similar in all respects to the pipe of the existing sewer. The Contractor shall do this work in a careful, workmanlike manner without extra compensation, so as not to disturb the adjoining sections of existing pipe.

Flow in the sewers shall not be interrupted unless adequate provisions, approved by the Commissioner, are made to continue service. A temporary flume pipe shall be installed at the end of each day between the existing and proposed sewers at locations where an existing sewer is being replaced.

Care shall be taken to prevent mud, sand or other obstructing materials from entering the sewer. All such materials which enter the sewer shall be removed and the sewer left clean and unobstructed upon completion of the work. This includes all debris created in making the circular opening in existing sewers for purposes of storm sewer connections and all materials employed to seal the joints.

Where broken tile in the existing sewer is determined, the Contractor shall replace the broken tile. This work will be paid for at the contract unit price per foot for Storm Sewer of the corresponding type and diameter.

All abandoned sewers and drains shall be plugged, as designated by the Commissioner, with Class SI concrete or brick and suitable mortar to the satisfaction of the Commissioner. This work will not be paid for separately, but will be considered as included in the contract unit price for the Storm Sewer items.

New openings or enlargements of existing openings in existing manholes that are required to accommodate the proposed sewers and removal and disposal of existing sewers within the proposed sewer trench will not be paid for separately but shall be considered included in the contract unit bid price for storm sewer items.

Work under this item shall also include, where encountered, the removal, disposal, and/or blocking of all abandoned sewer and utility lines as required.

The cost of Pavement Removal for proposed sewer trenches outside the limits of the scheduled Pavement Removal will not be paid for separately but shall be considered included in the contract unit bid price for storm sewer items.

**Inspection and Acceptance:** All sewers and sewer structures shall be inspected by the Department of Water Management (DOWM)-Sewer Section prior to the final payment to the Contractor. In conjunction with these sewer inspections, the Contractor shall furnish a digital recording in CD or DVD format of a televised inspection of the interior of all proposed main sewers and existing sewers to which proposed connections have been made under this contract. The sewer shall be cleaned prior to the video inspection. The video inspection shall be recorded under the supervision of the Commissioner. The cost of the video inspection and recording shall be considered included in the contract unit bid price for storm sewer items. The video inspection is

considered a critical item and shall be performed as soon as practical, but no later than two weeks after placement of subbase granular material or aggregate base course. The Contractor shall submit at the preconstruction meeting the name, phone number, and contact person of the firm that will perform the video inspection.

The final acceptance of the sewer will be based on the video inspection. All deficiencies exposed during the video inspection shall be corrected by the Contractor within 30 calendar days of notification, at no cost to the City. Pavement sections requiring removal shall be full panel sections and pavement anchors will be required for pavement restoration. The Contractor shall furnish the recording of an additional video inspection of the sewer, at no cost to the City, to verify that the deficiencies found during previous inspections have been corrected to the satisfaction of the DOWM -Sewer Section. Every effort shall be made by the Contractor to correct all deficiencies prior to the placement of the final wearing surface.

If, in the opinion of the Commissioner, the Contractor has delayed in submitting the recording of the video inspection, the placement of the final wearing surface will be suspended. No time extension will be granted due to this suspension. The Commissioner will be sole judge as to any delays. The digital video recordings shall include location maps, legends and descriptions.

**Method of Measurement.** This work will be measured for payment in place in feet.

**Basis of Payment.** This work will be paid for at the contract unit price per foot of STORM SEWERS, TYPE 2, 8-INCH (EXTRA STRENGTH VITRIFIED CLAY PIPE), which price includes payment for all labor, material and equipment necessary to complete the work as described above, including pipe, fittings, openings to existing manhole wall, excavation, and disposal of existing material and sewers, bedding, trench backfill, and video inspection. Any dewatering, sheeting, shoring, pumping, fluming or temporary sewer installation required to do the work as specified will not be paid for separately but shall be considered included in the contract unit bid price for this item.

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**ITEM 51    CDOT6640010    TEMPORARY CHAIN LINK FENCE WITH SCREENING, 6'**

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Effective: October 1, 2008

Revised: July 1, 2009

**Description.** Work under this item shall consist of constructing, installing, maintaining and removing a chain link fence and gates with screening, of the height specified on the Plans, or as directed by the Commissioner. Work under this item shall be performed according to Section 664 of the IDOT Standard Specifications for Road and Bridge Construction, except as herein modified.

**General Requirements.** The chain link fence shall be anchored sufficient to resist wind loads of 30 pounds per square foot without deflection of more than three inches between top and bottom fence. The base shall not interfere with pedestrian and/or vehicular traffic, and shall be approved by the Commissioner.

Opaque Fabric Meshing shall be affixed to the chain link fence face. The fabric meshing shall allow passage of air but shall contain dust and dirt. The mesh fabric shall be the full height of the fence and cover the entire length of the fence including any gated opening. The fabric meshing and fence shall not contain any advertisement. The color of the fabric shall be approved by the Commissioner.

**Method of Measurement.** Chain link fence will be measured for payment in feet, along the top of fence from center to center of end posts, including the length occupied by gates.

**Basis of Payment.** This work will be paid at the contract unit price per foot for TEMPORARY CHAIN LINK FENCE WITH SCREENING, 6'.

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**ITEM 52    X1400347    DETOUR TRAFFIC SIGNAL MODIFICATIONS AND  
MAINTENANCE**

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**Description.** This work will consist of furnishing, installing and removing temporary signals and aerial wiring on existing poles and installing and removing detour signal timings along detour route intersections listed below.

Ashland Avenue and Webster Avenue  
Ashland Avenue and Clybourn Avenue  
Clybourn Avenue and Webster Avenue

This work will include any required temporary traffic signal equipment, temporary relocation and wiring of traffic signal heads required during detour operations.

**Installation Requirements.** If additional equipment is needed, the Contractor shall select an aerial wiring scheme based on the specific requirements of each intersection. The Contractor shall submit a sketch of the proposed wiring scheme (wire location, type of cable) to the Commissioner for approval prior to installation. Detour route timings will be provided at the preconstruction meeting.

Contractor shall coordinate all signal changes along detour route with OEMC/ CDOT. Contractor shall set up a meeting with OEMC/CDOT through the Commissioner at least 15 days before beginning of the project. All signal and timing changes along detour route as identified by OEMC/ CDOT shall be incorporated to existing signal along detour route before beginning stage that requires a detour route. When the detour route in operation is no longer required, the Contractor shall install signal timing as directed by CDOT. All coordination with OEMC/ CDOT and changes and revisions to signals and timings as identified by OEMC/CDOT shall be considered incidental to DETOUR TRAFFIC SIGNAL MODIFICATIONS AND MAINTENANCE.

The Contractor shall maintain the existing traffic signal system at each intersection identified above. The maintenance shall commence at the time during construction, when the Contractor in the course of his/her work, begins detouring traffic. Maintenance shall continue in force until detour route is no longer needed and the post detour route timings as identified by CDOT is installed.

A properly operating traffic signal system shall be maintained by the Contractor at each intersection in the detour route as long as detour route is operational. Maintaining existing traffic signal system shall be incidental to DETOUR TRAFFIC SIGNAL MODIFICATIONS AND MAINTENANCE and shall not be paid for separately.

**Maintenance Procedure.** The Contractor shall perform the following maintenance program.

Patrol and inspect the signal installation at least once each week for proper alignment of signal heads, lamp outages, and general operation of the traffic signals.

Provide immediate corrective action to replace burned out lamps or damaged sockets with new lamps or sockets of approved qualities. At the time of replacement, the reflector and lens shall be cleaned.

Respond to emergency calls within two hours after notification and provide immediate corrective action. The Contractor shall maintain in stock a sufficient amount of material and equipment to provide temporary and permanent repairs. Any damage to the signal installation from any cause whatsoever shall be repaired or replaced by the Contractor at his/her own expense. The Contractor may institute action to recover damages from a responsible third party.

The Contractor shall install STOP signs (Standard No. R1-3636) on all approaches to the intersection as a temporary means of regulating traffic during the time of repair.

The Contractor shall provide the Commissioner the names and telephone numbers of two men who will be available 24 hours a day, 7 days a week, to perform any necessary work on the signal installation.

If at any time, the Contractor fails to perform any Work deemed necessary by the Commissioner to keep the traffic signals in proper operating condition, or if the Commissioner finds it impossible to contact the designated men to perform any Work, the Department reserves the right to have other Electrical Contractors perform the needed Work. The cost of such Work will be deducted from the amount due the Contractor.

**Method of Measurement.** Temporary modifications of traffic signals as identified above will be measured per each intersection. Maintenance will not be measured for payment.

**Basis of Payment.** This work will be paid for at the contract unit price per each intersection DETOUR TRAFFIC SIGNAL MODIFICATIONS AND MAINTENANCE, which price will be payment in full for all materials, equipment, and labor necessary to modify traffic signal equipment and modify signal timing and removal of these modifications to revert it back to CDOT approved signal configuration and signal timing. This price shall include maintaining the signals.

Payment will be made according to Article 890.04; Sixty percent of the bid unit price will be paid following approval of each installation. The remaining forty percent will be paid following removal of each installation.

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**ITEM 53    X7010218    TRAFFIC CONTROL AND PROTECTION, (SPECIAL)**

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**Description.** Work under this item shall be performed in according to Section 701 of the Standard Specifications, the applicable guidelines contained in the Illinois Manual on Uniform Traffic Control Devices for Streets and Highways, and any Special Details and Highway Standards contained within the Contract Documents, except as herein modified.

This item of work includes furnishing, installation, maintenance, relocation, covering and subsequent removal at the end of closure period of all signs, traffic cones, barricades, screening, warning lights, metal plates on manholes and trenches, flaggers, ADA compliant temporary ramps and other devices which are to be used for the purpose of detouring, regulating, warning or guiding, both vehicular and pedestrian traffic, during the construction of this improvement

**General Requirements.** The Traffic Control and Protection Details included in the Contract Documents represent the minimum required combination of traffic control devices needed for typical construction operations. Conditions created by the Contractors operation which are not covered by the standard details shall be protected by devices which may include, but are not limited to, barrier wall, fencing with screening, arrow board, or temporary ADA compliant ramps, as directed by the Commissioner, at no additional cost to the City. Revisions or modifications to the approved traffic control methods shall have the Commissioners written approval. The cost of this work shall be included in the Contract Lump Sum Price for TRAFFIC CONTROL AND PROTECTION (Special).

At the preconstruction meeting, the Contractor shall submit both a Traffic Control Plan and a Pedestrian Traffic Control Plan for approval by the Commissioner and shall furnish the name of the individual in his/her direct employ who is to be responsible for the installation and maintenance of the traffic control for this project. If the actual installation and maintenance are to be accomplished by a sub Contractor, consent shall be requested of the Commissioner at the time of the preconstruction meeting in accordance with Article 108.01 of the Standard Specifications. This will not relieve the Contractor of the foregoing requirement for a responsible individual in his/her direct employ.

If the Contractor requests and receives approval from the Commissioner to revise or change the staging of the project from that specified on the plans, any additional control required due to that request will be considered included in the contract and no additional payment will be made.

Special attention is called to Articles 107.09 and 107.14 of the Standard Specifications and the Highway Standards, Details, Supplemental Specifications and Special Provisions, and Recurring Special Provisions contained herein or in the plans relating to traffic control.

Special attention shall be given to advance guide signs during these operations in order to keep barricade placement consistent with lane assignment. The Contractor shall cover all traffic control devices, which may be inconsistent with traffic patterns during the transfer from one construction stage to another

The Contractors vehicle shall always move with and not against or across the flow of traffic. These vehicles shall enter or leave work areas in a manner, which will not be hazardous to or interfere with normal traffic and shall not park or stop except within designated work areas. Personal

vehicles will not be permitted to park within the right of way except in specific areas designated by the Commissioner.

The Contractor shall immediately furnish a certified flagger or flaggers if, in the opinion of the Commissioner, the Contractor's construction means or methods warrant. No additional compensation will be made for flaggers. If no flaggers are available the Contractor shall cease operations until they become available.

All signs, signals, traffic cones, barricades, chain link fence, warning lights, Temporary ADA ramps, flaggers, and other traffic control devices shall conform to the specifications, special provisions and the latest edition of the "State of Illinois Manual on Uniform Traffic Control Devices." The Contractor shall obtain, erect, maintain, and remove all traffic control devices in accordance with Article 107.14 of the Standard Specifications. Placement and maintenance of all traffic control devices shall be as directed by the Commissioner. The Commissioner will be the sole judge as to the acceptability of placement and maintenance of the traffic control devices prescribed in the appropriate standards.

The Contractor shall insure that all barricades, signs, lights and other devices installed by him are operational every day, including Sundays and holidays. In the event of severe weather conditions, the Contractor shall furnish any additional personnel required to properly maintain all traffic control devices as directed by the Commissioner.

This project shall be constructed under detours as indicated on the "Maintenance of Traffic" and "Detour" unless changes are approved by the Commissioner. Construction work shall not be started until detours are completely in place and operational. Construction signs referring to daytime or nighttime lane closures during working hours shall be removed or covered during non-working hours. Detour signs shall be removed or covered once detour is not necessary.

The Contractor will be responsible for the timely installation, maintenance, relocation and subsequent removal of all temporary signing, barricading and temporary striping necessary to accomplish these detours. At the completion of each stage of construction or whenever detour operations indicate that a relocation or removal of a proposed or existing traffic control device is advisable, as determined by the Commissioner, the Contractor shall relocate or remove said traffic control device. Those traffic control devices which were furnished by the Contractor will remain the property of the Contractor. Any existing traffic control device removed or relocated by the Contractor will remain the property of the City. All traffic control devices shall remain in place until specifically authorized for relocation or removal by the Commissioner.

The Contractor shall be aware of the requirements for coordination of all work in this project and adjoining or overlapping projects and for coordination of barricade placement necessary to provide a uniform traffic detour pattern. The Contractor will not be permitted to erect, change, or remove his/her detour barricade system without the prior approval of the Commissioner.

The placement of barricades and warning signs for the required lane closures shall be as specified herein and shall proceed in the direction of the flow of traffic. The removal of all signs and barricades shall begin at the end of the construction areas and proceed toward oncoming traffic.

The Contractor shall remove and store temporary concrete barrier wall between northbound and southbound lane during stage 1 crossover and reinstall it back during other stages. This item will be included in TRAFFIC CONTROL AND PROTECTION.



Maintenance of Roadways:

Beginning on the date when the Contractor begins work on this project he shall assume responsibility for the normal maintenance of all existing roadways within the limits of the improvement. This normal maintenance includes all repair work deemed necessary by the Commissioner but not snow removal operations. Traffic control and protection required for this work will be considered included in the lump sum price for TRAFFIC CONTROL AND PROTECTION.

Arrow Boards:

A flashing arrow board meeting the requirements of Article 1106.03 of the Standard Specifications shall be operating at all times when a lane is closed to traffic on a multi-lane highway. Arrow boards shall be provided and located in ahead-on position within each lane closure taper. The cost of furnishing and maintaining arrow boards will be considered included in the contract lump sum price for TRAFFIC CONTROL AND PROTECTION.

Pedestrian Traffic Control:

When an existing sidewalk is removed or is otherwise impassable, the Contractor shall install the necessary signs and barricades to direct pedestrian traffic to an alternate pedestrian route. Sidewalk Closed signs (Code No. R11-I102) shall be placed at each end of the closed sidewalk section. Type I, Type II, or Type III barricades shall be installed in sufficient number to completely close the pathway. Barricades across and along a pathway shall have a continuous cane detectable horizontal bar between 4" and 6" above the pavement. Access to and from alternate pedestrian routes shall be ADA compliant and shall be kept free of any obstructions and hazards. Where construction activities involve sidewalks on both sides of the street, the work shall be staged so both sides of the street are not under construction at the same time and no more than one corner at a time is out of service.

REQUIREMENTS:

- 1) Barricades may be Type I, II, III
- 2) Fencing with screen is to be used to protect the construction area.
- 3) Barricades across and along a pathway shall have a continuous cane detectable horizontal bar between 4" and 6" above the pavement.
- 4) Access to and from alternate pedestrian routes shall be ADA compliant.
- 5) Alternate pedestrian routes shall be a hard surface traversable by a wheel chair.
- 6) When the alternate pedestrian route is within the roadway it shall be protected by a continuous concrete barrier or other crash worthy barrier.
- 7) When the alternate pedestrian route is to or from the existing sidewalk, an ADA compliant plywood ramp shall be installed.
- 8) Use one "Sidewalk Closed" sign at each end of each sidewalk section being reconstructed at the location where the alternate pedestrian route begins.
- 9) At each point of closure, sufficient numbers of barricades shall be used to completely close the pathway.
- 10) Pedestrian walkways/ routes shall be maintained free of any obstructions and hazards such as holes, falling debris, mud, construction equipment, stored materials, etc. and shall be broom swept daily or as directed by the Commissioner.
- 11) All hazards near or adjacent to walkways shall be clearly delineated.

- 12) Where construction activities involve sidewalks on both sides of the street, the work shall be staged so that both sidewalks are not out of service at the same time.
- 13) The Contractor shall maintain pedestrian access to adjacent properties by installing ADA compliant plywood walkways and/ or ramps from the curb line to adjacent property entrances. Pedestrian access to adjacent properties shall be uninterrupted until the walk is fully restored.

The cost of this work will be included in the contract lump sum price for TRAFFIC CONTROL AND PROTECTION.

Traffic Control Deficiency

Traffic Control Deficiency Deduction shall be per Article 105.03(b) except as herein modified. A deficiency shall also include lack of maintaining pedestrian traffic control, the lack of maintaining access to abutting properties, lack of debris removal, fly dumping, timely and correct placement of temporary and permanent pavement markings, along with delay in implementing all items of work contained within this item.

**Method of Measurement:** This work will be measured for payment on a lump sum basis.

Temporary concrete barrier will be considered included in the contract lump sum for TRAFFIC CONTROL AND PROTECTION.

**Basis of Payment:** This work will be paid for at the contract lump sum price for TRAFFIC CONTROL AND PROTECTION.

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**ITEM 66    CDOT5010030    CONCRETE REMOVAL**

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Effective: January 1, 2009

**Description.** Work under this item shall be performed according to Section 501 of the IDOT Standard Specifications for Road and Bridge Construction, except as herein modified.

**General Requirements.** Only the use of hand sledges and pneumatic hand tools will be permitted to break out concrete. The use of frost balls, drop hammers, explosive and other means employing heavy inertial or explosive forces will be prohibited, unless permitted in writing by the Commissioner.

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**ITEM 67 CDOT5030020 HIGH PERFORMANCE CONCRETE STRUCTURES**

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**ITEM 68 CDOT5030030 HIGH PERFORMANCE CONCRETE SUPERSTRUCTURES**

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Effective: January 12, 2009

Revised: July 1, 2014

**Description.** Work under this item shall be performed according to all applicable portions of Section 503 of the IDOT Standard Specifications for Road and Bridge Construction for Class SI and BS Concrete, and as modified herein.

This work shall consist of mix designs, mix design testing, proportioning and mixing, transporting, placing, finishing, curing, and protection of cast-in-place high performance and cast-in-place high strength high performance concrete structures and superstructures.

**Materials.** Materials shall be provided from IDOT approved sources, except as stated herein.

- a) Portland cement. Type I, IS, I(SM), or IP, according to Article 1001.01 of the Standard Specification.
- b) Fine Aggregate.
  - i) Quality. According to Article 1003.02 of the Standard Specifications, except all sands or blends shall comply with the minus No. 200 sieve requirements in Article 1003.01(b) of the Standard Specification.
  - ii) ASR Rating. The IDOT assigned expansion value for dolomite or limestone stone sand shall be used. The expansion value for natural sands shall be as determined by IDOT.
  - iii) Gradation. FA/FM02.
- c) Coarse Aggregate.
  - i) Quality. According to Article 1004.02 of the Standard Specification, except Crushed gravel, crushed concrete, crushed slag or crushed sandstone are not allowed. Coarse Aggregates used in HPC Structure and Superstructure concrete shall contain no more than two percent total by weight (mass) of deleterious materials as specified in Article 1004.01(b) of the Standard Specification.
  - ii) Freeze-Thaw Rating. Shall be a minimum of an IDOT 30-Year rating.
  - iii) ASR Rating. The IDOT assigned expansion value for limestone or dolomite coarse aggregates (crushed stone) shall be used.
  - iv) Gradation. Two or more coarse aggregate sizes, consisting of CA/CM 11, CA/CM 13, CA/CM 14, and CA/CM 16 may be combined, provided a CA/CM 11 is included in the blend.
- d) Fly ash. Class F according to Section 1010 of the Standard Specification.

- e) Microsilica (silica fume). According to Section 1010 of the Standard Specification.
- f) Ground Granulated Blast Furnace (GGBF) Slag. According to Section 1010 of the Standard Specification.
- g) Admixtures. According to Section 1021 of the Standard Specification.
- h) Water. According to Section 1002 of the Standard Specification.

Concrete Mix Design.

- a) Proportions - HPC mixes shall be designed and produced within the following target proportions.

	HIGH STRENGTH HPC CONCRETE	HPC CONCRETE
Portland Cement	605 lbs. per CY minimum	490 lbs. per CY minimum
Microsilica (silica fume)	25 lbs. per CY required	
One of the Following Required:	Minimum content shall be 15% of the minimum Portland Cement content.	
Ground Granulated Blast Furnace Slag Cement or Fly Ash, Type F	If used for ASR mitigation, use ASR special provision, without cement reduction.	
Water : Cementitious Ratio	0.36 - 0.40	0.38 - 0.44
Air-Entraining Agent	Per IDOT approved list and manufacturer's written instructions	
High Range Water-Reducer	Per IDOT approved list and manufacturer's written instructions	
Retarder	Per IDOT approved list and manufacturer's written instructions	

- b) Cement replacement for IDOT Class BS concrete according to Article 1020.05(c)(1)(d) of the Standard Specification shall not apply.
- c) Corrosion inhibitors, accelerating admixtures (Types C or E), viscosity modifiers, and hydration stabilizers are not allowed unless approved by the Commissioner.
- d) Alkali-Silica Reaction (ASR) Mitigation shall be according to the current Illinois Department of Transportation Supplemental Specification for Portland Cement Concrete. The Contractor shall include a letter of compliance with the mix design submittal indicating which mitigation option has been selected.
- e) Physical Properties. The mix design shall meet the specifications listed in Table 1-A. The Commissioner reserves the right to conduct additional tests as required to determine the acceptability of durability and material properties of the HPC mixture.

**Table 1-A  
 Physical Properties**

<b>Property</b>	<b>HIGH STRENGTH HPC CONCRETE</b>	<b>HPC CONCRET E</b>	<b>Test Methods</b>
Total air content, plastic concrete	7 +/- 1.5% <sup>2/</sup>		AASHTO T152 <sup>1/</sup>
Slump, maximum after HRWR addition	8 in.		AASHTO T119 <sup>1/</sup>
Slump, minimum after 45 minutes	4 in.		AASHTO T119 <sup>1/</sup>
Initial set time, minimum	3 hours		AASHTO T197
28-day compressive strength, minimum	6,000 psi	4,000 psi	AASHTO T22 <sup>1/</sup>
28-day compressive strength, maximum	9,500 psi	9,500 psi	AASHTO T22 <sup>1/</sup>
Total air content, hardened concrete	7+/- 1.5%		ASTM C457
Maximum air void spacing factor	0.010 in		ASTM C457
Minimum air void specific surface	500 in <sup>2</sup> /in <sup>3</sup>		ASTM C457
Chloride Permeability Resistance	<2000 coulombs at 28 days		AASHTO T277
Petrographic examination	Report		ASTM C856

Footnotes:

<sup>1/</sup> Per IDOT Manual of Test Procedures

<sup>2/</sup> Or as required to meet the total air content in the hardened concrete.

Mix Design, Trial Mixes and Verification Testing.

- a) Mix designs shall be submitted to the Commissioner for approval at least 45 days prior to the start of production. Mix designs shall be performed according to the IDOT PCC Mix Design Program.
- b) The Trial Mix shall be produced with the mix equipment proposed for production. The Trial Mix evaluation shall include testing for the properties in Table 1-A.
  - i) Testing shall be conducted by laboratories approved by the Commissioner, and at no cost to the City.
  - ii) Initial Set Time (AASHTO T 197), Air Voids analysis (ASTM C457), Chloride Permeability Resistance (AASHTO T277), and Petrographic Analysis (ASTM C856) shall be performed by AASHTO accredited laboratories. Advance notice of testing shall be provided to the Commissioner, who may witness the trial mix and testing.
- c) Documentation:
  - i) Ingredient Materials. Include relevant pages of IDOT's:

- (1) Approved aggregate source list.
  - (2) Freeze-thaw rating list.
  - (3) Approved list of qualified cement plants.
  - (4) Approved list of concrete admixtures.
  - (5) Approved list of suppliers for finely divided minerals.
  - (6) Alkali-Silica Potential Reactivity Rating List.
- ii) Trial Mix test results verifying conformance with the requirements of Table 1-A.
- d) Mix Changes. Once the mix design is approved, no ingredient sources may be changed without the written approval of the Commissioner. The Commissioner may require or conduct additional tests to verify the affect of ingredient material changes.
- e) Approved HPC mix designs shall be valid for two years from date of approval.

**Equipment.** Equipment shall meet the requirements of Article 503.03 of the Standard Specifications unless superseded by this specification.

### **Construction Requirements.**

Placing and Consolidating. Work shall be performed according to Article 503.07 of the Standard Specification and as modified herein:

- a) All weather parameters shall be measured, recorded and provided. In addition, all weather monitoring equipment to support any request to deviate from the temperature requirements of this specification shall be provided.
- i) Temperature. The air and concrete temperature at placement shall be in accordance with Article 1020.14(b) of the Standard Specifications and as modified herein.
  - ii) HPC shall not be cast when air temperatures exceed 90°F.
  - iii) HPC deck shall be cast at night whenever air temperatures exceed 80°F, unless it has been demonstrated the evaporation rate will be less than 0.10 lbs./sf/hr and approval has been granted by the Commissioner.
- b) Wind. Whenever wind speeds exceed 10 mph (light breeze), fogging of the exposed concrete surface shall be continuous.
- c) Evaporation. Evaporation rates shall be determined utilizing the ACI 305 nomograph and shall be based on actual temperature and wind speed data obtained from the field the day prior to the pour. The resulting evaporation rates will determine the time of day for the subsequent placement if climatic conditions are anticipated to be similar in nature. If the conditions prior to the pour are deemed by the Commissioner not to be similar in nature, the time of day for the placement will need to be reevaluated using current field data. Unless waived by the Commissioner, evaporation rates shall also be monitored during every placement to determine the level of fogging necessary to reduce the potential for shrinkage cracking.
- i) When the evaporation rate exceeds 0.15 lbs/sf/hr, HPC concrete shall not be cast.

- ii) When the evaporation rate exceeds 0.10 lbs/sf/hr, casting HPC at night shall be performed.

Methods necessary to lower concrete temperatures including night time placements, cooling the mix water, adding ice, shading, or sprinkling the coarse aggregates with chilled water shall be implemented when concrete temperatures cannot be maintained below the maximum acceptable limit given the application. Extra attention to fogging may be required, as well as applying curing as soon as possible after finishing.

- d) No additional or supplemental compensation shall be made for any measures required for the satisfactory placement of HPC concrete as described herein or as directed by the Commissioner, including but not limited to weather data collection, equipment, admixtures, premium costs, lighting, or other appurtenant and collateral work required. The cost shall be included in the unit price for the placement of HPC, as shown on the Contract Plans and indicated in the Contract Specifications.

**Method of Measurement.** Measurement shall be performed according to Article 503.21 of the Standard Specification.

**Basis of Payment.** This work will be paid for at the contract unit price per cubic yard for HIGH PERFORMANCE CONCRETE STRUCTURES, HIGH PERFORMANCE CONCRETE SUPERSTRUCTURES, HIGH STRENGTH HIGH PERFORMANCE CONCRETE STRUCTURES and HIGH STRENGTH HIGH PERFORMANCE CONCRETE SUPERSTRUCTURES.

Concrete protected according to Article 1020.13(d) of the Standard Specification may be paid for at the adjusted unit prices which will be a percentage according to the table from Article 503.22 of the Standard Specification of the contract unit price for the classes of concrete involved. These adjustments will be made only when they are authorized in writing by the Commissioner. No adjustment will be made in the contract unit prices for any concrete if winter work is necessary to meet the required completion dates specified in the contract.



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**ITEM 69    CDOT5030050    CLASS "SI" CONCRETE (MISCELLANEOUS)**

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Effective:     January 26, 2009  
Revised:       June 3, 2009

**Description.** Work under this item shall consist in constructing small scale cast-in-place concrete structures and/or in performing small scale concrete repairs, at locations shown on the plans or as directed by the Commissioner. Work under this item shall be performed according to Section 503 of the IDOT Standard Specifications for Road and Bridge Construction, except as herein modified.

**Method of Measurement.** CLASS "SI" CONCRETE (MISCELLANEOUS) will be measured for payment in place and the volume will be computed in cubic yards. Any required steel reinforcement will not be measured separately.

**Basis of Payment.** This work will be paid at the contract unit price per cubic yard for CLASS "SI" CONCRETE (MISCELLANEOUS). Any required steel reinforcement will not be paid separately, and shall be incidental to the work.

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**ITEM 70    CDOT5870010    PROTECTIVE CONCRETE SEALER**

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Effective:        July 1, 2010

**Description.** Work under this item shall be performed according to the applicable portions of Sections 420, 421, 483, 503 and 587 of the IDOT Standard Specifications for Road and Bridge Construction, except as herein modified.

This work shall consist of providing and applying the protecting concrete sealer as directed by the Commissioner.

**Materials.** The use of linseed oil shall not be permitted. Material shall be in accordance with Section 1026 of the IDOT Standard Specifications for Road and Bridge Construction. The material shall not affect the appearance of the concrete.

**General Requirements.** Proposed material shall be submitted for approval by the Commissioner. No material application work shall be allowed without the approval of the Commissioner.

**Construction Requirements.** The material shall be applied according to the Manufacturer's specifications.

**Basis of Payment.** This work will be paid for at the contract unit price per square yard for PROTECTIVE CONCRETE SEALER.

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**ITEM 71    X0323444    DECORATIVE STEEL RAILING**

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**Description.** This work shall consist of fabricating, furnishing, erecting and painting steel railing in accordance with Section 509 of the Standard Specifications and as specified herein.

**Fabrication and Erection:** Fabrication and erection of structural steel shall be according to Section 509 of the Standard Specifications and according to details shown on the plans. The rail posts and pickets shall be vertical and the top of the railing shall be parallel to grade line.

Welded connections shall be in accordance with the latest edition of AASHTO/AWS D1.5 bridge welding code, made with E70XX electrodes and performed by certified welders.

The Contractor shall submit shop drawing to the Commissioner according to Article 505.03 before fabrication.

**Material.** All hot rolled shapes shall conform to ASTM A36. All anchor rods shall conform to either ASTM F1554 (Gr. 55) with weldability supplement S1 or ASTM A36. All square and rectangular hollow structural sections (HSS) shall conform to ASTM A500 Grade B,  $F_y = 46$  ksi.

All painting shall be done in accordance with CLEANING AND PAINTING EXISTING STEEL STRUCTURE specification.

**Method of Measurement.** This work will be measured for payment in place in feet. The length measured will be the overall length along the top longitudinal railing member through all posts and gaps.

**Basis of Payment.** This work will be paid for at the contract unit price per FOOT for DECORATIVE STEEL RAILING, which work will include all labor and material.

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**ITEM 72    X0326519    STEEL RAILING REMOVAL**

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**Description.** This work shall consist of the removal and satisfactory disposal of the existing steel railings as shown on the Plans and in accordance with the applicable Standard Specifications. All work shall comply with the applicable requirements of Section 501 of the Standard Specifications, and as specified herein. The steel railings, to be removed and disposed of, are located on the north and south fascia of the bascule span.

Rail posts supported on existing cantilever sidewalk brackets are to remain in place. Extreme care shall be taken while removing existing steel railings so as not to damage the existing members which are to remain. All damage to existing members which are to remain shall be repaired, or the members replaced, to the satisfaction of the Commissioner. Repair or replacement of damaged members shall be at the Contractor's expense and at no additional cost to the City.

**Method of Measurement.** STEEL RAILING REMOVAL shall be measured for payment per foot of steel railing removed as shown on the Plans.

**Basis of Payment.** This work shall be paid for at the contract unit price per foot for STEEL RAILING REMOVAL, which work shall include all labor and equipment needed to remove and dispose of the specified steel railings.

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**ITEM 73      Z0001903      STRUCTURAL STEEL REMOVAL**

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**Description.** This work shall consist of the satisfactory removal and disposal of structural steel members as shown on the Plans. This work shall be performed according to Section 501 of the Standard Specifications, except as modified herein.

Burning of existing rivets or bolts will only be allowed near steel surfaces which are to be removed and discarded. Burning of existing rivets or bolts will not be allowed for members to remain in place nor for members that are to be removed and reinstalled at a later date. When burning of rivets or bolts is not allowed, the head of the rivet or bolt shall be sheared off and the shank driven (or drilled) out. Extreme care shall be taken while removing the rivets or bolts so as not to damage the existing structural steel which is to remain. Unless noted otherwise on the Plans, the cost of rivet and bolt removal shall be included in this item.

All damage to existing members which are to remain shall be repaired, or the member replaced, to the satisfaction of the Commissioner. Repair or replacement of damaged members shall be at the Contractor's expense and at no additional cost to the Department.

**Submittals.** A proposal plan for the removal of the structural steel shall be submitted to the Commissioner for review and approval, at least 14 days prior to the beginning of the removal work. The removal of existing structural steel shall not commence without the Commissioner's approval.

The submittal shall show the procedures, equipment, haul routes, disposal site, and sequence of removal. The submittal shall include a written description of the proposed sequence of removal and the methods to be employed in the removal operations. Further, the submittal shall include calculations, drawings and details of the sequence of removal of the existing structures and locations of any temporary supports or bracing, the anticipated loads and the step-by-step removal procedure. The submittal shall also identify the location of disposal for the items removed. The removal procedure shall result in a safe and stable structure at all times, and shall comply with all safety requirements as required by all City, State and Federal laws, codes or other regulations. The submittal shall be sealed by an Illinois licensed Structural Engineer.

**Method of Measurement.** STRUCTURAL STEEL REMOVAL shall be measured for payment in POUNDS of structural steel removed as shown on the Plans.

**Basis of Payment.** This work shall be paid for at the contract unit price per pound for STRUCTURAL STEEL REMOVAL.

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<b>ITEM 74</b>	<b>Z0007101</b>	<b>CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES NO. 1</b>
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**Description.** Work under this item shall consist of capturing, storing, transporting and legally disposing of the residues produced by cleaning the lead containing paint for the Webster Avenue Bridge over the North Branch of the Chicago River.

The Contractor is alerted to the presence of lead-based paint found on the bridge. Information pertaining to the lead-based paint can be found in "Limited Lead-Based Paint Survey Report" included in Appendix A.

**General Requirements.** Work under this item shall be done in accordance with the requirements of IDOT Guide Bridge Special Provision (GBSP) 26 "Containment and Disposal of Lead Paint Cleaning Residues."

**Basis of Payment.** This work will be paid at the contract lump sum price for CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES NO. 1.

<b>ITEM 75</b>	<b>Z0012754</b>	<b>STRUCTURAL REPAIR OF CONCRETE (DEPTH EQUAL TO OR LESS THAN 5 INCHES)</b>
<b>ITEM 76</b>	<b>Z0012755</b>	<b>STRUCTURAL REPAIR OF CONCRETE (DEPTH GREATER THAN 5 INCHES)</b>

**Description.** Work under this item shall consist of structurally repairing concrete as indicated on the Plans, and as directed by the Commissioner.

**General Requirements.** Work under this item shall be done in accordance with the requirements of IDOT Guide Bridge Special Provision (GBSP) 53 "Structural Repair of Concrete."

**Basis of Payment.** This work will be paid at the contract unit price per square foot for STRUCTURAL REPAIR OF CONCRETE (DEPTH EQUAL TO OR LESS THAN 5 INCHES) and STRUCTURAL REPAIR OF CONCRETE (DEPTH GREATER THAN 5 INCHES).

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**ITEM 77**

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**BALANCING OF BRIDGE AND ALTERATION OF  
COUNTERWEIGHTS**

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**Description.** Work under this item shall consist of balancing the movable span of the bascule bridge, for interim conditions as defined by the Commissioner and for final configuration after the completion of the work. This includes, but is not limited to, testing balance conditions, monitoring balance condition, adjustments to counterweight, furnishing and erecting counterweight blocks, furnishing and erecting shim plates, and maintaining stability of bridge throughout construction.

**General Requirements.** The Contractor shall maintain the stability of the bascule bridge at all times during the project. The Contractor shall utilize a shoring system for the counterweight in accordance with TEMPORARY SUPPORT detailed specification. When the counterweight is not supported by the temporary support, the Contractor shall maintain the bridge in balance in all operating positions at all times. The Contractor shall make continuous adjustments of the counterweight throughout the project when work is performed that affects the overall balance of the leaf.

The Contractor is responsible for determining the means and methods for testing the bridge balance condition prior, during and at the end of construction. Balancing of the bridge shall meet the requirements of Subsection 1.5 Balance and Counterweights of the AASHTO LRFD Movable Highway Bridge Design Specifications. During construction, the Contractor shall monitor the balance condition as defined in his/her balance testing procedure and as approved by the Commissioner and make adjustments as needed to maintain the interim balance condition.

**Materials.** New counterweight blocks shall be cast iron according to ASTM A48, Class 20, and shall weigh approximately 445 pounds.

**Submittals.** The following submittals will be required as part of this item:

1. **Balance Testing:** The Contractor shall submit for approval of the Commissioner the means and methods that will be employed for testing the current balance condition (prior to start of construction), interim balance condition (throughout construction), and final balance condition. Due to the inoperable condition of the bridge, dynamic strain gauge testing is not considered feasible. The submittal shall include, but is not limited to, a detailed step-by-step procedure to test the bridge balance condition prior to and throughout construction, monitoring of balance condition and establish minimum intervals to test balance condition during construction, list of equipment to be employed and its specifications, locations of any temporary supports including any applicable calculations and detailed drawings for such supports, procedures for installing shim plates and their dimensions, and any other additional documentation as determined by the Commissioner.
2. **General Stability Maintenance Procedures:** The Contractor shall submit for approval to the Commissioner a detailed step-by-step plan for procedures to keep the bridge stable at all times during the project. This plan shall indicate the procedures for monitoring counterweight shoring, accounting for weights and locations relative to pivot point of material removed or added to the structure.
3. **Balancing Calculations and Drawings.** The Contractor shall submit to the Commissioner for approval the bridge balancing calculations and drawings showing the weights and distribution of the counterweights required to maintain the stability of the bridge throughout the rehabilitation process. The calculations shall be in accordance with AASHTO LRFD Movable



Highway Bridge Design Specifications and these specifications. The calculations shall account for weights computed from the shop drawings of structural steel, roadway and sidewalk gratings, concrete fill in the roadway deck, new sidewalk railings and any auxiliary material which will be part of the movable span. These calculations shall be presented in summarized tabulations that include each kind of material, the total quantity of the material, the estimated unit weight of the material, vertical and horizontal position of center of gravity of the material with respect to the trunnion center, calculated vertical and horizontal moments, and the total estimated weight and moments about the trunnion center. Before placing counterweight plates, the Contractor shall verify these estimated and computed weights by comparison with shipping weights of steel, and by weighing suitable portions of non-metal, non-structural parts, and shall submit to the Commissioner supplemental summarized tabulations based on these actual weights. Calculations and plans shall be submitted for interim and final balancing.

- a. Interim bridge balancing calculations and drawings: In addition to the initial approval, the Contractor shall keep this sheet current at all times and give the Commissioner access to this information. The balancing sheet in the drawings is furnished for the use of the Contractor in this regard. The Contractor shall keep this record in spreadsheet format electronically, and manually.
  - b. Final bridge balancing calculations and drawings: The Contractor shall submit a drawing with the final locations of all counterweight blocks in the counterweight box, including their location from the trunnion. Each installed counterweight block shall be labeled, and a corresponding label shall appear on the actual counterweight block, using paint or other lasting medium, so that a record of the counterweight configuration can be maintained by bridge maintainers into the future. All counterweight blocks shall be identical in configuration, as shown on the drawings.
4. When using new counterweight blocks, the Contractor shall submit shop drawings of new proposed cast-iron blocks to the Commissioner for review.

All submittals shall be sealed by an Illinois Licensed Structural Engineer. No work shall commence prior to the Commissioner's approval of the abovementioned submittals.

**Construction Requirements.** Reuse of existing counterweight blocks is acceptable. However, the Contractor shall furnish new counterweight blocks as required and as detailed in the Contract Plans. Furnishing new counterweight blocks is considered incidental to this item, and not measured separately. Counterweight blocks that are not used shall become the property of the City.

Prior to start of removal operations on the movable span of the bascule bridge the Contractor shall test the existing balance condition which includes, but is not limited to, determining the dead load reaction on the live load bearing in the closed position. When the counterweight is not supported by the temporary supports, the Contractor shall ensure the interim balance condition maintains a reaction at the live load bearing equal to the one determined prior to start of removal operations on the movable span. This reaction must be maintained within a tolerance of  $\pm 10\%$  of the predetermined value, but in no case, shall the reaction be less than 500 lbs. or more than 1,500 lbs.

The bridge shall be considered balanced in the final condition when the applicable requirements of the approved Balance Testing procedure and the following conditions are met simultaneously:

WEBSTER AVENUE BRIDGE OVER THE NORTH BRANCH OF THE CHICAGO RIVER  
CDOT PROJECT NO.: E-1-525

1. A dead load reaction at the live load bearings equal to 1,500 lbs.  $\pm$  150 lbs is obtained.
2. The center of gravity of the span fully seated is located toward the channel at an angle no greater than 20 degrees above or below a horizontal line through the trunnion.
3. No material serving as "dead weight" fastened to the bridge in locations other than the counterweight box shall be allowed. All balancing shall be performed with weights added in or removed from within the counterweight box.
4. All repairs to be performed on the structure and affecting the leaf balance have been performed and accepted by the Commissioner.

**Method of Measurement.** Work under this item will be measured for payment on a lump sum basis.

**Basis of Payment.** The work will be paid for at the contract price per lump sum for BALANCING OF BRIDGE AND ALTERATION OF COUNTERWEIGHTS.

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**ITEM 78**

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**BRIDGE OPERATION AND MAINTENANCE**

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**Description.** Work under this item shall consist of bridge operation and maintenance duties throughout the duration of the project, coordinating with the Coast Guard as to conforming to requirements for maintaining river traffic, developing a plan and implementing a plan for maintaining river traffic to the satisfaction of the Coast Guard and the Commissioner while completing the project work as defined in the contract documents. The work also includes operating each leaf as required, subject to safety restrictions of the Commissioner.

Multiple components of mechanical equipment are currently inoperable. Additionally, the pinion is assumed to be frozen and may require to be temporarily removed to facilitate operation of the bridge if operation is required. As such, the Operational Requirements set forth herein are for information only. However, there is a possibility the Contractor may still be required to operate the bridge (a single leaf or both) during construction for emergency reasons. In such event, the Contractor shall use the Operational Requirements described below as a guide to determine a feasible and safe procedure to operate the bridge.

If required, the Contractor shall operate the bridge and perform the work in accordance with the stipulations of the Contract. All costs associated with delays in bridge operations during the project shall be the responsibility of the Contractor.

The Contractor shall assume full maintenance responsibility for the structure throughout the duration of the project.

The work includes furnishing materials, labor and equipment required to perform the contract work in this item.

**Operational Requirements.**

Due to the nature of the work, if the Contractor shall occupy the entire navigable channel, he/she shall obtain permission from the Coast Guard to block the entire navigable waterway. The Contractor shall meet all requirements of the Coast Guard for allowing marine traffic to continue. If the Contractor's plan does not meet the requirements of the Coast Guard, then the Contractor shall revise the plan. The permanent vertical and horizontal clearances shall not be changed.

The Contractor will be responsible to train all employees that will be involved in the bridge operations. Those employees that will be trained for bridge operations shall be qualified electricians and machinists capable of addressing any mechanical and electrical issues that may arise related to bridge operations throughout the project. The training session shall be requested a minimum of one week in advance but the final determination of the training session date will be at the discretion of the Commissioner. The Contractor will assume full responsibility for the bridge operation from the Commissioner. This transfer of responsibility will occur after the training session, near the beginning of the project. The Contractor shall assume this responsibility prior to mobilizing for work on the structure.

Maintaining the Public Safety is of first importance in the bridge operation. Even when the roadway is closed it remains in close proximity to other roadways and pedestrian walks. Also, many boats of all sizes and occupancy, including barges, navigate under the bridge. The Contractor should be aware of all of the above-mentioned activity in the proximity and act accordingly.

The Contractor shall at all times follow the regulations of the Coast Guard. Minimum channel widths shall be maintained. All Contractor vessels in the waterway shall be properly lighted at all times with emergency back-up power. All barges or other vessels shall receive authorization from the Coast Guard prior to being placed into the waterway.

**Maintenance Requirements.** The Contractor is responsible for day-to-day maintenance of the entire structure during the project. Shortly after notice to proceed and before Contractor mobilization, the Commissioner will meet with qualified Contractor personnel to outline maintenance procedures. Such maintenance activities may include but are not limited to lubrication, adjustments, tightening, lighting maintenance, debris cleaning, pit water pumping, resetting breakers, maintaining bridge balance adjustments, to more major activities as required. The Contractor will furnish labor, materials, and equipment to fulfill maintenance of the structure.

All alterations to the structure that affect load capacity, stability or performance of the structure shall be prepared and stamped by a Structural Engineer licensed in the State of Illinois, and sent to the Commissioner for approval prior to beginning work.

**Submittals.** The Contractor shall submit for review and approval of the Commissioner a detailed procedure for operating the bridge during construction. The procedure shall include, but is not limited to, an evaluation of existing bridge operation components, additional equipment to be used, modifications to existing mechanical equipment, lubrication requirements, temporary shoring details and locations, sequence of operation, calculations, and monitoring of rotating components during operation. The Contractor shall submit this procedure within 60 days of Notice To Proceed. The procedure shall be prepared and stamped by a Structural Engineer licensed in the State of Illinois, and sent to the Commissioner for approval prior to beginning work.

**Method of Measurement.** Work under this item will be measured for payment on a lump sum basis.

**Basis of Payment.** The work in this item, including coordination, maintenance labor, furnishing and installing materials, equipment costs, engineering costs and all other costs incurred fulfilling the work required to the satisfaction of the Commissioner shall be paid for at the contract Lump Sum price for the pay item BRIDGE OPERATION AND MAINTENANCE. Payment will be authorized only after all required work has been completed to the satisfaction of the Commissioner.

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**ITEM 79      \*\*\*\*\*      CLEANING AND PAINTING EXISTING STEEL STRUCTURES**

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**Description.** This work consists of cleaning and painting the structural steel for the Webster Avenue Bridge over the North Branch of the Chicago River.

The work includes furnishing equipment, material and labor to prepare the structural steel for the application of Protective Coating, including cleaning, blast cleaning, erecting containment, providing correct atmospheric conditions for application, masking areas not to be painted, collecting and proper disposal of potentially lead-based residue from these operations. The work under this item also includes field touch up of areas of shop applied coatings damaged during erection or transport, to the satisfaction of the Commissioner. The work also includes application of Protective Coating in accordance with the General Requirements of this Item.

**General Requirements.** The work shall be performed in accordance with the following:

1. New Steel Material Furnished under this Contract:  
All new steel material furnished under this Contract shall receive primer in the shop. At the Contractor's option, the intermediate and finish coats can also be applied in the shop in accordance with the Standard Specifications, Section 506.08b or can receive the intermediate and finish coat in the field.
2. Existing Steel Bridge Members that are to Remain in Place:  
Existing members that are to remain in place according to the drawings shall be cleaned and coated in accordance with the Illinois Department of Transportation (IDOT) Guide Bridge Special Provisions (GBSP) 25, "Cleaning and Painting Existing Steel Structures," effective October 2, 2001 and revised April 22, 2016, and GBSP 21, "Cleaning and Painting Contact Surfaces of Existing Steel Structures, Effective June 30, 2003, Revised August 9, 2019, included in the appendices of this book. Surface preparation of the existing steel shall be SSPC-SP10, Near White Blast Cleaning unless otherwise authorized by the Commissioner. Any substitution of cleaning methods shall be at no additional charge to the City. The new steel plates added as reinforcement to existing members shall receive primer in shop. The whole reinforced member then shall receive all final coatings in field. All connections are to be considered slip-critical.
3. Paint system shall be Organic Zinc-Rich/Epoxy/Urethane Paint System per GBSP 25.
4. The color of the finish coat shall match standard glossy color code R76 G34 B35 (SW2717, Bordeaux), manufactured by Sherwin-Williams Industrial & Marine Coatings, PPG Protective & Marine Coatings or Tnemec Industrial Coatings. Color chips shall also be submitted for approval and shall match samples on file at the Chicago Department of Transportation, Division of Engineering, 30 N. LaSalle Street, Chicago, Illinois.
5. Paint system shall be manufactured in accordance with the requirements of the Steel Structures Painting Council's Painting System Specification No. 24.00 (Latex Painting System for Industrial and Marine Atmospheres, Performance-Based).

Containment and Disposal of cleaning materials shall conform to the requirements of Guide Bridge Special Provision (GBSP) 26 "Containment and Disposal of Lead Paint Cleaning Residues," included in the appendices of this book.

**Method of Measurement.** This work will not be measured for payment.

**Basis of Payment.** The work will be paid for at the contract lump sum price for CLEANING AND PAINTING EXISTING STEEL STRUCTURES, as designated on the Plans, in these specifications or as directed by the Commissioner. Payment will be authorized only after all required work for surface preparation and painting have been completed to the satisfaction of the Commissioner, and all Quality Control (QC) documentation has been approved. Payment also will not be authorized for non-conforming work until the discrepancy is resolved in writing.

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**ITEM 80**

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**COUNTERWEIGHT PIT CLEANING**

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**Description.** This item shall consist of furnishing all the necessary labor, tools, equipment and materials required to remove and dispose of all water and debris in the counterweight pits, including all material on the bridge seats and on the river piers as well. The Contractor will be responsible for dewatering the pits as required to complete this work.

All debris resulting from this operation shall be removed immediately from the site and disposed of in a manner satisfactory to the Commissioner. All removed material shall be considered surplus and shall be disposed according to Section 202.03 of the Standard Specifications. The water in the pits may contain lead, the Contractor shall be responsible for testing the water prior to dewatering. Contaminated water that is to be removed from the pits shall not be pumped to the river, but shall be disposed of in an environmentally acceptable manner. The manner and location of disposal shall be determined by the Contractor and shall be subject to the approval of the Commissioner. The Contractor shall furnish satisfactory evidence that he/she use the proper authority for the disposal.

**Basis of Payment.** The work under this item will be paid for at the contract unit price of each COUNTERWEIGHT PIT CLEANING, as indicated on the Plans, specified herein or as directed by the Commissioner.

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**ITEM 81**

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**DOLPHINS**

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**Description.** This item consists of furnishing labor, material and equipment for constructing four (4) new permanent dolphins consisting of 37 piles each as shown on the Plans and in accordance with Section 512 of the Standard Specifications except as herein modified. Work item consists of, but are not limited to, all equipment, materials, tools, labor, hardware, and incidentals required for removal and legal disposal of the existing dolphins, environmental protection of the river, identification and protection of existing submerged cables and tunnels, driving of new metal shell cast-in-place concrete piles, installation of steel cap plates, welded steel shield plates, pile splices, concrete crown, painting of shield plates and all items as shown on the Plans and as specified herein. This work shall be performed according to Section 512 and other applicable portions of the IDOT Standard Specifications for Road and Bridge Construction.

**General Requirements.** The Contractor shall obtain all approvals and permits required for all construction operations as may be required for the removal and legal disposal of existing dolphins and installation of new dolphins in the river.

The Contractor shall submit shop drawings and a written description for all work to be provided under the Item to the Commissioner for review.

Prior to commencing work under this item, the Contractor shall verify the location of all existing cables, tunnels, and any other utilities in and under the Chicago River. The Contractor shall submit drawings and written documentation to the Commissioner of all such verification. All work under this item shall be provided in such a manner so as not to disturb or damage the existing submarine cables, utilities, and the vicinity listed species including but not limited to the Banded Killifish.

The Contractor shall install an environmental protection system to control sediment prior to partial removal of the existing dolphins as specified in SOIL EROSION AND SEDIMENT CONTROL item.

**Materials.** Piles shall be black steel pipe, extra strong, 14" outside diameter, 1/4" wall thickness and conforming to ASTM A690/A690M-13a. All pipe piles shall be of lengths indicated on the Plans and shall be provided with open ends.

Structural steel shapes and plates shall conform to ASTM A709, Grade 36, and shall be in accordance with Section 1006.04 of the IDOT SSRBC.

Class SI Concrete shall conform to CDOT5030050 Class "SI" Concrete Misc.

Paint: All structural steel shapes and plates shall be painted in accordance with CLEANING AND PAINTING EXISTING STEEL STRUCTURES and Section 506 of Standard Specifications.

Aggregate used as fill for dolphin piles shall meet the applicable requirements of Section 1004 of the Standard Specifications for the gradation specified in the Plans.

**Construction Requirements.** Existing piles shall be fully removed prior to the installation of the new piles. All new piles shall be full length piles and shall not be spliced unless written approval is given by the Commissioner. If approved by the Commissioner, all splices of steel pile shall be weld compression splices which will develop the full capacity of the cross-sectional area of the pile.

The driving of all pile shall comply with the applicable requirements of Section 512 of the Standard Specification.



All piles deemed not acceptable by the Commissioner shall be removed and re-driven by the Contractor at no additional cost.

All piles shall be driven in the sequence indicated on the Plans unless otherwise approved by the Commissioner in writing.

All piles shall be cut-off at the elevation indicated on the Plans and to form a level surface to receive the cap as detailed.

The fabrication and erection of the structural steel portions of the shield plate shall comply with the applicable requirement of Section 505 of the Standard Specifications.

All structural steel portions of the shield plate for the new dolphins shall be cleaned and given one shop coat in accordance with Section 506. The minimum thickness of this coating shall be 8 mils.

After installation of all piles and erection of the structural steel portions of the shield plate for the new east dolphins and after cleaning of the structural steel portions of the shield plate for the existing west dolphins, all exposed surfaces of steel piles (east dolphins only) and structural steel shield plate above the water line of each dolphin shall be given one field applied coat in accordance with SSPC-24 and SSPC-16, respectively. The exposed surface of shield plate above the waterline for each dolphin shall receive a final field coat of safety yellow epoxy paint.

The concrete cap shall be placed in accordance with the applicable requirements of Section 1020 of the Standard Specifications.

**Submittals.** The Contractor shall submit shop drawings detailing all aspects of this installation for approval by the Commissioner prior to construction and ordering of the materials. In addition, the Contractor shall also submit color samples to the Commissioner for review prior to painting the dolphin shield plate.

**Method of Measurement.** New dolphins shall be measured for payment per each complete, in place and acceptable to the Commissioner. No separate or other measurement shall be made for the work to complete this item, including the removal of the existing dolphins.

**Basis of Payment.** The work under this Item will be paid for at the Contract unit price each for DOLPHINS, as indicated on the Plans and as specified herein.

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**ITEM 82**      \*\*\*\*\*      **DRAINAGE SYSTEM**

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**Description.** Description. This work shall consist of furnishing and installing a bridge drainage system as shown on the plans, including all piping, fittings, support brackets, inserts, bolts, and splash blocks when specified.

**Material.** The pipe and fittings shall be reinforced fiberglass according to ASTM D 2996 RTRP with a 30,000 psi (207 MPa) minimum short-time rupture strength hoop tensile stress. The reinforced fiberglass shall also have an apparent stiffness factor at 5 percent deflection exceeding 200 cu in.-lbf/sq. in. (22.6 cu mm-kPa) and a minimum wall thickness of 0.10 in. (2.54 mm). The adhesive for joining pipe and fittings shall be as recommended by the manufacturer. All pipe supports and associated hardware shall be hot dip galvanized according to AASHTO M 232 (M 232M). The fiberglass pipe and fittings furnished shall be pigmented through out, or have a resin-rich pigmented exterior coat, specifically designed for overcoating fiberglass, as recommended by the manufacturer. The color shall be as specified by the Commissioner. The resin in either case shall have an ultraviolet absorber designed to prevent ultraviolet degradation. The ultraviolet protection shall be designed to withstand a minimum of 2,500 hours of accelerated weathering when tested in conformance with the requirements in ASTM Designation: G 154. Lamps shall be UV-8 (313 nm wavelength). The resting cycle shall be 4 hours of ultraviolet exposure at 140°F (60°C), and then 4 hours of condensate exposure at 120°F (49°C). After testing, the surface of the pipe shall exhibit no fiber exposure, crazing, or hecking, and only a slight chalking or color change. The supplier shall certify the material supplied meets or exceeds these requirements.

**Design.** The drainage system shall be designed as an open system with allowances for the differential expansion and contraction expected between the bridge house and the foundation to which the drainage system is attached.

**Installation.** All connections of pipes and fittings shown on the plans to facilitate future removal for maintenance cleanout or flushing shall be made with a threaded, gasketed coupler or a bolted gasketed flange system. Adhesive bonded joints will be permitted for runs of pipe between such connections. The end run connection shall feature a minimum nominal 6 in. (150 mm) female threaded fiberglass outlet. Straight runs may utilize a 45 degree reducing saddle bonded to the pipe. The female outlet shall be filled with a male threaded PVC plug.

Runs of pipe shall be supported at spacings not exceeding those recommended by the manufacturer of the pipe. Supports that have point contact or narrow supporting areas shall be avoided. Standard slings, clamps, clevis hangers and shoe supports designed for use with steel pipe may be used. A minimum strap width for hangers shall be 1 1/2 in. (40 mm) for all pipe under 12 in. (300 mm) in diameter and 2 in. (50 mm) for diameters 12 in. (300 mm) or greater. Straps shall have 120 degrees of contact with the pipe. Pipes supported on less than 120 degrees of contact shall have a split fiberglass pipe protective sleeve bonded in place with adhesive.

All reinforced fiberglass pipe, fittings, and expansion joints shall be handled and installed according to guidelines and procedures recommended by the manufacturer or supplier of the material.

**Basis of Payment.** This work will be paid for at the contract lump sum price for DRAINAGE SYSTEM.

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**ITEM 83**

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**FURNISHING AND ERECTING 5-INCH HALF CONCRETE  
FILLED GRATING**

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**General.** This item consists of furnishing all equipment, tools, labor, and materials to furnish, deliver and erect the steel roadway grating on the movable spans of the bascule bridge, as shown on the Plans, complete with all appurtenant work, including galvanizing and filling up the upper half of the grating with concrete where shown on the drawings and described herein. This work shall be performed in accordance with the applicable portions of Sections 503 and 505 of the Standard Specifications.

**Description.** This work shall consist of furnishing and installing the factory fabricated and finished 5" 4-way half concrete filled steel grid bridge decking as directed and as shown on the Plans.

Any modifications or substitutions required to accommodate the work shall be submitted to the Commissioner for approval prior to ordering materials. Modifications shall be made at no additional cost.

**Materials.** Grating shall be heavy duty 5" deep four-way galvanized construction and shall meet the following requirements:

1. All steel shall be ASTM A709 Grade 50 or A572 Grade 50.
2. All concrete shall have a minimum 28-day unconfined compressive strength of 4,000 psi with a 3/8" maximum aggregate size. Concrete to be an approved IDOT mix.
3. All roadway grating shall be of the same type and from the same manufacturer.
4. Main bars shall be of a nominal 5" depth, with a finished depth of 5 3/16", spaced at 7-1/2" centers and have a bottom flange as indicated on the Plans. The grating shall include continuous 3/8" thick connection plates for bolting to roadway stringers, as shown on the Plans.
5. The main bars shall run perpendicular to the direction of traffic. Panel lengths shall be such that they extend from curb to curb as shown on the Plans. Main bars shall be continuous over three or more supports.
6. The grid shall be banded on all sides with a 2" x 1/4" trim bar except at the panel edges along the curb. The trim bars at these locations shall be 5" x 3/8" as detailed in the Plans.
7. Tolerances shall not exceed the following:
  - a. + 1/4" for width of panels
  - b. + 1/8" inch for length of panels
  - c. 1/16" inch bar offset on top
  - d. The panels shall be rectangular with a tolerance not to exceed 1/2" across the diagonals.
8. The grid shall be fabricated with pipe sleeves for access to the hold down plate for field connections to the roadway stringers within the areas of concrete infill. The sleeves shall be located at each roadway stringer connection point and shall not be filled with concrete until the field connections have been completed.
9. Prior to fabrication of the grating, the Contractor shall furnish shop drawings and erection plans to the Commissioner for approval as required by Article 505.03 of the Standard Specifications.

10. The Contractor is responsible for providing formwork to support the fluid concrete in accordance with the Standard Specifications. The Contractor has the option of providing removal formwork or a stay-in-place steel pan for filling with concrete the upper half of the grating.
11. The top surfaces of the open grating shall be serrated.
12. The grating panels shall be shop assembled in a workmanlike manner. Particular attention shall be given to ensure that transverse bracing bars are positioned in such a way as to provide positive bearing support to all intermediate bars. Grating panels shall be finished to the above tolerances in such a manner that the weight of the panel will cause all main bars to rest fully on support beams. All bars shall be straight.
13. Main, supplemental and cross-bars shall line up for the whole grating area.
14. All intermediate bars, longitudinal bars and cross-bars shall have positive support on main bars of the grating in order to maintain their support in place.
15. All field and shop welding shall comply with the requirements of the American Welding Society ANSI/AASHTO-AWS D1.5 Bridge Welding Code and shall be performed by a certified welder.
16. The Contractor shall fabricate the grating of proper lengths and widths so that when assembled on the site, the end panels shall have the indicated relationship to each other and to the structure as shown on the Plans. If found to be incorrect when erected, the Contractor shall make the necessary alterations to the satisfaction of the Commissioner without additional cost to the City.
17. Identifying embossed metal tags welded to the main bars shall be attached in two positions on each panel. Paper tags may not be used.
18. Upon completion of the fabrication of the grating panels and just prior to galvanizing, the gratings shall be free of grease, dirt, weld spatter, loose rust and scale, and shall be cleaned of oil by application of naphtha or benzene. Surfaces shall be entirely dry before hot-dip galvanizing.
19. Following fabrication and preparation of a panel, it shall be hot dipped galvanized in accordance with the requirements of ASTM A123. The zinc coating shall be applied at the average rate of not less than 2.0 ounces per square foot and no single sample of the required number shall show less than 1.8 ounces.
20. Following galvanization of the panels, each panel shall be filled with concrete, finished and cured according to IDOT Standard Specifications.

**Quality Assurance.** Manufacturer and furnishing the 5"-4 Way Half Filled Grid bridge decking to conform to the following minimum codes and standards:

1. Manufacturer shall be certified to American Institute of Steel Construction Simple Steel Bridges
2. Welding to meet AWS D1.5 Bridge Welding Code standards for fabrication and installation.
3. Manufacturer shall have an AWS Certified Welding Inspector present during manufacturing.

The Contractor shall take field measurements to verify dimensions prior to the preparation of Shop Drawings and fabrication.

**Submittal Requirements.** The Contractor shall provide the following submittals for the Commissioner to review:

1. Shop Drawings to show product details, bridge plan, profiles, joining method, fastening details, adjacent construction interfaces, and dimensions prior to fabrication and installation. Shop Drawings shall be sealed by a Structural Engineer licensed in the State of Illinois.
2. Structural calculations or manufacturer's documentation that the grating system can support the dead and live loads identified for this project.

**Construction Requirements.** Store materials in a dry, protected, well-vented area with blocking to maintain any prefabricated camber (or design flatness). Report damaged material or material in non-conformance with project specifications and plans to the delivering carrier and manufacturer.

Prior to installation, the Contractor shall verify that the substrate is dry, clean and free of foreign matter and correct all defects prior to installation. Additionally, the Contractor shall verify that the substrate can support the open grid bridge decking before installation begins.

Immediately prior to placement of grating, the top flanges of painted stringers and floor beams that will be inaccessible after installation of the grating shall be cleaned and free of grease and dirt, and then given two coats of field paint. The cost of this painting shall be included with the contract price for CLEANING AND PAINTING EXISTING STEEL STRUCTURES.

Install the steel grid bridge decking in accordance with the project drawings, specifications, approved shop drawings, and manufacturer's installation standards.

**Method of Measurement.** This work will be measured for payment in square feet, furnished and installed in place. Measurement will be out to out of grid deck, including trim bars. No deducts will be made for expansion joints or gaps between panels.

**Basis of Payment.** This work will be paid for at the contract unit price per square feet of FURNISHING AND ERECTING 5-INCH HALF CONCRETE FILLED GRATING.

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**ITEM 84**

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**FURNISHING AND ERECTING FRP GRATING**

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**General.** This item consists of furnishing all equipment, materials, tools, labor, hardware, and incidentals necessary for furnishing and erecting the proposed Fiberglass Reinforced Plastic (FRP) sidewalk grating systems as shown on the Plans, as directed by the Commissioner and as specified herein. This work shall also be performed according to applicable portions of the IDOT Standard Specifications for Road and Bridge Construction.

**Description.** This work shall consist of furnishing and erecting the proposed grating systems at the north and south sidewalks of the bascule span as shown on the Plans. The FRP grating system is to include a 1/2"-thick floor plate attached to 2"-deep pultruded grating for an overall depth of 2½". The grating system is to be secured to the sidewalk stringers as shown in the Contract Plans.

Any modifications to the FRP grating systems required to accommodate the provisions of this specification or alternative and equivalent systems shall be submitted to the Commissioner for approval prior to ordering materials. Modifications required shall be made at no additional cost.

**Materials.**

General FRP Composition:

1. All FRP items furnished under this Section shall be composed of fiberglass reinforcement and resin in qualities, quantities, properties, arrangements and dimensions as necessary to meet the design requirements as shown in the Plans.
2. Fiberglass reinforcement shall be a combination of continuous roving, continuous strand mat, and surfacing veil in sufficient quantities as needed by the application and/or physical properties required.
3. Resin shall be vinyl ester with chemical formulations as necessary to provide the corrosion resistance, strength and other physical properties as required.
4. All finished surfaces of FRP items and fabrications (except for the top exposed surfaces of the floor plates) are to be smooth, resin-rich, free of voids and without dry spots, cracks, crazes or unreinforced areas. All glass fibers shall be covered with resin to protect against their exposure due to wear or weathering.
5. All pultruded structural shapes shall be protected from ultraviolet (UV) lights with integral UV inhibitors in the resin and a synthetic surfacing veil to help produce a resin rich surface.
6. All FRP products shall have a tested flame spread rating of 25 or less for floor plate and 15 or less for pultruded shapes per ASTM E84 Tunnel Test. Plate and gratings shall also have a tested burn time of less than 30 seconds and an extent of burn rate of less than or equal to 10 millimeters per ASTM D635.

Molded FRP Floor Plate:

1. Floor plate shall be of a one-piece molded construction manufactured by building up multiple layers of resin-impregnated fiberglass reinforcements that are continuous and equally oriented in the length and width directions. Percentage of glass (by weight) shall not exceed 35% to achieve maximum corrosion resistance, and as required to maintain the structural requirements of the contract documents. After molding, no dry glass fibers shall be visible on any surface. All surfaces shall be smooth and uniform with no evidence of fiber orientation irregularities, interlaminar voids, porosity, resin rich or resin starved areas.
2. Floor plate shall have a standard #20-#30 quartz gritted surface, integrally molded into the plate during the manufacturing process. Plates that are secondarily gritted shall not be

allowed.

3. Floor plate shall be fire retardant and certified for a tested flame spread rating of 25 or less when tested in accordance with ASTM E84.
4. The resin system used in the manufacture of the plate shall be a vinyl ester resin with a flame spread rating of 25 or less when tested in accordance with ASTM E84. Manufacturer may be required to submit corrosion data from tests performed on actual plate products in standard chemical environments. Corrosion resistance data of the base resin from the manufacturer is not a true indicator of plate product corrosion resistance and shall not be accepted.
5. Color to be dark grey.

#### Pultruded FRP Grating:

1. Grating components shall be manufactured from high-strength and high-stiffness pultruded elements having a maximum of 70% and a minimum of 60% glass content (by weight) of continuous roving and continuous strand mat fiberglass reinforcements. The finished surface of the product shall be provided with a surfacing veil to provide a resin rich surface which improves corrosion resistance and resistance to ultraviolet degradations. Bearing bars shall be interlocked and epoxied in place with a two-piece cross rod system to provide a mechanical and chemical lock. Cross rods should be below the walking surface of the grating.
2. Grating shall be fire retardant with a tested flame spread rating of 25 or less when tested in accordance with ASTM E 84.
3. The resin system used in the manufacture of the grating shall be a vinyl ester resin with a flame spread rating of 25 or less when tested in accordance with ASTM E84. Manufacturer may be required to submit corrosion data from tests performed on actual grating products in standard chemical environments. Corrosion resistance data of the base resin from the manufacturer is not a true indicator of grating corrosion resistance and shall not be accepted.
4. Color to be grey.
5. The manufacturer's published safe recommended loads shall be greater than the design loads for the grating. The design loads for the FRP grating system are as follows: 100 psf. uniform pedestrian loading and 300 pounds concentrated live load. Deflection is not to exceed 0.375" or L/500, whichever is less.
6. Other products of equal strength, stiffness, corrosion resistance and overall quality may be submitted with the proper supporting data to the Commissioner for approval.

#### Miscellaneous Elements of the FRP Grating System:

1. All mechanical connections shall be manufactured of Type 316 stainless steel.

**Submittals.** The Contractor shall submit detailed shop drawings that shall include, but are not limited to:

1. All panel dimensions and an overall layout of the panel configuration.
2. Manufacturer's shop drawings clearly showing material sizes, types, styles, part or catalog numbers, complete details for the fabrication and erection of components including, but not limited to, location, lengths, type and sizes of fasteners, clip angles, member sizes, and connection details. The Contractor shall verify all required copes and cut-outs required for installation around posts of the pedestrian handrail and existing members.
3. Manufacturer's published literature including structural design data, structural properties data, grating load/deflection tables, corrosion resistance tables, certificates of compliance, test reports as applicable, allowable load tables, and design calculations for the specified

systems

4. Manufacturer's certification of ASTM E84 tests on grating panels from an independent testing laboratory showing a tested flame spread rating of 25 or less. Test data shall be from full-scale tests of actual production grating of the same type and material as required for this project. Test data performed only on the base resins are not acceptable. Certifications for the flame spread rating shall be dated within the past two years.
5. Sample pieces of each item specified herein for acceptance by the Commissioner as to quality and color. Sample pieces shall be manufactured by the method to be used in the work.
6. Any other information as required to fabricate and install the FRP Grating System as outlined in the Contract Documents.

#### **Fabrication.**

1. Grating supplied shall meet the minimum dimensional requirements as specified and as shown on the Plans. The Contractors shall provide and /or verify measurements in the field for work fabricated to fit field conditions as required by grating manufacturer to complete the work. The Contractor shall determine correct size and locations of required holes and verify cope/cut-out dimensions in the field before fabrication of the grating system.
2. Each grating sections shall be readily removable, except where indicated on Plans. Manufacturer to provide openings or holes where located on the contract drawings. Grating supports shall be provided at openings in the grating by Contractor where necessary to meet load/deflections requirements specified herein. Grating openings which fit around protrusions (pipes, cables, etc.) shall be discontinuous at approximately the centerline of opening so each section of grating is readily removable.
3. All shop fabricated grating cuts shall be coated with vinyl ester resin to provide maximum corrosion resistance. All field fabricated grating cuts shall be coated similarly by the Contractor in accordance with the manufacturer's instructions.
4. Type 316 Stainless steel bolts and associated hardware shall be provided and spaced as shown in the Plans. A minimum of four bolts shall be provided per piece of grating, or as recommended by the manufacturer.
5. The FRP grating system shall span the support spacing as shown on the Plans and be able to support the design loads and meet deflection criteria as specified herein.

#### **Quality Assurance.**

1. All items to be provided under this Section shall be furnished by manufacturers having a minimum of ten (10) years of experience in the design and manufacture of similar products and systems. Additionally, if requested, a record of at least five (5) previous, separate, similar successful installations in the last five (5) years shall be provided.
2. Manufacturer shall offer a three (3) year limited warranty on all FRP products against defects in materials and workmanship.
3. Manufacturer shall be certified to the ISO 9001-2000 standard.
4. Manufacturer shall provide proof of certification from at least two quality assurance programs for its facilities or products (UL, DNV, ABS, USCG, and AARR).
5. Manufacturer shall provide proof, via independent testing less than six (6) months old that materials proposed as a solution do not contain heavy metals in amounts greater than that allowed by current EPA requirements.

#### **Product Delivery and Storage.**

1. Delivery of Materials: Manufactured materials shall be delivered in original, unbroken pallets, packages, containers, or bundles bearing the label of the manufacturer.



Adhesives, resins and their catalysts and hardeners shall be crated or boxed separately and noted as such to facilitate their movement to a dry indoor storage facility.

2. Storage of Products: All materials shall be carefully handled to prevent them from abrasion, cracking, chipping, twisting, other deformations, and other types of damage. Adhesives, resins and their catalysts are to be stored in dry indoor storage facilities between 70 and 85 degrees Fahrenheit (21 to 29 degrees Celsius) until they are required.

**Construction Requirements.** This work shall include field-drilling holes in the new sidewalk framing to accommodate the bolts of the grating system. The holes shall be free of all burrs and shavings and shall be properly cleaned prior to applying a coat of organic zinc-rich primer to the holes. The primer shall be adequately dry and cured prior to installing the bolts.

Contractor shall install gratings in accordance with the manufacturer's assembly drawings. Lock grating panels securely in place with fasteners as specified herein and as shown in the Plans. Field cut and drill fiberglass reinforced plastic products with carbide or diamond tipped bits and blades. Seal cut or drilled surfaces in accordance with manufacturer's instructions. Follow manufacturer's instruction when cutting or drilling fiberglass products or using resin products; provide adequate ventilation.

**Method of Measurement.** This work will be measured for payment in square feet installed in place. The measured area will not deduct copes or cut-outs required for pedestrian handrail posts or existing steel. This shall include all field measuring, shop drawings, connections, hardware, trim bars, field drilling for bolts, field cutting panels, sealing cut edges and holes and all other miscellaneous items necessary for furnishing and erecting the FRP grating. The Contractor shall follow all manufacturer recommendations, and all costs shall be included under this pay item.

**Basis of Payment.** This work will be paid for at the contract unit price per square feet for FURNISHING AND ERECTING FRP GRATING.

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**ITEM 85**

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**FURNISHING AND ERECTING STRUCTURAL STEEL**

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**Description.** Work consists of furnishing, fabricating, shop assembly, cleaning, storing, transporting and erecting all structural steel as shown on the Plans or described herein. Work includes all temporary support systems required to facilitate work except for the temporary shoring of the counterweight which is included with item TEMPORARY SUPPORT. Work under this item also includes the removal and legal disposal of all temporary support system steel, and all modifications to existing structure required to erect the steel work as shown on the Plans and specified herein. Removal of existing rivets or bolts and replacement with high strength bolts in order to expedite erection of members, components of members and connection material will be considered incidental to this item. All structural steelwork shall be in accordance with the applicable requirements of Sections 505 and 506 of the Standard Specifications and as specified herein.

The Contractor is to be responsible for verifying and obtaining all field measurements as required for the proper dimension, details and fabrication of new structural steel to fit existing conditions. All dimensions and conditions shall be verified by the Contractor prior to submittal of shop drawings and the ordering, or fabricating of materials. The Commissioner shall be provided with copies of field notes and field dimensions to facilitate the checking of shop drawings. The original field notes and field dimensions will become the property of the City at the end of the Contract.

Requirements for Protective Coating are given in Specification Sections CLEANING AND PAINTING EXISTING STEEL STRUCTURES.

**Materials.** All structural steel covered by this item shall be new and shall be AASHTO M270 (ASTM A709), Grade 50, unless otherwise noted herein or as shown on the Plans. When material is obtained from stock, the Contractor shall submit to the Commissioner the supplier's certification of the type of steel provided and shall identify the steel sections involved. The frequency of testing shall conform to Section 5.1 of AASHTO T243. Sampling and testing procedures shall be in accordance with the Standard Specifications for Sampling Procedures for Impact Testing of Structural Steel, AASHTO T243.

All structural steel for tube sections shall be ASTM A500 Grade B or C. All structural steel tube sections shall be hot dip galvanized after fabrication in accordance with AASHTO M111. The fabricator shall provide relief holes for galvanizing as required by the galvanizer. The location of the holes shall have the approval of the Commissioner. Poor appearance or damage to the galvanized surface shall be sufficient cause for rejection. The exterior surfaces of steel tube sections shall be painted according to the Specification Sections CLEANING AND PAINTING EXISTING STEEL STRUCTURES and as modified herein. The Contractor shall submit for approval the proposed method of surface preparation and the coats to be applied. Passivating treatments shall not be used on galvanized surfaces that will be painted.

Fasteners hardware, bolts, nuts, and hardened washers shall be ASTM A325 Type 1 galvanized. For temporary connections during construction staging, Type 3 (black) bolts may be used. All fasteners and fastener hardware shall conform to the requirements of Section 505 of the Standard Specifications.

**Construction Requirements.** The fabrication and erection of all new structural steel shall conform to the requirements of Sections 505 of the Standard Specifications, these detail specifications, the shop drawings, and shall be approved by the Commissioner, and as specified herein.

Fabrication:

1. The new structural steel has been detailed to meet the length, slopes, and elevations as indicated on the original construction drawings. The actual lengths, slopes and elevations of individual steel elements to be replaced are not guaranteed to exactly agree with the original construction documents, due to unknown conditions that may have arisen during original construction. As such, the Contractor shall field inspect the location of new structural steel prior to submittal of shop drawings or ordering of, or fabrication of material and shall adjust the detailing as required to assure proper connection between existing and new material at the site.
2. Rivets shall be removed only by cutting heads off and driving shanks out mechanically with an air hammer. Prior to the beginning of work, the Contractor shall submit proposed detailed rivet removal procedure for approval by the Commissioner. Burning out of rivet or rivet heads is not allowed unless the Contractor requests in writing to use such a procedure and it is approved by the Commissioner. The Commissioner reserves the right to require demonstrations of such proposed procedures on an agreed upon location of the existing structure in order to determine acceptability. The Commissioner reserves the right to suspend such procedures during the project if deficiencies in the work are found.
3. Removal of rivets required for member addition or replacement shall be performed in such a manner as to not damage the existing structural steel that remains in place. If the structural steel is damaged due to negligence on the part of the Contractor, the additional costs for material and labor necessary to restore the member or member components to its original condition as expressed by the Commissioner shall not be measured for payment, but shall be done at the Contractor's expense.
4. All labor and equipment required to remove rivets from existing structural steel members, and their replacement with high strength bolts, facilitating the removal of members to be replaced or addition of members, will not be measured for payment. The cost will be incidental to the contract unit price under this item. Drilling, or reaming of existing structural steel members or components of members to accommodate bolts of a larger size, or to facilitate erection will not be measured for payment, but will be incidental in the cost of this item.
5. The Contractor is solely responsible for final detailing, and will not be paid extra for any field adjustments required to accomplish proper installations.
6. The Contractor shall supply shop drawings showing the method of joining, thicknesses of materials being joined, and shall contain full and complete information regarding joints and fastenings. These shop drawings shall also show clearly the required fabrication tolerances. In addition, these drawings shall provide detailed descriptions for any anticipated field procedure required to insure proper fit between new and existing structural steel members. No additional compensation will be given if field and/or shop adjustments are necessary after fabrication to meet the required fabrication and construction tolerances.
7. The Contractor is cautioned that the replacement of rivets with high strength bolts, nuts and washers may cause unintended conflicts that will inhibit or preclude installation either in the shop or in the field using traditional bolt tightening methods. The Contractor shall review the drawings and determine locations where such conflicts exist. These conflicts

shall be given in a report to the Commissioner. The Contractor will bring these conflicts to the attention of the Commissioner prior to fabrication for resolution. All revisions to the drawings shall be approved by the Commissioner.

8. Identification punching, stamping, stenciling or other methods of marking structural steel members shall not utilize micro-stress stamps. Identification for shipping, erection, etc., shall be made with permanent marker or paint in a color that contrasts with the primer coat.
9. Members designated "FCM" in the plans are considered Fracture Critical Members. All members and member components designated FCM must be fabricated in accordance with the requirements of the AASHTO/AWS Fracture Control Plan (FCP) for Nonredundant Members. Structural Steel for all FCM designated member components must be in accordance with ASTM A709 supplementary requirements for Fracture Critical material, toughness testing and marking. Members designated "NTR" in the Plans shall meet Notch Toughness requirements in accordance with supplemental requirements for ASTM A709 and in accordance with AASHTO/AWS Fracture Control Plan, unless noted otherwise herein or as shown in the Plans.

Fastener Installation: The following requirements for installation apply when high strength bolts are installed either in the field or in the shop.

1. Bolts shall be installed and tested in accordance with Article 505.04(f) of the Standard Specifications.
2. The rotational capacity test previously described in "Assembly Testing" shall be performed at the site on each rotational capacity lot prior to the start of bolt installation. Hardened steel galvanized washers will be required as part of the test although they may not be required in the actual installation procedure.
3. A Skidmore-Wilhelm Calibrator with current calibration certificates or an acceptable equivalent tension-measuring device is to be available at each jobsite during erection for testing assemblies. Bolts that are too short for the Skidmore-Wilhelm Calibrator shall be tested with other approved devices capable of measuring the bolt tension. The calibration device shall be capable of testing bolts with the following minimum lengths:
  - a. 2.0 inches for 5/8" and 3/4" diameter bolts
  - b. 2.25 inches for 7/8" diameter bolts
  - c. 2.50 inches for 1" diameter bolts
4. Weathered or rusted bolts or nuts not satisfying the requirement items 2 or 3 above shall be cleaned and re-lubricated prior to installation. Re-cleaned or re-lubricated bolt, nut and washer assemblies shall be re-tested in accordance with item 2 above prior to installation.
5. Bolt, nut and washer (when required) combinations shall be installed as units and be from the same rotational capacity lot. Bolts, nuts, and washers with different lot numbers shall not be mixed.

Erection:

1. Field welds other than those shown on the Plans are prohibited unless specifically authorized in writing by the Commissioner or shown on the design drawings. Holes in

existing members or other main members shall be drilled. No welding, burning of holes or flame cutting, for any purpose, will be permitted in these members. Where rivets are to be removed, they shall be replaced with high strength bolt of the same nominal diameter.

2. All erection shall be in accordance with Article 505.08 of the Standard Specifications, with the approved shop drawings, and with these specifications.
3. In Article 505.08 (l) minor misfits is defined as requiring the removal of less than 1/8" of material in the direction perpendicular to the installed position of the bolt. Any reaming of correct misfits of greater than 1/8" shall have the approval of the Commissioner before any corrective action is taken.
4. The Contractor may provide sub-punched or sub-drilled holes in new material when connecting to existing material where existing holes are to be matched. Field reaming of holes in new material that are to match existing connections is acceptable, provided the sub hole is fully contained within the outline of the reamed hole. Final holes shall be round and not oversized.
5. All contact surfaces of the existing structural steel to which new structural steel is to be connected, shall be cleaned. Connections are considered to be Slip-Critical in accordance with AASHTO criteria. Contact surfaces of bolted parts shall meet the requirements of Class A as designated by AASHTO article 10.32.3.2. The surface shall be prepared by the removal of all rust, mill scale, foreign materials and old paint by air blasting hand tools to SSPC SP6 or power hand tools to SSPC SP11 in accordance with Section 506 of the Standard Specifications.
6. For each item, the Plans detail members, components of members and connection material to be removed for replacement or removed to facilitate replacement of members, components of members or connection material.
  - a. If the Contractor wishes to remove additional members, components of members or connection material for ease of work, the Contractor shall receive approval from the Commissioner before proceeding. In all such cases, when re-erecting the Contractor shall provide new material in place of the existing material. If the existing material is in good condition and the Contractor believes it can be re-used, he shall obtain permission to re-use material from the Commissioner. Whether it is re-used or replaced new, this additional material will not be measured for payment and there will be no cause for additional compensation or delay in work.
  - b. If the Contractor believes it is necessary to remove additional members, components of members or connection material in order to complete a repair as detailed on the Plans that could not be anticipated from the drawings, shop plan or procedures, the Contractor shall immediately notify the Commissioner. The Commissioner will review such claims on a case by case basis. If the Commissioner is in agreement with the Contractor, the Commissioner will direct the Contractor to proceed. The Contractor shall not proceed with additional material replacement without the approval of the Commissioner. The additional material will be measured for payment under the item FURNISHING AND ERECTING STRUCTURAL STEEL, FIELD DISCOVERED CONDITIONS REPAIRED AS DIRECTED BY THE COMMISSIONER.
  - c. If, in the course of work, the Contractor discovers additional members, components of members or connection material that is corroded and he believes requires replacement, the Contractor shall immediately notify the Commissioner. The

Contractor shall submit detailed recommendations to the Commissioner for approval. The Commissioner will review these items on a case by case basis. If the Commissioner is in agreement with the Contractor, the Commissioner will direct the Contractor to proceed. The Contractor shall not proceed with additional material replacement without the approval of the Commissioner. The additional material will be measured for payment under the Item FURNISHING AND ERECTING STRUCTURAL STEEL, FIELD DISCOVERED CONDITIONS REPAIRED AS DIRECTED BY THE COMMISSIONER.

Supervision:

The Contractor shall, at all times, have a competent foreman, superintendent, or other representative on site who has full authority to act for the Contractor and to receive and execute orders from the Commissioner.

The Contractor shall employ competent workers. Workers expert in their respective branches of work shall be employed where special skills are required. Furthermore, the laborers employed by the Contractor are subject to the approval of the Commissioner, who will have the power to require the discharge of any of the Contractor's employees from the project, if, in his judgment, it would be in the best interest of the work that such worker be discharged there from. The Contractor shall immediately comply with any such request.

Temporary Support Structures:

The Contractor shall not place any temporary support structure in the counterweight pit slab.

Temporary support structures employed by the Contractor in the execution of the work are part of the work and not measured separately. This work consists of the design, fabrication, erection and monitoring of temporary support structures required to facilitate the structural steel repairs shown on the Plans and required by the Commissioner. The Contractor is wholly responsible for these procedures including fully designing all support structures, and accordingly shall submit detailed plans, procedures and calculations sealed by a Structural Engineer licensed by the State of Illinois for approval by the Commissioner.

The Plans provide a suggested procedure for completing the work within the Project Schedule as developed by the Commissioner during the design phase. It is conceptual in nature and does not include all details needed to accomplish the work. It is expected that the Contractor will bring the force of his own experiences and equipment capabilities to bear on the project. Therefore, the Contractor may suggest alternate procedures. The Contractor shall submit these alternate procedures to the Commissioner for approval prior to their execution. Approval of an alternate method developed by the Contractor does not relieve the Contractor of the obligation to provide the completed design, fabrication and erection of the work. The Contractor shall submit detailed plans, procedures, and calculations sealed by a Structural Engineer licensed in the State of Illinois for all alternate procedures for approval by the Commissioner. The Commissioner reserves the right to reject the alternate procedures and direct the Contractor to use the procedures outlined in the Plans. There shall be no additional reimbursement to the Contractor for this item regardless of the erection method approved by the Commissioner.

The Commissioner's review of the Contractor's submittals may only be for general conformance to the requirements set forth in the Plans and these Specifications. Acceptance of the Contractor's submittals by the Commissioner does not relieve the Contractor of the sole responsibility of the

structural adequacy, integrity and execution of the temporary support systems. The Contractor shall furnish plans and working drawings for fabricating and erecting structural steel for temporary structures and permanent structures, and submit them to the Commissioner for approval. The Contractor shall make his own field measurements without additional costs to the City.

Erection drawings shall include a written description of the proposed sequence of erection and the methods to be employed in the erection operations. The Contractor shall submit detailed procedures for all jacking operations. Furthermore, the submittal shall include drawings and details of the sequence of installation of steel and locations of any temporary supports or bracing, the anticipated loads and the step-by-step procedure. The Contractor is responsible to ensure that the erection procedure results in a safe and stable structure at all times and to comply with all safety requirements as required by all City, State, and Federal laws, codes or other regulations.

The Contractor's temporary support structures and procedures shall at all times be performed with instrumentation and monitoring as required by the Commissioner. The instrumentation and monitoring plan and its implementation will be the responsibility of a testing firm under contract with the City of Chicago. The Contractor shall cooperate fully with the designated testing firm, and shall provide equipment and operators to facilitate placement of strain gages, wires, load cells, computers and any other instrumentation the Commissioner requires to adequately monitor the repair/replacement procedure. The Contractor shall incorporate the Commissioner's proposed monitoring system and required instrumentation into his plans and procedures for temporary supports. The monitoring system will need to be designed after the Contractor's erection method is approved.

During jacking operations, the Contractor shall monitor his equipment for jacking information and share this data continuously with the Commissioner. The Contractor's determination of adequate load transfer and jacking forces shall be made in the field with the approval of the Commissioner or his designated testing firm. Monitoring of the temporary shoring and the existing structure shall be performed by the Contractor and the Commissioner's designated testing firm. The Contractor will immediately notify the Commissioner of any movement or change in the system performance. Should the Commissioner find the system requires adjustment, the Contractor shall immediately perform such adjustments to ensure the adequacy of the structure, at no additional cost. The structure monitoring performed by the Commissioner does not relieve the Contractor of the full responsibility for the adequacy of the structure or the performance of the work.

If the Commissioner determines that the shoring system is unstable or deficient in any manner, he may direct the Contractor to take action to stabilize the structure. The Contractor shall provide the required stabilizing action at no additional cost to the Commissioner. If the Contractor fails to take suitable, timely action under such conditions, then the Commissioner reserves the right to employ others to remedy the situation, at the expense of the Contractor.

**Submittals.** The Contractor shall submit for approval by the Commissioner, shop drawings as required by Article 505.03 of the Standard Specifications. The Contractor shall furnish plans and working drawings for erection of the structural steel. The Contractor shall make his own field measurements without additional costs to the City.

Erection drawings shall include a written description of the proposed sequence of erection and the methods to be employed in the erection operations. As required, the submittal shall include locations of any temporary supports or bracing, the anticipated loads, calculations and the step-by-step procedure. The Contractor is responsible for ensuring that the erection procedure results in a safe and stable structure at all times and to comply with all safety requirements as required by all City, State and Federal laws, codes or other regulations. The Erection plans shall be sealed

by a Structural Engineer licensed in the State of Illinois, and is subject to the approval of the Commissioner. All submittals shall be submitted at least 30 days prior to the beginning of the work.

**Method of Measurement.** Estimated weights have been included for information on the Plans, but payment for the net weight of the new structural steel furnished, fabricated, erected, and accepted by the Commissioner will not be measured for payment but shall be measured as a lump sum item, completely installed and accepted by the Commissioner.

**Basis of Payment.** New structural steel complying with the requirements of these specifications will be paid for as lump sum for FURNISHING AND ERECTING STRUCTURAL STEEL.



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**ITEM 86**

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**FURNISHING AND ERECTING STRUCTURAL STEEL, FIELD  
DISCOVERED CONDITIONS REPAIRED AS DIRECTED BY  
THE COMMISSIONER**

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**Description.** Work under this item shall consist of removing, furnishing, erecting and painting replacement pieces for all damaged or deteriorated structural steel that is identified in the field and not shown in the Contract Plans. Plates, shapes, members required to be removed to facilitate the replacement/repair of damaged structural steel shall be removed, stored and reinstalled as required and shall be included under this item. This item includes all temporary support systems required to facilitate work, the removal and legal disposal of all existing steel, and all modifications to existing structure required to erect the steel work as shown on the Plans and specified herein. Work under this item shall be performed according to Section 505 of the IDOT Standard Specifications for Road and Bridge Construction, except as herein modified.

**General Requirements.** After the start of construction, all newly identified damaged or deteriorated structural members that are not shown on the Contract Plans, shall be brought to the attention of the Commissioner for approval of either repair or replacement of such members.

**Submittals.** Calculations, procedures and shop drawings of members to be replaced under this item shall be submitted to the Commissioner within 7 days after approval is granted for repair and/or replacement of a member(s) under this item. The Contractor shall be responsible for verifying and obtaining all field measurements as required for the proper dimensions, details and fabrication of field identified steel to fit existing conditions. All dimensions and conditions shall be verified by the Contractor prior to submittal of shop drawings and order of materials. The Commissioner shall be provided with copies of field notes and field dimensions to facilitate the review of shop drawings. The original field notes and field dimensions shall become the property of the City at the end of the Contract. Submittals shall be sealed by an Illinois licensed Structural Engineer.

The Contractor's submittals shall satisfy the requirements of the Temporary Support Structure portion of the Specification under item FURNISHING AND ERECTING STRUCTURAL STEEL, SPECIAL and all requirements of the Contract Documents.

**Method of Measurement.** Work under this item will be measured for payment on a per pound basis for steel required. Rivets and/or bolts removed and replaced with high strength bolts as part of the work under this item will not be paid for separately, but shall be included within the costs for this item.

Temporary support structures including all associated design engineering, measurements, fabrication and erection of required materials, testing and monitoring activities required by the contract documents and all other such activities related to Temporary Support Structures shall not be measured for payment, but are considered included in the cost of this item.

**Basis of Payment.** This work will be paid for at the contract unit price per pound for FURNISHING AND ERECTING STRUCTURAL STEEL, FIELD DISCOVERED CONDITIONS REPAIRED AS DIRECTED BY THE COMMISSIONER. For the purposes of bidding, a quantity of 10,000 lbs. shall be assumed. This quantity may increase or decrease, based on field conditions, without affecting the unit price.

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**ITEM 87**

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**FLOOR ACCESS HATCH**

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**Description.** This item shall consist of furnishing all material, equipment, tools, hardware, labor, and incidentals necessary for furnishing and erecting the floor access hatches on the north and south sidewalks as shown on the Plans, specified herein, and as directed by the Commissioner.

**Materials.** Floor access doors shall be made of aluminum and fabricated to the dimensions shown in the Plans. Door leaf shall be ¼" aluminum plate with a diamond pattern and shall be reinforced as needed to support a uniformly distributed load of 100 psf. or a concentrated load of 300 lbs, whichever governs. Hardware shall be made of Type 316 Stainless Steel. Acceptable Manufacturers include, but are not limited to:

- (1) The Bilco Company | Type J-AL Access Door
- (2) Nystrom | Floor Door
- (3) U.S.F. Fabrication, Inc. | Model TPS

**Submittals.** The Contractor shall submit detailed shop drawings that shall include, but are not limited to:

1. All floor access hatch dimensions and an overall layout of the configuration.
2. Manufacturer's shop drawings clearly showing material sizes, types, styles, part or catalog numbers, complete details for the fabrication and erection of components including, but not limited to, location, lengths, type and sizes of fasteners, member sizes, and connection details.
3. Manufacturer's published literature including structural design data, structural properties data, grating load/deflection tables, corrosion resistance tables, certificates of compliance, test reports as applicable, allowable load tables, and design calculations for the specified systems
4. Any other information as required to fabricate and install the Floor Access Hatch as outlined in the Contract Documents.

**Fabrication.**

1. Design Loading: 100 lbs./sq. ft. (uniformly distributed) or 100 lbs. (concentrated load) pedestrian live load with a maximum deflection of L/150, where L is the span length.
2. Hardware includes, but is not limited to: hinges with stainless steel pins, locking mechanism, lifting mechanism comprised of springs (or similar), removable external handle, stainless steel bolts to attach to support framing.
3. Type 316 Stainless steel bolts and associated hardware shall be provided and spaced as recommended by the manufacturer. A minimum of four bolts shall be provided per access floor hatch, or as recommended by the manufacturer.
4. The Contractor shall coordinate connection requirements between floor access hatch and sidewalk stringers.
5. The top surface of hatches shall meet ADA requirements.

**Quality Assurance.**

1. All items to be provided under this Section shall be furnished by manufacturers having a minimum of five (5) years of experience in the design and manufacture of similar products and systems. Additionally, if requested, a record of at least five (5) previous, separate, similar successful installations in the last five (5) years shall be provided.
2. Manufacturer shall offer a five (5) year limited warranty on all floor access hatches against

defects in materials and workmanship.

3. Manufacturer shall be certified to the ISO 9001-2000 standard.
4. Manufacturer shall provide proof of certification from at least two quality assurance programs for its facilities or products (UL, DNV, ABS, USCG, and AARR).

**Construction Requirements.** This work shall include field-drilling holes in the new sidewalk framing to accommodate the bolts of the floor access hatches. The holes shall be free of all burrs and shavings and shall be properly cleaned prior to applying a coat of organic zinc-rich primer to the holes. The primer shall be adequately dry and cured prior to installing the bolts.

Contractor shall install access floor hatches in accordance with the manufacturer's assembly drawings. Lock access floor hatches securely in place with fasteners as specified herein and as directed by the Commissioner.

**Method of Measurement.** This work will be measured for payment per each access floor hatch installed. This item shall include all coordination, shop drawings, connections, hardware, handles, field drilling for bolts, and all other miscellaneous items necessary for furnishing and erecting the access floor hatch. The Contractor shall follow all manufacturer recommendations, and all costs shall be included under this pay item.

**Basis of Payment.** This work will be paid for at the contract unit price per each for FLOOR ACCESS HATCH.

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**ITEM 88**

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**METAL LADDERS**

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**Description.** This work shall consist of full replacement of metal ladders including all appurtenant and collateral work as shown on the Plans, called for in the Specifications or as directed by the Commissioner. The work shall also include the removal and replacement of all deteriorated support members as directed by the Commissioner; and the removal and legally disposing of the members called for replacement.

**Materials.**

- (a) Steel Shapes and Plates: ASTM A36.
- (b) Steel Pipe Sections: ASTM A53.
- (c) Steel Tubing: ASTM A500 Grade B.
- (d) Bolted Connections: ASTM A325N
- (e) Shop Primer: MPI #79, modified alkyd primer.

**Construction Requirements.**

- (a) General: Preassemble items in the shop to greatest extent possible. Use connections that maintain structural value of joined pieces.
  - 1. Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges. Remove sharp or rough areas on exposed surfaces.
  - 2. Weld corners and seams continuously. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals. Obtain fusion without undercut or overlap. Remove welding flux immediately. Finish exposed welds smooth and blended.
  - 3. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners where possible. Locate joints where least conspicuous.
  - 4. Fabricate seams and other connections that will be exposed to weather in a manner to exclude water. Provide weep holes where water may accumulate.
  - 5. Shop prime all metal fabrications with Masters Painters Institute, #76 Q.D. Alkyd Metal Primer.
    - a. Acceptable Manufacturers:
      - 1. Benjamin Moore.
      - 2. ICI Paints.
      - 3. PPG.
      - 4. Sherwin Williams.
  - 6. Paint: Provide two field applied coats of Master Painters Institute, #81 Q.D. Semi-gloss enamel on factory primed metal fabrications.
    - a. Acceptable Manufacturers:
      - 1. Benjamin Moore.
      - 2. ICI Paints.
      - 3. PPG.
      - 4. Sherwin Williams.

(b) Metal Ladders:

1. Comply with ANSI A14.3 and OSHA Subpart D Section 1910.27.
2. Space side rails 18 inches apart.
3. Steel Ladder Construction: Flat bar side rails, with 3/4-inch-diameter steel bar rungs fitted in centerline of side rails, plug-welded, and ground smooth on outer rail faces.
4. Ladders shall be painted safety yellow.

(c) Safety: The Contractor shall follow all IDOT safety work rules and OSHA requirements.

(d) All delivery, storage and handling of components shall comply with the manufacturer's instructions to prevent components from being damaged.

(e) Shop Drawings: Include plans, sections, and details of metal fabrications and their connections.

(f) Warranty: The Contractor shall provide a 1-year warranty according to the Standard Documents for Construction.

**Method of Measurement.** The work will be measured for payment per each metal ladder installed.

**Basis of Payment.** The work will be paid for at the contract unit price per each for METAL LADDER.

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**ITEM 89**

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**PIER PROTECTION REPLACEMENT**

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**Description.** The work in this item includes furnishing all labor, material, and equipment required to safely remove and replace the existing pier protection system along the west and east river piers. This work shall include the removal of all existing timber piles and timber wales including their anchorages to the existing pier wall, if any, and installation of the new pier protection system as shown on the Plans and specified herein.

**Materials.** Structural Treated Timbers shall conform to the material requirements of the Standard Specifications Articles 1007.03 and 1007.12 and shall be of the dimensions shown on the Plans. Provide anchor bolts, nuts, washers and hardware that conforms to Standard Specifications, Article 1006.09, at the size and location shown on the Plans or as directed by the Commissioner. Where no spacing is given, the Contractor shall propose spacing in the shop drawings which are required as described in the Submittals section of this item.

Structural steel piles shall conform to the requirements of Article 1006.05 of the Standard Specifications. The concrete used to fill the structural steel piles shall be Class SI and shall meet the requirements of Section 1020 of the Standard Specifications. Paint all structural steel shapes and plates in accordance with CLEANING AND PAINTING EXISTING STEEL STRUCTURES and Section 506 of Standard Specifications, unless otherwise noted in the Plans. The aggregate used as fill for dolphin piles shall meet the applicable requirements of Section 1004 of the Standard Specifications for the gradation specified in the Plans.

**Construction Requirements.** The existing pier protection system is heavily deteriorated and for the most part only timber piles remain in place. Due to the heavy deterioration, most of the timber piles are not visible above water level. The Contractor shall not assume that piles that are not visible above the water no longer require removal. Per the existing plans, piles were originally furnished as 40 feet in length. It is the Contractor's responsibility to properly locate all existing timber piles and wales and to remove them and safely dispose them. Disposal of the existing pier protection system shall be in accordance with Section 202.03 of the Standard Specifications. The Contractor shall take extreme care during removal operations as not to damage the existing bridge or piers. Any damage to the existing bridge or piers during removal operations shall be repaired at the Contractor's expense and to the satisfaction of the Commissioner. All work under this item shall be provided in such a manner so as not to disturb or damage the existing submarine cables, utilities, and the vicinity listed species including but not limited to the Banded Killifish.

**Submittals.** The Contractor shall submit shop drawings and material specifications for the pier protection system including but not limited to details for the structural timber wales, structural steel piles, pile shoes, connections and hardware, and splices. Shop drawings shall be in accordance with Section V of Book 1 of the project specifications.

**Method of Measurement.** This item shall be measured for payment per foot of PIER PROTECTION REPLACEMENT. Removal of existing pier protection, cutting existing anchorage, furnishing and installation of new anchors grouted in place, furnishing and installation of new piles, concrete, and fill aggregate are included in the unit cost of this item.

**Basis of Payment.** This work will be paid for at the Contract bid unit price per foot of PIER PROTECTION REPLACEMENT, as completed to the satisfaction of the Commissioner.

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**ITEM 90**

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**REMOVAL OF DETERIORATED CONNECTORS AND  
REPLACEMENT WITH HIGH STRENGTH BOLTS**

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**Description.** Work under this item shall consist of removing deteriorated rivets and/or bolts and replacing them with high strength bolt assemblies. Work under this item shall apply only to the replacement of deteriorated fasteners that connects existing components that shall remain. Work under this item shall be performed according to Section 505 of the IDOT Standard Specifications for Road and Bridge Construction, except as herein modified.

**General Requirements.** The existing rivets and/or bolts to be removed and replaced with high strength bolt assemblies shall be identified in the field by the Commissioner at the time work is being performed. The Contractor is advised that work as covered under this item may extend to any and all members in the structure unless specifically called out to be paid for under a different line item.

New high strength bolts shall be the same nominal diameter as the connector removed.

**Construction Requirements.** Not more than one rivet at a time shall be removed and replaced with a high strength bolt assembly except as approved by the Commissioner.

Thermal cutting and/or removal rivets and/or bolt heads shall not be permitted without approval by the Commissioner.

Upon completion of the connector replacement, the new bolts shall be cleaned and painted with one coat of primer as specified under the item CLEANING AND PAINTING EXISTING STEEL STRUCTURES.

**Method of Measurement.** Connectors to be removed and replaced will be measured in place per each connector.

**Basis of Payment.** This work will be paid for at the contract unit price per each for REMOVAL OF DETERIORATED CONNECTORS AND REPLACEMENT WITH HIGH STRENGTH BOLTS. For the purpose of bidding, a quantity of 1,000 connectors to be replaced with new high strength bolts shall be assumed. This quantity may increase or decrease, based on field conditions without affecting the unit price.

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**ITEM 91**

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**REFURBISHING LIVE LOAD BEARINGS**

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**Description.** This item shall consist of furnishing all material, equipment, and labor to refurbish the existing live load bearings as shown on the Plans, specified herein, and as directed by the Commissioner. The term 'live load bearings' as used in this item specification include the pedestal and bolster as shown in the plans. This work includes, but is not limited to:

- A. Temporary removal, refurbish and reinstall the cast steel upper plate of live load bearing
- B. Clean and paint anchor bolts in place.
- C. Clean and paint all existing live load bearings in place.
- D. Repair of grout pads.
- E. Install shim plates as needed for balancing.

**Materials.** All materials shall be as shown in the Plans, as specified herein, and in accordance with the applicable sections of the IDOT Standard Specifications.

**Construction Requirements.** The Contractor shall temporarily remove, clean and paint, and reinstall the cast steel upper plate of the live load bearings at the locations shown on the drawings as directed by the Commissioner and specified herein. Temporary removal of the upper plate shall be done after removal of existing grid deck and stringers, and prior to removal of floorbeams of the bascule span. The Contractor is responsible for the stability of the structure during this operation and shall retain a Licensed Structural Engineer registered in the state of Illinois to determine the stability requirements throughout this operation. Temporary support of the counterweight is included with TEMPORARY SUPPORT pay item. Any additional temporary shoring of the structure as deemed necessary by the Contractor to complete this operation will not be paid for separately, but shall be considered included in this pay item.

Live load bearings, fasteners, shim plates, anchor bolts, and any other miscellaneous attachments shall be cleaned and painted in place in accordance with CLEANING AND PAINTING EXISTING STEEL STRUCTURES.

If the existing anchor bolts exhibit excessive deterioration such that repair is necessary as determined by the Commissioner, the Contractor shall submit for approval to the Department a repair procedure similar to that shown on *Figure 2.9-7 – Anchor Bolt Extension of the IDOT Structural Services Manual*. Furnishing all materials, equipment, and labor necessary to conduct this repair shall be considered incidental to this work. The repair procedure shall be prepared, signed and sealed by an Illinois Licensed Structural Engineer.

Prior to reinstallation of the refurbished upper plates, the existing steel surfaces shall be milled level and ground smooth. As directed by the Commissioner, shim plates shall be installed as needed for balancing..

**Submittals.** Prior to the removal of the cast steel upper plates of the live load bearings as detailed on the Structural Drawings, the Contractor shall submit the procedures, equipment, temporary shoring details (if deemed necessary), and sequence of removal operations. The submittal shall include a written description of the proposed sequence of removal and the methods to be employed in the removal operations. Further, the submittal shall include calculations, drawings and details of the sequence of removal of the upper plates and locations of any temporary supports or bracing (if deemed necessary), the anticipated loads and the step-by-step removal procedure. The removal procedure shall result in a safe and stable structure at all times, and shall



comply with all safety requirements as required by all City, State and Federal laws, codes or other regulations. The submittal shall be sealed by an Illinois licensed Structural Engineer.

**Method of Measurement.** Refurbishing of the live load bearings shall be measured for payment per each. This work shall include all materials, equipment, and labor necessary to temporarily remove and reinstall the upper plates, clean, and paint the live load bearings as detailed on the Plans, specified herein, and as directed by the Commissioner.

**Basis of Payment.** Refurbishing live load bearings will be paid for at the contract unit price per each for REFURBISHING LIVE LOAD BEARINGS.

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**ITEM 92**

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**REMOVAL OF EXISTING SUPERSTRUCTURES**

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**General.** This item shall consist of furnishing all labor, equipment and materials necessary for the removal and disposal of the existing superstructure elements and decks of the fixed spans of Webster Avenue Bridge, Structure Number 016-6057. The work shall be done in accordance with the applicable portions of Section 501 of the Standard Specifications, as described herein, as detailed in the plans and as directed by the Commissioner.

**Description.** The scope of this item shall include removal and disposal of superstructure elements and asphalt, concrete, and steel decks that are within the limits of the fixed approach spans. This work shall also include removal and disposal of miscellaneous items appurtenant to the structures, including but not limited to deck overlay, bridge railings, fence, expansion joint materials and anchorages, structural steel, reinforcing steel, bearings, existing conduits, conduit supports, electrical wires, junction boxes, etc. The two existing signal poles on the west fixed span shall be removed under a separate item. The Contractor shall submit a detailed procedure for removing the existing structures to the Commissioner for approval prior to starting this work.

Contractor shall coordinate with utilities to remove and/or relocate existing utilities within the work zone prior to structure removal activities with exception of the two pipes running below and through the west fixed span which shall remain in place. The two pipes shall be temporarily supported by the Contractor during demolition activities. The cost of the temporary supports for these pipes shall be included in the cost of REMOVAL OF EXISTING SUPERSTRUCTURES. Where utilities were identified during design they are shown on the drawings. The final location of utilities is the responsibility of the Contractor and is included in Removal of Existing Superstructures.

The work shall conform in every respect to all environmental, state and local regulations regarding construction requirements, the protection of adjacent properties, as well as dust and noise control.

Prior to commencing work under this item, the Contractor shall verify the location of all existing utilities in the area. The Contractor shall submit drawings and written documentation to the Commissioner of such verification. All work under this item shall be executed in such a manner so as not to disturb or damage the existing utilities.

All materials, unless noted, removed under this item shall become the property of the Contractor and shall be disposed of by the Contractor off the site and in a lawful manner meeting all CDOT Policies and Procedures.

**Pedestrian Maintenance.** Pedestrian passage over the bridge shall be maintained on at least one sidewalk during demolition activities unless the Contractor has written approval from the Commissioner.

**Existing Plans.** See record drawings for available plans for the existing superstructures involved in this work. The original plans, however, may not show all modifications that have been made to the structures over the years. The completeness of these plans is not guaranteed and no responsibility is assumed by CDOT for their accuracy. Information is furnished for the Contractor's convenience and is to be used solely at the Contractor's risk.

**Method of Measurement.** No separate measurement will be made for removal of existing superstructures.

**Basis of Payment.** The work under this Item will be paid for at the Contract unit price each for

WEBSTER AVENUE BRIDGE OVER THE NORTH BRANCH OF THE CHICAGO RIVER  
CDOT PROJECT NO.: E-1-525

REMOVAL OF EXISTING SUPERSTRUCTURES, as indicated on the Plans and as specified herein.

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**ITEM 93**

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**REMOVAL OF EXISTING GRID DECK**

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**Description.** This item shall consist of removing and legally disposing and/or salvaging of the existing roadway grating and sidewalk grating in the bascule span of the bridge as indicated on the Plans and as directed by the Commissioner. All work shall comply with the applicable requirements of Section 501 of the Standard Specifications, and as specified herein.

The removal operations shall include all open steel roadway grating and concrete filled sidewalk grating, hatches, access doors, plates and related steel attachments, and all other related items included as part of the bascule span roadway and sidewalk deck.

**Removal Requirements.** The Contractor shall submit, to the Commissioner for review, his proposed method and equipment to be employed in the removal of the bascule span roadway and sidewalk decks.

The Contractor shall make note that the existing roadway grating is welded to the top flange of the existing stringers. When removing the existing roadway bridge deck, care shall be taken as to not damage existing structural steel trusses, existing railing posts, adjacent surfaces or materials or adjacent construction which are to remain. The Contractor shall be responsible for all expense and/or costs of repairing or replacing damaged members, surfaces, materials or construction caused during the removal operations. Repairs shall be done as directed by the Commissioner and may include, but not limited to, grinding, welding and/or member replacement depending upon location and severity of the damage.

The Contractor shall include all protection as required to prevent any materials produced during bridge deck removal from falling into the River or on the existing equipment below such demolition operations.

**Submittals.** The Contractor shall submit, to the Commissioner for review, his proposed method and equipment to be employed for the removal of designated roadway grating and sidewalk grating.

The submittal shall show the procedures, equipment, haul routes, disposal site, and sequence of removal. The submittal shall include a written description of the proposed sequence of removal and methods to be employed in the removal operations. Furthermore, the submittal shall include drawings and details of the sequence depicting removal of the existing grating and locations of any temporary supports, shoring, or bracing, including the anticipated loads and the step-by-step removal procedure. The Contractor shall be responsible to ensure that the removal procedure results in a safe and stable structure at all times and to comply with all safety requirements established and required by the City, State, and Federal laws, and any other applicable codes and/or regulations.

**Method of Measurement.** Bridge deck removal will not be measured for payment.

**Basis of Payment.** This Work will be paid for at the lump sum price for REMOVAL OF EXISTING GRID DECK, which price shall be payment in full for all labor, tools, equipment and incidentals and performing all work to complete the bridge roadway grating and sidewalk grating removal as indicated on the Plans, as specified herein, and as directed by the Commissioner.

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**ITEM 95**

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**STEEL RAILING (SPECIAL)**

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**Description.** This work shall consist of labeling or marking all the existing steel railing panels, removal and delivery of the panels to the shop, cleaning, repairing, selected picket removal, furnishing and welding of new pickets, painting the panels and posts, and re-installing the steel rail with rail posts, including the anchorage to brackets. All work shall be performed in accordance with applicable articles of Section 509 of the Standard Specifications. The steel rail shall be installed in accordance with the details indicated in the Plans and as directed by the Commissioner.

**Materials.** Materials shall be in accordance with Article 509.02 of the Standard Specifications. The new pickets shall be installed on the panels per the details and spacing as shown in the plans.

Cleaning and painting of the panels and posts shall be according to Section 506 of the Standard Specifications.

Shop drawings of the railing should be submitted for approval according to Section 509.04 of the Standard Specifications. Fabrication, inspection, and erection of steel railings shall be according to Section 505 of the Standard Specifications.

Shim plates shall be provided in accordance with Article 509.05(a).

**Method of Measurement.** STEEL RAILING (SPECIAL) shall be measured for payment in feet of such rail in place. The length measured will be the overall length along the top longitudinal railing member through all posts and gaps.

**Basis of Payment.** This work shall be paid for at the contract unit price per foot for STEEL RAILING (SPECIAL), which price shall be payment in full for all labor, materials, tools, equipment and appurtenances to complete the work specified herein, as indicated in the Plans, and as directed by the Commissioner.

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**ITEM 96**

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**STRUCTURAL STEEL REPAIRS**

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**Description.** Work under this item shall consist of furnishing, fabricating, shop assembly, cleaning, storing, transporting, and erecting all structural steel repairs as shown on the Plans. Work under this item shall include, but is not limited to, connection repairs, truss repairs, and bridge house steel repairs, as described on the drawings. These items include all temporary support systems required to facilitate work, the removal and legal disposal of all existing steel and temporary support system steel, the removal and legal disposal of all existing concrete encasements and reinforcement, and all modifications to existing structure required to erect the steel work as shown on the Plans and specified herein. Removal of existing rivets or bolts and replacement with high strength bolts in order to expedite erection of members, components of members and connection material is included under this item. All structural steelwork shall be in accordance with the applicable requirements of Sections 505 of the Standard Specifications and as specified herein.

The Contractor shall be responsible for verifying and obtaining all field measurements as required for the proper dimension, details and fabrication of new structural steel to fit existing conditions. All dimensions and conditions shall be verified by the Contractor prior to submittal of shop drawings and the ordering, or fabricating of materials. The Commissioner shall be provided with copies of field notes and field dimensions to facilitate the checking of shop drawings. The original field notes and field dimensions will become the property of the City at the end of the Contract.

**Construction Requirements.** The fabrication and erection of all new structural steel shall conform to the requirements of Sections 505 of the Standard Specifications, these Detail Specifications and the attachments, as indicated on the Plans, the shop drawings approved by the Commissioner, and as specified herein.

**Fabrication:**

1. The new structural steel has been detailed to meet the length, slopes, and elevations as indicated on the original construction drawings. The actual lengths, slopes and elevations of individual steel elements to be replaced are not guaranteed to exactly agree with the original construction documents, due to unknown conditions that may have arisen during original construction. As such, the Contractor shall field inspect the location of new structural steel prior to submittal of shop drawings or ordering of, or fabrication of material and shall adjust the detailing as required to assure proper connection between existing and new material at the site.
2. Prior to the beginning of work, the Contractor shall submit proposed detailed rivet removal procedure for approval by the Commissioner. Burning out of rivet or rivet heads is not allowed unless approved by the Commissioner. The Commissioner reserves the right to require demonstrations of such proposed procedures on an agreed upon location of the existing structure in order to determine acceptability. The Commissioner reserves the right to suspend such procedures during the project if deficiencies in the work are found.

**Erection:**

1. Removal of rivets required for member addition or replacement shall be performed in such a manner as to not damage the existing structural steel that remains in place. If the structural steel is damaged due to negligence on the part of the Contractor, the additional costs for material and labor necessary to restore the member or member components to

its original condition as expressed by the Commissioner shall not be measured for payment, but shall be done at the Contractor's expense.

2. All labor and equipment required to remove rivets from existing structural steel members, and their replacement with high strength bolts, facilitating the removal of members to be replaced or addition of members, will not be measured for payment. The cost will be incidental to the contract unit price under these items. Drilling, or reaming of existing structural steel members or components of members to accommodate bolts of a larger size, or to facilitate erection will not be measured for payment, but will be incidental in the cost of these items.
3. The Contractor is solely responsible for final detailing, and will not be paid extra for any field adjustments required to accomplish proper installations.
4. The Contractor is cautioned that the replacement of rivets with H.S. bolts, nuts and washers may cause unintended conflicts that will inhibit or preclude installation either in the shop or in the field using traditional bolt tightening methods. The Contractor shall review the drawings and determine locations where such conflicts exist. These conflicts shall be given in a report to the Commissioner. The Contractor will bring these conflicts to the attention of the Commissioner prior to fabrication for resolution. All revisions to the Drawings shall be approved by the Commissioner.

**Submittals.** The Contractor shall submit for approval by the Commissioner, shop drawings as required by Article 505.03 of the Standard Specifications. The shop drawings shall show the method of joining, the thickness of metal, profiles as well as all materials and shall also contain full and complete information regarding joints and fastenings.

The Contractor shall furnish plans and working drawings for fabricating and erecting structural steel as required by the Commissioner. The Contractor shall make his/her own field measurements without additional costs to the City. The Contractor shall provide the location of the fabrication shop and detailed shipping procedure, both to and from the shop, for those items designated on the Plans and in Detail Specifications as requiring fabricator and/or machine shop rehabilitation.

Erection drawings shall include a written description of the proposed sequence of erection and the methods to be employed in the erection operations. Furthermore, the submittal shall include drawings and details of the sequence of installation of steel and locations of any temporary supports or bracing, the anticipated loads, calculations and the step-by-step procedure. The Contractor is responsible for ensuring that the erection procedure results in a safe and stable structure at all times and to comply with all safety requirements as required by all City, State and Federal laws, codes or other regulations. The Erection plans shall be sealed by a Structural Engineer licensed in the State of Illinois, and is subject to the approval of the Commissioner.

The Contractor shall furnish plans and procedures for design, fabrication, erection and monitoring of all temporary support structures used in the performance of the work. The Submittals shall be sealed by a Structural Engineer Licensed in the State of Illinois and shall be submitted to the Commissioner for approval. The Contractor's submittals shall satisfy the requirements of the Temporary Support Structure portion of the Specification under item FURNISHING AND ERECTING STRUCTURAL STEEL, SPECIAL and all requirements of the Contract Documents.

**Method of Measurement.** Estimated weights have been included for bidding purposes, but payment for net weight of new structural steel, furnished, fabricated and erected and accepted by the Commissioner will be measured for payment per pound for STRUCTURAL STEEL REPAIRS.

The weights of bolts, nuts, washers and cutting or drilling of holes will not be measured separately for payment, and will be considered incidental to this item. Changes to the plan quantities due to field measurements shall be submitted in writing to the Commissioner for approval prior to ordering material. Additional structural steel required due to misalignment of holes, misfit of members or mis-fabrication is the responsibility of the Contractor. All material damaged in shipping, storage, handling or erection shall be replaced by the Contractor at his/her expense.

Temporary support structures including all associated design engineering, measurements, fabrication and erection of required materials, testing and monitoring activities required by the contract documents and all other such activities related to temporary support structures shall not be measured for payment, but are considered incidental to this item.

**Basis of Payment.** This work will be paid for at the contract unit price per pound for STRUCTURAL STEEL REPAIRS.



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**ITEM 97      \*\*\*\*\*      TEMPORARY SUPPORT**

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**Description.** This item includes design, furnishing, fabricating, installing, monitoring, maintaining and removing temporary supports for the counterweight of the bascule leaf, trunnion trusses, and the fixed span sidewalks. The work under this item shall be as shown on the Plans and specified herein. This work shall also meet the requirements of Section 505 of the Standard Specifications. The temporary supports for the counterweight and the trunnion trusses are intended to support the structure during periods of leaf imbalance during construction. The temporary support of the fixed sidewalks may be necessary to maintain pedestrian access throughout construction.

**Materials.** All materials shall be according to the Plans and the applicable sections of the Standard Specifications.

**General Requirements.** The Contractor shall design, fabricate, install, monitor, and maintain the temporary supports at locations shown on the drawings or as directed by the Commissioner. As noted on the plans, the locations and details on the Plans are suggestive in nature. It shall be the responsibility of the Contractor to design and detail the temporary supports.

The Contractor shall submit to the Commissioner for approval the plans and supporting design calculations for the temporary supports 14 days prior to commencing work. Plans and calculations shall be prepared under direct supervision of an Illinois licensed Structural Engineer, and the calculations and plans shall be sealed and signed by the same licensed Structural Engineer.

The temporary supports shall be designed to support the service reactions shown in the Plans with an additional factor of safety of 2. The Contractor shall be responsible for determination of maximum required design forces in the temporary support members. The temporary supports shall also be sufficiently braced laterally and shall consider vertical and horizontal forces that may develop during the different stages of construction.

Plans and calculations shall detail at a minimum the information required to construct the temporary supports including, but not limited to the following: sequence of work, dead loads, live loads, wind loads, material specifications, connections, dimensions and details of all pieces used in the installation, stresses, anchorage details, bracing, and contingency loads.

Temporary Support for Counterweight:

The temporary supports shall have provisions for jacking and lock-off, and shall have provisions for adjustments. The temporary supports shall be monitored and kept tight using shims or other means as approved by the Commissioner. The shims in direct contact with existing members shall have holes placed at the existing rivet head locations so that the rivet heads are not bearing load.

The temporary support for the counterweight shall be designed for compression only. No uplift forces are allowed in the temporary supports. Uplift forces shall be resisted using counterweights or other means as submitted by the Contractor and approved by the Commissioner. If any load case is found to require uplift in shoring, it shall be brought to the attention of the Commissioner.

The temporary supports may need to be assembled, then disassembled and reassembled

again, as determined by the sequence of work and Contractor means and methods for the project. The Contractor shall not be paid for each assembly of temporary support. The Contractor shall furnish all required shoring throughout the project as sequence of work requires.

Monitoring of Trunnion Shafts:

The Contractor shall monitor the Trunnion Shaft during temporary support operations. The Contractor shall submit for approval to the Commissioner the proposed method to monitor the Trunnion shafts to ensure safe conditions during construction. Given the inoperable state of the bridge, the trunnion shafts might be frozen at the bearings which could induce unintended torque in the shafts and bearings. Monitoring the trunnion shafts is intended to ensure trunnion shafts are allowing rotation as intended. This work shall be coordinated with CLEANING, PAINTING, AND LUBRICATING OPERATING MACHINERY ASSEMBLIES.

Temporary Support for Trunnion Trusses:

Prior to removal of the anchor columns, the Contractor shall temporary support the trunnion trusses. The Contractor shall verify the existing condition of the trunnion trusses prior to placing the temporary supports. The Contractor shall also verify the capacity of the trunnion trusses due to the concentrated loads at each temporary support location and strengthen the members as needed to prevent any localized buckling.

Temporary Support for Fixed Span Sidewalks

It is the Contractor's responsibility to ensure pedestrian access traffic is maintained during construction. Due to the nature of the work, it may be necessary for the fixed span sidewalks to be temporarily supported to maintain pedestrian traffic. It shall be the Contractor's responsibility to determine based on his/her means and methods the need for temporarily supporting fixed span sidewalks. Any alternative means used to maintain pedestrian traffic shall meet ADA requirements. The design of the temporary support or any alternative shall be based on an uniform pedestrian live load of 100 psf.

All welding, if specified, shall be done in the shop and in accordance with AASHTO/AWS D1.5 Bridge Welding Code.

Any additional fasteners, bracing, anchors, or timber blocking required for the stability of the temporary support during erection will not be measured for payment but shall be included in the unit cost of this item.

All temporary supports will be the property of the Contractor after the project is completed.

**Method of Measurement.** This item will not be measured for payment.

**Basis of Payment.** The work specified herein and as shown on the Plans will be paid for at the contract lump sum bid unit price for TEMPORARY SUPPORT completed to the satisfaction of the Commissioner. Payment includes all design, furnishing and erecting, installation, monitoring, maintenance, and removal temporary supports.

<b>ITEM 98</b>	<b>*****</b>	<b>REMOVE EXISTING BRIDGE HOUSES</b>
<b>ITEM 99</b>	<b>*****</b>	<b>REMOVE EXISTING CONCRETE RAILINGS</b>

**Description.** Work under these items shall consist of furnishing all labor, equipment and materials necessary for removing and disposing architectural items as indicated on the Drawings.

**General.** All work under these pay items shall include and conform to the requirements indicated in the following:

- a. Section 024119 – Selective Demolition
- b. Section 017329 – Cutting and Patching

**Method of Measurement.** The work under these items will be measured for payment according to the following:

REMOVE EXISTING BRIDGE HOUSES. The work under this item will be measured for payment per each bridge house removed.

REMOVE EXISTING CONCRETE RAILINGS. The work under this item will be measured for payment in place in linear feet of actual railing length removed.

**Basis of Payment.** This work will be paid for according to the following:

Work will be paid for at the contract unit price per each for REMOVE EXISTING BRIDGE HOUSES.

Work will be paid for at the contract unit price per linear foot for REMOVE EXISTING CONCRETE RAILINGS.

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**ITEM 100      \*\*\*\*\*      PRECAST CONCRETE WALL**

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**Description.** This item shall consist of furnishing all design, labor, equipment and materials necessary for the precast concrete walls as indicated on the Drawings. Include anchorages, reinforcement, and joint sealant.

**General.** All work under this pay item shall include and conform to the requirements indicated in the following:

- a. Section 034500 – Precast Architectural Concrete
- b. Section 079200 – Joint Sealant

**Method of Measurement.** The work under this item will be measured for payment in place per square foot of actual wall area constructed.

**Basis of Payment.** This work will be paid at the contract unit price per square foot for PRECAST CONCRETE WALL.

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**ITEM 101**      \*\*\*\*\*

**PRECAST CONCRETE RAILINGS**

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**Description.** This item shall consist of furnishing all design, labor, equipment and materials necessary for the precast concrete railings as indicated on the Drawings. Include anchorages, reinforcement and joint sealant.

**General.** All work under this pay item shall include and conform to the requirements indicated in the following:

- a. Section 034500 – Precast Architectural Concrete
- b. Section 079200 – Joint Sealant

**Method of Measurement.** The work under this item will be measured for payment in place per linear foot of actual railing length constructed.

**Basis of Payment.** This work will be paid at the contract unit price per linear foot for PRECAST CONCRETE RAILINGS.

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**ITEM 102      \*\*\*\*\*      METAL CLADDED WALL ASSEMBLY**

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**Description.** Work under these items shall consist of furnishing all labor, equipment and materials necessary for the metal cladded wall assembly as indicated on the Drawings. Include metal studs, gypsum board, copper formed cornice, internal gutter and window jamb trim.

**General.** All work under these pay items shall include and conform to the requirements indicated in the following:

- a.      Section 054000 – Cold-Formed Metal Framing
- b.      Section 061000 – Rough Carpentry
- c.      Section 076200 – Sheet Metal Flashing and Trim
- d.      Section 092500 – Gypsum Board

**Method of Measurement.** The work under this item will be measured for payment in place per sq. ft. of wall assembly area constructed.

**Basis of Payment.** This work will be paid for at the contract unit price per square foot of METAL CLADDED WALL ASSEMBLY.

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**ITEM 103      \*\*\*\*\*      PAINT GYPSUM BOARD CEILING**

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**Description.** Work under these items shall consist of furnishing all labor, equipment and materials necessary for the gypsum board ceiling assembly as indicated on the Drawings. Include metal framing system and gypsum board.

**General.** All work under these pay items shall include and conform to the requirements indicated in the following:

- a.      Section 092500 – Gypsum Board

**Method of Measurement.** The work under this item will be measured for payment in place per sq. ft. of painted gypsum board ceiling area constructed.

**Basis of Payment.** This work will be paid for at the contract unit price per square foot of PAINTED GYPSUM BOARD CEILING.

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**ITEM 104**   \*\*\*\*\*   **LIFE RINGS**

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**Description.** This item shall consist of furnishing all labor, equipment and materials necessary for life rings.

**General.** Life ring shall be U.S. Coast Guard-approved 30 in. life ring with at least 90 ft. of line attached at locations shown in the Plans.

All work under this pay item shall include and conform to the requirements indicated in the following:

- a. Section 011000 - Summary of Architectural Work

**Method of Measurement.** The work under this item will be measured for payment in place per each life ring furnished.

**Basis of Payment.** This work will be paid for at the contract unit price per each of LIFE RINGS.



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**ITEM 105**   \*\*\*\*\*   **INTERIOR PAINTING**

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**Description.** This item shall consist of furnishing all labor, equipment and materials necessary for interior painting indicated on the Drawings.

**General.** All work under this pay item shall include and conform to the requirements indicated in the following:

- a. Section 099123 – Interior Painting

**Method of Measurement.** The work under this item will be measured for payment in place per square feet of actual interior walls, ceilings and structure painted.

**Basis of Payment.** This work will be paid at the contract unit price per square foot for INTERIOR PAINTING.

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**ITEM 106 \*\*\*\*\***

**INSTALL AND PAINT STAIR RAILINGS**

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**Description.** This item shall consist of furnishing all design, labor, equipment and materials necessary installation and painting of stair railings and posts as indicated on the Drawings. Include anchorages and reinforcement.

**General.** All work under this pay item shall include and conform to the requirements indicated in the following:

- a. Section 055213 – Pipe and Tube Railings
- b. Section 099123 – Interior Painting

**Method of Measurement.** The work under this item will be measured for payment in place per feet along the longitudinal axis of the actual railing installed and painted.

**Basis of Payment.** This work will be paid for at the contract unit price per foot of INSTALL AND PAINT STAIR RAILINGS.

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**ITEM 107 \*\*\*\*\***

**PAINT CONCRETE FLOORS AND STAIRS**

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**Description.** This item shall consist of furnishing all labor, equipment and materials necessary for painting of concrete floors and stairs as indicated on the Drawings. This includes cleaning and patching deteriorated and spalled concrete before painting.

**General.** All work under this pay item shall include and conform to the requirements indicated in the following:

- a. Section 030130 – Maintenance of Cast In Place Concrete
- b. Section 099123 – Interior Painting

**Method of Measurement.** The work under this item will be measured for payment in place per square feet of actual painted surfaces. Cleaning and patching of deteriorated and spalled concrete areas will not be measured for payment separately but shall be considered incidental to this item.

**Basis of Payment.** This work will be paid at the contract unit price per square foot for PAINT CONCRETE FLOORS AND STAIRS.

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**ITEM 108      \*\*\*\*\*      ALUMINUM FRAMED WINDOWS**

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**Description.** This item shall consist of furnishing all labor, equipment and materials necessary for the installation of new Aluminum Framed Windows as indicated on the Drawings, including framing system, glass, trim, flashing and joint sealant.

**General.** All work under this pay item shall include and conform to the requirements indicated in the following:

- a. Section 079200 – Joint Sealants
- b. Section 084313 – Aluminum Framed Storefronts
- c. Section 088000 – Glazing

**Method of Measurement.** The work under this item will be measured for payment in place per square foot of actual aluminum windows installed.

**Basis of Payment.** This work will be paid at the contract unit price per square foot for ALUMINUM FRAMED WINDOWS.

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**ITEM 109      \*\*\*\*\*      STANDING SEAM METAL ROOFING**

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**Description.** This item shall consist of furnishing all labor, equipment and materials necessary for the installation of new standing seam metal roofing as indicated on the Drawings, including standing seam metal roof system, sheathing, flashing, trim and, gutters.

**General.** All work under this pay item shall include and conform to the requirements indicated in the following:

- a. Section 061600 – Sheathing
- b. Section 076100 – Sheet Metal Roofing
- c. Section 076200 – Sheet Metal Flashing and Trim

**Method of Measurement.** The work under this item will be measured for payment per square foot of standing seam metal roofing installed. Sheathing, flashing, trim, gutters, and any other items necessary for the completion of this work will not be measured for payment separately but shall considered included with this item.

**Basis of Payment.** This work will be paid at the contract unit price per square foot for STANDING SEAM METAL ROOFING.

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**ITEM 110**      \*\*\*\*\*      **EXTERIOR DOORS**

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**Description.** This item shall consist of furnishing all labor, equipment and materials necessary for the installation of exterior doors as indicated on the Drawings. Each door shall include framing system, hardware, weather-stripping, sealant, and painting.

**General.** All work under this pay item shall include and conform to the requirements indicated in the following:

- a. Section 079200 – Sealants
- b. Section 081113 – Hollow Metal Doors and Frames
- c. Section 087111 – Door Hardware
- d. Section 099600 – High-Performance Coatings

**Method of Measurement.** The work under this item will be measured for payment per each exterior door installed.

**Basis of Payment.** This work will be paid at the contract unit price per each for EXTERIOR DOORS.

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**ITEM 111** \*\*\*\*\*

**BREAKDOWN FOUNDATION**

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**Description.** The work will consist of removing a concrete foundation for the specific item referenced. The foundation shall be completely removed or broken down to point three feet (0.3ft.) below grade, disposing of the debris offsite in an approved manner, backfilling the excavation with screenings or other approved backfill material, and reconstructing the surface area. If the foundation is in a parkway, the parkway shall be properly restored with dirt to the existing level. Debris shall be disposed of according to Section 202.03 of the Standard Specifications. Backfill shall meet the requirements of Section 1003.04 of the Standard Specifications.

**Method of Measurement.** This work will be measured per each foundation removed, which will also include proper disposal and backfill.

**Basis of Payment.** This work will be paid for at the contract unit price each for BREAKDOWN FOUNDATION, of the type specified, which price will be payment in full for all labor and materials necessary to complete the work as described above. No additional payment will be made for backfill or disposal of debris.

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**ITEM 112 \*\*\*\*\***

**BRIDGE HOUSE ELECTRICAL WORK**

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**Description.** This item will consist of furnishing and installing all electrical equipment, conduit, cable, connections, and associated hardware at the Wester Avenue Bridge Houses as shown on the Plans and as specified herein. This work shall include, but is not limited to, a metering enclosure and socket, electrical panel boards circuit breakers, contactors, GFI receptacles, conduits, grounding system, cables, boxes, and related appurtenances. All work must conform to the requirements of the Chicago Electrical Code.

**Materials.** Materials associated with this item shall be as follows:

**Metering Enclosure and Socket:** The metering enclosure and socket must be appropriately sized for the incoming service, conform to ComEd requirements, and be approved by ComEd prior to installation.

**Panelboards:** All bus must be hard drawn copper having 98 percent conductivity and sized on a basis of 1000 amperes maximum per square inch of cross sectional area. All lugs and terminators must be copper.

All panelboard circuit breakers must be of the molded case, bolt-on type, with the ratings indicated. Circuit breakers must be thermal-magnetic type with each pole providing inverse time delay and instantaneous short-circuit protection.

Each panelboard must be furnished with a full length ground bus drilled and tapped to accommodate a ground cable for each circuit breaker. Cable terminals must be provided. Each panelboard main breaker must be connected to the main bus with copper bus bar. Insulated cable is not acceptable.

Each panelboard must be electrically protected by an appropriately sized surge suppression device.

**Receptacles:** All receptacles must be of the weather-resistant feed-through GFCI type, with heavy duty receptacles capable of protecting downstream receptacles on a single circuit, grounding type, UL rated Class A, Group 1, rated 20 amperes, 125 volt, 60 Hz, with a 5 mA ground fault trip level, NEMA configuration 5-20R.

**Pull and junction boxes:** Boxes must be NEMA Type 4X, 316 stainless steel, with stainless steel hinged cover, stainless steel fasteners, and stainless steel hardware. Minimum gauge must be 12 ga.

**Conduit:** All underground conduit used for the bridge house electrical work must be rigid galvanized steel. Conduit and fittings must be heavy wall type, hot-dipped galvanized with zinc-coated threads, and must be in accordance with UL 6 and ANSI C80.1.

Exposed conduits must be PVC coated rigid galvanized steel conforming to Section 1088 of the Standard Specifications.

Conduit embedded in concrete must be Schedule 40 PVC. PVC to rigid adapters shall be provided where embedded conduits transition to underground or exposed.



Electric Cable: Wire and cable used for the bridge house electric service work must be RHH/RHW-2/USE-2. Conductors must have 600-volt insulation, and must conform to the requirements of the Chicago Electrical Code. All conductors must be soft copper, properly refined, and must have a minimum conductivity of 98%.

**Submittals.**

1. Catalog cuts for electrical materials to be installed under this item, including panelboards, circuit breakers, contactors, conduit, cable, surge protection device, etc.
2. Installation drawings showing all electrical work as constructed.

**Installation.**

All electrical work shall be performed in accordance with the Chicago Electrical Code, approved shop drawings, and equipment manufacturers' recommendations.

The Drawings are diagrammatic and are intended to convey the scope of work and indicate the general arrangement and/or sizes of conduit, equipment, fixtures, and other work included in the Contract. The exact locations necessary to secure the best conditions and results must be determined at the site and will be subject to the review of the Commissioner.

Exposed conduit runs shall be installed true, plumb, parallel to or at right angles to adjacent structural members, and must present an orderly, neat, and workmanlike appearance. As far as practicable, conduit shall be pitched slightly to drain to the outlet boxes.

The Contractor must provide all labor required to complete the ComEd service connections to the bridge house. Work must be coordinated with ComEd and in accordance with ComEd standards and requirements.

**Method of Measurement.** This item will be measured per each complete installation at each bridge house.

**Basis of Payment.** This item will be paid for at the contract unit price each for BRIDGE HOUSE ELECTRICAL WORK, which shall constitute payment in full for furnishing and installing all electrical equipment, conduit, cable, connections, and associated hardware at the bridge house as shown on the Plans and as specified herein.

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ITEM 113 \*\*\*\*\*

CHICAGO 2000 LUMINAIRE ARM, 8 FOOT, WITH SCROLL,  
8'

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**Description.** This item will consist of furnishing and installing an ornamental luminaire arm with supporting scroll onto an ornamental fluted steel pole, or other pole as directed by the Commissioner or as shown on the plans.

**Materials.** The material shall meet the requirements of Material Specification 1514 and Standard Drawing 930.

**Installation.** The arm shall be securely mounted to the pole by two bolts supplied under this item. The scroll shall be attached to the pole and the arm with brackets as shown on Standard Drawing 930. The scroll will provide support to the arm and luminaire.

The Contractor shall exercise due caution in erecting the pole and mast arm to minimize any possible damage to the finish. When necessary, and when approved by the Commissioner, the Contractor will utilize, at his/her own expense, factory approved touch-up materials and methods to restore the finish to like new appearance and durability.

**Method of Measurement.** This item will be measured per each unit installed and shall include the arm, scroll, and all necessary hardware to attach the arm and scroll to the pole.

**Basis of Payment.** This work will be paid for at the contract unit price per each for CHICAGO 2000 LUMINAIRE ARM, 8 FOOT, WITH SCROLL, 8', which payment will be in full for securely attaching the arm and scroll to the pole.

MATERIAL  
1514

DRAWINGS  
930

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**ITEM 114**   \*\*\*\*\*

**CHICAGO 2000 MAST HEAD AND FINIAL FOR 10" POLE**

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**Description.** This item will consist of furnishing and installing an ornamental mast head and finial to the upper part of a steel light pole that has a luminaire arm and scroll already installed. The installation will be as directed by the Commissioner.

**Materials.** The material shall meet the requirements of Material Specification 1505 and Standard Drawings 930 and 930C. The castings shall be properly sized to fit the appropriate pole diameter.

**Installation.** The mast head and finial shall be securely mounted to the pole and arm as shown on Standard Drawings 930 and 930C.

The Contractor shall exercise due caution in installing the mast head and finial to minimize any possible damage to the finish. When necessary, and when approved by the Commissioner, the Contractor will utilize, at his/her own expense, factory approved touch-up materials and methods to restore the finish to like new appearance and durability.

**Method of Measurement.** This item will be measured per each unit installed and shall include the mast head castings, the finial, and all necessary hardware to securely attach the mast head and finial to the pole and arm.

**Basis of Payment.** This work will be paid for at the contract unit price per each for CHICAGO 2000 MAST HEAD AND FINIAL FOR 10" POLE, of the size indicated, which payment will be in full for furnishing and securely attaching the mast head and finial to the pole and arm.

MATERIAL  
1505

DRAWINGS  
930 930C

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**ITEM 115 \*\*\*\*\***

**CHICAGO 2000 BASE**

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**Description.** This item will consist of furnishing and installing an ornamental pole base to a steel light pole as directed by the Commissioner or as shown on the plans.

**Material.** The base will be fiberglass meeting the appropriate requirements of Material Specification 1513 and Standard Drawing 930A.

**Installation.** The base must be installed after the steel pole is erected. The base halves must be set around the pole shaft and secured to each other. The base must be set so that it sits evenly around the pole shaft. The base must be level and plumb so that it appears to be integral with the pole shaft. The base should sit level on the concrete foundation. Set screws will be used to keep the base from shifting about the shaft, and to attach the base to the pole as shown on Standard Drawing 930A.

The contractor may exercise due caution in installing the base to minimize any possible damage to finish. When necessary, and when approved by the Commissioner, the contractor will utilize, at their own expense, factory approved touch-up materials and methods to restore to like new appearance and durability.

**Method of Measurement.** This item will be measured per each unit installed and must include the ornamental base and all necessary hardware to securely install the base on the foundation and around the pole shaft.

**Basis of Payment.** This work will be paid for at the contract unit price per each for CHICAGO 2000 POLE BASE, which payment will be in full for furnishing and securely installing the ornamental base.

MATERIAL  
1513

DRAWINGS  
930A

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**ITEM 116** \*\*\*\*\*

**CLEAN EXISTING MANHOLE OR HAND HOLE**

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**Description.** This item will consist of furnishing all labor, materials, tools and equipment necessary to clean a manhole or handhole. Work shall include the removal and disposal of all foreign debris and liquids from the manhole or handhole. Manholes or handholes to be cleaned will be identified on the plans or by the Resident Engineer.

**Cleaning Requirements.** The inside dimension of the handhole will normally be 30 to 36 inches in diameter and three feet in depth. The inside dimension of the manhole will normally be 3'x4'x4' or 4'x6'x6'. Handholes and manholes of other dimensions may be encountered. Cleaning will include opening the lid and placing the lid back in place after cleaning. The cables shall not be damaged or disturbed during the cleaning process. All debris removed from the hole shall be properly disposed of in an approved manner and not be left in the public way or dumped into the City sewer system. Guidelines outlined in Section 202.03 of the Standard Specifications should be followed.

**Method of Measurement.** This work will be measured per each manhole or handhole cleaned.

**Basis of Payment.** This work will be paid at the contract unit price each for CLEAN EXISTING MANHOLE OR HANDHOLE, as directed by the Resident Engineer, which payment will include both cleaning and debris disposal.

<b>ITEM 117</b>	<b>*****</b>	<b>COILABLE CONDUIT, HDPE, SCH #80, DIRECTIONAL BORING, 2"</b>
<b>ITEM 118</b>	<b>*****</b>	<b>COILABLE CONDUIT, HDPE, SCH #80, DIRECTIONAL BORING, 3"</b>

**Description.** This work will consist of the installation of flexible conduit along and/or across roadways by the directional boring method. The conduit will be for street lighting or traffic signal cable. When specified, the coilable conduit will come with cable pre-installed in the conduit.

**Materials.** All conduits shall be coilable high strength polyethylene conforming to the applicable requirements of Material Specification 1533 and to the National Electrical Manufacturers Association, Standard TC7. The conduit shall also meet the requirements of ASTM-D1248, Type III, Grade PE34, Category 5, Class C, and the requirements of Section 1088.01(c) of the Standard Specifications. The average wall thickness of the schedule 40 conduit shall be 0.15 inches. The average wall thickness of the schedule 80 conduit shall be 0.2 inches. The nominal inside diameter of each conduit shall equal the designated conduit size.

Cable shall meet the requirements of Material Specification 1534. The cable will consist of three separate conductors twisted together. Two conductors shall be #6 AWG, and one conductor shall be #8 AWG.

**Construction Requirements.** The Contractor will be responsible for obtaining all necessary permits from the Chicago Department of Transportation (CDOT) for work in the public way. The Contractor will provide necessary notification to the Chicago Utility Alert Network (CUAN) 48 hours before planned work in the public way. The Contractor will organize a CUAN meet at the work site for the purpose of identifying all underground obstructions. The Contractor will be responsible for any and all damage caused to existing facilities, both private and public, including Bureau of Electricity infrastructure.

The Contractor will open excavations for conduit access, the location of underground obstructions (find holes), and the pulling back of conduit, as necessary to perform the work. The excavations shall be properly protected to ensure that vehicular and pedestrian traffic are not endangered. Traffic lane blockage shall be minimized and the intersection and roadway shall be kept safe at all times during the installation work.

The top of the conduit or duct shall be installed a minimum of thirty inches (30") below grade. Grade will mean the street surface level or the top of parkway. The Contractor will later pick-up and extend the conduit to manholes, hand holes, foundations, etcetera as required by the plans or as directed by the Resident Engineer.

Conduit will be cleaned of dirt, debris, bentonite or other foreign materials by the use of a swab or mandrel. If cable is not to be installed immediately, a 1/4" polyethylene pull line will be installed in each conduit.

Any excavation will be backfilled as soon as possible after the installation of the conduit. Soil excavated may only be used for backfilling when approved by the Commissioner. Backfill will be a fine or crushed screening aggregate material meeting the requirements of Section 1003.04 of the Standard Specifications. Cinders, rocks, or other inappropriate materials will not be permitted to be used as backfill material. Backfill material will be deposited in the excavation in layers not

to exceed six inches (6") in depth, and shall be thoroughly compacted with a mechanical tamper before the next layer is deposited in the excavation.

Excavations which are to remain open will be covered with steel plates, minimum 2" thickness for sidewalks and 1" thickness for streets, and will be secured in place as directed by the Commissioner. Any costs involved will be considered incidental.

The Contractor will remove all excavated material, except that which is acceptable for backfilling, from the job site. Spoil will be disposed of according to Section 202.03 of the Standard Specifications.

The Contractor will directional bore and install the proper sizes of conduit as indicated on the plans provided by the Bureau of Electricity. The Contractor shall follow the plans and directional bore and install conduit from point to point as indicated. Conduit will be installed and p-lined and any excavations shall be restored to original condition including pavement restoration, sidewalk restoration, and parkway restoration. Failure to accomplish point-to-point installation or to properly restore excavations will result in non-payment for that particular point-to-point installation.

**Method of Measurement.** This item will be paid for the number of lineal feet bored with conduit installed from point to point, measured in place. The length will be the distance horizontally from point to point. No vertical distances will be measured or applied.

**Basis of Payment.** This work will be paid for at the contract unit price per lineal foot for the type and number of conduits specified, measured with conduit in place, for COILABLE CONDUIT, HDPE, SCH #80, DIRECTIONAL BORING, 2" or COILABLE CONDUIT, HDPE, SCH #80, DIRECTIONAL BORING, 3", as applicable. Such price will include the cost of all conduit, conduit fittings, excavations, furnishing and placing all required backfill material, restoration of all find holes, plating and protection of all end holes when required, disposal of all surplus excavated material, and any trenching and backfill made for the purpose of placing conduit. Restoration of all pavements and sidewalks will be paid for separately.

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**ITEM 119 \*\*\*\*\* CONCRETE FOUNDATION, 28" DIAMETER, 1¼" ANCHOR  
RODS, 15" BOLT CIRCLE, 7 FEET**

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**Description.** The foundation will be a poured in place concrete structure used for structurally supporting street light poles or traffic signal poles.

**Materials.** Concrete shall be Portland cement concrete meeting the requirements of Article 1020 of the Standard Specifications for SI Class concrete. Reinforcement bars shall meet the requirements of Section 1006.10 of the Standard Specifications. Anchor rods shall meet the requirements of Material Specification 1467 and the ground rod shall meet the requirements of Material Specification 1465. Conduit elbows shall be PVC conduit meeting the requirements of Material Specification 1533.

**Construction Requirements.** Every foundation will be installed at the location designated and in the manner herein specified or in special cases as specifically directed. The Contractor will locate foundations as per plan or as directed by the Resident Engineer. A hole shall be augured for placement of the concrete form.

The proposed foundation under this pay item is a foundation for the Chicago 2000 Gateway and Pedestrian Ornamental light poles (Standard Drawing 953).

Top surface of these foundations in parkway will be at an elevation of two inches (2") above grade or as required by the Commissioner. Care shall be taken to install a level foundation and to ensure adequate anchor rod projections for double-nut installation. The foundations shall be centered back from the face of the curb in accordance with dimensions shown on the construction plans. Foundation raceways shall consist of large radius conduit elbow(s) in quantity, size and type as specified on the corresponding standard drawing or in the construction plans. Any number of elbows in excess of the number shown on the standard drawing shall be paid for under a separate pay item. The elbow ends above ground will be capped with standard conduit bushings. The Contractor shall furnish anchor rods, a ground rod, hardware, conduit elbow(s) and all other material shown on applicable foundation construction drawings. Depth of foundation will be as shown on the appropriate drawing. The foundation top shall be chamfered 3/4 of an inch. When the foundation is installed in a sidewalk, the foundation shall be installed level, with the height of the foundation as close to the height of the sidewalk as possible, or as directed by the Commissioner. A proper expansion joint will be installed between the sidewalk and the foundation.

Anchor rods shall be set in accordance with applicable construction plans so that when poles are mounted on the foundations, the street lighting mast arm will be properly oriented as indicated on the construction plans. The anchor rods will be set by means of a metal template which shall be submitted for approval before any foundation work is begun. The template shall hold the rods vertical, and in proper position.

Anchor rods shall conform in all respects to the appropriate City drawing.

**Method of Measurement.** This item will be measured per each foundation installed complete.

**Basis of Payment.** Payment will be made for foundations installed in place, including elbows, in accordance with construction drawings, constructions plans and these specifications. All necessary excavation and restoration of pavement, sidewalk and fill to their original conditions will be included in the unit price. This work will be paid for at the contract unit price per each, or



WEBSTER AVENUE BRIDGE OVER THE NORTH BRANCH OF THE CHICAGO RIVER  
CDOT PROJECT NO.: E-1-525

per lineal foot, as specified in the contract, for CONCRETE FOUNDATION, 28" DIAMETER, 1¼", ANCHOR RODS, 15" BOLT CIRCLE, 7 FEET of the diameter and size specified. The offset foundation will be paid for per each.

MATERIAL SPECIFICATION

1465

1467

1533

DRAWING

953

**ITEM 120 \*\*\*\*\***

**CONTROLLER STREET LIGHTING, RESIDENTIAL, 240 VOLT**

**Description.** This work will consist of furnishing and installing a cabinet onto a wood CECO pole. The cabinet will contain various electro-mechanical devices to automatically control residential street lighting circuits, and to provide protection for the equipment so controlled. The electrical control circuit will consist of a 60-amp main breaker with two 30-amp branch breakers.

**Material And Assembly.** The cabinet, panel, and circuitry shall meet the requirements of Material Standard 1535 and Standard Drawing 955. The service cable shall meet the requirements of Material Specification 1457.

**Installation.** The cabinet shall be mounted as shown on Standard Drawing 11925, with the exception that the millbank is to be replaced with the residential control cabinet. The fiberglass cabinet has four mounting holes in the back; two top and two bottom. The cabinet shall be bolted to two (2) galvanized steel sheets; one at the top of the cabinet and one at the bottom. Each sheet shall be sized to have two extensions which stick out beyond the sides of the cabinet and can be formed so that lag bolts can be inserted through the steel sheet into and through the wood pole. The steel sheets and the lag bolts shall be of sufficient strength to safely mount the cabinet. This work will include mounting the cabinet to the CECO pole. This work will include all steel conduit mounted to the CECO pole. The service cable from the controller to the CECO secondary shall be terminated at the controller and spliced at the other end to the CECO secondary. The street light cable shall be terminated on the load side of the controller.

The lighting circuit shall be placed in operation as soon as practicable with the Contractor being charged for the energy until the circuits are accepted by the City of Chicago, Bureau of Electricity.

**Method of Measurement.** This work shall include all conduit mounted to the pole, the controller with electrical components, all mounting hardware, the service cable from the controller to the CECO secondary, all cable terminations, and cable splicing. The street light cable is not included.

**Basis of Payment.** This work will be paid for at the contract unit price each for a CONTROLLER, STREET LIGHTING, RESIDENTIAL, 240 VOLT, and will be payment in full for furnishing and installing the controller complete in place.

MATERIAL SPECIFICATION  
1535      1457

DRAWING  
955 11925

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**ITEM 121** \*\*\*\*\*

**DRILL EXISTING MANHOLE OR HANDHOLE**

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**Description.** This work will consist of drilling a hole in an existing handhole or manhole for the installation of a new conduit. This item shall meet the requirements of Article 879 of the Standard Specifications.

**Construction Requirements.** The size of the hole shall be as close as possible to the size of the conduit to be installed. The conduit shall be installed in the drilled hole with a bushing before the hole is grouted. The conduit will be covered by a separate item. The space between the conduit and the handhole or manhole wall shall be caulked with a waterproof grout. Drawing 814 provides additional information.

**Method of Measurement.** This work will be measured per each hole drilled.

**Basis of Payment.** This work will be paid for at the contract unit price each for DRILL EXISTING MANHOLE OR HANDHOLE, which price will be payment in full for drilling the hole, grouting, and any additional work required to accomplish this task.

DRAWING  
814

<b>ITEM 122</b>	<b>*****</b>	<b>ELECTRIC CABLE IN CONDUIT, 1/C #10</b>
<b>ITEM 123</b>	<b>*****</b>	<b>ELECTRIC CABLE IN CONDUIT, 1/C #12</b>
<b>ITEM 124</b>	<b>*****</b>	<b>ELECTRIC CABLE IN CONDUIT, 1/C #350 KCMIL</b>
<b>ITEM 125</b>	<b>*****</b>	<b>ELECTRIC CABLE IN CONDUIT, 1/C #2/0</b>

**Description.** This work will consist of furnishing and installing electric cable as specified. The cable will be installed in conduit aboveground.

**Materials.** The cable shall meet all requirements of Material Specification 1534 of the Bureau of Electricity, City of Chicago.

**Construction Requirements.** All cables shall be installed with care to prevent damage to the cable. Any defects found in the cable shall be reported to the Resident Engineer. Damaged cable shall be replaced.

Bends in the cable will conform to the recommended minimum radii as outlined in the National Electric Code.

All wire or cable in the distribution panels and control cabinets shall be properly trained and have sufficient slack provided for any rearrangement of equipment or future additions. There shall be at least two feet of slack in a light pole base or street light controller base.

**Method of Measurement.** The length of cable furnished and installed will be measured as the length of conduit plus three feet for cable entering and leaving a junction box or light control cabinet.

**Basis of Payment.** This work will be paid for at the contract unit price per lineal foot for ELECTRIC CABLE IN CONDUIT, of the size specified. Such price will be payment in full for furnishing, installing, and testing the cable, and will include all material, labor, terminations, and incidentals necessary to complete the work as per the contract plans.

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**ITEM 126 \*\*\*\*\* ELECTRIC CABLE IN CONDUIT, TRIPLEX 2 1/C NO.6, 1/C NO.8**

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**Description.** This work will consist of furnishing and installing electric cable that is triplexed. The cable shall be rated at 600 volts and shall consist of two number 6 conductors and one number 8 conductor. The cable will be installed in conduit underground.

**Materials.** The cable shall meet all requirements of Material Specification 1534 of the Bureau of Electricity, City of Chicago.

**Construction Requirements.** All cables shall be installed with care to prevent damage to the cable. Any defects found in the cable shall be reported to the Resident Engineer. Damaged cable shall be replaced.

The cable shall be pulled into the conduit with a minimum of dragging on the ground or pavement. This will be accomplished by means of reels mounted on jacks or other suitable devices located for unreeling cable directly into duct. Lubricants shall be used to facilitate installation if deemed necessary by the Contractor.

Bends in the cable will conform to the recommended minimum radii as outlined in the National Electric Code.

Cable passing through manholes shall be trained and racked around the sides of the manhole into a permanent position. If racks are non-existent or in poor condition, the Contractor shall install racks. The material shall be approved by the Resident Engineer. Any material and labor involved in training and racking the cable will be considered incidental to the cost of this pay item. Where cable runs continue from manhole to manhole without tapping within a light pole, they will be continuous without splices unless authorized by the Resident Engineer.

The cable installation shall be color coded so that each lead of all circuits may be easily identified and lighting units connected to the proper leg as indicated on the plans. The equipment grounding conductor (no. 8) shall be color coded green.

All wire or cable in the distribution panels and control cabinets shall be properly trained and have sufficient slack provided for any rearrangement of equipment or future additions.

There shall be at least three feet of slack in a street light pole base or street light controller base. A handhole shall have at least five feet of slack and a manhole at least ten feet of slack.

**Method of Measurement.** The length of triplex cable furnished and installed will be measured as the length of conduit plus three feet for cable entering and leaving a light pole or street light control cabinet, plus any slack in manholes or handholes.

**Basis of Payment.** This work shall be paid for at the contract unit price per lineal foot for ELECTRIC CABLE IN CONDUIT, TRIPLEX, 2 1/C NO.6, 1 1/C NO.8. The price will be payment in full for furnishing, installing, and testing the cable, and will include all material, labor, terminations, and incidentals necessary to complete the work as per the contract plans.

MATERIAL  
1534

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ITEM 127 \*\*\*\*\*

**ELECTRICAL HANDHOLE, 30" DIAMETER WITH 24" FRAME  
AND LID**

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**Description.** This item is for supplying and installing an electrical handhole 30" in diameter with a 24" frame and lid.

**Materials.** The frame and lid shall meet the requirements of Material Specification 1458. The handhole shall meet the requirements of Material Specification 1528. A 24" frame and lid shall also meet the requirements of Standard Drawing 872. A 30" frame and lid shall also meet the requirements of Standard Drawings 874 and 10927. Bricks shall meet the requirements of Article 1041 of the Standard Specifications. All other materials used shall meet the appropriate material requirements of the Standard Specifications.

**Construction Requirements.** The handhole will be a precast concrete structure, or, if conditions merit, a cast in place concrete structure, complete with cast iron frame and cover, and conforming in detail with either Drawing Number 867, Drawing Number 866, or Drawing 871, except that the number of conduit openings shall be as shown on the construction plans.

Each handhole shall be installed at the location specified on the plans or at the location identified by the Resident Engineer.

The area where the handhole is to be placed shall be properly excavated. All disposable material shall be properly disposed of per Section 202.03 of the Standard Specifications. Each handhole shall be set or constructed on a foundation of loose stone not less than eight inches (8") deep. The 36" handhole for pavement installation shall have a floor as shown in Drawing Number 871. The frame casting shall be accurately set on a full bed of mortar to the finished elevation so that no subsequent adjustment will be necessary. It is desirable not to use a neck for the frame. However, if approved by the Resident Engineer, mortar and brick, or mortar and concrete rings, may be used to adjust to the proper grade. Adjustment rings, bricks, and frames shall be set in a full mortar bed. Use of partial bricks will not be allowed. Bricks shall be laid in full header courses only. Mortar shall be mixed in a proportion of one (1) part of cement to three (3) parts sand by volume of dry materials. After entering laterals have been installed in place in the handhole, the openings in the wall shall be plugged in an approved manner flush with the inner surface. If backfill is required, screenings shall be used and properly compacted. Parkway shall be restored to the proper grade. Pavement shall be properly restored to the correct grade. Patching of the pavement shall be done with high early strength concrete meeting the requirements of Articles 1001 and 1020 of the Standard Specifications. Sidewalks shall be restored to the proper grade using a 5-inch thickness of concrete. The inside of the handhole shall be clean of all debris.

**Method of Measurement.** This item will be paid for at the contract unit price per each unit installed.

**Basis of Payment.** The necessary excavation, backfilling and restoration of parkway and pavement shall be made in accordance with the foregoing specifications, and the cost thereof shall be included in the unit price each for installing ELECTRICAL HANDHOLE, 30" DIAMETER WITH 24" FRAME AND LID. No additional payment will be allowed for restoring parkway, sidewalk, or pavement. Removal of sidewalk or pavement will be paid for separately under a different pay item.

WEBSTER AVENUE BRIDGE OVER THE NORTH BRANCH OF THE CHICAGO RIVER  
CDOT PROJECT NO.: E-1-525

MATERIAL SPECIFICATION

1458

1528

DRAWING

866 874 871

867 872 10927

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**ITEM 128 \*\*\*\*\***

**INSTALL CONDUIT INTO EXISTING HELIX FOUNDATION**

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**Description.** This item will consist of furnishing and installing a steel conduit for cable entrance into an existing concrete foundation for a light pole, a traffic signal pole, or a traffic signal post, at the location shown on the plans or as designated by the Commissioner.

**Materials.** The material shall meet the requirements of Material Specification 1462 for Rigid Steel Conduit.

**Method Of Installation.** The cable connections with the underground circuits shall be disconnected and the pole or other appurtenances on the foundation shall be removed to clear the area for construction.

The anchor rods and the other existing conduit elbows in the foundation shall not be damaged. The top of the foundation shall be finished smooth and level as before in a workmanlike manner with neither humps nor voids to interfere with pole replacement. The earth shall be replaced and compacted in the area of the new elbow, and all concrete debris and surplus backfill shall be removed from the area.

**Method of Measurement.** This work will be measured per each installation at the helix foundation.

**Basis of Payment.** This work will be paid for at the contract unit price each for INSTALL CONDUIT INTO EXISTING HELIX FOUNDATION, which price will be payment in full for each installation, and any additional work required to accomplish this task.



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**ITEM 129 \*\*\*\*\***

**INTERCEPT EXISTING CONDUIT**

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**Description.** This item will consist of intercepting an existing City conduit or conduits for the purpose of installing a new foundation, a new manhole or handhole, or making a connection to a new conduit.

**Construction Requirements.** Work under this item will be performed in accordance with Article 800 of the Standard Specifications, Bureau of Electricity Standards and the City of Chicago Electrical Code, except as herein modified.

The Contractor shall carefully cut the conduit so that the cut conduit ends will be flush with the inside walls of the new manhole or handhole. Where existing cables are in service in the conduit(s) being intercepted, conduit(s) shall be carefully split so that all working cables are not interrupted. If conduit(s) are concrete encased, such concrete shall be removed as required. Any concrete encasement damaged during installation shall be restored as needed.

**Method of Measurement.** This work will be measured on a per each basis for each conduit end cut.

**Basis of Payment.** This work will be paid for at the contract unit price per each for INTERCEPT EXISTING CONDUIT, which price will include all necessary excavation, backfilling, and restoration of a parkway. No additional compensation will be made for removal or placement of concrete. This item will include all work necessary to bring the conduit into the manhole, handhole, or foundation, or to make the necessary connection to a new conduit. The Contractor will furnish all materials for a complete installation.

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**ITEM 130 \*\*\*\*\***

**JUNCTION BOX ATTACHED TO STRUCTURE**

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**Description.** This work shall consist of furnishing and installing a junction box.

**Materials.** Materials shall be according to the following.

Item Article/Section

(a) Junction Box ..... 1088.04

(b) Electrical Raceway Materials ..... 1088.01

**Installation Requirements.** Exposed junction boxes on structures shall be installed on 1/2 in. (13 mm) long stainless steel or brass spacers with the hinge on the side of the box and the cover lying in the vertical plane when closed. The exact orientation shall be as shown on the plans or as directed by the Commissioner. Care shall be taken to assure proper orientation of mounting lugs.

The embedded junction box shall be set flush with the adjoining surface and shall be properly supported during concrete placement. Concrete cover shall not be less than 3 in. (75 mm) all around the embedded junction box.

Field cut conduit openings shall be uniform and smooth. All burrs and rough edges shall be filed smooth prior to the installation of conduit(s) into the junction box. Field cut conduit openings shall be fitted with the appropriate conduit fittings and accessories.

**Method of Measurement.** This work will be measured on a per each basis for each junction box furnished and installed in place.

**Basis of Payment.** This work will be paid for at the contract unit price per each for JUNCTION BOX ATTACHED TO STRUCTURE of the type and size when specified.

<b>ITEM 131</b>	<b>*****</b>	<b>LED CHANNEL CENTER SIGNAL NAVIGATIONAL LIGHT</b>
<b>ITEM 132</b>	<b>*****</b>	<b>LED PIER SIGNAL NAVIGATIONAL LIGHT</b>

**Description.** The work shall consist of furnishing and installing navigational obstruction warning luminaires complete with all supports, hardware's, wirings and connections to the structure or pole and appurtenant mounting accessories.

**Materials.** The Fresnel piece shall be one piece, precision molded, color impregnated, tempered glass. Astragals shall be oriented so as to minimize their impact on the light beam at all viewing angles.

The navigation luminaire shall have a cast bronze, marine grade aluminum or brass body and be United States Coast Guard approved. Nuts, bolts, thump screws, hardware, thread rods, pipe, hangers, and mounting bases which are exterior, shall be stainless steel (300 series) or bronze. Hardware on the interior of the lamp cavity shall be stainless steel or bronze.

The luminaire shall be optically sealed, mechanically strong and easy to maintain. The luminaire shall be designed to operate on a 120VAC power supply. The lamp cavities shall be either watertight, or shall be waterproof or bug proof. The lamp shall be easily accessible for relamping through gasket doors which are held captive by means of hinges or a brass chain.

An LED light source shall produce the same candela output as a comparable incandescent luminaire. LED life for the optic shall excel 50000 hours and the end of life output shall not depreciate below 70 percent of its initial rating or a level established by the US Coast Guard, whichever is greater. The LED array shall be mounted on a shock and vibration isolator in the center of the lens focal point.

**Construction Requirements.** Mounting of the luminaire shall be as recommended by the luminaire manufacturer in such a manner that they clear all obstacles they retrieved for maintenance and relamping.

**Method of Measurement.** This work will be measured on a per each basis for each navigational light furnished and installed in place.

**Basis of Payment.** The work under this item shall be paid for at the contract unit price for LED CHANNEL CENTER SIGNAL NAVIGATIONAL LIGHT and LED PIER SIGNAL NAVIGATIONAL LIGHT.

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**ITEM 133** \*\*\*\*\*

**LED RESIDENTIAL LUMINAIRE - 108W**

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**Description.** This item will consist of furnishing and installing a street lighting luminaire, complete with internal ballast, electronic starting component, and a high pressure sodium vapor lamp of the proper wattage and input voltage, on a street light mast arm attached to a street light pole, or a floodlight mounted to a post top attachment on a street light pole, and connecting the unit to either an underground cable distribution system or an aerial wire distribution system at the location shown on the plans, or as directed by the Commissioner.

**Material.** The luminaire must meet the appropriate material specification for the lamp wattage and type of distribution specified. Items 224, 225, 226, 227, 228, 229, 229A, 2973, 2972, 230, and 280 must meet Material Specifications 1359, 1359, 1368, 1368, 1382, 1499, 1376, 1492, 1501, 1498, and 1498, respectively. Lamps for these items must meet Material Specification 1524.

**Installation Requirements.** The luminaire must be securely installed on the mast arm. The vertical axis of the luminaire must be in a vertical plane, and the longitudinal axis must be leveled as specified in shop drawings supplied by the manufacturer to produce the desired distribution pattern with the lamp socket secured in the required position for that distribution. Floodlights must be mounted on the pole top using a bracket supplied with this item. The bracket will be for one or two fixtures, as specified, or as directed by the Commissioner. Floodlights must be aimed for proper light distribution.

For an aerial distribution system, the primary wiring to the ballast must consist of 2 1/C #12 AWG wires, with 150 degrees C. irradiated polyolefin insulation, connected to the terminal board "line" terminals. They must extend through the mast arm and exit from the mast arm through the grommet in the hole provided for this purpose, and extend further forming a drip loop and connect with aerial circuit wires. Connection to the aerial circuit wires must be made with a split bolt type pressure connector for a No. 6 solid copper wire and the connection so formed must be wrapped with two layers of an approved electrical tape.

A cartridge type fuse, type KTK, rated at 10 amperes must be installed in each of the fuse holders. The primary wiring to the ballast must consist of 2 1/C No. 12 AWG wires with 150 degrees C. irradiated polyefin, insulation connected to the terminal board "line" terminals. They must extend through the mast arm raceway and down the inside of the pole to the pole base where they must be spliced to the underground feeder cables. Sufficient wire must be supplied to extend the wires outside of the pole through the access handhole to permit splicing work to be performed outside the pole.

All splice methods must be approved by the Commissioner before implemented. All splices, tapes and grounding connections must be inspected by the Commissioner's authorized representative before wires are permanently trained in the light pole.

Current, insulation resistance, and voltage readings must be taken and tabulated by the Contractor for each circuit. These readings are to be witnessed by the Commissioner's authorized representative. Any indication of grounds, open, or crossed conductors must be thoroughly investigated and remedied before acceptance of the installation. Line voltage must be taken at any in line fused location, within the pole designated by the Commissioner's authorized representative. Locations and voltage must be tabulated as directed. Three (3) copies of the tabulated voltage insulation resistance, and current readings must be submitted to the

Commissioner's authorized representative. Maximum voltage drop must not exceed 10% of nominal source voltage. The insulation resistance must not be less than 2 Megohms, when tested to ground with 500 volts A.C.

The Contractor must submit the manufacturer's certified test reports on all materials used on this project. Any material deemed defective must be removed and disposed of by the Contractor at his/her sole cost.

After the lighting installation has been completed and satisfactory current and voltage readings recorded, a field test must be made to ensure that all lighting and control equipment are in proper operating condition. This field test must be witnessed by the Commissioner.

The Contractor will furnish special test devices, tools and miscellaneous items that will be required for the testing of cables and control equipment, all as herein specified.

**Method of Measurement.** This work will be measured per each unit installed, complete. All wiring to the underground feeder cable, including splices, will be included in this measurement.

**Basis of Payment.** This work will be paid for at the contract unit price each for a LED RESIDENTIAL LUMINAIRE - 108W, of the proper wattage, voltage, and distribution type, which will be payment in full for furnishing, installing, connecting and testing the unit complete in place.

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**ITEM 134 \*\*\*\*\***

**LUMINAIRE CHICAGO 2000 PENDANT LED**

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**Description.** This work will consist of furnishing and installing a pendant luminaire with a teardrop refractor as specified herein, as shown on the plans or as directed by the Commissioner. The luminaire shall be complete with LED lamp, integral electrical components, fuses, arm fitter, pole wire, and mounting hardware.

**Materials.** The luminaire shall meet the requirements of Material Specification 1500 and Standard Drawing 931. The pole wire shall meet the requirements of Material Specification 1351, the fuses shall meet the requirements of Material Specification 1464, and the lamp shall meet the requirements of Material Specification 1524.

**Installation Requirements.** This work will meet the applicable requirements of Sections 801 and 821 of the Standard Specifications. Each luminaire shall be installed per the manufacturer's instructions. Luminaires shall be securely attached to the end of a two-inch diameter pipe arm and leveled to provide the proper illumination. The pole wire shall be spliced to the field wire at the base of the pole using splicing methods approved by the Commissioner. The pole wire shall be of sufficient length to connect the luminaire to the field cable at the base of the pole. Typical mast arm lengths will be 8 feet. Pole heights will be 32 feet.

**Method of Measurement.** Each luminaire, complete with lamp, components, pole wire, fuses, and any appurtenances necessary, to make the luminaire function once connected into the street light circuit, will count as one unit. Any labor, and equipment necessary will be included.

**Basis of Payment.** This work will be paid for at the contract unit price per each LUMINAIRE CHICAGO 2000 PENDANT LED, which will be payment in full for performing the work described herein. Payment will not be made until the luminaire can be shown to function properly within the street lighting circuit.

MATERIAL  
1351            1464  
1500            1524

DRAWING  
                  931

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**ITEM 135** \*\*\*\*\*

**MAINTAIN LIGHTING SYSTEM**

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**Description.** This work will consist of maintaining existing lighting that has been designated to remain in operation during construction of the new lighting system. Purpose of this item is to provide adequate lighting in an area during the construction of this improvement. This item will include furnishing, installation, wiring, maintenance relocation, and subsequent removal of all temporary equipment.

**Maintenance Procedures.** Before taking over maintenance of the existing lighting system, the Contractor shall arrange to conduct an inspection with the Commissioner to determine if any corrective action is required and to mutually agree on a date for transferring maintenance. The Contractor should normally begin maintaining the existing lighting as soon as the Contractor begins any work at the site.

**General Requirements.** Temporary street lighting will be in accordance with the applicable section of CDOT specification, and IESNA Roadway Lighting RP-8-14 recommended values and ratios for the street being improved. The Contractor shall maintain the temporary lighting system and ensure continuous operation of the lighting system at all times during all construction stages.

To ensure a prompt response to incidents involving the integrity of the work zone street lighting devices, the Contractor shall provide a telephone number where a responsible individual can be contacted on a 24-hour-a-day basis. When the Commissioner is notified or determines a deficiency exists, (s) he will be the sole judge as to whether the deficiency is an immediate safety hazard. The Contractor shall dispatch sufficient resources within 12 hours of notification to make needed corrections of deficiencies that constitute an immediate safety hazard. Other deficiencies shall be corrected within 24 hours. If the Contractor fails to restore the required street light within the time limits specified above, the Commissioner will impose a daily monetary deduction for each 24-hour period (or portion thereof) the deficiency exists. This time period will begin with the time of notification to the Contractor and end with the Commissioners acceptance of the below. In addition, if the Contractor fails to respond the Commissioner may correct the deficiencies and the cost thereof will be deducted from monies due or which may become due the Contractor. This corrective action will in no way relieve the Contractor of his contractual requirements or responsibilities.

**Method of Measurement.** This work will be measured for payment per lump sum, which will include all equipment, wiring and additional appurtenances required for the system to be functional during construction up to the time the new system has been installed.

**Basis of Payment.** This work will be paid for at the contract lump sum price for MAINTAIN LIGHTING SYSTEM, which will be payment in full for maintaining the lighting system from the mutually agreed maintenance transfer date until the de-energization of the existing lighting system. If for any reason the Contractor fails to properly maintain the lighting installation, leading to and requiring a response from City maintenance forces, the cost of such a response will be charged to the Contractor.

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**ITEM 136**      \*\*\*\*\*      **MAST ARM STEEL 4'**

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**Description:** This item will consist of furnishing and installing a steel pipe mast arm of a specified length to support a street light luminaire, or other electrical equipment as required.

**Material:** The material of the mast arm must conform to the requirements of Material Specification 1450.

**Installation:** The 4-foot mast arms will be installed with two bolts to the mast arm attachment on the pole. The truss arms require 2 such mounts.

**Method of Measurement:** This work will be measured per each unit installed.

**Basis of Payment:** This work must be paid for at the contract unit price each for a MAST ARM, STEEL, of the length specified, which will be payment in full for furnishing and installing the mast arm complete in place.



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**ITEM 137 \*\*\*\*\***

**PAINT EXISTING TRAFFIC SIGNAL POLE**

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**Description.** This work will consist of field painting existing steel and aluminum structures including poles and arms that support street lights and traffic control signals, controller cabinets for street lights and traffic signals, traffic signal housings, and street light luminaire housings.

**Materials.** All paints and painting materials intended for applications specified herein shall be certified by the Contractor to be of highest quality, shall be from the same manufacturer, and shall conform to the following, as applicable:

- a. Naptha. The solvent to be used for wiping down all metallic surfaces prior to application of paint shall be NAPTHA conforming to ASTM Standard D838.
- b. Primer. This paint shall meet the requirements of Section 4 (composition) and Section 5 (properties) of the Steel Structures Painting Council's Paint Specification No. 25 for red iron oxide, zinc oxide, raw linseed oil and alkyd primer as outlined in Volume 2, Systems and Specifications, Third Edition.
- c. Intermediate Coat. The paint shall meet the same requirements as the primer except that it will contain a contrasting shade of iron oxide/ or be tinted or shaded to produce a distinct contrast of at least 10 Hunter Delta E units compared to the primer.
- d. Finish Coat. This paint shall meet the requirements of Section 4 (composition) and Section 5 (properties) of the Steel Structures Painting Council's Paint Specification No. 21 for lead free white or colored silicone alkyd paint, Type 1, high gloss as outlined in Volume 2, Systems and Specifications, Third Edition.
- e. Color. A paint sample shall be submitted for approval prior to authorization to paint. The color will be as specified by the Commissioner. The sample shall be in the form of a 4" by 8" color chip. The Contractor shall provide a field-painted sample, if requested by the Commissioner. The field sample shall be of the same type of equipment to be painted and will be chosen by the Commissioner. Color will be green, gray, black, or another color as specified.
- f. Product Data. The Contractor shall submit the manufacturer's technical information, label analysis, and application instructions for each material proposed for use. Each material shall be listed and cross-referenced for the specific coating, finish system, and application. Each material shall include the manufacturer's catalog number.

**Delivery, Storage, and Handling.** The Contractor shall deliver, store, and handle the paint as herein specified.

- a. The materials shall arrive at the job site in the manufacturer's original, unopened packages and containers bearing the manufacturer's name label, product name, product description, manufacturer's stock number, date of manufacture, contents by volume for pigment and vehicle constituents, thinning instructions, application instructions, and color name and number.

- b. Materials to be stored should be kept in tightly covered containers in a well-ventilated area at a minimum ambient temperature of 45° Fahrenheit.

### **Preparation of Surfaces.**

- a. Steel Surfaces. Remove loose or scaling paint, dirt, oil grease, rust and foreign matter, as necessary, to receive paint. Wire brushing, where specified herein, shall be done with an approved power tool operated from a portable power source. After wire brushing, the complete surface be thoroughly wiped with a rag containing NAPTHA.
- b. Aluminum Surfaces. Remove loose scale and paint, dirt, oil, grease and foreign matter, as necessary, to receive paint. Wire brush surfaces, where necessary, to remove loose scale. Wire brushing, where specified herein, shall be done with an approved power tool operated from a portable power source. After wire brushing, the complete surface shall be thoroughly wiped with a rag containing NAPTHA.
- c. Weather Conditions. Do not apply paint coatings when temperature is below 40° F., or during periods of rain, fog, snow, or when relative humidity is above 85 %.
- d. Application Conditions. Surfaces to be painted shall be clean, dry, and relatively smooth. Each paint coating shall be applied smoothly and worked out evenly. Paint shall be thoroughly mixed just prior to application. Thinning shall be held to a minimum, and shall be done only when required for proper application. Thinners to be used will be the manufacturer's recommended thinner for the paints used; mixed thoroughly to assure complete blending with the coating. Spray painting will not be permitted when wind conditions are greater than 15mph. Painting shall be done as soon after cleaning as possible.

### **Detail Painting Requirements.**

- a. Street Light Poles. Street light poles to be painted under these specifications are steel structures which will vary from twenty-seven (27) to thirty (30) feet in height, with average surface required to be painted of approximately forty-eight (48) square feet. Some rusting and/or bare spots will be encountered which the Contractor will be required to wire-brush. The pole shall be thoroughly wiped with NAPTHA, and the finish coating applied.
- b. Mast Arm Brackets and Electrical Luminaries. Mast arms which are attached to the street light poles will consist of 2-inch steel pipe sections which will vary between eight feet (8') and fifteen feet (15') in length. Mast arms in twelve-foot (12') and fifteen-foot (15') sizes will have a supporting strut of two-inch (2") steel pipe. Surface scale and rust will be wire-brushed, and these mast arms thoroughly wiped with NAPTHA, and finish painted.
- c. Traffic Signal Post. Aluminum and steel posts consist of five-inch (5") pipe sections atop a conical base or base flange sixteen-inches (16") in diameter, and will vary in height from three feet six inches (3' - 6") to twenty feet (20'). Spot scaling shall be wire-brushed and the posts thoroughly wiped with NAPTHA, and finish painted.

- d. Street Light Controllers. The control cabinets will be cast aluminum and are approximately 18" x 14" x 30" in size. They will be mounted atop a three-foot six inch (3' 6") high post. The Contractor will wire-brush, as necessary, and thoroughly wipe the complete cabinet and casting with NAPTHA, and apply a finish coating.

**Method of Measurement.** This work will be measured on a per each basis for each existing equipment painted as specified in the Drawings.

**Basis of Payment.** This work will be paid for at the contract unit price each for PAINT EXISTING TRAFFIC SIGNAL POLE, which will be payment in full for all labor and materials necessary in painting the existing equipment.

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**ITEM 138 \*\*\*\*\* POLE, STEEL, ANCHOR BASE, 7" DIAMETER, 3 GAUGE, 20'**

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**Description.** This item will consist of furnishing, installing, and setting plumb a steel anchor base pole to which equipment may be attached for the extension of the City street light and traffic signal systems.

**Material.** The material of the pole shall meet the requirements of Material Specification 1447.

**Installation:** The pole shall be installed on the concrete foundation designed for the particular pole usage as indicated on the plans or as directed by the Commissioner. Any exposed portions of anchor rods extending above the nuts which interfere with the installation of the bolt covers shall be cut off to provide the necessary clearance. The excess shall not be burned off. The pole shall be set secure, properly orientated, and plumb using the nuts and washers provided with the anchor bolts. The bolt covers, handhole cover, and pole cap shall be securely attached. The 'Contractor' will utilize non-abrasive slinging materials and will otherwise exercise due care in erecting the pole and mast arm to minimize any possible damage to the finish. When necessary, the 'Contractor' will utilize, at his/her own expense, factory approved touch-up materials and methods to restore the finish to like new appearance and durability.

**Method of Measurement.** This item will be measured per each unit installed complete with anchor bolt covers, pole cap and handhole covers.

**Basis of Payment.** This work will be paid for at the Contract unit price each for a POLE, STEEL, ANCHOR BASE, 7" DIAMETER, 3 GAUGE, 20', which will be payment in full for furnishing and installing the pole complete in place. Light standard foundations, mast arms, and luminaires will not be included in this pay item.

MATERIAL SPECIFICATION  
1447

DRAWING

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<b>ITEM 139</b>	<b>*****</b>	<b>POLE, STEEL, ANCHOR BASE, 10" DIAMETER, 7 GAUGE, 34'-6"</b>
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**Description.** This item will consist of furnishing, installing, and setting plumb a steel anchor base pole to which equipment may be attached for the extension of the City street light and traffic signal systems.

**Materials.** The material of the pole shall meet the requirements of Material Specification 1447.

**Installation.** The pole shall be installed on the concrete foundation designed for the particular pole usage as indicated on the plans or as directed by the Commissioner. Double nut construction shall be used as shown on Drawing 837. Double nut construction provides the proper ventilation, as well as providing a way to plumb the pole. Any exposed portions of anchor rods extending above the nuts which interfere with the installation of the bolt covers shall be cut off to provide the necessary clearance. The excess shall not be burned off. The pole shall be set secure, properly orientated, and plumb using the nuts and washers provided with the anchor bolts. The bolt covers, handhole cover, and pole cap shall be securely attached. The Contractor will utilize non-abrasive slinging materials and will otherwise exercise due care in erecting the pole and mast arm to minimize any possible damage to the finish. When necessary, the Contractor will utilize, at his/her own expense, factory approved touch-up materials and methods to restore the finish to like new appearance and durability.

**Method of Measurement.** This item will be measured per each unit installed complete with anchor bolt covers, pole cap and handhole covers.

**Basis of Payment.** This work will be paid for at the Contract unit price each for a POLE, STEEL, ANCHOR BASE, 10" DIAMETER, 7 GAUGE, 34'-6", which will be payment in full for furnishing and installing the pole complete in place. Light standard foundations, mast arms, and luminaires are not be included in this pay item.

MATERIAL SPECIFICATION  
1447

DRAWING  
837 827 808 824

<b>ITEM 140</b>	<b>*****</b>	<b>CONDUIT ATTACHED TO STRUCTURE, 1"</b>
<b>ITEM 141</b>	<b>*****</b>	<b>CONDUIT ATTACHED TO STRUCTURE, 3"</b>
<b>ITEM 142</b>	<b>*****</b>	<b>CONDUIT ATTACHED TO STRUCTURE, 4"</b>
<b>ITEM 143</b>	<b>*****</b>	<b>PVC CONDUIT IN TRENCH, 3", SCH #80</b>

**Description.** This work will consist of furnishing and installing a conduit lateral of the type and size specified.

**Materials.** Galvanized rigid steel conduit and PVC coated steel conduit shall conform to the requirements of Material Specification 1462.

Polyvinyl chloride (PVC) conduit shall conform to the requirements of Material Specification 1533 and to the requirements of the National Electrical Manufacturers Association Standard, Publication Number TC2 for EPC-40, or EPC-80. Conduit color will be determined by the Resident Engineer.

Coilable non-metallic conduit shall be a high-density polyethylene meeting the requirements of Material Specification 1533 and ASTM-D1248, Type III, Grade PE34, Category 5, and Class C. The duct shall meet the requirements of Section 1088.01(c) of the Standard Specifications. The average outside diameter of the 1.25-inch duct shall be 1.66 inches, with a minimum wall thickness of .15 inches for the Schedule 40 conduit, and a wall thickness of .20 for the Schedule 80 conduit. Conduit color will be as determined by the Resident Engineer.

Aluminum conduit will be rigid wall conduit with a minimum wall thickness of 0.099". The conduit will be extruded from 6063 aluminum alloy and tempered to T-1. Aluminum conduit shall meet the requirements of UL-6 and ANSI C80.5.

**Construction Requirements.**

Definition of Laterals - A lateral will mean a conduit raceway extending from one sub-surface location to another sub-surface location, and in every case intended to encase electric circuit cable under paved surfaces, or in Unpaved parkway, street or alley, where specifically designated.

Locations - Laterals shall be installed at the locations shown on the plans. Laterals shall be installed in the shortest practicable line between points of termination, or under adverse conditions, as directed by the Resident Engineer. Laterals not shown on the drawing, but necessary to be installed will be paid for at the unit price bid for laterals as additional units of construction.

**Installation Requirements.** Galvanized rigid steel conduit may be installed in a trench, pushed underground, or attached to a structure. PVC conduit will normally be installed in a trench or attached to a structure. Coilable conduit will be installed in a trench. The 'Contractor' shall exercise care in installing the conduit to ensure that it is smooth, free from sharp bends or kinks, and has the minimum practicable number of bends. Crushed or deformed conduit will not be accepted. All conduit and fittings shall have the burrs and rough places smoothed, and all conduit runs shall be cleaned and swabbed before installation of electric cables. If cable is not to be installed immediately after cleaning of the conduit, a light weight pulling line such as 1/8" polyethylene line shall be placed in the conduit and will remain in the conduit for future work. The excavation for pushing conduit shall be located at least two feet (2') from the edge of pavement.

All underground conduits shall have a minimum cover of thirty inches (30") below grade. If conduit cannot be installed with a minimum cover of thirty inches (30"), the conduit shall be encased in concrete for protection. The method of encasement and protection shall be approved by the Commissioner. Concrete encasement will be paid for as a separate pay item.

When multiple laterals in a common trench are required, no more than three (3) three inch (3") or smaller conduit laterals can be laid on a single, horizontal level. Four or more conduit laterals shall be installed on two (2) levels in accordance with instructions of the Resident Engineer.

Conduit laterals installed under vaulted walks shall be securely attached to the retaining wall by means of galvanized clamps and clamp backs held in place by anchor bolts. Laterals will be fastened as close to the underside of the sidewalk as possible, and securing clamps installed every five feet (5'). Laterals shall be continuous through party walls.

Threaded fittings and bends of the same material as conduit shall be furnished and installed as required. Threadless couplings may be used only for splicing existing conduit. All conduit splices, where required, will be considered incidental to this pay item.

**Method of Measurement.** The length measured will be the number of lineal feet of conduit installed and accepted, measured in place. Each conduit will be measured separately even if in a single trench. The length for measurement will be the distance horizontally between changes in the direction of the conduit plus the conduit vertically attached to structures. All conduit on structures will be measured from point to point, whether vertical or horizontal.

**Basis of Payment.** This work will be paid for at the contract unit price per lineal foot for conduit of the type and size as specified, which price will be payment in full for furnishing and installing the conduit and fittings complete. Cleaning, swabbing, and p-lining of new conduit will be incidental to this pay item. Hangers, clamps, and fittings for conduit attached to structure will be incidental to this item.

Trench and backfill will be paid for separately. Concrete encasement, if required, will be paid for separately. No additional payment will be allowed for pushing under pavements or for jack holes for conduit laterals.

MATERIAL SPECIFICATIONS  
1462            1533

DRAWINGS  
579            813

ITEM 144	*****	REMOVE ANCHOR BASE POLE
ITEM 145	*****	REMOVE BRANCH WIRES/CABLES, 2 #6
ITEM 146	*****	REMOVE LUMINAIRE
ITEM 147	*****	REMOVE MAST ARM
ITEM 148	*****	REMOVE NAVIGATIONAL SIGNAL
ITEM 149	*****	REMOVE TS HEAD, 1-FACE
ITEM 150	*****	REMOVE PEDESTRIAN SIGNAL HEAD
ITEM 151	*****	REMOVE MONOTUBE M.A. 20'
ITEM 152	*****	REMOVE JUNCTION BOX, TSS 18

**Description.** This work will consist of the removal, salvage, and delivery of existing electrical equipment, including but not limited to light poles, arms, luminaires, signs, signals, controllers, enclosures, wires/cables and associated electrical fittings as specified on the plans or as directed by the Commissioner. Salvaged electrical equipment shall be delivered to the Bureau of Electricity yard at Cicero and 41st Street or to another City of Chicago location as directed by the Commissioner.

**General Requirements.** Electrical equipment to be removed and salvaged shall be disassembled as required for the complete and safe removal and transport of the item from the work site. Electrical equipment shall be hoisted, loaded and secured on adequate transport with care to prevent damage. Removal will include all incidental work and items associated with the equipment as directed by the Commissioner.

**Method of Measurement.** Electrical equipment to be removed and salvaged shall be measured per each unit removed and salvaged, except for the removal of wires/cables which shall be measured for payment per linear feet of wires/cables removed.

**Basis of Payment.** Electrical equipment removal and salvage will be paid for at the contract unit price for each unit removed and salvaged and electrical wires/cables removed and salvaged will be paid for at the unit price per linear feet, which prices will be payment in full for all labor, equipment, materials, and incidental work necessary to complete the work as specified.



<b>ITEM 153</b>	<b>*****</b>	<b>REINSTALL SIGNAL HEAD, 3 SECTION, MAST ARM MOUNTED</b>
<b>ITEM 154</b>	<b>*****</b>	<b>REINSTALL PEDESTRIAN SIGNAL, BRACKET MOUNTED</b>

**Description.** This work will consist of reinstalling a traffic signal head onto the original pole or mast arm, and reconnecting the harness cable to the junction box.

**Installation Requirements.** The traffic signal head will have been previously removed and stored or installed near the original installation on a temporary basis. This work shall include re-installing the head on the pole or mast arm. The reinstallation will include remounting the signal head and reconnecting the harness cable to the terminal strip in the junction box. Removal from a temporary installation will be covered under a separate item.

**Method of Measurement.** This work will be measured per each unit reinstalled, completely wired and operational.

**Basis of Payment.** This work will be paid for at the contract unit price each for REINSTALL SIGNAL HEAD, 3 SECTION , MAST ARM MOUNTED or REINSTALL PEDESTRIAN SIGNAL, BRACKET MOUNTED, whichever specified, and will include all necessary labor to reinstall the signal head.

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**ITEM 155** \*\*\*\*\*

**REINSTALL MAST ARM, MONOTUBE, 20'**

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**Description.** This work will consist of reinstalling a monotube mast arm onto the original pole.

**Installation Requirements.** This work will consist of reinstalling a mast arm for traffic signals or a mast arm for a street light luminaire onto the original pole. The mast arm will have been previously removed and stored or installed near the original installation on a temporary basis. This work will include re-installing the mast arm onto the pole. Removal from a temporary installation will be covered under a separate item.

**Method of Measurement.** This work will be measured per each arm reinstalled.

**Basis of Payment.** This work will be paid for at the contract unit price each for REINSTALL MAST ARM, MONOTUBE, 20', and will include all necessary labor to reinstall the arm.

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**ITEM 156** \*\*\*\*\*

**REINSTALL JUNCTION BOX**

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**Description.** This work will consist of reinstalling an existing traffic signal junction box onto a pole and installing all necessary harness cable to the traffic signals.

**Installation Requirements.** This work will consist of reinstalling a traffic signal junction box onto a pole intended for that purpose. The junction box will have been previously removed and stored. This work will include re-installing the junction box on the original pole or post.

**Method of Measurement.** This work will be measured per each junction box reinstalled. Harness cable to the traffic signals will be included as part of this item.

**Basis of Payment.** This work will be paid for at the contract unit price each for REINSTALL JUNCTION BOX, which payment will include all necessary material and labor to reinstall the junction box.

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**ITEM 157 \*\*\*\*\***

**ROD AND CLEAN DUCT IN EXISTING CONDUIT SYSTEM**

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**Description and Scope.** This work will consist of inserting a duct rod or electrical fish rod or tape of sufficient length and rigidity into an electrical conduit opening in one electrical manhole or handhole, and pushing the said rod through the conduit to emerge at the next or subsequent manhole in the conduit system at the location shown on the plans. The duct rod may be inserted and removed by any standard construction method which causes no damage to the conduit system. The size of the conduit may vary from two-inch (2") to four-inch (4"), but there will be no differentiation in cost for the size of the conduit. The conduit system which is to be rodded and cleaned may exist with various amounts of standing water in the manholes. The Contractor shall pump the water or sufficient water from the manholes to drain the conduit and to afford compatible working conditions for the installation of the duct rods and/or cables. The pumping of the manholes will be incidental to the work of rodding and cleaning of the conduit.

Any manhole which, in the opinion of the Resident Engineer contains excessive debris, dirt or other materials to the extent that conduit rodding and cleaning is not feasible, will be cleaned at the Commissioner's order and payment approved as a separate pay item, and not a part of this specification.

Prior to removal, of the duct rod, a duct cleaning attachment such as a properly sized wire brush or cleaning mandrel shall be attached to the duct rod, which by removal of the duct rod will be pulled through the conduit to remove sand, grit, or other light obstructions from the duct to provide a clean, clear passage for the installation of cable. Whenever the installation of cables is not performed as an adjunct to or immediately following the cleaning of the duct, a light weight pulling line such as a 1/8" polyethylene line or conduit measuring tape shall be placed and will remain in the conduit to facilitate future work. When great difficulty of either inserting the duct rod or removal of the cleaning mandrel is encountered, the duct may require further cleaning by use of a compressed air gun, or a low-pressure water hose. In the case of a broken duct line, the conduit shall be excavated and repaired. The existence and location of breaks in the duct line may be determined by rodding, but the excavation and repair work required will not be a part of this pay item.

**Method of Measurement.** This work will be measured per linear foot for each conduit cleaned. Measurements will be made from point to point horizontally. No vertical rises will count in the measurements.

**Basis of Payment.** This work will be paid for at the contract unit price per lineal foot for ROD AND CLEAN DUCT IN EXISTING CONDUIT SYSTEM for the installation of new electric cables. Such price will include the furnishing of all necessary tools, equipment, and polyethylene line as required to prepare a conduit for the installation of cable. When the number of cables to be installed requires the use of more than one conduit in the same run, each additional conduit required will be rodded and cleaned as a separate unit and paid for at the contract unit price.

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**ITEM 158      \*\*\*\*\*      REMOVE ELECTRICAL BRIDGE HOUSE EQUIPMENT**

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**Description.** This work will consist of the removal, salvage, and delivery of existing electrical bridge house equipment.

**General Requirements.** Electrical equipment to be removed and salvaged shall be disassembled as required for the complete and safe removal and transport of the item from the work site. Electrical equipment shall be hoisted, loaded and secured on adequate transport with care to prevent damage. Removal will include all incidental work and items associated with the equipment as directed by the Commissioner.

**Method of Measurement.** The work for this item will be measured for payment as lump sum.

**Basis of Payment.** This work will be paid at the Contract lump sum price.

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**ITEM 159 \*\*\*\*\***

**SERVICE INSTALLATION - 300A**

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**Description.** This work will consist of furnishing and installing a service on a Commonwealth Edison Company wood pole for either a 120 volt traffic signal service installation, or for a 240 volt street lighting service installation per City of Chicago Drawing Number 11925.

The 100 ampere installation can be used for either a 120 volt or 240 volt service. The 300 ampere installation can be used only for the 240 volt service.

**Service Junction Cabinet:** The cabinet must be cast from aluminum and met all the requirements of standard drawing 11922. Its dimensions must not exceed eight (8) inches in width, eighteen (18) inches in height and nine (9) inches in depth, and it must be weather proof. It must contain a two (2) pole disconnecting device, with bridge contacts and barrier strip, subject to approval. The disconnecting device must be rated for 300 amps and 600 volts. A suitable ground lug, subject to approval, to accommodate a 1/C #2, 1/C #4, 1/C #2/0, 1/C #1/0, or 350 KCMIL AWG stranded copper conductor must be provided. Any alternate cabinets which are considered equal to this may be considered.

**Cable Grip:** A one and one quarter inch (1 1/4") cable grip fitting must be installed at top of cabinet to accommodate a 3/C #2, #4, #2/0 or #1/0 AWG service cable.

**Service Riser:** A two (2) inch galvanized rigid steel conduit riser terminated at the bottom with a galvanized rigid steel, large radius, conduit elbow must be installed by the contractor on the Commonwealth Edison Company service pole as shown on City of Chicago Drawing Number 11925. The top of the riser must terminate in the service junction cabinet and the end of the elbow must connect to the horizontal conduit lateral leading to the control cabinet. Payment for the riser, elbow, and attachments must be included in the price bid for the complete Commonwealth Edison Company pole service junction unit. The laterals will be paid for separately under different pay items.

**Cable:** A sufficient length of three (3) conductor service entrance cable must be coiled at the top of the box in order to reach the Commonwealth Edison Company secondary wires for connection. The three (3) conductor service entrance cable must meet the requirements of Bureau of Electricity Specification Number 1457, or an approved equal. The black and red conductors must be connected to the disconnect device and the white conductor to the ground lug, for the 240 volt street lighting service installation. The black conductor must be connected to the disconnect, and the white to the ground lug, for the 120 volt traffic signal service installation. The red conductor must be taped and coiled inside box for future use.

**Cables in Service Riser:** Cables must extend continuously from the load side of the disconnect device, down the riser and elbow, and in the conduit lateral to the control cabinet. Payment for cables in riser and elbow will be included in separate pay items, and will not be considered as part of this pay item.

**Basis of Payment.** This work will be paid for at the contract unit price EACH for SERVICE INSTALLATION - 300A, which price must be payment in full for furnishing and installing the service equipment complete. Any charges by the utility company to provide electrical service to the service installation will be paid for by the contractor.

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**ITEM 160**      \*\*\*\*\*

**CLEANING, PAINTING, AND LUBRICATING OPERATING  
MACHINERY ASSEMBLIES**

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**Description.** This work item shall consist of furnishing all equipment, tools, labor, and materials to clean, paint, and lubricate all existing span drive operating machinery including gearing, racks, pinions, shafts, couplings, bearings, brakes, motors, trunnion assemblies, connections, and supports.

This work shall be performed in accordance with the Mechanical Equipment Detailed Specifications in the Appendix C.

**Method of Measurement.** The work for this item will be measured for payment as lump sum.

**Basis of Payment.** This work will be paid at the Contract lump sum price.

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**ITEM 161** \*\*\*\*\*

**REPLACEMENT OF CENTER LOCKS**

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**Description.** This work shall item shall consist of furnishing all equipment, tools, labor, and materials to completely remove, dispose all existing center lock machinery and associated components, furnishing, installation, aligning, testing, painting and lubrication of new center locks and associated components.

This work shall be performed in accordance with the Mechanical Equipment Detailed Specifications in the Appendix C.

**Method of Measurement.** This work will be measured for payment per each center lock assembly furnished, installed, tested and lubricated.

**Basis of Payment.** This work will be paid at the Contract unit price per each span lock assembly.



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**ITEM 162** \*\*\*\*\*

**FURNISH AND INSTALL NEW SUMP PUMPS**

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**Description.** This work shall item shall consist of furnishing all equipment, tools, labor, and materials to remove all existing sump pumps and associated components, furnishing, installation, aligning, testing and painting of new sump pumps, piping, controls and all associated components. The sump pump piping should connect to drainage system and exit out back to abutment. Drainage system for sump pump to be connected to catch basin (by others). This work shall also include complete cleaning of the existing counterweight pit and sump pit.

**Method of Measurement.** This work will be measured for payment per each sump pump assemblies furnished, tested, and installed.

**Basis of Payment.** This work will be paid for at the Contract unit price per each sump pump assembly.

**APPENDIX A**

**Hazardous Materials Abatement Detailed Specifications & Survey Reports**

1. Asbestos Abatement – Specification Section 02 82 13
2. Lead Based Paint Abatement – Specification Section 02 83 19
3. Hazardous Materials Abatement – Specification Section 02 84 16
4. Asbestos Containing Materials (ACM) Survey Report
5. Lead-Based Paint Survey Report

WEBSTER AVENUE BRIDGE OVER THE NORTH BRANCH OF THE CHICAGO RIVER  
CDOT PROJECT NO.: E-1-525

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SECTION 02 82 13  
ASBESTOS ABATEMENT

PART 1 – GENERAL

1.00 SCOPE OF WORK

- A. The Work in this Specification SECTION must include the provision of all labor, operational equipment, disposal, and incidental materials required to abate asbestos-containing materials (ACM) as indicated on the Drawings and required in this Specification SECTION.
  - 1. The capacity to operate the bascule bridge must be maintained at all times during abatement operations.
- B. The abatement contractor must complete preparation of the space to create a contained regulated area for all asbestos abatement activities.
- C. The abatement contractor must clean the contaminated areas and any elements of the bridge house that have been contaminated and are to be salvaged.
- D. The Contractor must restore the Work site to its preconstruction condition. The Contractor must repair or replace all affected materials, finishes, equipment, etc., which were damaged, affected, or otherwise changed in a manner not in accordance with these Specification SECTIONS during the course of the Work.
- E. The Contractor must be responsible for determining if any material, finishes, equipment, etc., are in good condition prior to commencing the Work. These items must be noted and put into record by the Contractor no fewer than ten (10) calendar days before commencing Work, with a copy to the Commissioner.

1.01 RELATED DOCUMENTS

- A. Work under this Specification SECTION is subject to the requirements of the Contract Documents.
- B. A survey report summarizing previous studies and tests on the facility is available for use by the Contractor. A copy of the report is included in Appendix A.

1.02 RELATED WORK

- A. SECTION 02 83 19 – LEAD-BASED PAINT ABATEMENT
- B. SECTION 02 84 16 – HAZARDOUS MATERIALS ABATEMENT

1.03 SUBMITTALS

- A. At least fourteen calendar days before start of project, the Contractor must submit copies of the following items to the Commissioner:
  - 1. A copy of the demolition/renovation notice must be submitted as required by EPA, NESHAPS, 40 CFR 61, Subparts A and M, to the appropriate Federal, State, City or Local

- air pollution control agency responsible for the enforcement of the National Emission Standard for Asbestos.
2. The Contractor must notify OSHA in accordance with CFR Section 1926.1101, the Contractor must designate a competent person, must notify employees, and must select respirators in accordance with CFR Section 1910.
  3. The Contractor must submit for review, shop Drawings for layout and construction of decontamination enclosure systems and barriers for isolation of the Work areas showing location and venting of HEPA units, proposed routing of waste through building and dumpster location as detailed in this Specification SECTION and required by applicable regulations.
  4. When rental equipment is to be used in abatement areas or to transport asbestos contaminated waste, the Contractor must provide a written notification concerning intended use of the rental equipment. The Contractor must provide this to the rental agency.
  5. The Contractor must submit copies of notices to police, fire, and emergency medical personnel.
  6. The Contractor must submit a copy of Respirator Maintenance Plan required in this Specification SECTION. This must also include a copy of Respirator Protection Training and Fit Testing Program.
  7. The Contractor must provide documentation that arrangements for the transport and disposal of asbestos-containing or contaminated materials and supplies have been made. The name and location of the disposal site, a copy of handling procedures, and a list of protective equipment utilized for asbestos disposal at the landfill, prepared and signed by the Landfill Operator, must be obtained and submitted.
  8. The Contractor must provide documentation from a physician that all employees or agents who may be exposed to airborne asbestos in excess of background levels have been provided with an opportunity to be medically monitored to determine if physically capable of working while wearing the required respiratory equipment without suffering adverse health effects.
  9. The Contractor must provide documentation that personnel have received medical monitoring as required in OSHA 29 CFR 1910.1001(j) must be submitted. The Contractor must provide information to the examining physician about conditions in the workplace environment (for example, high temperature, humidity, chemical contaminants).
  10. The Contractor must provide a list of NIOSH approvals for all respiratory protective devices utilized on site. In addition, manufacturer certification of HEPA filtration capabilities for all cartridges and fibers must be submitted. The Contractor must provide documentation that all of the Contractor's employees and agents who must enter the Work Area have passed respirator fit tests and have been assigned respirators which fit.
  11. The Contractor must provide manufacturer's certification that HEPA vacuums, negative air

pressure equipment, and other local exhaust ventilation equipment conform to ANSI Z 9.2 79.

12. The Contractor must provide Material Safety Data Sheet (MSDS) from supplier or manufacturer for all chemicals proposed for use on project.
  13. The Contractor must provide shop Drawings for layout and construction of decontamination enclosure systems and barriers for isolation of the Work area.
- B. Prior to commencement of the Work, the Commissioner will provide the Contractor the following:
1. The results of background level air sampling must include sampling location, name of the ASP, equipment utilized and method of analysis.
  2. The information concerning access, shutdown, and protection requirements of equipment and systems must be for the Work area.
- C. During abatement activities, the Contractor must submit to the Commissioner:
1. Weekly (or as otherwise required by the Commissioner) job progress reports must include the detailing abatement activities. The progress review must include previously established milestones and schedules, problems and action taken, injury reports, equipment breakdown and bulk material and air sampling results conducted by Contractor's air sampling personnel.
  2. Weekly reports must include copies of all transport manifests, trip tickets, and disposal receipts for all asbestos waste materials removed from the Work area during the abatement process.
  3. Daily reports must include copies of Work site entry logbooks with information on worker and visitor access.
  4. Daily logs must include documenting filter changes on respirators, HEPA vacuums, negative pressure ventilation units, and other engineering controls.
  5. Daily reports must include results of bulk material analysis and air sampling data collected during the course of the abatement including OSHA air monitoring results.
  6. Weekly logs must include documentation that each asbestos worker present and in the abatement area was licensed as such by the Illinois Department of Public Health (IDPH).

#### 1.04 REFERENCES

- A. A survey report summarizing previous studies and tests on the facility is available for use by the Contractor. A copy of the report is included in Appendix A, must be incorporated by reference as part of these Contract Documents. The report is listed below:
1. "Asbestos and Lead-Based Paint Survey Report," November 18, 2008, produced by Kowalenko Consulting Group, Inc.

- B. The following laws, regulations, and standards are incorporated by reference:
1. 29 CFR 1910.134 - US OSHA Respiratory Protection
  2. 29 CFR 1926 - US OSHA Construction Standards
  3. 29 CFR 1926.1101 - US OSHA Asbestos Construction Standards
  4. 29 CFR 1910.132 - Personal Protective Equipment
  5. 29 CFR 1910.20 - Access to Employee Exposure and Medical Records
  6. 29 CFR 1910.1200 - Hazard Communication
  7. 29 CFR 1910.151 - Medical and First Aid
  8. 40 CFR Part 61 - US EPA National Emissions Standards for Hazardous Air Pollutants (NESHAP), 11/90 revision
  9. 40 CFR 763 Subpart E - US EPA Asbestos Hazard Emergency Response Act (AHERA) Rules
  10. 40 CFR 763 Subpart E, - US EPA Asbestos Model Accreditation Plan Appendix C (MAP): Interim Final Rule
  11. 49 CFR 100 185 - Transportation
  12. 225 ILCS 207 - Illinois Commercial & Public Building Asbestos Abatement Act
  13. 77 Illinois Administrative - Code Part 855, Rules and Regulations
- C. If local requirements are more stringent than federal or state standards, the local standards are to be followed.

#### 1.05 DEFINITIONS

- A. Definitions included in documents listed in 1.04 REFERENCES, are incorporated into this Specification SECTION 02 82 13 ASBESTOS ABATEMENT. Whenever a conflict exists or is discovered, the most protective and stringent definition and rule must apply.

#### 1.06 QUALITY ASSURANCE

- A. All Work under this Contract must be done in accordance with applicable Federal, State, County and City regulations, standards and codes governing asbestos abatement and any other trade Work done in conjunction with the abatement.
- B. The Commissioner will assign an APM/ASP to oversee abatement activities, and collect air samples listed in this Specification SECTION 02 82 13 – ASBESTOS ABATEMENT. Specific air sampling required for OSHA compliance is the responsibility of the Contractor as listed in this Specification SECTION 02 82 13 – ASBESTOS ABATEMENT.

- C. The most recent edition of any relevant regulation, standard, document or code must be in effect. Where there is conflict between the requirements or with this Specification SECTION, the most stringent requirements must be utilized.
  - D. The Contractor must assure compliance with regulations incorporated in 1.04 REFERENCES, and other applicable standards as they are adopted or revised.
  - E. All laboratory testing services must be in compliance with the IDPH Asbestos Abatement Act and Rules and Regulations. (77 Ill. Adm. Code 855). All project oversight and air sampling will be provided by the Commissioner's APM/ASP, and specified in this Specification SECTION 02 82 13 – ASBESTOS ABATEMENT.
- 14. Air monitoring samples must be analyzed by an American Industrial Hygiene Association (AIHA) accredited laboratory which has successfully participated in the NIOSH Proficiency Analytical Testing (PAT) - PAT Program.
  - 15. Results of sample analysis must be reported verbally, and be followed by a written copy.
    - a. Within 24 hours for samples collected during removal must have phase contrast microscopy (PCM) analysis.
    - b. The Commissioner can request transmission electron microscopy (TEM) analysis with results within 24 hours for post removal final air clearance samples. If the Contractor desires quicker turn-around time for sample results, the additional costs must be borne by the Contractor.
  - 16. All background (pre abatement) air samples will be analyzed by the Commissioner.
  - 17. All Work areas or full containments larger than 160 square feet or 260 linear feet of ACM removal, encapsulation or enclosure may be analyzed by TEM for final air clearance samples if the Commissioner deems necessary.
  - 18. The final air clearance samples may be analyzed by PCM if the project areas are less than or equal to 160 square feet or 260 linear feet. The Commissioner will make this decision.
  - 19. The Contractor must be responsible for all personal monitoring as required by OSHA. The Contractor must provide original documents to the Commissioner covering the results of the air monitoring. The report must include the following:
    - a. Introduction must indicate location of projects, dates, name of Contractor, area size of projects, and identification of monitoring firm.
    - b. Summary must briefly state conclusions and findings of study.
    - c. Methodology must describe sampling equipment, procedures, and analytical methods used.
    - d. Tables must be provided for sample data and calculations.



- e. The original of all reports of Contractor's air monitoring must be signed by the person who conducted the monitoring. This must be in a separate report section.

F. Air Monitoring

1. The Commissioner's APM/ASP will be on site during the duration of the abatement work. The APM/ASP may be a combined IDPH-licensed person.
2. The number of daily air monitoring samples during removal or cleaning will be decided by the Commissioner based on the size of the abatement activity. The following are required minimum:
  - a. Two area samples inside the contained area.
  - b. Two personal samples inside the contained area. (This is not the Contractor's OSHA Compliance personnel monitoring required by law.)
  - c. Two area samples outside the Work area in uncontaminated areas of the building, including one at the entrance to the worker decontamination enclosure.
  - d. One area sample at the exhaust of negative pressure ventilation equipment.
3. Removal and/or cleaning activities must be halted when area sample results exceed the following levels:
  - a. The sample outside Work area has a total concentration total of 0.01 fibers per cubic centimeter.
  - b. The worker time weighed average exposure has a total concentration total of 0.10 fibers per cubic centimeter.
4. All daily air samples will be analyzed by Phase Contrast Microscopy (PCM). Verbal results of daily PCM samples will be available within 24 hours. All results will be followed by a written copy.

G. Clearance air sampling will not begin until the visual inspection is conducted and passed.

1. The Commissioner will conduct aggressive air sampling.
2. Clearance air sampling will be conducted in accordance with the IDPH standards.
3. The samples will be analyzed by the PCM or the TEM based on the criteria cited in this Specification SECTION.
4. The area will be considered clean if, according to the PCM analysis using NIOSH 7400 procedures, every sample value is at or below 0.01 fibers per cubic centimeter.
5. The area will be considered clean if, according to the TEM, the average of the inside Work Area samples are no more than 70 asbestos structures per square millimeter or if the average fiber concentration of the Work area samples are not statistically larger than the

average of the outside air samples.

6. The same clearance sampling procedures and criteria apply to glovebag/ mini containment (tent) removal.

1.07 WARRANTY

- A. The Contractor must provide a warranty as required by the Terms and Conditions for Construction Contract – Book 1 for the Department of Transportation.

1.08 PROJECT SITE CONDITIONS

- A. The Commissioner and staff are currently expected to be on premises during abatement Work.
- B. No construction traffic must occur through occupied portions of the building and isolation barriers must be provided to secure the Work areas as required in this Specification SECTION.
- C. No staff or public must enter the Work areas. The Contractor must be responsible to keep the Work areas secure and posted with required warning signs.

1.09 SEQUENCING/SCHEDULING

- A. Contractor must provide a written Work schedule for review by the Commissioner.
- B. Schedule must be itemized by containment so as to provide enough information for the Commissioner to review the Schedule.
- C. The Work schedule must follow the scheduling as required in Specification SECTION 01 10 00 - SUMMARY, and in Specification SECTION 01 12 16 - WORK SEQUENCE; and as shown on the Drawings.

1.10 EMERGENCY PROCEDURES

- A. A. Emergency planning must be developed prior to abatement initiation and agreed to by Contractor and the Commissioner.
- B. Emergency procedures must be in written form and prominently posted in the clean change areas and equipment rooms of the worker decontamination areas. Prior to entering the Work area, all tradesmen, workers, and those associated with the work must read and sign these procedures to acknowledge receipt and understanding of Work site layout, location of emergency exits, and emergency procedures. The Contractor is responsible for establishing and maintaining emergency fire exits from Work areas.
- C. Emergency planning must include written notification of police, fire and emergency medical personnel of planned abatement activities, Work schedules and layout of Work areas, particularly barriers that may affect response capabilities and approved means of egress.
- D. Emergency planning must include considerations of fire, explosion, toxic atmospheres, electrical hazards, slips, trips and falls, confined spaces and heat related injuries. Written procedures must be developed and employee training in procedures must be provided.

- E. Employees must be trained in evacuation procedures in the event of workplace emergencies.
- F. For all glove-bag removal, a written contingency plan must be provided to the Commissioner that details how an accidental breaking of a glovebag must be cleaned up, decontamination procedures of Work area and workers, and any other pertinent information for the Project.
- G. The Contractor must prepare and file a written report immediately following any accident or emergency. A copy of each report must be issued to the Commissioner.

#### 1.11 PROJECT COORDINATION

- A. The Commissioner will enforce the Contract Documents.
- B. The Commissioner will tour the Work Area with the Contractor and agree on pre abatement conditions and make a written record of those conditions. Written record must be agreed upon by both the COMMISSIONER and the Contractor.
- C. The Commissioner will observe activities at all times during the course of abatement.
- D. The Commissioner will meet with the Contractor daily to review Work progress and solve problems or adjust procedures as appropriate.
- E. The Commissioner will ensure performance for air sampling, workplace inspections and clearance air testing for the Commissioner.
- F. The Commissioner will report on abatement activities to the Commissioner.
- G. The Commissioner will request, review, and maintain Contractor submittals.
- H. The Commissioner will have the authority to stop any job activities if they are not performed in accordance with applicable regulations or guidelines, or the requirements of these Contract Documents. These must be reported to the Commissioner with description of activity, reason for stopping it and alternatives for correcting the problems.
- I. The Commissioner will conduct ambient air sampling in accordance with the NIOSH Standard Analytical Method for Asbestos in Air Method 7400 or other acceptable methods as otherwise agreed upon, including TEM and will follow all applicable codes and regulations.
- J. The number, location, and duration of air samples will be determined by the Commissioner, and will be conducted for information only, serving to monitor Contractor performance during the project and will not release the Contractor from any responsibility to conduct personnel air sampling for OSHA compliance.
- K. Minimum requirements for air sampling must be in accordance with Subpart E, Appendix A, and the Illinois Asbestos Abatement Act Rules and Regulations.
- L. The Contractor must be responsible for daily personnel monitoring as required by OSHA regulations.
- M. Project sequence pre abatement meeting must be conducted before start of Work.

- N. Removal Work must not commence until the containments are completely constructed, all decontamination areas and equipment are fully in place and operable, and the areas have been inspected and approved by the Commissioner.
- O. Upon completion of asbestos removal, for each Work area, containments must remain in place, with air filtration systems running, until areas have been inspected, approved by the Commissioner and clearance air monitoring limits and met as described in this Specification SECTION.

#### 1.12 TRAINING AND PERSONNEL PROTECTION

- A. Prior to commencement of abatement activities, all personnel who must be required to enter the Work areas or handle containerized asbestos containing materials must have valid asbestos worker and/or supervisor licenses issued by the IDPH.
- B. Special onsite training on equipment and procedures unique to this job site must be performed as required, such as confined space entry.
- C. Training in emergency response and evacuation procedures must be provided to all workers.
- D. The Contractor must provide respiratory protection to workers in accordance with a submitted written Respiratory Protection Program, and must include all items in OSHA 29 CFR 1910.134. This program must be posted on site. Workers must be provided with personally issued, individually identified (marked with waterproof designations) respirators approved by NIOSH.
- E. The minimum respiratory protection requirements during abatement must be Powered Air Purifying Respirator (PAPR). The Contractor may use half face air purifying respirator equipped with dual HEPA type filters labeled with NIOSH and Mine Safety and Health Administration (MSHA) certification for Work Area preparation and waste bag loading. Respiratory protection selected must be in accordance with Title 77, Chapter I. Subchapter P, Part 855.80 of the Illinois Administrative Code.
- F. Workers must perform positive and negative air pressure fit tests each time a respirator is put on, whenever the respirator design so permits.
- G. The Contractor must provide and workers must be given a qualitative fit test in accordance with procedures detailed in the OSHA Standard 29 CFR 1910.1025, Appendix D, Qualitative Fit Test Protocol (1985) for all respirators that must be used on this abatement project.
- H. The Contractor must provide documentation of adequate respirator fit and must be provided to the Commissioner.
- I. The Contractor must provide additional respirators (minimum of 2 of each type), and training on their donning and use must be available at the Work site for authorized visitors who may be required to enter the Work area.
- J. The Contractor must provide protective clothing in accordance with Title 77, 855.370 of the Illinois Administrative Code.

- K. The Contractor must provide disposable clothing including head, foot, and full body protection in sufficient quantities and adequate sizes for all workers, Commissioner and all authorized visitors by the Contractor.
- L. The Contractor must provide hard hats, protective eyewear, gloves, rubber boots, and/or other footwear as required for workers and authorized visitors. Safety shoes may be required for some activities.
- M. Non disposable footwear or clothing must remain in the Work area and must be disposed as contaminated material at the end of the Work activities.

## PART 2 – PRODUCTS

### 2.01 PRODUCTS

- A. The Contractor must deliver all materials in the original packages, containers or bundles bearing the name of the manufacturer and the brand name (where applicable).
- B. The Contractor must provide all equipment and materials completely clean before being brought on the Work site.
- C. The Contractor must provide 6 mm Polyethylene sheeting utilized for worker decontamination, opaque white or black in color.
- D. The Contractor must provide disposal bags, which must be of 6 mil polyethylene, pre- printed with labels as required by EPA regulation 40 CFR 61.152, OSHA requirement 29 CFR 1910.1001 or 29 CFR 1926.1101 with the following information:

**DANGER  
CONTAINS ASBESTOS FIBERS  
AVOID CREATING DUST  
CANCER AND LUNG DISEASE HAZARD**

- E. The Contractor must provide warning signs as required by OSHA Final Rules and Standards for 29 CFR Parts 1910.1001 and 1926.1101 Occupational Exposure to Asbestos, Tremolite, Anthophyllite and Actinolite.
- F. The Contractor must provide Material Safety Data Sheet (MSDS) from supplier or manufacturer and are required for all chemicals proposed for use on projects.
- G. Surfactant (wetting agent) is a 50/50 mixture of polyethylene ether and polyoxyethylene ester, or equivalent, mixed in a proportion of 1 fluid ounce to 5 gallons of water or as specified by manufacturer. (An equivalent surfactant must be understood to mean a material with a surface tension of 29 dynes per centimeter as tested in its properly mixed concentration, following ASTM protocol A Surface and Interfacial Tension of Solutions of Surface Active agents) Where Work area temperature may cause freezing of the amended water solution, the addition of ethylene glycol in amounts sufficient to prevent freezing is permitted.

- H. Acceptable encapsulating agents are to be U.S. Mineral - Cafco Bond Seal, Cable Coatings - Number 28 or Number 22P, or Arpin Mfg. - Asbestite 2000.

## 2.02 EQUIPMENT

- A. The Contractor must provide a sufficient quantity of negative pressure ventilation units equipped with HEPA filtration and operated in accordance with ANSI Z 9.2 79 (Local Exhaust Ventilation requirements) and EPA guidance document EPA 560/5 85 024 Guidance for Controlling Friable Asbestos Containing Materials in Buildings, Appendix J.
- B. Recommended Specifications and Operating Procedures for the Use of Negative Pressure Systems for Asbestos Abatement must be utilized so as to provide one workplace air change every 15 minutes.
- C. The Contractor must increase the air change rate to six times an hour (one air change every 10 minutes) if chemical solvents or removers are to be used in the Work area.
  - 1. The total air flow calculations requirement must be total cubic feet per minute equals volume of Work area (in cubic feet) for 15 minutes.
  - 2. The number of units needed for the abatements must be the number of units needed equals total cubic feet times the unit capacity (in cubic feet).
- D. Respirators and protective gear must comply with this Specification SECTION.
- E. The Contractor must provide a sufficient supply of disposable mops, rags and sponges for Work area decontamination.
- F. The Contractor must provide a sufficient supply of scaffolds, ladders, lifts, and hand tools (for example, scrapers, wire cutters, brushes, utility knives, wire saws, etc.)
- G. The Contractor must provide airless sprayers with pumps capable of providing 125 pounds per square inch at the nozzle tip at a flow rate of 2 gallons per minute for spraying amended water.
- H. The Contractor must provide rubber dust pans, and rubber squeegees for cleanup.
- I. The Contractor must provide brushes utilized for removing loose asbestos containing material which must have nylon or fiber bristles, not metal.
- J. The Contractor must provide a sufficient supply of HEPA filtered vacuum systems and must be available during cleanup.

## PART 3 – EXECUTION

### 3.01 WORK AREA PREPARATION

- A. The Contractor must provide the following full containment measures:
  - 1. The Contractor must have available on sites, a list containing the names, addresses, and home and office telephone numbers of the Contractor, City, Commissioner and any other

personnel who may be required to assist during abatement activities.

2. The Contractor must have available on site a copy of this Specification SECTION and Drawings, the IDPH regulations and any other applicable Federal, State, City and Local government regulations.
3. The Contractor must post caution signs meeting the specifications of OSHA's latest Final Rules and Standards. Signs must be posted to permit a person to read the signs and take the necessary protective measures to avoid exposure before entering the Work area. Additional signs may need to be posted following construction of workplace enclosure barriers.
4. The Contractor must shut down and lock out electric power to all Work areas. The Contractor must provide temporary power and lighting. The Contractor must ensure safe installation (including ground faulting at the power source) of all temporary power sources and equipment by compliance with all applicable electrical code requirements and OSHA requirements for temporary electrical systems. Electric power source must also be provided, by the Contractor, for the Commissioner.
5. The Contractor must seal all intake and exhaust vents in the Work Area with duct tape and 6 mil polyethylene; must seal any seams in system components that pass through the Work area. The Contractor must remove all HVAC system filters and place in labeled 6 mil polyethylene bags for staging and eventual disposal as asbestos contaminated waste. The Contractor must clean the filter assembly and ductwork using HEPA vacuums or wet cleaning techniques.
6. The Commissioner will provide cold water for construction purposes. Contractor must connect to existing water system. Contractor must provide portable water heater for personnel decontamination facility if hot water cannot be provided by the Commissioner during abatement.
7. The Contractor must pre clean all movable objects within the Work area using a HEPA filtered vacuum and/or wet cleaning methods as appropriate. After cleaning, these objects must be removed from the Work area and carefully stored in an uncontaminated location.
8. The Contractor must pre clean all fixed objects in the Work Area using HEPA filtered vacuums and/or wet cleaning techniques as appropriate. The Contractor must clean machinery behind grills or gratings if contaminated. The Contractor must clean wall, floor and behind fixed items. After pre cleaning, the Contractor must enclose fixed objects in 6 mil plastic sheeting and seal securely with tape.
9. The Contractor must pre clean all surfaces in the Work area using HEPA filtered vacuums and/or wet cleaning methods as appropriate. It is prohibited to use any methods that would raise dust such as dry sweeping or vacuuming with equipment not equipped with HEPA filters. The Contractor must not disturb asbestos containing materials during the pre-cleaning phase.
10. The Contractor must seal all windows, doorways, elevator openings, corridor entrances,

drains, ducts, grills, grates, diffusers, skylights and any other penetrations of the Work area (including the outside of the building, tunnels and crawl spaces, if any) with 6 mil polyethylene sheeting and seal with tape. The Contractor must seal all seams in system components that pass through the Work area. Doorways and corridors which must not be used for passage during Work must be sealed with barriers.

11. The Contractor must cover floors in the Work areas with polyethylene sheeting unless written approval to eliminate the floor sheeting has been obtained.
    - a. Floor must be covered with two layers of 6 mm (minimum) sheeting.
    - b. Plastic must be sized to minimize seams. If the floor area necessitates seams, those on successive layers of sheeting must be staggered with 18 inch overlap to reduce the potential for water to penetrate to the flooring material. A distance of at least 6 feet between seams is sufficient. No seams must be located at joints.
    - c. Floor sheeting must extend at least 12 inches up the sidewalls of the Work area.
  12. The Contractor must cover walls in the Work areas with polyethylene sheeting.
    - a. Walls must be covered with two layers of minimum of 4 mil polyethylene sheeting.
    - b. Plastic must be sized to minimize seams. Seams must be staggered and separated by a distance of at least 6 feet.
    - c. Wall sheeting must overlap floor sheeting by at least 12 inches beyond the wall/floor joint to provide a better seal against water damage and for negative pressure.
    - d. Wall sheeting must be secured adequately to prevent it from falling away from the walls. This must require additional support/attachment when negative pressure ventilation systems are utilized.
    - e. Ceiling must be covered the same as walls if removal is other than ceiling removal.
  13. The Contractor must maintain emergency and fire exits from the Work areas or establish alternative exits acceptable to the City of Chicago Fire Department.
  14. 14. The Contractor must provide an adequate number of portable fire extinguishers of the correct rating per containment.
- B. The Contractor must provide Worker Decontamination Enclosure Systems at all locations where workers must enter or exit the Work area. These systems may consist of existing rooms outside of the Work area, if the layout is appropriate, that can be enclosed in plastic sheeting and are accessible from the Work area. When this situation does not exist, enclosure systems may be constructed out of metal, wood or plastic support as appropriate.
1. The Contractor must provide shop Drawings for construction, including materials and layout, submitted as shop Drawings and approved in writing by the Commissioner prior to



Work initiation. Worker Decontamination Enclosure systems constructed at the Work site must utilize 6 mil opaque black or white polyethylene sheeting or other acceptable materials for privacy. Detailed descriptions of portable, prefabricated units, if used, must be submitted for approval. Submittal must include floor plan with dimensions, materials, size, thickness, plumbing and electrical utilities.

2. The Worker Decontamination Enclosure Systems must consist of at least a Clean Room, a Shower Room, and an Equipment Room, each separated from the other and from the Work area by airlocks.
3. Entry to and exit from all airlocks and Decontamination Enclosure System chambers must be through curtained doorways consisting of three sheets of overlapping polyethylene sheeting. One sheet must be secured at the top and left side, the second sheet at the top and right side and the third sheet must be attached the same as the first.
4. All sheets must have weights attached to the bottom to insure that they hang straight and maintain a seal over the doorway when not in use. Doorway designs, providing equivalent protection and acceptable to the Commissioner may be utilized.
5. Access between any two rooms in the Decontamination Enclosure System must be through an airlock with at least 3 feet separating each curtained doorway. Pathways into (from clean to contaminated) and out from (contaminated to clean) the Work area must be clearly designated.
6. Clean Rooms must be sized to adequately accommodate the clothes and equipment of the Work crew.
  - a. Benches must be provided as well as hooks for hanging up street clothes. Shelves for storing respirators must also be provided in this Work area.
  - b. Clean work clothes (if required under disposables), clean disposable clothing, replacement filters for respirators, towels and other necessary items must be provided in adequate supply in the Clean Room.
  - c. A location for postings must also be provided in this Work area.
  - d. A lockable door must be used to permit access into the Clean Room from outside the Work area.
  - e. Lighting, heat and electricity must be provided as necessary for comfort.
  - f. This space must not be used for storage of tools, equipment or materials, or as office space.
  - g. The Contractor must provide Shower Rooms at all locations where workers must enter or exit the Work area and must contain one or more showers as necessary to adequately accommodate the workers.

- h. Each showerhead must be supplied with hot and cold water adjustable from inside the shower.
  - i. The shower enclosure must be constructed to ensure against leakage of any kind. An adequate supply of soap, shampoo, and towels must be supplied by the Contractor and must be made available at all times.
  - j. Shower water must be drained, collected and filtered through a system with at least 5.0 micron particle size collection capability.
  - k. A system containing a series of several filters with progressively smaller pore sizes must be used to avoid rapid clogging of filtration system by large particles.
  - l. Filtered wastewater must be discharged to a sanitary sewer.
7. The equipment rooms must be used for storage of equipment and tools at the end of a shift after they have been decontaminated using a HEPA filtered vacuum and/or wet cleaning techniques as appropriate.
- a. Replacement filters (in sealed containers until used) for HEPA vacuums and negative pressure ventilation equipment, extra tools, containers of surfactant and other materials and equipment that may be required during the abatement may also be stored here as needed.
  - b. A walk off pan (a small children's swimming pool or equivalent) filled with water must be located in the Work area just outside the Equipment Room for workers to clean off foot coverings while leaving the Work area and to prevent excessive contamination of the Worker Decontamination Enclosure System.
  - c. A drum lined with a labeled 6 mil polyethylene bag for collection of disposable clothing must be located in this room.
  - d. Contaminated footwear (for example, rubber boots, other reusable footwear) must be stored in this area for reuse.
8. The equipment rooms must be used for storage of equipment and tools at the end of a shift after they have been decontaminated using a HEPA filtered vacuum and/or wet cleaning techniques as appropriate.
- a. Replacement filters (in sealed containers until used) for HEPA vacuums and negative pressure ventilation equipment, extra tools, containers of surfactant and other materials and equipment that may be required during the abatement may also be stored here as needed.
  - b. A walk off pan (a small children's swimming pool or equivalent) filled with water must be located in the Work area just outside the Equipment Room for workers to clean off foot coverings while leaving the Work area and to prevent excessive contamination of the Worker Decontamination Enclosure System.

- c. A drum lined with a labeled 6 mil polyethylene bag for collection of disposable clothing must be located in this room.
  - d. Contaminated footwear (for example, rubber boots, other reusable footwear) must be stored in this area for reuse.
9. This airlock system must consist of an airlock, a container staging area and another airlock with access to outside the Work area.
10. The waste transfer airlock must be constructed in similar fashion to the Worker Decontamination Enclosure System using similar materials and airlock and curtain doorway designs. This airlock system must not be used to enter or exit the Work area.
11. The waste transfer airlock must be secured to prevent unauthorized entry.
- C. The Contractor must establish emergency exits clearly marked with duct tape arrows or other effective designations to permit easy location from anywhere within the Work area. They must be secured to prevent access from uncontaminated areas and still permit emergency exiting. These exits must be properly sealed with polyethylene sheeting that can be cut to permit egress if needed. These exits may be the Worker Decontamination Enclosure System, the waste transfer airlock and/or other alternative exits satisfactory to fire officials.
- D. The Work areas must be separated from (uncontaminated) occupied areas of the building by the construction of Type A barriers in accordance with the requirements of the IDPH regulations. Locked doors must not be allowed to replace Type A barriers.
  1. Walls must be constructed of 2 inch by 4 inch wood or metal framing to support barriers in all openings larger than 4 foot by 8 foot.
  2. Plywood sheeting material of at least 5/8 inch thickness must be applied to the Work side of the barrier.
  3. Both sides of the partition must be covered with a double layer of 4 mm polyethylene sheeting with staggered joints and sealed in place.
  4. Caulk edges of partition at floor, ceiling, walls and fixtures to form an air tight seal.
- E. Following completion of the construction of all polyethylene barriers and decontamination system enclosures, the Contractor must allow overnight settling (at least eight hours) to ensure that barriers remain intact and secured to walls and fixtures before beginning actual abatement activities.
- F. The Contractor must provide all polyethylene barriers inside the Work area, in the Worker Decontamination Enclosure System, in the waste transfer airlock and at partitions constructed to isolate the Work area from occupied areas, must be inspected at least twice daily, prior to the start of each day's abatement activities and following the completion of the day's abatement activities.
- G. The Contractor must document inspections and observations in the daily project log.

- H. The Contractor must repair damage and defects in the enclosure system immediately upon discovery.
- I. The Contractor must provide smoke tubes to test the effectiveness of the barrier system before abatement Work begins and at least once a day thereafter until the Work is completed. Results and observations must be documented in the Project log book.
- J. At any time during the abatement activities after barriers have been erected, if visible material or emissions are observed outside of the Work area or if damage occurs to barriers, Work must immediately stop. The Contractor must repair barriers and must clean up debris/residue using appropriate HEPA vacuuming and wet mopping procedures, prior to resuming abatement activities.
- K. The Contractor must collect air samples outside of the Work area during abatement activities. If all samples, indicate airborne fiber concentrations greater than 0.01 fibers per cubic centimeter or the pre measured background levels (whichever is lower) determined by PCM, Work must immediately stop. The Contractor must inspect and repair barriers, cleanup of surfaces outside of the Work area using HEPA vacuums or wet cleaning techniques prior to resuming abatement activities.
- L. The Contractor must install and initiate operation of negative pressure ventilation equipment as needed to provide one air change in the Work area every 15 minutes. If chemical solvents or removers are to be used, the Contractor must provide six air changes per hour in the Work area.
  - 1. Openings made in the enclosure system to accommodate these units must be made airtight with tape and/or caulking as needed. If more than one unit is installed, they must be turned on one at a time. The Contractor must check the integrity of the wall barriers for secure attachment and must provide, where needed, additional reinforcement.
  - 2. The Contractor must ensure that adequate power supply is available to satisfy the requirements of the ventilating units.
  - 3. Negative pressure ventilation units must be exhausted to the outside of the building away from occupied areas.
  - 4. Twelve inch diameter extension ducting must be used to reach from the Work area to the outside when required.
- M. Careful installation, air monitoring and daily inspections must be done to ensure that the ducting does not release fibers into uncontaminated building areas.
- N. The Contractor must operate negative air pressure systems in accordance with Specifications and Operating Procedures for the Use of Negative Pressure Systems for Asbestos Abatement, Guidance for Controlling Friable Asbestos Containing Materials in Buildings, EPA Report Number 560/5 85 024 (1985).
- O. The Contractor must install and initiate operation of pressure differential recorder to verify maintenance of pressure differential of 0.02 inch of water continuously in containment. The Contractor must keep the recorder tape for Project record and provide copies of the recorder tape to Commissioner upon request. The Commissioner will check the recorder of the manometer on a regular basis during the abatement.

- P. Once constructed and reinforced as necessary, and with negative pressure ventilation units in operation as required, the Contractor must provide test enclosure for leakage utilizing smoke tubes. Repair or reconstruct as needed.
- Q. The Contractor must clearly identify and maintain emergency and fire exits from the Work area.
- R. The Contractor must HEPA vacuum or wet clean the Worker Decontamination Enclosure System and the waste transfer airlock system at the end of each day of abatement activities.
- S. The Contractor must not commence Work until:
  - 1. Enclosure systems must be constructed, and tested.
  - 2. Negative pressure ventilation systems must be functioning adequately.
  - 3. All pre abatement submissions, notifications, postings, permits bonds, insurance, etc. must be provided and must be satisfactory by the Commissioner.
- T. The Contractor must remove, clean, replace and enclose plastic in plastic sheeting all ceiling mounted objects such as lights and other items that may interfere with the abatement process and were not previously cleaned and sealed off.
- U. The Contractor must utilize localized spraying of amended water and/or HEPA vacuums to reduce fiber dispersal during the removal of these fixtures.
- V. If specified procedures cannot be utilized, the Contractor must make a request, in writing, to the Commissioner.
  - 1. Alternative procedures must provide equivalent or greater protection than procedures that they replace.
  - 2. Any alternative procedure must be approved in writing by the Commissioner, prior to implementation.

### 3.02 WORKPLACE ENTRY AND EXIT PROCEDURES

- A. All the following procedures must be posted in the Clean Room and Equipment Room by the Contractor. These procedures must be followed throughout the abatement Project until clearance air monitoring has been performed and documented to the satisfaction of the Commissioner.
  - 1. All workers and authorized personnel must enter the Work areas through the Worker Decontamination Enclosure Systems.
  - 2. All personnel who enter the Work areas must sign the entry log, located in the Clean Room, upon entry and exit.
  - 3. All personnel, before entering the Work areas, must read and be familiar with all posted regulations, OSHA, EPA - NESHAP and AHERA, IDPH, NIOSH, personal protection requirements (including Work place entry and exit procedures) and emergency procedures. A sign off sheet must be used to acknowledge that these have been reviewed and

understood by all personnel prior to entry.

4. All personnel must proceed first to the Clean Room, remove all street clothes and appropriately don respiratory protection (as deemed adequate for the Project conditions) and launderable and/or disposal coveralls, head covering and foot covering. Hard hats, eye protection and gloves must also be utilized if required. Clean respirators and protective clothing must be provided and utilized by each person for each separate entry into the Work areas.
5. Personnel wearing designated personal protective equipment must proceed to the Clean Room through the Shower Room and Equipment room to the main Work areas.
6. Before leaving the Work area, all personnel must remove gross contamination from the outside of respirators and protective clothing by brushing and/or wet wiping procedures. Small HEPA vacuums with brush attachments may be utilized for this purpose, however, larger machines may tear the suits. Each person must clean bottoms of protective footwear in the walk off pan just prior to entering the equipment room.
7. Personnel must proceed to equipment room where they remove all protective equipment except respirators. The Contractor must deposit disposable clothing into appropriately labeled containers for disposal.
8. Reusable, contaminated footwear must be stored in the Equipment Room when not in use in the Work areas. Upon completion of each abatement, it must be disposed of as asbestos contaminated waste. Rubber boots may be decontaminated at the completion of the abatement for reuse.
9. Those personnel still wearing respirators, must proceed to the shower areas; must clean the outside of the respirators and the exposed face area under running water prior to removal of respirator; and must shower and shampoo to remove residual asbestos contamination.
  - a. Various types of respirators may require slight modification of these procedures.
  - b. A powered air purifying respirator face piece must be disconnected from the filter/power pack assembly that is not waterproof, upon entering the shower.
  - c. A dual cartridge respirator may be worn into the shower.
  - d. Cartridges must be replaced for each new entry into the Work area.
10. 10. After showering and drying off, personnel must proceed to the clean room and don clean disposable clothing if there must be later reentry into the Work area or street clothes if it is the end of the Work shift.
11. The Contractor must remove asbestos contaminated waste that has been containerized and must be transported out of Work area through the waste transfer airlock or through the Worker Decontamination Enclosure system if separate airlocks have not been constructed.

12. Waste pass out procedures must utilize two teams of workers, an inside team and an outside team.
13. The inside team wearing appropriate protective clothing and respirators for inside the Work area must clean the outside, including bottoms, of properly labeled containers (bags, drums, or wrapped components) using HEPA vacuums and wet wiping techniques and transport them into the waste container pass out airlock. No worker from the inside team must further exit the Work area through this airlock.
14. The outside team, wearing a different color protective clothing and appropriately assigned respirators, must enter the airlock from outside the Work area, enclose the drums in clean, labeled, 6 mil polyethylene bags and remove them from the airlock to the outside. No worker from the outside team must further enter the Work area through this airlock.
15. The exit from this airlock must be secured to prevent unauthorized entry.

### 3.03 RESPIRATOR MAINTENANCE

- A. The Contractor must develop a plan for respirator maintenance, covering cleaning procedures, frequency of cleaning, person responsible for cleaning, method and means of storage, location of battery charging station, number of respirators available for use, frequency of cartridge change, compressor placement and length of hose used.
- B. The Contractor must submit copy of maintenance plan to the Commissioner.
- C. The Contractor must submit verification of testing conducted in compliance with ANSI Commodity Specification for Air and OSHA Final Rules and Standards for 29 CFR Parts and 1926.1101 Occupational Exposure to Asbestos, Tremolite, Anthophyllite and Actinolite.
- D. The Contractor must have available at each Work place one spare battery pack and cartridge per person per shift.
- E. The Contractor must develop emergency procedures as required in this Specification SECTION.
- F. The Contractor must maintain a log documenting all respirator maintenance procedures.

### 3.04 ABATEMENT PROCEDURES

- A. Prior to gross removal within full containment, the Contractor must clean and isolate the Work area in accordance with this Specification SECTION.
  1. The Contractor must follow entry and exit procedures in this Specification SECTION.
  2. Prior to commencement, during and after abatement Work, air monitoring is essential as a means of documenting the air quality throughout the removal project. The Contractor must upgrade workers respiratory protection or modify removal procedures to reduce airborne fiber concentrations as directed by the Commissioner.
  3. The Contractor must wet all asbestos containing material with an amended water solution

using equipment capable of providing a fine spray mist, in order to reduce airborne fiber concentrations when the material is disturbed. Saturate the material to the substrate; however, must not allow excessive water to accumulate in the Work area.

4. The Contractor must keep all removed material wet enough to prevent fiber release until it can be containerized for disposal. Maintain a high humidity in the Work area by misting or spraying to assist in fiber settling and reduce airborne concentrations. Wetting procedures are not equally effective on all types of asbestos containing materials but, must nonetheless be used in all cases.
  5. Saturated asbestos containing material must be removed in manageable sections by a 2 person team. Removed material must be containerized before moving to a new location for continuance of the Work. Surrounding areas must be periodically sprayed and maintained in a wet condition until visible material is cleaned up.
  6. Material removed from building structures or components must not be dropped or thrown to the floor or ground. Material must be removed as intact sections or components whenever possible and carefully lowered to the floor or ground.
  7. Polyethylene bags (6 mil. thick) must be sealed when full. ACM must be double bagged when 6 mil polyethylene bags are used for disposal. Bags must not be overfilled. Each bag must be securely sealed to prevent accidental opening and leakage by tying tops of bags in an overhand knot or by taping in goose neck fashion. The bag seal must NOT be with wire or cord. Bags must be decontaminated on exterior surfaces by wet cleaning and HEPA vacuuming.
  8. Large components removed intact must be wrapped in 2 layers of 6 mil polyethylene sheeting secured with tape for transport to the landfill.
  9. Asbestos containing waste with sharp edged components (for example, steel plate, nails, screws) must tear the polyethylene bags and sheeting. These materials must be placed into burlap bags prior to placement in 6 mil polyethylene bags and (drums where required) for disposal.
  10. After completion of all stripping Work, surfaces from which asbestos containing materials have been removed must be wet brushed with a nylon brush and sponged or cleaned by an approved equivalent method to remove all visible residue and mastic.
  11. Clean up must proceed in accordance with this Specification SECTION.
  12. After the Work area has been rendered free of visible residues and inspected by the Commissioner, the Contractor must apply a thin coat of an encapsulating agent approved by the Commissioner to all surfaces.
- B. The Contractor must encapsulate the asbestos containing materials in accordance with the following procedures:
1. The Contractor must field test encapsulants prior to use by applying each to a small area to determine suitability for the materials to be encapsulated.



2. Encapsulants must be applied using airless spray equipment, after gross removal is complete and the area is rendered free of visible residue.

### 3.05 CLEANUP PROCEDURES

- A. The Contractor must remove all visible accumulation of asbestos containing materials and asbestos contaminated debris utilizing rubber dust pans and rubber squeegees to move materials around. The Contractor must NOT use metal brushes or shovels to pick up or move accumulated waste. Special care must be taken to minimize damage to floor finishes.
- B. The Contractor must wet clean all surfaces in the Work area using rags, mops and sponges as appropriate. Excess water and wet debris may be picked up with a wet dry shop vacuum.
- C. Residual water must be vacuumed with the HEPA filtered vacuum. This water must be filtered to micrometers prior to disposal in municipal sewer.
- D. The Contractor must remove at the minimum on a daily basis all containerized waste from the Work area and waste container pass out airlock.
- E. The area must be inspected and approved by the Commissioner.
- F. The Contractor must remove the cleaned plastic sheeting from walls and floors. Windows, doors, HVAC system vents and all other openings must remain sealed. The negative pressure ventilation units must remain in continuous operation. Decontamination enclosure systems must remain in place and be utilized.
- G. After the first cleaning of the Work area, the Contractor must wait at least 12 hours to allow fibers to settle. Then HEPA vacuum and wet clean all objects and surfaces in the Work area again (second cleaning). The remaining plastic on the walls and floors must only be removed. The windows, doors, HVAC system vents and all other openings must remain sealed.
- H. The Contractor must decontaminate all tools and equipment and remove at the appropriate time in the cleaning sequence.
- I. The Contractor must inspect the Work area for visible residue by wiping surfaces with a dark cloth. If any accumulation of residue is observed by the Commissioner, it must be assumed to be asbestos and the 12 hour cleaning/settling period cycle must be repeated.
- J. The Contractor must encapsulate the areas from which asbestos has been removed.
- K. Once the Work area has passed the final visual inspection, clearance air monitoring will be conducted by the Commissioner in accordance with this Specification SECTION. A minimum of 12 hours after final cleaning must be allowed, prior to start of air sampling. The air in the Work area must be agitated during the air monitoring. If the acceptable air quality concentrations are met, barriers may be removed and properly disposed of.
- L. A final inspection must be conducted by the Commissioner to assure that no contamination remains in the Work area.

- M. All additional cleaning required must be provided at no cost to the City until the clean-up criteria have been met.
- N. The HEPA units must remain in operation until final clean check criteria have been met.

### 3.06 DISPOSAL

- A. The Contractor must remove all asbestos containing and contaminated materials from the Work area must occur as a minimum once daily. None of these materials must remain on site overnight but rather be placed in the required lockable dumpster or similar approved container.
- B. As the Work progresses, to prevent exceeding available storage capacity on site, sealed and labeled containers of asbestos containing waste must be removed and transported to the prearranged disposal location.
- C. Disposal must occur at an authorized site in accordance with regulatory requirements of NESHAP and applicable Federal, State, County, City and other Local guidelines and regulations.
- D. All dump receipts, trip tickets, transportation manifests and/or other documentation of disposal must be delivered to the Commissioner for their records.
  - 1. A recommended record keeping format utilizes a chain of custody form which must include the names and addresses of the Commissioner, Contractor, pickup site, and disposal site, the estimated quantity of the asbestos waste and the type and number of containers used.
  - 2. The form must be signed by the Contractor, Commissioner and the Disposal Site Operator, as the responsibility of the material changes hands.
  - 3. If a separate hauler is employed, the name, address, telephone number and signature must also appear on the form.
- E. Once bags and wrapped components have been removed from the Work area, they must be loaded into an enclosed truck for transportation. Cargo areas must be locked when unattended.
  - 1. When moving containers, utilize hand trucks, carts and proper lifting techniques to avoid back injuries. Trucks with lift gates are helpful for raising drums during truck loading.
  - 2. The enclosed cargo area of the truck must be free of debris and lined with 6 mil polyethylene sheeting to prevent contamination from leaking or spilled containers. Floor sheeting must be installed first and extend up the side walls. Wall sheeting must overlap floor sheeting by six inches and taped into place.
  - 3. Personnel loading asbestos containing waste must be protected by disposable clothing including head, body and foot protection and at a minimum, half face piece, air purifying, dual cartridge respirators equipped with HEPA filters.
  - 4. Any debris or residue observed on containers or surfaces outside of the Work area resulting from cleanup or disposal activities must be immediately cleaned up using HEPA filters vacuum equipment and/or wet methods as appropriate.

5. If dumpsters are used for asbestos waste disposal or enclosed cargo area of truck, they must have metal doors or metal tops that can be closed and locked to prevent vandalism, wind dispersion of asbestos fibers, or other disturbances of bagged asbestos debris. Unbagged material must not be placed in these containers, nor must they be used for non-asbestos waste. Bags must be placed, not thrown, into these containers.
  6. Asbestos containing materials must be transported directly to the landfill. Temporary storage is not permitted.
- F. Upon reaching the landfill, trucks must approach the dump location as closely as possible for unloading the asbestos containing waste.
1. Bags, drums, and components must be inspected as they are unloaded at the disposal site. Material in damaged containers must be repacked in empty two 6 mil polyethylene bags and burlap bag or one 6 mil polyethylene bag and drum as necessary.
  2. Waste containers must be placed on the ground at the disposal site, not pushed or thrown out of trucks.
  3. Personnel off-loading containers at the disposal site must wear protective equipment consisting of disposable head, body and foot protection and, at a minimum, half face piece, air purifying, dual cartridge respirators equipped with high efficiency filters.
  4. Following the removal of all containerized waste, the truck cargo area must be decontaminated using HEPA vacuums and/or wet methods to meet the no visible residue criteria. Polyethylene sheeting must be removed and discarded in bags or drums along with contaminated cleaning materials and protective clothing, bags or drums at the disposal site.
  5. If landfill personnel have not been provided with personal protective equipment for the compaction operation by the Landfill Operator, the Contractor must supply protective clothing and respiratory protection for the duration of this operation.
  6. All signed waste shipment records must be submitted to the Commissioner within 35 days after waste shipment from the job site.

### 3.07 RE ESTABLISHMENT OF THE WORK AREA AND SYSTEMS

- A. The Contractor must re-establish the Work area only following the completion of cleanup procedures and passing clearance air testing by TEM or PCM in accordance with this Specification SECTION.
- B. Following satisfactory clearance air monitoring of the Work areas, remaining polyethylene barriers and worker and equipment decontamination enclosure systems must be removed and disposed of as asbestos contaminated waste. Following removal, the entire Work area, including HVAC filter assembly and ductwork must be wet cleaned or HEPA vacuumed to remove residual asbestos fibers.
- C. The Contractor must reinstall mounted objects removed from their former positions during Work area preparation activities.

- D. The Contractor must relocate objects that were removed to temporary locations back to their original positions.
- E. The Contractor must reestablish HVAC, mechanical and electrical systems in proper working order after receiving written approval from the Commissioner.
- F. The Contractor must repair all areas of damage that occurred as a result of abatement activities.

3.08 GLOVEBAG REMOVAL/MINI CONTAINMENT (TENT)

- A. Air monitoring must be performed in accordance with this Specification SECTION.
  - 1. The Contractor must shut down the electric power to the abatement areas. The Contractor must provide temporary power and lighting. The Contractor must ensure safe installation (including ground faulting) of temporary power sources and equipment by compliance with all applicable Chicago Electrical Code requirements and OSHA requirements for temporary electrical systems.
  - 2. The Contractor must bring all necessary tools and materials into the mini containment (Tent) Work area before the glovebag removal procedure begins.
  - 3. The Contractor must clean all visible debris on the floor or other surfaces in the Work areas by HEPA vacuuming and wet cleaning methods.
  - 4. The Contractor must contain the Work area in which removal must be performed.
    - a. The Contractor must shut down the Work area HVAC system and seal all openings.
    - b. The Contractor must erect a mini containment (tent) consisting of one layer of 6 mil polyethylene. This mini containment (tent) must include a ceiling, walls and a floor.
    - c. The Contractor must provide an airlock with polyethylene sheeting curtained doorway at access doors.
    - d. The Contractor must provide a negative pressure atmosphere within the Work area.
  - 5. The Contractor must provide decontamination facilities consisting of at least a clean room, shower room and equipment room within reasonable proximity to all Work areas but within the Work area enclosed by each "Type A" barrier. Location must be approved by the Commissioner. The equipment room must be under negative air pressure for the entire duration of the Work.
  - 6. The Contractor must provide a waste transfer airlock.
  - 7. The Contractor must maintain emergency and fire exits from the Work area. Fire extinguishers must be in close proximity to each tent.

8. The Contractor's personnel must be provided with two disposable suits to wear during abatement Work.
- B. Mini containment (tent) removal procedures must be done by a minimum of two licensed asbestos workers trained in mini containment (tent) procedures and equipped with full personnel protective equipment in accordance with ILL. 855.480.
- C. If any insulation is severely damaged, either at or remote from the section of insulation being removed, the Contractor must wrap the entire portion of insulation in polyethylene and secure with duct tape, spiraling the length and must provide a shroud around the damaged area.
1. Insulation adjacent to that being removed must be wrapped in 6 mil polyethylene sheeting and sealed airtight with duct tape.
  2. The Contractor must wrap one layer of duct tape around the pipe/fitting/duct at each location where the glovebag must be attached.
  3. The pipe/fitting/duct insulation diameter must not exceed one half the glove bag above the attached gloves.
  4. The Contractor must open the bag; must place tools inside; must wrap glovebag around pipe/fitting/duct; and must seal the top with staples and duct tape. The glovebag must be attached securely around the insulation, forming a smooth airtight seal.
  5. The Contractor must tape the ends of the glovebag to the pipe. When removing from vertical piping/fitting/duct, special care must be taken to assure that the lower end of the glovebag is securely sealed against the pipe to ensure the glove bag remains airtight, thus no leakage.
  6. The Contractor must reinforce bottom of bag; make two folds (approximately one inch each); and must secure with duct tape.
  7. The Contractor must tape the wand from the water sprayer to the water sleeve.
  8. The Contractor must tape hose of HEPA vacuum to mini containment (tent) space.
  9. The Contractor must set up a chain of glovebags within the Work area prior to requesting the Commissioner's inspection. The Commissioner will not inspect the glovebags one at a time. The Commissioner will issue a warning notice or stop Work if abatement starts without Commissioner's inspection, testing and approval of glovebag setup.
  10. Each glovebag must be visually and smoke tube tested for air tightness by the Commissioner prior to asbestos removal. Any leakage points must be taped airtight and a retest must occur.
- D. Where damaged insulation is laying on ceiling or floor, all surfaces must be HEPA vacuumed prior to starting removal procedures. The Contractor must remove small amount of pipe/fitting/duct insulation in a mini containment (tent).

1. The Contractor must spray all tools with water and place in pouch.
2. The asbestos containing insulation within the secured glovebag must be wetted with amended water prior to stripping.
3. The Contractor must cut the ends of the insulation, and slit lengthwise. The Contractor must constantly mist the asbestos material with amended water during cutting and removal.
4. The Contractor must remove insulation.
5. The Contractor must deposit the waste in the bottom of the glovebag.
6. The Contractor must spray unprotected pipe with amended water, scrub and wipe down exposed pipe/fitting/duct to remove all visible ACM.
7. The Contractor must seal the exposed ends of insulation with encapsulant prior to detaching the glovebag.
8. The pipe/fitting/duct, the interior of the bag, the insulation, and the tools must be sprayed with amended water. The enclosed atmosphere must be misted and time allowed for the mist to settle.
9. The glovebag must not be shifted down a pipe or duct, nor must it be moved from the initial pipe or duct to another.
10. The Contractor must isolate tools in the glovebag gloves, thus turning the gloves inside out, forming a new pouch, twist and seal with duct tape, sever at mid seal forming two separate bags.
11. The Contractor must collapse the glovebag using HEPA filtered vacuum.
12. The Contractor must twist glovebag several times and seal with duct tape.
13. The Contractor must slip a 6 mil polyethylene disposal bag over the glovebag while it is still attached to pipe/fitting/duct. The Contractor must remove the tape; must open the top of the glovebag; and must fold it down into the disposable bag.
14. The Contractor must twist, seal and label the disposal bag.
15. The Contractor must clean the bag with a damp cloth.
16. The Contractor must dispose of all material, rags, brushes, etc. as asbestos contaminated waste.
17. The Contractor must follow waste container pass out procedures.
18. After removal is finished, the Contractor must wet wipe and HEPA vacuum the Work area.
19. Once removal Work begins, all workers leaving the Work area must be decontaminated by having their outer suit thoroughly HEPA vacuumed.

20. The Contractor must proceed into airlock, and remove and place outer suit in drum lined with a 6 mil polyethylene bag for disposal.
  21. All workers must proceed immediately to the shower area, with respirator still on and must perform complete decontamination.
  22. The Work place entry and exit procedures must be posted in the clean room and equipment room.
- E. Emergency Procedures.
1. In the event of the glovebag rupturing or melting, the device and shroud must be immediately cleaned with wet cloths and HEPA vacuuming.
  2. The broken glovebag must be encased in a new glovebag and attached as specified in the above paragraphs.
  3. Workers contaminated by asbestos material must follow Worker Decontamination Procedures as previously specified.
- F. The Contractor must remove and containerize all visible accumulation of asbestos containing materials and asbestos contaminated debris utilizing rubber dust pans and rubber squeegees to move materials around. The Contractor must NOT use metal shovels to pick up or move accumulated waste.
- G. The Contractor must wet clean all surfaces in the Work area using rags, mops and sponges as appropriate.
- H. The Contractor must encapsulate the Work areas from which asbestos has been removed.
- I. The Contractor must remove all containerized waste from the Work area.
- J. The Work area must be inspected and approved by the Commissioner.
- K. The Contractor must decontaminate all tools and equipment and must remove them at the appropriate time in the cleaning sequence.
- L. The Contractor must inspect the Work area for visible residue. If any accumulation of residue is observed by the Commissioner, it must be assumed to be asbestos and the cleaning cycle must be repeated.
- M. Following completion of removal and clean ups, all shrouds (including tent) must remain sealed until clearance air monitoring is complete and the results acceptable.
- N. Aggressive air sampling methods must be utilized for all clearance air monitoring unless directed otherwise by the Commissioner.
- O. The Contractor must remove all debris and materials that are left over and leave the area in the "clean" state.

- P. The Contractor must restore all Work areas to their original condition.
- Q. Contractor is responsible for all damage caused by or during the abatement process. Contractor must make every effort to rectify the damaged areas to their original condition subject to approval by the Commissioner and the Commissioner.
- R. Disposal procedures must comply with this Specification SECTION.
- S. Reestablishment of the Work area and systems must comply with this Specification SECTION.

END OF SECTION 02 82 13



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SECTION 02 83 19  
LEAD BASED PAINT ABATEMENT

PART 1 – GENERAL

1.00 SCOPE OF WORK

- A. The Work in this Specification SECTION must include the provision of all labor, operational equipment, disposal, and incidental materials required to perform abatement of all lead—based paint (LBP) as specified herein and indicated on the Drawings and required in this Specification SECTION.

1.01 RELATED DOCUMENTS

- A. Work under this Specification SECTION is subject to the requirements of the Contract Documents.
- B. A survey report summarizing previous studies and tests on the facility is available for use by the Contractor. A copy of the report is included in Appendix A.

1.02 RELATED WORK

- A. SECTION 02 82 13 – ASBESTOS ABATEMENT
- B. SECTION 02 84 16 – HAZARDOUS MATERIALS ABATEMENT

1.03 SUBMITTALS

- A. At least twenty-one calendar days before start of the Project, the Contractor must submit the following items to the Commissioner:
  - 1. A copy of the demolition/renovation notice must be submitted as required by EPA, NESHAPS, 40 CFR 61, Subparts A and M, to the appropriate Federal, State, City or Local air pollution control agency responsible for the enforcement of the National Emission Standards for Lead. The Contractor must notify OSHA in accordance with CFR Section 1926.1101; the Contractor must designate a competent person, must notify employees, and must select respirators in accordance with CFR Section 1910.
  - 2. The Contractor must submit for review by the Commissioner, shop Drawings for layout and construction of decontamination enclosure systems and barriers for isolation of the Work areas showing location and venting of HEPA units, proposed routing of waste through building and dumpster location as detailed in this Specification SECTION and required by applicable regulations.
  - 3. When rental equipment is to be used in abatement areas or to transport lead based contaminated waste, the Contractor must provide a written notification concerning intended use of the rental equipment. The Contractor must provide this to the rental agency with a copy submitted to the Commissioner.
  - 4. The Contractor must submit to the Commissioner copies of notices to police, fire, and emergency medical personnel.

5. The Contractor must submit to the Commissioner a copy of Respirator Maintenance Plan required in this Specification SECTION. This must also include a copy of Respirator Protection Training and Fit Testing Program.
  6. The Contractor must provide documentation that arrangements for the transport and disposal of LBP waste or contaminated materials and supplies have been made. The name and location of the disposal site, a copy of handling procedures, and a list of protective equipment utilized for LBP disposal at the landfill, prepared and signed by the Landfill Operator, must be obtained and submitted to the Commissioner.
  7. The Contractor must provide documentation from a physician that all employees or agents who may be exposed to lead in excess of background levels have been provided with an opportunity to be medically monitored to determine if physically capable of working while wearing the required respiratory equipment without suffering adverse health effects.
  8. The Contractor must provide documentation that personnel have received medical monitoring as required in OSHA 29 CFR 1926.62 must be submitted. The Contractor must provide information to the examining physician about conditions in the workplace environment (for example, high temperature, humidity, chemical contaminants).
  9. The Contractor must provide a list of NIOSH approvals for all respiratory protective devices utilized on site. In addition, manufacturer certification of HEPA filtration capabilities for all cartridges and fibers must be submitted.
  10. The Contractor must provide documentation that all of the Contractor's employees and agents who must enter the Work Area have passed respirator fit tests and have been assigned respirators which fit. This fit testing must be in accordance with qualitative procedures as detailed in the OSHA Lead Standard 29 CFR 1910.1025, Appendix D Qualitative Fit Test Protocol (1985).
  11. The Contractor must provide manufacturer's certification that HEPA vacuums, negative air pressure equipment, and other local exhaust ventilation equipment conform to ANSI Z 9.2 79.
  12. The Contractor must provide MSDS from supplier or manufacturer for all chemicals proposed for use on the Project.
- B. During abatement activities, the Contractor must submit to the Commissioner:
1. Weekly (or as otherwise required by the Commissioner) job progress reports detailing abatement activities. The progress review must include previously established milestones and schedules, problems and action taken, injury reports, equipment breakdown and bulk material and air sampling results conducted by Contractor's air sampling personnel.
  2. Weekly reports must include copies of all transport manifests, trip tickets, and disposal receipts for all lead based waste materials removed from the Work area during the abatement process.
  3. Daily reports must include copies of Work site entry logbooks with information on worker

and visitor access.

4. Daily logs must include documenting filter changes on respirators, HEPA vacuums, negative pressure ventilation units, and other engineering controls.
5. Daily reports must include results of bulk material analysis and air sampling data collected during the course of the abatement including OSHA air monitoring results.
6. Weekly logs must include documentation that each lead worker present and in the abatement area was licensed as such by the Illinois Department of Public Health.

#### 1.04 REFERENCES

A. A survey report summarizing previous studies and tests on the facility is available for use by the Contractor. A copy of the report is included in Appendix A, must be incorporated by reference as part of these Contract Documents. The report is listed below:

1. "Asbestos and Lead-Based Paint Survey Report," November 18, 2008, produced by Kowalenko Consulting Group, Inc.

B. Code of Federal Regulations.

29 CFR 1910.1200	Hazard Communication
29 CFR 1910.151	Medical and First Aid
29 CFR 1910.20	Access to Employee Exposure and Medical Records
29 CFR 1910.132	Personal Protective Equipment
29 CFR 1910.134	OSHA, Respiratory Protection
29 CFR 1910.141	OSHA, Sanitation
29 CFR 1926	OSHA, Occupational Safety and Health Regulations for Construction
29 CFR 1926.59	OSHA, Hazard Communication
29 CFR 1926.62	OSHA, Lead
29 CFR 1926.63	OSHA, Cadmium
40 CFR 50	EPA, National Primary and Secondary Ambient Air Quality Standards
40 CFR 50, Appendix B	EPA, Reference Method for the Determination of Lead in Suspended Particulate Matter in the Atmosphere (High Volume Method)
40 CFR 50, Appendix G	EPA, Reference Method for the Determination of Lead in Suspended Particulate Matter Collected from Ambient Air
40 CFR 50, Appendix J	EPA, Reference Method for the Determination of Particulate Matter as PM-10 in the Atmosphere (High Volume Method)
40 CFR 58	EPA, Ambient Air Quality Surveillance
40 CFR 60, Appendix A Method 9	EPA, Visual Determination of the Opacity of Emissions from Stationary Sources
40 CFR 60, Appendix A Method 22	EPA, Visual Determination of Fugitive Emissions from Material Sources and Smoke Emissions from Fires
40 CFR 117	EPA, Determination of Reportable Quantities for Hazardous Substances
40 CFR 122	EPA Administered Permit Program: The National Pollutant Discharge Elimination System

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40 CFR 141	National Primary Drinking Water Regulations
40 CFR 148	Hazardous Waste Injection Restrictions
40 CFR 260	Hazardous Waste Management System: General
40 CFR 261	EPA, Identification and Listing of Hazardous Waste
40 CFR 261, Appendix II	EPA, Method 1311 Toxicity Characteristic Leaching Procedure (TCLP)
40 CFR 262	EPA, Standards Applicable to Generators of Hazardous Waste
40 CFR 263	EPA, Standards Applicable to Transporters of Hazardous Waste
40 CFR 264	EPA, Standards for Owners and Operators of Hazardous Waste Treatment, Storage and Disposal Facilities
40 CFR 265	EPA, Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
40 CFR 265, Subpart C	EPA, Preparedness and Prevention
40 CFR 265, Subpart D	EPA, Contingency Plan and Emergency Procedures
40 CFR 265.16	EPA, Personnel Training
40 CFR 268	EPA, Land Disposal Restrictions
40 CFR 302	EPA, Designation, Reportable Quantities and Notification
40 CFR 355	EPA, Emergency Planning and Notification
40 CFR 745	Lead-Based Paint Poisoning Prevention in Certain Residential Structures
49 CFR Part 172	Hazardous Material Table, Special Provisions, Hazardous Material Communications, Emergency Response Information, and Training Requirements
49 CFR Part 178	Specifications for Packaging
49 CFR 100 – 185	Transportation.
C.	EPA Methods.
3050	Acid Digestion of Sediment, Sludge, and Soils
3051	SW-846 Test Methods for Evaluating Solid Waste - Physical/Chemical Methods
D.	NIOSH Methods.
NIOSH 7082	Lead
OSHA Booklet 3142	Lead in Construction
E.	State and Local Regulations.
Illinois Environmental Protection Act	Section 9(a)
35 Illinois Administrative Code 212.302	Fugitive Particulate Matter
35 Illinois Administrative Part 721	Identification and Listing of Hazardous Waste
Illinois Title 35, Part 302	Water Quality Standards, Subpart B (Special Waste)
35 Ill. Adm. Code Section 808, 809, and 810	
Subtitle C	General Use Water Quality Standards

35 Ill. Admin. Code Part 742	Tiered Approach to Corrective Action (TACO)
410 ILCS 45	Illinois Lead Poisoning Prevention Act
415 ILCS	Environmental Protection Act
77.IL. Admin. Code 845	Illinois Lead Poisoning Prevention Code

#### 1.05 DEFINITIONS

- A. Definitions included in documents listed in 1.04 REFERENCES, are incorporated into these Specification SECTIONS. Whenever a conflict exists or is discovered, the most protective and stringent definition and rule must apply.

#### 1.06 QUALITY ASSURANCE

- A. Requirements of regulatory agencies must be adhered to during handling, transport, and/or disposal of hazardous or suspect hazardous materials.
- B. Governing regulatory agencies include IDOT (hazardous materials transport rules), IEPA, other state, federal and local regulations governing hazardous materials.
- C. Contractor must meet transporter regulations and arrange permitting for disposal facilities, respective to hazardous materials to be disposed or transported for salvage.
1. Contractor's disposal plan for all materials must be outlined and submitted for review, including materials to be disposed, packing materials, estimated quantities, transport, and disposal facility certifications. Plan for salvage, removal and storage of medical equipment must also be outlined and submitted for review.

#### 1.07 WARRANTY

- A. The Contractor must provide a warranty as required by the Terms and Conditions for Construction Contract – Book 1 for the Department of Water Management.

#### 1.08 TOOLS AND EQUIPMENT

- A. All equipment must at least conform to minimum industry standards.
1. Negative Air Machines must provide HEPA filtration and conform to ANSI Z9.2 fabrication criteria.
2. Respirators and associated air purifying cartridges must be NIOSH or MSHA approved for use with lead, asbestos, or other contaminants anticipated in the Work.
3. Safety equipment, such as hard hats, eye protection, gloves, and footwear must comply with their respective ANSI standards.
- B. Tools.
1. Shovels and scoops must be suitable for use in a plasticized containment. Plastic or rubber models are preferred, but metal shovels are acceptable when used with care to prevent

damage to poly sheeting and permanent surfaces. Duct tape may be applied to the leading edges to aid in poly damage prevention.

2. Scrapers, wire and bristle brushes, utility knives and other hand tools must be of good quality and suitable for the intended uses. The Contractor must keep an ample supply on hand for the completion of the Work.
3. Power tools such as, but not limited to saws, pneumatic chisels, brushes, sanders, and needle guns must be equipped with shrouds and HEPA-filtered local exhaust systems to capture released particles.

#### 1.09 MATERIALS

##### A. Abatement materials

1. Tape must be 2 inch or 3 inch duct tape or other waterproof tape suitable for joining poly seams and attaching poly sheeting to surfaces.
2. Spray adhesives must be non-flammable and free of methylene chloride solvents.
3. Disposal bags must be minimum 6 mil where used for single-bagging, and minimum 4mil where used for double-bagging.
4. Disposable suits, hoods, and foot coverings must be TYVEK or similar.
5. Solvents must be compatible with any primers, paints, coatings, or other surfacing materials to be installed following their use.
6. Cleaning solutions must cause lead to chelate, precipitate, or otherwise release effectively release from surfaces. Cleaning solutions must not leave residue on surfaces to be painted.

#### 1.10 WORKER PROTECTION COMPLIANCE PROGRAM

##### A. General.

1. The Contractor must develop a written Compliance Program to establish and implement practices and procedures for assuring that no employee is exposed to lead at concentrations greater than 50  $\mu\text{g}/\text{m}^3$ , the OSHA permissible exposure limit (PEL). This program is in addition to other OSHA hazard communication and safety and health requirements of the Project, and must be revised and updated at least every six months.
2. The program must establish methods for complying with this Specification and the OSHA Construction Industry Lead Standard, 29 CFR 1926.62, which must be thoroughly reviewed. The Federal regulation is referred to as the "lead standard" for the purpose of this Specification SECTION.
3. The program must apply to all Contractor employees associated with lead on the Project, and to Subcontractors working under the direct control of the Contractor who are associated with lead on the Project.

4. The program must assign the specific responsibility for implementation and enforcement of the program to the Contractor.
  5. The program must contain a description of each activity in which lead is emitted (e.g., equipment used, material involved, controls in place, crew size, employee job responsibilities, operating procedures and maintenance practices). All elements of the lead standard as listed in this Specification SECTION, must be addressed.
  6. The program must contain a report of the technology considered in meeting the PEL and air monitoring data which documents the source of lead emissions.
  7. The program must contain a Work practice program which includes items required in the lead standard such as protective clothing and equipment, housekeeping, and hygiene facilities and practices. The program must include provisions for blood lead and zinc protoporphyrin (ZPP) testing of all Contractor personnel prior to assignment to a lead Project with follow-up testing at the frequencies established in the lead standard.
- B. Elements of Lead Standard to Be Addressed.
1. Exposure monitoring, including proper protection during initial monitoring.
  2. Action Level.
  3. Permissible Exposure Limit.
  4. Respiratory Protection.
  5. Protective Clothing and Equipment.
  6. Housekeeping.
  7. Personal Hygiene Facilities and Practices.
  8. Medical Surveillance and Medical Removal Protection.
  9. Employee Information and Training.
  10. Signs and Regulated Areas.
  11. Recordkeeping.
- C. An emergency action plan must be provided in the event that an incident occurs that may require the modification of the Contractor's standard operating procedures during abatement. The Contractor must detail procedures to be followed in the event of an incident assuring that lead abatement Work is stopped until the problem is corrected.
- D. Prior to beginning any abatement activity, all Contractor personnel must be trained in accordance with OSHA 29 CFR 1926.62 and any additional State/Local requirements. Training must have been conducted by a third party, EPA/State approved trainer meeting the requirements of EPA 40 CFR



745. Initial training certificates, current refresher training certificates and any applicable state and local licensing must be submitted for each person working at the site.

#### 1.11 AMBIENT AIR AREA SAMPLING TO ESTABLISH REGULATED AREAS

##### A. General.

1. The Contractor must collect area air samples using personal or area sampling pumps to monitor the air around the perimeter of any activities that might generate airborne lead emissions.
2. Based on the monitoring results, the Contractor must establish a regulated area around the Work sites to assure that unprotected personnel are not permitted access to any locations where the levels of airborne lead are at or above the OSHA Action Level (30  $\mu\text{g}/\text{m}^3$ ) as an 8 hour time-weighted average.
3. All air samples must be collected and analyzed according to NIOSH Method 7082, or equivalent. All samples must be analyzed by laboratories accredited by the AIHA for metals analysis.
4. The Contractor must develop a written program for the use of the pumps and for establishing the regulated area. General statements must not be used. Specific methods, procedures, and details are required. The program must include provisions for suspending Work and correcting the conditions in the event unacceptable emissions occur.

##### B. Area Sampling.

1. Area samples must be collected throughout an entire Work shift (or shifts, if more than one shift is operating) at a minimum of four locations around the perimeter of each Work area that may potentially create lead emissions, unless otherwise directed by the City.
2. If the results are below the action level of 30  $\mu\text{g}/\text{m}^3$ , the regulated area can be established at that location or the samplers moved closer to the Work area and the testing repeated. If the results are above the action level, the samplers must be moved further away from the Work area and the testing repeated. The testing must continue until regulated area around the worksites can be established to identify the outer boundary beyond which the Action Level is not exceeded.
3. Ropes, ribbons, tape, or other visible means must be used to define the areas. Entrance into the regulated areas by unprotected personnel must be prohibited.

##### C. Duration of Monitoring.

1. The above monitoring must be conducted around each operation at the beginning of the Project to establish the regulated area(s) and to confirm that unacceptable emissions are not occurring. Additional monitoring is not required except as outlined in this Specification SECTION.
2. If the methods of preparation, Work activities, or containment change, or suspect visible

emissions are observed, the monitoring must be repeated to reconfirm the acceptability of, or to reestablish, the regulated area. Monitoring must also be initiated at the request of the Commissioner.

D. Monitoring During Paint Removal Work.

1. Perform personal and area monitoring during the entire abatement operation. Sufficient area monitoring must be conducted at the physical boundary to ensure unprotected personnel are not exposed above 30  $\mu\text{g}/\text{m}^3$  of air at all times. If the outside boundary lead levels are at or exceed 30  $\mu\text{g}/\text{m}^3$  of air, Work must be stopped and the Contractor must immediately correct the condition(s) causing the increased levels and notify the Commissioner immediately.
2. The Commissioner must review the sampling data collected on that day to determine if condition(s) requires any further change in Work methods. Removal Work must resume when approval is given by the Commissioner. The Contractor must control the lead level outside of the Work boundary to less than 30  $\mu\text{g}/\text{m}^3$  of air at all times. As a minimum, conduct area monitoring daily on each shift in which lead paint removal operations are performed in areas immediately adjacent to the lead control area.
3. For outdoor operations, at least one sample on each shift must be taken on the downwind side of the lead control area. If adjacent areas are contaminated, clean and visually inspect contaminated areas. The Contractor must certify that the area has been cleaned of lead contamination.

E. Reports.

1. Unless directed otherwise by the Commissioner, the Contractor must verbally provide the results of monitoring within 48 hours after the monitoring was performed, with written results provided weekly.
2. The reports must include the following information at a minimum:
3. Name and location of job site.
  - a. Contract number.
  - b. Date of monitoring.
  - c. Duration of monitoring (i.e. time monitoring begins and ends each day) and sampling flow rate.
  - d. Identification and serial number on personal sampling pumps.
  - e. Drawing showing specific location of area sampling pumps.
  - f. Drawing showing specific location of paint removal operation and support equipment, and the method of removal or Work activity being performed.

- g. Name and address of laboratory used. Laboratory test procedure used.
- h. Laboratory test results.
- i. Signatures of field and laboratory technicians conducting the Work.

#### 1.12 AIR QUALITY REQUIREMENTS FOR PARTICULATE AND LEAD EMISSIONS

##### A. General.

1. The Contractor must control emissions from the Project site to comply with regulation 40 CFR 50, EPA National Primary and Secondary Ambient Air Quantity Standards (NAAQS), the Illinois Environmental Protection Act and 35 Illinois Administrative Code 312.302.
2. When there is a potential for significant human and/or environmental exposure to occur outside the containment structure, the Contractor must conduct instrument monitoring of emissions as described in this Specification SECTION.
3. Monitoring for compliance with the NAAQS must be the responsibility of the Contractor unless otherwise stipulated by the Commissioner.
4. The Contractor must develop a written program for the monitoring of emissions to assure compliance with the NAAQS and IEPA regulations. The program must effectively and clearly communicate the means for complying with the above regulations, and for halting the Work and correcting the containment system in the event unacceptable emissions occur. A quality assurance plan representing approximately ten percent of the monitoring program effort must be provided. This plan must include provisions to determine the precision and accuracy of both sampling and analytical procedures. General statements must not be used. Specific methods, procedures, and details are required. The plan should be submitted to the Commissioner and to: Manger, Air Monitoring Section, Bureau of Air, Illinois EPA, PO Box 19276, Springfield, Illinois 62794-9276.

##### B. Fugitive Emissions.

1. Fugitive emissions from the Work site must be controlled to comply with the following Illinois requirements.
2. No person must cause or threaten to allow the discharge of emission of any contaminant into the environment in any State so as to cause or tend to cause air pollution in Illinois, either alone or in combination with contaminants from other sources, or so as to violate regulations or standards adopted by the Board under this Act.
3. No person must cause or allow the emission of fugitive particulate matter from any process including any material handling or storage activity that is visible by an observer looking generally toward the zenith at a point beyond the property line of the emission source.

##### C. Stop Lead Removal

- D. If the Commissioner presents a written Stop Lead Removal Order, the Contractor must immediately stop all lead removal and maintain the regulated area.
- E. The Contractor must not resume any lead removal activity until authorized to do so by the Commissioner.
- F. A stop lead removal order may be issued at any time the Commissioner determines abatement conditions/activities are not within Specification requirements.
- G. Work stoppage must continue until conditions have been corrected to the satisfaction of the Commissioner.
- H. Standby time and costs for corrective actions must be borne by the Contractor, including the industrial hygienist's time.
- I. The occurrence of any of the following events must be reported immediately by the Contractor in writing to the Commissioner and must require the Contractor to immediately stop lead removal/disturbance activities and initiate contamination control activities:
  - 1. Breach/break in regulated area barrier(s);
  - 2. Less than  $-0.02$ " wcg pressure in the regulated area;
  - 3. Serious injury/death at the site;
  - 4. Fire/safety emergency at the site;
  - 5. Respiratory protection system failure;
  - 6. Exceedance of protection factor for personal protective equipment (ppe) provided to workers; or
  - 7. Power failure or loss of wetting agent; or
  - 8. Any visible emissions observed outside the regulated area.
- J. Monitoring Requirements for Lead.
  - 1. Total Suspended Particulate - Lead (TSP-Lead) must not exceed  $1.5 \mu\text{g}/\text{m}^3$ , averaged over a 90 day period.
  - 2. TSP-Lead monitoring must be conducted in accordance with 40 CFR 50, Appendix B. Filters must be analyzed for lead in accordance with 40 CFR 50, Appendix G.
- K. Reports.
  - 1. Unless otherwise directed by the Commissioner, the Contractor must verbally provide the results of monitoring within 48 hours after the monitoring was performed, with written results provided weekly.

2. The reports must include the following information at a minimum:
  - a. Name and location of job site.
  - b. Date of monitoring.
  - c. Time of monitoring (i.e., time monitoring begins and ends each day).
  - d. Identification and serial number of monitoring units.
  - e. Drawing showing specific location of monitoring units. Drawing showing specific location of paint removal operation and the method of removal or Work activity being performed.
  - f. Wind direction and velocity.
  - g. A flow chart verifying the rate of air flow across the filter throughout the sampling period.
  - h. Name and address of laboratory used.
  - i. Laboratory test procedure utilized.
  - j. Laboratory test results.
  - k. Signatures of field and laboratory technicians conducting the Work.
  - l. If a release of airborne dust and debris within a 24 hour period contains the equivalent of one pound or more of lead, it is considered to be a reportable quantity. Work must be suspended, and the Contractor must immediately notify the Commissioner, the National Response Center (800/424-8802), and IEPA headquarters at (217) 785-8604.

#### 1.13 GROUND QUALITY

##### A. General.

1. The Contractor must not allow contamination of the ground on or around the Project site to occur from the abatement activities, debris handling, or other Project-related activities. For the purpose of this Specification SECTION, ground includes, but is not limited to, soil, crushed stone, gravel, and paved areas.
2. Unless otherwise directed, the Contractor must conduct testing as described in this item to determine whether ground contamination has occurred.
3. The Contractor must develop a written Project Work plan to establish and implement practices and procedures for preventing contamination of the ground from the lead removal operation and other Project-related activities as required in this Specification SECTION. The program must specifically outline the procedures to be implemented by the Contractor to establish background levels of ground contamination, and to determine if contamination

of the ground has occurred due to Project activities. The program must effectively and clearly communicate the methods for halting the Work should ground contamination occur, correcting the deficiencies responsible for the contamination, and providing procedures for removing and replacing contaminated ground. General statements must not be used. Specific methods, procedures, and details are required.

4. Ground Contamination Criteria.
  - a. The ground must be considered to have been contaminated at each location where an increase in the total lead concentration is:
    - 1) above background levels, or
    - 2) greater than the concentrations of inorganic chemicals in background soils as established by the Illinois EPA, Tiered Approach to Corrective Action (TACO) regulations, 35 IAC Code Part 742.

B. Ground Analysis.

1. As referenced above, the Contractor must provide a written plan specifically outlining the procedures to determine ground contamination in accordance with applicable federal, state and local regulations, and the minimum following requirements.
2. The Contractor can accept the TACO background standards as baseline for the Project.
3. The Contractor can establish Project-specific background levels in accordance with procedures outlined in the TACO regulations.
4. The Contractor must be responsible to return the site to pre-abatement conditions based on the TACO background levels or the Project-specific background levels established through Contractor sampling.
5. If it is determined that contamination of the ground has occurred as a result of the abatement activities, Toxicity Characteristic Leaching Procedure (TCLP) testing must be employed to determine if the material must be handled and disposed of as a hazardous waste.

C. Spills or Releases of Materials.

1. Materials observed spilling onto the ground must be cleaned up immediately and steps taken to avoid a reoccurrence.
2. The Contractor must immediately notify the commissioner when any spills or releases occur.
3. A release of the equivalent of one pound or more of lead within a 24 hour period must be considered to be a reportable quantity. Work must be suspended, and the Contractor must immediately notify the Commissioner, the National Response Center (800/424-8802), and IEPA headquarters at (217) 785-8604.

D. Reporting.

1. The Contractor must provide the Commissioner with thorough documentation of the location of the soil samples and pre-job and post-job sampling results.
2. The Contractor must provide the Commissioner with thorough documentation regarding any spills or releases, clean-up activities, and corrective action, and the steps taken in the event contamination was found to occur.
3. The Contractor must provide the Commissioner with copies of any correspondence between the Contractor and governmental agencies.

1.14 WASTE CLASSIFICATION, HANDLING, AND DISPOSAL

A. General.

1. The Department of Water Management is the generator of lead-contaminated debris for permitting purposes.
2. The site specific Illinois EPA waste generator number and US EPA waste generator numbers must be used on all manifests that accompany the waste from the location of generation to the treatment/disposal facility.
3. The Contractor is responsible for assuring that all testing, handling, storage, transportation, manifesting, and disposal requirements are properly implemented, including satisfactory training of job site personnel and the cleaning of all reusable items and equipment prior to removal from the site.
4. The Contractor must develop a written program to establish and implement practices and procedures for the proper testing, handling, and disposal of waste generated on the Project. The name, address, and qualifications of the testing laboratory, transporter, and disposal facility must be provided. Only IEPA licensed waste haulers and IEPA-approved disposal facilities must be used. The program must include procedures that must be followed to assure that all reusable items such as equipment, containment materials, and scaffolding are cleaned free of lead prior to removal from the site.
5. The program must effectively and clearly communicate the means for complying with the requirements of this Specification SECTION, Federal EPA and 35 Illinois Administrative Code for solid and hazardous waste. Generic statements must not be used. Specific methods, procedures, and details are required.

B. Waste Handling & Storage.

1. Hazardous Waste.
  - a. The Contractor must comply with EPA 40 CFR 262 and Illinois regulations for the on-site handling and storage of all hazardous waste generated by the Project.

- b. Analysis of the waste and debris must be completed immediately upon filling waste containers in accordance with applicable regulations and this Specification SECTION until the TCLP test results are received, the containers must be labeled as "lead-containing debris". Hazardous waste labels must be applied after the test results are received, if the debris tests hazardous.
  - c. Hazardous waste must not be stored at the Project site for more than 90 days for a large quantity generator or 180 days for a small quantity generator.
  - d. Special attention must be given to the time of storage, storage conditions, amount of material stored at any one time, use of proper containers, and personnel training.
  - e. Different types of hazardous waste must not be co-mixed (e.g., do not mix clothing with paint debris).
  - f. Hazardous waste must not be placed on the unprotected ground, must be located in a secure area enclosed by a fence with signs around the perimeter, and must be shielded adequately to prevent dispersion of the waste by wind or water. Under no circumstances must the waste be stored within a flood plain area. Any evidence of improper storage must be cause for immediate shutdown of the Project until corrective action is taken.
  - g. Non-Hazardous Special Waste and Non-Hazardous Waste.
  - h. Non-hazardous special waste and non-hazardous waste must be stored in closed containers separate from hazardous waste.
  - i. Non-hazardous special waste and non-hazardous waste must not be stored at the Project site for more than 90 days.
  - j. Only Department of Transportation (DOT)-approved containers must be used for the storage of non-hazardous special waste and non-hazardous waste, the containers must be property labeled, and compatible with the waste stream stored.
- C. Waste Classification.
- 1. Testing.
    - a. All solid waste generated by the abatement activities must be tested in accordance with 35 Illinois Administrative Code Part 721 and 40 CFR 261, Appendix II, Method 1311 TCLP, to determine if it is considered to be a hazardous waste as defined by the United States Environmental Protection Agency (USEPA).
    - b. In the case of wet methods of preparation, the use of chemical strippers, or containerized hygiene water, all liquids and sludge must also be tested. When chemical strippers are used, the testing must include pH to determine corrosivity.



- c. Representative samples of the each waste stream must be collected. A minimum of four samples representative of each waste stream must be analyzed. Note that more than four initial samples of each waste stream must be collected in order to obtain the four representative samples for analysis.
- d. The collection of the initial representative samples of each waste stream and selection of the minimum of four for testing must be accomplished using a random sampling technique and must comply with the following: a minimum of one representative sample for each 55 gallons of waste, or a minimum of four representative samples for each gondola or roll-off box of waste. Samples must be collected in accordance with SW-846, "Test Methods for Evaluating Solid Waste - Physical/Chemical Methods."
- e. Sampling and testing must be performed by a qualified laboratory acceptable to the Commissioner. The name, address, and qualifications of the laboratory must be provided for approval. The Commissioner must be provided with copies of the test results as soon as they are received by the Contractor.

2. Classification.

- a. Lead containing paint debris is classified as hazardous waste if, after testing by TCLP, the leachate contains any of the 8 metals or other hazardous substances in concentrations at or above limits established in 40 CFR 261, The levels provided below include only those elements typically associated with paints. Other substances may be present which may cause debris to be classified as hazardous waste as defined in 40 CFR 261 (such as pH less than 2.0 or greater than 12.5, resulting in corrosivity), and must be taken into account.

Arsenic	5.0 mg/L
Barium	100.0 mg/L
Cadmium	1.0 mg/L
Chromium	5.0 mg/L
Lead	5.0 mg/L
Mercury	0.2 mg/L
Selenium	1.0 mg/L
Silver	5.0 mg/L

D. Waste Transportation.

- 1. Hazardous Waste. All hazardous waste must be transported by an IEPA-licensed transporter in accordance with EPA 40 CFR 263 and Illinois regulations. The name, address, and qualifications of the licensed waste transported must be provided to the Commissioner for acceptance prior to shipment.
- 2. Non-Hazardous Special Waste and Non-Hazardous Waste. All non-hazardous special waste and non-hazardous waste must be transported in accordance with Illinois regulations regarding waste transportation.

E. Waste Disposal.

1. Hazardous Waste.

- a. The Contractor is responsible for assuring the proper disposal of all hazardous waste generated during the Project.
- b. All hazardous waste must be disposed of in accordance with 40 CFR 264, 40 CFR 268, and Illinois regulations. Only currently licensed TSD facilities must be used. The name, address, and qualifications of the TSD facility must be provided to the Commissioner for acceptance prior to disposal.
- c. Non-Hazardous Special Waste and Non-Hazardous Waste.
- d. The Contractor is responsible for the proper disposal of all non-hazardous special waste and non-hazardous waste generated during the Project.
- e. Non-hazardous waste must be disposed of in accordance with Illinois regulations and at approved landfills. A state identification number must be obtained for non-hazardous special waste.

2. Contingency Plan and Training.

- a. The Contractor must comply with EPA 40 CFR 265, Subpart C in the event of a spill or a release of waste, EPA 40 CFR 265 Subpart D, and Illinois regulations.
- b. All personnel associated with the handling of hazardous waste must complete a formal training program in accordance with 40 CFR 265.16 and Illinois regulations.
- c. Training records of all employees must be maintained and kept on file.

3. Manifest and Reporting.

- a. The Contractor must investigate whether the facility already has usable Federal and State identification numbers for hazardous waste. If the facility does not, the Contractor must obtain Federal and State identification numbers for hazardous waste.
- b. A state identification number must be obtained for non-hazardous special waste. Illinois regulations and the certification, and reporting requirements of EPA 40 CFR 262, 40 CFR 268, must be followed, including certificates of final disposal for each shipment.
- c. Copies of all records and reports, test sample chain of custody forms, and TCLP test results must be provided to the Commissioner.

4. Hazardous Waste Management.

- a. The Hazardous Waste Management plan must comply with applicable requirements of Federal, State, and local hazardous waste regulations and address:
  - 1) Identification of hazardous wastes associated with the Work.
  - 2) Estimated quantities of wastes to be generated and disposed of.
  - 3) Names and qualifications of each Contractor transporting, storing, treating, and disposing of the wastes. Include the facility location and a 24-hour point of contact.
  - 4) Names and qualifications (experience and training) of personnel who will be working on-site with hazardous wastes.
  - 5) List of waste handling equipment to be used in performing the Work, to include cleaning, volume reduction, and transport equipment.
  - 6) Spill prevention, containment, and cleanup contingency measures to be implemented.
  - 7) Work plan and schedule for waste containment, removal and disposal. Wastes must be cleaned up and containerized daily.
  - 8) Cost for hazardous waste disposal according to this plan.
5. Decontamination.
  - a. The Contractor must thoroughly vacuum, wash, or otherwise decontaminate reusable items prior to removal from the Project site.
  - b. Items include but are not limited to equipment, containment materials, ground covers, scaffolding, and change and shower facilities.
  - c. If adequate cleaning is not possible, the materials must be treated as waste and tested and disposed of in accordance with the requirements of this Specification SECTION.
6. Clearance Testing.
  - a. Surfaces surrounding the Work site must be examined and tested for the presence of any surface lead dust which may remain. If detected, such dust must be thoroughly removed.
  - b. Dust wipe samples must be collected at the end of lead abatement activities to determine if the area is clean.
  - c. Describe methodology and SOPs. If the dust wipe sample results reveal that lead is greater than 10 ug/ft<sup>2</sup>, which are the EPA's requirements, the area must be re-cleaned and a dust wipe samples collected. The area must be re-cleaned until the

samples results reveal that lead is less than 10 ug/ft<sup>2</sup>. Clearance testing will be performed by the Commissioner.

- d. All cost associated with the repeated failure of clearance testing must be the responsibility of the Contractor, including sampling cost, analysis cost and cost for retesting by the Commissioner.

#### 1.15 CONTAINMENT SYSTEM CRITERIA

##### A. General.

1. The Contractor must design a containment system for the Work area that must preclude release of LBP or contaminated dust and debris outside of the contained Work area.
2. The containment must have air impenetrable walls, ceiling, and floors, as applicable, with rigid or flexible framing, fully sealed joints, airlock or re-sealable entryways, negative air pressure, and exhaust air filtration.
3. For wet methods of preparation, the containment must have water impermeable walls, ceiling, and floors as applicable, with rigid or flexible framing, fully sealed joints, re-sealable entryways, negative air pressure, and exhaust air filtration.
4. For chemical stripping, the containment must have chemical resistant walls, ceiling, and floors, as applicable, with rigid or flexible framing, fully sealed joints and overlapping entryways, forced air flow, and exhaust air filtration.
5. The containment must control environmental emissions and must maintain the site that is free of fugitive dust (i.e., dust that becomes airborne or visual) in accordance with the provisions of this Specification SECTION.
6. The containment must provide protection to the facility structures from contamination during the lead-based paint removal.
7. The containment systems must be constructed to allow paint removal Work without damage or contamination of adjacent areas. Where existing Work is damaged or contaminated, the Contractor must be responsible to restore such to its original condition.
8. Criteria for worker protection must be in accordance with the provisions of this Specification SECTION. Mechanical ventilation for the containment enclosure must be employed as required to achieve a safe working environment in accordance with OSHA regulations.

##### B. Work Plan.

1. The Work plan and sequencing of the construction activities must be developed by the Contractor and submitted to the Commissioner for review.
2. The Work plan must incorporate industry standards for paint removal.
3. Debris must be removed from the containment and equipment prior to relocation to

subsequent Work areas.

4. Reusable containment materials and equipment must be cleaned of lead prior to relocation to subsequent Work areas or removal from the site as outlined in this Specification SECTION.

C. Mechanical Ventilation System:

1. Use adequate ventilation to control personnel exposure to lead in accordance with 29 CFR 1926.57.
2. Use fixed local exhaust ventilation connected to HEPA filters or other collection systems. Local exhaust ventilation systems must be designed, constructed, installed, and maintained in accordance with ANSI Z9.2, and must be located in areas approved by the Commissioner.
3. Any air exhausted from the containment enclosure or vacuum equipment must be passed through a HEPA filtering system. The Contractor must be responsible for the design, effectiveness and maintenance of this HEPA filtering system. No discharge of debris dust must be allowed.

## PART 2 – PRODUCTS

### 2.01 TOOLS AND EQUIPMENT

A. Equipment – All Equipment shall at least conform to minimum industry standards:

1. Negative Air Machines shall provide HEPA filtration and conform to ANSI Z9.2 fabrication criteria.
2. Respirators shall be NIOSH or MSHA approved for use with lead, asbestos, or other contaminants anticipated in the work.
3. Full-body safety harnesses shall be used with approved lanyards for fall protection. Safety belts are not permitted.
4. Other Safety equipment, such as hard hats, eye protection, gloves, and footwear shall comply with their respective ANSI standards.

B. Tools

1. Shovels and scoops shall be suitable for use in a plasticized containment. Plastic or rubber models are preferred, but metal shovels are acceptable when used with care to prevent damage to poly sheeting and permanent surfaces. Duct tape may be applied to the leading edges to aid in poly damage prevention.
2. Scrapers, wire and bristle brushes, utility knives and other hand tools shall be of good quality and suitable for the intended uses. The Contractor shall keep an ample supply on hand for the completion of the work.

3. Power tools such as, but not limited to saws, pneumatic chisels, brushes, sanders, and needle guns shall be equipped with shrouds and HEPA-filtered local exhaust systems to capture released particles.

## 2.02 MATERIALS

- A. Installed materials which become a part of the work such as, but not limited to, primers, paints, surfacing compounds, and other surface coverings or finishes shall be new unless specified otherwise, of good quality, non-lead bearing, and shall conform with the respective reinstallation specification sections.
- B. Abatement materials:
  1. Poly sheeting for all applications shall 6 mil nominal thickness for all applications.
  2. Tape shall be 2-inch or 3-inch duct tape or other waterproof tape suitable for joining poly seams and attaching poly sheeting to surfaces.
  3. Spray adhesives shall be non-flammable and free of methylene chloride solvents.
  4. Disposal bags shall be 6 mil where used for single-bagging, and minimum 4 mil where used for double-bagging.
  5. Disposable suits, hoods, and foot coverings shall meet the requirements of OSHA Regulation 29 CFR 1926 for protective work clothing.
  6. Solvents shall be compatible with any primers, paints, coatings, or other surfacing materials to be installed following their use.
  7. Cleaning solutions shall cause lead to chelate, precipitate, or otherwise release effectively release from surfaces. Cleaning solutions shall not leave residue on surfaces to be painted.

## PART 3 – EXECUTION

### 3.01 QUALITY CONTROL (QC) INSPECTIONS

- A. The Contractor shall perform first line, in process QC inspections of all environmental control and waste handling aspects of the project to verify compliance with these specification requirements and the accepted drawings and plans. The Contractor may use the IDOT Environmental Daily Report form (BBS 2559) and adapt it for this project to record the results of the daily inspections. The completed daily reports shall be submitted to the Commissioner before work resumes the following day. Contractor QC inspections shall include, but not be limited to the following:
  1. Proper installation and continued performance of the containment system(s) in accordance with the approved drawings.
  2. Visual inspections of emissions into the air and verification that the cause(s) for any unacceptable emissions is corrected.
  3. Set up, calibration, operation, and maintenance of the regulated area and high volume

ambient air monitoring equipment, including proper shipment of cassettes/filters to the laboratory for analysis. Included is verification that the City receives the results within the time frames specified and that appropriate steps are taken to correct work practices or containment in the event of unacceptable results.

4. Visual inspections of spills or deposits of contaminated materials into the water or onto the ground, pavement, soil, or slope protection. Included is verification that proper cleanup is undertaken and that the cause(s) of unacceptable releases is corrected.
  5. Proper implementation of the waste management plan including laboratory analysis and providing the results to the Commissioner within the time frames specified herein.
  6. Proper implementation of the contingency plans for emergencies.
- B. The personnel providing the QC inspections shall possess current SSPC, NACE, or OSHA certification, including the annual training necessary to maintain that certification, and shall provide evidence of successful completion of 2 projects of similar or greater complexity and scope that have been completed in the last 2 years. References shall include the name, address, and telephone number of a contact person employed by the bridge owner. Proof of initial certification and the current annual training shall also be provided.

### 3.02 CONTAINMENT REQUIREMENTS

- A. The Contractor shall install and maintain containment systems surrounding the work for the purpose of controlling emissions of dust and debris according to the requirements of this specification. Working platforms and containment materials that are used shall be firm and stable and platforms shall be designed to support the workers, inspectors, spent surface preparation media (e.g., abrasives), and equipment during all phases of surface preparation and painting. Platforms, cables, and other supporting structures shall be designed according to OSHA regulations. If the containment needs to be attached to the structure, the containment shall be attached by bolting, clamping, or similar means. Welding or drilling into the structure is prohibited unless approved by the Commissioner in writing.
- B. The containment shall be dropped in the event of sustained winds of 40 mph (64 kph) or greater and all materials and equipment secured.
- C. The Contractor shall provide drawings showing the containment system and indicating the method(s) of supporting the working platforms and containment materials to each other and to the bridge. When the use of negative pressure and airflow inside containment is specified, the Contractor shall provide all ventilation calculations and details on the equipment that will be used for achieving the specified airflow and dust collection.
- D. When working adjacent to railroads, the Contractor shall provide evidence that the proposed clearance and the safety provisions that will be in place (e.g., flagman) are acceptable to the railroad.
- E. The City's review and acceptance of the drawings and calculations shall not relieve the Contractor from the responsibility for the safety of the working platforms and containment, and for providing ample ventilation to control worker and environmental exposures. After the work platforms and

containment materials are erected additional measures may be needed to ensure worker safety according to OSHA regulations. The Contractor shall institute such measures at no additional cost to the City.

- F. Containment for the cleaning operation of this contract is defined as follows:
1. The containment system shall maintain the work area free of visible emissions of dust and debris according to all provisions of this Specification, with no debris permitted outside of the regulated area at any time. All debris within the regulated area and within the containment shall be collected at the end of the last shift each day, and properly stored in sealed containers. Cleaning shall be accomplished by HEPA vacuuming unless it is conducted within a containment that is designed with a ventilation system capable of collecting the airborne dust and debris created by sweeping and blowing with compressed air. The ventilation system shall be in operation during the cleaning.
  2. The containment systems shall comply with the specified SSPC Guide 6 classifications as presented in Section 3.08, Table 1 for the method of paint removal utilized.
  3. TSP-lead in the air at monitoring locations selected by the Contractor shall comply with the requirements specified herein.
- G. The Contractor shall take appropriate action to avoid personnel injury or damage to the structure from the installation and use of the containment system. If the City determines that there is the potential for structural damage caused by the installed containment system, the Contractor shall take appropriate action to correct the situation.
- H. In addition to complying with the specific containment requirements in Section 3.08, Table 1 for each method of removal, the Contractor shall provide and maintain coverage over the ground in the areas to be cleaned. This coverage shall be capable of catching and containing surface preparation media, paint chips, and paint dust in the event of an accidental escape from the primary containment. The containment materials shall be cleaned of loose material prior to relocation or dismantling. Acceptable methods of cleaning include blowing down the surfaces with compressed air while the ventilation system is in operation, HEPA vacuuming, and/or wet wiping. If paint chips or dust is observed escaping from the containment materials during moving, all associated operations shall be halted and the materials and components re-cleaned.
- I. The containment systems shall also meet the following requirements:
1. 1. Dry Abrasive Blast Cleaning - Full Containment with Negative Pressure (SSPC Class 1A)
    - a. The enclosure shall be designed, installed, and maintained to sustain maximum anticipated wind forces, including negative pressure. Flapping edges of containment materials are prohibited and the integrity of all containment materials, seams, and seals shall be maintained for the duration of the project. Airflow inside containment shall be designed to provide visibility and reduce worker exposures to toxic metals according to OSHA regulations and as specified in Table 1 and its accompanying text. When the location of the work on the bridge, or over lane closures permit, the blast enclosure shall extend a minimum of 3 ft. (1 m) beyond



the limits of surface preparation to allow the workers to blast away from, rather than into the seam between the containment and the structure. The blast enclosure shall have an airlock or resealable door entryway to allow entrance and exit from the enclosure without allowing the escape of blasting residue.

- b. If recyclable metallic abrasives are used, the Contractor shall operate the equipment in a manner that minimizes waste generation. Steps shall also be taken to minimize dust generation during the transfer of all abrasive/paint debris (expendable or recyclable abrasives) for recycling or disposal. Acceptable methods include, but are not limited to vacuuming, screw or belt conveyance systems, or manual conveyance. However manual conveyance is only permitted if the work is performed inside a containment that is equipped with an operating ventilation system capable of controlling the dust that is generated.
- c. Appropriate filtration shall be used on the exhaust air of dust collection and abrasive recycling equipment as required to comply with IEPA regulations. The equipment shall be enclosed if visible dust and debris are being emitted and/or the regulated area or high volume monitor lead levels are not in compliance.
- d. Areas beneath containment connection points that were shielded from abrasive blast cleaning shall be prepared by vacuum blast cleaning or vacuum-shrouded power tool cleaning after the containment is removed.

2. Vacuum Blast Cleaning within Containment (SSPC Class 4A)

- a. Vacuum blasting equipment shall be fully automatic and capable of cleaning and recycling the abrasive. The system shall be designed to deliver cleaned, recycled blasting abrasives and provide closed system containment during blasting. The removed coating, mill scale, and corrosion shall be separated from the abrasive, and stored for disposal.
- b. The Contractor shall attach containment materials around and under the work area to catch and contain abrasive and waste materials in the event of an accidental escape from the vacuum shroud. This containment is in addition to the ground covers specified earlier.
- c. It is possible that the close proximity of some structural steel members preclude the use of the vacuum blasting equipment for the removal of the old paint. For surfaces that are inaccessible for the nozzles of the vacuum blasting equipment, the Contractor shall remove the paint by means of full containment inside a complete enclosure as directed by the City.

3. Vacuum-Shrouded Power Tool Cleaning within Containment (SSPC Class 3P)

- a. The Contractor shall utilize power tools equipped with vacuums and High Efficiency Particulate Air (HEPA) filters. The Contractor shall attach containment walls around the work area, and install containment materials beneath the work area to catch and contain waste materials in the event of an accidental escape

from the vacuum shroud. This containment is in addition to the ground covers specified earlier and shall be installed within 10 ft. (3m) of the areas being cleaned.

4. Power Tool Cleaning without Vacuum, within Containment (SSPC Class 2P)
  - a. When the use of power tools without vacuum attachments is authorized by the City, the Contractor shall securely install containment walls and flooring around the work area to capture and collect all debris that is generated. The containment material requirements for this Class 2P are similar to Class 3P used for vacuum-shrouded tools, but the supporting structure will be more substantial in Class 2P to better secure the containment materials from excessive movement that could lead to the loss of waste paint chips and debris. Containment beneath the work shall be within 10 ft. (3m) of the areas being cleaned, and is in addition to the ground covers specified earlier.
5. Water Washing, Water Jetting or Wet Abrasive Blast Cleaning within Containment (SSPC Class 2W-3W)
  - a. Water washing of the bridge for the purpose of removing chalk, dirt, grease, oil, bird nests, and other surface debris, and water jetting or wet abrasive blast cleaning for the purpose of removing paint and surface debris shall be conducted within a containment designed, installed, and maintained in order to capture and contain all water and waste materials. The containment shall consist of impermeable floors and lower walls to prevent the water and debris from escaping. Permeable upper walls and ceilings are acceptable provided the paint chips, debris, and water, other than mists, are collected. A fine mist passing through the permeable upper walls is acceptable, provided the environmental controls specified below are met. If paint chips, debris, or water, other than mists, escape the containment system, impermeable walls and ceilings shall be installed.
  - b. When water is used for surface cleaning, the collected water shall be filtered to separate the particulate from the water. Recycling of the water is preferred in order to reduce the volume of waste that is generated. The water after filtration shall be collected and disposed of according to the waste handling portions of this specification.
  - c. When a slurry is created by injecting water into the abrasive blast stream, the slurry need not be filtered to separate water from the particulate.

### 3.03 ENVIRONMENTAL CONTROLS AND MONITORING

- A. The Contractor shall prepare and submit to the Commissioner for review and acceptance, an Environmental Monitoring Plan. The purpose of the plan is to address the observations and equipment monitoring undertaken by the Contractor to confirm that project dust and debris are not escaping the containment into the surrounding air, soil, and water.
  1. Soil and Water. Containment systems shall be maintained to prevent the escape of paint chips, abrasives, and other debris into the water, and onto the ground, soil, slope protection,

and pavements. Releases or spills of, paint chips, abrasives, dust and debris that have become deposited on surrounding property, structures, equipment or vehicles are unacceptable. If there are inadvertent spills or releases, the Contractor shall immediately shut down the emissions-producing operations, clean up the debris, and change work practices, modify the containment, or take other appropriate corrective action as needed to prevent similar releases from occurring in the future.

At the end of each workday at a minimum, the work area inside and outside of containment, including ground tarpaulins, shall be inspected to verify that paint debris is not present. If debris is observed, it shall be removed by hand and HEPA-vacuuuming. If wet methods of preparation are used, the damp debris can remain overnight provided it is protected from accidental release by securely covering the waste, folding the waste into the ground tarps, or by other acceptable methods. Prior to commencing work the next day, the debris from the folded ground tarps shall be removed.

Upon project completion, the ground and water in and around the project site are considered to have been properly cleaned if paint chips, paint removal media (e.g., spent abrasives), fuel, materials of construction, litter, or other project debris have been removed.

NOTE: All project debris must be removed, even if the debris (e.g. spent abrasive and paint chips) was a pre-existing condition.

2. Visible Emissions. The Contractor shall conduct observations of visible emissions and releases on an ongoing daily basis when dust-producing activities are underway, such as paint removal, clean up, waste handling, and containment dismantling or relocation. Note that visible emissions observations do not apply to the fine mist that may escape through permeable containment materials when wet methods of preparation are used.

Visible emissions in excess of SSPC Guide 6, Level 1 (1% of the workday) are unacceptable. In an 8-hour workday, this equates to emissions of a cumulative duration no greater than 5 minutes (300 seconds). This criterion applies to scattered, random emissions of short duration. Sustained emissions from a given location (e.g., 1 minute or longer), regardless of the total length of emissions for the workday, are unacceptable and action shall be initiated to halt the emission.

If unacceptable visible emissions or releases are observed, the Contractor shall immediately shut down the emission-producing operations, clean up the debris, and change work practices, modify the containment, or take other appropriate corrective action as needed to prevent similar releases from occurring in the future.

3. Ambient Air Monitoring. The Contractor shall perform ambient air monitoring according to the following:
  - a. Monitor Siting. The Contractor shall collect and analyze air samples to evaluate levels of TSP-lead if there are sensitive receptors within 5 times the height of the structure or within 1000 ft. (305 m) of the structure, whichever is greater. If sensitive receptors are not located within these limits, monitoring is not required. Sensitive receptors are areas of public presence or access including, but not

limited to, homes, schools, parks, playgrounds, shopping areas, livestock areas, and businesses. The motoring public is not considered to be a sensitive receptor for the purpose of ambient air monitoring.

The Contractor shall locate the monitors according to SSPC TU-7, in areas of public exposure and in areas that will capture the maximum pollutant emissions resulting from the work. The Contractor shall identify the recommended monitoring sites in the Ambient Air Monitoring Plan, including a sketch identifying the above. The monitors shall not be sited until the City accepts the proposed locations.

- b. Equipment Provided by Contractor. The Contractor shall provide up to 4 monitors per work site and all necessary calibration and support equipment, power to operate them, security (or arrangements to remove and replace the monitors daily), filters, flow chart recorders and overnight envelopes for shipping the filters to the laboratory. The number of monitors required shall be as directed by the City. Each monitor shall be tagged with the calibration date.
- c. Duration of Monitoring. Monitoring shall be performed for the duration of dust-producing operations (e.g., paint removal, waste handling, containment clean-up and movement, etc.) or a minimum of 8 hours each day (when work is performed).

B. The monitoring schedule shall be as follows:

- 1. For dry abrasive blast cleaning monitoring shall be conducted full time during all days of dust-producing operations (e.g., paint removal, waste handling, containment movement, etc.).
- 2. For wet abrasive blast cleaning, water jetting, or power tool cleaning, monitoring shall be conducted for the first 5 days of dust producing operations. If the results after 5 days are acceptable, monitoring may be discontinued. If the results are unacceptable, corrective action shall be initiated to correct the cause of the emissions, and monitoring shall continue for an additional 5 days. If the results are still unacceptable, the City may direct that the monitoring continue full time.
- 3. When monitoring is discontinued, if visible emissions are observed and/or the Contractor's containment system changes during the course of the project, then air monitoring will again be required for a minimum of two consecutive days until compliance is shown.

a. Background Monitoring.

Background samples shall be collected for two days prior to the start of work while no dust producing operations are underway to provide a baseline. The background monitoring shall include one weekday and one weekend day. The background monitoring shall coincide with the anticipated working hours for the paint removal operations, but shall last for a minimum of 8 hours each day.

b. Monitor Operation and Laboratory Analysis.

The Contractor shall calibrate the monitors according to the manufacturer's written instructions upon mobilization to the site and quarterly. Each monitor shall be tagged with the calibration date, and calibration information shall be provided to the City upon request.

4. All ambient air monitoring shall be performed by the Contractor according to the accepted Ambient Air Monitoring Plan and according to EPA regulations 40 CFR Part 50 Appendix B, Reference Method for the Determination of Suspended Particulate Matter in the Atmosphere (High-Volume Method), and 40 CFR Part 50 Appendix G, Reference Method for the Determination of Lead in Suspended Particulate Matter Collected from Ambient Air.
5. Filters shall be placed in monitors and monitors operated each day prior to start of dust-producing operations and the filters removed upon completion each day. The Contractor shall advise the City in advance when the filters will be removed and replaced. The monitor operator shall record the following information, at a minimum, on field data and laboratory chain-of-custody forms (or equivalent):
  - a. Monitor location and serial number
  - b. Flow rate, supported by flow charts
  - c. Start, stop times and duration of monitoring
  - d. Work activities and location of work during the monitoring period
  - e. Wind direction/speed
6. For the first 5 days of monitoring, the Contractor shall submit the filters, field data and laboratory chain-of-custody forms together with the flow chart recorders (i.e. monitor flow rate and the duration of monitoring) on a daily basis in an overnight envelope to the laboratory for analysis. The laboratory must provide the City with written results no later than 72 hours after the completion of each day's monitoring. At the discretion of the City, if the initial 5 days of monitoring on full time monitoring projects is acceptable, the filters may be sent to the laboratory every 3 days rather than every day. Written results must be provided to the City no later than 5 days after the completion of monitoring for the latest of the 3 days.
  - a. Ambient Air Monitoring Results. The laboratory shall provide the report directly to the City with a copy to the Contractor. The report shall include:
    - 1) Monitor identification and location
    - 2) Work location and activities performed during monitoring period
    - 3) Monitor flow rate, duration, and volume of air sampled
    - 4) Laboratory methods used for filter digestion / analysis
    - 5) Sample results for the actual duration of monitoring

- 6) Sample results expressed in terms of a 24 hour time weighted average. Assume zero for period not monitored.
  - 7) Comparison of the results with the acceptance criteria indicating whether the emissions are compliant.
  - 8) Field data and chain-of-custody records used to derive results. Should revised reports or any information regarding the analysis be issued by the laboratory directly to the Contractor at any time, the Contractor shall immediately provide a copy to the City and advise the laboratory that the City is to receive all information directly from the laboratory.
- b. b. Acceptance Criteria. TSP-lead results at each monitor location shall be less than 1.5 µg/cu m per calendar quarter converted to a daily allowance using the formulas from SSPC Guide 6 as follows, except that the maximum 24-hour daily allowance shall be no greater than 6 µg/cu m.

The formula for determining a 24-hour daily value based on the actual number of paint disturbance days expected to occur during the 90-day quarter is:

$DA = (90 \div PD) \times 1.5 \mu\text{g}/\text{cu m}$ , where DA is the daily allowance, and

PD is the number of preparation days anticipated in the 90-day period. If the DA calculation is  $> 6.0 \mu\text{g}/\text{cu m}$ , use  $6.0 \mu\text{g}/\text{cu m}$ .

### 3.04 REGULATED AREAS

- A. Physically demarcated regulated area(s) shall be established around exposure producing operations at the OSHA Action Level for the toxic metal(s) present in the coating. The Contractor shall provide all required protective clothing and equipment for personnel entering into a regulated area. Unprotected street clothing is not permitted within the regulated areas.

### 3.05 3.05 HYGIENE FACILITIES/PROTECTIVE CLOTHING/BLOOD TESTS

- A. The Contractor shall provide clean lavatory and hand washing facilities according to OSHA regulations and confirm that employees wash hands, forearms, and face before breaks. The facilities shall be located at the perimeter of the regulated area in close proximity to the paint removal operation. Shower facilities shall be provided when workers' exposures exceed the Permissible Exposure Limit. Showers shall be located at each bridge site, or if allowed by OSHA regulations, at a central location to service multiple bridges. The shower and wash facilities shall be cleaned at least daily during use.
- B. All wash and shower water shall be filtered and containerized. The Contractor is responsible for filtration, testing, and disposal of the water.
- C. The Contractor shall make available to all the City project personnel a base line and post project blood level screening determined by the whole blood lead method, utilizing the Vena-Puncture technique. This screening shall be made available every 2 months for the first 6 months, and every 6 months thereafter.

- D. The Contractor shall provide the project personnel with all required protective clothing and equipment, including disposal or cleaning. Clothing and equipment includes, but is not limited to, disposable coveralls with hood, booties, disposable surgical gloves, hearing protection, and safety glasses.

### 3.06 SITE EMERGENCIES

- A. Stop Work. The Contractor shall stop work at any time the conditions are not within specifications and take the appropriate corrective action. The stoppage will continue until conditions have been corrected. Standby time and cost required for corrective action is at the Contractor's expense. The occurrence of the following events shall be reported in writing to the City and shall require the Contractor to automatically stop lead paint removal and initiate cleanup activities.

1. Airborne lead levels at any of the high volume ambient air monitoring locations that exceed the limits in this specification, or airborne lead in excess of the OSHA Action Level at the boundary of the regulated area.
2. Break in containment barriers.
3. Visible emissions in excess of the specification tolerances.
4. Loss of negative air pressure when negative air pressure is specified (e.g., for dry abrasive blast cleaning).
5. Serious injury within the containment area.
6. Fire or safety emergency.
7. Respiratory system failure.
8. Power failure.

- B. Contingency Plans and Arrangements. The City will refer to the contingency plan for site specific instructions in the case of emergencies.

1. The Contractor shall prepare a contingency plan for emergencies including fire, accident, failure of power, failure of dust collection system, failure of supplied air system or any other event that may require modification of standard operating procedures during lead removal. The plan shall include specific procedures to ensure safe egress and proper medical attention in the event of an emergency. The Contractor shall post the telephone numbers and locations of emergency services including fire, ambulance, doctor, hospital, police, Power Company and Telephone Company on clean side of personnel decontamination area.
2. A two-way radio or cell phone, capable of summoning emergency assistance shall be available at the bridge site during the time the Contractor's personnel are at the bridge site under this contract. The following emergency response equipment described in the contingency plan (see example generic form in Section 3.09) shall be available during this time as well: an appropriate portable fire extinguisher, a 55 gal (208 L) drum, a 5 gal (19 L)

pail, a long handled shovel, absorbent material (one bag).

3. A copy of the contingency plan shall be maintained at each bridge during cleaning operations and during the time the Contractor's personnel are at the bridge site under this contract. The Contractor shall designate the emergency coordinator(s) required who shall be responsible for the activities described.
4. An example of a contingency plan is included in Section 3.09, Sample Forms.

### 3.07 COLLECTION, TEMPORARY STORAGE, TRANSPORTATION AND DISPOSAL OF WASTE

- A. The Contractor is responsible for all aspects of waste collection, testing and identification, handling, storage, transportation, and disposal according to these specifications and all applicable Federal, State, and Local regulations. The Contractor shall provide for the City review and acceptance a Waste Management Plan that addresses all aspects of waste handling, storage, and testing, and provides the names, addresses, and a contact person for the proposed licensed waste haulers and disposal facilities. The City will not perform any functions relating to the waste other than provide EPA identification numbers, provide the Contractor with the emergency response information, the emergency response telephone number required to be provided on the manifest, and to sign the waste manifest. The City will obtain the identification numbers from the state and federal environmental protection agencies for the bridge(s) to be painted and furnish those to the Contractor.
- B. All surface preparation/paint residues shall be collected daily and deposited in all-weather containers supplied by the Contractor as temporary storage. The storage area shall be secure to prevent unauthorized entry or tampering with the containers. Acceptable measures include storage within a fully enclosed (e.g., fenced in) and locked area, within a temporary building, or implementing other reasonable means to reduce the possibility of vandalism or exposure of the waste to the public or the environment (e.g., securing the lids or covers of waste containers and roll-off boxes). Waste shall not be stored outside of the containers. Waste shall be collected and transferred to bulk containers taking extra precautions as necessary to prevent the suspension of residues in air or contamination of surrounding surfaces. Precautions may include the transfer of the material within a tarpaulin enclosure. Transfer into roll-off boxes shall be planned to minimize the need for workers to enter the roll-off box.
- C. No residues shall remain on surfaces overnight, either inside or outside of containment. Waste materials shall not be removed through floor drains or by throwing them over the side of the bridge. Flammable materials shall not be stored around or under any bridge structures.
- D. The all-weather containers shall meet the requirements for the transportation of hazardous materials and as approved by the City. Acceptable containers include covered roll-off boxes and 55-gallon drums (17H). The Contractor shall insure that no breaks and no deterioration of these containers occurs and shall maintain a written log of weekly inspections of the condition of the containers. A copy of the log shall be furnished to the City upon request. The containers shall be kept closed and sealed from moisture except during the addition of waste. Each container shall be permanently identified with the date that waste was placed into the container, contract number, hazardous waste name and ID number, and other information required by the IEPA.



- E. The Contractor shall have each waste stream sampled for each project and tested by TCLP and according to EPA and disposal company requirements. The City shall be notified in advance when the samples will be collected. The samples shall be collected and shipped for testing within the first week of the project, with the results due back to the City within 10 days. Testing shall be considered included in the contract price. Copies of the test results shall be provided to the City prior to shipping the waste.
- F. Waste water generated from bridge washing, hygiene purposes, and cleaning of equipment shall be filtered on site to remove particulate and disposed of at a Publicly Owned Treatment Works (POTW) according to State regulations. The Contractor shall provide the City with a letter from the POTW indicating that they will accept the waste water. If the POTW allows the filtered water to be placed into the sanitary sewer system, the Contractor shall provide a letter from the POTW indicating that based on the test results of the water, disposal in the sanitary sewer is acceptable to them. Water shall not be disposed of until the above letter(s) are provided to, and accepted by the City.
- G. If approved abrasive additives are used that render the waste non-hazardous as determined by TCLP testing, the waste shall be classified as a non-hazardous special waste, transported by a licensed waste transporter, and disposed of at an IEPA permitted disposal facility in Illinois.
- H. When paint is removed from the bridge without the use of abrasive additives, the paint, together with the surface preparation media (e.g. abrasive) shall be handled as a hazardous waste, regardless of the TCLP results. The waste shall be transported by a licensed hazardous waste transporter, treated by an IEPA permitted treatment facility to a non-hazardous special waste and disposed of at an IEPA permitted disposal facility in Illinois.
- I. The treatment/disposal facilities shall be approved by the City, and shall hold an IEPA permit for waste disposal and waste stream authorization for this cleaning residue. The IEPA permit and waste stream authorization must be obtained prior to beginning cleaning, except that if necessary, limited paint removal will be permitted in order to obtain samples of the waste for the disposal facilities. The waste shall be shipped to the facility within 90 days of the first accumulation of the waste in the containers. Waste from multiple bridges in the same contract may be transported by the Contractor to a central waste storage location(s) approved by the City in order to consolidate the material for pick up, and to minimize the storage of waste containers at multiple remote sites after demobilization. Arrangements for the final waste pickup shall be made with the waste hauler by the time blast cleaning operations are completed or as required to meet the 90 day limit stated above.
- J. The Contractor shall submit a waste accumulation inventory table to the City no later than the 5th day of the month. The table shall show the number and size of waste containers filled each day in the preceding month and the amount of waste shipped that month, including the dates of shipments.
- K. The Contractor shall prepare a manifest supplied by the IEPA for off-site treatment and disposal before transporting the hazardous waste off-site. The Contractor shall prepare a land ban notification for the waste to be furnished to the disposal facility. The Contractor shall obtain the handwritten signature of the initial transporter and date of the acceptance of the manifest. The Contractor shall send one copy of the manifest to the IEPA within two working days of transporting the waste off-site. The Contractor shall furnish the generator copy of the manifest and a copy of the land ban notification to the City. The Contractor shall give the transporter the remaining copies of the manifest.

- L. All other project waste shall be removed from the site according to Federal, State and Local regulations, with all waste removed from the site prior to final Contractor demobilization.
- M. The Contractor shall make arrangements to have other hazardous waste, which he/she generates, such as used paint solvent, transported to the Contractor's facility at the end of each day that this waste is generated. These hazardous wastes shall be manifested using the Contractor's own generator number to a treatment or disposal facility from the Contractor's facility. The Contractor shall not combine solvents or other wastes with cleaning residue wastes. All waste streams shall be stored in separate containers.
- N. The Contractor is responsible for the payment of any fines and undertaking any cleanup activities mandated by State or federal environmental agencies for improper waste handling, storage, transportation, or disposal.
- O. Contractor personnel shall be trained in the proper handling of hazardous waste, and the necessary notification and clean up requirements in the event of a spill. The Contractor shall maintain a copy of the personnel training records at each bridge site.

3.08 CONTAINMENT CRITERIA AND MATERIALS

<b>Table 1 Containment Criteria for Removal of Paint Containing Lead and Other Toxic Metals<sup>1</sup></b>					
Removal Method	SSPC Class <sup>2</sup>	Containment Material Flexibility	Containment Material Permeability <sup>3</sup>	Containment Support Structure	Containment Material Joints <sup>4</sup>
Hand Tool Cleaning	3P <sup>6</sup>	Rigid or Flexible	Permeable or Impermeable	Minimal	Partially Sealed
Power Tool Cleaning w/ Vacuum	3P <sup>6</sup>	Rigid or Flexible	Permeable or Impermeable	Minimal	Partially Sealed
Power Tool Cleaning w/o Vacuum	2P	Rigid or Flexible	Permeable or Impermeable	Rigid or Flexible	Fully or Partially Sealed
Water Jetting Web Ab Blast Water Cleaning <sup>7</sup>	2W-3W	Rigid or Flexible	Permeable and Impermeable <sup>7</sup>	Rigid, Flexible, or Minimal	Fully and Partially Sealed
Abrasive Blast Cleaning	1A	Rigid or Flexible	Impermeable	Rigid or Flexible	Fully Sealed
Vacuum Blast Cleaning	4A <sup>6</sup>	Rigid or Flexible	Permeable	Minimal	Partially Sealed

<b>Table 1 (Continued)</b>					
<b>Containment Criteria for Removal of Paint Containing Lead and Other Toxic Metals<sup>1</sup></b>					
Removal Method	SSPC Class <sup>2</sup>	Containment Entryway	Ventilation System Required <sup>5</sup>	Negative Pressure Required	Exhaust Filtration Required
Hand Tool Cleaning	3P <sup>6</sup>	Overlapping or Open Seam	Natural	No	No
Power Tool Cleaning w/ Vacuum	3P <sup>6</sup>	Overlapping or Open Seam	Natural	No	No
Power Tool Cleaning w/o Vacuum	2P	Overlapping or Open Seam	Natural	No	No
Water Jetting Web Ab Blast Water Cleaning <sup>7</sup>	2W-3W	Overlapping or Open Seam	Natural	No	No
Abrasive Blast Cleaning	1A	Airlock or Resealable	Mechanical	Yes	Yes
Vacuum Blast Cleaning	4A <sup>6</sup>	Open Seam	Natural	No	No

Notes:

<sup>1</sup>This table provides general design criteria only. It does not guarantee that specific controls over emissions will occur because unique site conditions must be considered in the design. Other combinations of materials may provide controls over emissions equivalent to or greater than those combinations shown above.

<sup>2</sup>The SSPC Classification is based on SSPC Guide 6. Note that for work over water, water booms or boats with skimmers must be employed, where feasible, to contain spills or releases. Debris must be removed daily at a minimum.

<sup>3</sup>Permeability addresses both air and water as appropriate. In the case of water removal methods, the containment materials must be resistant to water. Ground covers should always be impermeable, and of sufficient strength to withstand the impact and weight of the debris and the equipment used for collection and clean-up. Ground covers must also extend beyond the containment boundary to capture escaping debris.

<sup>4</sup>If debris escapes through the seams, then additional sealing of the seams and joints is required.

<sup>5</sup>When "Natural" is listed, ventilation is not required provided the emissions are controlled as specified in this Section, and provided worker exposures are properly controlled. If unacceptable emissions or worker exposures to lead or other toxic metals occur, incorporate a ventilation system into the containment.

<sup>6</sup>Ground covers and wall tarpaulins may provide suitable controls over emissions without the need to completely enclose the work area.

<sup>7</sup>This method applies to water cleaning to remove surface contaminants, and water jetting (with and without abrasive) and wet abrasive blast cleaning where the goal is to remove paint. Although both permeable and impermeable containment materials are included, ground covers and the lower portions of the containment must be water impermeable with fully sealed joints, and of sufficient strength and integrity to facilitate the collection and holding of the water and debris for proper disposal. If water or debris, other than mist, escape through upper sidewalls or ceiling areas constructed of permeable materials, they shall be replaced with impermeable materials. Permeable materials for the purpose of this specification are defined as materials with openings measuring 25 mils (1 micron) or less in greatest dimension.

- A. Containment Components. The basic components that make up containment systems are defined below. The components are combined in Table 1 to establish the minimum containment system requirements for the method(s) of paint removal specified for the Contract.
1. Rigidity of Containment Materials - Rigid containment materials consist of solid panels of plywood, aluminum, rigid metal, plastic, fiberglass, composites, or similar materials. Flexible materials consist of screens, tarps, drapes, plastic sheeting, or similar materials. When directed by the City, do not use flexible materials for horizontal surfaces directly over traffic lanes or vertical surfaces in close proximity to traffic lanes. If the City allows the use of flexible materials, the Contractor shall take special precautions to completely secure the materials to prevent any interference with traffic.
  2. Permeability of Containment Materials - The containment materials are identified as air impenetrable if they are impervious to dust or wind such as provided by rigid panels, coated solid tarps, or plastic sheeting. Air penetrable materials are those that are formed or woven to allow air flow. Water impermeable materials are those that are capable of containing and controlling water when wet methods of preparation are used. Water permeable materials allow the water to pass through. Chemical resistant materials are those resistant to chemical and solvent stripping solutions. Use fire retardant materials in all cases.
  3. Support Structure - Rigid support structures consist of scaffolding and framing to which the containment materials are affixed to minimize movement of the containment cocoon. Flexible support structures are comprised of cables, chains, or similar systems to which the containment materials are affixed. Use fire retardant materials in all cases.
  4. Containment Joints - Fully sealed joints require that mating surfaces between the containment materials and to the structure being prepared are completely sealed. Sealing measures include tape, caulk, Velcro, clamps, or other similar material capable of forming a continuous, impenetrable or impermeable seal. When materials are overlapped, a minimum overlap of 8 in. (200 mm) is required.
  5. Entryway - An airlock entryway involves a minimum of one stage that is fully sealed to the containment and which is maintained under negative pressure using the ventilation system of the containment. Resealable door entryways involve the use of flexible or rigid doors capable of being repeatedly opened and resealed. Sealing methods include the use of zippers, Velcro, clamps, or similar fasteners. Overlapping door tarpaulin entryways consist of two or three overlapping door tarpaulins.
  6. Mechanical Ventilation - The requirement for mechanical ventilation is to ensure that adequate air movement is achieved to reduce worker exposure to toxic metals to as low as feasible according to OSHA regulations (e.g., 29 CFR 1926.62), and to enhance visibility. Design the system with proper exhaust ports or plenums, adequately sized ductwork, adequately sized discharge fans and air cleaning devices (dust collectors) and properly sized and distributed make-up air points to achieve a uniform air flow inside containment for visibility. The design target for airflow shall be a minimum of 100 ft. (30.5m) per minute cross-draft or 60 ft. (18.3 m) per minute downdraft. Increase these minimum airflow requirements if necessary to address worker lead exposures. Natural ventilation does not require the use of mechanical equipment for moving dust and debris through the work area.

7. Negative Pressure - When specified, achieve a minimum of 0.03 in. (7.5 mm) water column (W.C.) relative to ambient conditions, or confirm through visual assessments for the concave appearance of the containment enclosure.
8. Exhaust Ventilation - When mechanical ventilation systems are used, provide filtration of the exhaust air, to achieve a filtration efficiency of 99.9 percent at 0.02 mils (0.5 microns).

### 3.09 SAMPLE FORMS

**(Sample Forms are included as part of this section, starting on the following page.)**

HAZARDOUS WASTE  
CONTINGENCY PLAN  
FOR  
LEAD BASED PAINT REMOVAL PROJECTS

Bridge No.: \_\_\_\_\_

Location: \_\_\_\_\_

USEPA Generator No.: \_\_\_\_\_

IEPA Generator No.: \_\_\_\_\_

Note:

1. A copy of this plan must be kept at the bridge while the Contractor's employees are at the site.
2. A copy of the plan must be mailed to the police and fire departments and hospital identified herein.

Primary Emergency Coordinator

Name: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_

Phone: (Work) \_\_\_\_\_

(Home) \_\_\_\_\_

Alternate Emergency Coordinator

Name: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_

Phone: (Work) \_\_\_\_\_

(Home) \_\_\_\_\_

Emergency Response Agencies

POLICE:

1. State Police (if bridge not in city) Phone: \_\_\_\_\_

District No. \_\_\_\_\_

Address: \_\_\_\_\_

2. County Sheriff \_\_\_\_\_ Phone: \_\_\_\_\_

County: \_\_\_\_\_

Address: \_\_\_\_\_

3. City Police \_\_\_\_\_ Phone: \_\_\_\_\_

District No. \_\_\_\_\_

Address: \_\_\_\_\_

Arrangements made with police: (Describe arrangements or refusal by police to make arrangements):

\_\_\_\_\_  
\_\_\_\_\_

FIRE:

1. City \_\_\_\_\_ Phone: \_\_\_\_\_

Name: \_\_\_\_\_

Address: \_\_\_\_\_

2. Fire District \_\_\_\_\_ Phone: \_\_\_\_\_

Name: \_\_\_\_\_

Address: \_\_\_\_\_

3. Other \_\_\_\_\_ Phone: \_\_\_\_\_

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Arrangements made with fire departments: (Describe arrangements or refusal by fire departments to make arrangements):

\_\_\_\_\_  
\_\_\_\_\_

HOSPITAL:

Name: \_\_\_\_\_ Phone: \_\_\_\_\_

Address: \_\_\_\_\_

Arrangements made with hospital: (Describe arrangements or refusal by hospital to make arrangements):

\_\_\_\_\_

Properties of waste and hazard to health:

Places where employees working:

Location of Bridge:

Types of injuries or illness which could result:

Appropriate response to release of waste to the soil:

Appropriate response to release of waste to surface water:



Emergency Equipment at Bridge

Emergency Equipment List	Location of Equipment	Description of Equipment	Capability of Equipment
1. Two-way radio	Truck		Communication
2. Portable Fire Extinguisher	Truck		Extinguishes Fire
3. Absorbent Material	Truck		Absorbs Paint or Solvent Spills
4. Hand Shovel	Truck		Scooping Material
5. 55 Gallon (208 L) Drum	Truck		Storing Spilled Material
6. 5 Gallon (19 L) Pail	Truck		Storing Spilled Material

Emergency Procedure

1. Notify personnel at the bridge of the emergency and implement emergency procedure.
2. Identify the character, source, amount and extent of released materials.
3. Assess possible hazards to health or environment.
4. Contain the released waste or extinguish fire. Contact the fire department if appropriate.
5. If human health or the environment is threatened, contact appropriate police and fire department. In addition, the Emergency Services and Disaster Agency needs to be called using their 24-hour toll free number (800-782-7860) and the National Response Center using their 24-hour toll free number (800-824-8802).
6. Notify the City that an emergency has occurred.
7. Store spilled material and soil contaminated by spill, if any, in a drum or pail. Mark and label the drum or pail for disposal.
8. Write a full account of the spill or fire incident including date, time, volume, material, and response taken.
9. Replenish stock of absorbent material or other equipment used in response.

THIS SECTION INCLUDES APPENDIX ON THE FOLLOWING PAGES:

Appendix 1 – Reference List

The Contractor shall maintain the following regulations and references on site for the duration of the project:

- Illinois Environmental Protection Act
- ASTM D 4214, Standard Test Method for Evaluating Degree of Chalking of Exterior Paint Films
- ASTM D 4285, Standard Test Method for Indicating Oil or Water in Compressed Air
- SSPC-AB 1, Mineral and Slag Abrasives
- SSPC-AB 2, Specification for Cleanliness of Recycled Ferrous Metallic Abrasives
- SSPC-AB 3, Newly Manufactured or Re-Manufactured Steel Abrasives
- SSPC-PA 2, Measurement of Dry Coating Thickness with Magnetic Gages
- SSPC-QP 1, Standard Procedure for Evaluating Painting Contractors (Field Application to Complex Structures)
- SSPC-QP 2, Standard Procedure for Evaluating the Qualifications of Painting Contractors to Remove Hazardous Paint
- SSPC-SP 1, Solvent Cleaning
- SSPC-SP 3, Power Tool Cleaning
- SSPC-SP 10/NACE No. 2, Near White Metal Blast Cleaning
- SSPC-SP 12/NACE No. 5, Surface Preparation and Cleaning of Metals by Water-jetting Prior to Recoating
- SSPC-SP15, Commercial Grade Power Tool Cleaning
- SSPC-VIS 1, Guide and Reference Photographs for Steel Surfaces Prepared by Dry Abrasive Blast Cleaning
- SSPC-VIS 3, Visual Standard for Power- and Hand-Tool Cleaned Steel
- SSPC-VIS 4, Guide and Reference Photographs for Steel Cleaned by Water Jetting
- SSPC-VIS 5, Guide and Reference Photographs for Steel Prepared by Wet Abrasive Blast Cleaning
- The paint manufacturer's application instructions, MSDS and product data sheets

END OF SECTION 02 83 19

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SECTION 02 84 16  
HAZARDOUS MATERIALS ABATEMENT

PART 1 – GENERAL

1.01 SCOPE OF WORK

- A. The Contractor must segregate, package, remove, transport, and dispose of hazardous materials as shown on Drawings and as required by this Specification SECTION.
- B. The Commissioner will review all submittals and documents required in these Specification SECTIONS. All submittals and documents must be submitted to the Commissioner.
- C. The hazardous materials include the following categories and example materials.
  - 1. Potential PCBs containing equipment (i.e., lighting ballasts, transformers).
  - 2. Potential Mercury containing equipment (i.e., switches, thermostats, fluorescent bulbs, other gauges, thermometers).

1.02 RELATED DOCUMENTS

- A. Work under this Specification SECTION is subject to the requirements of the Contract Documents.

1.03 RELATED WORK

- A. SECTION 02 82 13 - ASBESTOS ABATEMENT
- B. SECTION 02 83 19 – LEAD BASED PAINT ABATEMENT

1.04 SUBMITTALS

- A. The Contractor must provide the following submittals to the Commissioner prior to starting removal activities Work.
  - 1. The Contractor must submit for approval a schedule of activities, including sampling (if necessary), containment of hazardous material, transporter, and disposal facility.
  - 2. The Contractor must submit for approval a schedule of salvage inventory plan, transporter, and storage facility or recipient.
  - 3. The Contractor must submit for approval an inventory of hazardous materials and methods of disposal for each material.
  - 4. The Contractor must submit applications and obtain proper permitting for disposal from the appropriate disposal facility for categorized hazardous waste.
  - 5. The Contractor must provide copies of all permits and approvals for record.
  - 6. The Contractor must submit for review, the names and resumes of Contractor and

Subcontractor personnel that are to perform the removal Work. The Contractor must submit activities of subcontractors and subcontractor information. Resumes must identify personnel qualifications to perform the methods, protocols, and procedures for the Work. Proof of OSHA training must be in compliance with the Hazardous Waste Operations and Emergency Response Standard (29 CFR 1910.120) for applicable workers.

7. The Contractor must submit for approval a site-specific Health and Safety Plan (HASP) for removal Work.
- B. The Contractor must provide the following submittals to the Commissioner after completion of the removal Work.
1. The Contractor must submit disposal records. All records must be tracked in accordance with regulatory requirements.
    - a. Copies of all daily reports must include transport records, and disposal receipts.
    - b. Bills of sale must be for all materials sold as scrap or salvage.
    - c. Log must include materials retained by Contractor.
    - d. All manifests must include waste disposal and measured waste tickets, as appropriate, of all materials removed.
  2. The Contractor must submit Certificates of Disposal from the disposal facilities.
  3. The Contractor must submit salvage records. All records must be tracked in accordance with regulatory requirements.
    - a. Copies of all daily reports and transport records must be provided.
    - b. Receipts for all salvaged equipment must be provided.

#### 1.05 REFERENCES

- A. Illinois, Title 35
1. Part 721.103: Definition of Hazardous Waste
  2. Part 808: Special Waste Classifications
  3. Part 809: Nonhazardous Special Waste Hauling and the Uniform Program
- B. Occupational Safety and Health Administration (OSHA)
1. 29 CFR 1910.120. Hazardous Waste Operations and Emergency Response (HAZWOPER).
- C. US Department of Transportation

1. 49 CFR Parts 171-177: Hazardous Materials Regulations.
- D. U.S. Environmental Protection Agency (USEPA)
1. 40 CFR 261: Identification and Listing of Hazardous Waste.
  2. 40 CFR 268 Land Disposal Restrictions.
  3. 40 CFR 761: PCBs Manufacturing, Processing, Distribution in Commerce, and Use Prohibition.
  4. TSCA regulations
- 1.06 DEFINITIONS
- Not Used.
- 1.07 QUALITY ASSURANCE
- A. A. Requirements of regulatory agencies must be adhered to during handling, transport, and/or disposal of hazardous or suspect hazardous materials.
  - B. B. Governing regulatory agencies include IDOT (hazardous materials transport rules), IEPA, other state, federal and local regulations governing hazardous materials.
  - C. C. Contractor must meet transporter regulations and arrange permitting for disposal facilities, respective to hazardous materials to be disposed or transported for salvage.
    1. Contractor's disposal plan for all materials must be outlined and submitted for review, including materials to be disposed, packing materials, estimated quantities, transport, and disposal facility certifications. Plan for salvage, removal and storage of medical equipment must also be outlined and submitted for review.
    2. Contractor must show applicable certifications and record of previous job performance.
- 1.08 WARRANTY
- A. The Contractor must provide a warranty as required by the Terms and Conditions for Construction Contract - Book 1.

## PART 2 – PRODUCTS

### 2.01 MATERIALS

- A. Contractor must provide all materials, equipment, supplies, and other necessary items to complete the safe and contained removal, transport, and disposal of hazardous materials. It is the Contractor's responsibility to acquaint and satisfy themselves as to the nature and material of the Work and general conditions. Any failure by the Contractor to acquaint themselves with all available information must not relieve the Contractor of responsibility for properly estimating the difficulty or cost of successfully performing the Work.

- B. The Contractor must provide and maintain an adequate safety zone to secure the site Work area during handling and removal of materials from the Project site.
- C. Packing materials must be used to safely containerize materials for transport and safe disposal in accordance with all applicable regulations per each type of hazardous material. Hazardous materials must be properly removed. Packing materials must meet or exceed the requirements of applicable governing agencies or approving bodies.
- D. Any leaking materials or compromised containers are the Contractors responsibility to address for packing, cleanup, and on site impacts.
- E. The Contractor must provide the necessary safety equipment for protection of personnel to conduct Work under safe conditions and in accordance with applicable OSHA requirements regarding removal, transport, and disposal of hazardous materials.
- F. No fire or open flame must be allowed in the Work area at any time. Smoking must not be allowed in Work areas.
- G. All materials must be contained on site prior to transport and may require over pack materials or other containment.

### PART 3 – EXECUTION

#### 3.01 GENERAL

- A. The Contractor must supply all materials, equipment, labor and supervision necessary to complete the removal, transport and disposal.
- B. All Work must be in accordance with all applicable federal, state, and local requirements and regulations. In the event that state or local regulations exceed the requirements of this Specification SECTION, the regulation must take precedence.
- C. The Contractor must be responsible for and obtain at their own expense: disposal permits and other necessary permits, equipment registrations, operating certificates, and any other document required by applicable codes, regulations, and laws.
- D. Omissions from this Specification SECTION that are necessary to carry out the intent of the Project, or omissions which are customarily performed, must not relieve the Contractor from performing such omitted details of the Work, but they must be performed as if fully and correctly set forth and described in this Specification SECTION.
- E. The Contractor must conduct the Work so that operations of facilities must not be disturbed at any time during the Project.
  - 1. The Contractor must perform all Work within the permissible noise levels, day of week, and hour of day limitations, and within the guidelines established by applicable federal, state, and municipal codes, regulations, laws, and standards.
  - 2. The Contractor must use prevention techniques to prevent the generation of fumes, dust,

and environmental disruption in order to prevent any health hazards to nearby occupants.

- F. The Contractor must have a superintendent available to respond to the job site from telephone or in person immediately, upon request.
- G. Before starting any Work, the Contractor must meet with the Commissioner to discuss all phases of Work to be performed.
  - 1. At these meetings, an order of procedure must be established and documented that must be mutually satisfactory to the Commissioner and Contractor.
  - 2. Hazardous materials handling protocols must be defined in detail and must become part of the Contractor's standard operating procedures (SOPs) throughout all project operations.
  - 3. No deviation from this established order of procedures must be permitted unless approved, in writing, by the Commissioner.
- H. The Contractor must provide the following protection.
  - 1. The Contractor must exercise care during the Work to confine operations to the immediate areas of the hazardous materials to be removed. The physical means and methods used for protection must be at the Contractor's option. However, the Contractor must be completely responsible for replacement and restitution Work of whatever nature at no additional cost to the City.
  - 2. Adequate protection of persons and property must be provided at all times. The Work must be executed in such a way as to avoid hazards to persons and property.
  - 3. The Contractor must furnish signs, lights, barricades, and other Work equipment and temporary controls as may be necessary for the safe execution of the Work. The Contractor must remove when Work is completed.
  - 4. The Contractor must take all possible actions to prevent hazardous materials from entering any surface area or drainage system.
  - 5. The Contractor must maintain safe working conditions and meet all applicable laws and regulations. The Contractor must keep the Work area clean and secure at all times.
  - 6. Workers must hold current certification in 40 hour OSHA training in accordance with OSHA 29 CFR 1910.120 (HAZWOPER).

### 3.02 EXAMINATION

- A. The Contractor must conduct a site survey of hazardous materials to be removed.
- B. The Contractor must verify hazardous materials locations, quantities, and classes.
- C. The Contractor must identify ancillary non-hazardous waste to be removed with hazardous waste.



### 3.03 PREPARATION

- A. The Contractor must notify the Commissioner a minimum of one week prior commencement of hazardous materials Work.
- B. The Contractor must prepare separate onsite areas for approved containment of hazardous wastes.
- C. The Contractor must provide containers, vehicles, equipment, labor, signs, and labels as required for hazardous materials removal and disposal.
- D. Prior to beginning on-site activities, the Contractor must obtain disposal permits for each of the materials to be disposed. The following methods in order of preference must be provided and must be conducted in accordance with federal, state, and local regulations.
  - 1. Recycling
  - 2. Reclamation
  - 3. Incineration (including fuel blending and high temperature)
  - 4. Secure chemical landfill
  - 5. Aqueous treatment
  - 6. Chemical treatment
- E. Alternative methods must require written approval from the Commissioner. Application for approval must contain a description and give the quantity of the waste, and the method that must be utilized.

### 3.04 WASTE CHARACTERIZATION

- A. Most materials must require manifests.
- B. Manifests for all shipments of wastes must be prepared and submitted at the time of the waste shipment.

### 3.05 PERFORMANCE

- A. The means and methods of performing the hazardous materials Work must be solely the responsibility of the Contractor.
- B. Visual inspections and damage repairs must be made daily by the Contractor and/or as directed by the Commissioner to assure that product release and containment control measures are functioning properly. Damage caused by the Contractor must be repaired to the existing condition before the damage occurred at no additional cost to the City.
- C. In order to prevent and to provide for abatement of any environmental pollution arising from removal activities in the performance of this Contract, the Contractor and all the subcontractors must comply with all applicable federal, state, and local laws, and regulations concerning environmental pollution control and abatement and controlling hazards.

3.06 REMOVAL, TRANSPORT, AND DISPOSAL

- A. The Contractor must perform the hazardous materials removal procedures in accordance with all applicable Federal, State, and Local regulations including, but not limited to, the following:
  - 1. 29 CFR 1910 Occupational Safety and Health Standards
  - 2. 40 CFR 268 Land Disposal Regulations (USEPA)
- B. The Contractor must use field instrumentation and/or laboratory analysis to collect and screen samples for waste stream profile.
- C. The Contractor must segregate all materials into appropriate disposal facility classifications.
- D. The Contractor must inspect and assure adequate and proper containment for all materials. If proper containment is not present, it is the Contractor's responsibility to properly package hazardous materials for transport.
- E. The Contractor must arrange for proper vehicles and transport of all hazardous materials to the permitted disposal or salvage facilities.
- F. The Contractor must be responsible for transporting and disposing of all hazardous materials to the permitted disposal facility, in accordance with the rules and regulations of the UEPA.
  - 1. The Contractor must not transport hazardous materials off Site until evidence has been submitted to the Commissioner that disposal facility is authorized and must accept the hazardous materials.
  - 2. Hazardous materials must NOT be transported off site that does not meet acceptance criteria of the intended disposal facility.
- G. Hazardous waste left after Work hours must be properly secured with flashing barricades, caution tape, and/or fencing as deemed necessary during Contractor's hours away from the site.
- H. The Contractor must provide proof that contaminated substances transported off-site were properly dispositioned and must include the following minimum information.
  - 1. Name and address of disposal or recycling facility.
  - 2. Signature of authorized agent for the disposal or recycling facility.
  - 3. Date shipment accepted.
  - 4. Description of shipment.
  - 5. Quantity of shipment.
  - 6. Method of disposal or recycling.

- I. Any planned deviations from this procedure must be communicated to the Commissioner in writing.

END OF SECTION 02 84 16

## LIMITED ASBESTOS SURVEY REPORT

**Project Site:**

Webster Street Movable Bridge  
Ashland Avenue and Webster Street  
Chicago, Illinois 60614

**Prepared For:**

Parsons Brinkerhoff  
230 West Monroe Street  
Chicago, Illinois 60606

**September 27, 2013**

**Work Order #: 16889A**

**Prepared By:**



**GSG CONSULTANTS, INC.**

855 West Adams, Suite 200  
Chicago, Illinois 60607  
tel: 312.733.6262  
fax: 312.733.5612

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## APPENDICES

- A. Chain of Custody & Laboratory Analysis Report
- B. Asbestos Inspector Licenses
- C. Laboratory Accreditations

## **1.0 EXECUTIVE SUMMARY**

On September 17 and 20, 2013, GSG Consultants, Inc. (GSG) conducted a limited asbestos survey at the Webster Street Movable Bridge located at Ashland Avenue and Webster Street in Chicago, Illinois. Bulk samples were collected from selected areas by an Illinois Department of Public Health (IDPH) licensed asbestos inspector Marcus Tsilimos (IDPH License # 100-11460) of GSG. The purpose of the survey was to determine the presence of asbestos containing material (ACM) associated with the proposed project.

## 2.0 METHOD

Bulk samples were collected in accordance with generally accepted industry standards for bulk sampling procedures.

Bulk samples were assigned sample numbers including an alphanumeric code identifying the inspector, and date of initial sampling. The Chain of Custody/Laboratory Analysis Reports in Appendix A indicates the results of laboratory analysis on the bulk samples collected. All analyses were performed at STAT Analysis Corporation (STAT), a National Voluntary Laboratory Accreditation Program (NVLAP) certified laboratory in Chicago, Illinois. (Refer to Appendix C for Laboratory Accreditations.)

Samples are prepared in a negative pressure hood with High Efficiency Particulate Air (HEPA) filtered air and analyzed for bulk asbestos fiber in accordance with the United States Environmental Protection Agency (USEPA) Interim Method for the Determination of Asbestos in Bulk Insulation Samples as found in 40 CFR, Part 763, Subpart F, Appendix A or the current USEPA method for the analysis of asbestos in building materials. The unique laboratory sample number assigned by STAT corresponds to GSG's sample number.

Sample results are expressed in percentage of asbestos and non-asbestos materials, commonly including fiberglass, cellulose, and binder. The definition of binder has been provided in the National Institute of Standards and Technology (NIST) Handbook 150-3 Section 285.5 which defines binder with reference to a bulk sample as a component added for cohesiveness (e.g. plaster, cement, glue, etc.) Therefore, a binder is terminology widely used to express the non-asbestos containing materials. Since STAT is a NIST-certified laboratory, it follows the guidelines provided by NIST.

### 3.0 FINDINGS

#### Asbestos Containing Materials (ACM)

Bulk samples were collected from suspect materials within proposed renovation work areas that may be impacted. The results of this survey are summarized in the following Table 1. Refer to Appendix A for laboratory results and chain of custody forms.

**Table 1: Results of Materials Tested at Webster Street Movable Bridge**

<b>Material Description</b>	<b>Sample Location</b>	<b>Test Results</b>
Horse Hair Drain Pipe Insulation	Bridge Houses	Negative
Horse Hair Drain Pipe Insulation Outer Wrap	Bridge Houses	Negative
Black Lighting Wire	Bridge Houses	Negative
Horse Hair Drain Pipe Insulation Inner Wrap	Bridge Houses	Negative
White Cloth Wire Insulation	Bridge Houses	<b>Chrysotile 20-25%</b>
Incinerator Debris	Bridge Houses	Negative
Mag Block Pipe Insulation	Bridge Houses	Negative
Pipe Fittings on Mag Block Pipe Insulation	Bridge Houses	<b>Chrysotile 85-90%</b>

Any building material that is not listed in above table was not sampled during the survey. Such material shall be assumed and treated as asbestos containing building material (ACBM) until tested and proven otherwise. GC shall contact GSG to sample such material prior to any disturbance to the material.

The Occupational Safety and Health Administration (OSHA), IDPH, and EPA define an asbestos containing material as any material containing greater than 1 percent asbestos. Because a destructive survey was not performed and the scope of work included only accessible areas, the possibility exists that some asbestos-containing materials were not included in this survey if they were concealed within walls or other operational mechanical equipment. All doors are assumed to be asbestos-containing materials until analyzed. Locations are provided for reference only. Materials may exist in other areas not noted.



#### 4.0 RECOMMENDATIONS

Bulk samples were collected from suspect materials within proposed renovation work areas that may be impacted. GSG recommends the preparation of an asbestos removal project design prior to any renovation/demolition activities in which ACM may be impacted. Asbestos abatement design plan and specification shall include information regarding the location of containments and barriers, type of sealant, and air sampling requirements and clearance during the asbestos abatement activities. The asbestos design plan and specification shall be prepared and signed by a state licensed asbestos project designer in accordance with Illinois regulations. Asbestos abatement work shall be conducted by a licensed abatement contractor under the supervision of a licensed asbestos project manager in accordance with all applicable federal, state, and local regulations.

Any suspect material that is discovered during the renovation/demolition activities and is not listed in Table I, were not tested during this survey. Such materials shall be assumed and treated as ACM until tested.

For any ACM that will remain following renovation, GSG recommends the development of an Operations & Maintenance Plan for the purpose of managing ACM in good condition and preventing fiber releases.

Please contact our office should you have any question regarding this report.

Respectfully submitted,  
**GSG CONSULTANTS, INC.**



Marcus Tsilimos  
Senior Project Manager  
330.429.0283

**APPENDIX A**

Chain of Custody &  
Laboratory Analysis Reports

**STAT Analysis Corporation**  
 2242 West Harrison St., Suite 200, Chicago, IL 60612-3766  
 Tel: (312) 733-0551 Fax: (312) 733-2386 STATinfo@STATAnalysis.com



NVLAP Lab Code 101202-0

**ASBESTOS ANALYSIS BY POLARIZED LIGHT MICROSCOPY**

Method: EPA-600/M4-82-020

G.S.G. Consultants, Inc.  
 855 West Adams, Suite 200  
 Chicago, IL 60607  
 Phone: (312) 733-6262  
 Fax: (312) 733-5612

Reference:		Date Received: 09/18/2013
Location:	Ashland and Webster Bridge	Date Analyzed: 09/18/2013
Batch No.:	309751	Date Reported: 09/18/2013
Customer No.:	189	Turn Around Time: 4 Hour

Laboratory Sample	Customer Sample Number	Asbestos Components (%)	Non-Asbestos Components (%)
309751001	MT-091713-01	ND	Binder 99-100%
309751002	MT-091713-02	ND	Binder 99-100%
309751003	MT-091713-03	ND	Binder 99-100%
309751004	MT-091713-04	ND	Cellulose 80-85% Binder 15-20%
309751005	MT-091713-05	ND	Cellulose 80-85% Binder 15-20%
309751006	MT-091713-06	ND	Cellulose 80-85% Binder 15-20%
309751007	MT-091713-07	ND	Binder 99-100%
309751008	MT-091713-08	ND	Binder 99-100%
309751009	MT-091713-09	ND	Binder 99-100%
309751010	MT-091713-10	ND	Cellulose 80-85% Binder 15-20%
309751011	MT-091713-11	ND	Cellulose 80-85% Binder 15-20%
309751012	MT-091713-12	ND	Cellulose 80-85% Binder 15-20%
309751013	MT-091713-13	Chrysotile 20-25%	Binder 75-80%

ND = Asbestos Not Detected (Not Present)    NA = Not Analyzed    NS = Not Submitted  
 Components of inhomogeneous samples are analyzed per our Standard Operating Procedure, or per customer request.

The use of the NVLAP logo does not imply endorsement by NVLAP or any agency of the US Government.

*The information contained in this report and any attachments is confidential information intended only for the use of the individual or entities named above. The results of this report relate only to the samples tested. If you have received this report in error, please notify us immediately by phone. This report shall not be reproduced, except in its entirety, unless written approval has been obtained from the laboratory. This report remains property of STAT Analysis until payment is received in full (see invoice).*

Analyzed by Name :   
 Henry Robateau / Microscopist

**STAT Analysis Corporation**  
 2242 West Harrison St., Suite 200, Chicago, IL 60612-3766  
 Tel: (312) 733-0551 Fax: (312) 733-2386 STATinfo@STATAnalysis.com



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 Chicago, IL 60607  
 Phone: (312) 733-6262  
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Reference:		Date Received: 09/18/2013
Location:	Ashland and Webster Bridge	Date Analyzed: 09/18/2013
Batch No.:	309751	Date Reported: 09/18/2013
Customer No.:	189	Turn Around Time: 4 Hour

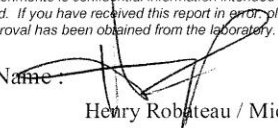
Laboratory Sample	Customer Sample Number	Asbestos Components (%)	Non-Asbestos Components (%)
309751014	MT-091713-14	NA	
309751015	MT-091713-15	NA	
309751016	MT-091713-16	ND	Binder 99-100%
309751017	MT-091713-17	ND	Binder 99-100%
309751018	MT-091713-18	ND	Binder 99-100%
309751019	MT-091713-19	ND	Binder 90-95% Other 5-10%
309751020	MT-091713-20	ND	Binder 90-95% Other 5-10%
309751021	MT-091713-21	ND	Binder 90-95% Other 5-10%

ND = Asbestos Not Detected (Not Present)    NA = Not Analyzed    NS = Not Submitted

Components of inhomogeneous samples are analyzed per our Standard Operating Procedure, or per customer request.

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Analyzed by Name:   
 Henry Robateau / Microscopist

WEBSTER AVENUE BRIDGE OVER THE NORTH BRANCH OF THE CHICAGO RIVER  
CDOT PROJECT NO.: E-1-525

**STAT** Analysis Corporation

2242 W. Harrison, Suite 200, Chicago, Illinois 60612 Phone: (312) 733-0551 Fax: (312) 733-2386  
e-mail address: STATinfo@STAT-Analysis.com AIHA accredited 101160 NVLAP lab code 101202-0

**CHAIN OF CUSTODY RECORD**

Page: 1 of 1

Client: GGG Consultants  
 Street Address: 855 West Adams  
 City, State, Zip: Chicago, IL 60607  
 Phone: 330-429-0283  
 Fax:  
 e-mail/Alt. Fax: mtgilmanus@yahoo.com  
 Project Number:  
 Project Name: PB  
 Project Location: Ashland and Webster Bridge  
 Project Manager: Marcus Iscigian  
 P.O. Number:

Turn Around: Immediate:  4 Hrs  8 Hrs  24 Hrs  1 Day  2 Days  3 Days  5 Days  
 Date Due: 9/18/13 Time Due:  
 Note: Not all turn-around times are available for all analysis.

Relinquished by: [Signature] Date/Time: 9/18/13 8:00 AM  
 Received by: [Signature] Date/Time: 9/18/13 8:55 AM  
 Relinquished by:  
 Received by:  
 Relinquished by:  
 Received by:

Batch No.: 309751  
 Office Use Only Below:  
 Samples Acceptable: Yes  No   
 Checked by (Initial/Date): [Signature] 9/18/13  
 QC by (Initial/Date):  
 Reported By (Initial/Date/Time/Verbal): [Signature] 9/18/13

Client Sample Number/Description; Date Taken	Time		Rate (ppm)	Volume (Liters)	Area Wiped (ft <sup>2</sup> )	Laboratory Sample No.	Comments
	On	Off					
M-091713-01 Horse Hair Drain Pipe Insulation SE Horse							
-02 ↓							
-03 ↓							
-04 Horse Hair Drain Pipe Insulation Deter/Wrap SE House							
-05 ↓							
-06 ↓							
-07 Black Lighting Wire SE House							
-08 ↓							
-09 ↓							
-10 Black inner Horse Hair/Wrap Drain Pipe SE House							
-11 ↓							
-12 ↓							

Comments: Stop at First Positive



**STAT Analysis Corporation**

2242 West Harrison St., Suite 200, Chicago, IL 60612-3766  
Tel: (312) 733-0551 Fax: (312) 733-2386 STATinfo@STATAnalysis.com



NVLAP Lab Code 101202-0

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Method: EPA-600/M4-82-020

G.S.G. Consultants, Inc.  
855 West Adams, Suite 200  
Chicago, IL 60607  
Phone: (312) 733-6262  
Fax: (312) 733-5612

Reference: Date Received: 09/23/2013  
Location: Webster Street Bridge Chicago Date Analyzed: 09/24/2013  
Batch No.: 309814 Date Reported: 09/24/2013  
Customer No.: 189 Turn Around Time: 24 Hour

Laboratory Sample	Customer Sample Number	Asbestos Components (%)	Non-Asbestos Components (%)
309814001	MT-092013-01	Chrysotile 10-15%	Binder 85-90%
309814002	MT-092013-02	NA	
309814003	MT-092013-03	NA	

ND = Asbestos Not Detected (Not Present) NA = Not Analyzed NS = Not Submitted

Components of inhomogeneous samples are analyzed per our Standard Operating Procedure, or per customer request.

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Analyzed by Name:

Henry Robateau / Microscopist

Page 1 of 1

Date: 09/24/2013





**APPENDIX B**


Asbestos Inspector Licenses

**Illinois Department of  
PUBLIC  
HEALTH**

**ASBESTOS  
PROFESSIONAL  
LICENSE**

<b>ID NUMBER</b>	<b>ISSUED</b>	<b>EXPIRES</b>
100 - 11460	4/11/2013	05/15/2014

**MARCUS J TSILIMOS**  
1741 West Potomac Avenue, Apt  
CHICAGO, IL 60622



Environmental Health

<b>ENDORSEMENTS</b>	<b>TC EXPIRES</b>
INSPECTOR	1/11/2014
PROJECT MANAGER AIR SAMPLING PROFESSIONAL	12/13/2013

**Alteration of this license shall result in legal action**  
This license issued under authority of the State of Illinois  
Department of Public Health  
This license is valid only when accompanied by a valid  
training course certificate.



# Occupational Training & Supply, Inc.

7233 Adams Street • Willowbrook, IL 60527 • (630) 655-3900

## Marcus Tsilimos

has successfully completed the 4 hour Asbestos Building Inspector Refresher Course and has passed the competency exam with a minimum score of 70%. This course is accredited by the Illinois Department of Public Health and the Indiana Department of Environmental Management for purposes of accreditation in accordance with EPA 40 CFR763, Asbestos Hazard Emergency Response Act (AHERA) and TSCA Title II. This training course complies with the requirements of TSCA Title II and is accredited by the state of Wisconsin Department of Health Services under CH.DHS159, Wisconsin Administration Code.

### Asbestos Abatement Building Inspector Refresher

Certificate: BIRWI1301110188

Location: 12304 75<sup>th</sup> Street Kenosha, WI 53142

Course Date: 1/11/2013

Examination Date: 1/11/2013

Expiration Date: 1/11/2014



Kathy DeSalvo/Director

2013

**APPENDIX C**

Laboratory Accreditations



**UNITED STATES DEPARTMENT OF COMMERCE**  
**National Institute of Standards and Technology**  
Gaithersburg, Maryland 20899

May 28, 2013

Dr. Lory Littlefield  
HI-TEK Environmental, Inc. dba.  
STAT Analysis Corporation  
2242 W. Harrison  
Chicago, IL 60612

NVLAP Lab Code: 101202-0

Dear Dr. Littlefield:

I am pleased to inform you that continuing accreditation for specific test methods in Bulk Asbestos Fiber Analysis (PLM) is granted to your organization under the National Voluntary Laboratory Accreditation Program (NVLAP). This accreditation is effective until June 30, 2014, provided that your organization continues to comply with accreditation requirements contained in the NVLAP Procedures.

Your Certificate of Accreditation is enclosed along with a statement of your Scope of Accreditation. You may reproduce these documents in their entirety and announce your organization's accreditation status using the NVLAP symbol and/or term in business publications, the trade press, and other business-oriented literature. Accreditation does not relieve your organization from observing and complying with any applicable existing laws and/or regulations.

We are pleased to have you participate in NVLAP and look forward to your continued association with this program. If you have any questions concerning your NVLAP accreditation, please direct them to Hazel M. Richmond, Program Manager, Laboratory Accreditation Program, National Institute of Standards and Technology, 100 Bureau Dr. Stop 2140, Gaithersburg, MD 20899-2140; (301) 975-4016.

Sincerely,

Warren R. Merkel, Chief  
Laboratory Accreditation Program

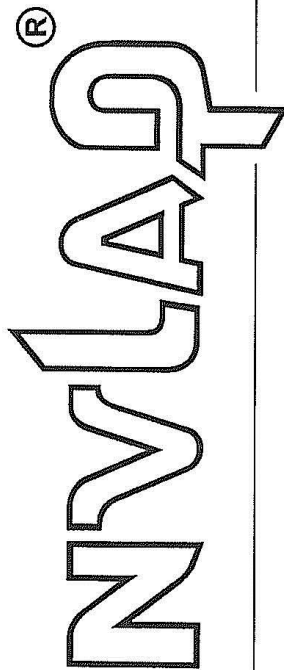
Enclosure(s)



NIST/NVLAP • 100 Bureau Drive, Stop 2140 • Gaithersburg, MD 20899-2140  
<http://www.nist.gov/nvlap>



United States Department of Commerce  
National Institute of Standards and Technology



---

## Certificate of Accreditation to ISO/IEC 17025:2005

---

NVLAP LAB CODE: 101202-0

**STAT Analysis Corporation**  
Chicago, IL

*is accredited by the National Voluntary Laboratory Accreditation Program for specific services,  
listed on the Scope of Accreditation, for:*

### **BULK ASBESTOS FIBER ANALYSIS**

*This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005.  
This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality  
management system (refer to joint ISO-IAC-IAF Communiqué dated January 2009).*

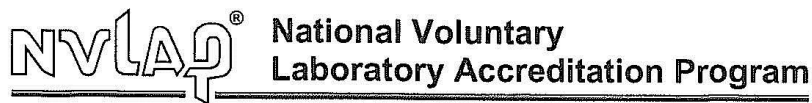
2013-07-01 through 2014-06-30

*Effective dates*



A handwritten signature in black ink, appearing to read "Mark R. Mudd".

*For the National Institute of Standards and Technology*



**SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005**

**STAT Analysis Corporation**  
STAT Analysis Corporation  
2242 W. Harrison  
Chicago, IL 60612  
Dr. Lory Littlefield  
Phone: 312-733-0551 Fax: 312-733-2386  
E-Mail: LLittlefield@STATAnalysis.com  
URL: <http://www.STATAnalysis.com>

**BULK ASBESTOS FIBER ANALYSIS (PLM)**

**NVLAP LAB CODE 101202-0**

<i>NVLAP Code</i>	<i>Designation / Description</i>
18/A01	EPA 600/M4-82-020: Interim Method for the Determination of Asbestos in Bulk Insulation Samples
18/A03	EPA 600/R-93/116: Method for the Determination of Asbestos in Bulk Building Materials

2013-07-01 through 2014-06-30

*Effective dates*

Page 1 of 1

A handwritten signature in black ink, appearing to read "Michael R. M...".

*For the National Institute of Standards and Technology*

NVLAP-01S (REV. 2005-05-19)

## LIMITED LEAD-BASED PAINT SURVEY REPORT

Project Site:

Webster Street Movable Bridge  
Ashland Avenue and Webster Street  
Chicago, Illinois 60614

Prepared For:

Parsons Brinkeroff  
230 West Monroe Street  
Chicago, Illinois 60606

September 24, 2013

GSG Project No.: 2013074

Prepared By



**GSG CONSULTANTS, INC.**

855 West Adams, Suite 200  
Chicago, Illinois 60607  
tel: 312.733.6262  
fax: 312.733.5612



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## TABLE OF CONTENTS

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1.0 EXECUTIVE SUMMARY	1
2.0 METHOD	2
3.0 FINDINGS	3
4.0 RECOMMENDATIONS	7

### APPENDICES

- A. XRF FIELD DATA SHEETS
- B. LEAD INSPECTOR LICENSE AND CERTIFICATIONS

## **1.0 EXECUTIVE SUMMARY**

GSG Consultants, Inc. (GSG) was retained by Parsons Brinkerhoff to conduct a limited Lead Based Paint (LBP) survey at the Webster Street Movable Bridge located at Ashland Avenue and Webster Street in Chicago. The LBP survey was conducted by an Illinois Department of Public Health (IDPH) licensed inspector Roberto Rivera of GSG. The purpose of this survey was to determine the presence of LBP surfaces/components associated with the proposed project. The survey was conducted on September 17 and 20, 2013. Please refer to Table 1 for XRF testing results of surfaces/components tested for LBP.

## **2.0 METHOD**

LBP testing was conducted using an X-Ray Fluorescence (XRF) spectrum analyzer. The LPA-1 Lead Paint Analyzer, a state-of-the-art analytical instrument used in quantitative analysis of lead in paint for various substrates used in commercial, industrial, and residential facilities, was utilized for testing during this survey. Radioactive material is used as the radiation source in this device for a non-destructive method of sample analysis.

### 3.0 FINDINGS

#### Lead Based Paint (LBP)

Please refer to Table 1 for XRF testing results of surfaces/components for LBP. Please refer to Appendix A for XRF field data sheets.

**TABLE I: XRF Testing Results of Surfaces/Components for LBP**

Room/ Location	Component	Substrate	Color	Test Results	XRF Readings
East Side of Bridge	Counter Weight	Steel	Burgundy	Negative	0.5
	Counter Weight	Steel	Burgundy	Negative	0.3
	Counter Weight Column	Steel	Burgundy	Negative	0.1
	Cross Girder	Steel	Burgundy	Negative	0.5
	Side E. Elev. of Counter Weight	Steel	Burgundy	Negative	0.0
	Column (N. wall under the sidewalk)	Steel	Burgundy	<b>Positive</b>	9.9
	East Gear Box Structure (gear frame)	Steel	Burgundy	<b>Positive</b>	3.2
	East Gear Box Structure (floor beam)	Steel	Burgundy	<b>Positive</b>	9.9
	East Gear Box Structure (cross beam)	Steel	Burgundy	<b>Positive</b>	2.4
	East Gear Box Structure (beam plate)	Steel	Burgundy	<b>Positive</b>	9.7
	Buckle Plate	Steel	Burgundy	<b>Positive</b>	9.7
	Stringer Beam	Steel	Burgundy	<b>Positive</b>	9.9
	West Gear Box Structure (floor beam)	Steel	Burgundy	<b>Positive</b>	9.9
	West Gear Box Structure (cross beam)	Steel	Burgundy	<b>Positive</b>	9.5
	West Gear Box Structure (beam plate)	Steel	Burgundy	<b>Positive</b>	9.9
	Trussed Girder	Steel	Burgundy	Negative	0.5
	Trunnion Truss	Steel	Burgundy	Negative	0.3
	Cross Frame	Steel	Burgundy	Negative	0.6
SE Bridge House – Boiler Closet/Room	N, E, W & S Walls	Concrete	White	Negative	0.0, 0.1, 0.2 & 0.0
	Ceiling	Concrete	White	Negative	0.1
	Door Frame	Wood	Gray	<b>Positive</b>	9.9

WEBSTER AVENUE BRIDGE OVER THE NORTH BRANCH OF THE CHICAGO RIVER  
 CDOT PROJECT NO.: E-1-525

Room/ Location	Component	Substrate	Color	Test Results	XRF Readings
SE Bridge House – Storage	N, E, W & S Walls	Concrete/ plaster	White/ Gray	Negative	0.0, 0.3, 0.0 & 0.1
	Ceiling	Concrete	White	Negative	0.4
	N. Wall	Metal	Rust	Negative	0.2
	Door	Metal	Rust	Negative	0.3
SE Bridge House – Stairs	N, E, W & S Walls	Concrete/ plaster	White/ Gray	Negative	0.1, 0.3, 0.0 & 0.0
	Ceiling	Concrete	White	Negative	0.4
	Door Frame	Wood	Green/ Gray	<b>Positive</b>	9.9
	Window Frame	Wood	Green/ Gray	<b>Positive</b>	9.9
SE Bridge House – Control Room	N, E, W & S Walls	Plaster	Green	<b>Positive</b>	9.9, 5.0, 9.9 & 9.7
	Ceiling	Plaster	Green	<b>Positive</b>	9.3
	Door and Frame	Wood	Gray	<b>Positive</b>	8.5 & 5.0
	Window & Frame	Wood	Green	<b>Positive</b>	9.9 & 9.9
	Door and Frame	Wood	Green	<b>Positive</b>	9.9 & 9.9
SE Bridge House – (East small room within control room)	N, E, W & S Walls	Concrete	Green	<b>Positive</b>	5.0, 9.9, 9.9 & 3.5
	Ceiling	Concrete	Green	<b>Positive</b>	5.0
SE Bridge House – (West small room within control room)	N, E, W & S Walls	Concrete	Green	<b>Positive</b>	9.9, 3.5, 9.9 & 9.9
	Ceiling	Concrete	Green	<b>Positive</b>	3.0
SE Bridge House – Stairs (leading to operators room)	N, E, W & S Walls	Plaster	Green	<b>Positive</b>	9.9, 9.9, 9.9 & 9.9
	Wainscot	Wood	Green	<b>Positive</b>	9.9
NW Bridge House – Control Room	N, E, W & S Walls	Plaster	Green	<b>Positive</b>	9.9, 9.9, 9.9 & 9.9
	Ceiling	Plaster	Green	<b>Positive</b>	8.0
	Door and Frame	Wood	Gray	<b>Positive</b>	3.0 & 2.5
NW Bridge House – (East small room within control room)	N, E, W & S Walls	Concrete	Green	<b>Positive</b>	9.9, 9.9, 5.0 & 6.5

WEBSTER AVENUE BRIDGE OVER THE NORTH BRANCH OF THE CHICAGO RIVER  
 CDOT PROJECT NO.: E-1-525

Room/ Location	Component	Substrate	Color	Test Results	XRF Readings
NW Bridge House – (East small room within control room)	Ceiling	Concrete	Green	<b>Positive</b>	9.9
	Window Frame	Wood	Green	<b>Positive</b>	9.9
NW Bridge House – (West small room within control room)	N, E, W & S Walls	Concrete	Green	<b>Positive</b>	9.9, 9.9, 9.9 & 8.5
	Ceiling	Concrete	Green	<b>Positive</b>	9.0
	Stair Frame	Metal	Green	<b>Positive</b>	9.9
	Pipe	Metal	Green	Negative	0.6
	Door Frame	Wood	Green	<b>Positive</b>	9.9
NW Bridge House – (Stairs leading to operators room)	N, E, W & S Walls	Plaster	Green	<b>Positive</b>	9.9, 9.9, 9.9 & 9.9
	Door Frame	Wood	Green	<b>Positive</b>	9.9
NW Bridge House – (Stairs leading down to storage room & boiler room)	N, E, W & S Walls	Concrete	White/ Gray	Negative	0.4, 0.0, 0.5 & 0.6
	Ceiling	Concrete	White/ Gray	Negative	0.1
	Door Frame	Wood	Green	<b>Positive</b>	9.9
	Beam	Metal	Rust	<b>Positive</b>	9.9
NW Bridge House – Storage	N, E, W & S Walls	Concrete/ Metal	Gray/ Rust	Negative	0.3, 0.0, 0.1 & 0.3
	Ceiling	Concrete	Gray	Negative	0.4
	Door	Metal	Rust	Negative	0.1
NW Bridge House – Boiler Room	N, E, W & S Walls	Concrete	Gray	<b>Positive</b>	3.0, 4.5, 3.0 & 9.9
	Ceiling	Concrete	Gray	<b>Positive</b>	3.5
	Door Frame	Wood	Green	<b>Positive</b>	9.9
	Column (Stairs)	Metal	Rust	<b>Positive</b>	9.9
Webster Bridge East side (Street level under the bridge – movable section)	Floor Beam	Steel	Burgundy	Negative	0.3, 0.0 & 0.5
	Stringer (Beam)	Steel	Burgundy	Negative	0.0, 0.6 & 0.0
	Cross Beam	Steel	Burgundy	Negative	0.3

WEBSTER AVENUE BRIDGE OVER THE NORTH BRANCH OF THE CHICAGO RIVER  
 CDOT PROJECT NO.: E-1-525

Room/ Location	Component	Substrate	Color	Test Results	XRF Readings
Webster Bridge West side (Street level under the bridge – movable section)	Floor Beam	Steel	Burgundy	Negative	0.0, 0.5, 0.1 & 0.1
	Stringer (Beam)	Steel	Burgundy	Negative	0.1, 0.4 & 0.0
	Cross Beam	Steel	Burgundy	Negative	0.7 & 0.6



#### **4.0 RECOMMENDATIONS**

LBP was identified on some surfaces/components during this survey. GSG recommends that prior to any demolition/renovation activities in which LBP surfaces may be impacted or disturbed, a lead mitigation/abatement project design/work plan shall be prepared. The design/work plan shall include information regarding lead-based paint locations, exposure assessment, and lead-based paint waste handling, removal, and disposal. Also, all LBP mitigation/abatement work shall be performed and supervised by properly trained workers and supervisors, along with using industry accredited contractors specializing in this type of LBP abatement under the monitoring of environmental consultant. The mitigation/abatement work shall be performed in accordance with applicable local, state, and federal regulations, including but not limited to: IDPH Lead Poisoning Prevention Act (Title 77, Part 845); Illinois Environmental Protection Act (415 ILCS); Occupational Safety and Health Regulations (1926.62); and Municipal Codes of Chicago (Title 11, Chapter 11-4).

Surfaces/components that tested negative during this survey, the Occupational Safety and Health Administration (OSHA) Lead in Construction Standard states that “negative” readings, i.e. those below the HUD/EPA definition of what constitutes LBP (1.0 mg/cm<sup>2</sup>), DO NOT relieve contractors from performing exposure assessments (personal air monitoring) on the their employees per the OSHA Lead Standard, and should not be interpreted as lead is not present. Although a reading may indicate “negative”, airborne lead concentrations still may exceed the OSHA Action Level or the OSHA Permissible Exposure Limit (PEL) depending on the work activity. GSG recommends that prior to any renovation activities in the building, engineering control measures be implemented in the renovation area to minimize the generation of dust, and site worker and occupant exposures to lead.

For the surfaces/components that are not listed in Table I, were not tested during this limited survey. Such surfaces/components shall be assumed and treated as LBP until tested.

Please contact our office should you have any question regarding this report.

Respectfully submitted,  
**GSG CONSULTANTS, INC.**



Roberto Rivera  
Senior Project Manager  
IDPH License # 003649

**APPENDICIES**

**APPENDIX A**

XRF Field Data Sheets



**GSG CONSULTANTS, INC.**  
 Engineering and Industrial Hygiene Services

855 West Adams, Suite 200  
 Chicago, IL 60607  
 (312) 733-6262 Fax: (312) 733-5612  
 www.gsg-consultants.com

**XRF ENVIRONMENTAL DATA SHEETS**

SITE: Webster Bridge  
 INSPECTOR: Roberto Rivera  
 TECHNICIAN: \_\_\_\_\_

DATE: 09/17/2013  
 XRF UNIT NO.: 1492

Shot	Room/Area	Reading	Component	Walls				Ceiling	Floor	Substrate	Color	Damage/ Comments
				N	E	S	W	C	F			
1	Calibration	1.0										
		1.0										
		1.0										
	East side of bridge	0.5	Counter weight		X					steel	burgundy	
5		0.3	↓		X							
		0.1	Counter weight column		X							
		0.5	Cross girder		X							
		0.0	Side Elev. of counter weight	X								
		9.9	Column	X							Column located on N. concrete wall, underside wall	
10		3.2	E. gear box structure								Gear frame	
		9.9	↓								Floor beam	
		2.4	↓								Cross beam	
		9.7	↓								beam plate	
		9.7	Buckle Plate									
15		9.9	stringer beam									
		9.9	W. gear box structure								Floor beam	
		9.5	↓								Cross beam	
		9.9	↓								beam plate	
		0.5	Trussed Girder									
20		0.3	Trunnion Truss									

Comments: \_\_\_\_\_



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**XRF ENVIRONMENTAL DATA SHEETS**

SITE: Webster Bridge  
 INSPECTOR: Roberto Rivera  
 TECHNICIAN: \_\_\_\_\_

DATE: 09/17/2013  
 XRF UNIT NO.: 1492

Shot	Room/Area	Reading	Component	Walls				Ceiling	Floor	Substrate	Color	Damage/ Comments
				N	E	S	W	C	F			
21	East side of Bridge	0.6	Cross Frame							steel	burgundy	- Trussed girder
	SE Bridge house-boiler closet	0.0	walls	X						concrete	white	
		0.1			X							
		0.2				X						
25		0.0					X					
		0.1	Ceiling					X				
		9.9	door frame							wood	gray	
	S. East (SE) bridge house storage	0.0	walls	X						Plaster	white/gray	
		0.3			X					concrete		
30		0.0				X						
		0.1					X			plaster		
		0.4	Ceiling					X		concrete		
		0.2	wall	X						metal	rust	
		0.3	Door		X							
35	SE Bridge house-stairs	0.1	walls	X						concrete	white/gray	
		0.3			X					plaster		
		0.0				X						
		0.0					X			concrete		
		0.4	Ceiling					X				
40		9.9	Door Frame							wood	green/gray	

Comments: \_\_\_\_\_



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 www.gsg-consultants.com

**XRF ENVIRONMENTAL DATA SHEETS**

SITE: Webster Bridge  
 INSPECTOR: Roberto Rivera  
 TECHNICIAN: \_\_\_\_\_

DATE: 09/17/2013  
 XRF UNIT NO.: 1492

Shot	Room/Area	Reading	Component	Walls				Ceiling	Floor	Substrate	Color	Damage/Comments
				N	E	S	W	C	F			
41	SE. Bridge house-stairs	9.9	Window frame							wood	green/gray	
	SE Bridge house-control Rm	9.9	walls	X						Plaster	green	Control Room
		5.0	↓		X					↓	↓	
		9.9	↓			X				↓	↓	
45		9.7	↓				X			↓	↓	
		9.3	Ceiling				X			↓	↓	
		8.5	Door							wood	gray	
		5.0	Door frame							↓	↓	
		9.9	Window							↓	green	
50		9.9	Window frame							↓	↓	
		9.9	Door							↓	↓	
		9.9	Door frame							↓	↓	
	SE Bridge house-	5.0	walls	X						concrete	green	East small room within control room
		9.9	↓		X					↓	↓	
55		9.9	↓			X				↓	↓	
		3.5	↓				X			↓	↓	
		5.0	Ceiling				X			↓	↓	
		9.9	walls	X						concrete	green	West small room within control room
		3.5	↓		X					↓	↓	
60		9.9	↓			X				↓	↓	↓

Comments: \_\_\_\_\_



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**XRF ENVIRONMENTAL DATA SHEETS**

09/20/2013

SITE: Webster Bridge

DATE: 09/17/2013

INSPECTOR: Roberto Rivera

XRF UNIT NO.: 1492

TECHNICIAN: \_\_\_\_\_

Shot	Room/Area	Reading	Component	Walls				Ceiling	Floor	Substrate	Color	Damage/ Comments
				N	E	S	W	C	F			
6 <sup>1</sup>	SE Bridge house	9.9	wall				X			concrete	green	West small room within control room
	↓	3.0	ceiling					X		↓	↓	↓
	SE Bridge house - stairs	9.9	walls	X						plaster	green	stairs leading to operator's room
	↓	9.9	↓		X					↓	↓	↓
6 <sup>5</sup>	↓	9.9	↓			X				↓	↓	↓
	↓	9.9	↓			X				↓	↓	↓
	↓	9.9	wainscot							wood	green	operator's room
	NW Bridge house - rm	9.9	walls	X						plaster	green	control room
	Control	9.9	↓		X					↓	↓	↓
7 <sup>0</sup>	↓	9.9	↓			X				↓	↓	↓
	↓	9.9	↓			X				↓	↓	↓
	↓	8.0	ceiling					X		plaster	↓	↓
	↓	3.0	Door			X				wood	green	↓
	↓	2.5	door frame			X				↓	↓	↓
7 <sup>5</sup>	NW Bridge house -	9.9	walls	X						concrete	green	Small room (east) within control rm
	↓	9.9	↓		X					↓	↓	↓
	↓	5.0	↓			X				↓	↓	↓
	↓	6.5	↓			X				↓	↓	↓
	↓	9.9	ceiling					X		↓	↓	↓
8 <sup>0</sup>	↓	9.9	Window frame							wood	green	↓

Comments: \_\_\_\_\_



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 www.gsg-consultants.com

**XRF ENVIRONMENTAL DATA SHEETS**

SITE: Webster Bridge  
 INSPECTOR: Roberto Rivera  
 TECHNICIAN: \_\_\_\_\_

DATE: 09/20/2013  
 XRF UNIT NO.: 1455

Shot	Room/Area	Reading	Component	Walls				Ceiling	Floor	Substrate	Color	Damage/ Comments
				N	E	S	W	C	F			
81	NW Bridge house -	9.9	wall	X						concrete	green	Small room (west) within control room
		9.9	↓		X							
		9.9	↓			X						
		8.5	↓				X					
85		9.0	Ceiling					X				↓
		9.9	stair frame							metal	green	
		0.6	Pipe									
		9.9	Door frame							wood	green	
90	NW Bridge house -	9.9	walls	X						plaster	green	stair leading to operator's room
		9.9	↓		X							
		9.9	↓			X						
		9.9	Door frame							wood	green	
95	NW Bridge house -	0.4	walls	X						concrete	green/gray/white	stair leading to storage/boiler room
		0.0	↓		X							
		0.5	↓			X						
		0.6	↓				X					
		0.1	Ceiling					X				↓
		9.9	Door frame							wood	green	
		9.9	Beam			X				metal	rust	

Comments: \_\_\_\_\_





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**XRF ENVIRONMENTAL DATA SHEETS**

SITE: Webster Bridge  
 INSPECTOR: Roberto Rivera  
 TECHNICIAN: \_\_\_\_\_

DATE: 09/20/13  
 XRF UNIT NO.: 1455

Shot	Room/Area	Reading	Component	Walls				Ceiling	Floor	Substrate	Color	Damage/ Comments
				N	E	S	W	C	F			
101	NW Bridge house - storage	0.3	walls	X						concrete	gray	
		0.0	↓		X					L	↓	
		0.1	↓			X				metal	rust	
		0.3	↓				X			↓	↓	
105	↓	0.4	ceiling					X		concrete	gray	
		0.1	Door							metal	rust	
		3.0	walls	X						concrete	gray	
110	NW Bridge house - pm boiler	4.5	↓		X					↓	↓	
		3.0	↓			X				↓	↓	
		9.9	↓				X			↓	↓	
		3.5	ceiling					X		↓	↓	
110	↓	9.9	Door frame							wood	green	
		9.9	Column (stairs)							metal	rust	
		0.3	Floor beam							steel	burgundy	street level - under the bridge movable section
115	↓	0.0	Floor beam							↓	↓	
		0.5	Floor beam							↓	↓	
		0.0	stringer (beam)							↓	↓	
		0.6	stringer (beam)							↓	↓	
		0.0	stringer (beam)							↓	↓	
120	↓	0.3	cross beam						↓	↓	↓	

Comments: \_\_\_\_\_



**GSG CONSULTANTS, INC.**  
 Engineering and Industrial Hygiene Services

855 West Adams, Suite 200  
 Chicago, IL 60607  
 (312) 733-6262 Fax: (312) 733-5612  
 www.gsg-consultants.com

**XRF ENVIRONMENTAL DATA SHEETS**

SITE: Webster Bridge  
 INSPECTOR: Roberto Rivera  
 TECHNICIAN: \_\_\_\_\_

DATE: 09/20/13  
 XRF UNIT NO.: 1455

Shot	Room/Area	Reading	Component	Walls				Ceiling	Floor	Substrate	Color	Damage/Comments
				N	E	S	W	C	F			
121	Webster bridge west	0.0	Floor beam							steel	burgundy	street level under the bridge - movable section
		0.5	Floor beam									
		0.1	Floor beam									
		0.1	stringer (beam)									
125		0.4	stringer (beam)									
		0.0	stringer (beam)									
	0.7	Cross beam										
	0.6	Cross beam										
	Calibration	0.0										
130	L	1.0										
		1.0										
		.										
	.											
	.											
5	.											
	.											
	.											
	.											
	.											
0	.											

Comments: \_\_\_\_\_



Pat Quinn, Governor  
LaMar Hebbrock, MD, MPH, Director

525-535 West Jefferson Street • Springfield, Illinois 62761-0001 • [www.idph.state.il.us](http://www.idph.state.il.us)

2/27/2013

LICENSE NUMBER: 003649

Roberto Rivera  
855 W. Adams St.  
Chicago, IL 60607

### LICENSE APPROVED

Illinois Department of Public Health (the Department) recently received and reviewed your application for lead licensure.

Your qualifications have been reviewed and found that you meet the requirements set forth by the Department's Lead Poisoning Prevention Code, Section 845.125. Therefore, your application for lead licensure is now complete.

Enclosed please find your lead license card. Please have this identification card with you at all times while conducting lead abatement activities.

Also, please note the expiration date on the front of the lead license card. A renewal application will need to be completed and submitted to the Department at least 60 days prior to the expiration date. Please follow this link [http://www.idph.state.il.us/envhealth/pdf/Lead-Renewal\\_App.pdf](http://www.idph.state.il.us/envhealth/pdf/Lead-Renewal_App.pdf) to find a renewal form on-line.

If you have any questions, please call (217) 782-5830 or for the hearing impaired, TTY (800) 547-0466.

Thank you,

The Department

Enclosure: Lead License

*Improving public health, a  
printed on rec.*

The license card features the Illinois Department of Public Health logo at the top left. To the right of the logo, the title "LEAD RISK ASSESSOR LICENSE" is printed in bold. Below the logo, the license details are listed: "LEAD ID" 003649, "ISSUED" 2/27/2013, and "EXPIRES" 1/31/2014. The licensee's name and address are provided: Roberto Rivera, 855 W. Adams St., Chicago, IL 60607. A small portrait photo of Roberto Rivera is positioned to the right of the text. At the bottom right, it says "ILLINOIS LEAD PROGRAM Environmental Health".

LEAD ID	ISSUED	EXPIRES
003649	2/27/2013	1/31/2014

Roberto Rivera  
855 W. Adams St.  
Chicago, IL 60607

ILLINOIS LEAD PROGRAM  
Environmental Health

# CERTIFICATE OF ACHIEVEMENT

## Lead Risk Assessment Recertification

Accredited by Illinois Department of Public Health

This is to certify that ROBERTO RIVERA has completed the 8-HOUR LEAD RISK ASSESSMENT RECERTIFICATION course and successfully passed the examination on 10/09/2010 with a minimum score of 70%. Training was in accordance with Title X, U.S. EPA Model Training Course Curriculum, 1995, the HUD Guidelines, 1995, and the Illinois Dept. of Public Health, 1998.



*N. Penoff*

10/09/2010

Course Dates:

10/09/2013

Expires:

1010RAR03

Certificate Number:

Phone Number: (312) 421-7397

Director of Training

Nicholas J. Penoff

Doctor of Public Health

FORM # L-017B

**APPENDIX B**

Lead Inspector License and Certifications

WEBSTER AVENUE BRIDGE OVER THE NORTH BRANCH OF THE CHICAGO RIVER  
CDOT PROJECT NO.: E-1-525

**APPENDIX B**

**Architectural Detailed Specifications**

WEBSTER AVENUE BRIDGE OVER THE NORTH BRANCH OF THE CHICAGO RIVER  
CDOT PROJECT NO.: E-1-525

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## SECTION 024119 - SELECTIVE DEMOLITION

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section Includes:
  - 1. Demolition and removal of selected portions of building or structure.
- B. Related Requirements:
  - 1. Section 011000 "Summary" for restrictions on use of the premises, Owner-occupancy requirements, and phasing requirements.
  - 2. Section 017300 "Execution" for cutting and patching procedures.
  - 3. Section 013516 "Alteration Project Procedures" for general protection and work procedures for alteration projects.

#### 1.3 DEFINITIONS

- A. Remove: Detach items from existing construction and dispose of them off-site unless indicated to be salvaged or reinstalled.
- B. Remove and Salvage: Detach items from existing construction, in a manner to prevent damage, and deliver to Owner ready for reuse.
- C. Remove and Reinstall: Detach items from existing construction, in a manner to prevent damage, prepare for reuse, and reinstall where indicated.
- D. Existing to Remain: Leave existing items that are not to be removed and that are not otherwise indicated to be salvaged or reinstalled.
- E. Dismantle: To remove by disassembling or detaching an item from a surface, using gentle methods and equipment to prevent damage to the item and surfaces; disposing of items unless indicated to be salvaged or reinstalled.

#### 1.4 MATERIALS OWNERSHIP

- A. Unless otherwise indicated, demolition waste becomes property of Contractor.



- B. Historic items, relics, antiques, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, and other items of interest or value to Owner that may be uncovered during demolition remain the property of Owner.

- 1. Carefully salvage in a manner to prevent damage and promptly return to Owner.

#### 1.5 PREINSTALLATION MEETINGS

- A. Predemolition Conference: Conduct conference at Project site.

- 1. Inspect and discuss condition of construction to be selectively demolished.
  - 2. Review structural load limitations of existing structure.
  - 3. Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.
  - 4. Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.
  - 5. Review areas where existing construction is to remain and requires protection.

#### 1.6 INFORMATIONAL SUBMITTALS

- A. Engineering Survey: Submit engineering survey of condition of building.

- B. Proposed Protection Measures: Submit report, including Drawings, that indicates the measures proposed for protecting individuals and property, for environmental protection, for dust control and, for noise control. Indicate proposed locations and construction of barriers.

- C. Schedule of Selective Demolition Activities: Indicate the following:

- 1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity.
  - 2. Interruption of utility services. Indicate how long utility services will be interrupted.
  - 3. Coordination for shutoff, capping, and continuation of utility services.

- D. Predemolition Photographs or Video: Show existing conditions of adjoining construction, including finish surfaces, that might be misconstrued as damage caused by demolition operations. Comply with Section 013233 "Photographic Documentation." Submit before Work begins.

- E. Warranties: Documentation indicating that existing warranties are still in effect after completion of selective demolition.

#### 1.7 CLOSEOUT SUBMITTALS

- A. Inventory: Submit a list of items that have been removed and salvaged.

#### 1.8 FIELD CONDITIONS

- A. Owner will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.

- B. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
    - 1. Before selective demolition, Owner will remove the following items:
      - a. <Insert items to be removed by Owner>.
  - C. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.
  - D. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.
    - 1. Hazardous materials will be removed by Owner before start of the Work.
    - 2. If suspected hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Hazardous materials will be removed by Owner under a separate contract.
  - E. Hazardous Materials: Present in buildings and structures to be selectively demolished. A report on the presence of hazardous materials is on file for review and use. Examine report to become aware of locations where hazardous materials are present.
    - 1. Hazardous material remediation is specified elsewhere in the Contract Documents.
    - 2. Do not disturb hazardous materials or items suspected of containing hazardous materials except under procedures specified elsewhere in the Contract Documents.
    - 3. Owner will provide material safety data sheets for suspected hazardous materials that are known to be present in buildings and structures to be selectively demolished because of building operations or processes performed there.
  - F. Historic Areas: Demolition and hauling equipment and other materials shall be of sizes that clear surfaces within historic spaces, areas, rooms, and openings, including temporary protection, by 12 inches (300 mm) or more.
  - G. Storage or sale of removed items or materials on-site is not permitted.
  - H. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.
- 1.9 COORDINATION
- A. Arrange selective demolition schedule so as not to interfere with Owner's operations.

## PART 2 - PRODUCTS

### 2.1 PERFORMANCE REQUIREMENTS

- A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
- B. Standards: Comply with ASSE A10.6 and NFPA 241.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Verify that utilities have been disconnected and capped before starting selective demolition operations.
- B. Review Project Record Documents of existing construction or other existing condition and hazardous material information provided by Owner. Owner does not guarantee that existing conditions are same as those indicated in Project Record Documents.
- C. Engage a professional engineer to perform an engineering survey of condition of building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures during selective building demolition operations.
  - 1. Perform surveys as the Work progresses to detect hazards resulting from selective demolition activities.
- D. Steel Tendons: Locate tensioned steel tendons and include recommendations for de-tensioning.
- E. Verify that hazardous materials have been remediated before proceeding with building demolition operations.
- F. Survey of Existing Conditions: Record existing conditions by use of preconstruction photographs or video.
  - 1. Comply with requirements specified in Section 013233 "Photographic Documentation."
  - 2. Inventory and record the condition of items to be removed and salvaged. Provide photographs or video of conditions that might be misconstrued as damage caused by salvage operations.
  - 3. Before selective demolition or removal of existing building elements that will be reproduced or duplicated in final Work, make permanent record of measurements, materials, and construction details required to make exact reproduction.

### 3.2 PREPARATION

- A. Refrigerant: Before starting demolition, remove refrigerant from mechanical equipment according to 40 CFR 82 and regulations of authorities having jurisdiction.

### 3.3 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

- A. Existing Services/Systems to Remain: Maintain services/systems indicated to remain and protect them against damage.
- B. Existing Services/Systems to Be Removed, Relocated, or Abandoned: Locate, identify, disconnect, and seal or cap off utility services and mechanical/electrical systems serving areas to be selectively demolished.
  - 1. Owner will arrange to shut off indicated services/systems when requested by Contractor.
  - 2. Arrange to shut off utilities with utility companies.

3. If services/systems are required to be removed, relocated, or abandoned, provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.
4. Disconnect, demolish, and remove plumbing, and HVAC systems, equipment, and components indicated on Drawings to be removed.
  - a. Piping to Be Removed: Remove portion of piping indicated to be removed and cap or plug remaining piping with same or compatible piping material.
  - b. Piping to Be Abandoned in Place: Drain piping and cap or plug piping with same or compatible piping material and leave in place.
  - c. Equipment to Be Removed: Disconnect and cap services and remove equipment.
  - d. Equipment to Be Removed and Reinstalled: Disconnect and cap services and remove, clean, and store equipment; when appropriate, reinstall, reconnect, and make equipment operational.
  - e. Equipment to Be Removed and Salvaged: Disconnect and cap services and remove equipment and deliver to Owner.
  - f. Ducts to Be Removed: Remove portion of ducts indicated to be removed and plug remaining ducts with same or compatible ductwork material.
  - g. Ducts to Be Abandoned in Place: Cap or plug ducts with same or compatible ductwork material and leave in place.

### 3.4 PROTECTION

- A. Temporary Protection: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
  1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.
  2. Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas.
  3. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.
  4. Comply with requirements for temporary enclosures, dust control, heating, and cooling specified in Section 015000 "Temporary Facilities and Controls."
- B. Temporary Shoring: Design, provide, and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.
  1. Strengthen or add new supports when required during progress of selective demolition.
- C. Remove temporary barricades and protections where hazards no longer exist.

### 3.5 SELECTIVE DEMOLITION, GENERAL

- A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:

WEBSTER AVENUE BRIDGE OVER THE NORTH BRANCH OF THE CHICAGO RIVER  
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1. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition operations above each floor or tier before disturbing supporting members on the next lower level.
  2. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping. Temporarily cover openings to remain.
  3. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
  4. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain portable fire-suppression devices during flame-cutting operations.
  5. Maintain fire watch during and for at least 2 hours after flame-cutting operations.
  6. Maintain adequate ventilation when using cutting torches.
  7. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
  8. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
  9. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
  10. Dispose of demolished items and materials promptly.
- B. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
- C. Work in Historic Areas: Selective demolition may be performed only in areas of Project that are not designated as historic. In historic spaces, areas, and rooms, or on historic surfaces, the terms "demolish" or "remove" shall mean historic "removal" or "dismantling" as specified in Section 024296 "Historic Removal and Dismantling."
- D. Removed and Salvaged Items:
1. Clean salvaged items.
  2. Pack or crate items after cleaning. Identify contents of containers.
  3. Store items in a secure area until delivery to Owner.
  4. Transport items to Owner's storage area [on-site] [off-site] [designated by Owner] [indicated on Drawings].
  5. Protect items from damage during transport and storage.
- E. Removed and Reinstalled Items:
1. Clean and repair items to functional condition adequate for intended reuse.
  2. Pack or crate items after cleaning and repairing. Identify contents of containers.
  3. Protect items from damage during transport and storage.
  4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.
- F. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Architect, items may be removed to a suitable, protected storage

location during selective demolition and reinstalled in their original locations after selective demolition operations are complete.

### 3.6 SELECTIVE DEMOLITION PROCEDURES FOR SPECIFIC MATERIALS

- A. Concrete: Demolish in small sections. Using power-driven saw, cut concrete to a depth of at least 3/4 inch (19 mm) at junctures with construction to remain. Dislodge concrete from reinforcement at perimeter of areas being demolished, cut reinforcement, and then remove remainder of concrete. Neatly trim openings to dimensions indicated.
- B. Concrete: Demolish in sections. Cut concrete full depth at junctures with construction to remain and at regular intervals using power-driven saw, and then remove concrete between saw cuts.
- C. Concrete Slabs-on-Grade: Saw-cut perimeter of area to be demolished, and then break up and remove.
- D. Roofing: Remove no more existing roofing than what can be covered in one day by new roofing and so that building interior remains watertight and weathertight. See Section <Insert Section number and title> for new roofing requirements.
  - 1. Remove existing roof membrane, flashings, copings, and roof accessories.
  - 2. Remove existing roofing system down to substrate.

### 3.7 DISPOSAL OF DEMOLISHED MATERIALS

- A. Remove demolition waste materials from Project site and dispose of them in an construction and demolition waste landfill acceptable to authorities having jurisdiction.
  - 1. Do not allow demolished materials to accumulate on-site.
  - 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
  - 3. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.
- B. Burning: Do not burn demolished materials.

### 3.8 CLEANING

- A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

### 3.9 SELECTIVE DEMOLITION SCHEDULE

- A. Remove:
  - 1. Existing Bridge Houses as indicated on the drawings. Including interior and exterior walls, roof, floors, windows, doors, etc.
- B. Remove and Salvage: <Insert description of items to remove and salvage>.
- C. Remove and Reinstall: <Insert description of items to remove and reinstall>.

WEBSTER AVENUE BRIDGE OVER THE NORTH BRANCH OF THE CHICAGO RIVER  
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D. Existing to Remain: <Insert description of items to remain>.

END OF SECTION 024119

## SECTION 034500 - PRECAST ARCHITECTURAL CONCRETE

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section Includes:

- 1. Architectural precast concrete cladding and load-bearing units.
- 2. Ornamental precast railing units.

- B. Related Requirements:

- 1. Section 051200 "Structural Steel Framing" for furnishing and installing connections attached to reinforced concrete structure and cold-formed metal framing.
- 2. Section 054000 "Cold-Formed Metal Framing" for furnishing and installing framing attached to Precast Architectural Concrete
- 3. Section 055000 "Metal Fabrications" for kickers and other miscellaneous steel shapes.
- 4. Section 085113 "Aluminum Windows" for windows set into architectural precast concrete units.
- 5. IDOT Standard Specifications Article 509.06 for drilling and setting anchor rods in concrete. Embedment shall be according to the manufacturer's specifications.
- 6. CDOT50300200 "High Performance Concrete Structures" for mix design testing, proportioning and mixing, transporting, placing, finishing, curing, and protection of cast-in-place high performance and cast-in-place high strength high performance concrete structures.

#### 1.3 DEFINITIONS

- A. Design Reference Sample: Sample of approved architectural precast concrete color, finish and texture, preapproved by Architect.

#### 1.4 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.

#### 1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Design Mixtures: For each precast concrete mixture. Include compressive strength and water-absorption tests.



C. Shop Drawings:

1. Detail fabrication and installation of architectural precast concrete units.
2. Indicate locations, plans, elevations, dimensions, shapes, and cross sections of each unit.
3. Indicate joints, reveals, drips, chamfers, and extent and location of each surface finish.
4. Indicate details at building corners.
5. Indicate type, size, and length of welded connections by AWS standard symbols. Detail loose and cast-in hardware and connections.
6. Indicate locations, tolerances, and details of anchorage devices to be embedded in or attached to structure or other construction.
7. Indicate locations, extent, and treatment of dry joints if two-stage casting is proposed.
8. Include plans and elevations showing unit location and sequence of erection for special conditions.
9. Indicate location of each architectural precast concrete unit by same identification mark placed on panel.
10. Indicate relationship of architectural precast concrete units to adjacent materials.
11. If design modifications are proposed to meet performance requirements and field conditions, submit design calculations and Shop Drawings. Do not adversely affect the appearance, durability, or strength of units when modifying details or materials and maintain the general design concept.

D. Samples: Design reference samples for initial verification of design intent, for each type of finish indicated on exposed surfaces of architectural precast concrete units, in sets of three, representative of finish, color, and texture variations expected; approximately 12 by 12 by 2 inches .

1. When other faces of precast concrete unit are exposed, include Samples illustrating workmanship, color, and texture of backup concrete as well as facing concrete.

E. Delegated-Design Submittal: For architectural precast concrete indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional structural engineer licensed in the State of Illinois responsible for their preparation.

1. Show governing panel types, connections, types of reinforcement, including special reinforcement, and concrete cover on reinforcement. Indicate location, type, magnitude, and direction of loads imposed on the building structural frame from architectural precast concrete.

1.6 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer and fabricator.

B. Welding certificates.

C. Material Certificates: For the following items:

1. Cementitious materials.
2. Reinforcing materials and prestressing tendons.
3. Admixtures.
4. Bearing pads.
5. Structural-steel shapes and hollow structural sections.

D. Material Test Reports: For aggregates.

- E. Field quality-control reports.

## 1.7 QUALITY ASSURANCE

- A. **Installer Qualifications:** A precast concrete erector qualified and designated by PCI's Certificate of Compliance to erect Category S2 (Complex Structural Systems) for load-bearing members.
- B. **Fabricator Qualifications:** A firm that assumes responsibility for engineering architectural precast concrete units to comply with performance requirements. This responsibility includes preparation of Shop Drawings and comprehensive engineering analysis by a qualified professional engineer.
  - 1. Designated as a PCI-certified plant for Group A, Category A1 - Architectural Cladding and Load Bearing Units at time of bidding or designated as an APA-certified plant for production of architectural precast concrete products.
- C. **Testing Agency Qualifications:** An independent testing agency,] qualified according to ASTM C1077 and ASTM E329 for testing indicated.
- D. **Quality-Control Standard:** For manufacturing procedures and testing requirements, quality-control recommendations, and dimensional tolerances for types of units required, comply with PCI MNL 117, "Manual for Quality Control for Plants and Production of Architectural Precast Concrete Products."
- E. **Welding Qualifications:** Qualify procedures and personnel according to AWS D1.1/D.1.1M, "Structural Welding Code - Steel"; and AWS D1.4/D1.4M, "Structural Welding Code - Reinforcing Steel."
- F. **Sample Panels:** After sample approval and before fabricating architectural precast concrete units, produce a minimum of two sample panels approximately 16 sq. ft. n area for review by Architect. Incorporate full-scale details of architectural features, finishes, textures, and transitions in sample panels.
  - 1. Locate panels where indicated or, if not indicated, as directed by Architect.
  - 2. Damage part of an exposed-face surface for each finish, color, and texture, and demonstrate adequacy of repair techniques proposed for repair of surface blemishes.
  - 3. After acceptance of repair technique, maintain one sample panel at manufacturer's plant and one at Project site in an undisturbed condition as a standard for judging the completed Work.
  - 4. Demolish and remove sample panels when directed.
- G. **Range Samples:** After sample panel approval and before fabricating architectural precast concrete units, produce a minimum of five sets of samples, approximately 2 sq. ft. in area, representing anticipated range of each color and texture on Project's units. Maintain one set of range samples at Project site and remaining range sample sets at manufacturer's plant as color and texture approval reference.

## 1.8 COORDINATION

- A. Furnish loose connection hardware and anchorage items to be embedded in or attached to other construction without delaying the Work. Provide locations, setting diagrams, templates, instructions, and directions, as required, for installation.

1.9 DELIVERY, STORAGE, AND HANDLING

- A. Deliver architectural precast concrete units in such quantities and at such times to limit unloading units temporarily on the ground or other rehandling.
- B. Support units during shipment on nonstaining shock-absorbing material.
- C. Store units with adequate dunnage and bracing and protect units to prevent contact with soil, to prevent staining, and to prevent cracking, distortion, warping or other physical damage.
- D. Place stored units so identification marks are clearly visible, and units can be inspected.
- E. Handle and transport units in a manner that avoids excessive stresses that cause cracking or damage.
- F. Lift and support units only at designated points indicated on Shop Drawings.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. MidCon Products, Inc.; Hortonville, Wisconsin
- B. International Concrete Products, Inc. , Germantown, Wisconsin
- C. Royal Stone, Williamston, Michigan

2.2 PERFORMANCE REQUIREMENTS

- A. Delegated Design: Engage a qualified professional engineer, as defined in Section 014000 "Quality Requirements," to design architectural precast concrete units.
- B. Design Standards: Comply with ACI 318 (ACI 318M) and design recommendations of PCI MNL 120, "PCI Design Handbook - Precast and Prestressed Concrete," applicable to types of architectural precast concrete units indicated.
- C. Calculated Fire-Test-Response Characteristics: Provide architectural precast concrete units with fire-resistance rating indicated as calculated according to ACI 216.1 (ACI 216.1M) or PCI MNL 124, "Design for Fire Resistance of Precast Prestressed Concrete," and acceptable to authorities having jurisdiction.
- D. Structural Performance: Provide architectural precast concrete units and connections capable of withstanding the following design loads within limits and under conditions indicated:
  - 1. Design Loads: As indicated on the drawings.
  - 2. Project-Specific Loads: Design live load for railings shall be taken as 50 pounds/ft, both transversely and vertically, acting simultaneously. Each longitudinal element will be designed for a concentrated load of 200 pounds, which shall act simultaneously with the above loads at any point and in any direction at the top of the longitudinal element. The posts shall be designed for a concentrated design live load applied transversely at the center of gravity of the upper longitudinal

element, the concentrated design live load for posts shall be 200 pounds + 50 pounds/ft x Post Spacing.

3. Design precast concrete units and connections to maintain clearances at openings, to allow for fabrication and construction tolerances, to accommodate live-load deflection, shrinkage and creep of primary building structure, and other building movements as follows:
  - a. Upward and downward movement of **[1/2 inch ]**
4. Thermal Movements: Provide for in-plane thermal movements resulting from annual ambient temperature changes of **80 deg F**
5. Fire-Resistance Rating: Select material and minimum thicknesses to provide **2hour** fire rating.

## 2.3 MOLD MATERIALS

- A. Molds: Rigid, dimensionally stable, non-absorptive material, warp and buckle free, that provides continuous and true precast concrete surfaces within fabrication tolerances indicated; nonreactive with concrete and suitable for producing required finishes.
  1. Mold-Release Agent: Commercially produced form-release agent that does not bond with, stain or adversely affect precast concrete surfaces and does not impair subsequent surface or joint treatments of precast concrete.
- B. Form Liners: Units of face design, texture, arrangement, and configuration indicated to match those used for precast concrete design reference sample. Use with manufacturer's recommended form-release agent that does not bond with, stain, or adversely affect precast concrete surfaces and does not impair subsequent surface or joint treatments of precast concrete.
- C. Surface Retarder: Chemical set retarder, capable of temporarily delaying final hardening of newly placed concrete mixture to depth of reveal specified.

## 2.4 REINFORCING MATERIALS

- A. Reinforcing Bars: ASTM A615/A615M, Grade 60 (Grade 420), deformed.
- B. Low-Alloy-Steel Reinforcing Bars: ASTM A706/A706M, deformed.
- C. Epoxy-Coated Reinforcing Bars: **[ASTM A615/A615M, Grade 60 (Grade 420)]** deformed bars, **[ASTM A775/A775M]** epoxy coated.
- D. Steel Bar Mats: ASTM A184/A184M, fabricated from **[ASTM A615/A615M, Grade 60 (Grade 420)]** deformed bars, assembled with clips.
- E. Plain-Steel Welded Wire Reinforcement: ASTM A185/A185M, fabricated from **galvanized**-steel wire into flat sheets.
- F. Deformed-Steel Welded Wire Reinforcement: ASTM A497/A497M, flat sheet.
- G. Epoxy-Coated-Steel Wire: ASTM A884/A884M, Class A coated, **[plain]**flat sheet, **[Type 1 bendable]** coating.

- H. Supports: Suspend reinforcement from back of mold or use bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded wire reinforcement in place according to PCI MNL 117.

## 2.5 CONCRETE MATERIALS

- A. Portland Cement: ASTM C150/C150M, Type I or Type III, gray, unless otherwise indicated.
  - 1. For surfaces exposed to view in finished structure, use gray or white cement, of same type, brand, and mill source.
- B. Supplementary Cementitious Materials:
  - 1. Fly Ash: ASTM C618, Class C or F, with maximum loss on ignition of 3 percent.
  - 2. Metakaolin: ASTM C618, Class N.
  - 3. Silica Fume: ASTM C1240, with optional chemical and physical requirement.
  - 4. Ground Granulated Blast-Furnace Slag: ASTM C989, Grade 100 or 120.
- C. Normal-Weight Aggregates: Except as modified by PCI MNL 117, ASTM C33/C33M, with coarse aggregates complying with Class 5S. Stockpile fine and coarse aggregates for each type of exposed finish from a single source (pit or quarry) for Project.
  - 1. Face-Mixture-Coarse Aggregates: Selected, hard, and durable; free of material that reacts with cement or causes staining; to match selected finish sample.
    - a. Gradation: To match design reference sample.
  - 2. Face-Mixture-Fine Aggregates: Selected, natural or manufactured sand compatible with coarse aggregate; to match approved finish sample.
- D. Coloring Admixture: ASTM C979/C979M, synthetic or natural mineral-oxide pigments or colored water-reducing admixtures, temperature stable, and nonfading.
- E. Water: Potable; free from deleterious material that may affect color stability, setting, or strength of concrete and complying with chemical limits of PCI MNL 117.
- F. Air-Entraining Admixture: ASTM C260, certified by manufacturer to be compatible with other required admixtures.
- G. Chemical Admixtures: Certified by manufacturer to be compatible with other admixtures and to not contain calcium chloride, or more than 0.15 percent chloride ions or other salts by weight of admixture.
  - 1. Water-Reducing Admixtures: ASTM C494/C494M, Type A.
  - 2. Retarding Admixture: ASTM C494/C494M, Type B.
  - 3. Water-Reducing and Retarding Admixture: ASTM C494/C494M, Type D.
  - 4. Water-Reducing and Accelerating Admixture: ASTM C494/C494M, Type E.
  - 5. High-Range, Water-Reducing Admixture: ASTM C494/C494M, Type F.
  - 6. High-Range, Water-Reducing and Retarding Admixture: ASTM C494/C494M, Type G.
  - 7. Plasticizing Admixture: ASTM C1017/C1017M, Type I.
  - 8. Plasticizing and Retarding Admixture: ASTM C1017/C1017M, Type II.
  - 9. Corrosion Inhibiting Admixture: ASTM C1582/C1582M.

## 2.6 STEEL CONNECTION MATERIALS

- A. Carbon-Steel Shapes and Plates: ASTM A36/A36M.
- B. Carbon-Steel-Headed Studs: ASTM A108, AISI 1018 through AISI 1020, cold finished, AWS D1.1/D1.1M, Type A or Type B, with arc shields and with minimum mechanical properties of PCI MNL 117, Table 3.2.3.
- C. Carbon-Steel Plate: ASTM A283/A283M, Grade C.
- D. Malleable Iron Castings: ASTM A47/A47M, Grade 32510 or Grade 35028.
- E. Carbon-Steel Castings: ASTM A27/A27M, Grade 60-30 (Grade 415-205).
- F. High-Strength, Low-Alloy Structural Steel: ASTM A572/A572M.
- G. Carbon-Steel Structural Tubing: ASTM A500/A500M, Grade B or Grade C.
- H. Wrought Carbon-Steel Bars: ASTM A675/A675M, Grade 65 (Grade 450).
- I. Deformed-Steel Wire or Bar Anchors: ASTM A496/A496M or ASTM A706/A706M.
- J. Carbon-Steel Bolts and Studs: ASTM A307, Grade A or ASTM F1554, Grade 36 (ASTM F568M, Property Class 4.6); carbon-steel, hex-head bolts and studs; carbon-steel nuts, ASTM A563 (ASTM A563M); and flat, unhardened steel washers, ASTM F844.
- K. High-Strength Bolts, Nuts, and Washers: ASTM F3125/F3125M, Grade A325 (Grade A325M), Type 1, heavy-hex steel structural bolts; ASTM A563, Grade DH, (ASTM A563M, Class 10S) heavy-hex carbon-steel nuts; and ASTM F436/F436M, Type 1, hardened carbon-steel washers.
- L. Zinc-Coated Finish: For exterior steel items, steel in exterior walls, and items indicated for galvanizing, apply zinc coating by hot-dip process according to ASTM A123/A123M or ASTM A153/A153M.
  - 1. For steel shapes, plates, and tubing to be galvanized, limit silicon content of steel to less than 0.03 percent or to between 0.15 and 0.25 percent or limit sum of silicon and 2.5 times phosphorous content to 0.09 percent.
  - 2. Galvanizing Repair Paint: High-zinc-dust-content paint with dry film containing not less than 94 percent zinc dust by weight, and complying with DOD-P-21035B or SSPC-Paint 20.
- M. Shop-Primed Finish: Prepare surfaces of nongalvanized steel items, except those surfaces to be embedded in concrete, according to requirements in SSPC-SP 3 and shop-apply lead- and chromate-free, rust-inhibitive primer, complying with performance requirements in MPI 79 according to SSPC-PA 1.
- N. Welding Electrodes: Comply with AWS standards.

## 2.7 STAINLESS STEEL CONNECTION MATERIALS

- A. Stainless Steel Plate: ASTM A240/A240M or ASTM A666, Type 304, Type 316, or Type 201.
- B. Stainless Steel Bolts and Studs: ASTM F593, Alloy Group 1 or 2 (ASTM F738M, Grade A1 or A4) hex-head bolts and studs; ASTM F594, Alloy Group 1 or 2 (ASTM F836M, Grade A1 or A4) stainless steel nuts; and flat, stainless steel washers.

1. Lubricate threaded parts of stainless steel bolts with an antiseize thread lubricant during assembly.
- C. Stainless Steel-Headed Studs: ASTM A276, Alloy 304 or Alloy 316, with minimum mechanical properties of PCI MNL 117, Table 3.2.3.

## 2.8 BEARING PADS

- A. Provide one of the following bearing pads for architectural precast concrete units as recommended by precast fabricator for application:
1. Elastomeric Pads: AASHTO M 251, plain, vulcanized, 100 percent polychloroprene (neoprene) elastomer, molded to size or cut from a molded sheet, Type A durometer hardness of 50 to 70, ASTM D2240, minimum tensile strength 2250 psi, ASTM D412.
  2. Random-Oriented-Fiber-Reinforced Elastomeric Pads: Preformed, randomly oriented synthetic fibers set in elastomer. Type A durometer hardness of 70 to 90, ASTM D2240; capable of supporting a compressive stress of 3000 psi with no cracking, splitting, or delaminating in the internal portions of pad. Test one specimen for every 200 pads used in Project.
  3. Cotton-Duck-Fabric-Reinforced Elastomeric Pads: Preformed, horizontally layered cotton-duck fabric bonded to an elastomer; Type A durometer hardness of 80 to 100, ASTM D2240; complying with AASHTO's "AASHTO LRFD Bridge Design Specifications," Division II, Section 18.10.2; or with MIL-C-882E.
  4. Frictionless Pads: PTFE, glass-fiber reinforced, bonded to stainless or mild-steel plate, or random-oriented-fiber-reinforced elastomeric pads; of type required for in-service stress.
  5. High-Density Plastic: Multimonomer, nonleaching, plastic strip.

## 2.9 ACCESSORIES

- A. Reglets: Specified in Section 076200 "Sheet Metal Flashing and Trim."
- B. Reglets: PVC extrusions felt or fiber filled, or with face opening of slots covered.
- C. Precast Accessories: Provide clips, hangers, high-density plastic or steel shims, and other accessories required to install architectural precast concrete units.

## 2.10 GROUT MATERIALS

- A. Sand-Cement Grout: Portland cement, ASTM C150/C150M, Type I, and clean, natural sand, ASTM C144 or ASTM C404. Mix at ratio of 1 part cement to 2-1/2 to 3 parts sand, by volume, with minimum water required for placement and hydration. Water-soluble chloride ion content less than 0.06 percent by weight of cement when tested according to ASTM C1218/C1218M.
- B. Nonmetallic, Nonshrink Grout: Packaged, nonmetallic, noncorrosive, nonstaining grout containing selected silica sands, portland cement, shrinkage-compensating agents, plasticizing and water-reducing agents, complying with ASTM C1107/C1107M, Grade A for drypack and Grades B and C for flowable grout and of consistency suitable for application within a 30-minute working time. Water-soluble chloride ion content less than 0.06 percent by weight of cement when tested according to ASTM C1218/C1218M.
- C. Epoxy-Resin Grout: Two-component, mineral-filled epoxy resin; ASTM C881/C881M, of type, grade, and class to suit requirements.

## 2.11 CONCRETE MIXTURES

- A. Prepare design mixtures for each type of precast concrete required.
  - 1. Use a single design mixture for units with more than one major face or edge exposed.
  - 2. Where only one face of unit is exposed use either a single design mixture or separate mixtures for face and backup.
- B. Limit use of fly ash and ground granulated blast-furnace slag to 20 percent of portland cement by weight; limit metakaolin and silica fume to 10 percent of portland cement by weight.
- C. Design mixtures may be prepared by a qualified independent testing agency or by qualified precast plant personnel at architectural precast concrete fabricator's option.
- D. Limit water-soluble chloride ions to maximum percentage by weight of cement permitted by ACI 318 (ACI 318M) or PCI MNL 117 when tested according to ASTM C1218/C1218M.
- E. Normal-Weight Concrete Mixtures: Proportion face and backup mixtures or full-depth mixtures, at fabricator's option by either laboratory trial batch or field test data methods according to ACI 211.1, with materials to be used on Project, to provide normal-weight concrete with the following properties:
  - 1. Compressive Strength (28 Days): 5000 psi (34.5 MPa) minimum.
  - 2. Maximum Water-Cementitious Materials Ratio: 0.45.
- F. Water Absorption: 6 percent by weight or 14 percent by volume, tested according to ASTM C642, except for boiling requirement.
- G. Lightweight Concrete Backup Mixtures: Proportion mixtures by either laboratory trial batch or field test data methods according to ACI 211.2, with materials to be used on Project, to provide lightweight concrete with the following properties:
  - 1. Compressive Strength (28 Days): 5000 psi .
  - 2. Unit Weight: Calculated equilibrium unit weight of 115 lb/cu. ft. , plus or minus 3 lb/cu. ft. , according to ASTM C567.
- H. Add air-entraining admixture at manufacturer's prescribed rate to result in concrete at point of placement having an air content complying with PCI MNL 117.
- I. When included in design mixtures, add other admixtures to concrete mixtures according to manufacturer's written instructions.

## 2.12 MOLD FABRICATION

- A. Molds: Accurately construct molds, mortar tight, of sufficient strength to withstand pressures due to concrete-placement operations and temperature changes and for prestressing and detensioning operations. Coat contact surfaces of molds with release agent before reinforcement is placed. Avoid contamination of reinforcement and prestressing tendons by release agent.
  - 1. Place form liners accurately to provide finished surface texture indicated. Provide solid backing and supports to maintain stability of liners during concrete placement. Coat form liner with form-release agent.



- B. Maintain molds to provide completed architectural precast concrete units of shapes, lines, and dimensions indicated, within fabrication tolerances specified.
  - 1. Form joints are not permitted on faces exposed to view in the finished work.
  - 2. Edge and Corner Treatment: Uniformly chamfered or as indicated in the drawings.

## 2.13 FABRICATION

- A. Cast-in Anchors, Inserts, Plates, Angles, and Other Anchorage Hardware: Fabricate anchorage hardware with sufficient anchorage and embedment to comply with design requirements. Accurately position for attachment of loose hardware, and secure in place during precasting operations. Locate anchorage hardware where it does not affect position of main reinforcement or concrete placement.
  - 1. Weld-headed studs and deformed bar anchors used for anchorage according to AWS D1.1/D1.1M and AWS C5.4, "Recommended Practices for Stud Welding."
- B. Furnish loose hardware items including steel plates, clip angles, seat angles, anchors, dowels, cramps, hangers, and other hardware shapes for securing architectural precast concrete units to supporting and adjacent construction.
- C. Cast-in reglets, slots, holes, and other accessories in architectural precast concrete units as indicated on the Contract Drawings.
- D. Cast-in openings larger than 10 inches in any dimension. Do not drill or cut openings or prestressing strand without Architect's approval.
- E. Reinforcement: Comply with recommendations in PCI MNL 117 for fabricating, placing, and supporting reinforcement.
  - 1. Clean reinforcement of loose rust and mill scale, earth, and other materials that reduce or destroy the bond with concrete. When damage to epoxy-coated reinforcing exceeds limits specified in ASTM A775/A775M, repair with patching material compatible with coating material and epoxy coat bar ends after cutting.
  - 2. Accurately position, support, and secure reinforcement against displacement during concrete-placement and consolidation operations. Completely conceal support devices to prevent exposure on finished surfaces.
  - 3. Place reinforcing steel and prestressing strands to maintain at least 3/4-inch (19-mm) minimum concrete cover. Increase cover requirements for reinforcing steel to 1-1/2 inches (38 mm) when units are exposed to corrosive environment or severe exposure conditions. Arrange, space, and securely tie bars and bar supports to hold reinforcement in position while placing concrete. Direct wire tie ends away from finished, exposed concrete surfaces.
  - 4. Install welded wire reinforcement in lengths as long as practicable. Lap adjoining pieces at least one full mesh spacing and wire tie laps, where required by design. Offset laps of adjoining widths to prevent continuous laps in either direction.
- F. Reinforce architectural precast concrete units to resist handling, transportation, and erection stresses and specified in-place loads.
- G. Prestress tendons for architectural precast concrete units by either pretensioning or post-tensioning methods. Comply with PCI MNL 117.

1. Delay detensioning or post-tensioning of precast, prestressed architectural concrete units until concrete has reached its indicated minimum design release compressive strength as established by test cylinders cured under same conditions as concrete unit.
  2. Detension pretensioned tendons either by gradually releasing tensioning jacks or by heat-cutting tendons, using a sequence and pattern to prevent shock or unbalanced loading.
  3. If concrete has been heat cured, detension while concrete is still warm and moist to avoid dimensional changes that may cause cracking or undesirable stresses.
  4. Protect strand ends and anchorages with bituminous, zinc-rich, or epoxy paint to avoid corrosion and possible rust spots.
- H. Comply with requirements in PCI MNL 117 and requirements in this Section for measuring, mixing, transporting, and placing concrete. After concrete batching, no additional water may be added.
- I. Place face mixture to a minimum thickness after consolidation of the greater of 1 inch (25 mm) or 1.5 times the maximum aggregate size, but not less than the minimum reinforcing cover specified.
- J. Place concrete in a continuous operation to prevent cold joints or planes of weakness from forming in precast concrete units.
1. Place backup concrete mixture to ensure bond with face-mixture concrete.
- K. Thoroughly consolidate placed concrete by internal and external vibration without dislocating or damaging reinforcement and built-in items, and minimize pour lines, honeycombing, or entrapped air voids on surfaces. Use equipment and procedures complying with PCI MNL 117.
1. Place self-consolidating concrete without vibration according to PCI TR-6, "Interim Guidelines for the Use of Self-Consolidating Concrete in Precast/Prestressed Concrete Institute Member Plants." Ensure adequate bond between face and backup concrete, if used.
- L. Comply with PCI MNL 117 for hot- and cold-weather concrete placement.
- M. Identify pickup points of architectural precast concrete units and orientation in structure with permanent markings, complying with markings indicated on Shop Drawings. Imprint or permanently mark casting date on each architectural precast concrete unit on a surface that does not show in finished structure.
- N. Cure concrete, according to requirements in PCI MNL 117, by moisture retention without heat or by accelerated heat curing using low-pressure live steam or radiant heat and moisture. Cure units until compressive strength is high enough to ensure that stripping does not have an effect on performance or appearance of final product.
- O. Discard and replace architectural precast concrete units that do not comply with requirements, including structural, manufacturing tolerance, and appearance, unless repairs meet requirements in PCI MNL 117 and Architect's approval.
- 2.14 FABRICATION TOLERANCES
- A. Fabricate architectural precast concrete units to shapes, lines, and dimensions indicated so each finished unit complies with the following product tolerances:
1. Overall Height and Width of Units, Measured at the Face Exposed to View: As follows:

WEBSTER AVENUE BRIDGE OVER THE NORTH BRANCH OF THE CHICAGO RIVER  
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- a. 10 feet or under, plus or minus 1/8 inch .
  - b. 10 to 20 feet , plus 1/8 inch , minus 3/16 inch .
  - c. 20 to 40 feet , plus or minus 1/4 inch .
  - d. Each additional 10 feet , plus or minus 1/16 inch .
2. Overall Height and Width of Units, Measured at the Face Not Exposed to View: As follows:
- a. 10 feet or under, plus or minus 1/4 inch
  - b. 10 to 20 feet , plus 1/4 inch , minus 3/8 inch .
  - c. 20 to 40 feet , plus or minus 3/8 inch .
  - d. Each additional 10 feet , plus or minus 1/8 inch .
3. Total Thickness or Flange Thickness: Plus 1/4 inch , minus 1/8 inch .
  4. Rib Thickness: Plus or minus 1/8 inch .
  5. Rib to Edge of Flange: Plus or minus 1/8 inch .
  6. Distance between Ribs: Plus or minus 1/8 inch .
  7. Variation from Square or Designated Skew (Difference in Length of the Two Diagonal Measurements): Plus or minus 1/8 inch/72 inches or 1/2 inch total, whichever is greater.
  8. Length and Width of Block-outs and Openings within One Unit: Plus or minus 1/4 inch .
  9. Dimensions of Haunches: Plus or minus 1/4 inch .
  10. Haunch Bearing Surface Deviation from Specified Plane: Plus or minus 1/8 inch .
  11. Difference in Relative Position of Adjacent Haunch Bearing Surfaces from Specified Relative Position: Plus or minus 1/4 inch .
  12. Bowing: Plus or minus L/360, maximum 1 inch .
  13. Local Smoothness: 1/4 inch/10 feet .
  14. Warping: 1/16 inch/12 inches of distance from nearest adjacent corner.
  15. Tipping and Flushness of Plates: Plus or minus 1/4 inch .
  16. Dimensions of Architectural Features and Rustications: Plus or minus 1/8 inch .
- B. Position Tolerances: For cast-in items measured from datum line location, as indicated on Shop Drawings.
1. Weld Plates: Plus or minus 1 inch .
  2. Inserts: Plus or minus 1/2 inch .
  3. Handling Devices: Plus or minus 3 inches .
  4. Reinforcing Steel and Welded Wire Reinforcement: Plus or minus 1/4 inch where position has structural implications or affects concrete cover; otherwise, plus or minus 1/2 inch .
  5. Reinforcing Steel Extending out of Member: Plus or minus 1/2 inch of plan dimensions.
  6. Tendons: Plus or minus 1/4 inch , vertical; plus or minus 1 inch , horizontal.
  7. Location of Rustication Joints: Plus or minus 1/8 inch .
  8. Location of Opening within Panel: Plus or minus 1/4 inch .
  9. Location of Flashing Reglets: Plus or minus 1/4 inch .
  10. Location of Flashing Reglets at Edge of Panel: Plus or minus 1/8 inch .
  11. Reglets for Glazing Gaskets: Plus or minus 1/8 inch .
  12. Location of Bearing Surface from End of Member: Plus or minus 1/4 inch .
  13. Allowable Rotation of Plate, Channel Inserts, and Electrical Boxes: 2-degree rotation or 1/4 inch maximum over the full dimension of unit.
  14. Position of Sleeve: Plus or minus 1/2 inch .

## 2.15 FINISHES

- A. Exposed faces shall be free of joint marks, grain, and other obvious defects. Corners, including false joints shall be uniform, straight, and sharp. Finish exposed-face surfaces of architectural precast concrete units to match approved sample panels and as follows:
  - 1. Textured-Surface Finish: Impart by form liners or inserts.
  - 2. Bushhammer Finish: Use power or hand tools to remove matrix and fracture coarse aggregates.
  - 3. Exposed-Aggregate Finish: Use chemical retarding agents applied to concrete forms and washing and brushing procedures to expose aggregate and surrounding matrix surfaces after form removal.
  - 4. Abrasive-Blast Finish: Use abrasive grit, equipment, application techniques, and cleaning procedures to expose aggregate and surrounding matrix surfaces.
  - 5. Acid-Etched Finish: Use acid and hot-water solution, equipment, application techniques, and cleaning procedures to expose aggregate and surrounding matrix surfaces. Protect hardware, connections, and insulation from acid attack.
  - 6. Honed Finish: Use continuous mechanical abrasion with fine grit, followed by filling and rubbing procedures.
  - 7. Polished Finish: Use continuous mechanical abrasion with fine grit, followed by filling and rubbing procedures.
  - 8. Sand-Embedment Finish: Use selected stones placed in a sand bed in bottom of mold, with sand removed after curing.
- B. Finish exposed top and back surfaces of architectural precast concrete units with smooth, steel-trowel finish.
- C. Finish unexposed surfaces of architectural precast concrete units with as cast finish.

## 2.16 SOURCE QUALITY CONTROL

- A. Quality-Control Testing: Test and inspect precast concrete according to PCI MNL 117 requirements. If using self-consolidating concrete, also test and inspect according to PCI TR-6, ASTM C1610/C1610M, ASTM C1611/C1611M, ASTM C1621/C1621M, and ASTM C1712.
- B. Strength of precast concrete units is considered deficient if units fail to comply with ACI 318 (ACI 318M) requirements for concrete strength.
- C. Testing: If there is evidence that strength of precast concrete units may be deficient or may not comply with ACI 318 (ACI 318M) requirements, precaster will employ an independent testing agency to obtain, prepare, and test cores drilled from hardened concrete to determine compressive strength according to ASTM C42/C42M and ACI 318 (ACI 318M).
  - 1. A minimum of three representative cores shall be taken from units of suspect strength, from locations directed by Architect.
  - 2. Test cores in an air-dry condition.
  - 3. Strength of concrete for each series of three cores is considered satisfactory if average compressive strength is equal to at least 85 percent of 28-day design compressive strength and no single core is less than 75 percent of 28-day design compressive strength.
  - 4. Report test results in writing on same day that tests are performed, with copies to Architect, Contractor, and precast concrete fabricator. Test reports include the following:
    - a. Project identification name and number.

- b. Date when tests were performed.
  - c. Name of precast concrete fabricator.
  - d. Name of concrete testing agency.
  - e. Identification letter, name, and type of precast concrete unit(s) represented by core tests; design compressive strength; type of break; compressive strength at breaks, corrected for length-diameter ratio; and direction of applied load to core in relation to horizontal plane of concrete as placed.
- D. Patching: If core test results are satisfactory and precast concrete units comply with requirements, clean and dampen core holes and solidly fill with precast concrete mixture that has no coarse aggregate, and finish to match adjacent precast concrete surfaces.
- E. Defective Units: Discard and replace recast architectural concrete units that do not comply with acceptability requirements in PCI MNL 117, including concrete strength, manufacturing tolerances, and color and texture range. Chipped, spalled, or cracked units may be repaired, subject to Architect's approval. Architect reserves the right to reject precast units that do not match approved samples, sample panels, and mockups. Replace unacceptable units with precast concrete units that comply with requirements.

### PART 3 - EXECUTION

#### 3.1 EXAMINATION

- A. Examine supporting structural frame or foundation and conditions for compliance with requirements for installation tolerances, bearing surface tolerances, and other conditions affecting performance of the Work.
- B. Do not install precast concrete units until supporting cast-in-place concrete has attained minimum allowable design compressive strength and supporting steel or other structure is structurally ready to receive loads from precast concrete units.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

#### 3.2 INSTALLATION

- A. Install clips, hangers, bearing pads, and other accessories required for connecting architectural precast concrete units to supporting members and backup materials.
- B. Erect architectural precast concrete level, plumb, and square within specified allowable tolerances. Provide temporary supports and bracing as required to maintain position, stability, and alignment of units until permanent connections are completed.
  - 1. Install temporary steel or plastic spacing shims as precast concrete units are being erected. Tack weld steel shims to each other to prevent shims from separating.
  - 2. Maintain horizontal and vertical joint alignment and uniform joint width as erection progresses.
  - 3. Remove projecting lifting devices and grout fill voids within recessed lifting devices flush with surface of adjacent precast surfaces when recess is exposed.
  - 4. Unless otherwise indicated, maintain uniform joint widths of 3/4 inch .

- C. Connect architectural precast concrete units in position by bolting, welding, grouting, or as otherwise indicated on Shop Drawings. Remove temporary shims, wedges, and spacers as soon as practical after connecting and grouting are completed.
  - 1. Do not permit connections to disrupt continuity of roof flashing.
- D. Welding: Comply with applicable requirements in AWS D1.1/D1.1M and AWS D1.4/D1.4M for welding, welding electrodes, appearance, quality of welds, and methods used in correcting welding work.
  - 1. Protect architectural precast concrete units and bearing pads from damage by field welding or cutting operations, and provide noncombustible shields as required.
  - 2. Welds not specified shall be continuous fillet welds, using no less than the minimum fillet as specified by AWS.
  - 3. Clean weld-affected metal surfaces with chipping hammer followed by brushing, and apply a minimum 4.0-mil- thick coat of galvanized repair paint to galvanized surfaces according to ASTM A780/A780M.
  - 4. Visually inspect welds and remove, reweld, or repair incomplete and defective welds.
- E. At bolted connections, use lock washers, tack welding, or other approved means to prevent loosening of nuts after final adjustment.
  - 1. Where slotted connections are used, verify bolt position and tightness. For sliding connections, properly secure bolt but allow bolt to move within connection slot.
  - 2. For slip-critical connections, use one of the following methods to assure proper bolt pretension:
    - a. Turn-of-Nut: According to RCSC's "Specification for Structural Joints Using ASTM A325 or A 490 Bolts."
    - b. Calibrated Wrench: According to RCSC's "Specification for Structural Joints Using ASTM A325 or A 490 Bolts."
    - c. Twist-off Tension Control Bolt: ASTM F3125/F3125M, Grade 1852.
    - d. Direct-Tension Control Bolt: ASTM F3125/F3125M, Grade 1852.
  - 3. For slip-critical connections, use method and inspection procedure approved by Architect and coordinated with inspection agency.
- F. Grouting or Dry-Packing Connections and Joints: Grout connections where required or indicated. Retain flowable grout in place until hard enough to support itself. Alternatively, pack spaces with stiff dry-pack grout material, tamping until voids are completely filled. Place grout and finish smooth, level, and plumb with adjacent concrete surfaces. Promptly remove grout material from exposed surfaces before it affects finishes or hardens. Keep grouted joints damp for not less than 24 hours after initial set.

### 3.3 ERECTION TOLERANCES

- A. Erect architectural precast concrete units level, plumb, square, and in alignment, without exceeding the following noncumulative erection tolerances:
  - 1. Plan Location from Building Grid Datum: Plus or minus 1/2 inch .
  - 2. Plan Location from Centerline of Steel: Plus or minus 1/2 inch .
  - 3. Top Elevation from Nominal Top Elevation: As follows:

- a. Exposed Individual Panel: Plus or minus 1/4 inch .
  - b. Non-Exposed Individual Panel: Plus or minus 1/2 inch .
  - c. Exposed Panel Relative to Adjacent Panel: 1/4 inch .
  - d. Non-Exposed Panel Relative to Adjacent Panel: 1/2 inch .
4. Support Elevation from Nominal Support Elevation: As follows:
- a. Maximum Low: 1/2 inch .
  - b. Maximum High: 1/4 inch .
5. Maximum Plumb Variation over the Lesser of Height of Structure or 100 Feet : 1 inch .
6. Plumb in Any 10 Feet of Element Height: 1/4 inch .
7. Maximum Jog in Alignment of Matching Edges: 1/4 inch .
8. Joint Width (Governs over Joint Taper): Plus or minus 1/4 inch .
9. Maximum Joint Taper: 3/8 inch .
10. Joint Taper in 10 Feet : 1/4 inch .
11. Maximum Jog in Alignment of Matching Faces: 1/4 inch .
12. Differential Bowing or Camber, as Erected, between Adjacent Members of Same Design: 1/4 inch .
13. Opening Height between Spandrels: Plus or minus 1/4 inch .

### 3.4 FIELD QUALITY CONTROL

- A. Special Inspections: Engage a qualified special inspector to perform the following special inspections and prepare reports:
1. Erection of loadbearing precast concrete members.
- B. Testing Agency: Engage a qualified testing agency to perform tests and inspections and prepare test reports.
- C. Visually inspect field welds and test according to ASTM E165 or to ASTM E709 and ASTM E1444. High-strength bolted connections are subject to inspections.
- D. Testing agency will report test results promptly and in writing to Contractor and Architect.
- E. Repair or remove and replace work where tests and inspections indicate that it does not comply with specified requirements.
- F. Additional testing and inspecting, at Contractor's expense, shall be performed to determine compliance of replaced or additional work with specified requirements.

### 3.5 REPAIRS

- A. Repair architectural precast concrete units if permitted by Architect. Architect reserves the right to reject repaired units that do not comply with requirements.
- B. Mix patching materials and repair units so cured patches blend with color, texture, and uniformity of adjacent exposed surfaces and show no apparent line of demarcation between original and repaired work, when viewed in typical daylight illumination from a distance of 20 feet .

- C. Prepare and repair damaged galvanized coatings with galvanizing repair paint according to ASTM A780/A780M.
- D. Wire brush, clean, and paint damaged prime-painted components with same type of shop primer.
- E. Remove and replace damaged architectural precast concrete units when repairs do not comply with requirements.

### 3.6 CLEANING

- A. Clean surfaces of precast concrete units exposed to view.
- B. Clean mortar, plaster, fireproofing, weld slag, and other deleterious material from concrete surfaces and adjacent materials immediately.
- C. Clean exposed surfaces of precast concrete units after erection and completion of joint treatment to remove weld marks, other markings, dirt, and stains.
  - 1. Perform cleaning procedures, if necessary, according to precast concrete fabricator's recommendations. Protect other work from staining or damage due to cleaning operations.
  - 2. Do not use cleaning materials or processes that could change the appearance of exposed concrete finishes or damage adjacent materials.

END OF SECTION 034500



## SECTION 054000 - COLD-FORMED METAL FRAMING

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section Includes:
  - 1. Roof rafter framing.
  - 2. Ceiling joist framing.
- B. Related Requirements:
  - 1. Section 055000 "Metal Fabrications" for miscellaneous steel shapes, masonry shelf angles, and connections used with cold-formed metal framing.

#### 1.3 ACTION SUBMITTALS

- A. Product Data: For the following:
  - 1. Cold-formed steel framing materials.
  - 2. Roof-rafter framing.
  - 3. Ceiling joist framing.
  - 4. Post-installed anchors.
  - 5. Power-actuated anchors.
- B. Shop Drawings:
  - 1. Include layout, spacings, sizes, thicknesses, and types of cold-formed steel framing; fabrication; and fastening and anchorage details, including mechanical fasteners.
  - 2. Indicate reinforcing channels, opening framing, supplemental framing, strapping, bracing, bridging, splices, accessories, connection details, and attachment to adjoining work.
- C. Delegated-Design Submittal: For cold-formed steel framing.

#### 1.4 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For testing agency.
- B. Welding certificates.
- C. Product Certificates: For each type of code-compliance certification for studs and tracks.

- D. Product Test Reports: For each listed product, for tests performed by manufacturer and witnessed by a qualified testing agency.
  - 1. Steel sheet.
  - 2. Expansion anchors.
  - 3. Power-actuated anchors.
  - 4. Mechanical fasteners.
  - 5. Miscellaneous structural clips and accessories.
  
- E. Research Reports:
  - 1. For nonstandard cold-formed steel framing power-actuated fasteners, from ICC-ES or other qualified testing agency acceptable to authorities having jurisdiction.

#### 1.5 QUALITY ASSURANCE

- A. Testing Agency Qualifications: Qualified according to ASTM E329 for testing indicated.
  
- B. Product Tests: Mill certificates or data from a qualified independent testing agency indicating steel sheet complies with requirements, including base-metal thickness, yield strength, tensile strength, total elongation, chemical requirements, and metallic-coating thickness.
  
- C. Code-Compliance Certification of Studs and Tracks: Provide documentation that framing members are certified according to the product-certification program of the Certified Steel Stud Association the Steel Framing Industry Association or the Steel Stud Manufacturers Association.
  
- D. Welding Qualifications: Qualify procedures and personnel according to the following:
  - 1. AWS D1.1/D1.1M, "Structural Welding Code - Steel."
  - 2. AWS D1.3/D1.3M, "Structural Welding Code - Sheet Steel."
  
- E. Comply with AISI S230 "Standard for Cold-Formed Steel Framing - Prescriptive Method for One and Two Family Dwellings."

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. ClarkDietrich.
  2. MarinoWARE.
  3. Nuconsteel, A Nucor Company.
  4. SCAFCO Steel Stud Company.

### 2.2 PERFORMANCE REQUIREMENTS

- A. Delegated Design: Engage a qualified professional engineer, as defined in Section 014000 "Quality Requirements," to design cold-formed steel framing.
- B. Structural Performance: Provide cold-formed steel framing capable of withstanding design loads within limits and under conditions indicated.
1. Design Loads: **Live Load Roof of 20psf, Snow Load of 21psf, Dead Load self-weight of materials, and Wind Load of 20psf (service), 67.3psf (strength without live load), and 26.1psf (strength in load combinations with live load).**
  2. Deflection Limits: Design framing systems to withstand **design loads** without deflections greater than the following:
    - a. Roof Rafter Framing: Vertical deflection of **1/360** of the horizontally projected span for live loads.
    - b. Ceiling Joist Framing: Vertical deflection of **1/360** of the span for live loads and 1/240 for total loads of the span.
  3. Design framing systems to provide for movement of framing members located outside the insulated building envelope without damage or overstressing, sheathing failure, connection failure, undue strain on fasteners and anchors, or other detrimental effects when subject to a maximum ambient temperature change of 120 deg F (67 deg C).
  4. Design framing system to maintain clearances at openings, to allow for construction tolerances, and to accommodate live load deflection of primary building structure as follows:
    - a. Upward and downward movement of **1/2 inch (13 mm).**
- C. Cold-Formed Steel Framing Standards: Unless more stringent requirements are indicated, framing shall comply with AISI S100, AISI S200, and the following:
1. Floor and Roof Systems: AISI S210.
  2. Headers: AISI S212.
  3. Lateral Design: AISI S213.
- D. Fire-Resistance Ratings: Comply with ASTM E119; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

1. Indicate design designations from UL's "Fire Resistance Directory" or from the listings of another qualified testing agency acceptable to authorities having jurisdiction.

## 2.3 COLD-FORMED STEEL FRAMING MATERIALS

- A. Steel Sheet: ASTM A1003/A1003M, Structural Grade, Type H, metallic coated, of grade and coating designation as follows:
  1. Grade: **ST50H (ST340H)**.
  2. Coating: G90 (Z275) or equivalent.
- B. Steel Sheet for **Vertical Deflection** Clips: ASTM A653/A653M, structural steel, zinc coated, of grade and coating as follows:
  1. Grade: **50 (340), Class 1**.
  2. Coating: G90 (Z275).

## 2.4 ROOF-RAFTER FRAMING

- A. Steel Rafters: Manufacturer's standard C-shaped steel sections, of web depths indicated, with stiffened flanges, and as follows:
  1. Minimum Base-Metal Thickness: **0.0538 inch (1.37 mm)**.
  2. Flange Width: **1-5/8 inches (41 mm)**, minimum.

## 2.5 CEILING JOIST FRAMING

- A. Steel Ceiling Joists: Manufacturer's standard C-shaped steel sections, of web depths indicated, **unpunched, punched with standard holes, or punched with enlarged service holes**, with stiffened flanges, and as follows:
  1. Minimum Base-Metal Thickness: **0.0451 inch (1.37 mm)**.
  2. Flange Width: **1-5/8 inches (41 mm)**, minimum.

## 2.6 FRAMING ACCESSORIES

- A. Fabricate steel-framing accessories from ASTM A1003/A1003M, Structural Grade, Type H, metallic coated steel sheet, of same grade and coating designation used for framing members.
- B. Provide accessories of manufacturer's standard thickness and configuration, unless otherwise indicated, as follows:
  1. Supplementary framing.
  2. Bracing, bridging, and solid blocking.
  3. Web stiffeners.
  4. Anchor clips.
  5. End clips.
  6. Gusset plates.

7. Stud kickers and knee braces.
8. Joist hangers and end closures.
9. Hole-reinforcing plates.
10. Backer plates.

## 2.7 ANCHORS, CLIPS, AND FASTENERS

- A. Steel Shapes and Clips: ASTM A36/A36M, zinc coated by hot-dip process according to ASTM A123/A123M.
- B. Anchor Bolts: ASTM F1554, **Grade 36**, threaded carbon-steel **hex-headed bolts**, carbon-steel nuts, and flat, hardened-steel washers; zinc coated by **hot-dip process according to ASTM A153/A153M, Class C**.
- C. Post-Installed Anchors: Fastener systems with bolts of same basic metal as fastened metal, if visible, unless otherwise indicated; with working capacity greater than or equal to the design load, according to an evaluation report acceptable to authorities having jurisdiction, based on **ICC-ES AC01** as appropriate for the substrate.
  1. Uses: Securing cold-formed steel framing to structure.
  2. Type: **Torque-controlled expansion anchor**.
  3. Material for Interior Locations: Carbon-steel components zinc plated to comply with ASTM B633 or ASTM F1941 (ASTM F1941M), Class Fe/Zn 5, unless otherwise indicated.
  4. Material for Exterior or Interior Locations and Where Stainless Steel Is Indicated: Alloy **Group 1 (A1)** stainless-steel bolts, ASTM F593 (ASTM F738M), and nuts, ASTM F594 (ASTM F836M).
- D. Power-Actuated Anchors: Fastener systems with working capacity greater than or equal to the design load, according to an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC70.
- E. Mechanical Fasteners: ASTM C1513, corrosion-resistant-coated, self-drilling, self-tapping, steel drill screws.
  1. Head Type: Low-profile head beneath sheathing; manufacturer's standard elsewhere.
- F. Welding Electrodes: Comply with AWS standards.

## 2.8 MISCELLANEOUS MATERIALS

- A. Galvanizing Repair Paint: MIL-P-21035B or SSPC-Paint 20.
- B. Cement Grout: Portland cement, ASTM C150/C150M, Type I; and clean, natural sand, ASTM C404. Mix at ratio of 1 part cement to 2-1/2 parts sand, by volume, with minimum water required for placement and hydration.
- C. Nonmetallic, Nonshrink Grout: Factory-packaged, nonmetallic, noncorrosive, nonstaining grout, complying with ASTM C1107/C1107M, and with a fluid consistency and 30-minute working time.
- D. Shims: Load-bearing, high-density, multimonomer, nonleaching plastic; or cold-formed steel of same grade and metallic coating as framing members supported by shims.

## 2.9 FABRICATION

- A. Fabricate cold-formed steel framing and accessories plumb, square, and true to line, and with connections securely fastened, according to referenced AISI's specifications and standards, manufacturer's written instructions, and requirements in this Section.
  - 1. Fabricate framing assemblies using jigs or templates.
  - 2. Cut framing members by sawing or shearing; do not torch cut.
  - 3. Fasten cold-formed steel framing members by welding, screw fastening, clinch fastening, pneumatic pin fastening, or riveting as standard with fabricator. Wire tying of framing members is not permitted.
    - a. Comply with AWS D1.3/D1.3M requirements and procedures for welding, appearance and quality of welds, and methods used in correcting welding work.
    - b. Locate mechanical fasteners and install according to Shop Drawings, with screws penetrating joined members by no fewer than three exposed screw threads.
  - 4. Fasten other materials to cold-formed steel framing by welding, bolting, pneumatic pin fastening, or screw fastening, according to Shop Drawings.
- B. Reinforce, stiffen, and brace framing assemblies to withstand handling, delivery, and erection stresses. Lift fabricated assemblies by means that prevent damage or permanent distortion.
- C. Tolerances: Fabricate assemblies level, plumb, and true to line to a maximum allowable variation of 1/8 inch in 10 feet and as follows:
  - 1. Spacing: Space individual framing members no more than plus or minus 1/8 inch from plan location. Cumulative error shall not exceed minimum fastening requirements of sheathing or other finishing materials.
  - 2. Squareness: Fabricate each cold-formed steel framing assembly to a maximum out-of-square tolerance of 1/8.

### PART 3 - EXECUTION

#### 3.1 EXAMINATION

- A. Examine substrates, areas, conditions, and abutting structural framing for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

#### 3.2 PREPARATION

- A. Install load-bearing shims or grout between the underside of load-bearing wall bottom track and the top of foundation wall or slab at locations with a gap larger than 1/4 inch to ensure a uniform bearing surface on supporting concrete or masonry construction.

#### 3.3 INSTALLATION, GENERAL

- A. Cold-formed steel framing may be shop or field fabricated for installation, or it may be field assembled.
- B. Install cold-formed steel framing according to AISI S200, AISI S202, and manufacturer's written instructions unless more stringent requirements are indicated.
- C. Install cold-formed steel framing and accessories plumb, square, and true to line, and with connections securely fastened.
  - 1. Cut framing members by sawing or shearing; do not torch cut.
  - 2. Fasten cold-formed steel framing members by welding, screw fastening, clinch fastening, or riveting. Wire tying of framing members is not permitted.
    - a. Comply with AWS D1.3/D1.3M requirements and procedures for welding, appearance and quality of welds, and methods used in correcting welding work.
    - b. Locate mechanical fasteners, install according to Shop Drawings, and comply with requirements for spacing, edge distances, and screw penetration.
- D. Install framing members in one-piece lengths unless splice connections are indicated for track or tension members.
- E. Install temporary bracing and supports to secure framing and support loads equal to those for which structure was designed. Maintain braces and supports in place, undisturbed, until entire integrated supporting structure has been completed and permanent connections to framing are secured.
- F. Do not bridge building expansion joints with cold-formed steel framing. Independently frame both sides of joints.
- G. Fasten hole-reinforcing plate over web penetrations that exceed size of manufacturer's approved or standard punched openings.

### 3.4 INSTALLATION OF JOIST FRAMING

- A. Install perimeter joist track sized to match joists. Align and securely anchor or fasten track to supporting structure at corners, ends, and spacings indicated **on Shop Drawings**.
- B. Install joists bearing on supporting frame, level, straight, and plumb; adjust to final position, brace, and reinforce. Fasten joists to both flanges of joist track.
  - 1. Install joists over supporting frame with a minimum end bearing of 1-1/2 inches (38 mm).
  - 2. Reinforce ends and bearing points of joists with web stiffeners, end clips, joist hangers, steel clip angles, or steel-stud sections.
- C. Space joists not more than 2 inches (51 mm) from abutting walls, and as follows:
  - 1. Joist Spacing: **16 inches (406 mm)**.
- D. Frame openings with built-up joist headers, consisting of joist and joist track or another combination of connected joists if indicated.
- E. Install joist reinforcement at interior supports with single, short length of joist section located directly over interior support, with lapped joists of equal length to joist reinforcement.
  - 1. Install web stiffeners to transfer axial loads of walls above.
- F. Install bridging at intervals indicated on shop drawings. Fasten bridging at each joist intersection as follows:
  - 1. Joist-Track Solid Bridging: Joist-track solid blocking of width and thickness indicated, secured to joist webs.
  - 2. Combination Bridging: Combination of flat, taut, steel sheet straps of width and thickness indicated and joist-track solid blocking of width and thickness indicated. Fasten flat straps to bottom flange of joists and secure solid blocking to joist webs.
- G. Secure joists to load-bearing interior walls to prevent lateral movement of bottom flange.
- H. Install miscellaneous joist framing and connections, including web stiffeners, closure pieces, clip angles, continuous angles, hold-down angles, anchors, and fasteners, to provide a complete and stable joist-framing assembly.

### 3.5 INSTALLATION TOLERANCES

- A. Install cold-formed steel framing level, plumb, and true to line to a maximum allowable tolerance variation of 1/8 inch in 10 feet and as follows:
  - 1. Space individual framing members no more than plus or minus 1/8 inch from plan location. Cumulative error shall not exceed minimum fastening requirements of sheathing or other finishing materials.



3.6 REPAIR

- A. Galvanizing Repairs: Prepare and repair damaged galvanized coatings on fabricated and installed cold-formed steel framing with galvanized repair paint according to ASTM A780/A780M and manufacturer's written instructions.

3.7 FIELD QUALITY CONTROL

- A. Testing: Contractor will engage a qualified independent testing and inspecting agency to perform field tests and inspections and prepare test reports.
- B. Field and shop welds will be subject to testing and inspecting.
- C. Testing agency will report test results promptly and in writing to Owner and Architect.
- D. Cold-formed steel framing will be considered defective if it does not pass tests and inspections.
- E. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

3.8 PROTECTION

- A. Provide final protection and maintain conditions, in a manner acceptable to manufacturer and Installer, that ensure that cold-formed steel framing is without damage or deterioration at time of Substantial Completion.

END OF SECTION 054000

SECTION 055213 - PIPE AND TUBE RAILINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
  - 1. Steel pipe railings.

1.3 COORDINATION

- A. Coordinate selection of shop primers with topcoats to be applied over them. Comply with paint and coating manufacturers' written recommendations to ensure that shop primers and topcoats are compatible with one another.
- B. Coordinate installation of anchorages for railings. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.
- C. Schedule installation so wall attachments are made only to completed walls. Do not support railings temporarily by any means that do not satisfy structural performance requirements.

1.4 ACTION SUBMITTALS

- A. Product Data: For the following:
  - 1. Manufacturer's product lines of mechanically connected railings.
  - 2. Railing brackets.
  - 3. Grout, anchoring cement, and paint products.
- B. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work.
- C. Samples: For each type of exposed finish required.
  - 1. Sections of each distinctly different linear railing member, including handrails, top rails, posts, and balusters, including finish.
  - 2. Fittings and brackets.
  - 3. Assembled Sample of railing system, made from full-size components, including top rail, post, handrail, and infill. Sample need not be full height.

- a. Show method of connecting and finishing members at intersections.
  - D. Delegated-Design Submittal: For railings, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.
- 1.5 INFORMATIONAL SUBMITTALS
- A. Qualification Data: For testing agency.
  - B. Welding certificates.
  - C. Mill Certificates: Signed by manufacturers of stainless-steel products certifying that products furnished comply with requirements.
  - D. Paint Compatibility Certificates: From manufacturers of topcoats applied over shop primers certifying that shop primers are compatible with topcoats.
  - E. Product Test Reports: For pipe and tube railings, for tests performed by a qualified testing agency, according to ASTM E894 and ASTM E935.
  - F. Evaluation Reports: For post-installed anchors, from ICC-ES.
- 1.6 QUALITY ASSURANCE
- A. Welding Qualifications: Qualify procedures and personnel according to the following:
    - 1. AWS D1.1/D1.1M, "Structural Welding Code - Steel."
- 1.7 DELIVERY, STORAGE, AND HANDLING
- A. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- 1.8 FIELD CONDITIONS
- A. Field Measurements: Verify actual locations of walls and other construction contiguous with metal fabrications by field measurements before fabrication.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. Steel Pipe and Tube Railings:
  - 1. Subject to compliance with requirements, provide products by one of the following:

- a.
- b.

- B. Source Limitations: Obtain each type of railing from single source from single manufacturer.

## 2.2 PERFORMANCE REQUIREMENTS

- A. Delegated Design: Engage a qualified professional engineer, as defined in Section 014000 "Quality Requirements," to design railings, including attachment to building construction.
- B. Structural Performance: Railings, including attachment to building construction, shall withstand the effects of gravity loads and the following loads and stresses within limits and under conditions indicated:
  - 1. Handrails and Top Rails of Guards:
    - a. Uniform load of 50 lbf/ ft. (0.73 kN/m) applied in any direction.
    - b. Concentrated load of 200 lbf (0.89 kN) applied in any direction.
    - c. Uniform and concentrated loads need not be assumed to act concurrently.
  - 2. Infill of Guards:
    - a. Concentrated load of 50 lbf (0.22 kN) applied horizontally on an area of 1 sq. ft. (0.093 sq. m).
    - b. Infill load and other loads need not be assumed to act concurrently.
- C. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes.
  - 1. Temperature Change: 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.

## 2.3 METALS, GENERAL

- A. Metal Surfaces, General: Provide materials with smooth surfaces, without seam marks, roller marks, rolled trade names, stains, discolorations, or blemishes.
- B. Brackets, Flanges, and Anchors: Cast or formed metal of same type of material and finish as supported rails unless otherwise indicated.
  - 1. Provide type of bracket with flange tapped for concealed anchorage to threaded hanger bolt and that provides 1-1/2-inch (38-mm) clearance from inside face of handrail to finished wall surface.

## 2.4 STEEL AND IRON

- A. Pipe: ASTM A53/A53M, Type F or Type S, Grade A, Standard Weight (Schedule 40), unless another grade and weight are required by structural loads.
  - 1. Provide galvanized finish for exterior installations and where indicated.
- B. Plates, Shapes, and Bars: ASTM A36/A36M.

- C. Woven-Wire Mesh: Intermediate-crimp, [diamond] [square] pattern, 2-inch (50-mm) woven-wire mesh, made from 0.134-inch- (3.42-mm-) diameter wire complying with ASTM A510 (ASTM A510M).

## 2.5 FASTENERS

- A. General: Provide the following:
  - 1. Ungalvanized-Steel Railings: Plated steel fasteners complying with ASTM B633 or ASTM F1941 (ASTM F1941M), Class Fe/Zn 5 for zinc coating.
  - 2. Hot-Dip Galvanized Railings: Type 304 stainless-steel or hot-dip zinc-coated steel fasteners complying with ASTM A153/A153M or ASTM F2329 for zinc coating.
- B. Fasteners for Anchoring Railings to Other Construction: Select fasteners of type, grade, and class required to produce connections suitable for anchoring railings to other types of construction indicated and capable of withstanding design loads.
- C. Fasteners for Interconnecting Railing Components:
  - 1. Provide concealed fasteners for interconnecting railing components and for attaching them to other work, unless otherwise indicated.
  - 2. Provide concealed fasteners for interconnecting railing components and for attaching them to other work, unless exposed fasteners are unavoidable or are the standard fastening method for railings indicated.
  - 3. Provide Phillips flat-head machine screws for exposed fasteners unless otherwise indicated.
- D. Post-Installed Anchors: Torque-controlled expansion anchors or chemical anchors capable of sustaining, without failure, a load equal to 6 times the load imposed when installed in unit masonry and 4 times the load imposed when installed in concrete, as determined by testing according to ASTM E488/E488M, conducted by a qualified independent testing agency.
  - 1. Material for Interior Locations: Carbon-steel components zinc-plated to comply with ASTM B633 or ASTM F1941 (ASTM F1941M), Class Fe/Zn 5, unless otherwise indicated.
  - 2. Material for Exterior Locations and Where Stainless Steel Is Indicated: Alloy [Group 1 (A1)] [Group 2 (A4)] stainless-steel bolts, ASTM F593 (ASTM F738M), and nuts, ASTM F594 (ASTM F836M).

## 2.6 MISCELLANEOUS MATERIALS

- A. Welding Rods and Bare Electrodes: Select according to AWS specifications for metal alloy welded.
  - 1. For railings, provide type and alloy as recommended by producer of metal to be welded and as required for color match, strength, and compatibility in fabricated items.
- B. Etching Cleaner for Galvanized Metal: Complying with MPI#25.
- C. Galvanizing Repair Paint: High-zinc-dust-content paint complying with SSPC-Paint 20 and compatible with paints specified to be used over it.
- D. Shop Primers: Provide primers that comply with Section 099113 "Exterior Painting" and Section 099123 "Interior Painting."

- E. Universal Shop Primer: Fast-curing, lead- and chromate-free, universal modified-alkyd primer complying with MPI#79 and compatible with topcoat.
  - 1. Use primer containing pigments that make it easily distinguishable from zinc-rich primer.
- F. Epoxy Zinc-Rich Primer: Complying with MPI#20 and compatible with topcoat.
- G. Shop Primer for Galvanized Steel: Primer formulated for exterior use over zinc-coated metal and compatible with finish paint systems indicated.
- H. Intermediate Coats and Topcoats: Provide products that comply with Section 099113 "Exterior Painting" and Section 099123 "Interior Painting."
- I. Bituminous Paint: Cold-applied asphalt emulsion complying with ASTM D1187/D1187M.
- J. Nonshrink, Nonmetallic Grout: Factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C1107/C1107M. Provide grout specifically recommended by manufacturer for interior and exterior applications.
- K. Anchoring Cement: Factory-packaged, nonshrink, nonstaining, hydraulic-controlled expansion cement formulation for mixing with water at Project site to create pourable anchoring, patching, and grouting compound.
  - 1. Water-Resistant Product: At exterior locations and where indicated provide formulation that is resistant to erosion from water exposure without needing protection by a sealer or waterproof coating and that is recommended by manufacturer for exterior use.

## 2.7 FABRICATION

- A. General: Fabricate railings to comply with requirements indicated for design, dimensions, member sizes and spacing, details, finish, and anchorage, but not less than that required to support structural loads.
- B. Shop assemble railings to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinated installation. Use connections that maintain structural value of joined pieces.
- C. Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges to a radius of approximately 1/32 inch (1 mm) unless otherwise indicated. Remove sharp or rough areas on exposed surfaces.
- D. Form work true to line and level with accurate angles and surfaces.
- E. Fabricate connections that are exposed to weather in a manner that excludes water. Provide weep holes where water may accumulate.
- F. Cut, reinforce, drill, and tap as indicated to receive finish hardware, screws, and similar items.
- G. Connections: Fabricate railings with either welded or nonwelded connections unless otherwise indicated.
- H. Welded Connections: Cope components at connections to provide close fit, or use fittings designed for this purpose. Weld all around at connections, including at fittings.

1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
  2. Obtain fusion without undercut or overlap.
  3. Remove flux immediately.
  4. At exposed connections, finish exposed surfaces smooth and blended so no roughness shows after finishing and welded surface matches contours of adjoining surfaces.
- I. Welded Connections for Aluminum Pipe: Fabricate railings to interconnect members with concealed internal welds that eliminate surface grinding, using manufacturer's standard system of sleeve and socket fittings.
- J. Nonwelded Connections: Connect members with concealed mechanical fasteners and fittings. Fabricate members and fittings to produce flush, smooth, rigid, hairline joints.
1. Fabricate splice joints for field connection using an epoxy structural adhesive if this is manufacturer's standard splicing method.
- K. Form Changes in Direction as Follows:
1. As detailed.
  2. By bending or by inserting prefabricated elbow fittings.
  3. By radius bends of radius indicated or by inserting prefabricated elbow fittings of radius indicated.
- L. For changes in direction made by bending, use jigs to produce uniform curvature for each repetitive configuration required. Maintain cross section of member throughout entire bend without buckling, twisting, cracking, or otherwise deforming exposed surfaces of components.
- M. Close exposed ends of railing members with prefabricated end fittings.
- N. Provide wall returns at ends of wall-mounted handrails unless otherwise indicated. Close ends of returns unless clearance between end of rail and wall is 1/4 inch (6 mm) or less.
- O. Brackets, Flanges, Fittings, and Anchors: Provide wall brackets, flanges, miscellaneous fittings, and anchors to interconnect railing members to other work unless otherwise indicated.
1. At brackets and fittings fastened to plaster or gypsum board partitions, provide crush-resistant fillers or other means to transfer loads through wall finishes to structural supports and prevent bracket or fitting rotation and crushing of substrate.
- P. Provide inserts and other anchorage devices for connecting railings to concrete or masonry work. Fabricate anchorage devices capable of withstanding loads imposed by railings. Coordinate anchorage devices with supporting structure.
- Q. For railing posts set in concrete, provide steel sleeves not less than 6 inches (150 mm) long with inside dimensions not less than 1/2 inch (13 mm) greater than outside dimensions of post, with metal plate forming bottom closure.
- R. Woven-Wire Mesh Infill Panels: Fabricate infill panels from woven-wire mesh crimped into 1-by-1/2-by-1/8-inch (25-by-13-by-3-mm) metal channel frames. Make wire mesh and frames from same metal as railings in which they are installed.

1. Orient wire mesh with [diamonds vertical] [diamonds perpendicular to top rail] [wires perpendicular and parallel to top rail] [wires horizontal and vertical] [as indicated on Drawings].
- S. Toe Boards: Where indicated, provide toe boards at railings around openings and at edge of open-sided floors and platforms. Fabricate to dimensions and details indicated.
- 2.8 STEEL AND IRON FINISHES
- A. Galvanized Railings:
1. Hot-dip galvanize exterior or as indicated steel railings, including hardware, after fabrication.
  2. Comply with ASTM A123/A123M for hot-dip galvanized railings.
  3. Comply with ASTM A153/A153M for hot-dip galvanized hardware.
  4. Do not quench or apply post galvanizing treatments that might interfere with paint adhesion.
  5. Fill vent and drain holes that are exposed in the finished Work, unless indicated to remain as weep holes, by plugging with zinc solder and filing off smooth.
- B. For galvanized railings, provide hot-dip galvanized fittings, brackets, fasteners, sleeves, and other ferrous components.
- C. Preparing Galvanized Railings for Shop Priming: After galvanizing, thoroughly clean railings of grease, dirt, oil, flux, and other foreign matter, and treat with etching cleaner.
- D. For nongalvanized-steel railings, provide nongalvanized ferrous-metal fittings, brackets, fasteners, and sleeves; however, galvanize anchors to be embedded in exterior concrete or masonry.
- E. Preparation for Shop Priming: Prepare uncoated ferrous-metal surfaces to comply with requirements indicated below:
1. Exterior Railings: SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning."
  2. Railings Indicated to Receive Zinc-Rich Primer: SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning."
  3. Railings Indicated to Receive Primers Specified in Section 099600 "High-Performance Coatings": SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning."
  4. Other Railings: SSPC-SP 3, "Power Tool Cleaning."
- F. Primer Application: Apply shop primer to prepared surfaces of railings unless otherwise indicated. Comply with requirements in SSPC-PA 1, "Shop, Field, and Maintenance Painting of Steel," for shop painting. Primer need not be applied to surfaces to be embedded in concrete or masonry.
1. Shop prime uncoated railings with universal shop primer or primers specified in Section 099113 "Exterior Painting" and Section 099123 "Interior Painting" unless indicated.
  2. Do not apply primer to galvanized surfaces.



## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine plaster and gypsum board assemblies, where reinforced to receive anchors, to verify that locations of concealed reinforcements are clearly marked for Installer. Locate reinforcements and mark locations if not already done.

### 3.2 INSTALLATION, GENERAL

- A. Fit exposed connections together to form tight, hairline joints.
- B. Perform cutting, drilling, and fitting required for installing railings. Set railings accurately in location, alignment, and elevation; measured from established lines and levels and free of rack.
  - 1. Do not weld, cut, or abrade surfaces of railing components that are coated or finished after fabrication and that are intended for field connection by mechanical or other means without further cutting or fitting.
  - 2. Set posts plumb within a tolerance of 1/16 inch in 3 feet (2 mm in 1 m).
  - 3. Align rails so variations from level for horizontal members and variations from parallel with rake of steps and ramps for sloping members do not exceed 1/4 inch in 12 feet (6 mm in 3.5 m).
- C. Control of Corrosion: Prevent galvanic action and other forms of corrosion by insulating metals and other materials from direct contact with incompatible materials.
  - 1. Coat, with a heavy coat of bituminous paint, concealed surfaces of aluminum that are in contact with grout, concrete, masonry, wood, or dissimilar metals.
- D. Adjust railings before anchoring to ensure matching alignment at abutting joints.
- E. Fastening to In-Place Construction: Use anchorage devices and fasteners where necessary for securing railings and for properly transferring loads to in-place construction.

### 3.3 RAILING CONNECTIONS

- A. Nonwelded Connections: Use mechanical or adhesive joints for permanently connecting railing components. Seal recessed holes of exposed locking screws using plastic cement filler colored to match finish of railings.
- B. Welded Connections: Use fully welded joints for permanently connecting railing components. Comply with requirements for welded connections in "Fabrication" Article whether welding is performed in the shop or in the field.
- C. Expansion Joints: Install expansion joints at locations indicated but not farther apart than required to accommodate thermal movement. Provide slip-joint internal sleeve extending 2 inches (50 mm) beyond joint on either side, fasten internal sleeve securely to one side, and locate joint within 6 inches (150 mm) of post.

### 3.4 ANCHORING POSTS

- A. Use metal sleeves preset and anchored into concrete for installing posts. After posts are inserted into sleeves, fill annular space between post and sleeve with nonshrink, nonmetallic grout or anchoring cement, mixed and placed to comply with anchoring material manufacturer's written instructions.
- B. Form or core-drill holes not less than 5 inches (125 mm) deep and 3/4 inch (20 mm) larger than OD of post for installing posts in concrete. Clean holes of loose material, insert posts, and fill annular space between post and concrete with nonshrink, nonmetallic grout or anchoring cement, mixed and placed to comply with anchoring material manufacturer's written instructions.
- C. Leave anchorage joint exposed with anchoring material flush with adjacent surface.
- D. Anchor posts to metal surfaces with oval flanges, angle type, or floor type as required by conditions, connected to posts and to metal supporting members as follows:
  - 1. For aluminum pipe railings, attach posts using fittings designed and engineered for this purpose.
  - 2. For stainless-steel pipe railings, weld flanges to post and bolt to supporting surfaces.
  - 3. For steel pipe railings, weld flanges to post and bolt to metal supporting surfaces.

### 3.5 ATTACHING RAILINGS

- A. Anchor railing ends at walls with round flanges anchored to wall construction and welded to railing ends or connected to railing ends using nonwelded connections.
- B. Anchor railing ends to metal surfaces with flanges bolted to metal surfaces and welded to railing ends or connected to railing ends using nonwelded connections.
- C. Attach railings to wall with wall brackets, except where end flanges are used. Locate brackets as indicated or, if not indicated, at spacing required to support structural loads.
- D. Secure wall brackets and railing end flanges to building construction as follows:
  - 1. For concrete and solid masonry anchorage, use drilled-in expansion shields and hanger or lag bolts.
  - 2. For hollow masonry anchorage, use toggle bolts.

### 3.6 ADJUSTING AND CLEANING

- A. Clean by washing thoroughly with clean water and soap and rinsing with clean water.
- B. Touchup Painting: Immediately after erection, clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with the same material as used for shop painting to comply with SSPC-PA 1 requirements for touching up shop-painted surfaces.
  - 1. Apply by brush or spray to provide a minimum 2.0-mil (0.05-mm) dry film thickness.
- C. Touchup Painting: Cleaning and touchup painting of field welds, bolted connections, and abraded areas of shop paint are specified in Section 099113 "Exterior Painting" and Section 099123 "Interior Painting."

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- D. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas, and repair galvanizing to comply with ASTM A780/A780M.

3.7 PROTECTION

- A. Protect finishes of railings from damage during construction period with temporary protective coverings approved by railing manufacturer. Remove protective coverings at time of Substantial Completion.

END OF SECTION 055213

## SECTION 061600 - SHEATHING

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section Includes:
  - 1. Roof sheathing.
- B. Related Requirements:
  - 1. [Section 061000 "Rough Carpentry"] [Section 061053 "Miscellaneous Rough Carpentry"] for plywood backing panels.

#### 1.3 ACTION SUBMITTALS

- A. Product Data: For each type of process and factory-fabricated product. Indicate component materials and dimensions and include construction and application details.
  - 1. Include data for wood-preservative treatment from chemical treatment manufacturer and certification by treating plant that treated plywood complies with requirements. Indicate type of preservative used and net amount of preservative retained.
  - 2. Include data for fire-retardant treatment from chemical treatment manufacturer and certification by treating plant that treated plywood complies with requirements. Include physical properties of treated materials.
  - 3. For fire-retardant treatments, include physical properties of treated plywood both before and after exposure to elevated temperatures, based on testing by a qualified independent testing agency according to ASTM D5516.
  - 4. For products receiving waterborne treatment, include statement that moisture content of treated materials was reduced to levels specified before shipment to Project site.

#### 1.4 INFORMATIONAL SUBMITTALS

- A. Evaluation Reports: For the following, from ICC-ES:
  - 1. Wood-preservative-treated plywood.
  - 2. Fire-retardant-treated plywood.
  - 3. Air-barrier and water-resistant glass-mat gypsum sheathing.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Stack panels flat with spacers beneath and between each bundle to provide air circulation. Protect sheathing from weather by covering with waterproof sheeting, securely anchored. Provide for air circulation around stacks and under coverings.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Fire-Resistance Ratings: As tested according to ASTM E119; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
  - 1. Fire-Resistance Ratings: Indicated by design designations from UL's "Fire Resistance Directory" or from the listings of another qualified testing agency.

2.2 WOOD PANEL PRODUCTS

- A. Emissions: Products shall meet the testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."
- B. Thickness: As needed to comply with requirements specified, but not less than thickness indicated.
- C. Factory mark panels to indicate compliance with applicable standard.

2.3 PRESERVATIVE-TREATED PLYWOOD

- A. Preservative Treatment by Pressure Process: AWPA U1; Use Category UC2 for interior construction not in contact with ground, Use Category UC3b for exterior construction not in contact with ground, and Use Category UC4a for items in contact with ground.
  - 1. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium.
- B. Mark plywood with appropriate classification marking of an inspection agency acceptable to authorities having jurisdiction.
- C. Application: Treat all plywood unless otherwise indicated.

2.4 FIRE-RETARDANT-TREATED PLYWOOD

- A. General: Where fire-retardant-treated materials are indicated, use materials complying with requirements in this article that are acceptable to authorities having jurisdiction and with fire-test-response characteristics specified as determined by testing identical products per test method indicated by a qualified testing agency.

- B. Fire-Retardant-Treated Plywood by Pressure Process: Products with a flame-spread index of 25 or less when tested according to ASTM E84, and with no evidence of significant progressive combustion when the test is extended an additional 20 minutes, and with the flame front not extending more than 10.5 feet (3.2 m) beyond the centerline of the burners at any time during the test.
  - 1. Use treatment that does not promote corrosion of metal fasteners.
  - 2. Exterior Type: Treated materials shall comply with requirements specified above for fire-retardant-treated plywood by pressure process after being subjected to accelerated weathering according to ASTM D2898. Use for exterior locations and where indicated.
  - 3. Interior Type A: Treated materials shall have a moisture content of 28 percent or less when tested according to ASTM D3201/D3201M at 92 percent relative humidity. Use where exterior type is not indicated.
  - 4. Design Value Adjustment Factors: Treated lumber plywood shall be tested according to ASTM D5516 and design value adjustment factors shall be calculated according to ASTM D6305. Span ratings after treatment shall be not less than span ratings specified. For roof sheathing and where high-temperature fire-retardant treatment is indicated, span ratings for temperatures up to 170 deg F (76 deg C) shall be not less than span ratings specified.
- C. Kiln-dry material after treatment to a maximum moisture content of 15 percent. Do not use material that is warped or does not comply with requirements for untreated material.
- D. Identify fire-retardant-treated plywood with appropriate classification marking of qualified testing agency.
- E. Application: Treat plywood indicated on Drawings, and the following:
  - 1. Roof sheathing.

## 2.5 ROOF SHEATHING

- A. Plywood Sheathing: , Exterior, Structural I Exposure 1 sheathing.
  - 1. Span Rating: Not less than 24/0.
  - 2. Nominal Thickness: Not less than 1/2 inch (13 mm).

## 2.6 FASTENERS

- A. General: Provide fasteners of size and type indicated that comply with requirements specified in this article for material and manufacture.
  - 1. For roof sheathing, provide fasteners of Type 304 stainless steel.
- B. Nails, Brads, and Staples: ASTM F1667.
- C. Power-Driven Fasteners: Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC70.
- D. Screws for Fastening Sheathing to Wood Framing: ASTM C1002.
- E. Screws for Fastening Wood Structural Panels to Cold-Formed Metal Framing: ASTM C954, except with wafer heads and reamer wings, length as recommended by screw manufacturer for material being fastened.

- F. Screws for Fastening Gypsum Sheathing to Cold-Formed Metal Framing: Steel drill screws, in length recommended by sheathing manufacturer for thickness of sheathing to be attached.
  - 1. For steel framing less than 0.0329 inch (0.835 mm) thick, use screws that comply with ASTM C1002.
  - 2. For steel framing from 0.033 to 0.112 inch (0.84 to 2.84 mm) thick, use screws that comply with ASTM C954.

### PART 3 - EXECUTION

#### 3.1 INSTALLATION, GENERAL

- A. Do not use materials with defects that impair quality of sheathing or pieces that are too small to use with minimum number of joints or optimum joint arrangement. Arrange joints so that pieces do not span between fewer than three support members.
- B. Cut panels at penetrations, edges, and other obstructions of work; fit tightly against abutting construction unless otherwise indicated.
- C. Securely attach to substrate by fastening as indicated, complying with the following:
  - 1. Table 2304.9.1, "Fastening Schedule," in the ICC's International Building Code.
  - 2. Table R602.3(1), "Fastener Schedule for Structural Members," and Table R602.3(2), "Alternate Attachments," in the ICC's International Residential Code for One- and Two-Family Dwellings.
  - 3. ICC-ES evaluation report for fastener.
- D. Use common wire nails unless otherwise indicated. Select fasteners of size that will not fully penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections. Install fasteners without splitting wood.
- E. Coordinate roof sheathing installation with flashing and joint-sealant installation so these materials are installed in sequence and manner that prevent exterior moisture from passing through completed assembly.
- F. Coordinate sheathing installation with installation of materials installed over sheathing so sheathing is not exposed to precipitation or left exposed at end of the workday when rain is forecast.

#### 3.2 WOOD STRUCTURAL PANEL INSTALLATION

- A. General: Comply with applicable recommendations in APA Form No. E30, "Engineered Wood Construction Guide," for types of structural-use panels and applications indicated.
- B. Fastening Methods: Fasten panels as indicated below:
  - 1. Roof Sheathing:
    - a. Nail to wood framing.
    - b. Screw to cold-formed metal framing.
    - c. Space panels 1/8 inch (3 mm) apart at edges and ends.

### 3.3 GYPSUM SHEATHING INSTALLATION

- A. Comply with GA-253 and with manufacturer's written instructions.
  - 1. Fasten gypsum sheathing to wood framing with screws.
  - 2. Fasten gypsum sheathing to cold-formed metal framing with screws.
  - 3. Install panels with a 3/8-inch (9.5-mm) gap where non-load-bearing construction abuts structural elements.
  - 4. Install panels with a 1/4-inch (6.4-mm) gap where they abut masonry or similar materials that might retain moisture, to prevent wicking.
- B. Apply fasteners so heads bear tightly against face of sheathing, but do not cut into facing.
- C. Horizontal Installation: Install sheathing with V-grooved edge down and tongue edge up. Interlock tongue with groove to bring long edges in contact with edges of adjacent panels without forcing. Abut ends over centers of studs, and stagger end joints of adjacent panels not less than one stud spacing. Attach at perimeter and within field of panel to each stud.
  - 1. Space fasteners approximately 8 inches (200 mm) o.c. and set back a minimum of 3/8 inch (9.5 mm) from edges and ends of panels.
  - 2. For sheathing under stucco cladding, panels may be initially tacked in place with screws if overlying self-furring metal lath is screw-attached through sheathing to studs immediately after sheathing is installed.
- D. Seal sheathing joints according to sheathing manufacturer's written instructions.
  - 1. Apply elastomeric sealant to joints and fasteners and trowel flat. Apply sufficient amount of sealant to completely cover joints and fasteners after troweling. Seal other penetrations and openings.
  - 2. Apply glass-fiber sheathing tape to glass-mat gypsum sheathing joints and apply and trowel sealant to embed entire face of tape in sealant. Apply sealant to exposed fasteners with a trowel so fasteners are completely covered. Seal other penetrations and openings.

END OF SECTION 061600



## SECTION 076100 - SHEET METAL ROOFING

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section Includes:

- 1. Custom-fabricated, standing-seam sheet metal roofing.

- B. Related Requirements:

- 1. Section 076200 "Sheet Metal Flashing and Trim" for gutters fasciae and flashings that are not part of sheet metal roofing.
  - 2. Section 079200 "Joint Sealants" for field-applied sealants adjoining sheet metal roofing and not otherwise specified in this Section.

#### 1.3 COORDINATION

- A. Coordinate sheet metal roofing layout and seams with sizes and locations of roof curbs, equipment supports, equipment provided, and roof penetrations.
- B. Coordinate sheet metal roofing installation with rain drainage work, flashing, trim, and construction of roofing substrate, parapets, walls, and other adjoining work to provide leakproof, secure, and noncorrosive installation.

#### 1.4 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.
  - 1. Review construction schedule. Verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
  - 2. Review structural loading limitations of substrates during and after roofing installation.
  - 3. Review insulation, air barrier, vapor retarder, and underlayment requirements.
  - 4. Review flashings, special roofing details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that affect sheet metal roofing.
  - 5. Review requirements for insurance and certificates if applicable.
  - 6. Review roof observation and repair procedures after sheet metal roofing installation.

1.5 ACTION SUBMITTALS

A. Product Data: For each of the following:

1. Roofing sheet metal.
2. Underlayment materials.
3. Fasteners.
4. Sealant tape.
5. Elastomeric sealant.

B. Shop Drawings:

1. Include plans, elevations, sections, and attachment details.
2. Detail fabrication and panel installation layouts, expansion joint locations, points of fixity, and keyed details. Distinguish between shop- and field-assembled Work.
3. Include details for forming, including seams and dimensions.
4. Include details for joining and securing, including layout and spacing of fasteners, cleats, and other attachments. Include pattern of seams.
5. Include details of expansion joints, including showing direction of expansion and contraction from points of fixity.
6. Include details of roof penetrations.
7. Include details of edge conditions, including eaves, ridges, valleys, rakes, crickets, corners, flashings, and counterflashings.
8. Include details of special conditions.
9. Include details of connections to adjoining work.
10. Detail the following accessory items, at scale of not less than 3 inches per 12 inches (1:5):
  - a. Flashing and trim.

C. Samples for Verification: For each type of exposed finish.

1. Sheet Metal Roofing: 12 inches (300 mm) long by actual width of unit, including finished seam and in required profile. Include fasteners, cleats, and other attachments.
2. Trim and Metal Closures: 12 inches (300 mm) long and in required profile. Include fasteners and other exposed accessories.
3. Other Accessories: 12-inch- (300-mm-) long Samples for each type of other accessory.

1.6 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer and fabricator.

1. Include listing of completed projects of comparable scale of this Project, including name, address, telephone, and contact person for Architect, and name, address, telephone number, and contact person for building Owner.

B. Sample Warranties: For special warranties.

1.7 CLOSEOUT SUBMITTALS

A. Maintenance Data: For roofing sheet metals and accessories to include in maintenance manuals.

- B. Special warranties.

#### 1.8 QUALITY ASSURANCE

- A. Sheet Metal Roofing Fabricator Qualifications: Employs skilled workers who custom fabricate sheet metal roofing similar to that required for this Project and whose products have a record of successful in-service performance.
- B. Mockups: Build mockups to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for fabrication and installation.
  - 1. Build mockup of typical roof area and eave as shown on Drawings, including, underlayment, attachments, and accessories.
    - a. Size: Approximately 12 feet (3.5 m) long by 6 feet (1.75 m).
    - b. Include each type of exposed seam and seam termination, fascia, soffit, and gable end and rake.
  - 2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
  - 3. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

#### 1.9 DELIVERY, STORAGE, AND HANDLING

- A. Do not store sheet metal roofing materials in contact with other materials that might cause staining, denting, or other surface damage.
  - 1. Store sheet metal roofing materials away from uncured concrete and masonry.
  - 2. Protect stored sheet metal roofing materials from contact with water.
- B. Protect strippable protective covering on sheet metal roofing from exposure to sunlight and high humidity, except to extent necessary for period of sheet metal roofing installation.

#### 1.10 WARRANTY

- A. Special Warranty: Warranty form at end of this Section in which Installer agrees to repair or replace components of sheet metal roofing that fail in materials or workmanship within specified warranty period.
  - 1. Failures include, but are not limited to, the following:
    - a. Structural failures, including, but not limited to, rupturing, cracking, or puncturing.
    - b. Wrinkling or buckling.
    - c. Loose parts.
    - d. Failure to remain weathertight, including uncontrolled water leakage.
    - e. Deterioration of metals, metal finishes, and other materials beyond normal weathering, including nonuniformity of color or finish.
    - f. Galvanic action between sheet metal roofing and dissimilar materials.

2. Warranty Period: Five years from date of Substantial Completion.
- B. Special Warranty on Finishes: Manufacturer agrees to repair finish or replace sheet metal roofing that shows evidence of deterioration of factory-applied finishes within specified warranty period.
1. Exposed Panel Finish: Deterioration includes, but is not limited to, the following:
    - a. Color fading more than 5 Delta E units when tested according to ASTM D2244.
    - b. Chalking in excess of a No. 8 rating when tested according to ASTM D4214.
    - c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.
  2. Finish Warranty Period: 10 years from date of Substantial Completion.

## PART 2 - PRODUCTS

### 2.1 PERFORMANCE REQUIREMENTS

- A. General Performance: Sheet metal roofing system, including, but not limited to, metal roof panels, cleats, anchors and fasteners, sheet metal flashing integral with sheet metal roofing, fascia panels, trim, underlayment, and accessories, shall comply with requirements without failure due to defective manufacture, fabrication, or installation, or due to other defects in construction. Sheet metal roofing shall remain watertight.
- B. Sheet Metal Roofing Standard: Comply with SMACNA's "Architectural Sheet Metal Manual" unless more stringent requirements are specified or indicated on Drawings.
- C. Copper Roofing Standard: Comply with CDA's "Copper in Architecture Handbook." Conform to dimensions and profiles shown unless more stringent requirements are specified or indicated on Drawings.
- D. Energy Performance: Provide sheet metal roofing according to one of the following when tested according to CRRC-1:
1. Three-year, aged, solar reflectance of not less than [0.55] <Insert value> and emissivity of not less than [0.75] <Insert value>.
  2. Three-year, aged, Solar Reflectance Index of not less than [64] <Insert value> when calculated according to ASTM E1980.
- E. Wind-Uplift Resistance: Provide metal roof panel assemblies that comply with UL 580 for wind-uplift-resistance class indicated.
1. Uplift Rating: UL 90.
- F. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes to prevent buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects.
1. Temperature Change: 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.

## 2.2 ROOFING SHEET METALS

- A. Protect mechanical and other finishes on exposed surfaces from damage by applying strippable, temporary protective film before shipping.
- B. Copper Sheet: ASTM B370 cold-rolled copper sheet, H00 temper.
  - 1. Subject to compliance with requirements, provide products by one of the following:
    - a.
    - b.
  - 2. Weight (Thickness): [16 oz./sq. ft. (0.55 mm thick)] [20 oz./sq. ft. (0.70 mm thick)] <Insert weight (thickness)> unless otherwise indicated.
  - 3. Nonpatinated Exposed Finish: Mill.

## 2.3 UNDERLAYMENT MATERIALS

- A. Self-Adhering, High-Temperature Sheet Underlayment: Minimum 30 mils (0.76 mm) thick, consisting of a slip-resistant polyethylene- or polypropylene-film top surface laminated to a layer of butyl- or SBS-modified asphalt adhesive, with release-paper backing; specifically designed to withstand high metal temperatures beneath metal roofing. Provide primer according to written recommendations of underlayment manufacturer.
  - 1. Subject to compliance with requirements, provide one of the following:
    - a. ; WIP 300HT.
    - b. ; Grace Ice and Water Shield HT.
    - c. ; Blueskin PE200 HT.
  - 2. Thermal Stability: ASTM D1970/D1970M; stable after testing at 240 deg F (116 deg C) or higher.
  - 3. Low-Temperature Flexibility: ASTM D1970/D1970M; passes after testing at minus 20 deg F (29 deg C) or lower.

## 2.4 MISCELLANEOUS MATERIALS

- A. Provide materials and types of fasteners[, solder], protective coatings, sealants, and other miscellaneous items as required for complete roofing system and as recommended by primary sheet metal manufacturer unless otherwise indicated.
- B. Fasteners: Wood screws, annular-threaded nails, self-tapping screws, self-locking rivets and bolts, and other suitable fasteners designed to withstand design loads.
  - 1. General:
    - a. Exposed Fasteners: Heads matching color of sheet metal roofing, using plastic caps or factory-applied coating. Provide metal-backed EPDM or PVC sealing washers under heads of exposed fasteners bearing on weather side of roofing.
    - b. Fasteners for Flashing and Trim: Blind fasteners or self-drilling screws, gasketed; with hex-washer head.

- c. Blind Fasteners: High-strength aluminum or stainless steel rivets suitable for metal being fastened.
- 2. Fasteners for Copper Sheet: Copper, hardware bronze, or passivated Series 300 stainless steel.
- C. Solder:
  - 1. For Copper: ASTM B32, [Grade Sn50, 50 percent tin and 50 percent lead] [with maximum lead content of 0.2 percent].
- D. Sealant Tape: Pressure-sensitive, 100 percent solids, polyisobutylene compound sealant tape with release-paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape 1/2 inch (13 mm) wide and 1/8 inch (3 mm) thick.
- E. Elastomeric Sealant: ASTM C920, elastomeric silicone polymer sealant; of type, grade, class, and use classifications required to seal joints in sheet metal roofing and remain watertight.
- F. Butyl Sealant: ASTM C1311, single-component, solvent-release butyl rubber sealant; polyisobutylene plasticized; heavy bodied for hooked-type expansion joints with limited movement.
- G. Bituminous Coating: Cold-applied asphalt emulsion according to ASTM D1187.
- H. Underlayment Adhesive:
  - 1. Cold-Applied Asphalt Adhesive: ASTM D3019, Type III, asphalt-based, one- or two-part, asbestos-free, cold-applied adhesive, specially formulated for compatibility and use with underlayment.

## 2.5 ACCESSORIES

- A. Sheet Metal Accessories: Provide components required for complete sheet metal roofing assembly, including trim, fasciae, corner units, clips, flashings, sealants, gaskets, fillers, metal closures, closure strips, and similar items. Match material and finish of sheet metal roofing unless otherwise indicated.
  - 1. Cleats: Intermittent and continuous attachment devices for mechanically seaming into joints and formed from the following materials and thicknesses unless otherwise indicated:
    - a. Aluminum Roofing: 0.0250- (0.635-) inch- (mm-) thick stainless steel.
  - 2. Expansion-Type Cleats: Cleats of a design that allows longitudinal movement of roof panels without stressing panel seams; of same material as other cleats.
  - 3. Backing Plates: Plates at roofing splices, fabricated from material recommended by SMACNA's "Architectural Sheet Metal Manual."
  - 4. Closure Strips: Closed-cell, expanded, cellular, rubber or crosslinked, polyolefin foam or closed-cell laminated polyethylene; minimum 1-inch- (25-mm-) thick, flexible-closure strips; cut or premolded to match sheet metal roofing profile. Provide closure strips where necessary to ensure weathertight construction.
  - 5. Flashing and Trim: Formed from same material and with same finish as sheet metal roofing, minimum 0.018 (0.46) inch (mm) thick.

## 2.6 FABRICATION

- A. Custom fabricate sheet metal roofing to comply with details shown and recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions (panel width and seam height), geometry, metal thickness, and other characteristics of installation. Fabricate sheet metal roofing and accessories in shop to greatest extent possible.
  - 1. Standing-Seam Roofing: Form standing-seam panels with finished seam height of 1 inch (25 mm).
- B. Fabrication Tolerances: Fabricate sheet metal roofing that is capable of installation to a tolerance of 1/4 inch in 20 feet (6 mm in 6 m) on slope and location lines indicated on Drawings and within 1/8-inch (3-mm) offset of adjoining faces and of alignment of matching profiles.
- C. Form exposed sheet metal work to fit substrates with little oil canning; free of buckling and tool marks; true to line, levels, and slopes; and with exposed edges folded back to form hems.
  - 1. Lay out sheet metal roofing, so transverse seams, if required, are made in direction of flow, with higher panels overlapping lower panels.
  - 2. Offset transverse seams from each other [12 inches (300 mm)] <Insert dimension> inches (mm) minimum.
  - 3. Fold and cleat eaves and transverse seams in shop.
  - 4. Form and fabricate sheets, seams, strips, cleats, valleys, ridges, edge treatments, integral flashings, and other components of metal roofing to profiles, patterns, and drainage arrangements indicated on Drawings and as required for leakproof construction.
- D. Built-In Gutters (Integral Gutters): Fabricate to cross section indicated, with riveted and soldered joints, complete with end pieces, outlet tubes, and other special accessories as required.
  - 1. Fabricate in minimum 96-inch- (2400-mm-) long sections.
  - 2. Fabricate expansion joints and accessories from same metal as gutters unless otherwise indicated.
  - 3. Fabricate gutters with built-in expansion joints.
- E. Expansion Provisions: Fabricate sheet metal roofing to allow for expansion in running work sufficient to prevent leakage, damage, and deterioration of the Work.
  - 1. Form expansion joints of intermeshing hooked flanges, not less than 1 inch (25 mm) deep, filled with butyl sealant concealed within joints.
  - 2. Use lapped expansion joints only where indicated on Drawings.
- F. Sealant Joints: Where movable, nonexpansion-type joints are required, form metal to provide for proper installation of elastomeric sealant according to SMACNA's "Architectural Sheet Metal Manual."
- G. Sheet Metal Accessories: Custom fabricate flashings and trim to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, metal, and other characteristics of item required. Obtain field measurements for accurate fit before shop fabrication.
  - 1. Form exposed sheet metal accessories without excessive oil canning, buckling, and tool marks; true to line, levels, and slopes; and with exposed edges folded back to form hems.
  - 2. Seams: Fabricate nonmoving seams with flat-lock seams. Form seams and seal with elastomeric sealant unless otherwise recommended by sealant manufacturer for intended use. Rivet joints where necessary for strength.

3. Sealed Joints: Form nonexpansion, but movable, joints in metal to accommodate elastomeric sealant.
  4. Conceal fasteners and expansion provisions where possible. Do not use exposed fasteners on faces of accessories exposed to view.
  5. Fabricate cleats and attachment devices of sizes recommended by SMACNA's "Architectural Sheet Metal Manual" for application, but not less than thickness of metal being secured.
- H. Do not use graphite pencils to mark metal surfaces.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances, substrate, and other conditions affecting performance of the Work.
1. Examine solid roof sheathing to verify that sheathing joints are supported by framing or blocking, that tops of fasteners are flush with surface, and that installation is within flatness tolerances required for finished roofing installation.
  2. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and completely anchored, and that provision has been made for drainage, flashings, and penetrations through sheet metal roofing.
  3. Verify that air- or water-resistant barriers have been installed over sheathing or backing substrate to prevent air infiltration or water penetration.
- B. Examine roughing-in for components and systems penetrating sheet metal roofing to verify actual locations of penetrations relative to seam locations of sheet metal roofing before installation.
- C. Prepare written report, endorsed by Installer, listing conditions detrimental to performance of the Work.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 PREPARATION

- A. Lay out panel arrangement, and before installation of sheet metal roofing.
1. Space fasteners not more than 18 (460) inches (mm) o.c.

### 3.3 INSTALLATION OF UNDERLAYMENT

- A. Self-Adhering High-Temperature Sheet Underlayment:
1. Install self-adhering high-temperature sheet underlayment, wrinkle free.
  2. Prime substrate if recommended by underlayment manufacturer.
  3. Comply with temperature restrictions of underlayment manufacturer for installation; use primer for installing underlayment at low temperatures.
  4. Apply in shingle fashion to shed water, with end laps of not less than 6 inches (150 mm) staggered 24 inches (600 mm) between courses.



5. Overlap side edges not less than 3-1/2 inches (90 mm).
6. Roll laps and edges with roller.
7. Cover underlayment within 14 days of installation.
8. Install self-adhering high-temperature underlayment at the following locations:

- a. Over entire roof.

- B. Install flashings to cover underlayment according to requirements in Section 076200 "Sheet Metal Flashing and Trim."

### 3.4 INSTALLATION, GENERAL

- A. Install sheet metal roofing to comply with details shown and recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to installation characteristics required unless otherwise indicated on Drawings.

1. Install fasteners, protective coatings, separators, sealants, and other miscellaneous items as required for complete roofing system.
2. Install sheet metal roofing true to line, levels, and slopes. Provide uniform, neat seams with minimum exposure of [solder] [welds] [sealant].
3. Anchor sheet metal roofing and other components of the Work securely in place, with provisions for thermal and structural movement.
4. Do not field cut sheet metal roofing by torch.
5. Provide metal closures at peaks rake, eaves, and each side of ridge caps and as required.
6. Flash and seal sheet metal roofing with closure strips at eaves, rakes, and perimeter of all openings. Fasten with self-tapping screws.
7. Locate and space fastenings in uniform vertical and horizontal alignment. Predrill panels for fasteners.
8. Lap metal flashing over sheet metal roofing to direct moisture to run over and off roofing.
9. Do not use graphite pencils to mark metal surfaces.

- B. Thermal Movement: Rigidly fasten metal roof panels to structure at only one location for each panel.

1. Allow remainder of panel to move freely for thermal expansion and contraction.
2. Point of Fixity: Fasten each panel along a single common line of fixing located at ridge.
3. Avoid attaching accessories through roof panels in manner that inhibits thermal movement.

- C. Fasteners: Use fastener sizes that penetrate substrate not less than recommended by fastener manufacturer to achieve maximum pull-out resistance.

- D. Metal Protection: Where dissimilar metals contact each other, or where metal contacts pressure-treated wood or other corrosive substrates, protect against galvanic action or corrosion by painting contact surfaces with bituminous coating, by applying self-adhering sheet underlayment to each contact surface, or by other permanent separation as recommended in SMACNA's "Architectural Sheet Metal Manual."

1. Coat concealed side of uncoated-aluminum sheet metal roofing with bituminous coating where roofing contacts wood, ferrous metal, or cementitious construction.

- E. Conceal fasteners and expansion provisions where possible in exposed work and locate to minimize possibility of leakage. Cover and seal fasteners and anchors as required for a tight installation.

F. Fasciae:

1. Align bottom of sheet metal roofing and fasten with blind rivets, bolts, or self-tapping screws.
2. Flash and seal sheet metal roofing with closure strips where fasciae meet soffits, along lower panel edges, and at perimeter of all openings.

3.5 INSTALLATION OF CUSTOM-FABRICATED SHEET METAL ROOFING

A. Install sheet metal roofing system with lines and corners of exposed units true and accurate.

1. Form exposed faces flat and free of buckles, excessive waves, and avoidable tool marks, considering metal temper and reflectivity.
2. Provide uniform, neat seams with minimum exposure of solder, welds, and sealant.
3. Fold back sheet metal to form hem on concealed side of exposed edges unless otherwise indicated.

B. Install cleats to hold sheet metal roofing panels in position.

1. Attach each cleat with at least two fasteners to prevent rotation.
2. Space cleats not more than 12 (300) inches (mm) o.c.
3. Bend tabs over fastener head.
4. Provide expansion-type cleats for roof panels that exceed 30 feet (9.1 m) in length.

C. Seal joints as required for watertight construction. For roofing with 3:12 slopes or less, use cleats at transverse seams.

1. Use sealant-filled joints unless otherwise indicated.
  - a. Embed hooked flanges of joint members not less than 1 inch (25 mm) into sealant.
  - b. Form joints to completely conceal sealant.
  - c. When ambient temperature at time of installation is between 40 and 70 deg F (4 and 21 deg C), set joint members for 50 percent movement each way.
  - d. Adjust setting proportionately for installation at higher ambient temperatures.
  - e. Do not install sealant-type joints at temperatures below 40 deg F (4 deg C).
2. Prepare joints and apply sealants to comply with requirements in Section 079200 "Joint Sealants."

D. Soldered Joints: Clean surfaces to be soldered, removing oils and foreign matter.

1. Pre-tin edges of sheets with solder to a width of 1-1/2 inches (38 mm); however, reduce pre-tinning where pre-tinned surface would show in completed Work.
2. Do not solder aluminum sheet.
3. Do not pre-tin zinc-tin alloy-coated copper.
4. Do not use torches for soldering.
5. Heat surfaces to receive solder, and flow solder into joint.
  - a. Fill joint completely.
  - b. Completely remove flux and spatter from exposed surfaces.
6. Copper Soldering: Tin edges of uncoated sheets, using solder for copper.

- E. Rivets: Rivet joints in uncoated aluminum where necessary for strength.
- F. Standing-Seam Roofing:
  - 1. Attach standing-seam metal panels to substrate with double-fastened cleats spaced at 12 (300) inches (mm) o.c.
  - 2. Install panels reaching from eave to ridge before moving to adjacent panels.
    - a. Where transverse joints are required, stagger joints in adjacent panels not less than 48 inches (1200 mm).
  - 3. Before panels are interlocked, apply continuous bead of sealant to top of flange of lower panel.
  - 4. Lock standing seams by folding over twice, so cleat and panel edges are completely engaged.
  - 5. Lock each panel to panel below with sealed transverse seam.
  - 6. Loose-lock panels at eave edges to continuous edge flashing exposed 24 inches (600 mm) from roof edge.
    - a. Attach edge flashing to face of roof edge with continuous cleat fastened to roof substrate at 12- (305-) inch (mm) o.c. spacing.
    - b. Lock panels to edge flashing.
  - 7. Fold over seams after locking at ridges and hips.
- G. Built-In Gutters:
  - 1. Anchor back edge of gutter with continuous cleat.
  - 2. Provide expansion joints at locations indicated on Drawings, but not less than 50 feet (14 m) on center.
  - 3. Join gutter sections with soldered joints.
    - a. Join sections with lapped joints sealed with sealant where required for expansion.
  - 4. Provide for thermal expansion.
  - 5. Slope gutters to drainage points.
  - 6. Provide end closures and seal watertight with sealant.
  - 7. Install self-adhering, high-temperature sheet underlayment inside built-in gutter as indicated on Drawings.
    - a. Extend self-adhering, high-temperature sheet underlayment to eave drip edges and beneath roof underlayment.
    - b. Lap edges 2 inches (50 mm).
    - c. Lap ends 4 inches (100 mm).

### 3.6 INSTALLATION OF ACCESSORIES

- A. Install accessories with positive anchorage to building and weathertight mounting, and provide for thermal expansion.
  - 1. Coordinate installation with flashings and other components.
  - 2. Install components required for complete sheet metal roofing assembly, including trim, seam covers, flashings, sealants, gaskets, fillers, metal closures, closure strips, and similar items.

3. Install accessories integral to sheet metal roofing that are specified in Section 076200 "Sheet Metal Flashing and Trim" to comply with that Section's requirements.
- B. Flashing and Trim: Comply with performance requirements and SMACNA's "Architectural Sheet Metal Manual."
1. Provide concealed fasteners where possible, and install units true to line, levels, and slopes.
  2. Install work with laps, joints, and seams that are permanently watertight and weather resistant.
  3. Install flashing and trim as required to seal against weather and to provide finished appearance, including, but are not limited to, eaves, rakes, corners, bases, framed openings, ridges, fasciae, and fillers.
  4. Install continuous strip of self-adhering underlayment at edge of continuous flashing overlapping self-adhering underlayment, where "continuous seal strip" is indicated in SMACNA's "Architectural Sheet Metal Manual" and on Drawings.
  5. Install exposed flashing and trim without excessive oil canning, buckling, and tool marks; true to line, levels, and slopes; and with exposed edges folded back to form hems.
  6. Install sheet metal flashing and trim to fit substrates, and to result in waterproof and weather-resistant performance.
  7. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim.
    - a. Space expansion joints at maximum of 10 feet (3 m) with no joints within 24 inches (600 mm) of corner or intersection.
    - b. Form expansion joints of intermeshing hooked flanges, not less than 1 inch (25 mm) deep, and filled with butyl sealant concealed within joints.
    - c. Use lapped expansion joints only where indicated on Drawings.

### 3.7 INSTALLATION TOLERANCES

- A. Installation Tolerances: Shim and align sheet metal roofing within installed tolerance of 1/4 inch in 20 feet (6 mm in 6 m) on slope and location lines indicated on Drawings and within 1/8-inch (3-mm) offset of adjoining faces and of alignment of matching profiles.

### 3.8 CLEANING

- A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.
- B. On completion of sheet metal roofing installation, clean finished surfaces as recommended by sheet metal roofing manufacturer.
- C. Clean and neutralize flux materials. Clean off excess solder.
- D. Clean off excess sealants.

### 3.9 PROTECTION

- A. Remove temporary protective coverings and strippable films as sheet metal roofing is installed unless otherwise indicated in manufacturer's written installation instructions.
- B. Prohibit traffic of any kind on installed sheet metal roofing.

- C. Maintain sheet metal roofing in clean condition during construction.
- D. Replace sheet metal roofing components that have been damaged or have deteriorated beyond successful repair by finish touchup or similar minor repair procedures, as determined by Architect.

### 3.10 ROOFING INSTALLER'S WARRANTY

- A. WHEREAS <Insert name> of <Insert address>, herein called the "Roofing Installer," has performed roofing and associated work ("work") on the following project:
  - 1. Owner: <Insert name>.
  - 2. Owner's Address: <Insert address>.
  - 3. Building Name/Type: <Insert information>.
  - 4. Building's Address: <Insert address>.
  - 5. Area of Work: <Insert information>.
  - 6. Acceptance Date: <Insert date>.
  - 7. Warranty Period: <Insert time>.
  - 8. Expiration Date: <Insert date>.
- B. AND WHEREAS Roofing Installer has contracted (either directly with Owner or indirectly as a subcontractor) to warrant said work against leaks and faulty or defective materials and workmanship for designated Warranty Period,
- C. NOW THEREFORE Roofing Installer hereby warrants, subject to terms and conditions herein set forth, that during Warranty Period Roofing Installer will, at Roofing Installer's own cost and expense, make or cause to be made such repairs to or replacements of said work as are necessary to correct faulty and defective work and as are necessary to maintain said work in a watertight condition.
- D. This Warranty is made subject to the following terms and conditions:
  - 1. Specifically excluded from this Warranty are damages to work and other parts of the building, and to building contents, caused by:
    - a. Lightning;
    - b. Peak gust wind speed exceeding 188 mph (m/s);
    - c. Fire;
    - d. Failure of roofing system substrate, including cracking, settlement, excessive deflection, deterioration, and decomposition;
    - e. Faulty construction of parapet walls, chimneys, skylights, vents, equipment supports, and other edge conditions and penetrations of the work;
    - f. Vapor condensation on bottom of roofing; and
    - g. Activity on roofing by others, including construction contractors, maintenance personnel, other persons, and animals, whether authorized or unauthorized by Owner.
  - 2. When work has been damaged by any of foregoing causes, Warranty shall be null and void until such damage has been repaired by Roofing Installer and until cost and expense thereof have been paid by Owner or by another responsible party so designated.
  - 3. Roofing Installer is responsible for damage to work covered by this Warranty but is not liable for consequential damages to building or building contents resulting from leaks or faults or defects of work.

4. During Warranty Period, if Owner allows alteration of work by anyone other than Roofing Installer, including cutting, patching, and maintenance in connection with penetrations, attachment of other work, and positioning of anything on roof, this Warranty shall become null and void on date of said alterations, but only to the extent said alterations affect work covered by this Warranty. If Owner engages Roofing Installer to perform said alterations, Warranty shall not become null and void unless Roofing Installer, before starting said work, shall have notified Owner in writing, showing reasonable cause for claim, that said alterations would likely damage or deteriorate work, thereby reasonably justifying a limitation or termination of this Warranty.
5. During Warranty Period, if original use of roof is changed and it becomes used for, but was not originally specified for, a promenade, work deck, spray-cooled surface, flooded basin, or other use or service more severe than originally specified, this Warranty shall become null and void on date of said change, but only to the extent said change affects work covered by this Warranty.
6. Owner shall promptly notify Roofing Installer of observed, known, or suspected leaks, defects, or deterioration and shall afford reasonable opportunity for Roofing Installer to inspect work and to examine evidence of such leaks, defects, or deterioration.
7. This Warranty is recognized to be the only warranty of Roofing Installer on said work and shall not operate to restrict or cut off Owner from other remedies and resources lawfully available to Owner in cases of roofing failure. Specifically, this Warranty shall not operate to relieve Roofing Installer of responsibility for performance of original work according to requirements of the Contract Documents, regardless of whether Contract was a contract directly with Owner or a subcontract with Owner's General Contractor.

E. IN WITNESS THEREOF, this instrument has been duly executed this <Insert day> day of <Insert month>, <Insert year>.

1. Authorized Signature: <Insert signature>.
2. Name: <Insert name>.
3. Title: <Insert title>.

END OF SECTION 076100

SECTION 076200 - SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
  - 1. Manufactured copper cornice & decorative trims
  - 2. Formed roof-drainage sheet metal fabrications.
- B. Related Requirements:
  - 1. Section 061000 "Rough Carpentry" for wood nailers, curbs, and blocking.

1.3 COORDINATION

- A. Coordinate sheet metal flashing and trim layout and seams with sizes and locations of penetrations to be flashed, and joints and seams in adjacent materials.
- B. Coordinate sheet metal flashing and trim installation with adjoining roofing and wall materials, joints, and seams to provide leakproof, secure, and noncorrosive installation.

1.4 ACTION SUBMITTALS

- A. Product Data: For each of the following
  - 1. Underlayment materials.
  - 2. Elastomeric sealant.
  - 3. Butyl sealant.
  - 4. Epoxy seam sealer.
- B. Shop Drawings: For sheet metal flashing and trim.
  - 1. Include plans, elevations, sections, and attachment details.
  - 2. Detail fabrication and installation layouts, expansion-joint locations, and keyed details. Distinguish between shop- and field-assembled Work.
  - 3. Include identification of material, thickness, weight, and finish for each item and location in Project.
  - 4. Include details for forming, including profiles, shapes, seams, and dimensions.
  - 5. Include details for joining, supporting, and securing, including layout and spacing of fasteners, cleats, clips, and other attachments. Include pattern of seams.

6. Include details of termination points and assemblies.
  7. Include details of roof-penetration flashing.
  8. Include details of edge conditions, including eaves, ridges, valleys, rakes, crickets, flashings, and counterflashings.
  9. Include details of special conditions.
  10. Include details of connections to adjoining work.
  11. Detail formed flashing and trim at scale of not less than 3 inches per 12 inches (1:5).
- C. Samples: For each exposed product and for each color and texture specified, 12 inches (300 mm) long by actual width.
- D. Samples for Verification: For each type of exposed finish.
1. Sheet Metal Cornice: 12 inches (300 mm) long by actual width of unit, including finished seam and in required profile. Include fasteners, cleats, clips, closures, and other attachments.
  2. Trim, Metal Closures, Expansion Joints, Joint Intersections, and Miscellaneous Fabrications: 12 inches (300 mm) long and in required profile. Include fasteners and other exposed accessories.
- 1.5 INFORMATIONAL SUBMITTALS
- A. Qualification Data: For fabricator.
- B. Product Certificates: For each type of coping and roof edge flashing that is ANSI/SPRI/FM 4435/ES-1 tested and FM Approvals approved.
- C. Product Test Reports: For each product, for tests performed by a qualified testing agency.
- D. Evaluation Reports: For copings and roof edge flashing, from an agency acceptable to authority having jurisdiction showing compliance with ANSI/SPRI/FM 4435/ES-1.
- E. Sample Warranty: For special warranty.
- 1.6 CLOSEOUT SUBMITTALS
- A. Maintenance Data: For sheet metal flashing and trim, and its accessories, to include in maintenance manuals.
- B. Special warranty.
- 1.7 QUALITY ASSURANCE
- A. Fabricator Qualifications: Employs skilled workers who custom fabricate sheet metal flashing and trim similar to that required for this Project and whose products have a record of successful in-service performance.
- B. Where pre-engineered manufactured products are specified, other field fabricated or shop/field fabricated substitutions will not be accepted. However, where shop/field fabrications are indicated pre-engineered systems will be considered with Architect approval.



- C. Mockups: Build mockups to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for fabrication and installation.
  - 1. Build mockup of typical roof cornice (eave), including built-in gutter, fascia, and approximately 4 feet long, including supporting construction cleats, seams, attachments, and accessories.
  - 2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Owner specifically approves such deviations in writing.
  - 3. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

## 1.8 DELIVERY, STORAGE, AND HANDLING

- A. Do not store sheet metal flashing and trim materials in contact with other materials that might cause staining, denting, or other surface damage.
  - 1. Store sheet metal flashing and trim materials away from uncured concrete and masonry.
  - 2. Protect stored sheet metal flashing and trim from contact with water.
- B. Protect strippable protective covering on sheet metal flashing and trim from exposure to sunlight and high humidity, except to extent necessary for period of sheet metal flashing and trim installation.

## PART 2 - PRODUCTS

### 2.1 PERFORMANCE REQUIREMENTS

- A. Sheet metal flashing and trim assemblies, including cleats, anchors, and fasteners, shall withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Completed sheet metal flashing and trim shall not rattle, leak, or loosen, and shall remain watertight.
- B. Sheet Metal Standard for Flashing and Trim: Comply with NRCA's "The NRCA Roofing Manual: Architectural Metal Flashing, Condensation and Air Leakage Control, and Reroofing" and SMACNA's "Architectural Sheet Metal Manual" requirements for dimensions and profiles shown unless more stringent requirements are indicated.
- C. SPRI Wind Design Standard: Manufacture and install roof edge flashings tested in accordance with ANSI/SPRI/FM 4435/ES-1 and capable of resisting the following design pressure:
  - 1. Design Pressure: As indicated on Drawings.
- D. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes to prevent buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
  - 1. Temperature Change: 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.

## 2.2 MANUFACTURERS

- A. Custom Design Manufacturer Cornice and Integral Gutter: Provide pre-design aluminum cornice, decorative trims, and accessories.
  - 1. Subject to compliance with requirements, provide products by one of the following:
    - a.
    - b.
    - c.
  - 2. See drawings for profile of cornice design.

## 2.3 SHEET METALS

- A. Protect mechanical and other finishes on exposed surfaces from damage by applying strippable, temporary protective film before shipping.
- A. Copper Sheet: ASTM B370, cold-rolled copper sheet, H00 or H01 temper.
  - 1. Subject to compliance with requirements, provide products by one of the following:
    - a.
    - b.
  - 2. Source Limitations: Obtain sheet from single source from single manufacturer.
  - 3. Nonpatinated, Exposed Finish: Mill.
- B. Lead Sheet: ASTM B749 lead sheet.

## 2.4 UNDERLAYMENT MATERIALS

- A. Self-Adhering, High-Temperature Sheet Underlayment: Minimum 30 mils (0.76 mm) thick, consisting of a slip-resistant polyethylene- or polypropylene-film top surface laminated to a layer of butyl- or SBS-modified asphalt adhesive, with release-paper backing; specifically designed to withstand high metal temperatures beneath metal roofing. Provide primer in accordance with underlayment manufacturer's written instructions.
  - 1. Subject to compliance with requirements, provide one of the following:
    - a. ; WIP 300HT.
    - b. ; Grace Ice and Water Shield HT.
    - c. ; WeatherLock Specialty Tile and Metal Underlayment.
  - 2. Source Limitations: Obtain underlayment from single source from single manufacturer.
  - 3. Low-Temperature Flexibility: ASTM D1970/D1970M; passes after testing at minus 20 deg F (29 deg C) or lower.
- B. Slip Sheet: Rosin-sized building paper, 3 lb/100 sq. ft. (0.16 kg/sq. m) minimum.

2.5 MISCELLANEOUS MATERIALS

- A. Provide materials and types of fasteners, protective coatings, sealants, and other miscellaneous items as required for complete sheet metal flashing and trim installation and as recommended by manufacturer of primary sheet metal or manufactured item unless otherwise indicated.
- B. Fasteners: Wood screws, annular threaded nails, self-tapping screws, self-locking rivets and bolts, and other suitable fasteners designed to withstand design loads and recommended by manufacturer of primary sheet metal or manufactured item.
  - 1. General: Blind fasteners or self-drilling screws, gasketed, with hex-washer head.
    - a. Exposed Fasteners: Heads matching color of sheet metal using plastic caps or factory-applied coating. Provide metal-backed EPDM or PVC sealing washers under heads of exposed fasteners bearing on weather side of metal.
    - b. Blind Fasteners: High-strength aluminum or stainless steel rivets suitable for metal being fastened.
    - c. Spikes and Ferrules: Same material as gutter; with spike with ferrule matching internal gutter width.
  - 2. Fasteners for Copper Sheet: Copper, hardware bronze or passivated Series 300 stainless steel.
  - 3. Fasteners for Aluminum Sheet: Aluminum or Series 300 stainless steel.
- C. Solder:
  - 1. For Copper: ASTM B32, Grade Sn50, 50 percent tin and 50 percent lead with maximum lead content of 0.2 percent.
- D. Sealant Tape: Pressure-sensitive, 100 percent solids, polyisobutylene compound sealant tape with release-paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape 1/2 inch (13 mm) wide and 1/8 inch (3 mm) thick.
- E. Elastomeric Sealant: ASTM C920, elastomeric silicone polymer sealant; of type, grade, class, and use classifications required to seal joints in sheet metal flashing and trim and remain watertight.
- F. Butyl Sealant: ASTM C1311, single-component, solvent-release butyl rubber sealant; polyisobutylene plasticized; heavy bodied for hooked-type expansion joints with limited movement.
- G. Epoxy Seam Sealer: Two-part, noncorrosive, aluminum seam-cementing compound, recommended by aluminum manufacturer for exterior nonmoving joints, including riveted joints.
- H. Bituminous Coating: Cold-applied asphalt emulsion in accordance with ASTM D1187/D1187M.
- I. Asphalt Roofing Cement: ASTM D4586, asbestos free, of consistency required for application.
- J. Reglets: Units of type, material, and profile required, formed to provide secure interlocking of separate reglet and counterflashing pieces, and compatible with flashing indicated [with factory-mitered and -welded corners and junctions] [and] [with interlocking counterflashing on exterior face, of same metal as reglet].
  - 1. Subject to compliance with requirements, provide products by one of the following:

- a.
- b.
- c.
2. Source Limitations: Obtain reglets from single source from single manufacturer.
3. Material: Copper, 16 oz./sq. ft. (0.55 mm thick).
4. Surface-Mounted Type: Provide with slotted holes for fastening to substrate, with neoprene or other suitable weatherproofing washers, and with channel for sealant at top edge.
5. Stucco Type: Provide with upturned fastening flange and extension leg of length to match thickness of applied finish materials.
6. Concrete Type: Provide temporary closure tape to keep reglet free of concrete materials, special fasteners for attaching reglet to concrete forms, and guides to ensure alignment of reglet section ends.
7. Masonry Type: Provide with offset top flange for embedment in masonry mortar joint.
8. Accessories:
  - a. Flexible-Flashing Retainer: Provide resilient plastic or rubber accessory to secure flexible flashing in reglet where clearance does not permit use of standard metal counterflashing or where Drawings show reglet without metal counterflashing.
  - b. Counterflashing Wind-Restraint Clips: Provide clips to be installed before counterflashing to prevent wind uplift of counterflashing's lower edge.
9. Finish: Mill.

## 2.6 FABRICATION, GENERAL

- A. Custom fabricate sheet metal flashing and trim to comply with details indicated and recommendations in cited sheet metal standard that apply to design, dimensions, geometry, metal thickness, and other characteristics of item required.
  1. Fabricate sheet metal flashing and trim in shop to greatest extent possible.
  2. Fabricate sheet metal flashing and trim in thickness or weight needed to comply with performance requirements, but not less than that specified for each application and metal.
  3. Verify shapes and dimensions of surfaces to be covered and obtain field measurements for accurate fit before shop fabrication.
  4. Form sheet metal flashing and trim to fit substrates without excessive oil-canning, buckling, and tool marks; true to line, levels, and slopes; and with exposed edges folded back to form hems.
  5. Conceal fasteners and expansion provisions where possible. Do not use exposed fasteners on faces exposed to view.
- B. Fabrication Tolerances:
  1. Fabricate sheet metal flashing and trim that is capable of installation to a tolerance of 1/4 inch in 20 feet (6 mm in 6 m) on slope and location lines indicated on Drawings and within 1/8-inch (3-mm) offset of adjoining faces and of alignment of matching profiles.
  2. Fabricate sheet metal flashing and trim that is capable of installation to tolerances specified.
- C. Expansion Provisions: Form metal for thermal expansion of exposed flashing and trim.

1. Form expansion joints of intermeshing hooked flanges, not less than 1 inch (25 mm) deep, filled with butyl sealant concealed within joints.
  2. Use lapped expansion joints only where indicated on Drawings.
- D. Sealant Joints: Where movable, nonexpansion-type joints are required, form metal in accordance with cited sheet metal standard to provide for proper installation of elastomeric sealant.
- E. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal.
- F. Fabricate cleats and attachment devices of sizes as recommended by cited sheet metal standard and by FM Global Property Loss Prevention Data Sheet 1-49 for application, but not less than thickness of metal being secured.
- G. Seams:
1. Fabricate nonmoving seams with flat-lock seams. Tin edges to be seamed, form seams, and solder.
  2. Fabricate nonmoving seams with flat-lock seams. Form seams and seal with elastomeric sealant unless otherwise recommended by sealant manufacturer for intended use. Rivet joints where necessary for strength.
  3. Seams for Aluminum: Fabricate nonmoving seams with flat-lock seams. Form seams and seal with epoxy seam sealer. Rivet joints where necessary for strength.
- H. Do not use graphite pencils to mark metal surfaces.

## 2.7 ROOF-DRAINAGE SHEET METAL FABRICATIONS

- A. Built-in Gutters:
1. Fabricate to cross section required, with riveted and soldered joints, complete with end pieces, outlet tubes, and other special accessories as required.
  2. Fabricate in minimum 96-inch- (2400-mm-) long sections. Fabricate expansion joints and accessories from same metal as gutters unless otherwise indicated.
  3. Fabricate gutters with built-in expansion joints.
  4. Accessories: Wire-ball downspout strainer.
  5. Fabricate from the following materials:
    - a. Copper: 16 oz./sq. ft. (0.55 mm thick).

## 2.8 LOW-SLOPE ROOF SHEET METAL FABRICATIONS

- A. Custom Manufactured Cornice and Integral Gutter:
1. Decorative cornice and gutter profiles shall be manufactured from mill finished copper, 10'-0" lengths, in shapes as indicated in the drawings.
    - a. Decorative cornice profiles shall be manufactured from 0.050" mill finished copper, 10'-0" lengths, in shapes as indicated by manufacturer's printed literature and as indicated on plans.
    - b. All cornice trims shall be factory punched with elongated fastening holes.
    - c. All exposed surfaces of cornice profiles shall be finished as specified in this section.

- d. Preassemble cornice sections in shop to greatest extent possible to minimize field splicing.
- e. Furnish miter patterns and reassembly instructions properly marked for each cornice profile.
2. Decorative cornice splices shall be manufactured from 0.050" copper, 4" lengths, formed to fit the inside of the cornice profiles.
3. Support Brackets, attachments brackets and retainer brackets shall be manufactured from material compatible with the copper gutters, heliarc welded construction (where necessary), factory punched for fasteners.
4. Mitered Corners: Provide factory mitered corners for all cornice profiles (excluding soffits). Cornice profiles shall be precision saw cut, heliarc tack welded to produce a picture frame joint.
5. Cornice Returns: If shown on drawings, provide cornice returns at eaves & rake terminations in lengths as indicated on plans.

### PART 3 - EXECUTION

#### 3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with installer present, for compliance with requirements for installation tolerances, substrate, and other conditions affecting performance of the Work.
  1. Verify compliance with requirements for installation tolerances of substrates.
  2. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.
  3. Verify that air- or water-resistant barriers have been installed over sheathing or backing substrate to prevent air infiltration or water penetration.
- B. Field verify that framing has been built in accordance with the dimensions furnished by the cornice manufacturer shop drawings. Do not proceed with installation until unsatisfactory conditions are corrected.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

#### 3.2 INSTALLATION OF UNDERLAYMENT

- A. Felt Underlayment: Install felt underlayment, wrinkle free, using adhesive to minimize use of mechanical fasteners under sheet metal flashing and trim.
  1. Install in shingle fashion to shed water.
  2. Lap joints not less than 2 inches (50 mm).
- B. Self-Adhering, High-Temperature Sheet Underlayment:
  1. Install self-adhering, high-temperature sheet underlayment; wrinkle free.
  2. Prime substrate if recommended by underlayment manufacturer.
  3. Comply with temperature restrictions of underlayment manufacturer for installation; use primer for installing underlayment at low temperatures.
  4. Apply in shingle fashion to shed water, with end laps of not less than 6 inches (150 mm) staggered 24 inches (600 mm) between courses.
  5. Overlap side edges not less than 3-1/2 inches (90 mm). Roll laps and edges with roller.
  6. Roll laps and edges with roller.
  7. Cover underlayment within 14 days.

### 3.3 INSTALLATION, GENERAL

- A. Install sheet metal flashing and trim to comply with details indicated and recommendations of cited sheet metal standard that apply to installation characteristics required unless otherwise indicated on Drawings.
  - 1. Install fasteners, solder, protective coatings, separators, sealants, and other miscellaneous items as required to complete sheet metal flashing and trim system.
  - 2. Install sheet metal flashing and trim true to line, levels, and slopes. Provide uniform, neat seams with minimum exposure of solder, welds or sealant.
  - 3. Anchor sheet metal flashing and trim and other components of the Work securely in place, with provisions for thermal and structural movement.
  - 4. Install sheet metal flashing and trim to fit substrates and to result in watertight performance.
  - 5. Install continuous cleats with fasteners spaced not more than 12 inches (300 mm) o.c.
  - 6. Space individual cleats not more than 12 inches (300 mm) apart. Attach each cleat with at least two fasteners. Bend tabs over fasteners.
  - 7. Install exposed sheet metal flashing and trim with limited oil-canning, and free of buckling and tool marks.
  - 8. Do not field cut sheet metal flashing and trim by torch.
  - 9. Do not use graphite pencils to mark metal surfaces.
  
- B. Metal Protection: Where dissimilar metals contact each other, or where metal contacts pressure-treated wood or other corrosive substrates, protect against galvanic action or corrosion by painting contact surfaces with bituminous coating or by other permanent separation as recommended by sheet metal manufacturer or cited sheet metal standard.
  - 1. Coat concealed side of uncoated-aluminum and stainless steel sheet metal flashing and trim with bituminous coating where flashing and trim contact wood, ferrous metal, or cementitious construction.
  - 2. Underlayment: Where installing sheet metal flashing and trim directly on cementitious or wood substrates, install underlayment and cover with slip sheet.
  
- C. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim.
  - 1. Space movement joints at maximum of 10 feet (3 m) with no joints within 24 inches (600 mm) of corner or intersection.
  - 2. Form expansion joints of intermeshing hooked flanges, not less than 1 inch (25 mm) deep, filled with sealant concealed within joints.
  - 3. Use lapped expansion joints only where indicated on Drawings.
  
- D. Fasteners: Use fastener sizes that penetrate substrate not less than recommended by fastener manufacturer to achieve maximum pull-out resistance.
  
- E. Conceal fasteners and expansion provisions where possible in exposed work and locate to minimize possibility of leakage. Cover and seal fasteners and anchors as required for a tight installation.
  
- F. Seal joints as required for watertight construction.
  - 1. Use sealant-filled joints unless otherwise indicated.
    - a. Embed hooked flanges of joint members not less than 1 inch (25 mm) into sealant.
    - b. Form joints to completely conceal sealant.

- c. When ambient temperature at time of installation is between 40 and 70 deg F (4 and 21 deg C), set joint members for 50 percent movement each way.
  - d. Adjust setting proportionately for installation at higher ambient temperatures.
    - 1) Do not install sealant-type joints at temperatures below 40 deg F (4 deg C).
  - 2. Prepare joints and apply sealants to comply with requirements in Section 079200 "Joint Sealants."
- G. Soldered Joints: Clean surfaces to be soldered, removing oils and foreign matter.
- 1. Pretin edges of sheets with solder to width of 1-1/2 inches (38 mm); however, reduce pretinning where pretinned surface would show in completed Work.
  - 2. Do not solder metallic-coated steel and aluminum sheet.
  - 3. Do not pretin zinc-tin alloy-coated copper.
  - 4. Do not use torches for soldering.
  - 5. Heat surfaces to receive solder, and flow solder into joint.
    - a. Fill joint completely.
    - b. Completely remove flux and spatter from exposed surfaces.
  - 6. Copper Soldering: Tin edges of uncoated sheets, using solder for copper.
  - 7. Copper-Clad Stainless Steel Soldering: Tin edges of uncoated sheets, using solder for copper-clad stainless steel.

### 3.4 INSTALLATION OF CUSTOM MANUFACTURED CORNICE AND INTEGRAL GUTTER

- A. The manufactured cornice and decorative trims shall be installed in strict accordance with manufacturer's printed instructions and shop drawings.
- B. Fastening: Cornice trims shall be nailed through elongated holes with 1-1/2" stainless steel nails. Support brackets, retaining brackets and attachment brackets shall be installed with #10 x 2" stainless steel wood screws at locations and spacing as shown on shop drawings
- C. Install cornice profiles and decorative trims with concealed splice plates over brackets and/or framing substrates as shown on shop drawings. In accordance with shop drawings;
  - 1. Coordinate and align spacing of expansion reveal joints with associated trims (stack joints).
  - 2. Plan spacing of joints so there is no sections of fascia shorter than 48" in length.
  - 3. Check horizontal alignment of fascia during installation and adjust as required.

### 3.5 INSTALLATION OF ROOF-DRAINAGE SYSTEM

- A. Install sheet metal roof-drainage items to produce complete roof-drainage system in accordance with cited sheet metal standard unless otherwise indicated. Coordinate installation of roof perimeter flashing with installation of roof-drainage system.
- B. Built-in Gutters:
  - 1. Join sections with riveted and soldered joints or joints sealed with sealant.
  - 2. Provide for thermal expansion.



3. Slope to downspouts.
4. Provide end closures and seal watertight with sealant.
5. Install underlayment layer in built-in gutter trough and extend to drip edge at eaves and under underlayment on roof sheathing.
  - a. Lap sides minimum of 2 inches (50 mm) over underlying course.
  - b. Lap ends minimum of 4 inches (100 mm).
  - c. Stagger end laps between succeeding courses at least 72 inches (1830 mm).
  - d. Fasten with roofing nails.
  - e. Install slip sheet over underlayment.
6. Anchor and loosely lock back edge of gutter to continuous cleat, eave or apron flashing.
7. Install gutter with expansion joints at locations indicated on Drawings, but not exceeding, 50 feet (15.2 m) apart. Install expansion-joint caps.

### 3.6 INSTALLATION OF ROOF FLASHINGS

- A. Install sheet metal flashing and trim to comply with performance requirements, sheet metal manufacturer's written installation instructions, and cited sheet metal standard.
  1. Provide concealed fasteners where possible, and set units true to line, levels, and slopes.
  2. Install work with laps, joints, and seams that are permanently watertight and weather resistant.
- B. Roof Edge Flashing:
  1. Install roof edge flashings in accordance with ANSI/SPRI/FM 4435/ES-1.
- C. Counterflashing: Coordinate installation of counterflashing with installation of base flashing.
  1. Insert counterflashing in reglets or receivers and fit tightly to base flashing.
  2. Extend counterflashing 4 inches (100 mm) over base flashing.
  3. Lap counterflashing joints minimum of 4 inches (100 mm).
  4. Secure in waterproof manner by means of interlocking folded seam or blind rivets and sealant unless otherwise indicated.

### 3.7 INSTALLATION TOLERANCES

- A. Installation Tolerances: Shim and align sheet metal flashing and trim within installed tolerance of 1/4 inch in 20 feet (6 mm in 6 m) on slope and location lines indicated on Drawings and within 1/8-inch (3-mm) offset of adjoining faces and of alignment of matching profiles.

### 3.8 CLEANING

- A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.
- B. Clean and neutralize flux materials. Clean off excess solder.
- C. Clean off excess sealants.

3.9 PROTECTION

- A. Remove temporary protective coverings and strippable films as sheet metal flashing and trim are installed unless otherwise indicated in manufacturer's written installation instructions.
- B. On completion of sheet metal flashing and trim installation, remove unused materials and clean finished surfaces as recommended in writing by sheet metal flashing and trim manufacturer.
- C. Maintain sheet metal flashing and trim in clean condition during construction.
- D. Replace sheet metal flashing and trim that have been damaged or that have deteriorated beyond successful repair by finish touchup or similar minor repair procedures, as determined by Architect.

END OF SECTION 076200

## SECTION 079200 - JOINT SEALANTS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section Includes:
  - 1. Nonstaining silicone joint sealants.
  - 2. Urethane joint sealants.
  - 3. Butyl joint sealants.

#### 1.3 ACTION SUBMITTALS

- A. Product Data: For each joint-sealant product.
- B. Samples for Initial Selection: Manufacturer's color charts consisting of strips of cured sealants showing the full range of colors available for each product exposed to view.
- C. Samples for Verification: For each kind and color of joint sealant required, provide Samples with joint sealants in 1/2-inch- (13-mm-) wide joints formed between two 6-inch- (150-mm-) long strips of material matching the appearance of exposed surfaces adjacent to joint sealants.
- D. Joint-Sealant Schedule: Include the following information:
  - 1. Joint-sealant application, joint location, and designation.
  - 2. Joint-sealant manufacturer and product name.
  - 3. Joint-sealant formulation.
  - 4. Joint-sealant color.

#### 1.4 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For qualified testing agency.
- B. Product Test Reports: For each kind of joint sealant, for tests performed by manufacturer and witnessed by a qualified testing agency.
- C. Field-Adhesion-Test Reports: For each sealant application tested.
- D. Sample Warranties: For special warranties.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: An authorized representative who is trained and approved by manufacturer.
- B. Product Testing: Test joint sealants using a qualified testing agency.
  - 1. Testing Agency Qualifications: Qualified according to ASTM C1021 to conduct the testing indicated.
- C. Mockups: Install sealant in mockups of assemblies specified in other Sections that are indicated to receive joint sealants specified in this Section. Use materials and installation methods specified in this Section.

1.6 PRECONSTRUCTION TESTING

- A. Preconstruction Field-Adhesion Testing: Before installing sealants, field test their adhesion to Project joint substrates as follows:
  - 1. Locate test joints where indicated on Project or, if not indicated, as directed by Architect.
  - 2. Conduct field tests for each kind of sealant and joint substrate.
  - 3. Notify Architect seven days in advance of dates and times when test joints will be erected.
  - 4. Arrange for tests to take place with joint-sealant manufacturer's technical representative present.
    - a. Test Method: Test joint sealants according to Method A, Field-Applied Sealant Joint Hand Pull Tab, in Appendix X1.1 in ASTM C1193 or Method A, Tail Procedure, in ASTM C1521.
      - 1) For joints with dissimilar substrates, verify adhesion to each substrate separately; extend cut along one side, verifying adhesion to opposite side. Repeat procedure for opposite side.
  - 5. Report whether sealant failed to adhere to joint substrates or tore cohesively. Include data on pull distance used to test each kind of product and joint substrate. For sealants that fail adhesively, retest until satisfactory adhesion is obtained.
  - 6. Evaluation of Preconstruction Field-Adhesion-Test Results: Sealants not evidencing adhesive failure from testing, in absence of other indications of noncompliance with requirements, will be considered satisfactory. Do not use sealants that fail to adhere to joint substrates during testing.

1.7 FIELD CONDITIONS

- A. Do not proceed with installation of joint sealants under the following conditions:
  - 1. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer or are below 40 deg F (5 deg C).
  - 2. When joint substrates are wet.
  - 3. Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.
  - 4. Where contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

1.8 WARRANTY

- A. Special Installer's Warranty: Installer agrees to repair or replace joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.
  - 1. Warranty Period: Two years from date of Substantial Completion.
- B. Special Manufacturer's Warranty: Manufacturer agrees to furnish joint sealants to repair or replace those joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.
  - 1. Warranty Period: Five years from date of Substantial Completion.
- C. Special warranties specified in this article exclude deterioration or failure of joint sealants from the following:
  - 1. Movement of the structure caused by stresses on the sealant exceeding sealant manufacturer's written specifications for sealant elongation and compression.
  - 2. Disintegration of joint substrates from causes exceeding design specifications.
  - 3. Mechanical damage caused by individuals, tools, or other outside agents.
  - 4. Changes in sealant appearance caused by accumulation of dirt or other atmospheric contaminants.

PART 2 - PRODUCTS

2.1 JOINT SEALANTS, GENERAL

- A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by joint-sealant manufacturer, based on testing and field experience.
- B. Colors of Exposed Joint Sealants: As selected by Architect from manufacturer's full range.

2.2 NONSTAINING SILICONE JOINT SEALANTS

- A. Nonstaining Joint Sealants: No staining of substrates when tested according to ASTM C1248.
- B. Silicone, Nonstaining, S, NS, 50, NT: Nonstaining, single-component, nonsag, plus 50 percent and minus 50 percent movement capability, nontraffic-use, neutral-curing silicone joint sealant; ASTM C920, Type S, Grade NS, Class 50, Use NT.
  - 1. Subject to compliance with requirements, provide one of the following:
    - a. ; Silpruf NB.
    - b. ; Pecora 895NST.
    - c. ; Dow Corning® 795 Silicone Building Sealant.
    - d. ; Spectrem 2.

## 2.3 BUTYL JOINT SEALANTS

### A. Butyl-Rubber-Based Joint Sealants: ASTM C1311.

1. Subject to compliance with requirements, provide one of the following:

- a. ; Chem-Calk 300.
- b. ; BC-158.

## 2.4 JOINT-SEALANT BACKING

### A. Sealant Backing Material, General: Nonstaining; compatible with joint substrates, sealants, primers, and other joint fillers; and approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.

1. Subject to compliance with requirements, provide one of the following:

- a. ; MasterSeal 920 & 921(Pre-2014: Sonolastic Backer Rod).
- b. ;.

### B. Cylindrical Sealant Backings: ASTM C1330, Type B (bicellular material with a surface skin) or any of the preceding types, as approved in writing by joint-sealant manufacturer for joint application indicated, and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.

## 2.5 MISCELLANEOUS MATERIALS

### A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.

### B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.

### C. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

#### A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting performance of the Work.

#### B. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 PREPARATION

- A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:
1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.
  2. Clean porous joint substrate surfaces by brushing, grinding, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining after cleaning operations above by vacuuming or blowing out joints with oil-free compressed air. Porous joint substrates include the following:
    - a. Concrete.
    - b. Masonry.
  3. Remove laitance and form-release agents from concrete.
  4. Clean nonporous joint substrate surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants. Nonporous joint substrates include the following:
    - a. Metal.
    - b. Glass.
- B. Joint Priming: Prime joint substrates where recommended by joint-sealant manufacturer or as indicated by preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.
- C. Masking Tape: Use masking tape where required to prevent contact of sealant or primer with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

### 3.3 INSTALLATION OF JOINT SEALANTS

- A. General: Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.
- B. Sealant Installation Standard: Comply with recommendations in ASTM C1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.
- C. Install sealant backings of kind indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.
1. Do not leave gaps between ends of sealant backings.
  2. Do not stretch, twist, puncture, or tear sealant backings.

3. Remove absorbent sealant backings that have become wet before sealant application, and replace them with dry materials.
- D. Install sealants using proven techniques that comply with the following and at the same time backings are installed:
1. Place sealants so they directly contact and fully wet joint substrates.
  2. Completely fill recesses in each joint configuration.
  3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.
- E. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified in subparagraphs below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.
1. Remove excess sealant from surfaces adjacent to joints.
  2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
  3. Provide concave joint profile per Figure 8A in ASTM C1193 unless otherwise indicated.
    - a. Use masking tape to protect surfaces adjacent to recessed tooled joints.

### 3.4 FIELD QUALITY CONTROL

- A. Field-Adhesion Testing: Field test joint-sealant adhesion to joint substrates as follows:
1. Extent of Testing: Test completed and cured sealant joints as follows:
    - a. Perform 5 tests for the first 1000 feet (300 m) of joint length for each kind of sealant and joint substrate.
  2. Test Method: Test joint sealants according to Method A, Field-Applied Sealant Joint Hand Pull Tab, in Appendix X1 in ASTM C1193 or Method A, Tail Procedure, in ASTM C1521.
    - a. For joints with dissimilar substrates, verify adhesion to each substrate separately; extend cut along one side, verifying adhesion to opposite side. Repeat procedure for opposite side.
  3. Inspect tested joints and report on the following:
    - a. Whether sealants filled joint cavities and are free of voids.
    - b. Whether sealant dimensions and configurations comply with specified requirements.
    - c. Whether sealants in joints connected to pulled-out portion failed to adhere to joint substrates or tore cohesively. Include data on pull distance used to test each kind of product and joint substrate. Compare these results to determine if adhesion complies with sealant manufacturer's field-adhesion hand-pull test criteria.
  4. Record test results in a field-adhesion-test log. Include dates when sealants were installed, names of persons who installed sealants, test dates, test locations, whether joints were primed, adhesion results and percent elongations, sealant material, sealant configuration, and sealant dimensions.



5. Repair sealants pulled from test area by applying new sealants following same procedures used originally to seal joints. Ensure that original sealant surfaces are clean and that new sealant contacts original sealant.

- B. Evaluation of Field-Adhesion-Test Results: Sealants not evidencing adhesive failure from testing or noncompliance with other indicated requirements will be considered satisfactory. Remove sealants that fail to adhere to joint substrates during testing or to comply with other requirements. Retest failed applications until test results prove sealants comply with indicated requirements.

### 3.5 CLEANING

- A. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

### 3.6 PROTECTION

- A. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out, remove, and repair damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from original work.

### 3.7 JOINT-SEALANT SCHEDULE

- A. Joint-Sealant Application: Exterior joints in vertical surfaces and horizontal nontraffic surfaces.

1. Joint Locations:
  - a. Construction joints in cast-in-place concrete.
  - b. Joints between plant-precast architectural concrete units.
  - c. Joints between metal panels.
  - d. Joints between different materials listed above.
  - e. Perimeter joints between materials listed above and frames of doors and windows.
  - f. Other joints as indicated on Drawings.

2. Joint Sealant: Silicone, nonstaining, S, NS, 50, NT.
3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.

- B. Joint-Sealant Application: Concealed mastics.

1. Joint Locations:
  - a. Aluminum thresholds.
  - b. Sill plates.
  - c. Other joints as indicated on Drawings.

2. Joint Sealant: Butyl-rubber based.
3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.

WEBSTER AVENUE BRIDGE OVER THE NORTH BRANCH OF THE CHICAGO RIVER  
CDOT PROJECT NO.: E-1-525

END OF SECTION 079200

SECTION 081113 - HOLLOW METAL DOORS AND FRAMES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes:
  - 1. Interior standard steel doors and frames.
  - 2. Exterior standard steel doors and frames.
  - 3. Exterior custom hollow-metal doors and frames.
- B. Related Requirements:
  - 1. Section 087100 "Door Hardware" for door hardware for hollow-metal doors.

1.3 DEFINITIONS

- A. Minimum Thickness: Minimum thickness of base metal without coatings according to NAAMM-HMMA 803 or ANSI/SDI A250.8.

1.4 COORDINATION

- A. Coordinate anchorage installation for hollow-metal frames. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors. Deliver such items to Project site in time for installation.
- B. Coordinate requirements for installation of door hardware, electrified door hardware, and access control and security systems.

1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product.
  - 1. Include construction details, material descriptions, core descriptions, fire-resistance ratings, and finishes.
- B. Sustainable Design Submittals:
  - 1. Product Data: For recycled content, indicating postconsumer and preconsumer recycled content and cost.

- C. Shop Drawings: Include the following:
  - 1. Elevations of each door type.
  - 2. Details of doors, including vertical- and horizontal-edge details and metal thicknesses.
  - 3. Frame details for each frame type, including dimensioned profiles and metal thicknesses.
  - 4. Locations of reinforcement and preparations for hardware.
  - 5. Details of each different wall opening condition.
  - 6. Details of electrical raceway and preparation for electrified hardware, access control systems, and security systems.
  - 7. Details of anchorages, joints, field splices, and connections.
  - 8. Details of accessories.
  - 9. Details of moldings, removable stops, and glazing.
- D. Samples for Initial Selection: For hollow-metal doors and frames with factory-applied color finishes.
- E. Samples for Verification:
  - 1. Finishes: For each type of exposed finish required, prepared on Samples of not less than 3 by 5 inches (75 by 127 mm).
  - 2. Fabrication: Prepare Samples approximately 12 by 12 inches (305 by 305 mm) to demonstrate compliance with requirements for quality of materials and construction:
    - a. Doors: Show vertical-edge, top, and bottom construction; core construction; and hinge and other applied hardware reinforcement. Include separate section showing glazing if applicable.
    - b. Frames: Show profile, corner joint, floor and wall anchors, and silencers. Include separate section showing fixed hollow-metal panels and glazing if applicable.
- F. Product Schedule: For hollow-metal doors and frames, prepared by or under the supervision of supplier, using same reference numbers for details and openings as those on Drawings. Coordinate with final door hardware schedule.

## 1.6 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For door inspector.
  - 1. Fire-Rated Door Inspector: Submit documentation of compliance with NFPA 80, Section 5.2.3.1.
  - 2. Egress Door Inspector: Submit documentation of compliance with NFPA 101, Section 7.2.1.15.4.
  - 3. Submit copy of DHI Fire and Egress Door Assembly Inspector (FDAI) certificate.
- B. Product Test Reports: For each type of fire-rated hollow-metal door and frame assembly and thermally rated door assemblies for tests performed by a qualified testing agency indicating compliance with performance requirements.
- C. Oversize Construction Certification: For assemblies required to be fire-rated and exceeding limitations of labeled assemblies.
- D. Field quality control reports.

1.7 CLOSEOUT SUBMITTALS

- A. Record Documents: For fire-rated doors, list of door numbers and applicable room name and number to which door accesses.

1.8 QUALITY ASSURANCE

- A. Fire-Rated Door Inspector Qualifications: Inspector for field quality control inspections of fire-rated door assemblies shall meet the qualifications set forth in NFPA 80, section 5.2.3.1 and the following:
  - 1. Door and Hardware Institute Fire and Egress Door Assembly Inspector (FDAI) certification.
- B. Egress Door Inspector Qualifications: Inspector for field quality control inspections of egress door assemblies shall meet the qualifications set forth in NFPA 101, Section 7.2.1.15.4 and the following:
  - 1. Door and Hardware Institute Fire and Egress Door Assembly Inspector (FDAI) certification.

1.9 DELIVERY, STORAGE, AND HANDLING

- A. Deliver hollow-metal doors and frames palletized, packaged, or crated to provide protection during transit and Project-site storage. Do not use nonvented plastic.
  - 1. Provide additional protection to prevent damage to factory-finished units.
- B. Deliver welded frames with two removable spreader bars across bottom of frames, tack welded to jambs and mullions.
- C. Store hollow-metal doors and frames vertically under cover at Project site with head up. Place on minimum 4-inch- (102-mm-) high wood blocking. Provide minimum 1/4-inch (6-mm) space between each stacked door to permit air circulation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Subject to compliance with requirements, provide products by one of the following:
  - 1.
  - 2.
  - 3.
  - 4.

2.2 PERFORMANCE REQUIREMENTS

- A. Fire-Rated Door Assemblies: Assemblies complying with NFPA 80 that are listed and labeled by a qualified testing agency acceptable to authorities having jurisdiction for fire-protection ratings indicated on Drawings, based on testing at positive pressure according to NFPA 252 or UL 10C.

1. Smoke- and Draft-Control Door Assemblies: Listed and labeled for smoke and draft control by a qualified testing agency acceptable to authorities having jurisdiction, based on testing according to UL 1784 and installed in compliance with NFPA 105.
  2. Oversize Fire-Rated Door Assemblies: For units exceeding sizes of tested assemblies, provide certification by a qualified testing agency that doors comply with standard construction requirements for tested and labeled fire-rated door assemblies except for size.
  3. Temperature-Rise Limit: At vertical exit enclosures and exit passageways, provide doors that have a maximum transmitted temperature end point of not more than 450 deg F (250 deg C) above ambient after 30 minutes of standard fire-test exposure.
- B. Fire-Rated, Borrowed-Lite Assemblies: Assemblies complying with NFPA 80 and listed and labeled by a qualified testing agency acceptable to authorities having jurisdiction, for fire-protection ratings indicated, based on testing according to NFPA 257 or UL 9.
- C. Thermally Rated Door Assemblies: Provide door assemblies with U-factor of not more than 0.40 deg Btu/F x h x sq. ft. (2.27 W/K x sq. m) when tested according to ASTM C518.

### 2.3 EXTERIOR STANDARD STEEL DOORS AND FRAMES

- A. Construct hollow-metal doors and frames to comply with standards indicated for materials, fabrication, hardware locations, hardware reinforcement, tolerances, and clearances, and as specified.
- B. Extra-Heavy-Duty Doors and Frames: ANSI/SDI A250.8, Level 3; ANSI/SDI A250.4, Level A..
1. Doors:
    - a. Type: As indicated in the Door and Frame Schedule.
    - b. Thickness: 1-3/4 inches (44.5 mm).
    - c. Face: Metallic-coated steel sheet, minimum thickness of 0.053 inch (1.3 mm) 16 gauge, with minimum A60 (ZF180) coating.
    - d. Edge Construction: Model 2, Seamless.
    - e. Edge Bevel: Provide manufacturer's standard beveled or square edges.
    - f. Top Edge Closures: Close top edges of doors with flush closures of same material as face sheets. Seal joints against water penetration.
    - g. Bottom Edges: Close bottom edges of doors with end closures or channels of same material as face sheets. Provide weep-hole openings in bottoms of exterior doors to permit moisture to escape.
    - h. Core: Polyurethane Vertical steel stiffener.
    - i. Fire-Rated Core: Manufacturer's standard vertical steel stiffener with insulation core for fire-rated doors.
  2. Frames:
    - a. Materials: Metallic-coated steel sheet, minimum thickness of 0.053 inch (1.3 mm) 16 gauge, with minimum A60 (ZF180) coating.
    - b. Construction: Full profile welded.
  3. Exposed Finish: Prime.

2.4 EXTERIOR CUSTOM HOLLOW-METAL DOORS AND FRAMES

A. Commercial Doors and Frames: NAAMM-HMMA 861; ANSI/SDI A250.4, Physical Performance Level A. [At locations indicated in the Door and Frame Schedule] <Insert locations>.

1. Doors:

- a. Type: As indicated in the Door and Frame Schedule.
- b. Thickness: 1-3/4 inches (44.5 mm).
- c. Face: Metallic-coated steel sheet, minimum thickness of 0.053 inch (1.30 mm), with minimum G60 or A60 (ZF180) coating.
- d. Edge Construction: Continuously welded with no visible seam.
- e. Top Edge Closures: Close top edges of doors with flush closures of same material as face sheets. Seal joints against water penetration.
- f. Bottom Edges: Close bottom edges of doors where required for attachment of weather stripping with end closures or channels of same material as face sheets. Provide weep-hole openings in bottoms of exterior doors to permit moisture to escape.
- g. Core: Steel stiffened.

2. Frames:

- a. Materials: Metallic-coated steel sheet, minimum thickness of 0.053 inch (1.3 mm), except 0.067 inch (1.7 mm) for openings exceeding 4 feet (1219 mm) wide; with minimum G60 or A60 (ZF180) coating.
- b. Construction: Full profile welded.

3. Exposed Finish: Prime.

B. Commercial Laminated Doors and Frames: NAAMM-HMMA 867; ANSI/SDI A250.4, Physical Performance Level A. [At locations indicated in the Door and Frame Schedule] <Insert locations>.

1. Doors:

- a. Type: As indicated in the Door and Frame Schedule.
- b. Thickness: 1-3/4 inches (44.5 mm).
- c. Face: Metallic-coated steel sheet, minimum thickness of 0.053 inch (1.3 mm) 16 gauge, with minimum G60 or A60 (ZF180) coating.
- d. Edge Construction: Continuously welded with no visible seam.
- e. Top Edge Closures: Close top edges of doors with flush closures of same material as face sheets. Seal joints against water penetration.
- f. Bottom Edges: Close bottom edges of doors where required for attachment of weather stripping with end closures or channels of same material as face sheets. Provide weep-hole openings in bottoms of exterior doors to permit moisture to escape.
- g. Core: Polyurethane Vertical steel stiffener.

2. Frames:

- a. Materials: Metallic-coated steel sheet, minimum thickness of 0.053 inch (1.3 mm), with minimum G60 or A60 (ZF180) coating.
- b. Construction: Full profile welded.

3. Exposed Finish: Prime.

## 2.5 HOLLOW-METAL PANELS

- A. Provide hollow-metal panels of same materials, construction, and finish as adjacent door assemblies.

## 2.6 FRAME ANCHORS

- A. Jamb Anchors:

1. Type: Anchors of minimum size and type required by applicable door and frame standard, and suitable for performance level indicated.
2. Quantity: Minimum of three anchors per jamb, with one additional anchor for frames with no floor anchor. Provide one additional anchor for each 24 inches (610 mm) of frame height above 7 feet (2.1 m).
3. Postinstalled Expansion Anchor: Minimum 3/8-inch- (9.5-mm-) diameter bolts with expansion shields or inserts, with manufacturer's standard pipe spacer.

- B. Floor Anchors: Provide floor anchors for each jamb and mullion that extends to floor.

- C. Floor Anchors for Concrete Slabs with Underlayment: Adjustable-type anchors with extension clips, allowing not less than 2-inch (51-mm) height adjustment. Terminate bottom of frames at top of underlayment.

- D. Material: ASTM A879/A879M, Commercial Steel (CS), 04Z (12G) coating designation; mill phosphatized.

1. For anchors built into exterior walls, steel sheet complying with ASTM A1008/A1008M or ASTM A1011/A1011M; hot-dip galvanized according to ASTM A153/A153M, Class B.

## 2.7 MATERIALS

- A. Recycled Content of Steel Products: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 25 percent.

- B. Cold-Rolled Steel Sheet: ASTM A1008/A1008M, Commercial Steel (CS), Type B; suitable for exposed applications.

- C. Hot-Rolled Steel Sheet: ASTM A1011/A1011M, Commercial Steel (CS), Type B; free of scale, pitting, or surface defects; pickled and oiled.

- D. Metallic-Coated Steel Sheet: ASTM A653/A653M, Commercial Steel (CS), Type B.

- E. Inserts, Bolts, and Fasteners: Hot-dip galvanized according to ASTM A153/A153M.

- F. Power-Actuated Fasteners in Concrete: Fastener system of type suitable for application indicated, fabricated from corrosion-resistant materials, with clips or other accessory devices for attaching hollow-metal frames of type indicated.



- G. Mineral-Fiber Insulation: ASTM C665, Type I (blankets without membrane facing); consisting of fibers manufactured from slag or rock wool; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively; passing ASTM E136 for combustion characteristics.
- H. Glazing: Comply with requirements in Section 088000 "Glazing."

## 2.8 FABRICATION

- A. Door Astragals: Provide overlapping astragal on one leaf of pairs of doors where required by NFPA 80 for fire-performance rating or where indicated. Extend minimum 3/4 inch (19 mm) beyond edge of door on which astragal is mounted or as required to comply with published listing of qualified testing agency.
- B. Hollow-Metal Frames: Fabricate in one piece except where handling and shipping limitations require multiple sections. Where frames are fabricated in sections, provide alignment plates or angles at each joint, fabricated of metal of same or greater thickness as frames.
  - 1. Frames: Provide closed tubular members with no visible face seams or joints, fabricated from same material as door frame. Fasten members at crossings and to jambs by welding, or by rigid mechanical anchors.
  - 2. Provide countersunk, flat- or oval-head exposed screws and bolts for exposed fasteners unless otherwise indicated.
  - 3. Door Silencers: Except on weather-stripped frames, drill stops to receive door silencers as follows. Keep holes clear during construction.
    - a. Single-Door Frames: Drill stop in strike jamb to receive three door silencers.
    - b. Double-Door Frames: Drill stop in head jamb to receive two door silencers.
- C. Hardware Preparation: Factory prepare hollow-metal doors and frames to receive templated mortised hardware, and electrical wiring; include cutouts, reinforcement, mortising, drilling, and tapping according to ANSI/SDI A250.6, the Door Hardware Schedule, and templates.
  - 1. Reinforce doors and frames to receive nontemplated, mortised, and surface-mounted door hardware.
  - 2. Comply with BHMA A156.115 for preparing hollow-metal doors and frames for hardware.
- D. Glazed Lites: Provide stops and moldings around glazed lites where indicated. Form corners of stops and moldings with mitered hairline joints.
  - 1. Provide stops and moldings flush with face of door, and with beveled stops unless otherwise indicated.
  - 2. Multiple Glazed Lites: Provide fixed and removable stops and moldings so that each glazed lite is capable of being removed independently.
  - 3. Provide fixed frame moldings on outside of exterior and on secure side of interior doors and frames. Provide loose stops and moldings on inside of hollow-metal doors and frames.
  - 4. Coordinate rabbet width between fixed and removable stops with glazing and installation types indicated.
  - 5. Provide stops for installation with countersunk flat- or oval-head machine screws spaced uniformly not more than 9 inches (230 mm) o.c. and not more than 2 inches (51 mm) o.c. from each corner.

## 2.9 STEEL FINISHES

- A. Prime Finish: Clean, pretreat, and apply manufacturer's standard primer.
  - 1. Shop Primer: Manufacturer's standard, fast-curing, lead- and chromate-free primer complying with ANSI/SDI A250.10; recommended by primer manufacturer for substrate; compatible with substrate and field-applied coatings despite prolonged exposure.

## 2.10 LOUVERS

- A. Provide louvers for interior doors, where indicated, which comply with SDI 111, with blades or baffles formed of 0.020-inch- (0.5-mm-) thick, cold-rolled steel sheet set into 0.032-inch- (0.8-mm-) thick steel frame.
  - 1. Sightproof Louver: Stationary louvers constructed with inverted-V or inverted-Y blades.
  - 2. Lightproof Louver: Stationary louvers constructed with baffles to prevent light from passing from one side to the other.
  - 3. Fire-Rated Automatic Louvers: Louvers constructed with movable blades closed by actuating fusible link, and listed and labeled for use in fire-rated door assemblies of type and fire-resistance rating indicated by same qualified testing and inspecting agency that established fire-resistance rating of door assembly.
- B. Form corners of moldings with hairline joints. Provide fixed frame moldings on outside of exterior and on secure side of interior doors and frames.

## PART 3 - EXECUTION

### 3.1 PREPARATION

- A. Remove welded-in shipping spreaders installed at factory. Restore exposed finish by grinding, filling, and dressing, as required to make repaired area smooth, flush, and invisible on exposed faces. Touch up factory-applied finishes where spreaders are removed.
- B. Drill and tap doors and frames to receive nontemplated, mortised, and surface-mounted door hardware.

### 3.2 INSTALLATION

- A. Install hollow-metal doors and frames plumb, rigid, properly aligned, and securely fastened in place. Comply with approved Shop Drawings and with manufacturer's written instructions.
- B. Hollow-Metal Frames: Comply with ANSI/SDI A250.11.
  - 1. Set frames accurately in position; plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is complete, remove temporary braces without damage to completed Work.

- a. Where frames are fabricated in sections, field splice at approved locations by welding face joint continuously; grind, fill, dress, and make splice smooth, flush, and invisible on exposed faces. Touch-up finishes.
  - b. Install frames with removable stops located on secure side of opening.
2. Fire-Rated Openings: Install frames according to NFPA 80.
  3. Floor Anchors: Secure with postinstalled expansion anchors.
    - a. Floor anchors may be set with power-actuated fasteners instead of postinstalled expansion anchors if so indicated and approved on Shop Drawings.
  4. Solidly pack mineral-fiber insulation inside frames.
  5. Masonry Walls: Coordinate installation of frames to allow for solidly filling space between frames and masonry with grout or mortar.
  6. In-Place Concrete or Masonry Construction: Secure frames in place with postinstalled expansion anchors. Countersink anchors, and fill and make smooth, flush, and invisible on exposed faces.
  7. Installation Tolerances: Adjust hollow-metal frames to the following tolerances:
    - a. Squareness: Plus or minus 1/16 inch (1.6 mm), measured at door rabbet on a line 90 degrees from jamb perpendicular to frame head.
    - b. Alignment: Plus or minus 1/16 inch (1.6 mm), measured at jambs on a horizontal line parallel to plane of wall.
    - c. Twist: Plus or minus 1/16 inch (1.6 mm), measured at opposite face corners of jambs on parallel lines, and perpendicular to plane of wall.
    - d. Plumbness: Plus or minus 1/16 inch (1.6 mm), measured at jambs at floor.
- C. Hollow-Metal Doors: Fit and adjust hollow-metal doors accurately in frames, within clearances specified below.
1. Non-Fire-Rated Steel Doors: Comply with ANSI/SDI A250.8.
  2. Fire-Rated Doors: Install doors with clearances according to NFPA 80.
- D. Glazing: Comply with installation requirements in Section 088000 "Glazing" and with hollow-metal manufacturer's written instructions.
- 3.3 REPAIR
- A. Prime-Coat Touchup: Immediately after erection, sand smooth rusted or damaged areas of prime coat and apply touchup of compatible air-drying, rust-inhibitive primer.
  - B. Metallic-Coated Surface Touchup: Clean abraded areas and repair with galvanizing repair paint according to manufacturer's written instructions.
  - C. Touchup Painting: Cleaning and touchup painting of abraded areas of paint are specified in painting Sections.

END OF SECTION 081113

SECTION 085113 - ALUMINUM WINDOWS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes aluminum windows for exterior locations.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
  - 1. Include construction details, material descriptions, glazing and fabrication methods, dimensions of individual components and profiles, hardware, and finishes for aluminum windows.
- B. Shop Drawings: For aluminum windows.
  - 1. Include plans, elevations, sections, hardware, accessories, insect screens, operational clearances, and details of installation, including anchor, flashing, and sealant installation.
- C. Samples: For each exposed product and for each color specified, 2 by 4 inches (50 by 100 mm) in size.
- D. Samples for Initial Selection: For units with factory-applied finishes.
  - 1. Include Samples of hardware and accessories involving color selection.
- E. Product Schedule: For aluminum windows. Use same designations indicated on Drawings.

1.4 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For manufacturer and Installer.
- B. Product Test Reports: For each type of aluminum window, for tests performed by a qualified testing agency.
- C. Field quality-control reports.
- D. Sample Warranties: For manufacturer's warranties.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: A manufacturer capable of fabricating aluminum windows that meet or exceed performance requirements indicated and of documenting this performance by test reports and calculations.
- B. Installer Qualifications: An installer acceptable to aluminum window manufacturer for installation of units required for this Project.

1.6 WARRANTY

- A. Manufacturer's Warranty: Manufacturer agrees to repair or replace aluminum windows that fail in materials or workmanship within specified warranty period.
  - 1. Failures include, but are not limited to, the following:
    - a. Failure to meet performance requirements.
    - b. Structural failures including excessive deflection, water leakage, condensation, and air infiltration.
    - c. Faulty operation of movable sash and hardware.
    - d. Deterioration of materials and finishes beyond normal weathering.
    - e. Failure of insulating glass.
  - 2. Warranty Period:
    - a. Window: 2 years from date of Substantial Completion.
    - b. Glazing Units: 10 years from date of Substantial Completion.
    - c. Aluminum Finish: 20 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Source Limitations: Obtain aluminum windows from single source from single manufacturer.

2.2 WINDOW PERFORMANCE REQUIREMENTS

- A. Product Standard: Comply with AAMA/WDMA/CSA 101/I.S.2/A440 for definitions and minimum standards of performance, materials, components, accessories, and fabrication unless more stringent requirements are indicated.
  - 1. Window Certification: AAMA certified with label attached to each window.
- B. Performance Class and Grade: AAMA/WDMA/CSA 101/I.S.2/A440 as follows:
  - 1. Minimum Performance Class: AW.
  - 2. Minimum Performance Grade: 100.

- C. Thermal Transmittance: NFRC 100 maximum whole-window U-factor of 0.58 Btu/sq. ft. x h x deg F (3.43 W/sq. m x K).
- D. Solar Heat-Gain Coefficient (SHGC): NFRC 200 maximum whole-window SHGC of 0.30.
- E. Condensation-Resistance Factor (CRF): Provide aluminum windows tested for thermal performance according to AAMA 1503, showing a CRF of 59 for the frame and 57 for the glass.
- F. Thermal Movements: Provide aluminum windows, including anchorage, that allow for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures by preventing buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
  - 1. Temperature Change: 120 deg F (67 deg C) ambient; 180 deg F (100 deg C) material surfaces.

### 2.3 ALUMINUM WINDOWS

- A. Subject to compliance with requirements, provide ; 8225TI Thermal Window or a comparable product by one of the following:
  - 1. .
  - 2. .
- B. Types: Provide the following types in locations indicated on Drawings:
  - 1. Fixed.
- C. Frames and Sashes: Aluminum extrusions complying with AAMA/WDMA/CSA 101/I.S.2/A440.
  - 1. Thermally Improved Construction: Fabricate frames, sashes, and muntins with an integral, concealed, low-conductance thermal barrier located between exterior materials and window members exposed on interior side in a manner that eliminates direct metal-to-metal contact.
- D. Glass: Clear annealed glass, ASTM C1036, Type 1, Class 1, q3.
  - 1. Kind: Fully tempered.
- E. Windborne-Debris-Impact-Resistant Laminated Glass: ASTM C1172 with two plies of float glass.
  - 1. Float Glass: Fully tempered.
  - 2. Inner Ply: Clear.
  - 3. Interlayer: 0.090 inch (2.29 mm).
  - 4. Outer Ply: Clear.
- F. Insulating-Glass Units: ASTM E2190.
  - 1. Glass: ASTM C1036, Type 1, Class 1, q3.
    - a. Tint: Clear.
    - b. Kind: Fully tempered.

2. Lites: Two.
3. Filling: Fill space between glass lites with air.
4. Low-E Coating: Pyrolytic on second surface.

- G. Glazing System: Manufacturer's standard factory-glazing system that produces weathertight seal.
- H. Hardware, General: Provide manufacturer's standard hardware fabricated from aluminum, stainless steel, carbon steel complying with AAMA 907, or other corrosion-resistant material compatible with adjacent materials; designed to smoothly operate, tightly close, and securely lock windows, and sized to accommodate sash weight and dimensions.
1. Exposed Hardware Color and Finish: As selected by Architect from manufacturer's full range.
- I. Fasteners: Noncorrosive and compatible with window members, trim, hardware, anchors, and other components.
1. Exposed Fasteners: Do not use exposed fasteners to greatest extent possible. For application of hardware, use fasteners that match finish hardware being fastened.

## 2.4 ACCESSORIES

- A. Dividers (False Muntins): Provide extruded-aluminum divider grilles in designs indicated for each sash lite.
1. Type: Permanently located at exterior lite or permanently located between insulating-glass lites. Review with Architect and Owner
  2. Pattern: As indicated on Drawings.
  3. Profile: As selected by Architect from manufacturer's full range.
- B. Subsills: Thermally broken, extruded-aluminum subsills in configurations indicated on Drawings or manufacturer's standard sill.
- C. Column Covers: Extruded-aluminum profiles in sizes and configurations indicated on Drawings.
- D. Interior Trim: Extruded-aluminum profiles in sizes and configurations indicated on Drawings.
- E. Panning Trim: Extruded-aluminum profiles in sizes and configurations indicated on Drawings.
- F. Receptor System: Two-piece, snap-together, thermally broken, extruded-aluminum receptor system that anchors windows in place.

## 2.5 FABRICATION

- A. Fabricate aluminum windows in sizes indicated. Include a complete system for assembling components and anchoring windows.
- B. Glaze aluminum windows in the factory.
- C. Weather strip each operable sash to provide weathertight installation.
- D. Weep Holes: Provide weep holes and internal passages to conduct infiltrating water to exterior.

- E. Mullions: Provide mullions and cover plates, matching window units, complete with anchors for support to structure and installation of window units. Allow for erection tolerances and provide for movement of window units due to thermal expansion and building deflections. Provide mullions and cover plates capable of withstanding design wind loads of window units.
- F. Window Assemblies: Provide fixed units in configuration indicated. Provide window frames, sashes, hardware, and other trim and components necessary for a complete, secure, and weathertight installation, including the following:
  - 1. Angled mullion posts with interior and exterior trim.
  - 2. Angled interior and exterior extension and trim.
  - 3. Exterior head and sill casings and trim.
- G. Complete fabrication, assembly, finishing, hardware application, and other work in the factory to greatest extent possible. Disassemble components only as necessary for shipment and installation.

## 2.6 GENERAL FINISH REQUIREMENTS

- A. Comply with NAAMM's "Metal Finishes Manual" for recommendations for applying and designating finishes.
- B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- C. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

## 2.7 ALUMINUM FINISHES

- A. Finish designations prefixed by AA comply with the system established by the Aluminum Association for designating aluminum finishes.
- B. Class I, Color Anodic Finish: AA-M12C22A42/A44 (Mechanical Finish: nonspecular as fabricated; Chemical Finish: etched, medium matte; Anodic Coating: Architectural Class I, integrally colored or electrolytically deposited color coating 0.018 mm or thicker) complying with AAMA 611.
  - 1. Color: As selected by Architect from full range of industry colors and color densities.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine openings, substrates, structural support, anchorage, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Verify rough opening dimensions, levelness of sill plate, and operational clearances.



- C. Examine wall flashings, vapor retarders, water and weather barriers, and other built-in components to ensure weathertight window installation.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 INSTALLATION

- A. Comply with manufacturer's written instructions for installing windows, hardware, accessories, and other components. For installation procedures and requirements not addressed in manufacturer's written instructions, comply with installation requirements in ASTM E2112.
- B. Install windows level, plumb, square, true to line, without distortion or impeding thermal movement, anchored securely in place to structural support, and in proper relation to wall flashing and other adjacent construction to produce weathertight construction.
- C. Install windows and components to drain condensation, water penetrating joints, and moisture migrating within windows to the exterior.
- D. Separate aluminum and other corrodible surfaces from sources of corrosion or electrolytic action at points of contact with other materials.

### 3.3 ADJUSTING, CLEANING, AND PROTECTION

- A. Adjust operating sashes and hardware for a tight fit at contact points and weather stripping for smooth operation and weathertight closure.
- B. Clean exposed surfaces immediately after installing windows. Avoid damaging protective coatings and finishes. Remove excess sealants, glazing materials, dirt, and other substances.
  - 1. Keep protective films and coverings in place until final cleaning.
- C. Remove and replace glass that has been broken, chipped, cracked, abraded, or damaged during construction period.
- D. Protect window surfaces from contact with contaminating substances resulting from construction operations. If contaminating substances do contact window surfaces, remove contaminants immediately according to manufacturer's written instructions.

END OF SECTION 085113

SECTION 087100 - DOOR HARDWARE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:

- 1. Mechanical door hardware for the following:
  - a. Swinging doors.
- 2. Cylinders for door hardware specified in other Sections.
- 3. Electrified door hardware.

- B. Related Requirements:

- 1. Section 081113 "Hollow Metal Doors and Frames".

1.3 COORDINATION

- A. Installation Templates: Distribute for doors, frames, and other work specified to be factory prepared. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing door hardware to comply with indicated requirements.
- B. Existing Openings: Where hardware components are scheduled for application to existing construction or where modifications to existing door hardware are required, field verify existing conditions and coordinate installation of door hardware to suit opening conditions and to provide proper door operation.

1.4 PREINSTALLATION MEETINGS

- A. Keying Conference: Conduct conference at Project site.

- 1. Conference participants shall include Installer's Architectural Hardware Consultant.
- 2. Incorporate conference decisions into keying schedule after reviewing door hardware keying system including, but not limited to, the following:
  - a. Flow of traffic and degree of security required.
  - b. Preliminary key system schematic diagram.
  - c. Requirements for key control system.
  - d. Requirements for access control.
  - e. Address for delivery of keys.

1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product.
  - 1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.
- B. Samples: For each exposed product in each finish specified, in manufacturer's standard size.
  - 1. Tag Samples with full product description to coordinate Samples with door hardware schedule.
- C. Samples for Initial Selection: For each type of exposed finish.
- D. Door Hardware Schedule: Prepared by or under the supervision of Installer's Architectural Hardware Consultant. Coordinate door hardware schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.
  - 1. Submittal Sequence: Submit door hardware schedule concurrent with submissions of Product Data, Samples, and Shop Drawings. Coordinate submission of door hardware schedule with scheduling requirements of other work to facilitate the fabrication of other work that is critical in Project construction schedule.
  - 2. Format: Use same scheduling sequence and format and use same door numbers as in door hardware schedule in the Contract Documents.
  - 3. Content: Include the following information:
    - a. Identification number, location, hand, fire rating, size, and material of each door and frame.
    - b. Locations of each door hardware set, cross-referenced to Drawings on floor plans and to door and frame schedule.
    - c. Complete designations, including name and manufacturer, type, style, function, size, quantity, function, and finish of each door hardware product.
    - d. Fastenings and other installation information.
    - e. Explanation of abbreviations, symbols, and designations contained in door hardware schedule.
    - f. Mounting locations for door hardware.
    - g. List of related door devices specified in other Sections for each door and frame.
- E. Keying Schedule: Prepared by or under the supervision of Installer's Architectural Hardware Consultant, detailing Owner's final keying instructions for locks. Include schematic keying diagram and index each key set to unique door designations that are coordinated with the Contract Documents.

1.6 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Architectural Hardware Consultant.
- B. Product Certificates: For each type of electrified door hardware.
  - 1. Certify that door hardware for use on each type and size of labeled fire-rated doors complies with listed fire-rated door assemblies.
- C. Product Test Reports: For compliance with accessibility requirements, for tests performed by manufacturer and witnessed by a qualified testing agency, for door hardware on doors located in accessible routes.

- D. Field quality-control reports.
- E. Sample Warranty: For special warranty.

#### 1.7 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For each type of door hardware to include in maintenance manuals.
- B. Schedules: Final door hardware and keying schedule.

#### 1.8 QUALITY ASSURANCE

- A. Installer Qualifications: Supplier of products and an employer of workers trained and approved by product manufacturers and of an Architectural Hardware Consultant who is available during the course of the Work to consult Contractor, Architect, and Owner about door hardware and keying.
  - 1. Warehousing Facilities: In Project's vicinity.
  - 2. Scheduling Responsibility: Preparation of door hardware and keying schedule.
  - 3. Engineering Responsibility: Preparation of data for electrified door hardware, including Shop Drawings, based on testing and engineering analysis of manufacturer's standard units in assemblies similar to those indicated for this Project.
- B. Architectural Hardware Consultant Qualifications: A person who is experienced in providing consulting services for door hardware installations that are comparable in material, design, and extent to that indicated for this Project and who is currently certified by DHI as an Architectural Hardware Consultant (AHC).

#### 1.9 DELIVERY, STORAGE, AND HANDLING

- A. Inventory door hardware on receipt and provide secure lock-up for door hardware delivered to Project site.
- B. Tag each item or package separately with identification coordinated with the final door hardware schedule, and include installation instructions, templates, and necessary fasteners with each item or package.
- C. Deliver keys to manufacturer of key control system for subsequent delivery to Owner.
- D. Deliver keys and permanent cores to Owner by registered mail or overnight package service.

#### 1.10 WARRANTY

- A. Special Warranty: Manufacturer agrees to repair or replace components of door hardware that fail in materials or workmanship within specified warranty period.
  - 1. Failures include, but are not limited to, the following:
    - a. Structural failures including excessive deflection, cracking, or breakage.
    - b. Faulty operation of doors and door hardware.

- c. Deterioration of metals, metal finishes, and other materials beyond normal weathering and use.
2. Warranty Period: Three years from date of Substantial Completion unless otherwise indicated below:
  - a. Manual Closers: 10 years from date of Substantial Completion.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. Source Limitations: Obtain each type of door hardware from single manufacturer.
  1. Provide electrified door hardware from same manufacturer as mechanical door hardware unless otherwise indicated. Manufacturers that perform electrical modifications and that are listed by a testing and inspecting agency acceptable to authorities having jurisdiction are acceptable.

### 2.2 PERFORMANCE REQUIREMENTS

- A. Fire-Rated Door Assemblies: Where fire-rated doors are indicated, provide door hardware complying with NFPA 80 that is listed and labeled by a qualified testing agency, for fire-protection ratings indicated, based on testing at positive pressure according to NFPA 252 or UL 10C.
- B. Means of Egress Doors: Latches do not require more than 15 lbf (67 N) to release the latch. Locks do not require use of a key, tool, or special knowledge for operation.
- C. Accessibility Requirements: For door hardware on doors in an accessible route, comply with the DOJ's "2010 ADA Standards for Accessible Design", ICC A117.1 and Illinois Accessibility Code.
  1. Provide operating devices that do not require tight grasping, pinching, or twisting of the wrist and that operate with a force of not more than 5 lbf (22.2 N).
  2. Comply with the following maximum opening-force requirements:
    - a. Interior, Non-Fire-Rated Hinged Doors: 5 lbf (22.2 N) applied perpendicular to door.
    - b. Fire Doors: Minimum opening force allowable by authorities having jurisdiction.
  3. Bevel raised thresholds with a slope of not more than 1:2. Provide thresholds not more than 1/2 inch (13 mm) high.
  4. Adjust door closer sweep periods so that, from an open position of 90 degrees, the door will take at least 5 seconds to move to a position of 12 degrees from the latch.
  5. Adjust spring hinges so that, from an open position of 70 degrees, the door will take at least 1.5 seconds to move to the closed position.

### 2.3 SCHEDULED DOOR HARDWARE

- A. Provide products for each door that comply with requirements indicated in Part 2 and door hardware schedule.

1. Door hardware is scheduled in Part 3.

## 2.4 HINGES

- A. Hinges: BHMA A156.1. Provide template-produced hinges for hinges installed on hollow-metal doors and hollow-metal frames.
  1. Subject to compliance with requirements, provide products by one of the following:
    - a.
    - b.
    - c.

## 2.5 MECHANICAL LOCKS AND LATCHES

- A. Lock Functions: As indicated in door hardware schedule.
- B. Lock Throw: Comply with testing requirements for length of bolts required for labeled fire doors, and as follows:
  1. Bored Locks: Minimum 1/2-inch (13-mm) latchbolt throw.
  2. Mortise Locks: Minimum 3/4-inch (19-mm) latchbolt throw.
  3. Deadbolts: Minimum [1-inch (25-mm)] [1.25-inch (32-mm)] <Insert dimension> bolt throw.
- C. Lock Backset: 2-3/4 inches (70 mm) unless otherwise indicated.
- D. Lock Trim:
  1. Description: [As indicated on Drawings] <Insert description or manufacturer's design designation>.
  2. Levers: Cast.
    - a. <Insert model number and description>.
  3. Escutcheons (Roses): Forged.
  4. Dummy Trim: Match lever lock trim and escutcheons.
- E. Strikes: Provide manufacturer's standard strike for each lock bolt or latchbolt complying with requirements indicated for applicable lock or latch and with strike box and curved lip extended to protect frame; finished to match lock or latch.
  1. Flat-Lip Strikes: For locks with three-piece antifriction latchbolts, as recommended by manufacturer.
  2. Extra-Long-Lip Strikes: For locks used on frames with applied wood casing trim.
  3. Rabbet Front and Strike: Provide on locksets for rabbeted meeting stiles.
- F. Bored Locks: BHMA A156.2; Grade 1; Series 4000.
  1. Subject to compliance with requirements, provide one of the following:

- a.
- b.
- c.

G. Mortise Locks: BHMA A156.13; Security Grade 1; stamped steel case with steel or brass parts; Series 1000.

1. Subject to compliance with requirements, provide products by one of the following:

- a.
- b.
- c.

## 2.6 LOCK CYLINDERS

A. Lock Cylinders: Tumbler type, constructed from brass or bronze, stainless steel, or nickel silver.

1. Subject to compliance with requirements, provide products by one of the following:

- a.
- b.
- c.

B. Standard Lock Cylinders: BHMA A156.5; Grade 1 permanent cores; face finished to match lockset.

1. Core Type: Interchangeable and Removable.

C. High-Security Lock Cylinders: BHMA A156.30; Grade 1 permanent cores that are removable; face finished to match lockset.

1. Type: M, mechanical.

D. Construction Master Keys: Provide cylinders with feature that permits voiding of construction keys without cylinder removal. Provide 10 construction master keys.

E. Construction Cores: Provide construction cores that are replaceable by permanent cores. Provide 10 construction master keys.

## 2.7 KEYING

A. Keying System: Factory registered, complying with guidelines in BHMA A156.28, appendix. Provide one extra key blank for each lock. Incorporate decisions made in keying conference.

1. Existing System:

- a. Review the keying system with the Commissioner and provide the type required (master, grandmaster or great-grandmaster), either new or integrated with Commissioner's existing system
- b. Re-key Owner's existing master key system into new keying system.

2. Keyed Alike: Key all cylinders to same change key.

- B. Keys: Nickel silver.
  - 1. Stamping: Permanently inscribe each key with a visual key control number and include the following notation:
    - a. Notation: "DO NOT DUPLICATE." Information to be furnished by Commissioner.

## 2.8 OPERATING TRIM

- A. Operating Trim: BHMA A156.6; aluminum or stainless steel unless otherwise indicated.
  - 1. Subject to compliance with requirements, provide products by one of the following:
    - a.
    - b.
    - c.
    - d.

## 2.9 ACCESSORIES FOR PAIRS OF DOORS

- A. Coordinators: BHMA A156.3; consisting of active-leaf, hold-open lever and inactive-leaf release trigger; fabricated from steel with nylon-coated strike plates; with built-in, adjustable safety release[; and with internal override].
- B. Carry-Open Bars: BHMA A156.3; prevent the inactive leaf from opening before the active leaf; provide polished brass or bronze carry-open bars with strike plate for inactive leaves of pairs of doors unless automatic or self-latching bolts are used.
- C. Astragals: BHMA A156.22.

## 2.10 SURFACE CLOSERS

- A. Surface Closers: BHMA A156.4; rack-and-pinion hydraulic type with adjustable sweep and latch speeds controlled by key-operated valves and forged-steel main arm. Comply with manufacturer's written instructions for size of door closers depending on size of door, exposure to weather, and anticipated frequency of use. Provide factory-sized closers, adjustable to meet field conditions and requirements for opening force.
  - 1. Subject to compliance with requirements, provide products by one of the following:
    - a. LCN.
    - b.
    - c.

## 2.11 MECHANICAL STOPS AND HOLDERS

- A. Wall- and Floor-Mounted Stops: BHMA A156.16.
  - 1. Subject to compliance with requirements, provide products by one of the following:



- a.
- b.
- c.

2.12 OVERHEAD STOPS AND HOLDERS

A. Overhead Stops and Holders: BHMA A156.8.

1. Subject to compliance with requirements, provide products by one of the following:

- a.
- b.
- c.
- d.

2.13 DOOR GASKETING

A. Door Gasketing: BHMA A156.22; with resilient or flexible seal strips that are easily replaceable and readily available from stocks maintained by manufacturer.

1. Subject to compliance with requirements, provide products by one of the following:

- a.
- b.
- c.
- d.

B. Maximum Air Leakage: When tested according to ASTM E283 with tested pressure differential of 0.3-inch wg (75 Pa), as follows:

- 1. Gasketing on Single Doors: 0.3 cfm/sq. ft. (3 cu. m per minute/sq. m) of door opening.
- 2. Gasketing on Double Doors: 0.50 cfm per foot (0.000774 cu. m/s per m) of door opening.

2.14 THRESHOLDS

A. Thresholds: BHMA A156.21; fabricated to full width of opening indicated.

1. Subject to compliance with requirements, provide products by one of the following:

- a.
- b.
- c.
- d.

2.15 METAL PROTECTIVE TRIM UNITS

A. Metal Protective Trim Units: BHMA A156.6; fabricated from 0.050-inch- (1.3-mm-) thick stainless steel; with manufacturer's standard machine or self-tapping screw fasteners.

1. Subject to compliance with requirements, provide products by one of the following:

- a.
- b.

## 2.16 AUXILIARY DOOR HARDWARE

### A. Auxiliary Hardware: BHMA A156.16.

1. Subject to compliance with requirements, provide products by one of the following:
  - a.
  - b.
  - c.
  - d.

## 2.17 FABRICATION

### A. Manufacturer's Nameplate: Do not provide products that have manufacturer's name or trade name displayed in a visible location except in conjunction with required fire-rating labels and as otherwise approved by Architect.

1. Manufacturer's identification is permitted on rim of lock cylinders only.

### B. Base Metals: Produce door hardware units of base metal indicated, fabricated by forming method indicated, using manufacturer's standard metal alloy, composition, temper, and hardness. Furnish metals of a quality equal to or greater than that of specified door hardware units and BHMA A156.18.

### C. Fasteners: Provide door hardware manufactured to comply with published templates prepared for machine, wood, and sheet metal screws. Provide screws that comply with commercially recognized industry standards for application intended, except aluminum fasteners are not permitted. Provide Phillips flat-head screws with finished heads to match surface of door hardware unless otherwise indicated.

1. Concealed Fasteners: For door hardware units that are exposed when door is closed, except for units already specified with concealed fasteners. Do not use through bolts for installation where bolt head or nut on opposite face is exposed unless it is the only means of securely attaching the door hardware. Where through bolts are used on hollow door and frame construction, provide sleeves for each through bolt.
2. Fire-Rated Applications:
  - a. Steel Through Bolts: For the following unless door blocking is provided:
    - 1) Surface hinges to doors.
    - 2) Closers to doors and frames.
    - 3) Surface-mounted exit devices.
  3. Spacers or Sex Bolts: For through bolting of hollow-metal doors.
  4. Gasketing Fasteners: Provide noncorrosive fasteners for exterior applications and elsewhere as indicated.

## 2.18 FINISHES

### A. Provide finishes complying with BHMA A156.18 as indicated in door hardware schedule.

- B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- C. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

### PART 3 - EXECUTION

#### 3.1 EXAMINATION

- A. Examine doors and frames, with Installer present, for compliance with requirements for installation tolerances, labeled fire-rated door assembly construction, wall and floor construction, and other conditions affecting performance of the Work.
- B. Examine roughing-in for electrical power systems to verify actual locations of wiring connections before electrified door hardware installation.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

#### 3.2 PREPARATION

- A. Steel Doors and Frames: For surface-applied door hardware, drill and tap doors and frames according to ANSI/SDI A250.6.
- B. Wood Doors: Comply with door and hardware manufacturers' written instructions.

#### 3.3 INSTALLATION

- A. Mounting Heights: Mount door hardware units at heights to comply with the following unless otherwise indicated or required to comply with governing regulations.
  - 1. Standard Steel Doors and Frames: ANSI/SDI A250.8.
  - 2. Custom Steel Doors and Frames: HMMA 831.
- B. Install each door hardware item to comply with manufacturer's written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work. Do not install surface-mounted items until finishes have been completed on substrates involved.
  - 1. Set units level, plumb, and true to line and location. Adjust and reinforce attachment substrates as necessary for proper installation and operation.
  - 2. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors according to industry standards.
- C. Hinges: Install types and in quantities indicated in door hardware schedule, but not fewer than the number recommended by manufacturer for application indicated or one hinge for every 30 inches (750 mm) of

door height, whichever is more stringent, unless other equivalent means of support for door, such as spring hinges or pivots, are provided.

- D. Lock Cylinders: Install construction cores to secure building and areas during construction period.
  - 1. Replace construction cores with permanent cores as directed by Commissioner.
  - 2. Furnish permanent cores to Owner for installation.
- E. Thresholds: Set thresholds for exterior doors and other doors indicated in full bed of sealant complying with requirements specified in Section 079200 "Joint Sealants."
- F. Stops: Provide floor stops for doors unless wall or other type stops are indicated in door hardware schedule. Do not mount floor stops where they will impede traffic.
- G. Perimeter Gasketing: Apply to head and jamb, forming seal between door and frame.
  - 1. Do not notch perimeter gasketing to install other surface-applied hardware.
- H. Meeting Stile Gasketing: Fasten to meeting stiles, forming seal when doors are closed.
- I. Door Bottoms: Apply to bottom of door, forming seal with threshold when door is closed.

### 3.4 ADJUSTING

- A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.
  - 1. Door Closers: Adjust sweep period to comply with accessibility requirements and requirements of authorities having jurisdiction.
- B. Occupancy Adjustment: Approximately three months after date of Substantial Completion, Installer's Architectural Hardware Consultant shall examine and readjust each item of door hardware, including adjusting operating forces, as necessary to ensure function of doors, door hardware, and electrified door hardware.

### 3.5 CLEANING AND PROTECTION

- A. Clean adjacent surfaces soiled by door hardware installation.
- B. Clean operating items as necessary to restore proper function and finish.
- C. Provide final protection and maintain conditions that ensure that door hardware is without damage or deterioration at time of Substantial Completion.

3.6 MAINTENANCE SERVICE

- A. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions for Owner's continued adjustment, maintenance, and removal and replacement of door hardware.

3.7 DOOR HARDWARE SCHEDULE

- A. Hardware Set 1. (Exterior Single Doors)
  - 1. 1-1/2 pr. Butts
  - 2. 1 Lockset w/cylinder and core
  - 3. 1 Closer w/ hold open
  - 4. 1 Door Bottom
  - 5. 1 Threshold
  - 6. 1 Weatherstripping

END OF SECTION 087100

SECTION 088000 - GLAZING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
  - 1. Glass for windows and doors.
  - 2. Glazing sealants and accessories.
- B. Related Requirements:
  - 1. Section 81113 "Hollow Metal Doors and Frames"
  - 2. Section 085113 "Aluminum Windows."

1.3 DEFINITIONS

- A. Glass Manufacturers: Firms that produce primary glass, fabricated glass, or both, as defined in referenced glazing publications.
- B. Glass Thicknesses: Indicated by thickness designations in millimeters according to ASTM C1036.
- C. Interspace: Space between lites of an insulating-glass unit.

1.4 COORDINATION

- A. Coordinate glazing channel dimensions to provide necessary bite on glass, minimum edge and face clearances, and adequate sealant thicknesses, with reasonable tolerances.

1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Glass Samples: For each type of the following products; 12 inches (300 mm) square.
  - 1. Laminated glass.
  - 2. Insulating glass.
- C. Glazing Accessory Samples: For sealants, in 12-inch (300-mm) lengths.

- D. Glazing Schedule: List glass types and thicknesses for each size opening and location. Use same designations indicated on Drawings.

#### 1.6 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer.
- B. Product Certificates: For glass.
- C. Product Test Reports: For insulating glass, for tests performed by a qualified testing agency.
- D. Preconstruction adhesion and compatibility test report.
- E. Sample Warranties: For special warranties.

#### 1.7 QUALITY ASSURANCE

- A. Manufacturer Qualifications for Insulating-Glass Units with Sputter-Coated, Low-E Coatings: A qualified insulating-glass manufacturer who is approved by coated-glass manufacturer.
- B. Installer Qualifications: A qualified installer who employs glass installers for this Project who are certified under the National Glass Association's Certified Glass Installer Program.
- C. Glass Testing Agency Qualifications: A qualified independent testing agency accredited according to the NFRC CAP 1 Certification Agency Program.
- D. Sealant Testing Agency Qualifications: An independent testing agency qualified according to ASTM C1021 to conduct the testing indicated.

#### 1.8 DELIVERY, STORAGE, AND HANDLING

- A. Protect glazing materials according to manufacturer's written instructions. Prevent damage to glass and glazing materials from condensation, temperature changes, direct exposure to sun, or other causes.
- B. Comply with insulating-glass manufacturer's written instructions for venting and sealing units to avoid hermetic seal ruptures due to altitude change.

#### 1.9 FIELD CONDITIONS

- A. Environmental Limitations: Do not proceed with glazing when ambient and substrate temperature conditions are outside limits permitted by glazing material manufacturers and when glazing channel substrates are wet from rain, frost, condensation, or other causes.
  - 1. Do not install glazing sealants when ambient and substrate temperature conditions are outside limits permitted by sealant manufacturer or are below 40 deg F (4.4 deg C).

1.10 WARRANTY

- A. Manufacturer's Special Warranty for Laminated Glass: Manufacturer agrees to replace laminated-glass units that deteriorate within specified warranty period. Deterioration of laminated glass is defined as defects developed from normal use that are not attributed to glass breakage or to maintaining and cleaning laminated glass contrary to manufacturer's written instructions. Defects include edge separation, delamination materially obstructing vision through glass, and blemishes exceeding those allowed by referenced laminated-glass standard.
  - 1. Warranty Period: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Subject to compliance with requirements, provide products by one of the following:
  - 1.
  - 2.
  - 3.
  - 4.
- B. Source Limitations for Glass: Obtain from single source from single manufacturer for each glass type.
  - 1. Obtain tinted glass from single source from single manufacturer.
  - 2. Obtain reflective-coated glass from single source from single manufacturer.
- C. Source Limitations for Glazing Accessories: Obtain from single source from single manufacturer for each product and installation method.

2.2 PERFORMANCE REQUIREMENTS

- A. General: Installed glazing systems shall withstand normal thermal movement and wind and impact loads (where applicable) without failure, including loss or glass breakage attributable to the following: defective manufacture, fabrication, or installation; failure of sealants or gaskets to remain watertight and airtight; deterioration of glazing materials; or other defects in construction.
- B. Safety Glazing: Where safety glazing is indicated, provide glazing that complies with 16 CFR 1201, Category II.
- C. Thermal and Optical Performance Properties: Provide glass with performance properties specified, as indicated in manufacturer's published test data, based on procedures indicated below:
  - 1. For monolithic-glass lites, properties are based on units with lites 6 mm thick.
  - 2. For laminated-glass lites, properties are based on products of construction indicated.
  - 3. U-Factors: Center-of-glazing values, according to NFRC 100 and based on LBL's WINDOW 5.2 computer program, expressed as Btu/sq. ft. x h x deg F (W/sq. m x K).
  - 4. Solar Heat-Gain Coefficient and Visible Transmittance: Center-of-glazing values, according to NFRC 200 and based on LBL's WINDOW 5.2 computer program.



5. Visible Reflectance: Center-of-glazing values, according to NFRC 300.

## 2.3 GLASS PRODUCTS, GENERAL

- A. Glazing Publications: Comply with published recommendations of glass product manufacturers and organizations below unless more stringent requirements are indicated. See these publications for glazing terms not otherwise defined in this Section or in referenced standards.
  1. GANA Publications: "Laminated Glazing Reference Manual" and "Glazing Manual."
  2. AAMA Publications: AAMA GDSG-1, "Glass Design for Sloped Glazing," and AAMA TIR A7, "Sloped Glazing Guidelines."
  3. IGMA Publication for Sloped Glazing: IGMA TB-3001, "Guidelines for Sloped Glazing."
  4. IGMA Publication for Insulating Glass: SIGMA TM-3000, "North American Glazing Guidelines for Sealed Insulating Glass Units for Commercial and Residential Use."
- B. Safety Glazing Labeling: Where safety glazing is indicated, permanently mark glazing with certification label of the SGCC or another certification agency acceptable to authorities having jurisdiction. Label shall indicate manufacturer's name, type of glass, thickness, and safety glazing standard with which glass complies.
- C. Thickness: Where glass thickness is indicated, it is a minimum.
  1. Minimum Glass Thickness for Exterior Lites: 6 mm.
- D. Strength: Where annealed float glass is indicated, provide annealed float glass, heat-strengthened float glass, or fully tempered float glass as needed to comply with "Performance Requirements" Article. Where heat-strengthened float glass is indicated, provide heat-strengthened float glass or fully tempered float glass as needed to comply with "Performance Requirements" Article. Where fully tempered float glass is indicated, provide fully tempered float glass.

## 2.4 GLASS PRODUCTS

- A. Clear Annealed Float Glass: ASTM C1036, Type I, Class 1 (clear), Quality-Q3.
- B. Tinted Annealed Float Glass: ASTM C1036, Type I, Class 2 (tinted), Quality-Q3.
- C. Fully Tempered Float Glass: ASTM C1048, Kind FT (fully tempered), Condition A (uncoated) unless otherwise indicated, Type I, Class 1 (clear) or Class 2 (tinted) as indicated, Quality-Q3.
  1. Fabrication Process: By horizontal (roller-hearth) process with roll-wave distortion parallel to bottom edge of glass as installed unless otherwise indicated.
- D. Heat-Strengthened Float Glass: ASTM C1048, Kind HS (heat strengthened), Type I, Condition A (uncoated) unless otherwise indicated, Type I, Class 1 (clear) or Class 2 (tinted) as indicated, Quality-Q3.
  1. Fabrication Process: By horizontal (roller-hearth) process with roll-wave distortion parallel to bottom edge of glass as installed unless otherwise indicated.

## 2.5 LAMINATED GLASS

- A. Laminated Glass: ASTM C1172. Use materials that have a proven record of no tendency to bubble, discolor, or lose physical and mechanical properties after fabrication and installation.
1. Construction: Laminate glass with polyvinyl butyral interlayer to comply with interlayer manufacturer's written instructions.
  2. Interlayer Thickness: Provide thickness not less than that indicated and as needed to comply with requirements.
  3. Interlayer Color: Clear unless otherwise indicated.

## 2.6 GLAZING SEALANTS

- A. General:
1. Compatibility: Compatible with one another and with other materials they contact, including glass products, seals of insulating-glass units, and glazing channel substrates, under conditions of service and application, as demonstrated by sealant manufacturer based on testing and field experience.
  2. Suitability: Comply with sealant and glass manufacturers' written instructions for selecting glazing sealants suitable for applications indicated and for conditions existing at time of installation.
  3. Colors of Exposed Glazing Sealants: As selected by Architect from manufacturer's full range.
- B. Glazing Sealant:
1. Neutral-curing silicone glazing sealant complying with ASTM C920, Type S, Grade NS, Class 50, Use NT.
    - a. ; 791.
    - b. ; SilPruf NB SCS9000.
    - c. ; 895NST.
    - d. Applications: Wet seal.

## 2.7 GLAZING TAPES

- A. Back-Bedding Mastic Glazing Tapes: Preformed, butyl-based, 100 percent solids elastomeric tape; nonstaining and nonmigrating in contact with nonporous surfaces; with or without spacer rod as recommended in writing by tape and glass manufacturers for application indicated; and complying with ASTM C1281 and AAMA 800 for products indicated below:
1. AAMA 804.3 tape, where indicated.
  2. AAMA 806.3 tape, for glazing applications in which tape is subject to continuous pressure.
  3. AAMA 807.3 tape, for glazing applications in which tape is not subject to continuous pressure.
- B. Expanded Cellular Glazing Tapes: Closed-cell, PVC foam tapes; factory coated with adhesive on both surfaces; and complying with AAMA 800 for the following types:
1. AAMA 810.1, Type 1, for glazing applications in which tape acts as the primary sealant.
  2. AAMA 810.1, Type 2, for glazing applications in which tape is used in combination with a full bead of liquid sealant.

## 2.8 MISCELLANEOUS GLAZING MATERIALS

- A. General: Provide products of material, size, and shape complying with referenced glazing standard, with requirements of manufacturers of glass and other glazing materials for application indicated, and with a proven record of compatibility with surfaces contacted in installation.
- B. Cleaners, Primers, and Sealers: Types recommended by sealant or gasket manufacturer.
- C. Setting Blocks:
  - 1. Type recommended by sealant or glass manufacturer.
- D. Spacers:
  - 1. Type recommended by sealant or glass manufacturer.
- E. Edge Blocks:
  - 1. Type recommended by sealant or glass manufacturer.
- F. Cylindrical Glazing Sealant Backing: ASTM C1330, Type O (open-cell material), of size and density to control glazing sealant depth and otherwise produce optimum glazing sealant performance.

## 2.9 FABRICATION OF GLAZING UNITS

- A. Fabricate glazing units in sizes required to fit openings indicated for Project, with edge and face clearances, edge and surface conditions, and bite complying with written instructions of product manufacturer and referenced glazing publications, to comply with system performance requirements.
  - 1. Allow for thermal movements from ambient and surface temperature changes acting on glass framing members and glazing components.
    - a. Temperature Change: 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.
- B. Clean-cut or flat-grind vertical edges of butt-glazed monolithic lites to produce square edges with slight chamfers at junctions of edges and faces.
- C. Grind smooth and polish exposed glass edges and corners.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine framing, glazing channels, and stops, with Installer present, for compliance with the following:
  - 1. Manufacturing and installation tolerances, including those for size, squareness, and offsets at corners.
  - 2. Presence and functioning of weep systems.
  - 3. Minimum required face and edge clearances.
  - 4. Effective sealing between joints of glass-framing members.

- B. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 PREPARATION

- A. Clean glazing channels and other framing members receiving glass immediately before glazing. Remove coatings not firmly bonded to substrates.
- B. Examine glazing units to locate exterior and interior surfaces. Label or mark units as needed so that exterior and interior surfaces are readily identifiable. Do not use materials that leave visible marks in the completed Work.

### 3.3 GLAZING, GENERAL

- A. Comply with combined written instructions of manufacturers of glass, sealants, gaskets, and other glazing materials, unless more stringent requirements are indicated, including those in referenced glazing publications.
- B. Protect glass edges from damage during handling and installation. Remove damaged glass from Project site and legally dispose of off Project site. Damaged glass includes glass with edge damage or other imperfections that, when installed, could weaken glass, impair performance, or impair appearance.
- C. Apply primers to joint surfaces where required for adhesion of sealants, as determined by preconstruction testing.
- D. Install setting blocks in sill rabbets, sized and located to comply with referenced glazing publications, unless otherwise required by glass manufacturer. Set blocks in thin course of compatible sealant suitable for heel bead.
- E. Do not exceed edge pressures stipulated by glass manufacturers for installing glass lites.
- F. Provide spacers for glass lites where length plus width is larger than 50 inches (1270 mm).
  - 1. Locate spacers directly opposite each other on both inside and outside faces of glass. Install correct size and spacing to preserve required face clearances, unless gaskets and glazing tapes are used that have demonstrated ability to maintain required face clearances and to comply with system performance requirements.
  - 2. Provide 1/8-inch (3-mm) minimum bite of spacers on glass and use thickness equal to sealant width. With glazing tape, use thickness slightly less than final compressed thickness of tape.
- G. Provide edge blocking where indicated or needed to prevent glass lites from moving sideways in glazing channel, as recommended in writing by glass manufacturer and according to requirements in referenced glazing publications.
- H. Set glass lites in each series with uniform pattern, draw, bow, and similar characteristics.
- I. Set glass lites with proper orientation so that coatings face exterior or interior as specified.
- J. Where wedge-shaped gaskets are driven into one side of channel to pressurize sealant or gasket on opposite side, provide adequate anchorage so gasket cannot walk out when installation is subjected to movement.

- K. Square cut wedge-shaped gaskets at corners and install gaskets in a manner recommended by gasket manufacturer to prevent corners from pulling away; seal corner joints and butt joints with sealant recommended by gasket manufacturer.

### 3.4 TAPE GLAZING

- A. Position tapes on fixed stops so that, when compressed by glass, their exposed edges are flush with or protrude slightly above sightline of stops.
- B. Install tapes continuously, but not necessarily in one continuous length. Do not stretch tapes to make them fit opening.
- C. Cover vertical framing joints by applying tapes to heads and sills first, then to jambs. Cover horizontal framing joints by applying tapes to jambs, then to heads and sills.
- D. Place joints in tapes at corners of opening with adjoining lengths butted together, not lapped. Seal joints in tapes with compatible sealant approved by tape manufacturer.
- E. Do not remove release paper from tape until right before each glazing unit is installed.
- F. Apply heel bead of elastomeric sealant.
- G. Center glass lites in openings on setting blocks, and press firmly against tape by inserting dense compression gaskets formed and installed to lock in place against faces of removable stops. Start gasket applications at corners and work toward centers of openings.
- H. Apply cap bead of elastomeric sealant over exposed edge of tape.

### 3.5 GASKET GLAZING (DRY)

- A. Cut compression gaskets to lengths recommended by gasket manufacturer to fit openings exactly, with allowance for stretch during installation.
- B. Insert soft compression gasket between glass and frame or fixed stop so it is securely in place with joints miter cut and bonded together at corners.
- C. Installation with Drive-in Wedge Gaskets: Center glass lites in openings on setting blocks, and press firmly against soft compression gasket by inserting dense compression gaskets formed and installed to lock in place against faces of removable stops. Start gasket applications at corners and work toward centers of openings. Compress gaskets to produce a weathertight seal without developing bending stresses in glass. Seal gasket joints with sealant recommended by gasket manufacturer.
- D. Installation with Pressure-Glazing Stops: Center glass lites in openings on setting blocks, and press firmly against soft compression gasket. Install dense compression gaskets and pressure-glazing stops, applying pressure uniformly to compression gaskets. Compress gaskets to produce a weathertight seal without developing bending stresses in glass. Seal gasket joints with sealant recommended by gasket manufacturer.
- E. Install gaskets so they protrude past face of glazing stops.

3.6 SEALANT GLAZING (WET)

- A. Install continuous spacers, or spacers combined with cylindrical sealant backing, between glass lites and glazing stops to maintain glass face clearances and to prevent sealant from extruding into glass channel and blocking weep systems until sealants cure. Secure spacers or spacers and backings in place and in position to control depth of installed sealant relative to edge clearance for optimum sealant performance.
- B. Force sealants into glazing channels to eliminate voids and to ensure complete wetting or bond of sealant to glass and channel surfaces.
- C. Tool exposed surfaces of sealants to provide a substantial wash away from glass.

3.7 CLEANING AND PROTECTION

- A. Immediately after installation remove nonpermanent labels and clean surfaces.
- B. Protect glass from contact with contaminating substances resulting from construction operations. Examine glass surfaces adjacent to or below exterior concrete and other masonry surfaces at frequent intervals during construction, but not less than once a month, for buildup of dirt, scum, alkaline deposits, or stains.
  - 1. If, despite such protection, contaminating substances do come into contact with glass, remove substances immediately as recommended in writing by glass manufacturer. Remove and replace glass that cannot be cleaned without damage to coatings.
- C. Remove and replace glass that is damaged during construction period.
- D. Wash glass on both exposed surfaces not more than four days before date scheduled for inspections that establish date of Substantial Completion. Wash glass as recommended in writing by glass manufacturer.

3.8 MONOLITHIC GLASS SCHEDULE

- A. Glass Type GL-1: Clear heat-strengthened float glass.
  - 1. Minimum Thickness: 6 mm.
  - 2. Safety glazing required.

3.9 LAMINATED GLASS SCHEDULE

- A. Glass Type GL-2: Clear laminated glass with two plies of fully tempered float glass.
  - 1. Minimum Thickness of Each Glass Ply: 6 mm.
  - 2. Interlayer Thickness: 0.060 inch (1.52 mm).
  - 3. Safety glazing required.

END OF SECTION 088000

SECTION 099123 - INTERIOR PAINTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes surface preparation and the application of paint systems on the following interior substrates:
  - 1. Concrete.
  - 2. Steel and iron.
  - 3. Galvanized metal.
  - 4. Gypsum board.
- B. Related Requirements:
  - 1. Section 051200 "Structural Steel Framing" for shop priming structural steel.
  - 2. Section 055000 "Metal Fabrications" for shop priming metal fabrications.
  - 3. Section 055213 "Pipe and Tube Railings" for shop [priming] [painting] pipe and tube railings.

1.3 DEFINITIONS

- A. MPI Gloss Level 1: Not more than five units at 60 degrees and 10 units at 85 degrees, according to ASTM D523.
- B. MPI Gloss Level 2: Not more than 10 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D523.
- C. MPI Gloss Level 3: 10 to 25 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D523.
- D. MPI Gloss Level 4: 20 to 35 units at 60 degrees and not less than 35 units at 85 degrees, according to ASTM D523.
- E. MPI Gloss Level 5: 35 to 70 units at 60 degrees, according to ASTM D523.
- F. MPI Gloss Level 6: 70 to 85 units at 60 degrees, according to ASTM D523.
- G. MPI Gloss Level 7: More than 85 units at 60 degrees, according to ASTM D523.

#### 1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product. Include preparation requirements and application instructions.
  - 1. Include Printout of current "MPI Approved Products List" for each product category specified, with the proposed product highlighted.
  - 2. Indicate VOC content.
- B. Samples for Initial Selection: For each type of topcoat product.
- C. Samples for Verification: For each type of paint system and in each color and gloss of topcoat.
  - 1. Submit Samples on rigid backing, 8 inches (200 mm) square.
  - 2. Apply coats on Samples in steps to show each coat required for system.
  - 3. Label each coat of each Sample.
  - 4. Label each Sample for location and application area.
- D. Product List: Cross-reference to paint system and locations of application areas. Use same designations indicated on Drawings and in schedules. Include color designations.

#### 1.5 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials, from the same product run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
  - 1. Paint: 5 percent, but not less than 1 gal. (3.8 L) of each material and color applied.

#### 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F (7 deg C).
  - 1. Maintain containers in clean condition, free of foreign materials and residue.
  - 2. Remove rags and waste from storage areas daily.

#### 1.7 FIELD CONDITIONS

- A. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F (10 and 35 deg C).
- B. Do not apply paints when relative humidity exceeds 85 percent; at temperatures less than 5 deg F (3 deg C) above the dew point; or to damp or wet surfaces.



## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. Subject to compliance with requirements, provide products by one of the following:
- 1.
  - 2.
  - 3.
- B. Products: Subject to compliance with requirements, provide one of the products listed in the Interior Painting Schedule for the paint category indicated.

### 2.2 PAINT, GENERAL

- A. MPI Standards: Products shall comply with MPI standards indicated and shall be listed in its "MPI Approved Products Lists."
- B. Material Compatibility:
1. Materials for use within each paint system shall be compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
  2. For each coat in a paint system, products shall be recommended in writing by topcoat manufacturers for use in paint system and on substrate indicated.
- C. Colors: As selected by Architect from manufacturer's full range.

### 2.3 SOURCE QUALITY CONTROL

- A. Testing of Paint Materials: Owner reserves the right to invoke the following procedure:
1. Owner will engage the services of a qualified testing agency to sample paint materials. Contractor will be notified in advance and may be present when samples are taken. If paint materials have already been delivered to Project site, samples may be taken at Project site. Samples will be identified, sealed, and certified by testing agency.
  2. Testing agency will perform tests for compliance with product requirements.
  3. Owner may direct Contractor to stop applying paints if test results show materials being used do not comply with product requirements. Contractor shall remove noncomplying paint materials from Project site, pay for testing, and repaint surfaces painted with rejected materials. Contractor will be required to remove rejected materials from previously painted surfaces if, on repainting with complying materials, the two paints are incompatible.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.
- B. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:
  - 1. Concrete: 12 percent.
  - 2. Gypsum Board: 12 percent.
- C. Gypsum Board Substrates: Verify that finishing compound is sanded smooth.
- D. Verify suitability of substrates, including surface conditions and compatibility, with existing finishes and primers.
- E. Proceed with coating application only after unsatisfactory conditions have been corrected.
  - 1. Application of coating indicates acceptance of surfaces and conditions.

### 3.2 PREPARATION

- A. Comply with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual" applicable to substrates and paint systems indicated.
- B. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.
  - 1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.
- C. Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, and incompatible paints and encapsulants.
  - 1. Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce paint systems indicated.
- D. Concrete Substrates: Remove release agents, curing compounds, efflorescence, and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces to be painted exceeds that permitted in manufacturer's written instructions.
- E. Steel Substrates: Remove rust, loose mill scale, and shop primer, if any. Clean using methods recommended in writing by paint manufacturer but not less than the following:
  - 1. SSPC-SP 2.

- F. Shop-Primed Steel Substrates: Clean field welds, bolted connections, and areas where shop paint is abraded. Paint exposed areas with the same material as used for shop priming to comply with SSPC-PA 1 for touching up shop-primed surfaces.
- G. Galvanized-Metal Substrates: Remove grease and oil residue from galvanized sheet metal by mechanical methods to produce clean, lightly etched surfaces that promote adhesion of subsequently applied paints.
- H. Aluminum Substrates: Remove loose surface oxidation.

### 3.3 APPLICATION

- A. Apply paints according to manufacturer's written instructions and to recommendations in "MPI Manual."
  - 1. Use applicators and techniques suited for paint and substrate indicated.
  - 2. Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed equipment or furniture with prime coat only.
  - 3. Paint front and backsides of access panels, removable or hinged covers, and similar hinged items to match exposed surfaces.
  - 4. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
  - 5. Primers specified in painting schedules may be omitted on items that are factory primed or factory finished if acceptable to topcoat manufacturers.
- B. Tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of same material are to be applied. Tint undercoats to match color of topcoat, but provide sufficient difference in shade of undercoats to distinguish each separate coat.
- C. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.
- D. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.
- E. Painting Fire Suppression, Plumbing, HVAC, Electrical, Communication, and Electronic Safety and Security Work:
  - 1. Paint the following work where exposed in equipment rooms:
    - a. Equipment, including panelboards.
    - b. Uninsulated metal piping.
    - c. Uninsulated plastic piping.
    - d. Pipe hangers and supports.
    - e. Metal conduit.
    - f. Plastic conduit.
    - g. Tanks that do not have factory-applied final finishes.
    - h. Duct, equipment, and pipe insulation having cotton or canvas insulation covering or other paintable jacket material.
  - 2. Paint the following work where exposed in occupied spaces:

- a. Equipment, including panelboards.
  - b. Uninsulated metal piping.
  - c. Uninsulated plastic piping.
  - d. Pipe hangers and supports.
  - e. Metal conduit.
  - f. Plastic conduit.
  - g. Duct, equipment, and pipe insulation having cotton or canvas insulation covering or other paintable jacket material.
  - h. Other items as directed by Architect.
3. Paint portions of internal surfaces of metal ducts, without liner, behind air inlets and outlets that are visible from occupied spaces.

### 3.4 FIELD QUALITY CONTROL

- A. Dry Film Thickness Testing: Owner may engage the services of a qualified testing and inspecting agency to inspect and test paint for dry film thickness.
1. Contractor shall touch up and restore painted surfaces damaged by testing.
  2. If test results show that dry film thickness of applied paint does not comply with paint manufacturer's written recommendations, Contractor shall pay for testing and apply additional coats as needed to provide dry film thickness that complies with paint manufacturer's written recommendations.

### 3.5 CLEANING AND PROTECTION

- A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.
- B. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.
- C. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.
- D. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

This Section may be edited using AVITRU's SpecBuilder and the MPI Architectural Painting Decision Tree. [<Double click here to connect.>](#)

### 3.6 INTERIOR PAINTING SCHEDULE

- A. Concrete Substrates, Nontraffic Surfaces:
1. Institutional Low-Odor/VOC Latex System [MPI INT 3.1M]:

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- a. Prime Coat: Primer sealer, interior, institutional low odor/VOC, MPI #149.
  - b. Intermediate Coat: Latex, interior, institutional low odor/VOC, matching topcoat.
  - c. Topcoat: Latex, interior, institutional low odor/VOC, semi-gloss (MPI Gloss Level 5), MPI #147.
2. Alkyd System [MPI INT 3.1D]:
    - a. Prime Coat: Primer, alkali resistant, water based, MPI #3.
    - b. Intermediate Coat: Alkyd, interior, matching topcoat.
    - c. Topcoat: Alkyd, interior, semi-gloss (MPI Gloss Level 5), MPI #47.
- B. CMU Substrates:
1. Institutional Low-Odor/VOC Latex System [MPI INT 4.2E]:
    - a. Block Filler: Block filler, latex, interior/exterior, MPI #4.
    - b. Intermediate Coat: Latex, interior, institutional low odor/VOC, matching topcoat.
    - c. Topcoat: Latex, interior, institutional low odor/VOC, semi-gloss (MPI Gloss Level 5), MPI #147.
- C. Steel Substrates:
1. Institutional Low-Odor/VOC Latex System [MPI INT 5.1S]:
    - a. Prime Coat: Primer, rust inhibitive, water based MPI #107.
    - b. Intermediate Coat: Latex, interior, institutional low odor/VOC, matching topcoat.
    - c. Topcoat: Latex, interior, institutional low odor/VOC, flat (MPI Gloss Level 1), MPI #143.
    - d. Topcoat: Latex, interior, institutional low odor/VOC (MPI Gloss Level 4), MPI #146.
    - e. Topcoat: Latex, interior, institutional low odor/VOC, semi-gloss (MPI Gloss Level 5), MPI #147.
  2. Alkyd System MPI INT 5.1E:
    - a. Prime Coat: Primer, alkyd, quick dry, for metal, MPI #76.
    - b. Prime Coat: Shop primer specified in Section where substrate is specified.
    - c. Intermediate Coat: Alkyd, interior, matching topcoat.
    - d. Topcoat: Alkyd, interior, flat (MPI Gloss Level 1), MPI #49.
    - e. Topcoat: Alkyd, interior, semi-gloss (MPI Gloss Level 5), MPI #47.
- D. Galvanized-Metal Substrates:

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1. Institutional Low-Odor/VOC Latex System [MPI INT 5.3N]:
  - a. Prime Coat: Primer, galvanized, water based, MPI #134.
  - b. Intermediate Coat: Latex, interior, institutional low odor/VOC, matching topcoat.
  - c. Topcoat: Latex, interior, institutional low odor/VOC, flat (MPI Gloss Level 1), MPI #143.
  - d. Topcoat: Latex, interior, institutional low odor/VOC (MPI Gloss Level 2), MPI #144.
  - e. Topcoat: Latex, interior, institutional low odor/VOC, semi-gloss (MPI Gloss Level 5), MPI #147.
  
- E. Gypsum Board and Plaster Substrates:
  1. Institutional Low-Odor/VOC Latex System MPI INT 9.2M:
    - a. Prime Coat: Primer sealer, interior, institutional low odor/VOC, MPI #149.
    - b. Intermediate Coat: Latex, interior, institutional low odor/VOC, matching topcoat.
    - c. Topcoat: Latex, interior, institutional low odor/VOC, flat (MPI Gloss Level 1), MPI #143.
    - d. Topcoat: Latex, interior, institutional low odor/VOC (MPI Gloss Level 3), MPI #145.
    - e. Topcoat: Latex, interior, institutional low odor/VOC, semi-gloss (MPI Gloss Level 5), MPI #147.

END OF SECTION 099123

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**APPENDIX C**

**Mechanical Equipment Detailed Specifications**



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MECHANICAL EQUIPMENT  
DETAILED SPECIFICATIONS

I. GENERAL REQUIREMENTS

This section consists of the general construction requirements for all mechanical items work described in the Plans and these Special Provisions.

The work included under this section shall consist of furnishing all labor, materials, plants and incidentals required to rehabilitate the mechanical components in accordance with the Plans, Specifications, and the directions of the Engineer.

A. SCOPE OF WORK

The work shall include, but not be limited to the following tasks:

1. Clean, paint, and lubricate all existing span drive operating machinery assemblies and associated components.
2. Disassemble and remove existing center lock assemblies and all associated components.
3. Furnish and install new center lock assemblies.
4. Disassemble and remove existing sump pump assemblies and all associated components.
5. Furnish and install new sump pump assemblies and associated components.

The following shall also be included in the work:

1. Any apparatus, appliance, material, labor or service either shown on the Contract Drawings or noted in the Specifications.
2. Any incidental apparatus, appliance, material, labor, service of a minor nature, necessary to make the work complete in all respects, and ready for operation, even if not particularly shown on the Contract Drawings or mentioned in the Specifications.
3. Small details not shown on the Contract Drawings or specified, but which are necessary for the proper and complete installation and operation of the work.
4. Detailed field measurements of the elevations and relative positions of the existing pinions and pinion shafts. A reference line shall be established through the centers of the pinions and the alignment of the pinion shafts to the reference line and of the reference line to the structure shall be established with a resolution of 1/64".
5. Demolition of the existing equipment to be replaced shall be included under this item. The contractor shall coordinate the dimensions given on the mechanical plans with actual dimensions of the approved manufactured

components, bascule pier, bascule span and the electrical plans to insure proper fit and to provide adequate clearances against all moving components.

#### B. COORDINATION

1. The Contractor shall coordinate all Mechanical work with related Structural and Electrical work.

#### C. REFERENCES

Portions or all of certain recognized industry or association standards or specifications referred to as a requirement in these Special Provisions are to be considered as binding as though reproduced in full herein unless supplemented and/or modified by more stringent requirements of the Contract Documents. Unless otherwise stated, the reference standard or specification which is current at the time of the Contract Documents are issued, will apply.

1. American Association of State Highway and Transportation Officials, LRFD Movable Highway Bridge Design Specifications. (AASHTO LRFD)
2. American Bearing Manufacturers Association - ABMA.
3. American Institute of Steel Construction - AISC.
4. Association of Iron and Steel Engineers - AISE.
5. American Iron and Steel Institute - AISI
6. American National Standards Institute - ANSI.
7. American Society of Mechanical Engineers - ASME.
8. American Society for Testing and Materials - ASTM.
9. American Welding Society - AWS. ANSI/AWS D1.1/D1.1M:2010, Structural Welding Code.
10. International Organization for Standardization - ISO.
11. National Electrical Contractors Association - NECA.
12. National Electrical Manufacturers Association - NEMA.
13. National Fluid Power Association - NFPA.
14. National Lubricating Grease Institute - NLGI.
15. Occupational Safety and Health Act - OSHA.
16. Society of Automotive Engineers - SAE.
17. Steel Structures Painting Council - SSPC.
18. Underwriters Laboratories - UL.

#### D. QUALIFICATIONS, PERSONNEL AND FACILITIES

1. The Contractor for this project, or his Mechanical Subcontractor shall be responsible for and experienced in all aspects of mechanical construction for bascule bridges, including attending all meetings related to mechanical issues, reviewing and approving all mechanical submittals, checking and verifying bascule leaf alignment throughout the fabrication and erection stages, supervising mechanical system field installations and coordinating all mechanical aspects among subcontractors and manufacturers, and also with the structural, electrical and architectural interfaces.
2. The Contractor shall demonstrate that his staff personnel or those of his Mechanical Subcontractor, who are assigned to this project, have over 10 years' experience in setting and aligning heavy machinery, and who have performed installation of machinery for a minimum of five trunnion type bascule bridges. The Contractor shall submit the qualifications of the proposed millwrights to the Engineer for review and approval.
3. The Contractor shall employ millwrights for setting and aligning all mechanical items and systems and to verify and document all alignment. The millwrights shall have a minimum of ten years in setting and aligning heavy machinery and who have performed installation of machinery for a minimum of five movable bridges. The Contractor shall submit this information for approval, 10 days after award of contract.
4. The Contractor shall provide adequate plant, material, and personnel for proper execution of the work. The work shall be managed in a professional manner and in compliance with all applicable safety regulations. Contractor's superintendent, who is fully authorized to act on behalf of the Contractor, shall be continuously present at the site during the work. The Contractor will be responsible for repairs of all damage to the bridge, the bridge equipment, and surroundings that result from the Contractor's operations.
5. All materials shall be supplied by manufacturers who have supplied similar materials for similar applications for a period not less than ten (10) years. Products used in this work shall be produced by manufacturers regularly engaged in the manufacture of the specified products. Where two or more units of the same class of equipment are required, these units must be products of the same manufacturer.
6. For the fabrication, installation, cleaning, painting, aligning, testing, and all other work required for the mechanical systems, use adequate numbers of skilled, trained, and experienced millwrights who are thoroughly familiar with the requirements and methods required for the proper execution of the work. Provide personnel and supervisory personnel with a minimum of two jobs as previous experience in the installation of hoisting machinery of this size or larger. Contractor's superintendent, who is fully authorized to act on behalf of the Contractor, shall be continuously present at the site during the work. The Contractor will be responsible for repairs of all damage to the bridge, the bridge buildings, the bridge equipment, and other surroundings that result from the contractor's operations.

7. For the installation, adjustment, and alignment of all specialized machinery components, provide for the presence, at the job site, of manufacturer's service personnel skilled in these specialties. Such service personnel shall be properly equipped with all necessary instruments to assure that related components have been installed within acceptable tolerances and to make all necessary adjustments for attaining the specified ratings. Contractor shall perform any required alignment adjustments as directed by the manufacturer's representative.
8. A quality assurance (QA) program shall be prepared for the project by the contractor for all bridge machinery work. All QA program documentation must be submitted that includes but is not limited to the following:
  - i. Welding Procedure Specifications.
  - ii. Welding Procedure Qualification Records.
  - iii. Workers Welding Certificates.
  - iv. QA/QC programs for individual fabricators.
  - v. Work Plan.
  - vi. Material Test Reports.
  - vii. Test Results for the mechanical elements.

All submittals for bridge machinery required in this specification and prepared by the Contractor shall be under the responsible charge of one lead Engineer who shall coordinate the work with other components of the design and construction, and review all submittals for conformance to the project Plans and Specifications.

The lead Engineer shall be professionally licensed in the State of Illinois in the branch of Mechanical Engineering and shall seal and sign all Quality Assurance submittals.

#### E. SUBMITTALS

1. Submit design plans and calculations for the center locks. The design for the center locks shall be in accordance with AASHTO Movable Highway Bridge Design Specifications and these Special Provisions. Design Plans shall include complete details necessary to develop fully detailed dimensioned shop drawings for all components being replaced. All materials and quantities needed shall be indicated on the plans and shall be submitted with all supporting calculations qualifying the size and materials indicated for use. Plans shall be submitted per the Contract schedule. Presentation and format of drawings shall match requirements for CDOT roadway and bridge design and construction.
2. No final drawings for a particular item can be submitted until the comments are resolved and CDOT approval is given. No work shall begin on the

particular item until comments are resolved and CDOT approval is given. The contractor shall allow 28 days for the review of submittals and 14 days for processing in and out of the office. If more than one component is submitted within a seven day period, an additional 7 days will be allowed for the reviews.

3. Design calculation submittals to CDOT shall include at least two bound sets and one electronic copy in "pdf" format. Design drawing submittals to CDOT shall include at least two full size (22" x 34") sets, seven half size sets, and one electronic copy (in Microstation, "pdf", and CALS format). All design calculations and final design drawings shall bear the legible seal, date, and signature of the responsible engineer registered as a Structural Engineer in the State of Illinois.

#### F. SHOP DRAWINGS

1. Shop drawing submittals shall comply with Section V of Book 1 of these Terms and Conditions for Construction.
2. At a minimum, prepare shop drawings for the following mechanical components in accordance with these specifications and the Plans:
  - i. Center Lock Assemblies
  - ii. Sump Pump Components
  - iii. Painting Materials and Lubrications
3. Shop drawings for the center locks shall be developed after the design plans have been accepted by CDOT and all comments resolved.
4. Submit shop drawings for complete systems and related or interconnected equipment together. Partial or incomplete submittals will not be accepted for review. Coordinate the work of machinery component manufacturers where components interface. Contractor shall review and approve all shop and working plans to coordinate the proper configuration and assembly of the various machinery components prior to submission for approval. All equipment shall be shown in place in the structural and architectural building backgrounds.
5. State grade and extent of finish machining, with all tolerances and allowances, for each part for which a specific fit is required. Finished surfaces shall be as defined by the ANSI B46.1, Surface Texture; and fits shall be as defined by the ANSI B4.1, Preferred Limits and Fits for Cylindrical Parts, unless otherwise stated herein, ANSI B4.1 shall also apply to fits for non-cylindrical parts.
6. Show manufactured components in outline on drawings, with sufficient dimensions and data to determine the clearances required for installation and operation. Manufacturer's certified dimension prints shall state the name of the job; pertinent ratings of the equipment; and shall indicate, where applicable, the provisions for adding, draining, and checking the level of

- lubricant; the method of lubrication and type of fittings; and the location of inspection openings.
7. Specific steps in fabrication shall be outlined in sequence.
  8. Weld types and joint sizes shall be shown on the shop drawings. Welding procedures shall be submitted and shall include:
    - i. Temporary welds, tack welds, jigs and other temporary measures required for construction of the elements shall be shown.
    - ii. All weld processes, including pre-qualified and contractor proposed welding procedures.
    - iii. Detailed welding drawings, weld sequencing plan, including proposed inspection plans, repair procedures, and welder qualifications.
    - iv. Procedures for controlling distortion of elements.
    - v. Disposition rates, preheat and inter pass temperatures, sequencing, inspection controls by the contractor and other related items for the control of welding.
  9. The Contractor shall furnish complete assembly drawings or diagrams showing each part contained therein and the manufacturer's part number assigned to each part. The drawings or diagrams shall be sufficient to enable complete disassembly and reassembly of the assemblies described herein. In the event that any part is modified in any manner from the way it is described or delivered by its original manufacturer, the Contractor shall furnish a drawing which details each modification and the part shall be assigned a unique part number to assure the furnishing of replacement parts modified in similar fashion.
  10. Furnish complete data regarding the design and construction of all manufactured items to be furnished as part of the machinery under this Contract, including material specifications, cross-sectional assembly drawings, detail drawings of component parts, characteristic curves, and the dimensions of principal elements.
  11. Materials and material specifications shall be stated for each part. Where ASTM or any other standard specifications are used, the applicable numbers of such specifications shall be given.
  12. Clearly indicate heat treatment, stress relieving, normalizing, tempering, and all other processes.
  13. Certified prints of each manufactured assembly shall be furnished. Certified prints are manufacturer's drawing of proprietary products where mounting dimensions, ratings, and any other required properties are shown and manufacturer certifies their correctness for this specific project. In addition to identifying and describing each part, they shall show:

- i. Dimensions of all principal parts comprising the assembly.
  - ii. Certified external dimensions, which affect clearances and are required for installation, including tolerances.
  - iii. Capacity and normal operating ratings.
  - iv. Recommended lubrication, including location, lubrication fittings and provisions for adding, changing and checking the level of lubricants.
  - v. Inspection openings, seals and vents.
  - vi. Details or description of all fasteners required to mount the assembly.
  - vii. Gross weight
  - viii. Name of the bridge, and location.
  - ix. Certified prints shall be signed and dated by an officer of the manufacturing company.
  - x. Complete shop bills of materials shall be made for all machinery parts. If the bills are not shown on the shop drawings, prints of the bills shall be furnished for approval in the same manner as specified for the shop drawings.
  - xi. The computed weight of each piece of machinery shall be stated on the shop drawings upon which it is detailed or billed.
  - xii. Complete assembly and erection drawings shall be furnished. These drawings shall give part numbers, match marks, and essential dimensions for locating each part or assembled unit with respect to the bridge structure or foundation.
  - xiii. Each shop drawing shall be given a suitable title to describe the assembly or parts detailed thereon, and the complete project name, contract number and structure number 099-9904 shall identify each drawing.
  - xiv. Lubrication charts shall be prepared and submitted as shop drawings.
14. It is the Contractor's responsibility to manufacture and install stable functioning machinery. Review and approval of shop drawings by the Engineer does not relieve the Contractor of this responsibility.
15. Complete shop bills of materials shall be made for all machinery parts. If the bills are not indicated on working drawings, submit prints of the bills for review in the same manner as specified for the drawings. State the weight of each piece of machinery on the shop drawing upon which it is detailed or billed.
16. Shop drawings shall give identifying marks and essential dimensions for locating each part or assembled unit.

#### G. CLOSEOUT SUBMITTALS



Submit drawings of all materials, as fabricated, following fabrication. Any deviations from the Design Plans or approved shop drawings shall be clearly indicated. These drawings shall be stamped "As Built", immediately above the title block.

#### H. GUARANTEE AND WARRANTIES

The Contractor shall obtain and assign to the Department or the agency or authority having jurisdiction over the bridge, all manufacturer's warranties or guarantees on all equipment, material or products furnished for or installed as part of the work.

The Contractor shall warrant the satisfactory in-service operation of the mechanical equipment, materials, products, and related components. This warranty shall extend for a minimum period of one-year following the date of final acceptance of the entire Project, including balancing.

#### I. SHOP ASSEMBLY

Shop assembly shall be made prior to shipment to verify the fit and the performance of the various parts. The following assemblies shall be assembled in the shop, tested and shipped as assemblies herein:

1. Lock machinery assemblies shall be tested on their respective supports and guides in a shop prior to shipping to the field installation.

#### J. OPERATIONS AND MAINTENANCE MANUALS AND DRAWING BOOKS

Prepare and submit an Operation and Maintenance Manual(OIM) for the mechanical rehabilitation. Both hard copies and electronic color pdf copies shall be submitted.

##### 1. General Requirements for Manuals

- i. Operating and maintenance manuals giving complete instructions relative to assembly, installation, operation, adjustment, lubrication, maintenance, disassembly and carrying complete parts list shall be furnished by the Contractor for every item of equipment furnished by the Contractor.
- ii. Manuals shall include manufacturer's standard publications which comply with specified requirements relative to quantity and quality of information and data, and the additional requirements stated herein these Specifications.
- iii. Operating and maintenance manuals shall each be individually and separately bound volumes; not combined.
- iv. All printed matter, data, drawings, etc., shall be accurate, distinct and clearly and easily legible. Illustrations shall be clear; and printed matter, including dimensions and lettering on drawings, shall be legible. If reduced drawings are incorporated to manuals, the original lines and letters shall be darkened as necessary to retain their legibility after reduction. Larger drawings may be folded into manuals to page size.

- v. All printed matter, data, drawings, etc., shall be produced by methods so as to result in permanence and durability; no materials shall be used which will adversely affect this permanence and durability.

2. Content of Manuals.

Manuals shall contain, as a minimum, the following:

- i. Table of contents, in numerical page order.
- ii. Index, in alphabetical order.
- iii. Manufacturer's literature describing each piece of equipment and giving complete identification including manufacturer's model number and drawing number. A set of descriptive leaflets, bulletins and drawings covering all items of equipment used in the bridge machinery. The catalog number of each piece shall be given, to be used in case it becomes necessary to order replacement parts from the original manufacturer.
- iv. Operation instructions, including step-by-step preparation for starting, operation, shutdown, and draining of all machinery components. Operation instructions shall note all precautions required for correct and safe operation.
- v. Sequence of operation and how each component and interlock effects the operation of other components.
- vi. Diagrammatic location, function, and tag numbers of each valve used in required piping.
- vii. Maintenance and lubrication instructions for the machinery components.
- viii. Lubrication schedule indicating method and frequency of lubrication.
- ix. Schematic indicating what items should be cleaned and painted on a regular basis.
- x. Complete details and procedures for adjusting all items that may wear.
- xi. Anticipation of possible breakdowns and repairs for trouble-shooting.
- xii. Manufacturer's parts list of functional components, control diagrams and wiring diagrams where required, giving manufacturer's model number and part number. List shall include split-bearing seals needed for replacement.
- xiii. Steps for cursory inspection that should be carried out annually.
- xiv. Steps for in-depth inspection that should be carried out every 2 years.
- xv. List of nearest location suppliers of all components parts, including their addresses.

xvi. Spare parts data as follows:

- a. Complete list of parts and supplies with sources of supply.
- b. List of parts and supplies that are either normally furnished at no extra cost with purchase of equipment, or specified herein to be furnished as part of this Contract.

xvii. Name, address, and telephone number of the manufacturer's representative and Service Company, for each machinery component so that service or spare parts can be readily obtained.

### 3. Operating Diagrams

- i. As approved by and in the sole discretion and opinion of the Engineer.

## K. DELIVERY, STORAGE, AND HANDLING

1. Delivery, storage, and handling of materials and equipment shall be in strict accordance with manufacturer's recommendations.
2. Coat finished metal surfaces and unpainted metal surfaces that might be damaged by corrosion as soon as practicable after disassembly or finishing with a corrosion preventative compound. Remove coating from all surfaces prior to assembly and painting after installation. All shims shall be coated prior to shipment with the rust-inhibiting preservative, and immediately before installation this coating shall be wiped from the shims that are used.
3. Protect all machinery parts from weather, dirt and all other injurious conditions during disassembly, manufacture, shipment and while awaiting erection. Protect all shaft journals that are shipped disassembled from their bearings during shipment and before erection by a packing of oil-soaked fabric secured in place by burlap and covered with heavy metal thimbles or heavy timber lagging securely attached. Take every precaution to ensure that the bearing surfaces will not be damaged and that all parts shall arrive at their destination in satisfactory condition.
4. Mount assembled units on skids or otherwise crate for protection during handling and shipment.
5. The Engineer shall approve the methods and materials used for protection. The Contractor shall submit in advance an outline of the methods and materials to be used for this purpose. No machinery shall be stored outdoors. All equipment shall be properly protected per the manufacturer's recommendation when stored prior to installation or activation.

## II. MATERIALS

### A. GENERAL

1. All materials shall be as called out on the Contract Drawings and as indicated in the Specifications.

2. The current issue of all material specifications and standards shall be those in effect on the date of the bid for this project.
3. All materials furnished for machinery work shall be new except as noted, clean, and free of defects.
4. Material on the Contract Drawings not covered by Material Specifications shall be commercially available material acceptable to the Engineer.

#### B. STANDARD PRODUCTS

1. All equipment and materials furnished under the items specified herein shall be new. All equipment, materials and workmanship shall be first class in every particular manner.
2. Materials and equipment not being fabricated as unique items to this installation shall be essentially the standard catalogued products of manufacturers regularly engaged in production of such materials or equipment and shall be manufacturer's latest standard design that complies with the specification requirements. Materials and equipment shall essentially duplicate items that have been in satisfactory commercial or industrial use at least two years prior to bid opening. Where two units of the same class of equipment are required, these units shall be products of a single manufacturer. Each major component of equipment shall have the manufacturer's name and address and the model and serial number on a nameplate, securely affixed in a conspicuous place. The nameplate of the distributing agent will not be acceptable.

#### C. MANUFACTURER'S RECOMMENDATIONS

1. Storage, delivery, and installation of materials or any part thereof are required to be in accordance with the recommendations of the manufacturer of the material being installed. Printed copies of these recommendations shall be furnished to the Engineer prior to fabrication. Fabrication of the item will not be allowed to proceed until the recommendations are received. Failure to furnish these recommendations can be cause for rejection of the material. Provide as part of the work all special machining and installation required by the component manufacturer.

#### D. STRUCTURAL STEEL

1. Steel components of manufactured items shall conform to the materials recommended by the manufacturer.
2. Provide suitable supports, structurally adequate.
3. Mill top surfaces of all new supports after fabrication to provide a uniform surface. All surfaces requiring milling shall have adequate material allowance for milling to the minimum finish dimensions required.

#### E. CASTINGS

1. Castings shall be true to pattern in form and dimensions, free from pouring faults, sponginess, cracks, blow holes, and other defects in positions affecting their strength and value for the service intended. All castings shall be sandblasted or otherwise effectively cleaned of scale and sand, to present a smooth, clean, and uniform surface. All unfinished edges of castings shall be neatly cast with rounded corners, and all inside angles shall have ample fillets.
2. All surfaces requiring finish shall have adequate material allowance for machining to finish dimensions. Machined bosses shall be provided on cast steel machinery parts to give proper seats for bolt heads and nuts. Bolt holes in steel castings shall be drilled through the solid material. All bolt holes through castings shall be spot faced for bolt heads, nuts, or washers.
3. Blow holes appearing upon finished castings shall be so located that a straight line laid in any direction will not cut a total length of cavity greater than one inch in any one foot, nor shall any single blow hole exceed one inch in any dimension or have an area greater than one-half square inch. Blow holes shall not have a depth injuriously affecting the strength of the casting.
4. Minor defects which do not impair the strength may, with the approval of the Commissioner be welded by an approved process and be inspected by magnetic particle examination, performed by the Contractor at no additional cost to the Contract. The defects shall be removed to solid metal by chipping, drilling, or other satisfactory method, and, after welding, the castings shall be annealed, if required by the Commissioner. Castings which have been welded without the Engineer's permission will be rejected.
5. Castings, which show or develop cracks, flaws, or other defects during hammering or from any other cause, shall be rejected in accordance with the requirements of ASTM A27, ASTM A148, or ASTM A781. Charpy impact and tensile bars may be taken from the casting or from separately cast test bars as per ASTM A781.
6. The steel casting shall be thermally stress-relieved after shakeout, cleaning and rough grinding, by slowly heating at 100°F/hour to 1100°F, holding for 1 hour, then slowly cooling at 100°F/hour until 600°F, when it will be air cooled in still air.
7. All steel castings that have solid sections 4" thick or greater are to be ultrasonically tested in accordance with ASTM A609, Method A, Quality Level 3. Castings that do not pass this test may be rejected. Test results, whether positive or negative, are to be submitted to the Engineer.
8. Brinell or Rockwell hardness tests shall be made and recorded on inspection reports of all steel parts for which hardness values specified on the Contract Drawings or required by the applicable material specifications
9. All bronze castings are to be finished all over except as noted. Copper-based bronze alloy castings shall be centrifugally cast per ASTM B271 to rough or

nominal dimensions, and machined to final dimensions. Castings shall be free of voids, porosity, gas entrapment, cracks, shrinkage, or other injurious defects. The non-machined areas shall have a fine, shot-blasted finish. Machined and ground areas shall be protected before shipment to prevent any damage or contamination during shipping. Test bars for tensile and impact tests shall be taken either from the actual casting or from castings in separate molds from the same heat as described in ASTM B208. Castings shall be ultrasonically inspected in the same manner as per ASTM A388, except that cast bronze calibration blocks shall be used. Maximum tolerable internal flaw size shall be ¼" for bronze. Any defects found in the casting shall be repaired only when feasible, and repair procedures shall be submitted for approval by the Engineer.

10. Brinell or Rockwell hardness tests shall be made and recorded on inspection reports of all bronze castings for which hardness values are specified by the applicable material specifications.

#### F. FORGINGS

1. All rough-machined forgings supplied to the Contractor or sub-contractor shall be homogeneous, free of voids, large inclusions, seams, forging laps, cracks or internal shrinkage cavities or other injurious defects. Forging stock shall be derived from blooms, continuously-cast bars or ingots which have sustained a reduction in cross-sectional area by a factor of 3 or more by hot working. The forgings shall have a fine grain size of ASTM 5 or greater. Forgings shall be hot worked at known forging temperature ranges established for the specified alloy grade, such as those listed in the American Society for Metals Heat Treater's Guide or other authoritative reference. Forgings shall be ordered in sizes with sufficient machining allowance for machining to final dimensions.
2. Forgings shall be ultrasonically tested in accordance with ASTM A388. Charpy V-notch and tensile specimens shall be taken from forging prolongations in the longitudinal direction as per ASTM A668. Any defects found in the forging shall be repaired only when feasible, and repair procedures shall be submitted for approval by the Engineer.
3. All shafts shall be accurately finished, round, smooth, and straight; and when turned to different diameters, they shall have rounded fillets at the shoulders. All journal bearing areas on shafts and pins shall be accurately turned, ground, and polished with no trace of tool marks or scratches on the journal surface or adjoining shoulder fillets. Journal diameters shall be finished to the limits specified in AASHTO Specifications.
4. Brinell or Rockwell hardness tests shall be made and recorded on inspection reports of all steel parts for which hardness values specified on the Contract Drawings or required by the applicable material specifications

#### G. FITS AND FINISHES

1. Fits and surface finishes for machinery parts shall be in accordance with ANSI B4.1, Preferred Limits and Fits for Cylindrical Parts and ANSI B46.1, Surface Texture. Surface finishes are given as the roughness height in micro inches; if additional limits are required for waviness and lay, they will be specified by the Engineer. Fits for cylindrical parts shall also apply to the major dimensions of non-cylindrical parts.

#### H. FASTENERS

1. The following requirements for bolts, nuts, cap screws and washers shall apply, except where otherwise called for herein or on the Contract Drawings.
2. All bolts for connecting machinery parts to each other or to supporting members shall be as shown on the Contract Drawings or specified otherwise and conform to one of the following types:
  - i. Machinery Fit, high strength bolts
  - ii. Structural Fit, high strength bolts
  - iii. Turned bolts, turned cap screws and turned studs
3. All high strength bolts shown on the mechanical drawings shall be machinery fit unless otherwise noted. All high strength bolts shall meet the requirements of ASTM A449.
4. Holes for machinery fasteners shall be reamed to 1/32" larger than for nominal bolt diameters less than 1", and 1/16" for fasteners 1" diameter or larger.
5. Structural Fit high strength bolts shall have a maximum clearance of 1/16 inch between the bolt shank and hole.
6. Both Machinery Fit and Structural Fit high strength bolts shall be connected using nuts meeting the requirements of ASTM A563 Grade DH or DH3 and shall be installed with a hardened plain washer meeting ASTM F436 at each end.
7. Turned bolts, turned cap screws, and turned studs shall have turned shanks and cut threads. Turned bolts shall have semi-finished, washer-faced, hexagonal heads and nuts. Turned cap screws shall have finished washer-faced, hexagonal heads. All finished shanks of turned fasteners shall be 1/16 of an inch larger in diameter than the diameter of the thread, which shall determine the head and nut dimensions. The shanks of all turned fasteners shall have Class LC6 fit in the finished holes in accordance with ANSI Standard B4.1. Inner surfaces of the holes for turned bolts, and the shanks of turned bolts, shall have a maximum surface roughness of 63 micro-inches. The material used for machining turned shank fasteners shall meet the requirements of ASTM A193, Grade B7. Turned bolts shall be secured using nuts meeting the requirements of ASTM A194 or A563 Grades DH or DH3. Turned fasteners shall be fully detailed on shop drawings.

8. The dimensions of countersunk hexagon socket-head cap screws shall conform to ANSI B18.3, and the screws shall be made of heat-treated alloy steel, zinc or nickel plated and furnished with a self-locking nylon pellet embedded in the threaded section. Set screws shall be of the headless safety type, shall have threads of the coarse thread series, and shall have cup points. Set screws shall neither be used to transmit torsion nor as the fastening or stop for any equipment that contributes to the stability or operation of the Bridge.
9. Bolt holes through unfinished surfaces shall be spot faced for the head and nut, square with the axis of the hole.
10. Unless otherwise called for, all bolt holes in machinery parts or connecting these parts to the supporting steel work shall be sub drilled at least  $\frac{1}{4}$  inch smaller in diameter than the bolt diameter and shall be reamed assembled for the proper fit at assembly or at erection with the steel work after the parts are correctly assembled and aligned.
11. All elements connected by bolts shall be drilled or reamed assembled to assure accurate alignment of the whole and accurate clearance over the entire length of the bolt within the specified limit.
12. Holes in shims and fills for machinery parts shall be reamed or drilled to the same tolerances as the connected parts at final assembly.
13. Positive locks of an approved type shall be furnished for all nuts except high strength bolts. High-strength bolts and nuts if fully torqued per AASHTO Standards are self-locking and need no additional locking devices. If double nuts are used, they shall be used for all connections requiring occasional opening or adjustment, and shall be shown on the Contract Drawings.
14. All cotters shall conform to the SAE standard dimensions and shall be made of half-round stainless steel wire, ASTM A276, Type 316.
15. All fasteners shall be of United States manufacture and shall be clearly marked with the manufacturer's designation. The Contractor shall have on site a set of micrometers and bore micrometers capable of measuring bolt and bore diameters. The Contractor shall check that bolt clearances meet specifications before assembly.
16. Unless otherwise noted on the Contract Drawings, all threads for bolts, nuts, and cap screws shall conform to the coarse thread series and shall have a Class 2 tolerance for bolts and nuts or Class 2A tolerance for bolts and Class 2B tolerance for nuts in accordance with the ANSI B1.1, "Unified Screw Threads."

#### I. SHIMS

1. Where shown on the drawings, all machinery shims required for leveling and alignment of equipment shall be steel, neatly trimmed to the dimensions of the assembled parts and drilled for all bolts that pass through the shims.



2. Sufficient thickness shall be furnished to secure 1/64 inch variations of the shim allowance plus one shim equal to the full allowance. Contractor shall anticipate the need for tapered shims to achieve proper alignment of equipment. Shim packs to be provided to the nominal thicknesses shown on Plans. Spare shim packs will be provided at each location.
3. Shims 1/2" thick or less shall be Stainless Steel ASTM A240 Type 316/304.
4. Shims shall be provided without bolt holes and shall be drilled and reamed in the field to the same fit as the other connected components. Shims greater than 1/2 inch shall include one solid plate of thickness equal to 1/2 inch less than total shim thickness.
5. Shims shall be shown and fully dimensioned and detailed on the shop drawings. Shims with open side or U-shaped holes for bolts will not be permitted. No shims shall have less than two holes for bolts.
6. The use of peel able surface bonded laminated shims will be permitted as approved in writing by the Engineer. Plastic or other non-metallic shims will not be permitted.

#### J. GREASE FITTINGS

1. Where grease fittings are called out on the plans a 5/8" Standard Button-Head Grease Fittings suitable for use on heavy machinery shall be used. The grease fitting shall have 1/4" NPTF male threads, constructed of Zinc-Plated steel and use a plunger type check valve.
2. All grease fittings shall be conveniently located for greasing, and if necessary, they shall be connected to the points requiring lubrication from convenient lubrication stations by 3/8 inch stainless steel piping with a minimum bursting pressure of 12,000 psi. All pipe shall be securely supported and located so that it shall be protected from injury and excessive vibration. All lubricating equipment shall be installed in perfect working condition. Where multiple lubrication fittings are tied into one station, a label shall identify the point of lubrication for each fitting. Labels shall be made of laminated micarta or textolite with chamfered edges, and shall be engraved to show black letters on a white background. They shall be mounted with stainless steel screws.

#### K. LUBRICATION, LUBRICANTS, AND CHARTS

1. Contractor is to provide lubricant and lubricate machinery that is impacted by construction activities. The contractor is to protect machinery, shafts, bearings, and gears during construction activities. If lubricant becomes lost or contaminated during construction it shall be replaced with lubricant as regularly used by CDOT.
2. Lubricant for new machinery shall comply, where appropriate with lubricant that is regularly used by CDOT in an effort to minimize the number of different types of lubricant.

3. The Contractor shall furnish sufficient lubricant to provide for the initial lubrication of each component on the structure requiring lubrication. Maintenance lubricants shall not be required for synthetic gearbox oil which will have an indefinite service life. All synthetic oils purchased for use on the bridge shall be provided by a manufacturer which has facilities for annual testing of the oil furnished.
4. The Contractor shall coordinate the grease requirements with the various suppliers to attempt to limit the different types of greases to no more than three.
5. The Contractor shall furnish one copy of a lubrication chart on mylar showing the location of all lubricating fittings and other points of the mechanical and electrical equipment, which require lubrication of any kind, and shall show the kind of lubricant to be used at each point and the frequency of lubrication. The chart shall be framed under glass in a neat wooden frame and shall be placed as directed by CDOT within the control house.

#### L. WELDING

1. All welds shall be as indicated on the Contract Drawings.
2. Weldments for machinery base supports shall be neat and shall have all exposed sharp corners and edges removed. Mounting surfaces of the frames shall be straight and flat such that full contact with the equipment being supported is obtained.
3. All welding required herein or called for on the plans shall be done in accordance with the requirements of AWS D1.5, Bridge Welding Code.
4. Treat all welding and weldments supporting machinery as main members and all welding as joining primary components. All welds shall be performed and inspected as welds subject to both tension and compression.
5. Weldments shall be stress relieved by heat prior to final machining. The fitting up and welding procedure shall be such that distortion of the work will be a minimum. If necessary to obtain this result, suitable welding fixtures shall be used. The Contractor shall submit welding procedures, together with the working drawings for the parts to the Engineer for approval.
6. Inspection of welds and basis of acceptance shall be in accordance with the welding code requirements.
7. All field welds shall be stress relieved unless otherwise indicated within these Special Provisions or unless specific written permission is granted to omit the stress relieving process for each weld. The Contractor shall submit his proposed weld procedures for all field welds. Proposed stress relieving procedures will be required to be included in the weld procedures before approval will be granted.

#### M. PAINTING

1. Cleaning and painting of all existing and new machinery shall comply with all the applicable requirements. Submit for review with the working drawings an outline of painting materials and methods as well as limits of painting for each component.
2. All existing and new machinery shall be painted using a three-coat system conforming to all requirements stated elsewhere for Painting of Structural Steel except for the following:
  - i. Site glasses.
  - ii. Rubbing surfaces in direct contact such as brake pads and bearing bushings on shafts.
  - iii. Nameplates.
3. The application of paint shall adhere to all relative authority standard Specifications and the paint manufacturer's recommendations. The following colors shall be used:
  - i. Federal Safety Orange:

Except for rubbing surfaces, for all moving parts of the machinery such as shafting, couplings, and the sides of gears and brake wheels.
  - ii. Federal Safety Green:

For all stationary parts of machinery.
4. All painted surfaces of the new and existing machinery components shall be cleaned to bare metal in accordance with SSPC-SP11.
5. All unfinished machinery surfaces shall be made free of all chips, dirt, rust, scale, sand, grease, and other foreign matter by sandblasting, wire brushing, or other approved means as stated elsewhere.
6. After proper surface preparation, prime all unfinished machinery surfaces with coats of primer in accordance with the requirements given under Shop Applied Structural Steel Paint System. All new machinery shall be given one shop coat of primer. All rubbing surfaces on new machinery shall be protected from the elements with a corrosion preventative compound approved by the Commissioner.
7. After installation is complete, all machinery surfaces remaining exposed, except rubbing surfaces, shall be thoroughly cleaned and given two field coats of paint prepared as specified elsewhere.
8. After completion of the operating tests and acceptance of the machinery, all accumulated oil, grease, dirt, and other foreign matter shall be solvent cleaned in accordance with SSPC-SP1 from exposed machinery surfaces, except rubbing surfaces.

9. The existing machinery component coating contains lead. Take appropriate precautions to deal with the present of lead on this project. The Contractor shall meet the requirements of LEAD BASED PAINT ABATEMENT (Item 11).
10. Containment and Disposal of cleaning materials shall conform to the requirements of Guide Bridge Special Provision (GBSP) 26 "Containment and Disposal of Lead Paint Cleaning Residues."
11. Nameplates on all manufacturers' components shall be readable, clean and free of all paint before acceptance of the machinery.

#### N. SHOP TESTS AND INSPECTIONS

1. Contractor shall provide two weeks' advanced notice to the Engineer prior to the commencement of work at the foundries, forge, and machine shops so that inspection may be provided. No materials shall be cast, forged, or machined prior to the Engineer having been notified where the orders have been placed.
2. Furnish all facilities for the inspection of material and workmanship in the foundries, forge, and machine shops; and the Engineer shall be allowed free access to necessary parts of the premises. Work done while the Inspector has been refused access will automatically be rejected.
3. The Quality Assurance Manager shall have the power to reject materials or workmanship, which do not fulfill the requirements of these Special Provisions.
4. Inspection at the foundries, forge, and machine shops is intended as a means of facilitating the work and avoiding errors; and it is expressly understood that it will not relieve the Contractor from any responsibility in regard to imperfect material or workmanship and the necessity for replacing the defective materials or workmanship.
5. The Contractor shall furnish the Engineer with copies of all orders for materials and services at the time of each order. Not having received such notification for an order may be sufficient grounds for rejection of materials or parts, whether an inspection is performed or not.
6. Unless otherwise provided, the Contractor shall furnish test specimens, as specified herein, and all labor, testing machines, tools, and equipment necessary to prepare the specimens and to make the physical tests and chemical analyses. Copies of all test reports and chemical analyses shall be furnished to the Engineer.
7. The acceptance of any material or finished parts by the Engineer shall not bar their subsequent rejection if found defective. Rejected material and workmanship shall be replaced or corrected by the Contractor in a manner satisfactory to the Engineer at no additional cost.
8. The Contractor/Manufacturer shall submit detailed field and shop testing procedures for approval prior to testing. The testing procedures shall be

supplemented with drawings, photographs, calculations, and catalog cuts as appropriate. The procedures shall include drawings of the testing configuration, detailed step-by-step procedures, and details on the testing instrumentation and methods of recording measured data.

### III. CONSTRUCTION REQUIREMENTS

#### A. MACHINING

1. All surfaces with a surface finish symbol shown in the Plans shall be machine finished.
2. All surfaces requiring machining shall be finished in accordance with AASHTO Movable Bridge Specification and as specified herein.
3. Any surface finish, dimensional accuracy, or other machining requirement for the machined parts, more stringent than those specified in the Plans that Contractor deems necessary for his own purposes and benefit to fabricate, assemble, align, erect, and install the parts in accordance with the Plans and these Supplementary Specifications shall be provided by Contractor at no additional cost to the State.
4. Parts in contact with other parts or with supports shall be machined to provide even, true bearings. Surfaces in sliding or rotating contact with other surfaces shall be finished true to dimensions and in accordance with Article 2.5.17 of AASHTO Standard Specifications for Movable Highway Bridges.
5. Lay for sliding surfaces shall be in the direction of sliding.
6. All journals on shafts and pins shall be accurately turned, ground, and polished with no trace of tool marks or scratches on the journal surface or adjoining shoulder fillets.
7. Machining flaws shall be repaired subject to approval by the Engineer of proposed repair method and resulting repair.
8. All grease grooves shall be machine-cut and smooth.

#### B. ASSEMBLY

1. Match Marking: connecting parts assembled in the shop for the purpose of reaming or drilling holes in field connections shall be match marked, and a diagram showing such marks shall be furnished to the Inspector and Engineer prior to disassembly.
2. Surfaces of metal that will be in contact when shop assembled shall not be painted. These surfaces shall be thoroughly cleaned of rust, loose mill scale, dirt, oil or grease and all other foreign substances.
3. Assembled parts shall be taken apart if necessary for the removal of burrs and shavings produced by the reaming operation.

4. Upon completion of assembly, parts that are to be disassembled, or left in the partially assembled condition, shall be coated with an approved rust inhibiting compound. Remove the rust inhibitor from bearing surfaces is to be removed before final assembly.
5. The parts shall be free from twists, bends or other deformations.
6. Each assembly, including alignment, accuracy of holes, and workmanship, shall be approved by the Engineer before reaming is commenced.
7. The approval by the Engineer of any shop assembly method shall in no way reduce the responsibility of Contractor to construct the components as required by the Plans and Supplementary Specifications.

### C. INSTALLATION

1. Prior to any work being performed on the machinery, the Contractor shall submit to the Engineer for approval a detailed mechanical work procedure. This procedure shall give in detail the methods for installation and testing of new machinery. Procedures shall include duration of time involved with the work and shall show coordination with structural, electrical and architectural work which will be coinciding with the mechanical work.
2. Before final drilling or reaming, all parts shall be adjusted to exact alignment by means of shims furnished for each part. Components shall be aligned to the installation tolerances listed in the manufacturers regularly published literature. After final alignment and bolting, all parts shall operate smoothly.
3. Bolt holes in structural steel for connecting machinery shall, in general, be drilled from the solid after final alignment of the machinery. Sufficient installation holes, sub-drilled 1/4 inch (6 mm) undersize for undersize temporary bolts, may be used for installation and alignment of the machinery. After the machinery has been aligned in its final position, full-size holes for the remaining bolts shall be drilled or sub-drilled and reamed, the full-size bolts installed, and the temporary bolts removed. The undersize holes used for temporary bolts shall then be reamed full size and full-size bolts installed.
4. The machinery shall be installed and adjusted by competent mechanics skilled in the type of work involved. They shall be provided with all necessary measuring and leveling instruments as may be required including but not limited to dial indicators, feeler gauges, gauge blocks, calipers, and laser alignment equipment. Contractor shall provide all necessary equipment and methods to the Engineer to verify proper alignment of all machinery has been obtained to the satisfaction of the Engineer.
5. The machinery shall be installed with the utmost care in the field. Ropes, slings or other equipment used for installation shall be carefully placed to prevent scratches, abrasions or other damage.
6. The alignment of all components shall be checked by the use of laser alignment tools, dial indicators, gauge blocks, and/or feeler gages both before

and after final bolting up of the machinery in the presence of the Engineer. Installation tolerances listed in the manufacturer's regularly published literature shall be considered maximum values. The installation shall be such that the installed tolerances are no more than those recommended unless otherwise approved by the Engineer. Any re-adjustment after final bolting required by the Engineer in order to conform to this requirement shall be made by the Contractor at no additional cost.

7. For new gearing, tooth contact shall be evaluated and adjusted. Prior to operational testing, apply bluing compound to demonstrate proper gear tooth contact. A machinist bluing compound shall be applied to all gear teeth. The bluing compound shall be of the type that indicate face contact through the removal of the compound during operation. Hard dykem blue shall be used for tooth contact testing. The type of bluing compound to be used for face contact measurements shall be submitted to the Commissioner for review prior to testing. No tooth shall indicate a face contact of less than 85% of the full width of the tooth. Contact shall be documented with digital photographs.
8. After installation is complete, the Contractor shall make a thorough inspection to insure that all gears are clean and free of obstruction, that all parts are aligned and adjusted as closely as practicable without actual operation, and that all bolts are properly tightened. The lubricants listed on the lubrication charts shall conform to the recommendations of the Manufacturers of the units.
9. When the bridge machinery is ready for testing, the bridge machinery shall be operated through not less than five complete cycles.
10. During the foregoing test runs, all parts shall be inspected to detect overheating, misalignment, or incorrect adjustment. All such defects shall be corrected at no additional cost. The bridge machinery systems shall successfully complete five consecutive operations, without issue, before final acceptance.

#### D. TRAINING

The contractor shall provide five days of instruction for personnel. The instruction shall include all aspects of inspection, maintenance, and operation of all machinery components including but not limited to the following:

1. Normal maintenance.
2. Checking and adding lubricants.
3. Purging and replacing lubricants.
4. Normal operation.
5. Brake adjustments.
6. Adjustments to machinery components.

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**ITEM 160 \*\*\*\*\* CLEANING, PAINTING, AND LUBRICATING  
OPERATING MACHINERY ASSEMBLIES**

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IV. CLEANING, PAINTING, AND LUBRICATING OPERATING MACHINERY ASSEMBLIES

A. DESCRIPTION

1. This work item shall consist of furnishing all equipment, tools, labor, and materials to clean, paint, and lubricate all existing span drive operating machinery including gearing, racks, pinions, shafts, couplings, bearings, brakes, motors, trunnion assemblies, connections, and supports as described in the plans and these specifications. In addition, this work item shall include erecting containment, providing correct atmospheric conditions for application, masking areas not to be painted, collecting and proper disposal of potentially lead-based residue from these operations.
2. All existing span drive operating machinery shall be painted. The existing machinery components to be cleaned and painted shall include but not limited to the following:
  - i. Gearing
  - ii. Racks
  - iii. Pinions
  - iv. Shaft
  - v. Couplings
  - vi. Bearings
  - vii. Brakes
  - viii. Motors
  - ix. Trunnion Assemblies
  - x. Connections
  - xi. Supports.
3. The existing machinery components to be lubricated shall include but not limited to the following:
  - i. Bearings
  - ii. Trunnion Assemblies
4. Replace all bearing grease fittings.

B. MATERIALS



Paint and lubrication shall meet the requirements outlined in the plans and these specifications.

C. CONSTRUCTION REQUIREMENTS

Cleaning, painting, and lubrication shall be performed as required in the plans and these specifications.

Clean and paint existing span drive gear teeth in addition to the gear sides, rims, spokes, and hubs. Do not lubricate gear teeth which are painted unless as directed by the Engineer or Commissioner.

Various span drive bearings are disassembled and abandoned. Where existing span drive bearings are assembled, clean and lubricate all assembled span drive bearings and all trunnion bearings. Where existing bearings are disassembled, clean and paint all exposed surfaces including shafts, bushings, and liners.

D. METHOD OF MEASUREMENT.

The work for this item will be measured for payment as lump sum.

E. BASIS OF PAYMENT.

This work will be paid at the Contract lump sum price.

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**ITEM 161      \*\*\*\*\*      REPLACEMENT OF CENTER LOCKS**

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V. CENTER LOCK REPLACEMENT

A. DESCRIPTION

1. This work shall item shall consist of furnishing all equipment, tools, labor, and materials to completely remove, dispose all existing center lock machinery and associated components, furnishing, installation, aligning, testing, painting and lubrication of new center locks and associated components as described in the Plans and these Specifications.
2. The existing center lock components to be removed shall include but not limited to the following:
  - i. All existing lock bars, guides, socket assemblies and all associated components.
  - ii. All existing lock bar cranks, actuating linkages assemblies and associated components
  - iii. All existing lock machinery supports
  - iv. All existing limit switch assemblies
  - v. All existing manual drive mechanisms and associated components
  - vi. All existing spur gears, reducer, shaft and keys
  - vii. All existing transverse line shafts, associated bearings and couplings
  - viii. Electric motors, brakes and all associated bearings and couplings
  - ix. All existing lubrication lines and associated components
3. The new center locks shall include but not be limited to:
  - i. Furnishing and Installing new lock bar operator with manual hand cranks and all associated components.
  - ii. Furnishing and Installing new lock bars.
  - iii. Furnishing and Installing new lock bar guides and receivers.
  - iv. Furnishing and Installing new lubrication lines from the guides and receivers to a location that allows easy access and lubrication.

All mechanical work must be planned and coordinated with electrical and structural work as well as closures and restrictions to vehicular and navigational traffic.

Maintain the center locks in the fully engaged position (fully driven) whenever vehicle traffic is passing over the bridge. Provide a temporary center locks whenever vehicular traffic is present over the bridge and the center locks are

disengaged for work. Submit the temporary span lock mechanism to the Engineer for approval.

#### B. SUBMITTALS

1. Submit fully detailed Shop Drawings of all equipment. Indicate adjustment tolerances, fits, finishes, profiles, sizes, fasteners and accessories. Indicate connection attachments, reinforcing, anchorage, size and type of fasteners, and accessories. Include erection drawings, erection tolerances, elevations, span lock power unit layout with component configuration, and details where applicable.
2. Indicate welded connections using standard AWS welding symbols.
3. Submit with the Bascule Leaf Shop Fabrication and Alignment Procedure a procedure for establishing dimensional control.
4. Submit a proposed procedure for the installation of span locks and centering devices after alignment and adjustment of Bascule Leaf live load shoes.
5. Complete system schematic with component reference numbers matching reference numbers on the Plans.
6. Paint material and painting procedures, including color identifications, surface preparation procedures and product specifications.
7. List of spare parts provided with manufacturer, model/part numbers and quantity to be supplied.
8. Submit As-Built measurements of the clearance between lock bar and guide shoes of the receiving, front and rear guides at the top and bottom of the lock bar. Submit the total shim thickness for each guide shoe after final alignment.

#### C. MATERIAL REQUIREMENTS

1. Bar Operator
  - i. Each operator system shall include a mechanical bar linear actuator that moves the lock bar through a bar guide, situated on one leaf tip, and into a receiver on the other leaf tip. The gearing shall consist of two reductions using heat-treated, alloy steel helical gears on shafts supported by anti-friction bearings.
  - ii. Each actuator shall be designed with manual operation as the primary method of operation and with the electric motor as an alternative method of operation. Manual operation shall be achievable by both a removable hand crank or an electric hand drill. The Contractor shall provide one removable hand crank for each center lock assembly and one electric hand drill for the bridge with required drill bits for attachment to the manual input shaft to operate the center locks. The manual drive shall be accessible from the center lock access platform.

- iii. The actuator motor shall be high starting torque, induction type, 5HP, 1800RPM, 3-phase, 60 Hertz, 240/480 volts, NEMA design D, frame B145TDZ, TENV electric motor having a 15-minute duty rating and equipped with a 3 ft-lb marine duty brake with manual release and safety interlock switch. The motor shall be totally enclosed, non-ventilated, equipped with ball bearings and designed especially for outdoor applications subjected to adverse weather conditions. Strip heaters shall be installed in the motor housing. The motor shall have a through shaft to allow for attachment of the removal hand crank and electric hand drill.
- iv. The operator shall be capable of delivering a thrust of 8800 pounds to the lock bar by manual operation or at 50% stall torque of the motor.

## 2. Lock Bar

The lock bar shall meet the material requirements noted on the Plans and in these Specifications. A hinged joint shall connect the lock bar to the actuator.

## 3. Guides and Receivers

The lock bar guides and receivers shall have high strength bronze wear shoes. Provide lock bar guide and receiver bushings as specified in the Plans. Minimum deformation limit (compression) of 55,000 PSI.

## D. CONSTRUCTION REQUIREMENTS

Coordinate all center lock work with related work. In particular, coordinate center lock work with live load shoe work.

### 1. Removal of Existing Center Locks

- i. Remove and discard all center lock machinery: including but not limited to drive motor, speed reducer, shafts gears, clutches, connecting rods, links, rod guides, lock bars, lock bar guides and receivers and all mounting hardware. Before any work is undertaken on the center lock systems, submit a detailed plan to the Engineer for the removal of the existing center lock and installation of the new center locks.
- ii. Demolition and disposal of all machinery equipment and components indicated on the Contract Plans and stated herein shall be in accordance with all local and Federal regulations.
- iii. Contractor shall perform the demolition carefully not to damage any equipment or components not part of the demolition, which are to remain or salvaged.
- iv. Existing machinery components for demolition may contain existing lead-paint. All demolition and disposals shall be in accordance with all Local and Federal regulations.

- v. The existing enclosed machinery components of the tie-shaft machinery may contain lubricating oil and grease. All removals and disposals shall be in accordance with all local and federal regulations.
- vi. The Contractor shall at any time after removal of the existing center locks the bridge is opened to the passage of vehicular traffic; provide temporary center locks at the leaf tips.
- vii. Do not field cut or alter structural members without authorization of the Engineer. Any damage to the bridge structure due to the demolition shall be reported to the Engineer and repaired. Submit to the Engineer plans for repair due to damage prior to the start of repair work.

## 2. Temporary Span Locks

The bridge is expected to be closed to the passage of vehicular traffic throughout the duration of the contract. Should the bridge be opened to the passage of vehicular traffic during a period of time where at least one center lock will remain disengaged or removed, the Contractor shall design, fabricate and install temporary span locks at the leaf tips prior to the removal of the existing lock components. The design and procedure for installation shall be submitted and approved by the Engineer prior to removal of existing locks. The size of the temporary lock bar shall be the same as the existing.

After installation of the temporary span locks, the Contractor shall remove one span lock assembly at a time. Each assembly consist of, but not limited to, the following components; lock operator, lock bars, lock bar guides and receivers and mounting hardware.

## 3. Installation of New Center Lock Assemblies

- i. Installation, alignment, and adjustment of the center lock systems shall all be made only under the supervision of personnel who are experienced and qualified with previous experience in the installation and adjustment of movable bridges mechanical machinery. The center lock equipment shall be installed, aligned and adjusted by competent millwrights skilled in the type of work involved, provide all necessary measuring, alignment and leveling instruments as may be required. To minimize field installation time, the Contractor shall shop assemble and inspect all the span lock machinery to assure correct fits and assembled dimensions as required by the contract documents.
- ii. Install locks per approved procedure.

## 4. Span Lock Adjustment

Adjust Span Locks to the following conditions and tolerances:

- i. Make Span Lock adjustments after Live Load Shoes on adjoining bascule leaf are installed and adjusted to within final construction requirements. Properly balance leaves as required prior to final span lock adjustments.

- ii. Install and adjust guides to such that the maximum side and vertical clearance between the guide and lock bar are per the requirements shown on the Plans.
- iii. With the center locks fully driven, align the leaf tips with each other and adjust load shoes such that the deck elevation at the tip matches the theoretical deck profile at that point +/-0.060 inch.
- iv. Adjust center locks such that driving and/or pulling the locks causes no change in the contact of the live load shoes.
- v. After adjustment is complete, test both manual hand crank and hand drill operations of the center locks.
- vi. Shim lock bars to obtain a total vertical clearance between bar and socket as described in the Contract Plans.

After adjustment is complete, perform and demonstrate to CDOT full operation of the center locks by manual hand crank and hand drill operation.

#### 5. Testing and Inspection

- i. Shop assemble and inspect all the center lock machinery to assure correct fits and assembled dimensions as required by the contract documents. Any components requiring disassembly for installation shall be match marked to enable proper assembly on the bridge leaves. Perform a test of both power driven and auxiliary operations of the center locks in the shop.
- ii. Upon completion of the center lock systems, submit a testing procedure and schedule to the engineer as outlined in the Bridge Machinery-General.
- iii. The tests shall demonstrate the machinery is in correct working order, in full compliance with the contract documents, general and special provisions. Correct, adjust or replace as necessary any irregular operation, evidence of distress, improper functioning, defective or inadequate components revealed during the test, before final acceptance, without additional cost to the department.
- iv. Field testing of the center locks shall include fully cycling the locks three times per assembly. At least one cycle shall be performed in its entirety by the manual hand crank and at least one cycle shall be performed in its entirety by electric hand drill.
- v. The vertical alignment of the movable sidewalk span and the main span shall be maintained and secured per the alignment criteria established in the structural portion of these specifications with the sidewalk center locks engaged.

#### E. METHOD OF MEASUREMENT.

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1. This work will be measured for payment per each center lock assembly furnished, installed, tested and lubricated.

F. BASIS OF PAYMENT.

1. This work will be paid at the Contract unit price per each span lock assembly.

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**ITEM 162      \*\*\*\*\*      FURNISH AND INSTALL NEW SUMP PUMPS**

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**VI. SUMP PUMP REPLACEMENT**

This work shall item shall consist of furnishing all equipment, tools, labor, and materials to remove all existing sump pumps and associated components, furnishing, installation, aligning, testing and painting of new sump pumps, piping, controls and all associated components. This work shall also include complete cleaning of the existing counterweight pit and sump pit as described in the Plans and these Specifications. See electrical specifications for additional information.

The work shall include but not limited to the following:

1. Complete cleaning of the counterweight pit from all dirt and debris. Coordinate counterweight pit cleaning with Structural work.
2. The removal and demolition of the existing sump pumps, discharge piping and all associated components shall also be included under this Item. The demolition shall include but not be limited to the following:
  - a. All existing sump pump, associated discharge piping and all supports.
  - b. All existing pit screens and all associated supports.
  - c. All existing pump controls and all associated electrical components.

**A. SUMP PUMP SPECIFIC MATERIAL REQUIREMENTS**

**1. Sump Pumps**

Each sump pump shall be of heavy-duty submersible non-clog pump type. The pump volute, motor and sealing housing shall cast iron, Class 25. All fasteners exposed to the pumped liquid shall be 300 series stainless steel.

Each pump shall have a 3 inch discharge capable of handling 2 inch diameter solids. The pumps shall be non-overloading throughout the entire range of operation without employing a service factor. The pump shall reserve a minimum service factor of 1.15. The performance curve submitted for approval shall state in addition to the head and capacity performance, the pump efficiency, impeller diameter, and solid handling capabilities.

**i. Motors**

Single-phase motors shall be oil filled, split-phase, capacitor start, class B insulated NEMA B design, rated for continuous duty. Three-phase motors shall be poly-phase. At maximum load the winding temperature shall not exceed 135°C un-submerged. Since air filled motors are not capable of dissipating heat they shall not be considered equal. Single-phase motors shall have an integral thermal overload switch in the windings for protecting the motor. Three-phase motors shall be used with an appropriate controller with integral overload protection. The capacitor



circuit on single-phase motors shall be mounted internally in the pump. Single-phase motors shall have an integral solid state starting circuit switch for switching the start winding off.

ii. Bearings and Shafts

An upper radial and lower thrust bearing shall be required. The upper bearing shall be a single ball/race type bearing. The lower bearing shall be an angular contact heavy-duty ball/race type bearing, designed to handle axial pump thrust loads. Both bearings shall be permanently lubricated by the oil that fills the motor housing. The motor shaft shall be made of 300 or 400 series stainless steel and have a minimum diameter of 0.670".

iii. Seals

The pump shall have a dual seal arrangement consisting of a lower and upper seal to protect the motor from the pumping liquid. The lower seal shall be an FKM fluoroelastomer or Buna-N molded double lip seal designed to exclude foreign material away from the main upper seal. The upper seal shall be a unitized carbon ceramic hard face seal with stainless steel housings and spring. The motor plate/housing interface shall be sealed with a Buna-N O-ring.

iv. Impeller

The impeller shall be a class 25 cast iron enclosed 2 vane impeller, with pump out vanes on the back shroud to keep debris away from the seal area. It shall be screw mounted to the motor shaft with a bonding agent.

v. Painting

The exterior of the casting shall be protected with powder coat or polyester paint.

vi. Electrical Power Cord

The submersible pump shall be supplied with a multi-conductor power cord. It shall be cord type SJOOW (1-phase), capable of continued exposure to the pumped liquid. The power cord shall be sized for the rated full load amps of the pump in accordance with the National Electric Code. The power cable shall not enter the motor housing directly but will conduct electricity to the motor by means of a watertight compression fitting cord plate assembly with molded pins to conduct electricity. This eliminates the ability of water to enter internally through the cord via a damaged or wicking cord

vii. Pit Screen

The material for the pit screen construction and all associated supports shall be 316 stainless steel unless otherwise noted on the plans. Pit screen grille shall be of a size as shown on the plans.

## 2. Pump Controller

The controls for each sump pump shall consist of a NEMA-4 weather-protected UL labeled simplex control panel, with a lockable “dead front” outer door, and a separate inner-door with an interlocked safety disconnect. The panel shall include a seal failure contacts, heat failure contacts, control circuit transformer, starter, circuit breaker, O.L Block, H-O-A switch, run light, and dry remote alarm contacts. Two (2) level switches shall control pump “on” and “off, and shall be suspended from a wall-mounted float mounting bracket. The automatic switching device shall start the pump when the when the depth of the water level reaches 24 inches from the bottom of the sum pit and stop the pump when the water level reaches 17 inches from the bottom of the pit wall.

## 3. Float Switches

The contractor shall furnish and install and test completely the float switches and all associated mounting supports and details. The contractor shall furnish two (2) float switches for each pump in the counterweight pit.

The float shall be constructed of a durable ABS outer shell. It is tested and proven to be leak proof, shock proof and impact resistant for use with intrinsically safe circuits. Mercury float switches will not be accepted. The external cord weight shall be made of I 304 stainless steel. The float shall have a split weight design which allows for easy adjustment, and a secure and permanent attachment to the cord.

The mechanically activated micro switch design shall have a recommended operating temperature of 32-190°F and a rated at 10 Amps at 120 Volts or 5 Amps at 240 Volts, A.C.

The float switches power cords shall be a chlorinated polyethylene (CPE) type SJOOW-300 Volt on 16/2 for normally open switch.

Each sump pit shall be furnished completely with two (2) normally open controls to control the pump. One control is set for turn off level and the other is set for turn on level.

The float switch support shall be PVC pipe anchored to the sump wall. Each float switch shall be tied separately to the float support and set at the appropriate level. The contractor shall submit to the engineer the float switch mounting support and pipe support details for approval before fabrication or installation.

## 4. Temperature Gage

The sump pump controller shall have means to prevent the pump from operating when low water temperature are below the manufacturer's recommended operating range by means of a temperature gage or sensor.

## B. SUMP PUMP SPECIFIC CONSTRUCTION REQUIREMENTS

1. Counterweight Pit

The counterweight pits and sump pumps shall be cleaned in accordance with Pay Item 84 – Counterweight Pit Cleaning.

2. Pit Screen

Furnish and install a pit screen for each sump pump. The screen shall be constructed to protect the pump and prevent debris from entering the pump. The sump pit screen shall completely encompass the existing sump pit and wall recesses. Provisions shall be made in the pit screen for the easy removal and installation of the sump pump. Provisions shall also be made for all electrical connections and all associated sump pump electrical accessories and components.

The Contractor shall submit to the engineer for approval details of the pit screen construction, construction materials, and how the pit screen is supported in the pit before beginning fabrication and/or installation.

3. Testing

Commercial testing shall be required and include the following:

1. The pump shall be visually inspected to confirm that it is built in accordance with the specifications as to the HP, voltage, phase and hertz.
2. The motor housing chambers shall be meggered for infinity to test for moisture content and insulation defects.
3. Pumps shall be allowed dry to check for proper rotation.
4. Discharge piping shall be attached, the pump submerged in water and the amps readings shall be taken in windings, shall be checked with a bridge to determine if an unbalanced resistance exists. If so the stator shall be replaced.
5. The pump shall be removed from water, meggered again, dried and the motor housing filled with dielectric oil.

4. Submittals

Submit to the Engineer for review and approval prior to any fabrication and/or installation.

- a. All pump manufacturing data, including but not limited to pump performance curves, pump controller data including wiring diagrams.
- b. Discharge piping layout and all supporting details.
- c. Pump controller location and supporting details.
- d. Float switch mounting system and supporting details.

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- e. Pit screen construction details with all associated support and materials.
- f. The Contractor shall provide a complete pump Operations and Maintenance Manual.

C. METHOD OF MEASUREMENT.

This work will be measured for payment per each sump pump assemblies furnished, tested, and installed.

D. BASIS OF PAYMENT.

This work will be paid for at the Contract unit price per each sump pump assembly.

END OF SECTION

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**APPENDIX D**

**CDOT Division of Electrical Operations**  
**Material Specifications**

WEBSTER AVENUE BRIDGE OVER THE NORTH BRANCH OF THE CHICAGO RIVER  
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**ELECTRICAL SPECIFICATION 1351  
DIVISION OF ENGINEERING  
DEPARTMENT OF TRANSPORTATION  
CITY OF CHICAGO  
REVISED AUGUST 27, 2013**

**WIRE: SINGLE CONDUCTOR NO. 12 COPPER WITH CROSS LINKED  
POLYETHYLENE INSULATION**

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**SUBJECT**

1. This specification states the requirements for insulated wire intended for use as a conductor to connect street light luminaires to aerial distribution wires or underground distribution cables in a street lighting circuit. This wire is also known as pole wire.

**GENERAL**

2. (a) Specifications. The cable shall conform in detail to the requirements herein stated and to the latest referenced specifications of the following organizations:  
  
American Society for Testing and Materials (ASTM)  
Insulated Cable Engineers Association (ICEA)  
National Electric Code (NEC)  
National Electrical Manufacturers Association (NEMA)  
Underwriters Laboratories (UL)
- (b) Acceptance. Cable not conforming to this specification will not be accepted.
- (c) Sample. If requested by the Chief Procurement Officer, a three (3) foot sample of the cable intended to be provided under this specification, shall be submitted to the Engineer of Electricity within fifteen (15) business days after receipt of the request.
- (d) Warranty. The manufacturer shall warrant the cable to be first class material throughout. The manufacturer will be responsible for any cable failing during normal and proper use within one (1) year after the date of installation. The manufacturer will provide replacement of any failed cable segment, from the point of normal termination to the next point of normal termination. There will be no cost to the City.



### **CABLE**

3. (a) **Construction.** The cable shall consist of an uncoated copper conductor concentrically encased in a moisture resistant thermosetting plastic of cross linked polyethylene. The cable shall be listed with UL as Type RHW-2 or Type USE-2, and shall meet the NEC's requirements for these types of cable up to 90° C in wet or dry locations.
- (b) **Color.** Cable will be either black, red, or green.
- (c) **Marking.** The cable must be identified by a permanently inscribed legend in white lettering. The legend must have the following information at a minimum: 1/C #12AWG, 600V, XLPE, 90°, RHW-2 or USE-2, manufacturer's name, date of manufacture. The legend must be repeated at approximately eighteen inch (18") intervals parallel to the longitudinal axis of the cable.
- (d) Overall cable diameter shall be approximately 0.19 inches.

### **CONDUCTOR**

4. (a) **Material.** Conductor shall be Number 12 AWG consisting of seven (7) strands of uncoated copper wires (.0305 inch diameter) per ASTM-B3.
- (b) **Resistivity.** Conductor shall conform to the requirements of ASTM B-33.

### **INSULATION**

5. (a) **Type.** The insulation shall be a cross linked polyethylene compound meeting the physical and electrical requirements herein specified and the requirements of NEMA WC-70 (ICEA S-95-658).
- (b) **Thickness.** The insulation must be circular in cross section and have an average thickness of 45 mils. The thickness must not vary by more than plus or minus five percent (+/-5%).

**TESTS**

6. (a) General. The tests required to determine compliance with this specification must be certified by the manufacturer or an independent testing facility. Before shipment, copies of the test reports must be forwarded to the Division of Engineering for approval. The City reserves the right to reject any cable failing to meet the requirements of the tests. Tests must be made in accordance with methods in ASTM D-470.

(b) Physical Properties

Initial Values:

Tensile strength, minimum psi	2000
Elongation at rupture, minimum %	250

After Aging:

After 168 hours in an air oven at 121° +/-1°C:

Tensile strength, minimum % of initial value	80
Elongation at rupture, minimum % of initial value	80

(c) Modulus Test. After initial conditioning period of four (4) minutes at a temperature of 150° C and at 100% elongation, the modulus must not be less than 110 pounds per square inch.

(d) Accelerated Water Absorption Characteristics.

1. Electrical Method. After twenty-four (24) hours immersion in tap water at 75° +/- 1° C, the specific inductive capacity of the insulation must not be more than 7. After a continued fourteen (14) day immersion, the specific inductive capacity must not be more than three percent (3%) higher than the value determined at the end of the first day, nor more than two percent (2%) higher than the value determined at the end of the seventh day.

2. Gravimetric Method. The insulation must not absorb more than five (5) milligrams of water per square inch of exposed surface area after immersion in distilled water at 70° C for a period of seven (7) days.

(e) Electrical Characteristics. Each completed length of insulated conductor must withstand a test voltage of 3000 volts AC for a period of five (5) minutes after immersion in water for not less than six (6) hours and while still immersed. After withstanding this dielectric test, the cable must have an insulation resistance constant of not less than 25,000.

- (f) Cold Bend Test. The cable must pass the cold bend, long-time voltage test on short specimens as outlined in ASTM D-470.

**PACKING**

- 7. (a) Sealing. Both ends of each length of cable must be thoroughly sealed to prevent the entrance of moisture and other foreign matter.
- (b) The cable must be delivered in coils containing five hundred (500) feet each. Each coil must be packed in individual dispenser cartons. Each carton must be labeled, identifying the cable type and size, manufacturer, and date of manufacture.

**ELECTRICAL SPECIFICATION 1447  
DIVISION OF ENGINEERING  
DEPARTMENT OF TRANSPORTATION  
CITY OF CHICAGO  
REVISED MARCH 20, 2007**

**POLE: ANCHOR BASE, 3 AND 7 GAUGE, TAPERED TUBULAR STEEL,  
WITH HANDHOLE ENTRY**

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**SUBJECT**

1. This specification states the requirements for tapered, tubular, 3 gauge and 7 gauge steel anchor base poles with mast arm supports. They will support street light luminaires and/or traffic signal mast arms and will be served by underground cables.

**GENERAL**

2. (a) Specifications. The poles shall conform in detail to the requirements herein stated, and to the requirements of the following organizations cited herein, of which the most recent revisions shall govern:

American Association of State Highway and Transportation Officials (AASHTO)

American National Standards Institute (ANSI)

American Society for Testing and Materials (ASTM)

American Welding Society (AWS)

Society for Protective Coatings (SSPC)

- (b) Acceptance. Poles not conforming to this specification will not be accepted.
- (c) Bidders Drawings. Bidders shall submit with their bids detailed scale drawings of the mast showing actual dimensions, details, and welds. Shop drawings must be original engineering drawings created by the manufacturer. The drawings must show every dimension necessary to show how all parts will fit each other and be properly held in assembly. These drawings must also be submitted in electronic format, preferably Microstation 95, if so requested by the City.
- (d) Drawings. The drawings mentioned herein are drawings of the Department of Transportation being an integral part of this specification cooperating to state necessary requirements.

- (e) Sample. If requested by the Chief Procurement Officer, one completely assembled anchor-base pole of the manufacture intended to be furnished, must be submitted for review within fifteen (15) business days of receiving the request.
- (f) Warranty. The manufacturer shall warrant the performance and construction of the light poles to meet the requirements of this Specification and must warrant all parts, components, and appurtenances against defects due to design, workmanship, or material developing within a period of five years after the light poles have been delivered. This will be interpreted particularly to mean structural or mechanical failure of any element or weld, or failure of any portion of the painting system. The warranty must be furnished in writing guaranteeing material replacement including shipment, free of charge to the City. The Commissioner will be the sole judge in determining which replacements are to be made and the Commissioner's decision will be final.

### **STANDARDS**

- 3. (a) Assembly. Each anchor base pole shall consist of a steel mast with handhole entry, entry door with machine screws, grounding nut, mast base plate, top cap for mast, two (2) mast arm supports, bolt covers, and all necessary hardware required for complete assembly of these parts, ready for assembly, without special tools.
- (b) Interchangeability. Members of each pole type shall be mutually interchangeable for assembly, so that no reworking will be required to make any member fit properly in the place of any other similar member of any other similar pole.
- (c) Design. Each pole type shall conform in design and dimensions to the pertinent drawing(s) listed in Table "A".

### **MASTS**

- 4. (a) Mast Size. The outside diameters of the mast of each pole type shall be as listed in Table A. The mast must be tapered at 0.14 inches per foot.
- (b) Material. The mast must be fabricated from one length of No. 3, No. 7, or No. 11 Standard gauge steel meeting the material requirements of ASTM A606 for low alloy high strength coil steel, which, after fabrication, must possess an ultimate tensile strength of not less than 70,000 psi and a yield strength of not less than 60,000 psi, in accordance with ASTM A595, Grade C. Chemistry of the steel must be such as to insure resistance to atmospheric corrosion superior to that of ordinary copper bearing steel. Material certification is required. Manufacturer's steel meeting the specified physical

and chemical requirements, and approved by the Commissioner, will be accepted.

- (c) Fabrication. The mast must be fabricated with not more than one (1) longitudinal weld. The weld shall be ground smooth so that it is virtually invisible. There shall be no lateral welds in the masts other than where the masts are welded to the steel bases. Each mast must be straight and centered on its longitudinal axis. Each mast must be formed on a mandrel and worked to form a round cross-section. The completed, unpainted masts shall have smooth external surfaces free from protuberances, dents, cracks or other imperfections marring their appearance.
- (d) Base. The mast base shall be a steel plate, of low alloy, high strength steel as noted in Par. 4 (b).

Plate Base. The base plate for each pole type shall be as listed in Table "A". It must be fabricated from the same ASTM A606 low alloy, high strength steel as is used for the mast. After fabrication the steel must meet the requirements of ASTM A588. The mast must be inserted into the base to a maximum depth which will still allow for an adequate weld to be made between the bottom of the mast and the plate. A circumferential weld must be made between the mast and the base at both the top and underside of the plate. Non-metallic removable bolt covers which completely cover the anchor bolts and nuts shall be provided. The covers must be attached with stainless steel screws coated with a non-seizing compound, or another type of non-seizing fastener, as approved by the Commissioner. The covers shall enclose the anchor bolts and be secured in an approved manner. The base shall be attached to the mast so that the bearing surface of the base is at right angles to the longitudinal axis of the mast. The vertical center line of the seam must be positioned so that no welds for the simplex attachments or the handhole opening will go through the seam.

Anchor Rod Openings. All anchor rod openings for each pole type shall have a width as listed in Table "A". Each opening must be sized to have a circumferential slot length equal to  $15^\circ$  of the circumference.

- (e) Mast Arm Support Plates. The mast arm support plates will be made of cast steel conforming to the requirements for Grade 65-35 cast steel of ASTM A27, or equivalent, subject to approval. They shall neatly fit the external surface of the mast. The upper mast arm support plate must have a hollow protuberance, the hole of which must be approximately equivalent to two (2) inches in diameter, extending into the interior of the pole providing a smooth surface for the lamp cables to rest upon. The mast arm support plates shall be designed so that they will carry the mast arm and hold it in the proper position for fastening the mast arm to the mast. The design of the mast arm

support plates must be a two (2) bolt type as shown on Drawing No. 659.

- (f) Provision for Ground. A 1/2-13 UNC (unified thread – course ANSI B1.1) square nut must be welded to the inside of the mast on the handhole entry frame for a ground connection.
  
- (g) Entry. A vertical doorframe carrying a removable door providing access to the interior of the mast must be welded into a close fitting opening centered approximately 15 inches above the bottom of the base. The doorframe must be formed and welded of steel with a cross section of two and one-quarter (2-1/4) inches wide by one-quarter (1/4) inch thick so as to adequately reinforce the opening of the mast. The internal horizontal clearance of the doorframe must be four and three-quarter (4-3/4) inches; its internal vertical clearance must be seven (7) inches. Its upper and lower ends must be semi-circular meeting its straight sides tangentially. The radius of this opening must be two and three-eighths (2-3/8) inches. The vertical center line of the entry must be at a right angle clockwise from the vertical center line of the mast arm supports. The frame must have two welded tabs; one at the top and one at the bottom of the door frame. These tabs must be drilled and tapped to accept a 1/4-20 UNC screw. The top hole must be located 13/16 of an inch from the top of the opening. The bottom hole must be located 13/16 of an inch from the bottom of the opening. The 1/4-20 UNC machine screws must be stainless steel with hex heads, meeting the requirements of ASTM A193. The screws shall be treated with a compound to prevent seizing. Other non-seizing types of screws and fasteners may be considered. An alternate method of attachment consisting of a removable hinge on the bottom with a screw connection at the top may be considered. (The above requirements apply to all pole masts except those with a 10 inch bolt circle. Poles with 10 inch bolt circles must have handhole openings of 3" by 5". All other requirements apply.)
  
- (h) Door. The removable door must be formed of sheet steel approximately one-eighth (1/8) inch thick. It shall be flat or dished depending upon the pole type, and fit the doorframe closely so that it will stay in proper position even if its locking screws are slightly loosened. The door must be drilled top and bottom to accept the 1/4-20 UNC hex head machine screws which will fasten the door to the doorframe. A half-circle piece of steel must be welded by the screw opening, to allow only a socket wrench to be used. All doors shall be interchangeable. An alternate method of attachment using an internal hinge at the bottom of the door with a screw at the top of the door will be considered. Any alternate method will be subject to approval by the Commissioner or his duly authorized representative.
  
- (i) Locking Device. Any other door locking device, other than the one outlined above in (g) and (h), must be approved by the Commissioner or his duly

authorized representative.

- (j) Tag. To each pole must be attached immediately below the handhole, by mechanical means and not by adhesive, a stainless steel tag with a stamped or embossed legend which must include the pole outside diameter at the base, the overall length, and the gauge; i.e., 12.5" X 34'-6" X 3 gauge.
- (k) Structural Requirements. The mast shall be manufactured in accordance with AASTHO's 1994 version of the "Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals". The shaft and base assembly must be designed to meet AASTHO's 1994 criteria for 80 MPH wind loading with a 30% gust factor. The poles shall be designed appropriately for Chicago applications for both street lighting and traffic signal applications, including signal mast arms.

### **TOP**

- 5. (a) Design. The mast top shall be essentially conical with a globe-shaped upper-end and having a minimum wall thickness throughout of not less than 1/4 inch. The cone portion must meet the skirted portion of the top in a smooth filet, the skirt must enclose the top 7/8" inches of the mast. Three stainless steel, or other similar approved material, set screws not less than 3/4 inches long must be equally spaced in tapped holes around the skirt and must hold the top securely in place atop the mast. The design of the top shall be similar to one shown on Drawing #11420A.
- (b) Material. The top must be aluminum alloy 356-F per ASTM B108. It shall have smooth surfaces, neat edges and corners and be free from fins, holes or other casting flaws. Non-metallic tops may be substituted if approved by the Commissioner.
- (c) Finish. Tops shall be painted as herein specified.

### **HARDWARE**

- 6. All the hardware necessary to complete the assembly of the pole shall be furnished. All hardware will be as specified elsewhere in these specifications. Hardware not specified elsewhere must be stainless steel meeting the requirements of ASTM A193, or equal corrosion-resistant non-seizing metal, or a non-metallic material subject to approval by the Commissioner.

### **WELDING**

- 7. (a) General. Every welded joint shall be made in conformity with the proper



interpretation of the standard welding symbols of the American Welding Society as indicated on the drawings; however, each bidder must submit with his proposal a drawing showing the sizes and types of welds, must state the type of electrode, and must describe the welding methods, he proposes to use in fabricating the pole.

- (b) Testing. Welds shall be inspected for penetration and soundness of the welds by the magnetic particle inspection method or by radiography. Acceptance or rejection will be governed by the same conditions as in Section 9. If the magnetic inspection process is to be used, the dry method with the direct current must be employed. All transverse welds must be magnetized by the "prod" (Circular magnetization) method. Longitudinal welds may be magnetized by either circular or longitudinal magnetization.

### PAINING

- 8. (a) Oil and Grease Removal. All metal surfaces shall be washed with an alkaline detergent to remove any oils or grease.
- (b) Metal Cleaning. All exterior metal surfaces shall be cleaned by blasting with a combination of shot and grit to remove all dirt, mill scale, rust, corrosion, oxides and foreign matter and provide a "near white" surface in accordance with SSPC-SP10. Included in this process will be the interior base section of the mast to a minimum height of twelve (12) inches.
- (c) Chemical Pretreatment. The cleaned metal surfaces shall then be treated with a hot, pressurized iron phosphate wash and shall be dried by convection heat.
- (d) Primer Coat. All exterior surfaces are to be coated with Tnemec 90-97 corrosion-inhibiting zinc-rich aromatic urethane to a minimum dry film thickness of 2.5 mils (.0025"). The aromatic urethane is to consist of a zinc dust content not less than 83% by weight in dried film. The coating shall be airless-spray applied and moisture cured.
- (e) Finish Coat. All exterior surfaces are to be subsequently coated with Tnemec Endura-Shield II 1074 aliphatic acrylic polyurethane to a minimum dry film thickness of 3.0 mils (.003"). The coating shall be airless-spray applied and cured in a gas-fired convection oven by heating the steel substrate to between 150° Fahrenheit and 220° Fahrenheit.
- (f) Interior Coat. Interior surfaces are to be coated with red oxide rust inhibitive alkyd primer to a dry film thickness of 1.5 mils.
- (g) Durability. Both the exterior and interior coats must be capable of passing 1,000 hours of salt spray exposure as per ASTM B117 in a 5% NaCl (by

weight) solution at 95°F and 95% relative humidity without blistering. Before test, the panel must be scribed with an "X" down to bare metal.

- (h) Coating Measurement. Measurement of coating thickness must be done in accordance with SSPC-Pa 2-73T, "Measurement of Dry Paint Thickness with Magnetic Gauges," except that the lowest "single spot measurement" in an area of two square inches must be not less than 5.5 mils.
- (i) Color. Color must be gloss black unless otherwise noted in the order. A color sample must be submitted for approval prior to fabrication.
- (j) Alternate Methods. Alternate painting methods may be reviewed and tested on a case by case basis. However, no coating method will be accepted unless the Commissioner judges such alternate to be equal to the coating herein specified.

### **MAST TEST**

- 9. (a) General. All completed masts shall be available for testing for maximum deflection and set. The masts shall meet the structural requirements of Section 4(k). Unless specifically authorized in writing, all tests shall be made at the works of the manufacturer. A record of every test must be made and a certified copy of the test record must be submitted to the Commissioner before the masts are shipped.
- (b) Lot. Tests for welds, deflection and set of the mast and of the mast arm supports shall be made upon three (3) masts of the first fifty (50) in every order. An additional one (1) mast shall be tested for each additional fifty (50) masts in the order. The selection of masts for testing shall be random from the entire completed lot. If any of the masts in any lot fail to meet the test, an additional three (3) masts of the same lot must be tested. If any of these masts fail to meet the test requirements, the entire lot will be subject to rejection, except that the manufacturer may subject each mast in the lot to the test, and those which fulfill the requirement will be accepted. After testing, each base weld must be inspected by the magnetic particle method to determine that the welds have not been affected.
- (c) Mast Requirements. With base rigidly anchored, a test load as indicated in Table A must be applied at a point approximately two feet (2'0") from the free end. The load must be applied at right angles to the center line of the mast and in the same vertical plane. The deflection must not be greater than that indicated in Table A. Within one (1) minute after the test load is released, measurement must be made of the set taken by the mast. This set must not be greater than that indicated in Table A. The deflection measurement device must be reset to zero and the test load must be reapplied.

The deflection must not change from the deflection noted in the first test by more than  $\pm 5\%$ . No measurable set must be noted within one (1) minute after test load is released.

- (d) Mast Arm Support (simplex) Requirements. With an appropriate mast arm firmly attached to the mast, a test load of 300 pounds must be applied to the mast arm as a side pull at a point seven (7) feet from the mast. After the test, the mast arm support welds on the mast must be tested by the magnetic particle method to determine that they have not been affected.

### **PACKAGING**

- 10. (a) General. The poles must be shipped in twelve (12) pole bundles. Each pole must be individually wrapped so that the pole can be bundled for shipping and unbundled for delivery to the City without damaging the pole or its finish.
- (b) Bundles. The bundles shall consist of twelve (12) poles laid base to top to form an approximately rectangular cylinder. Materials such as lumber (2" x 4" min.), non-marring banding, and other appropriate bundling materials must be used to make a rigid, long lasting, bundle capable of being handled, shipped and stored without shifting of contents or breaking, subject to approval. Any bundles, in which either poles or packaging is received broken, damaged or with contents shifted, will not be accepted and it will be the responsibility of the supplier to return the bundle to its original destination at no cost to the City of Chicago. The bundles should be capable of being stacked two (2) high without breaking, or shifting of the contents. Each bundle must be capable of being lifted by a fork lift truck or crane and the bundles must be shipped on a flat bed truck to facilitate unloading. Each pole wrapping must be clearly labeled indicating the pole size, i.e. 34'6", 7 GAUGE, STEEL POLE, 15" B.C.
- (c) Hardware. The bolt covers and their attachment devices must be shipped with each bundle and packaged in twelve (12) sets of four (4) each. The package must be labeled and placed in a prominent position to facilitate accessibility, and must be attached to, or within, the bundle in such a manner as to assure safe delivery. Payment will be withheld for any bundle delivered without the accompanying hardware. Pole caps must be attached at the manufacturer's facilities, or be packed separately in a manner similar to the bolt covers, and the same payment conditions will prevail. Cracked, broken or chipped parts will be considered as an incomplete delivery as regards payment.

**TABLE A**

POLE	GAUGE	BOLT CIRCLE	ANCHOR ROD	BASE P L A T E	TEST L O A D	M A X. D E F	M A X. S E T	D R A W I N G
7.67"x12.5" x34'6"	3	16.5"	1.5"	1.75"	3200#	22"	2.5"	827
6.17"x11"x 34'6"	3	17.25"	1.25"	1.5"	2500#	26"	2.5"	824
5.17"x10.0" x34'6"	3	15.0"	1.25"	1.5"	2000#	30"	2.5"	808
5.17"x10.0" x34'6"	7	15.0"	1.25"	1.5"	1500#	30"	2.5"	808
3.95"x8.5"x 32'6"	3	11.5"	1.25"	1.5"	1500#	33"	2.5"	763
3.95"x8.5"x 32'6"	7	11.5"	1.0"	1.25"	1200#	33"	2.5"	762
3.87"x8.0"x 29'6"	3	10.0"	1.0"	1.5"	1500#	28"	1.0"	657
3.87"x8.0"x 29'6"	7	10.0"	1.0"	1.25"	1200#	28"	1.0"	656
4.15"x8.0"x 27'6"	3	10.0"	1.0"	1.5"	1500#	23"	1.0"	655
4.15"x8.0"x 27'6"	7	10.0"	1.0"	1.25	1200#	23"	1.0"	654
4.20"x7.0"x 20'0"	3	10.0"	1.0"	1.0"	1500#	13"	1.0"	653
3.70"x6.5"x 20'0"	11	10.0"	1.0"	1.0"	800#	14"	1.0"	652

**ELECTRICAL SPECIFICATION 1450**  
**DIVISION OF ELECTRICAL OPERATIONS**  
**DEPARTMENT OF TRANSPORTATION**  
**CITY OF CHICAGO**  
**REVISED APRIL 20, 2007**

**MAST ARMS: 4-, 8-, 12-, AND 15-FOOT: STEEL**

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**SUBJECT**

1. This specification covers the requirements for 4-, 8-, 12-, and 15-foot steel mast arms for supporting street light luminaires.

**GENERAL**

2. (a) Specifications. The mast arms shall conform in detail to the requirements herein stated and to the Specifications and Methods of Test of the American Society for Testing and Materials cited by ASTM Designation Number of which the most recently published revision will govern.
- (b) Acceptance. Mast arms not conforming to this specification will not be accepted.
- (c) Drawings. The drawings mentioned herein are drawings of the Department of Transportation. They are integral parts of this specification cooperating to state necessary requirements.
- (d) Bidders Drawings. Bidders shall submit with their bids detailed scale drawings of the mast arms and attachments showing actual dimensions, details, and welds. Shop drawings must be original engineering drawings created by the manufacturer. The drawings must give every dimension necessary to show how the parts will fit each other and be properly held in assembly. These drawings shall be submitted in electronic format, preferably Microstation 95, if so requested by the City.
- (e) Sample. One complete mast arm of each size and of the manufacture intended to be furnished must be submitted within fifteen (15) business days upon request of the Chief Procurement Officer.
- (f) Warranty. The manufacturer shall warrant the performance and construction of the mast arms to meet the requirements of this specification and must warrant all parts, components, and appurtenances against defects due to design, workmanship, or material developing within a period of three years

after the mast arms have been delivered. This will be interpreted particularly to mean structural or mechanical failure of any element or weld, or failure of any portion of the painting system. The warranty must be furnished in writing guaranteeing material replacement including shipment, free of charge to the City. The Commissioner will be the sole judge in determining which replacements are to be made and the Commissioner's decision will be final.

### **DESIGN**

3. (a) 4-Foot Mast Arm. Each 4-foot mast arm must be fabricated from a continuous, single piece, two (2) inch "extra strong" steel pipe conforming to the requirements of ASTM A53, Table X2. It must conform in detail with the mast arm shown on Drawing Number 661.
- (b) 8-Foot Mast Arm. Each 8-foot mast arm must be fabricated from a continuous, single piece, two (2) inch "extra strong" steel pipe conforming to the requirements of ASTM A53, Table X2. It must conform in detail with the mast arm shown on Drawing Number 620.
- (c) 12-Foot Mast Arm. Each 12-foot mast arm must be fabricated from two (2) continuous, single piece, two (2) inch "standard" steel pipes conforming to the requirements of ASTM A53, Table X2. It must conform in detail with the mast arm shown on Drawing Number 839.
- (d) 15-Foot Mast Arm. Each 15-foot mast arm must be fabricated from two (2) continuous, single piece, two (2) inch "standard" steel pipes conforming to the requirements of ASTM A53, Table X2. It must conform in detail with the mast arm shown on Drawing Number 840.
- (e) Mast Arm Attachment. The mast arm attachment to be welded to all mast arms will be a steel forging per ASTM A668, Class D, or cast steel conforming to the requirements for Grade 65-35 cast steel of ASTM A27, or can be fabricated from corrosion resistant steel plate such as "Cor-Ten" or approved equal. It shall be so designed that it may be fitted over the mast arm supports on the pole and be held by the mast arm supports in proper position without other support. The attachment must conform to the details shown on Standard Drawing 724. Provision must be made for fastening the attachment to each mast arm support by two special screws and washers as noted in Section 6.
- (f) Entryway for Wires. A drilled opening lined with a neoprene grommet having inserted therein a neoprene plug must be provided on the underside of the upper member of all arms approximately three inches from the point of attachment. The clear opening must not be less than 5/8 inch in diameter. Its design must be submitted for approval by the Commissioner or his authorized

representative.

- (g) Mast Arm Members. All mast arm members shall conform with the type of steel required for the arm specified. The members must be continuous lengths of pipe cut to the proper size to fabricate the mast arm lengths requested. No butt welded, swaged and welded or other pieced together configurations of pipe lengths will be accepted. The outer and inner surfaces of the pipes shall be smooth and even without protrusions, nicks, holes or other imperfections.

## **PAINING**

- 4. (a) Oil and Grease Removal. All metal surfaces shall be washed with an alkaline detergent to remove any oils or grease.
- (b) Metal Cleaning. All exterior metal surfaces shall be cleaned by blasting with a combination of shot and grit to remove all dirt, mill scale, rust, corrosion, oxides and foreign matter and provide a "near white" surface in accordance with SSPCS-SP10. Included in this process shall be one to two inches of the interior section of the mast arm.
- (c) Chemical Pretreatment. The cleaned metal surfaces shall be treated with a hot, pressurized iron phosphate wash and shall be dried by convection heat.
- (d) Exterior Coat. A Thermosetting, polyester powder coat must be applied electrostatically to all cleaned and treated surfaces to a uniform eight (8) mil thickness in a one coat application. This powder coat must be cured in a convection oven at a minimum temperature of 400°F to form a high molecular weight fusion bonded finish.
- (e) Alternate Methods. Alternate powder coat methods may be reviewed and tested on a case by case basis. However, no coating method will be accepted unless the Commissioner judges such alternate to be equal to the coating herein specified.
- (f) Interior Coat. The interior metal surfaces must be powder coated with a thermoplastic hydrocarbon resin containing corrosion inhibitors. The resin shall be formulated for application over untreated metal surfaces. The resin must be applied at a temperature of approximately 200°F to a minimum thickness of three (3) mils. The interior thermoplastic coat must overlap the interior, thermosetting base coat by approximately one (1) inch. Alternate interior coatings may be used subject to prior approval of the Commissioner.
- (g) Durability. Both the exterior and interior coats must be capable of passing 1,000 hours of salt spray exposure as per ASTM B117 in a five percent (5%)

NaCl solution at 95°F and 95% relative humidity without blistering.

- (h) Coating Measurement. Measurement of coating thickness must be done in accordance with SSPC-PA 2-73T, "Measurement of Dry Paint Thickness with Magnetic Gauges," except that the lowest "Single spot measurement" in an area of two square inches must be not less than 7.0 mils.
- (i) Color. Color must be gloss black, unless otherwise specified in the order. A color chip sample must be submitted for approval prior to fabrication.

### **WELDING**

- 5. (a) Standards. Every weld shall be made in conformity with the proper interpretation of the standard welding symbols of the American Welding Society as indicated on the drawings; however, each bidder must submit with his proposal a drawing showing the sizes and types of welds, must state the type of electrode, and must describe the welding methods he proposes to employ in fabricating the mast arm.
- (b) Testing. The welds shall be inspected for penetration and soundness by the magnetic particle inspection method or by radiography. If the magnetic inspection process is used, the dry method with direct current must be employed.

### **SCREWS**

- 6. Two (2) special 1/2" - 13 NC x 1-1/2" long stainless steel cap screws, and two (2) stainless steel flat washers, must be provided for each mast arm attachment.

### **MAST ARM TESTS**

- 7. (a) General. Tests must be made upon three (3) of the first fifty (50) arms in any order. An additional one (1) arm must be tested for each additional fifty (50) arms in the order.
- (b) 4-Foot Mast Arm. The 4-foot mast arm, when securely attached to a suitable and proper supporting structure, must withstand a side pull of not less than three hundred (300) pounds applied at a point three feet six inches (3'-6") from the connection to the supporting structure without failure of welds.
- (c) 8-Foot Mast Arms. The 8-foot mast arm, when securely attached to a suitable and proper supporting structure, must withstand a side pull of not less than three hundred (300) pounds applied at a point seven (7) feet from the connection to the supporting structure without failure of the welds.



- (d) 12-Foot and 15-Foot Mast Arms. The 12-foot mast arm and the 15-foot mast arm, when securely attached to a suitable and proper supporting structure, must withstand a side pull of 300 pounds applied at a point seven (7) feet from the connection to the supporting structure without failure of the welds.
- (e) Rejection. If any of the mast arms in any lot fail to meet the test, an additional three (3) arms in the same lot must be tested. If any of these mast arms fail to meet the test requirements the entire lot will be subject to rejection, except that the manufacturer may subject each mast arm in the lot to the test, and those which meet the requirements will be accepted.
- (f) All test results must be certified by the manufacturer. Documentation must be available for the City to approve.

### **PACKAGING**

- 8. (a) General. The arms shall be shipped in bundles. Each arm must be individually wrapped so that the arm can be bundled for shipping and unbundled for delivery without damage to the arm or its finish. Materials such as lumber(2"x4" min.), non-marring banding, and other appropriate bundling materials must be used to make a rigid, long lasting, bundle capable of being handled , shipped and stored without shifting or breaking of the contents. Any bundles, in which either the mast arms or packaging is received broken, damaged or with contents shifted, will not be accepted and it will be the responsibility of the supplier to return the bundle at no cost to the City. Each bundle must be capable of being lifted by a fork lift truck or crane and the bundles must be shipped in a flat bed truck to facilitate unloading. Each arm wrapping must be clearly labeled indicating the arm size, i.e. 8' STEEL LUMINAIRE MAST ARM.
- (b) The hardware must be shipped with each bundle. The package must be labeled and placed in a prominent position to facilitate accessibility, and must be attached to, or within, the bundle in such a manner as to assure safe delivery.
- (c) All mast arms will be delivered to the Division of Electrical Operations storage yard at 4101 South Cicero Avenue in Chicago, or to another location within the City as indicated on the order.

**ELECTRICAL SPECIFICATION 1457  
DIVISION OF ENGINEERING  
DEPARTMENT OF TRANSPORTATION  
CITY OF CHICAGO  
REVISED AUGUST 3, 2006**

**CABLE: SERVICE ENTRANCE,  
THREE INSULATED CONDUCTORS IN ONE OVERALL JACKET,  
600 VOLT**

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**SUBJECT**

1. This specification states the requirements for a three conductor (two power conductors and one neutral conductor) Ethylene Propylene Rubber (EPR) insulated, chlorosulfonated polyethylene (CSPE) or polyvinyl chloride (PVC) jacketed cable for installation on Commonwealth Edison service poles for the purpose of providing secondary power feeds from Commonwealth Edison to a City disconnect mounted on the pole for street lighting or traffic signal circuits.

**GENERAL**

2. (a) Specifications. The cable shall conform in detail to the requirements herein stated, and to the applicable portions of the specifications and methods of test of the following agencies:
  - (1) ICEA Specification S-95-658
  - (2) IEEE Standard 383
  - (3) ASTM Standard E-662-79
  - (4) ASTM Standard D-470-81
  - (5) U.L. 44
  - (6) U.L. 854
- (b) Acceptance. Cable not conforming to this specification will not be accepted.
- (c) Sample. A three (3) foot sample of the cable intended to be provided under this contract must be submitted to the Engineer of Electricity within fifteen (15) business days after receipt of such a request from the Chief Procurement Officer.
- (d) Warranty. The manufacturer shall warranty the cable to be first class material throughout. If the cable is installed within one year of the date of shipment, the manufacturer must replace any cable failing during normal and proper use

within two years of installation. The cable length to be replaced will be the entire unspliced length where the fault has been located. The Commissioner will be the sole judge in determining if a cable has failed and should be replaced. All replacements under this warranty must be made free of charge F.O.B. delivery point of the original contract

### **CABLE**

3. (a) Construction. The cable must consist of three (3) conductors separately insulated and color coded. Suitable fillers must be used to produce essentially a round cross section in the completed cable. The insulated conductors must be cabled with a suitable left hand lay in conformance with the latest revision of ICEA S-95-658. A binder tape must be used over the cabled conductor assembly and a jacket applied overall.
- (b) Sealing. The ends of each length of cable shall be sealed against the entrance of moisture.
- (c) Marking. The color of the neutral conductor must be white; that of the phase conductors must be black and red, respectively. The jacket must be black.
- (d) Each conductor shall consist of a round copper wire with a tight fitting, free stripping, concentric layer of Ethylene Propylene insulation. The cable must be rated for continuous duty at 90°C operating temperature, wet or dry, 130°C emergency overload temperature and 250°C short circuit temperature.

### **CONDUCTOR**

4. (a) Material. The conductor shall either be soft or annealed round copper wire, tin coated.
- (b) Specifications. The conductor must meet the requirements of ASTM B3, and B8 for stranded Class B copper.
- (c) Size. The conductor size shall be as stated in the proposal or on the plans.

### **INSULATION**

5. (a) Type. The insulation must be Ethylene Propylene compound meeting the physical and electrical requirements specified herein.
- (b) Thickness. The insulation must be circular in cross-section, concentric to the conductor, and must have an average thickness not less than 30 mils (.030") for #14 AWG, 55 mils (.055") for #4 AWG, 65 mils (.065") for #2 AWG, 80 mils (.080") for #1/0 AWG, 80 mils (.080") for #2/0 AWG ,and a spot

thickness not less than ninety percent (90%) of the average thickness.

(c) Initial Physical Requirements:

(1) Tensile Strength, min., psi. 1200

(2) Elongation at Rupture, min. % 250

(d) Air Oven Exposure Test. After conditioning in an air oven at  $121 \pm 1^\circ\text{C}$  for 168 hours using methods of test described in ASTM-D 573:

(1) Tensile strength, min% of unaged value 75

(2) Elongation, min % of unaged value at rupture 75

(e) Mechanical Water Absorption:

(1) Gravimetric Method: After 168 hours in water at  $70 \pm 1^\circ\text{C}$ :

Water absorption, maximum  
(Mg. per sq. in) 5.0

(f) Cold Bend Test Requirements. The completed cable must pass the "Cold-Bend, Long-Time Voltage Test on Short Specimens" of ASTM D-470 except that the test temperature must be minus (-)  $25^\circ\text{C}$ .

(g) Electrical Requirements.

(1) Voltage Test. The completed cable must meet an A.C. and D.C. voltage test in accordance with ASTM- D-470 and D-2655.

(2) Insulation Resistance. The completed cable must have an insulation resistance constant of not less than 20,000 when tested in accordance with methods shown in ASTM D-470.

**JACKET**

6. (a) Type. The jacket shall be either a chlorosulfonated polyethylene (CSPE) or a polyvinylchloride (PVC) compound meeting the physical and electrical requirements specified herein. CSPE must meet the environmental requirements of CFR Title 40, Part 261 for leachable lead content.

(b) Thickness. The jacket must be circular in cross-section, concentric with the insulation, must have an average thickness not less than 45 mils (.045") for #14 AWG, 80 mils (.080") for #2 and #4 AWG, and not less than 95 mils

(.095”) for #1/0 and #2/0 AWG, and a spot thickness not less than ninety percent (90%) of the average thickness.

(c) Initial Physical Requirements:

- (1) Tensile strength minimum PSI..... 1800
- (2) Elongation at rupture, minimum percent 300

(d) Air Oven Exposure Test. After conditioning in an air oven at  $121 \pm 1^\circ\text{C}$  for 168 hours:

- (1) Tensile strength, minimum percent of unaged value 75
- (2) Elongation at rupture, minimum percent of unaged value 60

(e) Mechanical Water Absorbtion. After 168 hours at  $70 \pm 1^\circ\text{C}$ :

- (1) Milligrams per square inch, maximum 20

**TESTING**

7. (a) General. Tests shall be performed on insulation, jacket and completed cables in accordance with the applicable standards as listed in these specifications. Included in these tests will be a 70,000 BTU per hour flame test in accordance with IEEE 383. Where standards are at variance with each other or with other portions of this specification, the most stringent requirements, as determined by an engineer from the Division of Engineering, will apply. All tests shall be conducted on cable produced for this order.

(b) Number of Tests. Insulation and jacket tests shall be conducted on samples taken every 5,000 feet or fraction thereof of each conductor size. In no case must less than two (2) samples be taken. Approximately five percent (5%) of the cable must be tested. Where the cable fails to conform to any of the tests specified herein, samples must be taken from each reel and must successfully conform to all tests specified herein. Reels from which samples fail to conform, will be rejected.

(c) Test Reports. No cable may be shipped until certified copies of all factory tests have been reviewed and approved by the engineer.

## **PACKAGING**

8. (a) Cable Marking. The cable must be identified by a permanently inscribed legend in white lettering as follows:

3/C - No. (conductor size)AWG-600V-90°C-EPR/CSPE or EPR/PVC-  
manufacturer's name- month/year of manufacture

The legend must be repeated at approximately eighteen (18) inch intervals on the outside surface of the cable parallel to the longitudinal axis of the conductor.

- (b) Reels. The completed cable shall be delivered on sound substantial, non-returnable reels. Both ends of each length of cable must be properly sealed against the entrance of moisture and other foreign matter by the use of clamp-on cable caps. The ends must be securely fastened so as not to become loose in transit. Before shipment, all reels must be wrapped with cardboard or other approved wrapping.
- (c) Footage. Each reel must contain 1,000 foot of cable for either #4 AWG or #2 AWG and 500 feet of cable for #1/0 AWG or #2/0 AWG. A tolerance limit of plus or minus ten percent ( $\pm 10\%$ ) shall be adhered to.
- (d) Reel Marking. A metal tag must be securely attached to each reel indicating the reel number, contract number, date of shipment, gross and tare weights, description of the cable and the total footage. Directions for unrolling the cable must be placed on the reel with an approved permanent marking material such as oil-based paint or a securely attached metal tag.

TABLE 1 - THREE CONDUCTOR SERVICE ENTRANCE CABLE

Size (AWG)	Overall Diameter (mils)	No. Of Strands	Test Volts (KV)	Footage per Reel	Insulation (mils)	Jacket (mils)
4	950	7	4.5	1000	55	80
2	1100	7	4.5	1000	65	80
1/0	1400	19	5.5	500	80	95
2/0	1800	19	5.5	500	80	95

**ELECTRICAL SPECIFICATION 1458  
DIVISION OF ENGINEERING  
DEPARTMENT OF TRANSPORTATION  
CITY OF CHICAGO  
REVISED MARCH 4, 2014**

**ELECTRICAL MANHOLE FRAMES AND COVERS  
24 INCH AND 30 INCH DIAMETER**

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**SCOPE**

1. This specification describes the requirements for both 24 inch and 30 inch round frames and covers. These frames and covers will be used for electrical manholes and handholes and will provide access to the interior of the manholes and handholes. The 24 inch frames and covers will be used in parkway and sidewalk areas. The 30 inch frames and covers will be used in streets and in driveways and will provide sufficient strength to withstand normal traffic conditions.

**GENERAL REQUIREMENTS**

2.
  - (a) Conformance. The manhole frames and covers shall conform with every detail of the requirements herein stated and to the specifications and methods of test of the American Society for Testing and Materials cited by ASTM Designation Number in which the most recently published revision will govern.
  - (b) Acceptance. Frames and covers not conforming to this specification will not be accepted. The Commissioner of Transportation will have the final say as to whether or not the frames and covers meet specifications.
  - (c) Drawings. The drawings mentioned herein are drawings of the Department of Transportation, Division of Engineering, and must be interpreted as part of these specifications.
  - (d) Sample. Upon request, one complete manhole frame and cover of the manufacture intended to be furnished must be submitted within fifteen (15) business days after receipt of such a request from the Chief Procurement Officer. The samples must be delivered to the Division of Electrical Operations, 2451 South Ashland Avenue, Chicago, Illinois.
  - (e) Warranty. The manufacturer shall warrant that the frames and covers meet



the specifications and warrant the frames and covers for a period of one (1) year from the date of delivery against defects which may occur during that period from normal and customary use. Any frame or cover which fails during this period must be replaced by the manufacturer at no cost to the City.

### **DESIGN**

3. (a) The frames and covers shall each conform in detail to the designs shown on Drawings 872, 874 and 10927.
- (b) Each frame and cover shall weigh approximately as shown on the drawings.
- (c) Machining. The bearing surfaces of both the cover and the frame shall be machine finished as indicated on the drawings.
- (d) Workmanship. The frames and covers must be mutually interchangeable size for size, so that each lid will fit every frame neatly without jamming and with only such clearance as the drawings indicate. In addition, 24" & 30" covers must fit existing 24" & 30" frames, as shown on drawings 872, 874 and 10927. The castings shall be neat, true to pattern and free from cracks and casting flaws. No welding of defective castings will be permitted nor must the castings be painted.
- (e) Material. The frames and covers must be made of Class 30 Cast Iron described in the specifications for Gray Iron Castings of ASTM A48. No plugging of defective castings will be permitted.

### **TESTS**

4. (a) Test bars of the metal used for the castings shall be made and tested for tensile and transverse strength in accordance with ASTM A48. The metal must be tested at the works of the manufacturer. The manufacturer must furnish a certified copy of all test data sheets to the City prior to delivery of the castings. Frames and covers shall each be considered a separate casting for determining the requirement of testing.

**ELECTRICAL SPECIFICATION 1462  
DIVISION OF ENGINEERING  
DEPARTMENT OF TRANSPORTATION  
CITY OF CHICAGO  
REVISED NOVEMBER 21, 2014**

**RIGID STEEL CONDUIT  
(HOT DIPPED GALVANIZED)**

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**SCOPE**

1. This specification describes rigid steel conduit, zinc coated. This specification also describes rigid steel conduit that is both zinc and PVC coated. The conduit will be used underground or on structure as a raceway for electrical cables.

**GENERAL REQUIREMENTS**

2.
  - (a) Rigid steel conduit must be zinc coated by the hot-dip process. Conduit must be furnished in 10 foot lengths, threaded on each end and with one coupling attached to one end and a protective cap at the other end.
  - (b) The conduit shall be manufactured according to Underwriters Laboratories Standard U.L. - 6 and must meet ANSI Standard C 80.1 and the requirements of NEC Article 344. In addition, conduit must be recognized as an equipment grounding conductor as per NEC Article 250. There will be no exceptions to meeting these standards.
  - (c) Acceptance. Conduit not conforming to this specification will be rejected. The Commissioner will be the final judge in determining if the conduit meets the specification.
  - (d) Sample. If requested by the Chief Procurement Officer, a sample of conduit must be submitted to the Engineer of Electricity within fifteen (15) business days of receipt of such a request.
  - (e) Warranty. The manufacturer shall warrant the construction and performance of the conduit to meet the requirements of this specification and shall warrant all parts and components against defects due to design, workmanship, or material developing within a period of one (1) year after the conduit has been delivered.

### **STEEL**

3. Conduit shall be formed from steel suitable for use as an electrical raceway. It shall be structurally sound so that it will hang straight and true when supported by hangers in accordance with Chicago electrical code requirements and shall be capable of being field bent without deformation of the walls.

Conduit shall have a circular cross section sufficiently accurate to permit the cutting of threads in accordance with Table 2 and shall provide a uniform wall thickness throughout. All surfaces shall be smooth and free of injurious defects. The dimensions and weights of rigid steel conduit must be in accordance with Table 1.

### **THREADING AND CHAMFERING**

4. Each length of conduit, and each nipple, elbow and bend must be threaded on both ends, and each end must be chamfered to remove burrs and sharp edges.

The number of threads per inch, and the length of the threaded portion at each end of each length of conduit, nipple and elbow must be as indicated in Table 2. The perfect thread must be tapered for its entire length, and the taper must be 3/4 inch per foot.

### **ZINC COATING**

5. After all cutting, threading, and chamfering all conduit surfaces shall be thoroughly cleaned before application of zinc. The cleaning process shall leave the interior and exterior surfaces of the conduit in such a condition that the zinc will be firmly adherent and smooth.

The conduit must be hot dipped galvanized both inside and out to provide approximately two (2) ounces of zinc per square foot. This is equivalent to 3.4 mils of zinc coating. An additional interior coating to aid in the installation of wires is required.

### **COUPLINGS**

6.
  - (a) The outside surface of couplings shall be protected by means of a zinc coating. The zinc content of the coating on the outside surface must be equivalent to a minimum thickness of 3.4 mils.
  - (b) Couplings shall be so made that all threads will be covered when the coupling is pulled tight on standard conduit threads.

- (c) Both ends of the coupling must be chamfered to prevent damage to the starting threads.
- (d) The outside diameter, length and weight of coupling must be as indicated in Table 3.
- (e) Couplings must be straight tapped, except that the 2 1/2 inch and larger sizes may be taper-tapped.

#### **PVC COATED (WHEN SPECIFIED)**

- 7. (a) Only hot dipped galvanized conduit, couplings, and fittings may be polyvinylchloride (PVC) coated.
- (b) All conduit, couplings, and fittings must be cleaned before being coated.
- (c) All conduit, couplings, and fittings must have a PVC coating applied to the exterior by dipping in liquid plastisol. The coating thickness must be a nominal 40 mils.
- (d) All coated conduit, couplings, and fittings must conform to the requirements of NEMA Standard RN1- Section 3 , “External Coatings”. The latest revision will apply.

#### **PACKING AND IDENTIFICATION**

- 8. The pipe shall be delivered in bundles. Each length of conduit must be marked with the manufacturer's name or trademark. Securely attached to each bundle at two (2) locations on the bundle must be a weather resistant tag containing the following information:
  - a. conduit size
  - b. footage of bundle
  - c. gross weight of bundle
  - d. manufacturer’s name

Precaution will be taken by the contractor in handling during shipment or delivery of conduit, and any conduit found to be damaged will not be accepted.

#### **TEST AND INSPECTION**

- 9. Galvanized rigid conduit must be capable of being bent cold into a quarter of a circle around a mandrel, the radius of which is four times the nominal size of the conduit, without developing cracks at any portion and without opening the

weld.

The protective coatings used on the outside and inside surfaces of rigid steel conduit must be sufficiently elastic to prevent their cracking or flaking off when a finished sample of 2 inch conduit is tested within one year after the time of manufacture, by bending it into a half of a circle around a mandrel, the radius of which is 3 1/2 inches.

Tests on sizes other than 1/2 inch may be conducted within one year after the time of manufacture. If such tests are conducted, the conduit must be bent into a quarter of a circle around a mandrel, the radius of which is six times the nominal size of the conduit.

One of the following three test methods shall be employed for measuring the thickness or extent of the external zinc coating on conduit:

- (a) Magnetic test.
- (b) Dropping test.
- (c) Preece test (Material which will withstand four 1-minute immersions will be considered as meeting requirements as follows; the zinc content of the coating on the outside surface must be equivalent to a minimum thickness of 3.4 mils).

All tests and inspections must be made at the place of manufacture prior to shipment unless otherwise specified, and shall be so conducted as not to interfere with normal manufacturing processes.

Each length of conduit shall be examined visually both on the outside and inside to determine if the product is free from slivers, burrs, scale or other similar injurious defects (or a combination thereof), and if coverage of the coating is complete.

If any samples of rigid steel conduit tested as prescribed in this specification should fail, two additional samples must be tested, both of which must comply with the requirements of the specification.

All pipe which may develop any defect under tests, or which may before testing or on delivery be found defective, or not in accordance with these specifications, must be removed by the Contractor at his own expense; and such pipe so removed by the Contractor must be replaced by him within ten (10) days of such rejection with other pipe which will conform to these specifications.

**TABLE 1**

**Design Dimension and Weights of Rigid Steel Conduit**

Nominal or Trade Size of Conduit	Inside Diameter	Outside Diameter	Wall Thickness	Length Without Coupling	Minimum Weight of Ten Unit Length w/coup lings
(Inches)	(Inches)	(Inches)	(Inches)	(Feet/Inches)	(Pounds)
1/2	0.622	0.840	0.109	9-11 1/4	79.00
3/4	0.824	1.050	0.113	9-11 1/4	105.0
1	1.049	1.315	0.133	9-11	153.0
1 1/4	1.380	1.660	0.140	9-11	201.0
1 1/2	1.610	1.900	0.145	9-11	249.0
2	2.067	2.375	0.154	9-11	334.0
2 1/2	2.469	2.875	0.203	9-10 1/2	527.0
3	3.068	3.500	0.216	9-10 1/2	690.0
3 1/2	3.548	4.000	0.226	9-10 1/4	831.0
4	4.026	4.500	0.237	9-10 1/4	982.0

NOTE: The applicable tolerances are:

Length: + 1/4 inch (without coupling)

Outside diameter: + 1/64 inch or -1/32 inch for the 1 1/2 inch and smaller sizes,  
 ± 1 % for the 2 inch and larger sizes.

Wall thickness: - 12 1/2 %

**TABLE 2**

**Dimensions of Threads**

Nominal or Trade Size of Conduit (Inches)	Threads per Inch	Pitch Diameter at end of Thread (Inches) Tapered 3/4 Inch per foot	Length of Thread (Inches)	
			Effective L2	Overall L4
1/2	14	0.7584	0.53	0.78
3/4	14	0.9677	0.55	0.79
1	11 1/2	1.2136	0.68	0.98
1 1/4	11 1/2	1.5571	0.71	1.01
1 1/2	11 1/2	1.7961	0.72	1.03
2	11 1/2	2.2690	0.76	1.06
2 1/2	8	2.7195	1.14	1.57
3	8	3.3406	1.20	1.63
3 1/2	8	3.8375	1.25	1.68
4	8	4.3344	1.30	1.73

NOTE: The applicable tolerances are:

Threaded Length (L4 Col 5): Plus or minus one thread

Pitch Diameter (Col 3): Plus or minus one turn is the maximum variation permitted from the gaging face of the working thread gages. This is equivalent to plus or minus one and one half turns from basic dimensions, since a variation of plus or minus one half turn from basic dimensions is permitted in working gages.

**TABLE 3**

**Designed Dimensions and Weights of Couplings**

Nominal or Trade Size of Conduit <u>(INCHES)</u>	Outside Diameter  <u>(INCHES)</u>	Minimum Length  <u>(INCHES)</u>	Minimum Weight  <u>(POUNDS)</u>
1/2	1.010	1-9/16	0.115
3/4	1.250	1-5/8	0.170
1	1.525	2	0.300
1 1/4	1.869	2-1/16	0.370
1 1/2	2.155	2-1/16	0.515
2	2.650	2 1/8	0.671
2 1/2	3.250	3-1/8	1.675
3	3.870	3-1/4	2.085
3 1/2	4.500	3-3/8	2.400
4	4.875	3-1/2	2.839



**ELECTRICAL SPECIFICATION 1464  
DIVISION OF ENGINEERING  
DEPARTMENT OF TRANSPORTATION  
CITY OF CHICAGO  
NOVEMBER 24, 1992**

**FUSES FOR STREET LIGHTING**

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**SUBJECT**

1. This specification covers the requirements for fuses to be used to protect street lighting circuits and luminaires. The fuses will installed in the fixture on fuse blocks, or in-line in in-line fuse holders.

**DESIGN**

2.
  - (a) Fuses shall be rated for H.I.D. ballast and street lighting protection.
  - (b) Fuses shall be fast acting, high interrupting capacity and current limiting.
  - (c) Fuses must be rated for 10A, 600 VAC and 100,000 AMPS symmetrical interrupting.
  - (d) Fuse dimensions must be 13/32" x 1-1/2".
  - (e) Fuses must be U.L. listed.
  - (f) Fuses shall be Buss fuse type KTK; Littlefuse type KLK; Gould (Chase-Shawmut) type CTK; or approved equal.

**ELECTRICAL SPECIFICATION 1465  
DIVISION OF ENGINEERING  
DEPARTMENT OF TRANSPORTATION  
CITY OF CHICAGO  
REVISED JULY 12, 2006**

**GROUND RODS**

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**SUBJECT**

1. This specification states requirements for ground rods and clamps to be used for ground electrodes in street lighting, traffic signal, and miscellaneous electrical circuits.

**GENERAL**

2. (a) Ground rods must be copper clad, steel rods suitable for driving into the ground without deformation of the rod or scoring, separation or other deterioration of the copper cladding.
- (b) Sample. If requested by the Chief Procurement Officer, the contractor must furnish one sample of the ground rod proposed to be furnished within fifteen (15) business days from receipt of such request. The sample ground rod must be delivered to the Division of Electrical Operations, 2451 S. Ashland Avenue, Chicago, Illinois 60608.
- (c) Warranty. The manufacturer shall warrant every ground rod against defects due to design, workmanship, or material developing within a period of one (1) year after the ground rod has been accepted. Any ground rod which fails during this period must be replaced by the contractor without expense to the City. The Commissioner of Transportation or his duly authorized representative will be the sole judge in determining which replacements are to be made.
- (d) The Commissioner will be the sole judge in determining whether the submitted ground rods meet the requirements of this specification. Ground rods not accepted must be removed at the sole expense of the contractor.

**DESIGN**

3. (a) The ground rods and couplings must meet the latest requirements of (National Electrical Manufacturer's Association) NEMA Standard GR-1, for copper bonded ground rod electrodes and couplings. The ground rods must also meet the requirements of (Underwriter's Laboratories) UL 467.
- (b) Ground rods shall be made of steel core suitable for driving into the earth without deformation.
- (c) A uniform covering of electrolytic copper, 10 mils in thickness, shall be metallically bonded to the steel core to provide a corrosion resistant, inseparable bond between the steel core and the copper overlay.
- (d) The finished rod must be of uniform cross-section; straight, and free of nicks, cuts or protuberances.
- (e) The rod must be pointed at one end and chamfered at the other.
- (f) All ground rods must be three-quarter inches (3/4") in diameter. The length shall be as specified in the order or in the plans. The length and diameter of the rod and the manufacturer must be clearly and permanently marked near the top of the rod (chamfered end).
- (g) All ground rods must have a ground clamp capable of accommodating a No. 6 AWG Copper Wire.

**PACKING**

4. (a) Ground rods must be packed in bundles with reinforced tape or plastic banding that will not damage the rods. Small bundles may then be bound in larger bundles held together with steel banding.
- (b) Ground clamps must be packed in a suitable carton. The carton must be labeled to indicate the contents.

**SPECIFICATION 1467  
DIVISION OF ENGINEERING  
DEPARTMENT OF TRANSPORTATION  
CITY OF CHICAGO  
REVISED JUNE 28, 2012**

**ROD: ANCHOR, STEEL, WITH HARDWARE**

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**SUBJECT**

1. This specification states the requirements for steel anchor rods with hardware for street light pole foundations.

**GENERAL**

2. (a) Specifications. The anchor rods shall conform in detail to the requirements herein stated, and to the specifications of the American Society for Testing and Materials cited by ASTM Designation Number, of which the most recently published revision will govern.
- (b) Drawing. The drawings mentioned herein are issued by the Department of Transportation, Division of Engineering, and are an integral part of this specification.

**ANCHOR ROD**

3. (a) Fabrication. Each anchor rod must be fabricated in conformity with City of Chicago drawings numbered 806, 811, 830 and 844.
- (b) Material. The rods must be fabricated from cold rolled carbon steel bar meeting the requirements of ASTM Specification A-36, except that the Specification must be modified to provide a minimum yield point of 55,000 psi (379 MPa).
- (c) Thread. The straight end of each rod must be threaded as shown on City of Chicago drawing for that size rod, and must be American Standard, National Coarse.

**HARDWARE**

4. Hardware furnished with the anchor rod shall be as shown on the applicable drawing. It must include two (2) hexagonal nuts, American Standard Regular, two (2) flat washers, type B, series W, and one (1) lock washer, steel, helical

spring. The nuts must have a Class 2 or 3 fit.

### **FINISH**

5. Galvanizing. The threaded end of each rod must be hot dipped galvanized for the distance shown on the applicable drawing. The thickness of the galvanized coating must not be less than 0.0021 inches. Each hexagonal nut and washer must be galvanized to the minimum thickness required by ASTM A-153, Class C, or ASTM B-454, Class 50. After galvanization, each anchor rod and nut must have a mating fit equivalent to the American Standard Class 2 or 3 fit for nuts and bolts.

### **TESTS**

6. At the discretion of the Commissioner, anchor rods and hardware furnished under this specification will be subject to testing to determine compliance with the materials physical requirements.

### **INSPECTION**

7. Final inspection must be made at point of delivery. Any anchor rods and hardware rejected must be removed by the Contractor at his sole expense.

**ELECTRICAL SPECIFICATION 1500  
DIVISION OF ENGINEERING  
DEPARTMENT OF TRANSPORTATION  
CITY OF CHICAGO  
REVISED SEPTEMBER 19, 2001**

**TEARDROP LUMINAIRE, HORIZONTAL LAMP, FOR CHICAGO 2000 POLE;  
250/310 WATT HIGH PRESSURE SODIUM LAMP; I.E.S. TYPE III  
DISTRIBUTION**

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**SUBJECT**

1. This specification states the requirements for a type III teardrop style street lighting luminaire with integral ballast and electronic components, and a 250 or 310 watt high pressure sodium lamp. The luminaire must include fitter and must be fabricated for attachment to a 2" O.D. and 8' long steel mast arm on a Chicago 2000 light pole.

**SUBMITTAL INFORMATION**

2. (a) Manufacturer=s Shop Drawings and Product Data. The apparent successful bidder, if so requested, must submit scaled manufacturer=s shop drawings showing actual luminaire dimensions, description, weight, and EPA. Shop drawings must be original drawings created by the manufacturer; photocopied or scanned copies of the Standard Drawings will not be accepted, and will be considered rejected as an incomplete submittal. These drawings will also be submitted in electronic format in Microstation 95, if requested. The apparent successful bidder may also be requested to submit manufacturer=s catalog cut sheets showing luminaire designation(s), characteristics, and catalog number(s). Also, manufacturer=s catalog cut sheets for all electrical components including lamp, ballast, capacitor, ignitor, lamp holder, terminal blocks, fuse holders and fuses, and wiring.
- (b) Photometric Calculations and Data. If requested, the apparent successful bidder must include the following:
  1. Candlepower distribution curve showing the light distribution in the 70 degree cone and in a vertical plane through the maximum beam.
  2. Isofootcandle chart of horizontal foot candles.
  3. Utilization efficiency charts and luminaire efficiency tables.
  4. Luminaire classification per ANSI designation.
  5. Candlepower values at every 5.0 degree intervals.
  6. Candlepower tables in I.E.S. format in electronic format.

7. Luminaire manufacturer and catalog number in photometric test report.
- (c) Certified Test Reports and Statements. The apparent successful bidder may be required to submit certified test reports as noted in this specification.
- (d) The apparent successful bidder may be required to provide manufacturer's written instructions and maintenance manuals for luminaire.
- (e) Sample. If requested by the Chief Procurement Officer, one completely assembled luminaire with fitter and integral components, of the manufacture intended to be furnished, must be submitted for review within fifteen (15) business days of receipt of such notice.
- (f) Warranty. The manufacturer must warrant the performance and construction of these luminaires to meet the requirements of this Specification and must warrant all parts, components, and appurtenances against defects due to design, workmanship, or material developing within a period of five years after delivery. This will be interpreted particularly to mean compatible performance of ballast with lamps of various manufacture, failure of any ballast component, loss of reflectivity of any reflecting surface, and discolorations or fogging of any portion of the optical system impairing the transmission of light. The reflector, the refractor or lens, and the entire optical assembly must not develop any discoloration over the normal life span of the luminaire. An extended warranty of seven years, over and above the normal warranty, must be furnished by the manufacturer pertaining to the above said discoloration. The extended warranty must be furnished in writing guaranteeing replacement, including shipment, free of charge to the City, of any optical assembly, or any component parts thereof, which, as determined by the Commissioner, would develop aforesaid discoloration. The extended warranty must accompany submittal information. Any luminaire or part thereof not performing as required or developing defects within this period, must be replaced by the manufacturer at no cost to the City. The Commissioner will be the sole judge in determining which replacements are to be made and the Commissioner's decision will be final. Any cost for the warranty as specified will be incidental to this contract.

### GENERAL

3. (a) Assembly. Each luminaire must be delivered completely assembled, wired, and ready for installation; without the lamp. It must consist of the cast housing, refractor, and fitter as shown on Department of Transportation Standard Drawing 931; reflector, lamp holder assembly, terminal block, fusing, ballast components, gaskets, and all necessary hardware.

- (b) Approval. Whenever Approval@ and Approved@ are used in this specification they will mean a written approval by the Commissioner to be secured prior to proceeding with manufacture of these luminaires.
- (c) Commissioner=s Review. The Commissioner will be the sole judge in determining the submitted luminaires compliance with this Specification. The Commissioner=s decision will be final.

#### **CAST HOUSING AND FITTER**

- 4. (a) Material. Each housing and fitter must be cast aluminum, ASTM Grade 356, conforming to the Aluminum Association Standards for Aluminum Sand and Permanent Mold Castings, Washington, D.C., March 1980.
- (b) Construction. The housing and fitter must conform in detail and dimensions to Standard Drawing 931. Each casting must be made by the permanent mold process; sand castings will not be acceptable. Minimum thickness will be 3/16", excluding the fitter attachment to the pole, and will be uniform within each casting and throughout all castings in an entire order. Inconsistencies in casting thickness will be cause for rejection of the entire lot.
- (c) Appearance. Castings will have smooth external surfaces free from protuberances, dents, cracks, or other imperfections marring their appearance. Welding or plugging of casting defects is prohibited. The housing will be of a similar design as manufactured by Lumec Inc., Luminaire Catalog Series RN20. The fitter will be of a similar design as manufactured by Lumec Inc., RN20 Style Catalog # LMS14343A. Similar designs must be approved by the Commissioner. The Commissioner=s decision of what constitutes a similar design will be final.
- (d) Housing. The housing must enclose the lamp socket, reflector, terminal block, fuse holder(s) and ballast components, with provision for proper mounting of these parts. The housing must be of such size and surface area, or must have Aheat sink@ characteristics, such that all enclosed components will operate within their designed operating temperatures under expected service conditions.
- (e) Fitter. The fitter attachment to the pole mast arm must provide the structural integrity to hold the luminaire firmly in place during the vibrations anticipated due to wind loading, passing elevated trains and heavily loaded vehicles. Two 3/8-16, stainless steel (type 304) U-shape bolts must be used to secure the fitter to the pole mast arm. A minimum of 3/4" thickness of metal will be provided where the U-bolts are inserted to minimize the possibility of stripping the threads when the hardware is tightened into place. The hardware must include 3/8" x 16 threaded, stainless steel washers and nuts; four sets of nuts and washers must be provided where cobra-head style leveling device and



fitter attaches to mast arm. The U-bolts must be properly installed and torqued in accordance with the manufacturer's written installation instructions. The fitter must be securely threaded into the cast housing such that it will remain an integral part of the luminaire during the vibrations described above.

### **CAST HOUSING AND FITTER PAINTING**

5. (a) Oil and Grease Removal. All metal surfaces must be washed with an alkaline detergent to remove any oils or grease.
- (b) Chemical Pretreatment. The cleaned metal surfaces must be rinsed with de-ionized water, treated with a hot, pressurized phosphate wash and sealer, rinsed again with de-ionized water, and then dried by convection heat.
- (c) Exterior and Interior Coat. A thermosetting, weathering, polyester powder coat must be applied electrostatically to all cleaned and treated surfaces to a uniform four mil thickness in a one coat application. This powder coat must be cured in a convection oven at a minimum 400F to form a high molecular weight fusion bonded finish.
- (d) Alternate Methods. Alternate powder coat methods may be reviewed and tested on a case-by-case basis. However, no coating method will be accepted unless the Commissioner judges such alternate to be equal to the coating herein specified.
- (e) Durability. Both the exterior and interior coats must be capable of passing 1,000 hours of salt spray exposure as per ASTM B117 in a 5% Na Cl (by weight) solution at 95F and 95% relative humidity without blistering. Before test, the panel must be scribed with an "X" down to bare metal.
- (f) Coating Measurement. Measurement of coating thickness must be done in accordance with SSPC-Pa 2-73T, "Measurement of Dry Paint Thickness with Magnetic Gauges", except that the lowest "single spot measurement" must be not less than 3.0 mils.
- (g) Color. Preferred color will be gloss black. A 4" square color chip sample must be submitted for approval prior to fabrication. The chip sample must be of the same material as the capital, and must include the manufacturer's name and the manufacturer's color name as well. The sample must also include any other information which will be required to purchase the same color for the poles and split pedestal bases. Preferred color will be equal to Morton Powder Coat #20-7345.

### **ACRYLIC REFRACTOR**

6. (a) Material/Construction - The refractor must be molded of clear, UV resistant V825 HID acrylic resin. The refractor exterior must be smooth to shed dirt and pollutants. Any prismatic necessary must be on the interior of the refractor. The refractor will be of a similar design as manufactured by Lumec Inc. Catalog # RN20-AC.
- (b) Appearance - The refractor must conform to that shown on Department of Transportation Standard Drawing 931.
- (c) Refractor Mounting - The refractor must be mounted by means of a hinge assembly with stainless steel, captive screws mounted into the cast aluminum fixture housing. An asymmetric refractor will be clearly marked and keyed AHOUSE SIDE@ and ASTREET SIDE@, so that it will be properly installed to provide the required photometrics. The mounting will afford the rigidity necessary to prevent the refractor from twisting or rattling when subjected to the vibrating forces of wind loading, passing elevated trains or heavily loaded vehicles. Mounting will include bolt torquing in accordance with the manufacturer's written installation instructions. The mounting must not preclude any refractor from being mutually interchangeable with any other refractor intended for this function.

### **ELECTRICAL COMPONENTS**

7. (a) Lamp Holder. The lamp holder must be a glazed porcelain lamp-grip socket, mogul base, with a nickel-plated shell and spring loaded center contact rated for a minimum of 4KV pulsing. It must be a street lighting grade, commercially available product. The lamp holder must be properly secured in the factory and must not require field adjustment for optimum photometric performance.
- (b) Terminal Block and Fusing. A divisible-type terminal block of molded phenolic plastic must be provided within the housing in a readily accessible location. The terminal block must be rated for 600 volts and must provide the terminals needed to completely prewire all luminaire components. The terminal block must be connected to the factory-provided fuse holder(s) which take "small dimension" (13/32" x 1-1/2") cartridge fuses. Fuses must be included. The fuse holder(s) must be standard, 600 volt fuse holder(s) with bayonet-type knob, and must be factory-wired to the appropriate terminals. The terminal block will have plated copper or plated brass, clamp-type pressure terminals of an approved type which will accommodate an incoming wire size of #12 AWG. The terminals for connection of the incoming wiring must be the polarized quick disconnect type.

(c) Ballast Requirements.

1. General. The integral ballast must be a constant wattage autotransformer (CWA) type. It must be designed to furnish proper electrical characteristics for starting and operating a 310 watt, type LU high pressure sodium lamp at temperatures as low as minus 401F (for a 250 watt fixture, the ballast must operate a 250 watt lamp). The ballast winding must be adequately impregnated and treated for protection against the entrance of moisture, insulated with Class G insulation and able to withstand the NEMA standard dielectric test. The ballast must include an electronic starting component. Ballast must be CWA Quad Volt, Advance Catalog #71A8391 or equal, for 120 volt, 208 volt, 240 volt, or 277 volt operation.
2. Lamp Operation. The ballast must provide positive lamp ignition at an input voltage of 95 volts at 120 volts nominal, 190 volts at 208 volts nominal, and 190 volts at 240 volts nominal. It must operate the lamp over a range of input voltage from 95 to 125 volts for the 120 volt tap, from 190 to 220 volts for the 208 volt tap, and from 220 to 254 volts for the 240 volt tap, without damage to the ballast. It must provide lamp operation within lamp specifications for rated lamp life at input voltages between 106 volts and 122 volts for the 120 volt tap, between 198 volts and 218 volts for the 208 volt tap, and between 228 volts and 252 volts for the 240 volt tap.
3. Rating. The ballast must have non-fading, color coded wire leads for rated input voltage of 120 volts, 208 volts, or 240 volts at 60 cycles, which must drive a nominal 100 volt lamp at 310 watts (for the 250 watt fixture, the ballast must drive a nominal 100 volt lamp at 250 watts). The design range of input voltage for this ballast must be from +6% to -8% of the nominal voltage.
4. Lamp Current. The ballast must supply a nominal 3.6 amperes to a 310 watt, 100 volt high pressure sodium lamp, in accordance with the lamp manufacturer's recommendations, during operation and a maximum of 5.5 amperes at starting. For the 250 watt fixture, the ballast must supply a nominal 2.2 amperes to a 250 watt, 100 volt high pressure sodium lamp during operation and a maximum of 3.0 amperes at starting.
5. Power Factor. The power factor of the ballast over the design range of input voltages specified above must not be less than 90%.
6. Line Current. With nominal input voltage applied, the input current under starting, short circuit, or open circuit condition, must not

exceed 3.37 amperes rms at 120 volts nominal, 1.94 amperes rms at 208 volts nominal, and 1.68 amperes rms at 240 volts nominal.

7. Lamp Wattage. The ballast must deliver either 250 watts or 310 watts to a horizontal burning nominal (100 volt) lamp when operating at the nominal input voltage. Wattage input to the nominal (100 volt) lamp must not vary more than a total of 30% over the input voltage design range specified above.
  8. Ballast Loss. Wattage loss of the ballast must not exceed 62 watts when delivering 310 watts to a nominal (100 volt) lamp at the nominal input voltage. Wattage loss of the ballast must not exceed 45 watts when delivering 250 watts to a nominal (100 volt) lamp at the nominal input voltage. The wattage loss will be measured with a nominal 100 volt lamp "hot" in the fixture.
  9. Short or Open Circuit. The ballast must be capable of sustaining short circuit or open circuit conditions for extended periods without damage to ballast components, including the electronic starter.
- (d) Ignitor. The ignitor must be of a similar design as manufactured by Payne Sparkman Manufacturing Incorporated, Catalog No. ULI-100S, which directs the voltage spike directly to the lamp without being directed through the ballast windings. It must provide a low energy, high voltage surge to the lamp for initial ignition with a duration of one microsecond minimum within 20 degrees of peak voltage of the sine wave. The voltage surge or spike, must have a minimum amplitude to 2,300 volts. The ignitor must be totally epoxy encapsulated in a metal can and used with all brands and types of 60 Hz HPS ballasts. The unit must be burned in for 48 hours with power applied at elevated temperatures and with constant monitoring of case isolation. A proposed equal ignitor must have a documented non-failure rate equal to that of the Payne Sparkman product.
- (e) Crest Factor. Current crest factor must not be greater than 1.8 at nominal input voltage for a nominal horizontal burning lamp.
- (f) Mounting. The ballast components must be mounted and fastened on the component mounting plate or tray in a manner such that the components will remain secure and capable of withstanding the vibrations and shocks likely to occur when installed and in service. These components must be readily removable for replacement. All ballast components must be mounted to a single galvanized steel plate, which will be secured to the housing by a sliding captive rail system or other approved method. When the ballast housing door is opened, the entire assembly will be removed from the housing by sliding out the assembly and lifting it off of the captive position. Each component must be

readily removable for replacement. Quick disconnects must be provided for this purpose. The ignitor will be of a plug-in type for easy removal. Alternate methods may be considered.

- (g) Capacitor. The capacitor must be an A.C. voltage, paper, non-PCB impregnated, 80°C temperature rated, power capacitor. Its physical size and location within the luminaire must be such that the case temperature of the capacitor must not exceed 80°C after ten hours of continuous operation of the luminaire in an ambient temperature of 30°C.
- (h) Noise Level. The noise level of this ballast must be such that when installed in the luminaire and operating, no objectionable audible or radio noise will be detected from directly beneath the luminaire when field tested in the actual installation and mounted on a steel pole at a 30' light center height.
- (i) Measurements and Tests. Measurements and tests, where required, must be made with a nominal lamp burning in the luminaire and the ballast operating at a stabilized temperature.
- (j) Wiring. The lamp holder and ballast components must be completely factory wired with non-fading, color coded leads. These leads must be insulated with an approved class of insulation and must be #16 AWG conductor minimum. The use of wiring smaller than #16 AWG will require the written approval of the Commissioner. Color coding will be in a manner approved by the Commissioner. A complete wiring diagram must be displayed at an approved location on the interior of the luminaire and must include all luminaire and component identification and ratings. The wiring diagram must be provided on high quality material that will be resistant to cracking, yellowing, and fading in a luminaire environment. Quick disconnects must be provided for all components and to change the 2 available utilization voltage taps on the ballast.
- (k) Component Mounting.
  - 1. Modular Construction. All electrical components must be securely mounted to a modular plate in such manner that individual components can be easily maintained or replaced. Permanent straps or tie-wraps will not be permitted. Provisions must be included to secure the component mounting plate in its "disconnected" position to allow easy access to terminal blocks and components for installation and maintenance. The entire assembly should be easily disconnected and removed for replacement.

2. Interchangeability. Component mounting plates must be mutually field interchangeable so that units can be restored to working condition without trouble shooting components.
  3. Other Methods. Other methods of component mounting may be considered if they are judged to provide the same ease of installation and maintainability. No alternates will be allowed without the specific written approval of the Commissioner.
- (l) Slip-fitter. The slip-fitter must be suitable for attachment over the end of either a one and a quarter inch (1-1/4") or a two inch (2") steel pipe inserted against a built-in pipe stop, and provided with an approved means of clamping firmly in place. It must have an adequate Aclamping length@ and permit a secure grip on the pipe by means of a clamp arrangement, or a saddle type clamping sleeve, subject to approval, in order to assure a stable attachment which must withstand jarring, vibration, and wind and ice loads. The slip-fitter must be designed to permit adjustment of not less than three (3) degrees above and below the axis of the mounting bracket to compensate for slight misalignment. Unless otherwise specified in the proposal, the slip-fitter will be set for a 2-inch pipe mounting. The slip-fitter will contain an approved shield around the pipe entrance to block entry of birds.
- (m) Reflector. The optical system must be designed to perform properly and efficiently with a reflector. The reflector must be made of hydroformed aluminum sheet of a grade quality such that the reflecting surface must have a specular finish and the reflection factor of the reflecting surface, as determined by the A. H. Taylor or Baumgartner Reflectometer, must not be less than 78%. The reflecting surface must have a dense protective coating of oxide not less than  $0.0116\text{mg/mm}^2$  (7.5 milligrams/in<sup>2</sup>), applied by the anodic oxidation process. The reflector must have a reverse flange to prevent direct light radiation on the gasket surface. The reflector must be held securely within the housing in a manner such that it can be readily removed and replaced. Reflector mounting must provide proper mating with the refractor. A silicone rubber, EPDM (ethylene propylene diene monomer), or EPR (ethylene propylene rubber) gasket must be fixed in place to seal between reflector and refractor. A Abreathing@ filter of Fiberglass or other approved material must be incorporated in the reflector for sealed optical units. It must effectively filter out dirt and particle size contaminants. The optical unit as a whole must provide an IES Medium Cut-off Type III distribution.
- (n) Refractor Holder-Door. The refractor holder-door must be a precision, aluminum ASTM Grade 356 permanent mold casting which must be hinged to the luminaire housing and must open downward approximately 90 degrees to allow servicing of the lamp. The hinging arrangement must be of rugged construction with corrosion resistant hinge fittings. The hinge must prevent

the refractor-holder from disengaging and dropping in case it should swing open. The door must also be connected to the housing with a stainless steel cable. The refractor must be securely held in the holder-door, yet will be easily removed by means of a double action, quick release, corrosion resistant latch. When closed, the refractor holder-door must lock the refractor in precise optical alignment with the lamp, and with positive pressure against the sealing gasket. A sturdy, positive-acting, spring loaded latch will permit single-glove-handed release, and on closing of the refractor, holder-door must provide a definite snap action or visual indication that it is locked.

- (o) Reflector Gasket. This gasket will be a silicone rubber, EPR (ethylene propylene rubber), or EPDM (ethylene propylene diene monomer) molded, cavity type gasket of an approved cross section.
- (p) Hardware. All machine screws, locknuts, pins and set screws necessary to make a firm assembly, and for secure attachment of the luminaire to the mast arm, must be furnished in place. All hardware will be of stainless steel, copper silicon alloy, or other approved non-corrosive or suitably protected metal, and where necessary must be plated to prevent electrolytic action by contact with aluminum.

#### **PHOTOMETRIC REQUIREMENTS**

- 8. (a) Parameters. The manufacturer must demonstrate that the luminaires will meet or exceed the specified photometric requirements under the following set of conditions. The manufacturer must provide photometric calculations using published luminaire data as part of the submitted package. The responsible material proposal must contain luminaire photometric performance with results equal to or better than those listed in this Specification. Submittal information must include computer calculations based on the controlling given conditions which demonstrate achievement of all listed performance requirements. Computer calculations must be performed for roadway lighting and for sidewalk/parkway lighting in accordance with I.E.S. recommendations. The submitted roadway lighting calculations must be done in accordance with I.E.S. RP-8-00, and must include point-by-point illuminance, luminance and veiling luminance as well as listings of all indicated averages and ratios. The submitted sidewalk/parkway calculations must be done in accordance with I.E.S. RP-8-00, and must include point-by-point horizontal illuminance and vertical illuminance as well as listings of all indicated averages and ratios. The program(s) used to perform the calculations must be identified in the submittal.
- (b) Unless otherwise indicated, the light distribution will be I.E.S. classified as medium-cutoff-Type III (M-C-III), as defined in the American National

Standard Practice for Roadway Lighting<sup>®</sup> approved June 27, 2000 by the American National Standards Institute<sup>®</sup> (ANSI).

(c) Verification of Data. All photometric data will be based on the parameters listed above. This data will be verified by an independent testing laboratory or manufacturer's laboratory as approved by the Commissioner. All testing must be performed on completed luminaires.

(d) Measurement Parameters.

1. Observer eye height: 4.75 feet above grade.
2. Line of sight of observer: Downward/one degree below horizontal; parallel to edge of roadway along lines 1/4 roadway lane width from edges of each lane (2 lines per lane).
3. Lighting system: Smooth and level, at least 10 mounting heights long.
4. Points per line: At least 10, not more than 16 feet apart.
5. Roadway area covered: All points between 2 luminaires on one side of roadway, centerline to curbline.
6. Parkway area covered: All points between 2 luminaires on one side of roadway, curbline to right of way.
7. Calculation point: At least one luminaire behind, and at least three ahead of calculation point.
8. Luminaire: Tilt will be 0 degrees.

(e) Given Conditions.

1. Right of Way Width 66 feet
2. Pavement Width 50 feet
3. Number of lanes 4
4. IES Surface R3
5. Mounting Height 30 feet
6. Mast Arm Length 8 feet
7. Pole set back 3 feet
8. Lamp 310 watt clear HPS
9. Lamp position Horizontal or Vertical
10. Lumens 37000
11. IES Distribution Medium-Cutoff - Type III
12. Light Loss Factor .7
13. Pole Spacing 110 feet
14. Configuration Two sides - Opposite



15. Overhang 5 feet
- (f) Performance Requirements.
1. Roadway Illuminance:
    - Average Horizontal 2.5 fc
    - Uniformity Ratio Av/Min 3:1
    - Uniformity Ratio Max/Min 6:1
  2. Roadway Luminance:
    - Average Luminance 1.6 cd/m<sup>2</sup>
    - Uniformity Ratio Av/Min 3:1
    - Uniformity Ratio Max/Min 6:1
    - Max Veiling Luminance 0.3

### **TESTING**

9. (a) Testing. At a maximum, luminaire testing will be conducted on two percent of the manufacturer=s production models for each order in which the quantity of luminaires is 50 or more. The number of tests and the type of tests will be as required by the Commissioner. The testing will include photometric and electrical testing, and additional testing. All testing must be certified by the manufacturer, or an independent lab.
- (b) The selection of luminaires must be a random selection from the entire completed lot of luminaires.
- (c) Photometric testing must be in accordance with IES recommendations except that the selected luminaires will be tested as manufactured without any disassembly or modification. The photometric tests must be conducted with a reference lamp and ballast. The reference lamp must be installed in a manner recommended by the lamp manufacturer and the optical assembly must not be specially prepared for the tests.
- (d) Electrical testing must conform to NEMA and ANSI standards and, as a minimum, must yield:
1. A complete check of wiring connections
  2. A ballast dielectric test
  3. Total ballast losses in watts and percent of input.
  4. A lamp volt-watt trace
  5. Regulation data
  6. A starter test
  7. Lamp current crest factor
  8. Power factor (minimum over the design range of input voltage at nominal lamp voltage)

9. A table of ballast characteristics showing input amperes, watts and power factor, output volts, amperes, watts and lamp crest factor as well as ballast losses over the range of values required to produce the lamp volt-watt trace.
- (e) Interchangeability of all component parts.
  - (f) Thermal testing in accordance with U.L. Standard 1572 or Standard 1598. The fixture must be placed in a controlled 25° Centigrade environment and be energized for a minimum of 8 hours. At no time will any of the components exceed the manufacturer=s recommended operating temperatures. At no time will any surface of the refractor exceed the manufacturer=s recommended temperature limits.
  - (g) Vibration testing in accordance with ANSI Standard C136.31/1. Upon completion of the tests, all set screws, castings, and components will be carefully examined to determine whether there has been a compromise in the security of the luminaires, mounting and/or components.
  - (h) Moisture testing in accordance with U.L. Standard 1572 or Standard 1598. The luminaire will be subjected to a water spray from various directions for a sufficient amount of time to verify that the inside lamp compartment stays dry and that the fixture does not take on water. After the water spray the inside of the refractor must remain dry and the fixture should be demonstrated to operate properly.
  - (i) The summary report and the test results must be certified by the independent test laboratory or the manufacturer=s laboratory, as applicable, and must be sent directly to the Commissioner before the luminaires are shipped. The Commissioner may require some or all of the tests mentioned.
  - (j) Should any of the tested luminaires of a given distribution type and wattage fail to satisfy the specifications and perform in accordance with approved submittal information, that luminaire will be rejected. The City may then require additional testing. Each luminaire may be subject to testing, if the City so deems.

#### **SHIPMENT AND DELIVERY**

10. (a) General. The luminaires must be carefully inspected at the factory prior to shipment to assure that they are complete and free of defects. When luminaires are stacked together, they must be supported with suitable spacers or must otherwise be protected from dents and other potential shipping damage. The spacing and protective materials must be suitable for and usable

in the storage of the luminaires. All hardware must be packaged in a clear container and labeled.

- (b) Packaging. Each luminaire assembly must be securely packed in a suitable carton so that it will not be damaged by shipment and/or handling.
- (c) Marking. Each carton containing a luminaire must be clearly marked on the outside in letters not less than 3/8" tall with the legend: "CHICAGO 2000 TEARDROP LUMINAIRE W/BALLAST, HP-SODIUM, IES TYPE M-C-III". The wattage, appropriate City Commodity Code Number, name of manufacturer, date of manufacture, and contract number under which the luminaire is furnished must also be clearly marked on the carton.
- (d) Delivery. Luminaires will be delivered to the Division of Electrical Operations at 2451 South Ashland in Chicago, or to another City location as indicated on the order. Luminaire information submitted for approval will include any recommendations of the Manufacturer for storage as required under this Contract.

**ELECTRICAL SPECIFICATION 1505  
DIVISION OF ENGINEERING  
DEPARTMENT OF TRANSPORTATION  
CITY OF CHICAGO  
REVISED JULY 17, 2006**

**CHICAGO 2000 LIGHT POLE: ANCHOR BASE, 32'-6", 7 GAUGE FLUTED,  
TAPERED STEEL FOR 15" BOLT CIRCLE**

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**SUBJECT**

1. This specification states the requirements for an Anchor Base Chicago 2000 Light Pole. The pole must support single or twin, simplex mounted mast arm(s) and teardrop luminaire(s). A split pedestal base will be provided to cover the bottom nominal 40" of the pole. A finial will be mounted at the top of the pole. This pole will be served by underground cables.

**SUBMITTAL INFORMATION REQUIRED**

2. (a) Manufacturer's Shop Drawings. Scaled manufacturer's shop drawings showing actual light pole dimensions, details, and welds. Shop drawings must be original engineering drawings created by the manufacturer; photocopied or scanned copies of the Standard Drawings will not be accepted, and will be rejected as an incomplete submittal. These drawings must also be submitted in electronic format in Microstation 95, if requested; failure to provide drawings in this format will be cause for rejecting the submittal.

Dimensions must include but will not be limited to: mast height, width, taper, and fluting; base plate length, width, thickness, and bolt circle; handhole length, width, and height above base plate; component attachment plan locations and heights above baseplate including simplex brackets, finial top, banner arms, and flower basket rosettes; and all decorative bracelet heights above base plate.

Details must include scaled and dimensioned plan views, front elevations, side elevations, and section views as required for components including but not limited to: handhole; simplex brackets; finial top; banner arm attachments and finials; flower basket rosettes; and all decorative bracelets. All components must be clearly identified on the drawings.

Welds must include but will not be limited to: locations, sizes, and types of welds in accordance with the WELDING Section of this Specification.

- (b) Manufacturer's catalog cut sheets showing light pole designation(s), characteristics, and catalog number(s).
- (c) Manufacturer's specifications including fabricating materials and processes.
- (d) Manufacturer's written installation instructions and maintenance manuals including recommendations and/or procedures for storage, assembly, orientation, installation, component access and wiring, and numeric tolerances for torquing the foundation anchor bolts to the light pole base plate.
- (e) Sample. If requested by the Chief Procurement Officer, one completely assembled anchor-base pole with integral components, or one mast head and finial, or ornamental bracelets, of the manufacture intended to be furnished, must be submitted for review within fifteen (15) business days from receipt of notice.
- (f) Warranty. The manufacturer must warrant the performance and construction of these light poles to meet the requirements of this specification and must warrant all parts, components, and appurtenances against defects due to design, workmanship, or material developing within a period of five years after the light poles have been delivered. This will be interpreted particularly to mean structural or mechanical failure of any component, failure of any weld, or failure of any portion of the painting system. The warranty must be furnished in writing guaranteeing replacement, including shipment, free of charge to this Contract and to the City, of any light pole assembly, or any component parts thereof, which, as determined by the Commissioner, would develop aforesaid failures. The warranty must accompany submittal information. Any light pole or part thereof not performing as required or developing defects within this period, must be replaced by the manufacturer at no cost to the City. The Commissioner will be the sole judge in determining which replacements are to be made and the Commissioner's decision will be final. Any cost for the warranty as specified will be incidental to this contract.

### GENERAL

- 3. (a) Products. Light pole masts and component equipment must be the products of a single, established manufacturer, and must be suitable for the service required. Light pole masts or component equipment items which are proposed as similar or identical must be the products of a single manufacturer. Masts will be manufactured by Union Metal Corporation, Valmont Industries Incorporated, or an approved equal.
- (b) Specifications. The pole shall conform in detail to the requirements herein stated and to the requirements of the following organizations as cited herein:

American Association of State Highway and Transportation Officials (AASHTO)

American Society for Testing and Materials (ASTM)

American Welding Society (AWS)

Society for Protective Coatings (SSPC)

- (c) Drawings. The drawings mentioned herein are drawings of the Department of Transportation being an integral part of this specification cooperating to state the necessary requirements.
- (d) Design. The pole must conform in design and dimensions to corresponding Standard Drawings 930, 930C, and 724.
- (e) Approval. Whenever “approval” and “approved” are used in this specification they will mean a written approval by the Commissioner to be secured prior to proceeding with manufacture of these light poles.
- (f) Commissioner’s Review. The Commissioner will be the sole judge in determining the submitted light pole compliance with this Specification. The Commissioner’s decision will be final.

### **MAST**

- 4. (a) Mast Size. The mast size must be nominally 32'-6" as shown on Standard Drawing 930. The mast diameter at the bottom must be 10".
- (b) Mast Design. The mast must be tapered at 0.14" per foot. The 32'-6" long mast must be of monotube construction and must be rolled on a mandrel to provide a 16-flute pattern. The flutes must be neat, true to pattern, and free from cracks and flaws. Each mast must be straight and centered on its' longitudinal axis. The mast must utilize a single longitudinal weld, 70% minimum penetration, in accordance with the WELDING Section of this Specification. There must be no lateral welds in the mast other than at the base plate and at the flower basket rosettes.
- (c) Material. The mast must be 7 gauge, high strength low alloy steel in accordance with ASTM A595, Grade A.
- (d) Mast Base. The mast base must be a 1¼" thick steel plate of low alloy, high strength steel conforming to ASTM A 595, Grade C, ASTM A 588 or ASTM A 606.
  - 1. The base must be attached to the mast so that the bearing surface of the base is at right angles to the longitudinal axis of the mast. The

vertical center line of the seam must be positioned 135° counter-clockwise from the vertical center line of the mast arm support plates.

2. The mast must be inserted into the base to a maximum depth which will still allow for an adequate weld to be made between the bottom of the mast and the plate. A circumferential weld must be made between the mast and the base at both the top and underside of the plate.
  3. The base plate must have four (4) 1 1/2" wide slots to accommodate 1 1/4" diameter anchor bolts. The slots must be a total of three inches long measured along the circumference. The mast must provide for mounting on a 15" bolt circle using 1 1/4" anchor bolts, nuts and washers provided by others. Any special hardware required to facilitate installation must be provided under this contract.
- (e) Provision for Ground. A 1/2" - 13 square nut must be welded to the inside of the mast on the handhole entry frame for a ground connection.
- (f) Entry. A vertical doorframe carrying a removable door providing access to the interior of the mast must be welded into a close fitting opening centered approximately 24" above the bottom of the base. The doorframe must be formed and welded of steel with cross section not less than 1-1/2" wide by 1/4" inch thick so as to adequately reinforce the opening of the mast. The internal horizontal clearance of the doorframe must be 4"; its internal vertical height must be 8". Its upper and lower ends must be semi-circular meeting its straight sides tangentially. The frame must have two welded tabs; one at the top and one at the bottom of the door frame. The top hole must be located 13/16 of an inch from the top of the opening. The bottom hole must be located 13/16 of an inch from the bottom of the opening. These tabs must be drilled to accept a 1/4 inch screw. Stainless steel spring clips must be mounted to the tabs. These clips must be made to accept 1/4"-20 machine screws. The entry must in all respects be identical to handhole openings on poles that have already been installed and accepted by the City.
- (g) Door. The removable door must be formed of sheet steel approximately 1/8" thick. It must fit the doorframe closely and be dished so that it will stay in proper position even if its locking screws become slightly loosened. The door must be drilled top and bottom to accept the 1/4" - 20 hex head stainless steel screws which will fasten the door to the doorframe. All doors must be interchangeable. Doors must fit pole handholes of like poles that have already been installed and accepted by the City. Alternate methods will be subject to approval by the Commissioner or his fully authorized representative.
- (h) Tag. A stainless steel tag must be attached to each pole immediately below the handhole by mechanical means and not by adhesive. The stainless steel tag

must have an embossed legend which must include the pole outside diameter at the base, the overall length, and the gauge; i.e. 10" x 32'-6" - 7 gauge.

- (i) Interchangeability. Each member including the handhole doors in the pole and all component equipment must be mutually interchangeable for assembly, so that no work will be required to make any member fit properly in the place of any other similar member of any other similar pole.
- (j) Simplex Brackets. Two simplex mast arm support plates must be provided opposite each other as shown on the Drawings, and in accordance with Standard Drawing No. 659. The mast arm support plates must be made of cast steel conforming to the requirements for Grade 65-35 cast steel of ASTM A27, or equivalent, subject to approval. They must neatly fit the external surfaces of the fluted mast. Each mast arm support plate must have a hollow protuberance, the hole of which must be approximately equivalent to two (2) inches in diameter, extending into the interior of the pole providing a smooth surface for the lamp cables to rest upon. Each mast arm support plate must be designed so that it will carry the mast arm and hold it in the proper position for fastening the mast arm to the mast. The design of the mast arm support plates must be a two (2) bolt type as shown on Drawing No. 659. The brackets must be factory assembled to the mast. The finished mast must give the appearance of a single, homogeneous mast and the entire assembly must be structurally sound so that with the weight of the mast arm(s) and luminaire(s), the mast will not twist, rack, vibrate or otherwise deform when subjected to the severe vibrations of wind loading, passing elevated trains or heavily loaded vehicles.
- (k) Flower Basket Rosettes. The pole must be equipped with flower basket rosettes welded to the pole at the factory. Other flower basket attachments are not integral to the pole and are optional.
- (l) Luminaire Mounting Height. The luminaire mounting height indicates the height necessary to provide a distance of 30.0 feet from the top of the light pole foundation to the light source center of the luminaire.

#### **BANNER AND BASKET ATTACHMENTS (Optional)**

- 5. (a) Optional Attachments. Banner arm attachments and flower basket attachments must be provided as an option. These items must be provided only if ordered as a separate line item. All attachments must be manufactured to properly fit the pole shaft. All castings and parts must be permanently labeled on the back. The label must clearly identify the part and the pole it is to be used for.



- (b) Banner Arms. Banner arms, bracelets, couplings, and hardware necessary to attach banners must be provided. The appearance and dimensions of these items are shown on Standard Drawings 930, 930B, and 930C. Unless otherwise noted, the banner arms must be constructed of a light weight material flexible enough to withstand the loads presented by the appropriate size banners under ASSTHO wind loadings. The banner arms must have an approximate outside diameter of 1-3/4".
- (c) Flower Basket Attachments. The bracelet and all necessary hardware for attaching a flower basket must be provided. The appearance and dimensions of these items are shown on the Standard Drawings.

### **FINIAL TOP (Optional)**

- 6. (a) Design. The finial mast top must include different pieces assembled together to resemble a single, uniform casting. The pieces must include a top, two side pieces and a side finial ball as shown on Standard Drawings 930, 930B, and 930C. Two sets of end covers for the arms should be included to accommodate the possible use of two arms. The top must be essentially conical with a globe-shaped lower-end and have a minimum wall thickness throughout of not less than 5/32 inches. The cone portion must meet the skirted portion of the top in a smooth filet, and the skirt must enclose the top 7/8 inches of the mast. Three stainless steel, or other similar approved material, set screws not less than 5/16 inches long must be equally spaced in tapped holes around the skirt and must hold the top securely in place atop the mast. The design of the top must be as shown on the Standard Drawings. All castings and parts must be permanently labeled on the back of the part. The part label must clearly identify the part and the pole it is intended for. All mast heads and finials must have the appearance as shown on the Standard Drawings. The dimensions on the drawings are for attachment to the Chicago 2000 Gateway pole. Mast heads and finials for combination traffic poles, 11" or 12.5" poles, must be sized accordingly.
- (b) Material. The top finial must be made of aluminum alloy 356-F per ASTM B108. The top must have smooth surfaces, neat edges and corners and be free of fins, holes or other casting flaws.
- (c) Finish. Tops must be painted as herein specified. The color shall be black.

### **HARDWARE**

- 7. All the hardware necessary to complete the assembly of the pole must be furnished. All hardware must be stainless steel, or equal corrosion-resistant metal, subject to approval.

## WELDING

8. (a) General. Where welds are required and approved, each welded joint must be thoroughly cleaned of flux and spatter, and must be made in conformity with the standards of the American Welding Society. Each bidder must submit with his proposal a drawing showing the sizes and types of welds, in conformity with the proper interpretation of the standard welding symbols of the American Welding Society. The bidder's proposal must state the type of electrode and must describe the welding methods proposed for use in fabricating the pole.
- (b) Certifications. Welders must have proper certification for the welding operations required. Welding by non-certified personnel will not be allowed. Certifications for welding personnel must be included with the submittal information package for review.
- (c) Testing. All welds of 5% of the poles in every lot must be inspected for penetration and soundness of the welds by the magnetic particle inspection method or by radiography. Acceptance or rejection will be governed by the same conditions as in the TESTING Section. If the magnetic inspection process is used, the dry method with direct current must be employed. All transverse welds must be magnetized by the "prod" (Circular Magnetization) method. Longitudinal welds may be magnetized by either circular or longitudinal magnetization. Proposed weld inspection method must be included with the submittal information package for review.

## PAINTING

9. (a) Oil and Grease Removal. All metal surfaces must be washed with an alkaline detergent to remove oils and grease.
- (b) Metal Cleaning. All exterior metal surfaces must be cleaned by blasting with a combination of shot and grit to remove all dirt, mill scale, rust, corrosion, oxides and foreign matter and provide a "near white" surface in accordance with SSPC-SP10. Included in this process, the pretreatment process and the painting process must be the interior base section of the mast to a minimum height of 12".
- (c) Chemical Pretreatment. The cleaned metal surfaces must then be treated with a hot, pressurized iron phosphate wash and must be dried by convection heat.
- (d) Exterior Coat. A thermosetting, weathering, Polyester powder coat must be applied electrostatically to all cleaned and treated surfaces to a uniform 8 mil thickness in a one coat application. This powder coat must be cured in a

convection oven at a minimum temperature of 400°F to form a high molecular weight fusion bonded finish.

- (e) Alternate Methods. Alternate powder coat methods may be reviewed and tested on a case by case basis. However, no coating method will be accepted unless the Commissioner judges such alternate to be equal to the coating herein specified.
- (f) Interior Coat. The interior metal surfaces must be powder coated with a thermoplastic hydrocarbon resin containing corrosion inhibitors. The resin must be formulated for full application over untreated metal surfaces. The resin must be applied at a temperature of approximately 200°F to a minimum thickness of 3 mils. The interior thermoplastic coat must overlap the interior, thermosetting base coat by approximately 6". Alternate interior coatings may be used subject to prior approval of the Commissioner.
- (g) Durability. Both the exterior and interior coats must be capable of passing 1,000 hours of salt spray exposure per ASTM B117 in a 5% NaCl (by weight) solution at 95°F and 95% relative humidity without blistering. Before test, the panel must be scribed with an "X" down to bare metal.
- (h) Coating Measurement. Measurement of coating thickness must be done in accordance with SSPC-Pa 2-73T, "Measurement of Dry Paint Thickness with Magnetic Gauges," except that the lowest "single spot measurement" in an area of two square inches must be not less than 7.0 mils.
- (i) Color. Color must be gloss black unless noted otherwise in the order. A 4" square color chip sample must be submitted for approval prior to fabrication. The chip sample must be of the same material as the pole mast, and must include the manufacturer's name and the manufacturer's color name as well. The sample must also include any other information required to purchase the same color for the mast arm(s), flower baskets, and the cast aluminum finial and split pedestal base.

## **STRUCTURAL REQUIREMENTS**

10. The pole must be manufactured in accordance with AASHTO's 1994 version of the "Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals." The shaft and base plate assembly must be designed to meet AASHTO's 1994 criteria for 80 MPH wind loading with a 30% gust factor. The mast must be designed to support twin gateway mast arms with twin gateway luminaires of not less than 65 pounds each and having an effective projected area (EPA) of not less than 1.70 square feet each with twin gateway luminaire fitters of not less than 50 pounds each and having an EPA of not less than 0.73 square feet each. In addition the mast must be able

to support twin banners 6 feet high by 1.5 feet wide each; and twin flower baskets weighing 75 pounds each and having an EPA of not less than 3.0 square feet each.

### **TESTING**

11. (a) Testing. Structural testing must be conducted on 5% of the manufacturer's production masts for each order in which the quantity of masts is 20 or more. The testing must include coupon tests, load tests, and weld tests. All testing must be certified by the manufacturer.
- (b) The selection of pole masts must be a random selection from the entire completed lot of pole masts required for the Contract. Selections from partial lots will not be allowed.
- (c) Coupon tests as outlined in ASTM A53 and A 595, A588, or A606.
- (d) Load tests for masts. With base rigidly anchored, a test load of 1500 pounds must be applied at a point approximately two feet (2'-0") from the free end. The load must be applied at right angles to the center line of the mast and in the same vertical plane. The deflection must not be greater than 30". Within one (1) minute after the test load is released, measurement must be made of the set taken by the mast. This set must not be greater than 2.5". The deflection measurement device must be reset to zero and the test load must be reapplied. The deflection must not change from the deflection noted in the first test by more than  $\pm 5\%$ . No measurable set must be noted within one (1) minute after test load is released. The mast must then be checked to insure that it is still securely fastened, that it is plumb, and that no cracks have developed in either the mast or base plate.
- (e) Load tests for masts arm supports. With gateway mast arms rigidly anchored, a test load of 300 pounds must be applied to each mast arm at a point approximately seven feet (7'-0") from the pole mast. The load must be applied at right angles to the center line of the mast arm and in the same vertical plane. Each mast arm support must then be checked to insure that it is still securely fastened and that no cracks have developed in either mast arm support bracket or the weld.
- (f) Load tests for flower basket rosettes. With base rigidly anchored, a test load of 150 pounds must be applied to each rosette ring. The load must be applied at right angles to the center line of the mast and in the same vertical plane. Each rosette must then be checked to insure that it is still securely fastened and that no cracks have developed in either the ring, rosette, or rosette weld.
- (g) Weld tests as described in the WELDING Section of this Specification.

## **PACKAGING**

12. (a) General. The poles must be carefully inspected at the factory prior to shipment to assure that the poles are complete and free of defects. When poles are stacked together, they must be supported with suitable spacers or must otherwise be protected from dents and other potential shipping damage. The spacing and protective materials must be suitable for and usable in the storage of the poles. All pole hardware must be packaged in a clear container and labeled. Castings and parts must be packaged in clearly labeled boxes. Parts hardware must be packaged in clear containers, properly labeled.
- (b) Pole Packaging. The poles must be shipped in bundles weighing a maximum of 5,000 pounds. Each pole must be individually wrapped and protected so that it can be bundled and unbundled without damage to the pole or its finish. Each pole wrapping must be labeled using permanent ink in two inch letters identifying the pole type, height, and gauge. Specific instructions must be securely attached to each bundle indicating the proper methods of storage. In addition, each bundle must contain specific instructions on unbundling and erection of poles. Instructions must be printed on a fibre based paper with a permanent ink so that instructions will be completely legible after weathering outdoors for a minimum of 5 years.
- (c) Pole Bundles. The bundles must consist of poles laid base to top to form an approximately rectangular cylinder. Materials such as lumber (2" x 4" min.) non-marring banding, and other appropriate bundling materials must be used to make a rigid, long lasting bundle capable of being handled, shipped and stored without shifting of contents or breaking. Bundling procedure will be subject to approval. Any bundles, in which either poles or packaging is received broken, damaged or with contents shifted, will not be accepted and it will be the responsibility of the supplier to return the bundle to its original destination at no cost to the City of Chicago. The bundles should be capable of being stacked two high without breaking, or shifting of the contents. Each bundle must be capable of being lifted by a fork lift truck or crane and the bundles must be shipped on a flat bed truck to facilitate unloading.
- (d) Pole Hardware. Any appurtenant devices and hardware not attached to the pole must be carefully wrapped and securely attached to each bundle. Payment will be withheld for any units provided without the appropriate appurtenant devices and hardware. Cracked, broken, chipped or damaged units will also be considered as incomplete quantities as regards payment.
- (e) Castings and Parts. Castings and parts, such as the finial, banner brackets, etcetera, must be individually wrapped and packaged in boxes. Hardware must be packaged in a clear package, clearly labeled. The label must identify

each piece of hardware and the quantity of each, as well as what part the hardware is intended for. An individual box must contain like part types and the related hardware ( i.e. the upper banner bracelet halves and hardware must be boxed separately from the lower banner bracelet halves and hardware). Each box must be labeled with 3/8" letters identifying the manufacturer, the casting or part numbers, the part name, the date of manufacture, the City contract number, and the City Commodity code.

**ELECTRICAL SPECIFICATION 1513  
DIVISION OF ELECTRICAL OPERATIONS  
DEPARTMENT OF TRANSPORTATION  
CITY OF CHICAGO  
REVISED JULY 17, 2006**

**SPLIT PEDESTAL BASE: FOR CHICAGO 2000 LIGHT POLE**

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**SUBJECT**

1. This specification states the requirements for a split pedestal base (Clamshell) for installation on a 10" x 32'-6" fluted, tapered steel Chicago 2000 light pole. This specification will address the requirements for a split aluminum base with aluminum doors, a split fiberglass base without doors, and non-metallic doors only.

**SUBMITTAL INFORMATION REQUIRED**

2. (a) Manufacturer's Certification of Compliance. The submittal information must include a written certification of compliance with this Specification from the Manufacturer.
- (b) Manufacturer's Shop Drawings. Scaled manufacturer's shop drawings showing actual split pedestal base and/or door dimensions, details, and welds. Shop drawings must be original engineering drawings created by the manufacturer; photocopied or scanned copies of the Standard Drawings will not be accepted, and will be rejected as an incomplete submittal. These drawings will also be submitted in electronic format in Microstation 95, if requested by the City; failure to provide drawings in this format will be cause for rejecting the submittal.

Dimensions must include but will not be limited to: base height, width, pattern, and fluting; access door opening length, width, plan location, and height above base bottom.

Details must include scaled and dimensioned plan views, front elevations, side elevations, and section views as required for components including but not limited to: base, access doors and door attachments.

Welds must include but will not be limited to: locations, sizes, and types of welds in accordance with the WELDING Section of this Specification.

- (c) Manufacturer's catalog cut sheets showing split pedestal base and/or door designation(s), characteristics, and catalog number(s).

- (d) Manufacturer's specifications including fabricating materials and processes.
- (e) Manufacturer's written installation instructions and maintenance manuals including recommendations and/or procedures for storage, assembly, orientation, installation, and numeric tolerances for torquing the access door bolts to the split pedestal base.
- (f) Sample. If requested by the Chief Procurement Officer, one completely assembled split pedestal base and/or doors with hardware and all components, of the manufacture intended to be furnished, will be submitted for review within fifteen (15) business days from the receipt of notice. The sample base must be coordinated with an existing Chicago 2000 light pole for accuracy of fit. The sample door must be coordinated with an existing base for accuracy of fit.
- (g) Warranty. The manufacturer must warrant the performance and construction of these split pedestal bases and/or doors to meet the requirements of this Specification and must warrant all parts, components, and appurtenances against defects due to design, workmanship, or material developing within a period of three years after the bases and/or doors have been delivered. This will be interpreted particularly to mean structural or mechanical failure of any component, failure of any weld, or failure of any portion of the painting system. The warranty must be furnished in writing guaranteeing replacement, including shipment, free of charge to this Contract and to the City, of any split pedestal base or door assembly, or any component parts thereof, which, as determined by the Commissioner, would develop aforesaid failures. The warranty must accompany submittal information. Any split pedestal base, door, or part thereof not performing as required or developing defects within this period, must be replaced by the manufacturer at no cost to the City. The Commissioner will be the sole judge in determining which replacements are to be made and the Commissioner's decision will be final. Any cost for the warranty as specified will be incidental to this contract.

### GENERAL

- 3. (a) Products. Split pedestal bases and/or doors and component equipment must be the products of established manufacturers, and must be suitable for the service required. Split pedestal bases or component equipment items which are proposed as similar or identical must be the products of a single manufacturer. Aluminum Bases and/or doors may be manufactured by Union Metal Corporation, Holophane Corporation, or an approved equal. Fiberglass bases or doors may be manufactured by Shakespeare Company, W.J. Whatley, Incorporated, or an approved equal.



- (b) Specifications. The split pedestal bases and/or doors must conform in detail to the requirements herein stated, and to the Specifications and Methods of Test of the American Society for Testing and Materials cited by ASTM Designation Number, of which the most recently published revision will govern.
- (c) Drawings. The drawings mentioned herein are drawings of the Department of Transportation being an integral part of this specification cooperating to state the necessary requirements.
- (d) Design. The base and/or doors must conform in design and dimensions to corresponding Standard Drawings 930 and 930A.
- (e) Approval. Whenever “approval” and “approved” are used in this specification they will mean a written approval by the Commissioner to be secured prior to proceeding with manufacture of these split pedestal bases and/or doors.
- (f) Commissioner’s Review. The Commissioner will be the sole judge in determining the submitted split pedestal bases and/or doors compliance with this Specification. The Commissioner’s decision will be final.

**OPTION 1. ALUMINUM BASE WITH DOORS**

- 4. (a) Each split pedestal base must be cast aluminum conforming to ASTM B26/B26M, Grade 356. Each base must be certified as pure #356 alloy, free of foreign materials or cosmetic fillers.
- (b) The split pedestal base must conform in detail and dimensions to Standard Drawings 930 and 930A.
- (c) All castings must be done in a workmanlike manner which will result in uniform casting without warping or mold shifting. Castings must have smooth external surfaces free from protuberances, dents, cracks or other imperfections marring their appearance. Welding or plugging of casting defects is prohibited. All castings and parts must be permanently labeled for easy identification.
- (d) The two halves of the split base casting must be perfectly matched to each other and to the poles such that when they are attached to the mast, the base and mast assembly must appear as a one piece unit. No tolerance greater than 0.125" will be accepted.

- (e) The split pedestal base attachment to the mast must provide the structural integrity to ensure the base will not vibrate, twist or bounce during the sidewalk movement experienced when an elevated train or heavily loaded vehicle passes. Where set screws are used to secure the split pedestal base to the mast, a minimum of 3/8" thickness of metal must be provided where the set screws are inserted to minimize the possibility of stripping the threads when the set screws are tightened into place. The set screws will be 3/8"-16 steel allen head screws and a minimum of four set screws must be provided, two per base half. The set screws must be black.
- (f) The split pedestal base must provide two entry doors, opposite each other, whose appearance and fit are in consonance with the mast and base design both aesthetically and structurally. The doors must be of the same material as the base.
  - 1. The doors must be securely fastened in place with four 1/4"-20 hex head stainless steel screws which will thread into a rigid door frame. The door frame must be drilled and tapped. The door must be drilled only.
  - 2. All doors must be interchangeable with any other base, including bases of like design which have already been installed and accepted by the City. Bases whose doors are matched to a single base will be rejected.
  - 3. The doors must be positioned in the base such that the base can be attached to the mast with the base doors in perfect alignment with the mast handhole door.
  - 4. The doors must provide ample room for a worker to reach into the base with hand tools, open the mast handhole door, splice wires, change connectors and read the identification tag on the mast.
- (g) Interchangeability. Each member including the access doors in the base and all component equipment must be mutually interchangeable for assembly, so that no work will be required to make any member fit properly in the place of any other similar member of any other similar base.
- (h) Fabrication. It is preferred that the split pedestal base is cast as a single unit and sawcut into identical halves.
- (i) Standards. Each split pedestal base must be made in conformity with the proper interpretation of the applicable ASTM Standards, and as indicated on the drawings.

- (j) Certification. All split pedestal bases must be made by personnel who are certified for that type of work. Work must be performed in accordance with NIST Certification.
- (k) Finishing. Finishing work must be performed at the manufacturer's facility. All work must be inspected for shop finish, soundness and appearance by the Commissioner.

## **OPTION 2. FIBERGLASS BASE WITHOUT DOORS**

- 5. (a) Each pedestal base must be formed of a fiberglass composite consisting of a polyester resin and containing a minimum of 65% fiberglass by weight. The resin must contain no clay fibers. The composite must be UV and weather resistant. Alternate materials may be considered. Each base half must be permanently marked on the inside identifying it as a base for a pedestrian pole.
- (b) The split pedestal base must conform in detail and dimensions to Standard Drawings 930 and 930A.
- (c) The two halves of the clamshell must be identical to each other. They must be perfectly matched and when installed there must be no more than a 0.125 inch gap between the inside top of the assembled base and the outside surface of the mast.
- (d) Set screws must be used at the top of the base to attach the base to the mast, giving the base some rigidity and allowing the base to be positioned level. There must be four set screws (two in each half) evenly spaced at 90 degrees. The set screws will be 5/16"-18 allen head steel screws. The set screws must be black.
- (e) The color of the base must be gloss black and must match the color of existing and proposed Chicago 2000 poles. The resin must contain color pigment throughout. The pigment must be even throughout the thickness of the base. A finish coat of urethane enamel must be applied to the surface of the base to a minimum dry thickness of 1.5 mils. The resin color must match the enamel color. A paint sample on fiberglass must be submitted for approval prior to production. The paint manufacturer's name and any information necessary to acquire the same color for the pole must be provided. The contractor must supply one quart of touch-up paint for every 50 bases ordered.
- (f) The texture of the fiberglass base exterior must be equal to that of the aluminum cast base. Acceptance of the aesthetic appearance of the base will be by the Commissioner.

- (g) The two halves of the clamshell must be affixed by means of screws as shown on Standard Drawing 930A. The screws must fit so that the halves of the base are drawn together so that the edges of the base fit snug against each other. Threaded stainless steel inserts in the base must be used to affix the screws. The screws must be flush with the surface of the base and must not detract from the appearance of the base. Other methods of attachment may be considered. Any method of attachment must be approved by the Commissioner.

### **OPTION 3. NON-METALLIC DOORS**

- 6.
  - (a) Each base door must be formed of fiberglass (as described in Section 5.) or from another non-metallic material. The material must be UV and weather resistant. Any material other than fiberglass must be approved by the Commissioner. Each door must have a permanent marking on the back describing the part as a door for a Chicago 2000 light pole base.
  - (b) The door must conform to the detail and dimensions of Standard drawings 930 and 930A. All doors must be interchangeable in both existing and proposed Chicago 2000 light poles bases.
  - (c) The color of the door must be gloss black and must match the color of existing and proposed Chicago 2000 light poles and bases. The non-metallic door must be pigmented throughout the material. The pigment must be even throughout the thickness of the door. A finish of urethane enamel must be applied to the door surface to a minimum dry thickness of 1.5 mils. A sample of the door with paint must be submitted for approval prior to production.
  - (d) The door appearance must be of a texture and of a fit that it will appear to be part of the original base. Acceptance of the aesthetic appearance and fit of the door will be by the Commissioner.
  - (e) The doors must be securely fastened in place with four 1/4"-20 hex head stainless steel screws which will thread into the base frame. The door will be properly drilled to accept the screws. The holes must not be tapped. The screws must have a stainless steel core within a threaded nylon body. Screws must be supplied with the doors.

### **OPTION 4. ALUMINUM BASE WITH NON-METALLIC DOORS**

- 7. Each aluminum base must meet the requirements of Option 1, with the exception of the doors. Each door must be non-metallic meeting the requirements of Option 3.

### **WELDING FOR ALUMINUM BASES**

8. (a) General. Where welds are required and approved, each welded joint must be thoroughly cleaned of flux and spatter, and must be made in conformity with the standards of the American Welding Society. Each bidder must submit with his proposal a drawing showing the sizes and types of welds, in conformity with the proper interpretation of the standard welding symbols of the American Welding Society. The bidder's proposal must state the type of electrode and must describe the welding methods proposed for use in fabricating the base.
- (b) Certifications. Welders must have proper certification for the welding operations required. Welding by non-certified personnel will not be allowed. Certifications for welding personnel must be included with the submittal information package for review.
- (c) Testing. All welds of 5% of the bases in every lot must be inspected for penetration and soundness of the welds by the magnetic particle inspection method or by radiography. Acceptance or rejection must be governed by the same conditions as in the testing section. If the magnetic inspection process is used, the dry method with direct current must be employed. All transverse welds must be magnetized by the "prod" (Circular Magnetization) method. Proposed weld inspection method must be included with the submittal information package for review.

### **PAINTING OF ALUMINUM BASES**

9. (a) Oil and Grease Removal. All metal surfaces must be washed with an alkaline detergent to remove oils and grease.
- (b) Chemical Pretreatment. The cleaned metal surfaces must then be treated with a hot, pressurized phosphate wash and must be dried by convection heat.
- (c) Exterior and Interior Coat. A thermosetting, weathering, Polyester powder coat must be applied electrostatically to all cleaned and treated surfaces to a uniform eight mil thickness in a one coat application. This powder coat must be cured in a convection oven at a minimum temperature of 400°F to form a high molecular weight fusion bonded finish.
- (d) Alternate Methods. Alternate powder coat methods may be reviewed and tested on a case by case basis. However, no coating method will be accepted unless the Commissioner judges such alternate to be equal to the coating herein specified.
- (e) Durability. Both the exterior and interior coats must be capable of passing 1,000 hours of salt spray exposure as per ASTM B117 in a 5% Na Cl (by

weight) solution at 95°F and 95% relative humidity without blistering. Before test, the panel must be scribed with an “X” down to bare metal.

- (f) Coating Measurement. Measurement of coating thickness must be done in accordance with SSPC-Pa 2-73T, “Measurement of Dry Paint Thickness with Magnetic Gauges,” except that the lowest “single spot measurement” in an area of two square inches must be not less than 7.0 mils.
- (g) Color. Color must be gloss black unless noted otherwise in the order. A 4" square color chip sample must be submitted for approval prior to fabrication. The chip sample must be of the same material as the split pedestal base, and must include the manufacturer’s name and the manufacturer’s color name as well. The sample must also include any other information required to purchase the same color for the pole, mast arm(s), and the cast aluminum finial.
- (h) Field Touch-up. Any minor damage to the split pedestal base surfaces must be touched-up in a professional manner as recommended by the paint manufacturer, with protective coating solutions as provided by the split pedestal base manufacturer at no additional cost to the City. Any major damage to the split pedestal base or components surfaces must be repaired at the manufacturer’s place of business, or must be replaced as directed by the Commissioner. The Commissioner will be the sole judge of the extent of any such damage and the adequacy of repair. The Contractor must supply a field touch-up kit for every 20 bases or fraction thereof. Each kit must consist of a highly legible instruction sheet, one gallon of the recommended touch-up paint and all other materials required to touch-up 20 bases.

### **FABRICATION REQUIREMENTS FOR ALUMINUM BASES**

- 10. (a) Foundry Qualifications. The manufacturer must demonstrate that the foundry proposed to fabricate the split pedestal bases must meet or exceed the specified qualification requirements under the following set of conditions. The manufacturer must provide foundry qualifications using published capacity data as part of the submittal package, and must include the actual molding and core equipment proposed for use in fabricating the split pedestal bases for the specific order. The responsible material proposal must contain verification of production capacity including the number of shifts per day running in the plant. Submittal information must include the foundry’s written Quality Assurance Plan which demonstrates achievement of the latest industry technology in testing requirements. Submittal information must demonstrate that the work performed by the foundry will be done in accordance with both ASTM Standards and NIST Certification. Further, the foundry must be a domestic facility, unless proven to be directly owned and operated by the manufacturer.

- (b) Verification of Data. All foundry qualifications must be based on the parameters listed above. This data must be verified by an independent witness or representative as approved by the Commissioner. All verification must be performed on site at the foundry. The cost of verification must be included in this item. Should the foundry be deemed incapable of meeting this Specification after verification, the Contractor must provide an alternate foundry as approved by and at no additional costs to the Commissioner. The foundry qualifications and verification process must be repeated in its entirety.

## **TESTING**

- 11. (a) Testing. Testing must be conducted on five percent of the manufacturer's production bases or doors for each order in which the quantity is 20 or more. All testing must be certified by the manufacturer, or by an independent lab.
- (b) The selection of bases or doors must be a random selection from the entire completed lot ordered.
- (c) Requirements for Aluminum Bases. All completed aluminum bases must be available for testing. The following tests must be included in the testing procedure:
  - 1. Bar tests as outlined in ASTM B26.
  - 2. Weld tests as described in the WELDING Section of this Specification.
- (d) Requirements for Fiberglass Bases and Non-Metallic Doors. All completed fiberglass bases and non-metallic doors must be available for testing. The manufacturer must provide evidence that the bases and doors are structurally sound and are able to withstand the normal abuse of salt spray, freeze-thaw cycles, and exposure to moisture. The bases and doors must be impact resistant and must be resistant to UV damage.
- (e) The summary report and the test results must be certified by the independent test laboratory or the manufacturer's laboratory, as applicable, and must be sent directly to the Commissioner before the bases and/or doors are shipped.
- (f) Acceptance of Equipment. Tests must be made on 5% of all bases or doors in the order. If any of the bases or doors fail to meet these specifications, an additional three bases or doors must be tested for each failed unit. Should any of these additional units fail to meet these specifications, the entire lot will be subject to rejection. The Commissioner will then decide, based on the nature of the failure, whether the entire lot will be rejected outright or whether the manufacturer may subject each base or door in the order to

testing. If each base or door in the order is tested, those units which fulfill the specified requirements may be accepted at the discretion of the Commissioner.

### **SHIPMENT AND DELIVERY**

12. (a) General. The split pedestal bases and/or doors must be carefully inspected at the factory prior to shipment to assure that the bases and/or doors are complete and free of defects. When bases or doors are stacked together, they must be supported with suitable spacers or must otherwise be protected from dents and other potential shipping damage. The spacing and protective materials must be suitable for and usable in the storage of the bases and doors. All hardware must be packaged in a clear container and labeled as to size, quantity, and part association.
- (b) Packaging. The split pedestal bases must be shipped on pallets with at least six units per pallet. Each base must be individually wrapped and protected so that it can be bundled and unbundled without damage to the base or its finish. Each base wrapping must be labeled to identify the base. Specific instructions must be securely attached to each pallet indicating the proper methods of storage. In addition, each pallet must contain specific instructions on the installation of the split pedestal bases. Instructions must be printed on a fibre based paper with a permanent ink so that instructions will be completely legible after weathering outdoors for a minimum of 5 years. Doors must be individually wrapped and packaged in cartons. The cartons must be labeled in 3/8 inch high lettering indicating the type of door (i.e. FIBERGLASS DOOR FOR CHICAGO 2000 POLE BASE), the part number, the manufacturer, the date of manufacture, and the contract number.
- (c) Appurtenant Devices and Hardware. Any appurtenant devices and hardware not attached to the bases must be carefully wrapped, labeled, and securely attached to each pallet. Hardware for doors must be packaged in a clear bag with a label indicating the type of hardware, the quantity of hardware, and the associated door type. Hardware for doors must be in the same carton as the doors. Payment will be withheld for any units provided without the appropriate appurtenant devices and hardware, or for any missing or improper packaging or labeling. Cracked, broken, chipped or damaged units will also be considered as incomplete quantities as regards payment.
- (d) Touch-up Paint. Touch-up paint and appurtenant materials must be packaged in units sufficient for the number of bases on each pallet. These units will be securely attached to each pallet.
- (e) Delivery. Split pedestal bases and/or doors will be delivered to the Division of Electrical Operations storage yard at 4101 South Cicero in Chicago, or as



indicated on the order. Split pedestal base information submitted for approval will include any recommendations of the Manufacturer for storage.

**ELECTRICAL SPECIFICATION 1514  
DIVISION OF ENGINEERING  
DEPARTMENT OF TRANSPORTATION  
CITY OF CHICAGO  
REVISED MARCH 7, 2014**

**CHICAGO 2000 MAST ARM: 8-FOOT, STEEL**

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**SUBJECT**

1. This specification covers the requirements for an 8-foot straight steel mast arm and decorative scroll for supporting a teardrop street light luminaire on a Chicago 2000 light pole or other pole fitted for a simplex attachment.

**SUBMITTAL INFORMATION REQUIRED**

2. (a) Manufacturer's Shop Drawings. Scaled manufacturer's shop drawings showing actual mast arm and scroll dimensions, details, and welds. Shop drawings must be original engineering drawings created by the manufacturer; photocopied or scanned copies of the Standard Drawings will not be accepted, and will be rejected as an incomplete submittal. These drawings must also be submitted in electronic format in Microstation 95, if requested by the City; failure to provide drawings in this format will be cause for rejecting the submittal.

Dimensions must include but will not be limited to: mast arm length, diameter, and ornamentation; attachment plate length, width, thickness, and bolt circle; scroll length, cross section dimensions, and shape.

Details must include scaled and dimensioned plan views, front elevations, side elevations, and section views as required for components including but not limited to: attachment plates; ornamentation; and arm attachments.

Welds must include but will not be limited to: locations, sizes, and types of welds in accordance with the WELDING Section of this specification.

- (b) Manufacturer's catalog cut sheets showing mast arm and scroll designation(s), characteristics, and catalog number(s).
- (c) Manufacturer's specifications including fabricating materials and processes.

- (d) Manufacturer's written installation instructions and maintenance manuals including recommendations and/or procedures for storage, assembly, orientation, installation, component access and wiring, and numeric tolerances for torquing the attachment plate bolts to the light pole mast arm support plate.
- (e) Sample. If requested by the Chief Procurement Officer, one completely assembled gateway mast arm with scroll and integral components, of the manufacture intended to be furnished, must be submitted for review within fifteen (15) business days from receipt of notice.
- (f) Warranty. The manufacturer must warrant the performance and construction of these mast arms and scrolls to meet the requirements of this specification and must warrant all parts, components, and appurtenances against defects due to design, workmanship, or material developing within a period of five years after the mast arms and scrolls have been delivered. This will be interpreted particularly to mean structural or mechanical failure of any component, failure of any weld, or failure of any portion of the painting system. The warranty must be furnished in writing guaranteeing replacement, including shipment, free of charge to this Contract and to the City, of any mast arm assembly, or any component parts thereof, which, as determined by the Commissioner, would develop aforesaid failures. The warranty must accompany submittal information. Any mast arm or part thereof not performing as required or developing defects within this period, must be replaced by the manufacturer at no cost to the City. The Commissioner will be the sole judge in determining which replacements are to be made and the Commissioner's decision will be final. Any cost for the warranty as specified will be incidental to this contract.

### GENERAL

- 3. (a) Products. Mast arms and component equipment must be the products of established manufacturers, and must be suitable for the service required. Mast arm or component equipment items which are proposed as similar or identical must be the products of a single manufacturer. Mast arms must be manufactured by Union Metal Corporation, Valmont Industries Incorporated, Millerbernd Manufacturing Company, or an approved equal.
- (b) Specifications. The mast arm and scroll must conform in detail to the requirements herein stated and to the requirements of the following organizations as cited herein:

American Association of State Highway and Transportation Officials (AASHTO)

American Society for Testing and Materials (ASTM)

American Welding Society (AWS)  
Society for Protective Coatings (SSPC)

- (c) Drawings. The drawings mentioned herein are drawings of the Department of Transportation being an integral part of this specification cooperating to state the necessary requirements.
- (d) Design. The mast arm and scroll must conform in design and dimensions to Standard Drawings 930 and 930C.
- (e) Approval. Whenever “approval” and “approved” are used in this specification they will mean a written approval by the Commissioner to be secured prior to proceeding with manufacture of these mast arms and scrolls.
- (f) Commissioner’s Review. The Commissioner will be the sole judge in determining the submitted mast arms compliance with this specification. The Commissioner’s decision will be final.

#### **ARM DESIGN**

- 4. (a) 8-Foot Mast Arm. Each 8-foot mast arm must be fabricated from a continuous, single piece, two (2) inch "extra strong" steel pipe conforming to the requirements of ASTM A53, Table X2. It must conform in detail with the mast arm shown on Standard Drawings 930 and 930C.
- (b) Mast Arm Attachment. The mast arm attachment to be welded to all mast arms must conform to Standard Drawing 724. It must be a steel forging per ASTM A668, Class D, or cast steel conforming to the requirements for Grade 65-35 cast steel of ASTM A27, or it can be fabricated from weathering steel plate. It must be so designed that it may be fitted over the mast arm supports on the pole and be held by the mast arm supports in proper position without other support. Provision must be made for fastening the attachment to each mast arm support by two special screws and washers as noted in the HARDWARE Section of this Specification.
- (c) Entryway for Wires. A drilled opening lined with a neoprene grommet having inserted therein a neoprene plug must be provided on the underside of the upper member of all arms approximately three inches from the point of attachment. The clear opening must not be less than 5/8 inch in diameter. Its design must be submitted for approval by the Commissioner or his authorized representative.
- (d) Mast Arm Members. All mast arm members must conform with the type of steel required for the arm specified. The members must be continuous lengths of pipe and bar cut to the proper size to fabricate the mast arm lengths

requested. No butt welded, swaged and welded or other pieced together configurations of pipe and bar lengths will be accepted. The outer and inner surfaces of the pipes and bars must be smooth and even without protrusions, nicks, holes or other imperfections.

- (e) Interchangeability. Each member including the arm and all component equipment must be mutually interchangeable for assembly, so that no work will be required to make any member fit properly in the place of any other similar member of any other similar mast arm.

### **SCROLL DESIGN**

- 5. (a) Scroll. The scroll must be fabricated out of 3/4 inch thick by 2-1/2 inch wide bar stock meeting the requirements of ASTM A36. The scroll must be formed as shown on Standard Drawing 930.
- (b) Clamps. The scroll must be attached to the mast arm and pole by clamps, as shown on Standard Drawing 930. The clamps must meet the requirements of ASTM A307 galvanized to ASTM A153. All connecting hardware must meet the requirements of the HARDWARE Section of this Specification.
- (c) Identification. The scroll and clamps must be permanently labeled for identification purposes. The identification must not affect the aesthetics of the scroll.

### **WELDING**

- 6. (a) General. Where welds are required and approved, each welded joint must be thoroughly cleaned of flux and spatter, and must be made in conformity with the standards of the American Welding Society. Each bidder must submit with his proposal a drawing showing the sizes and types of welds, in conformity with the proper interpretation of the standard welding symbols of the American Welding Society. The bidder's proposal must state the type of electrode and must describe the welding methods proposed for use in fabricating the mast arm.
- (b) Certifications. Welders must have proper certification for the welding operations required. Welding by non-certified personnel will not be allowed. Certifications for welding personnel must be included with the submittal information package for review.
- (c) Testing. All welds of 5% of the mast arms and scrolls in every lot must be inspected for penetration and soundness of the welds by the magnetic particle inspection method or by radiography. Acceptance or rejection will be governed by the same conditions as in the TESTING Section. If the magnetic

inspection process is used, the dry method with direct current must be employed. All transverse welds must be magnetized by the "prod" (Circular Magnetization) method. Proposed weld inspection method must be included with the submittal information package for review.

### **HARDWARE**

7. Two (2) special 1/2" - 13 NC x 1-1/2" long stainless steel cap screws, and two (2) stainless steel flat washers, must be provided for each mast arm attachment. All other hardware necessary to complete the assembly of the mast arm and scroll must be furnished. All hardware must be stainless steel, or equal corrosion-resistant metal, subject to approval.

### **PAINTING**

8. (a) Oil and Grease Removal. All metal surfaces must be washed with an alkaline detergent to remove any oils or grease.
- (b) Metal Cleaning. All exterior metal surfaces must be cleaned by blasting with a combination of shot and grit to remove all dirt, mill scale, rust, corrosion, oxides and foreign matter and provide a "near white" surface in accordance with SSPC-SP10.
- (c) Chemical Pretreatment. The cleaned metal surfaces must be treated with a hot, pressurized iron phosphate wash and must be dried by convection heat.
- (d) Exterior Coat. A Thermosetting, polyester powder coat must be applied electrostatically to all cleaned and treated surfaces to a uniform eight (8) mil thickness in a one coat application. This powder coat must be cured in a convection oven at a minimum temperature of 400°F to form a high molecular weight fusion bonded finish.
- (e) Alternate Methods. Alternate powder coat methods may be reviewed and tested on a case by case basis. However, no coating method will be accepted unless the Commissioner judges such alternate to be equal to the coating herein specified.
- (f) Interior Coat. The interior metal surfaces must be powder coated with a thermoplastic hydrocarbon resin containing corrosion inhibitors. The resin must be formulated for application over untreated metal surfaces. The resin must be applied at a temperature of approximately 200°F to a minimum thickness of three (3) mils. The interior thermoplastic coat must overlap the interior, thermosetting base coat by approximately one (1) inch. Alternate interior coatings may be used subject to prior approval of the Commissioner.

- (g) Durability. Both the exterior and interior coats must be capable of passing 1,000 hours of salt spray exposure as per ASTM B117 in a 5% NaCl solution at 95°F and 95% relative humidity without blistering.
- (h) Coating Measurement. Measurement of coating thickness must be done in accordance with SSPC-PA 2-73T, "Measurement of Dry Paint Thickness with Magnetic Gauges", except that the lowest "Single spot measurement" in an area of two square inches must be not less than 7.0 mils.
- (i) Color. Color must be gloss black unless noted otherwise in the order. A 4" square color chip sample must be submitted for approval prior to fabrication. The chip sample must be of the same material as the mast arm, and must include the manufacturer's name and the manufacturer's color name as well. The sample must also include any other information required to purchase the same color for the pole mast and the cast aluminum finial and split pedestal base.
- (j) Field Touch-up. Any minor damage to the mast arm surfaces must be touched-up in a professional manner as recommended by the paint manufacturer, with protective coating solutions as provided by the mast arm manufacturer at no additional cost to the City. Any major damage to the mast arm shaft or component surfaces must be repaired at the manufacturer's place of business, or must be replaced as directed by the Commissioner. The Commissioner will be the sole judge of the extent of any such damage and the adequacy of repair. The Contractor must supply a field touch-up kit for every 20 mast arms or fraction thereof. Each kit must consist of a highly legible instruction sheet, one gallon of the recommended touch-up paint and all other materials required to touch-up 20 mast arms and scrolls.

### **STRUCTURAL REQUIREMENTS**

- 9. The arm must be manufactured in accordance with AASHTO's 1994 "Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals." The mast arm and attachment plate assembly must be designed to meet AASHTO's 1994 criteria for 80 MPH wind loading with a 30% gust factor, for gateway luminaires of not less than 65 pounds each and having an effective projected area (EPA) of not less than 1.70 square feet each; and twin gateway luminaire fitters of not less than 50 pounds each and having an EPA of not less than 3.5 square feet each.

## **TESTING**

10. (a) Testing. Structural testing must be conducted on 5% of the manufacturer's production mast arms and scrolls for each order in which the quantity is 20 or more. The testing must include coupon tests, load tests, and weld tests. All testing must be certified by the manufacturer, or an independent lab.
- (c) The selection of mast arms and scrolls must be a random selection from the entire completed lot required in the order.
- (d) Coupon tests for the arm and the scroll as outlined in ASTM A53, A 668, A27, or A36.
- (e) Load tests for mast arms. The scroll must not be considered as part of the load test. With mast arm rigidly anchored, a test load of 300 pounds must be applied at a point approximately one foot (1'-0") from the free end. The load must be applied at right angles to the center line of the mast arm and in the same vertical plane. The deflection must not be greater than 3". Within one (1) minute after the test load is released, measurement must be made of the set taken by the mast arm. This set must not be greater than 0.5". The deflection measurement device must be reset to zero and the test load must be reapplied. The deflection must not change from the deflection noted in the first test by more than  $\pm 5\%$ . No measurable set must be noted within one (1) minute after test load is released. The mast arm must then be checked to insure that it is still securely fastened, that it is plumb, and that no cracks have developed in either the mast arm or attachment plate.
- (f) Weld tests for both the arm and the scroll as described in the WELDING Section of this Specification.
- (g) Acceptance of Equipment. Tests must be made on 5% of all mast arms and scrolls in the order. If any of the mast arms or scrolls fail to meet these specifications, an additional three mast arms or scrolls must be tested for each failed unit. Should any of these additional units fail to meet these specifications, the entire lot will be subject to rejection. The Commissioner will then decide, based on the nature of the failure, whether the entire lot will be rejected outright or whether the manufacturer may subject each mast arm or scroll in the order to testing. If each mast arm or scroll in the order is tested, those mast arms or scrolls which fulfill the specified requirements may be accepted at the discretion of the Commissioner.

## **PACKAGING**

11. (a) General. The mast arms and scrolls must be carefully inspected at the factory prior to shipment to assure that the mast arms and scrolls are complete and



free of defects. When mast arms are stacked together, they must be supported with suitable spacers or must otherwise be protected from dents and other potential shipping damage. The spacing and protective materials must be suitable for and usable in the storage of the mast arms. The same requirements apply to the scrolls. All hardware must be packaged in a clear container and labeled.

- (b) Packaging. The mast arms and scrolls must be shipped in bundles weighing a maximum of 1,000 pounds. Mast arms and scrolls must be in separate bundles. Each mast arm or scroll must be individually wrapped and protected so that it can be bundled and unbundled without damage to the unit or its finish. The wrapping must be clearly marked to identify the arms and scrolls. Specific instructions must be securely attached to each bundle indicating the proper methods of storage. In addition, each bundle must contain specific instructions on unbundling and erection of the mast arms or scrolls. Instructions must be printed on a fiber based paper with a permanent ink so that instructions will be completely legible after weathering outdoors for a minimum of 5 years.
- (c) Bundles. The bundles must consist of arms or scrolls laid to form an approximately rectangular cylinder. Arms and scrolls must be packaged in separate bundles. Materials such as lumber (2" x 4" min.), non-marring banding, and other appropriate bundling materials must be used to make a rigid, long lasting bundle capable of being handled, shipped and stored without shifting of contents or breaking. Bundling procedure will be subject to approval. Any bundles, in which either mast arms, scrolls or packaging is received broken, damaged or with contents shifted, will not be accepted and it will be the responsibility of the supplier to return the bundle to its original destination at no cost to the City of Chicago. The bundles should be capable of being stacked two high without breaking, or shifting of the contents. Each bundle must be capable of being lifted by a fork lift truck or crane and the bundles must be shipped on a flat bed truck to facilitate unloading.
- (d) Appurtenant Devices and Hardware. Any appurtenant devices and hardware not attached to the mast arm or scroll must be carefully wrapped and securely attached to each bundle. All device and hardware containers must be clearly labeled as to the contents. Labels must identify the quantity of parts and their relationship to the arms or scrolls. Payment will be withheld for any units provided without the appropriate appurtenant devices and hardware. Cracked, broken, chipped or damaged units will be considered as incomplete quantities as regards payment. Improperly labeled units will also be considered as incomplete.
- (e) Touch-up Paint. Touch-up paint and appurtenant materials must be packaged in units sufficient for twenty 20 mast arms and 20 scrolls. These units will be

securely attached to a sufficient number of bundles to fulfill the touch-up paint requirements stated herein.

**ELECTRICAL SPECIFICATION 1524  
DIVISION OF ENGINEERING  
DEPARTMENT OF TRANSPORTATION  
CITY OF CHICAGO  
REVISED JULY 31, 2006**

**LAMPS: HIGH PRESSURE SODIUM FOR STREET LIGHTING**

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**SUBJECT**

1. This specification states the requirements for high pressure sodium lamps for street lighting service. Lamps must burn in various positions: base up, base down, and horizontal.

**PHYSICAL REQUIREMENTS**

2. The lamps must conform to the physical characteristics of ANSI Standard C78.42-1995 "High-Pressure Sodium Lamps". All bases must be of the screw-shell-type made of brass and meeting ANSI Standard C81.61. Bases will be mogul or medium depending upon the requirements. Bulb material must be lead borosilicate glass. The bulb finish must be clear. The arc tube material must be polycrystalline aluminum oxide.

**ELECTRICAL REQUIREMENTS**

3. The lamp must conform to the electrical characteristics of ANSI Standard C78.42-1995.

**LIGHT OUTPUT**

4. The color temperature of the lamp must be between 1050 and 2100 degrees Kelvin. At half the average rated lamp life, the mean output lumens must not be less than 90% of the initial lumen output.

**TESTING**

5. All lamps must be tested according to the requirements in ANSI Standard C78.42-1995. Because street light lamps operate under harsher conditions than most lamps, the physical structure of these lamps will be required to withstand the vibrations due to weather and traffic conditions expected in the Chicago area.

**INDIVIDUAL LAMP CHARACTERISTICS**

6. High pressure sodium lamps must meet the following:

Wattage	Rated Life (hours)	Initial Lumens	Lamp Voltage
35	16000	2250	52
50	24000	4000	52
70	24000	5800	52
100	24000	9500	55
150	24000	15000	100
200	24000	22000	100
250	24000	27500	100
310	24000	37000	100
400	24000	50000	100
750	16000	110000	120
1000	24000	140000	250

**WARRANTY**

7. The manufacturer will be required to replace, with new rated life lamps, without cost to the City, all lamps failing to operate satisfactorily for the specified period as indicated in the following paragraphs.

Any lamp that fails during the first 500 hours of operation must be replaced with a new, operable, lamp without charge to the City.

After the first 500 hours of operation, based on published lamp mortality tables, any lamp failures in excess of the published figures will require replacement lamps in numbers equal to the excess failures. This will apply for the first three years of the lamp life. All replacements will be at no cost to the City. Replacement lamps must be new.

**PACKAGING**

8. All lamps must have the date of manufacture, either actual or coded, embossed on the lamp base or another suitable location.

All lamps must be individually packaged and packed in properly labeled cartons so as to prevent damage in shipping or storage.

**ELECTRICAL SPECIFICATION 1528**  
**DIVISION OF ENGINEERING**  
**DEPARTMENT OF TRANSPORTATION**  
**CITY OF CHICAGO**  
**REVISED JUNE 6, 2014**

**PRECAST CONCRETE STRUCTURES**

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**SUBJECT**

1. This specification covers the requirements for precast concrete structures to be used for City of Chicago electrical facilities. The structures will include manholes, handholes, and street light pole foundations.

**GENERAL**

2. (a) Specifications. The precast structures must conform in detail to the requirements herein stated and to the specifications and methods of test of the American Society for Testing and Materials cited by ASTM Designation Number of which the most recently published revision will govern.
- (b) Acceptance. Precast structures not conforming to this specification will not be accepted. The Commissioner of Transportation or his representative will be the sole judge in determining if the precast structures meet this specification. The Commissioner's decision will be final.
- (c) Drawings. The drawings mentioned herein are drawings of the Department of Transportation. They are integral parts of this specification cooperating to state necessary requirements.
- (d) Bidders Drawings. The apparent low bidder must submit detailed scale drawings of the precast structures showing actual dimensions and details, if so requested. Shop drawings must be original engineering drawings created by the manufacturer. The drawings must give every dimension necessary and show how the structure is assembled.
- (e) Sample. One complete precast structure of each item must be submitted within fifteen (15) business days upon request of the Chief Procurement Officer.
- (f) Warranty. The manufacturer must warrant the performance and construction of the precast structures to meet the requirements of this specification and

must warrant all parts, components, and appurtenances against defects due to design, workmanship, or material developing within a period of one (1) year after the precast structures have been delivered. This will be interpreted particularly to mean structural failure of any element. The warranty must be furnished in writing guaranteeing material replacement including shipment, free of charge to the City. The Commissioner will be the sole judge in determining which replacements are to be made. The Commissioner's decision will be final.

### **DESIGN**

3. (a) **Material.** Concrete must be Portland cement concrete, Class SI or PC, meeting current IDOT specifications. Pulling irons in manholes must meet or exceed the requirements of ASTM A36 steel. Pulling irons must be hot dipped galvanized. Steel reinforcing bars must meet or exceed the requirements of ASTM A615, Grade 60. Cable supports in manholes, including stanchions and racks, must be manufactured for that specific purpose. Stanchions must be non-metallic and must be capable of accommodating several different sizes of cable hooks at various elevations. A minimum of eight cable hooks, 4 inches in length, must be provided with each manhole, and should include any hardware necessary to affix the hooks to the racks. Cable hooks for handholes must be manufactured for that specific purpose. Cable hooks for handholes must be a minimum of 3 inches in length and 3 inches in depth. Anchor rods in foundations must meet the latest Electrical Material Specification 1467. Conduit elbows in foundations must meet the latest Electrical Material Specification 1462.
- (b) Foundations must include conduit elbows, anchor rods, washers, and nuts. The 7 foot foundation must include a 6 foot re-bar cage. Handholes must include cable hooks. Manholes must include cable racks, pulling irons, and cable hooks. Each manhole and each handhole must have lifting anchors cast in the concrete to facilitate shipment and installation. If the manhole or handhole is in more than one piece, instructions for assembly must be provided. Also, a sufficient amount of bonding agent must be provided. The bonding agent must be approved material. Frames and covers, sump grates, clay tile, and ground rods are not included under this specification.
- (c) **Dimensions of Manholes and Handholes.** Each manhole or handhole must be dimensioned as shown on the appropriate standard drawing. The 30 inch diameter handhole is Standard Drawing 867. The 36 inch diameter handhole for 24 inch frame and cover is Standard Drawing 866. The 36 inch diameter for 30 inch for frame and cover is Standard Drawing 871. The 3 foot by 4 foot by 4 foot manhole for a 24 inch diameter frame and cover is Standard Drawing 730. The 3 foot by 4 foot by 4 foot manhole for 30 inch frame and cover is Standard Drawing 729. The 4 foot by 6 foot by 6 foot manhole for

24 inch frame and cover is Standard Drawing 732. The four foot by 6 foot by 6 foot manhole for 30 inch frame and cover is Standard Drawing 733. The 5 foot 4 inch by 7 foot 4 inch manhole roof is Standard Drawing 733.

- (c) Dimensions of Grade Rings. Grade rings shall be in four different dimensions. The 39 inch outside diameter ring shall have a 24 inch diameter opening and shall come in both 2 inch and 4 inch thicknesses. The 45 inch outside diameter ring shall have a 30 inch diameter opening and shall also come in both 2 inch and 4 inch thicknesses.
- (d) Dimensions of foundations. The residential street light foundation shall be dimensioned as shown on standard drawing 565. The 7 foot arterial street light foundation shall be as shown on standard drawing 818.

### **DELIVERY**

- 4. All manholes, handholes, and foundations will be delivered to the Division of Electrical Operations storage yard at 1539 South Ashland Avenue in Chicago, or to another location within the City as indicated on the order. Any manhole, handhole, or foundation deemed to be defective by the Commissioner or his representative must be removed and replaced at no cost to the City. The Commissioner=s decision will be final.

**ELECTRICAL SPECIFICATION 1533  
DIVISION OF ENGINEERING  
DEPARTMENT OF TRANSPORTATION  
CITY OF CHICAGO  
REVISED NOVEMBER 21, 2014**

**NON-METALLIC CONDUIT**

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**SCOPE**

1. This specification states the requirements for both rigid and coilable non-metallic conduit. The conduit will be used for low voltage ( 600 volt rated cables) electrical street lighting and traffic control systems. It may also be used for fiber-optic communications cables. This conduit will be installed underground. Rigid non-metallic conduit may be installed on structure.

**GENERAL**

2. (a) Standards. The following standards are referenced herein.

ASTM – American Society for Testing and Materials

NEC – National Electrical Code

NEMA – National Electrical Manufacturer’s Association

UL – Underwriter’s Laboratories

- (b) Warranty. The manufacturer must warrant the conduit against defective workmanship and material for a period of one year from date of installation or date of delivery. Any conduit that is found to be defective must be replaced without cost to the City.
- (c) Sample. If requested by the Chief Procurement Officer, a sample of the conduit intended to be furnished under this specification, must be submitted to the Engineer of Electricity within fifteen (15) business days upon receipt of such request.

**MATERIAL**

2. (a) Rigid non-metallic conduit will be made of polyvinyl chloride (PVC). All conduit and fittings must comply with ASTM D 1784 and with the applicable sections of NEMA TC2, UL standard 651, and NEC Article 352. Fittings must meet the standards of NEMA TC3 and TC6, as well as UL 514.



- (b) Coilable non-metallic conduit will be made of high density polyethylene (HDPE). All conduit must comply with ASTM D3485 ,ASTM D 1248, and NEMA TC7.
- (c) A tape must be installed in the HDPE conduit at the factory. The tape is for pulling cable through the conduit. The tape must be specifically manufactured for this purpose. The tape must have a tensile strength of at least 1000 pounds.

### **SIZES**

- 3. (a) PVC and HDPE will come in two wall thicknesses; schedule 40 and schedule 80.
- (b) PVC will come in ten foot sections. HDPE will come on reels.
- (c) Nominal inside diameters ( in inches) for non-metallic conduits will include the following:  $\frac{1}{2}$  ,  $\frac{3}{4}$  , 1, 1  $\frac{1}{4}$ , 1  $\frac{1}{2}$  , 2, 2  $\frac{1}{2}$  , 3, 3  $\frac{1}{2}$ , 4.

### **PACKING**

- 4. Rigid conduit must be shipped in bundles. Coilable conduit must come on wooden reels. Both bundles and reels must be tagged to indicate the size and diameter of the conduit, the quantity in feet, the weight, and the manufacturer's name. The conduit itself must be marked to indicate the type and size, as well as the manufacturer.

**ELECTRICAL SPECIFICATION 1534  
DIVISION OF ENGINEERING  
DEPARTMENT OF TRANSPORTATION  
CITY OF CHICAGO  
REVISED AUGUST 5, 2013**

**CABLE: SINGLE-CONDUCTOR, COPPER 600 VOLT**

---

**SUBJECT**

1. This specification states the requirements for single conductor cables intended to be used in 240 VAC street lighting circuits. The cable will also be used as service cable for both street light controllers and traffic signal controllers. The cables will be installed in underground conduit and rated as 600 volt.

**GENERAL**

2. (a) Specifications. The cable must conform in detail to the requirements herein stated, and to the applicable portions of the latest revisions of the specifications and methods of test of the following agencies:
  - (1) ASTM – American Society for Testing and Materials
  - (2) ICEA – Insulated Cable Engineers Association
  - (3) IEEE – Institute of Electrical and Electronics Engineers
  - (4) UL – Underwriters Laboratories
- (b) Acceptance. Cable not in accordance with this specification will not be accepted.
- (c) Sample. If requested by the Chief Procurement Officer, a three (3) foot sample of the cable intended to be provided under this specification must be sent to the attention of the Engineer of Electricity within fifteen (15) days of receipt of such request.
- (d) Warranty. The manufacturer must warrant the cable to be first class material throughout. In lieu of other claims against them, if the cables are installed within twelve (12) months of date of shipment, the manufacturer must replace any cable failing during normal and proper use within two years of date of installation. All replacements under this warranty must be made free of charge F.O.B. delivery point of the original contract.

### **CABLES**

3. (a) Construction. The cable must consist of an uncoated multiple strand copper conductor with a tight fitting thermoset, free stripping, concentric layer of ethylene propylene (EPR) insulation.
- (b) The number of strands and the outer diameter of the cable shall be as noted in TABLE A.
- (c) Cable shall be UL approved for sunlight resistance and for direct burial applications.
- (d) Cable must meet IEEE 383 and UL 1581 70,000 BTUs per hour flame test requirements.

### **COLOR CODE**

4. (a) Triplexed cable shall consist of a black cable, a red cable, and a green ground cable. Triplexed cable will have a 16" to 18" lay.
- (b) Individual cables will be black, red, or white, depending upon the order.

### **CONDUCTOR**

5. (a) Material. The conductors must be soft round copper strands.
- (b) Specifications. The conductor must meet the requirements of ASTM B3 and ASTM B8.
- (c) Sizes. The conductor sizes must be in accordance with all requirements in Table A of this specification.
- (d) Stranding. The number of strands must be as indicted in Table A. Stranding must meet the requirements of ASTM B8, Class B.

### **INSULATION**

6. (a) Type. The insulation must be ethylene propylene rubber compound (EPR) meeting the requirements of ICEA S-95-658 and UL 44 for RHW-2 cable and UL 854 for USE-2 cable.
- (b) Thickness. The insulation must be circular in cross-section, concentric to the conductor, and must have an average thickness not less than that set forth in Table A of this specification, and a spot thickness not less than ninety percent

(90%) of the average thickness.

- (c) Cable Marking. The cable must be identified by a permanently inscribed legend in white lettering as follows:

1/C No. (conductor size) AWG-600V-90°C-EPR-RHW-2

The legend must be repeated at approximately eighteen (18) inch intervals on the outside surface of the cable parallel to the longitudinal axis of the conductor. A sequential footage marking must be located on the opposite side from the legend.

## **TESTING**

7. (a) Initial Physical Requirements.

- |                                      |      |
|--------------------------------------|------|
| 1. Tensile strength, minimum, p.s.i. | 1200 |
| 2. Elongation at rupture, minimum %  | 250  |

- (b) Oven Exposure Test. After conditioning in an air oven at  $121 \pm 1^\circ\text{C}$  for 168 hours using methods of test described in ASTM D 573:

- |  |    |
|--|----|
| 1. Tensile strength, minimum % of initial value            | 75 |
| 2. Elongation at rupture, minimum percent of initial value | 75 |

- (c) Water Absorption Test. Gravimetric method: After 168 hours in water at  $70 \pm 1^\circ\text{C}$  water absorption, at a maximum – 5 milligrams per square inch

- (d) Cold Bend Test. The completed cable must pass the test requirements of ASTM D 470, except that the test temperature must be  $-25^\circ\text{C}$ .

- (e) Electrical Tests.

1. Voltage. The completed cable must meet an A.C. and D.C. voltage test in accordance with ASTM D 470 and D 2655.

2. Insulation Resistance. The completed cable must have an insulation resistance constant of not less than 20,000 ohms when tested in accordance with ASTM D 470.

- (f) Flame Tests. Cable must pass a 70,000 BTU flame test in accordance with IEEE 383.

- (g) All of the above tests must be on cable produced for the order. Tests must be taken on samples taken every 25,000 feet, or fraction thereof, of each conductor size.

- (h) Test Reports. No cable shall be shipped until certified copies of all factory tests have been reviewed and approved by the City. Cable that does not pass any one of the above tests will be rejected.

### **PACKAGING**

- 8. (a) Reels. The completed cable must be delivered on sound substantial, non-returnable reels. Both ends of each length of cable must be properly sealed against the entrance of moisture and other foreign matter by the use of clamp-on cable caps. The ends must be securely fastened so as not to become loose in transit. Before shipment, complete 2 X 4 lagging must be applied to all reels.
- (b) Footage. Each reel must contain the length of cable as set forth in Table A of this specification. Alternate lengths may be considered.
- (c) Reel Marking. A metal tag must be securely attached to each reel indicating the reel number, contract number, date of shipment, gross and tare weights, the appropriate City commodity code if applicable, and a description of the cable. Also, each reel must have permanent marking on it indicating the total footage, and the beginning and ending sequential footage numbers. Directions for unrolling the cable must be placed on the reel with an approved permanent marking material such as oil-based paint or a securely attached metal tag.

**TABLE A**

<b>CONDUCTOR</b>		<b>INSULATION THICKNESS</b>	<b>A-C TEST</b>	<b>REEL LENGTH</b>	<b>OVERALL DIAMETER</b>
<b><u>AWG</u></b>	<b><u>STRANDS</u></b>	<b><u>MILS</u></b>	<b><u>VOLTS</u></b>	<b><u>FEET</u></b>	<b><u>INCH</u></b>
14	7	45	5500	2000	.133
12	7	45	5500	2000	.152
10	7	45	5500	2000	.176
8	7	60	5500	2000	.236
6	7	60	5500	2000	.274
4	7	60	5500	2000	.322
2	7	60	5500	1000	.382
1/0	19	80	7000	1000	.470
2/0	19	80	7000	1000	.514
3/0	19	80	7000	1000	.564
4/0	19	80	7000	1000	.620
250 MCM	37	95	8000	1000	.705

**ELECTRICAL SPECIFICATION 1535  
DIVISION OF ENGINEERING  
DEPARTMENT OF TRANSPORTATION  
CITY OF CHICAGO  
REVISED MARCH 12, 2015**

**RESIDENTIAL STREET LIGHTING CONTROLLER**

---

**SUBJECT**

1. This specification states the requirements for a residential street lighting controller and cabinet for controlling residential street lighting circuits. The controller is intended to be mounted to a Commonwealth Edison wood pole.

**GENERAL**

2. (a) Specifications. The controller and cabinet must conform in detail to the requirements herein stated, to the Specifications and Methods of Test of the American Society for Testing and Materials, cited by ASTM Designation Number, in which the most recently published revision will govern. Cabinets must meet or exceed the requirements of a NEMA 4X enclosure type and must be U.L. listed.
- (b) Acceptance. Controllers not conforming to this specification will not be accepted.
- (c) Drawings. The drawings mentioned herein are drawings of the Department of Transportation, and must be interpreted as part of these specifications cooperating to state necessary requirements.
- (d) Sample. One complete controller of the manufacture intended to be furnished must be submitted upon request of the Chief Procurement Officer within fifteen (15) business days after receipt of such a request. The sample must be delivered to the Division of Electrical Operations, 2451 South Ashland Avenue, Chicago, Illinois 60608.
- (e) Warranty. The manufacturer must warranty the controller and cabinet against flaws in material or workmanship for a period of two (2) years from the date of delivery. Any controller, cabinet, or components developing flaws within this period must be replaced by the manufacturer, including shipment, at no cost to the City.

## **DESIGN**

3. (a) Drawings. The controller and cabinet must conform in detail to requirements shown on Electrical Standard Drawing 955.
- (b) Dimensions. The overall outside dimensions of the control cabinet must be 19.5 inches in height by 17.5 inches in width by 9.6 inches in depth. Cabinets must have sloped tops to shed water.

## **CABINET REQUIREMENTS**

4. (a) Cabinet. The cabinet must be classified as NEMA 4X. The cabinet and the door must be constructed of gray, hot molded, fiberglass reinforced polyester resin compound with a minimum of 20% glass fibers by weight. Fiberglass material must meet UL 746C requirements with halogen-free and self-extinguishing characteristics. The enclosure should be listed under UL standard 508. The cabinet door opening must be double flanged on all four (4) sides. The cabinet will be made of one piece of molded fiberglass.
- (b) Door. The door will be fabricated of one-piece of fiberglass. The door size must be as shown on Electrical Standard Drawing 955. The door must be hinged on the left side when facing the cabinet. The door must have a gasket that meets the requirements found in U.L.508 Table 21.1. The gasket must form a weather-tight seal between the cabinet and the door.
- (c) Hinge. Hinge must be a continuous stainless steel piano hinge bolted to the cabinet and door with 1/4-20 stainless steel carriage bolts and nylock nuts. The hinge leaves must not be exposed externally when the door is closed. Only the hinge knuckles must be visible upon closing the door. The hinge pin must be .250 inch diameter stainless steel and must be capped top and bottom by weld to render it tamper-proof.
- (d) Latching. Two (2) quick release, padlockable, stainless steel latches must be provided.
- (e) Cable Openings. The bottom of the cabinet must have an opening to accommodate a cord grip for a cable up to 1.375 inches in diameter. The bottom of the cabinet must also have an opening to accommodate a 2.0 inch schedule 40 rigid galvanized steel conduit. The cord grip and conduit hub must be included as part of the cabinet assembly.
- (f) Cabinet Mounts. The cabinet must be equipped with two (2) galvanized steel brackets, a minimum of 1/16" in thickness, which will allow mounting to a wood pole. Each bracket will be mounted to the back of the cabinet with two (2) 1/4-20 stainless steel hex head bolts with washers, and nuts. Each bracket



will be formed of a single piece of galvanized steel, 16" by 6". The top of the bracket will be straight and have two holes drilled to accept the mounting bolts of the cabinet. The lower part of the bracket must be bent to form two "wings" to fit around the ComEd pole. Each wing will be drilled to accept 1/2-13 X 4" stainless steel lag bolts. All bolts will be included.

### **PANEL**

5. The panel must be composed of phenolic plastic 1/2 " in thickness, or an approved equal. It must be securely bolted to the cabinet using stainless steel hardware. The panel must have holes cut into it, and holes drilled into it, to accept mounting of all the electrical components. The location of the components must be as indicated on Electrical Standard Drawing 955.

### **ELECTRICAL COMPONENTS**

6.
  - (a) The contactor must be rated for 50 amps and fit a Milbank AP2300 socket.
  - (b) Circuit breakers must have thermal magnetic trips. Each breaker must be enclosed in a hard case insulated housing. The frame must be rated for 100 amp service at 240 volts. The minimum interrupting capacity will be 18,000 r.m.s. amperes at 240 volts. All breakers must be UL listed.
  - (c) Wiring will be as indicated on Electrical Standard Drawing 955. All wire will have stranded copper conductors. All wires must be insulated with an approved 125° Centigrade insulation.
  - (d) All components will be as indicated on Drawing 955, or approved equals.

**APPENDIX E**

**Illinois Department of Transportation Special Provisions**

1. Index for Supplemental and Recurring Special Provisions
2. Check Sheet for Recurring Special Provisions
3. Check Sheet for Local Roads and Streets Recurring Special Provisions
4. BDE Special Provisions
5. Guide Bridge Special Provision Index/Check Sheet
6. District 1 Special Provisions

WEBSTER AVENUE BRIDGE OVER THE NORTH BRANCH OF THE CHICAGO RIVER  
CDOT PROJECT NO.: E-1-525

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INDEX  
FOR  
SUPPLEMENTAL SPECIFICATIONS  
AND RECURRING SPECIAL PROVISIONS

Adopted January 1, 2020

This index contains a listing of SUPPLEMENTAL SPECIFICATIONS, frequently used RECURRING SPECIAL PROVISIONS, and LOCAL ROADS AND STREETS RECURRING SPECIAL PROVISIONS.

ERRATA Standard Specifications for Road and Bridge Construction  
(Adopted 4-1-16) (Revised 1-1-20)

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The Following Recurring Special Provisions Indicated By An "X" Are Applicable To This Contract And Are Included By Reference:

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BDE SPECIAL PROVISIONS  
For the April 24, 2020 and June 12, 2020 Lettings

The following special provisions indicated by a "check mark" are applicable to this contract and will be included by the Project Coordination and Implementation Section of the BD&E. An \* indicates a new or revised special provision for the letting.

File Name	#		Special Provision Title	Effective	Revised
*	80099	1	<input type="checkbox"/> Accessible Pedestrian Signals (APS)	April 1, 2003	April 1, 2020
	80274	2	<input type="checkbox"/> Aggregate Subgrade Improvement	April 1, 2012	April 1, 2016
	80192	3	<input type="checkbox"/> Automated Flagger Assistance Device	Jan. 1, 2008	
	80173	4	<input type="checkbox"/> Bituminous Materials Cost Adjustments	Nov. 2, 2006	Aug. 1, 2017
	80426	5	<input type="checkbox"/> Bituminous Surface Treatment with Fog Seal	Jan. 1, 2020	
	80241	6	<input type="checkbox"/> Bridge Demolition Debris	July 1, 2009	
	50261	7	<input type="checkbox"/> Building Removal-Case I (Non-Friable and Friable Asbestos)	Sept. 1, 1990	April 1, 2010
	50481	8	<input type="checkbox"/> Building Removal-Case II (Non-Friable Asbestos)	Sept. 1, 1990	April 1, 2010
	50491	9	<input type="checkbox"/> Building Removal-Case III (Friable Asbestos)	Sept. 1, 1990	April 1, 2010
	50531	10	<input type="checkbox"/> Building Removal-Case IV (No Asbestos)	Sept. 1, 1990	April 1, 2010
	80425	11	<input type="checkbox"/> Cape Seal	Jan. 1, 2020	
	80384	12	<input checked="" type="checkbox"/> Compensable Delay Costs	June 2, 2017	April 1, 2019
	80198	13	<input type="checkbox"/> Completion Date (via calendar days)	April 1, 2008	
	80199	14	<input type="checkbox"/> Completion Date (via calendar days) Plus Working Days	April 1, 2008	
	80293	15	<input type="checkbox"/> Concrete Box Culverts with Skews > 30 Degrees and Design Fills ≤ 5 Feet	April 1, 2012	July 1, 2016
	80311	16	<input type="checkbox"/> Concrete End Sections for Pipe Culverts	Jan. 1, 2013	April 1, 2016
	80277	17	<input type="checkbox"/> Concrete Mix Design – Department Provided	Jan. 1, 2012	April 1, 2016
	80261	18	<input checked="" type="checkbox"/> Construction Air Quality – Diesel Retrofit	June 1, 2010	Nov. 1, 2014
	80387	19	<input type="checkbox"/> Contrast Preformed Plastic Pavement Marking	Nov. 1, 2017	
	80029	20	<input checked="" type="checkbox"/> Disadvantaged Business Enterprise Participation	Sept. 1, 2000	March 2, 2019
	80402	21	<input type="checkbox"/> Disposal Fees	Nov. 1, 2018	
	80378	22	<input type="checkbox"/> Dowel Bar Inserter	Jan. 1, 2017	Jan. 1, 2018
	80405	23	<input checked="" type="checkbox"/> Elastomeric Bearings	Jan. 1, 2019	
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	80423	26	<input type="checkbox"/> Engineer's Field Office and Laboratory	Jan. 1, 2020	
	80388	27	<input checked="" type="checkbox"/> Equipment Parking and Storage	Nov. 1, 2017	
	80229	28	<input type="checkbox"/> Fuel Cost Adjustment	April 1, 2009	Aug. 1, 2017
	80417	29	<input type="checkbox"/> Geotechnical Fabric for Pipe Underdrains and French Drains	Nov. 1, 2019	
	80420	30	<input type="checkbox"/> Geotextile Retaining Walls	Nov. 1, 2019	
	80304	31	<input type="checkbox"/> Grooving for Recessed Pavement Markings	Nov. 1, 2012	Nov. 1, 2017
	80422	32	<input type="checkbox"/> High Tension Cable Median Barrier Reflectors	Jan. 1, 2020	
	80416	33	<input type="checkbox"/> Hot-Mix Asphalt – Binder and Surface Course	July 2, 2019	Nov. 1, 2019
	80398	34	<input type="checkbox"/> Hot-Mix Asphalt – Longitudinal Joint Sealant	Aug. 1, 2018	Nov. 1, 2019
*	80406	35	<input type="checkbox"/> Hot-Mix Asphalt – Mixture Design Verification and Production (Modified for I-FIT Data Collection)	Jan. 1, 2019	Jan. 2, 2020
	80347	36	<input type="checkbox"/> Hot-Mix Asphalt – Pay for Performance Using Percent Within Limits – Jobsite Sampling	Nov. 1, 2014	July 2, 2019
	80383	37	<input type="checkbox"/> Hot-Mix Asphalt – Quality Control for Performance	April 1, 2017	July 2, 2019
	80411	38	<input type="checkbox"/> Luminaires, LED	April 1, 2019	
	80393	39	<input type="checkbox"/> Manholes, Valve Vaults, and Flat Slab Tops	Jan. 1, 2018	March 1, 2019
	80045	40	<input type="checkbox"/> Material Transfer Device	June 15, 1999	Aug. 1, 2014
	80418	41	<input type="checkbox"/> Mechanically Stabilized Earth Retaining Walls	Nov. 1, 2019	
	80424	42	<input type="checkbox"/> Micro-Surfacing and Slurry Sealing	Jan. 1, 2020	
*	80428	43	<input checked="" type="checkbox"/> Mobilization	April 1, 2020	
	80165	44	<input type="checkbox"/> Moisture Cured Urethane Paint System	Nov. 1, 2006	Jan. 1, 2010
	80412	45	<input type="checkbox"/> Obstruction Warning Luminaires, LED	Aug. 1, 2019	
	80349	46	<input type="checkbox"/> Pavement Marking Blackout Tape	Nov. 1, 2014	April 1, 2016



80371	47	<input checked="" type="checkbox"/>	Pavement Marking Removal	July 1, 2016	
80389	48	<input checked="" type="checkbox"/>	Portland Cement Concrete	Nov. 1, 2017	
80359	49	<input checked="" type="checkbox"/>	Portland Cement Concrete Bridge Deck Curing	April 1, 2015	Nov. 1, 2019
80300	50	<input type="checkbox"/>	Preformed Plastic Pavement Marking Type D - Inlaid	April 1, 2012	April 1, 2016
34261	51	<input type="checkbox"/>	Railroad Protective Liability Insurance	Dec. 1, 1986	Jan. 1, 2006
80157	52	<input type="checkbox"/>	Railroad Protective Liability Insurance (5 and 10)	Jan. 1, 2006	
* 80306	53	<input type="checkbox"/>	Reclaimed Asphalt Pavement (RAP) and Reclaimed Asphalt Shingles (RAS)	Nov. 1, 2012	Jan. 2, 2020
80407	54	<input checked="" type="checkbox"/>	Removal and Disposal of Regulated Substances	Jan. 1, 2019	Jan. 1, 2020
* 80419	55	<input checked="" type="checkbox"/>	Silt Fence, Inlet Filters, Ground Stabilization and Riprap Filter Fabric	Nov. 1, 2019	April 1, 2020
80395	56	<input type="checkbox"/>	Sloped Metal End Section for Pipe Culverts	Jan. 1, 2018	
80340	57	<input type="checkbox"/>	Speed Display Trailer	April 2, 2014	Jan. 1, 2017
80127	58	<input type="checkbox"/>	Steel Cost Adjustment	April 2, 2004	Aug. 1, 2017
80408	59	<input type="checkbox"/>	Steel Plate Beam Guardrail Manufacturing	Jan. 1, 2019	
80413	60	<input type="checkbox"/>	Structural Timber	Aug. 1, 2019	
80397	61	<input type="checkbox"/>	Subcontractor and DBE Payment Reporting	April 2, 2018	
80391	62	<input checked="" type="checkbox"/>	Subcontractor Mobilization Payments	Nov. 2, 2017	April 1, 2019
80317	63	<input type="checkbox"/>	Surface Testing of Hot-Mix Asphalt Overlays	Jan. 1, 2013	Aug. 1, 2019
80298	64	<input checked="" type="checkbox"/>	Temporary Pavement Marking	April 1, 2012	April 1, 2017
80403	65	<input type="checkbox"/>	Traffic Barrier Terminal, Type 1 Special	Nov. 1, 2018	
80409	66	<input checked="" type="checkbox"/>	Traffic Control Devices - Cones	Jan. 1, 2019	
80410	67	<input type="checkbox"/>	Traffic Spotters	Jan. 1, 2019	
20338	68	<input type="checkbox"/>	Training Special Provisions	Oct. 15, 1975	
80318	69	<input type="checkbox"/>	Traversable Pipe Grate for Concrete End Sections	Jan. 1, 2013	Jan. 1, 2018
* 80429	70	<input type="checkbox"/>	Ultra-Thin Bonded Wearing Course	April 1, 2020	
80288	71	<input type="checkbox"/>	Warm Mix Asphalt	Jan. 1, 2012	April 1, 2016
80302	72	<input checked="" type="checkbox"/>	Weekly DBE Trucking Reports	June 2, 2012	April 2, 2015
* 80414	73	<input type="checkbox"/>	Wood Fence Sight Screen	Aug. 1, 2019	April 1, 2020
* 80427	74	<input type="checkbox"/>	Work Zone Traffic Control Devices	Mar. 2, 2020	
80071	75	<input type="checkbox"/>	Working Days	Jan. 1, 2002	

The following special provisions are in the 2020 Supplemental Specifications and Recurring Special Provisions.

<u>File Name</u>	<u>Special Provision Title</u>	<u>New Location(s)</u>	<u>Effective</u>	<u>Revised</u>
80404	Coarse Aggregate Quality for Micro-Surfacing and Cape Seals	Article 1004.01(b)	Jan. 1, 2019	
80392	Lights on Barricades	Articles 701.16, 701.17(c)(2) & 603.07	Jan. 1, 2018	
80336	Longitudinal Joint and Crack Patching	Check Sheet #36	April 1, 2014	April 1, 2016
80400	Mast Arm Assembly and Pole	Article 1077.03(b)	Aug. 1, 2018	
80394	Metal Flared End Section for Pipe Culverts	Articles 542.07(c) and 542.11	Jan. 1, 2018	April 1, 2018
80390	Payments to Subcontractors	Article 109.11	Nov. 2, 2017	

The following special provisions have been deleted from use.

<u>File Name</u>	<u>Special Provision Title</u>	<u>Effective</u>	<u>Revised</u>
80328	Progress Payments	Nov. 2, 2013	

The following special provisions require additional information from the designer. The additional information needs to be submitted as a separate document. The Project Coordination and Implementation section will then include the information in the applicable special provision.

- Bridge Demolition Debris
- Building Removal - Case I
- Building Removal - Case II
- Building Removal - Case III
- Building Removal-Case IV
- Completion Date
- Completion Date Plus Working Days
- DBE Participation
- Material Transfer Device
- Railroad Protective Liability Insurance
- Training Special Provisions
- Working Days

## **COMPENSABLE DELAY COSTS (BDE)**

Effective: June 2, 2017

Revised: April 1, 2019

Revise Article 107.40(b) of the Standard Specifications to read:

“(b) Compensation. Compensation will not be allowed for delays, inconveniences, or damages sustained by the Contractor from conflicts with facilities not meeting the above definition; or if a conflict with a utility in an unanticipated location does not cause a shutdown of the work or a documentable reduction in the rate of progress exceeding the limits set herein. The provisions of Article 104.03 notwithstanding, compensation for delays caused by a utility in an unanticipated location will be paid according to the provisions of this Article governing minor and major delays or reduced rate of production which are defined as follows.

- (1) Minor Delay. A minor delay occurs when the work in conflict with the utility in an unanticipated location is completely stopped for more than two hours, but not to exceed two weeks.
- (2) Major Delay. A major delay occurs when the work in conflict with the utility in an unanticipated location is completely stopped for more than two weeks.
- (3) Reduced Rate of Production Delay. A reduced rate of production delay occurs when the rate of production on the work in conflict with the utility in an unanticipated location decreases by more than 25 percent and lasts longer than seven calendar days.”

Revise Article 107.40(c) of the Standard Specifications to read:

“(c) Payment. Payment for Minor, Major, and Reduced Rate of Production Delays will be made as follows.

- (1) Minor Delay. Labor idled which cannot be used on other work will be paid for according to Article 109.04(b)(1) and (2) for the time between start of the delay and the minimum remaining hours in the work shift required by the prevailing practice in the area.

Equipment idled which cannot be used on other work, and which is authorized to standby on the project site by the Engineer, will be paid for according to Article 109.04(b)(4).

- (2) Major Delay. Labor will be the same as for a minor delay.

Equipment will be the same as for a minor delay, except Contractor-owned equipment will be limited to two weeks plus the cost of move-out to either the

Contractor's yard or another job and the cost to re-mobilize, whichever is less. Rental equipment may be paid for longer than two weeks provided the Contractor presents adequate support to the Department (including lease agreement) to show retaining equipment on the job is the most economical course to follow and in the public interest.

- (3) Reduced Rate of Production Delay. The Contractor will be compensated for the reduced productivity for labor and equipment time in excess of the 25 percent threshold for that portion of the delay in excess of seven calendar days. Determination of compensation will be in accordance with Article 104.02, except labor and material additives will not be permitted.

Payment for escalated material costs, escalated labor costs, extended project overhead, and extended traffic control will be determined according to Article 109.13.”

Revise Article 108.04(b) of the Standard Specifications to read:

“(b) No working day will be charged under the following conditions.

- (1) When adverse weather prevents work on the controlling item.
- (2) When job conditions due to recent weather prevent work on the controlling item.
- (3) When conduct or lack of conduct by the Department or its consultants, representatives, officers, agents, or employees; delay by the Department in making the site available; or delay in furnishing any items required to be furnished to the Contractor by the Department prevents work on the controlling item.
- (4) When delays caused by utility or railroad adjustments prevent work on the controlling item.
- (5) When strikes, lock-outs, extraordinary delays in transportation, or inability to procure critical materials prevent work on the controlling item, as long as these delays are not due to any fault of the Contractor.
- (6) When any condition over which the Contractor has no control prevents work on the controlling item.”

Revise Article 109.09(f) of the Standard Specifications to read:

“(f) Basis of Payment. After resolution of a claim in favor of the Contractor, any adjustment in time required for the work will be made according to Section 108. Any adjustment in the costs to be paid will be made for direct labor, direct materials, direct equipment, direct jobsite overhead, direct offsite overhead, and other direct costs allowed by the resolution. Adjustments in costs will not be made for interest charges, loss of anticipated profit, undocumented loss of efficiency, home office overhead and unabsorbed overhead

other than as allowed by Article 109.13, lost opportunity, preparation of claim expenses and other consequential indirect costs regardless of method of calculation.

The above Basis of Payment is an essential element of the contract and the claim cost recovery of the Contractor shall be so limited.”

Add the following to Section 109 of the Standard Specifications.

**“109.13 Payment for Contract Delay.** Compensation for escalated material costs, escalated labor costs, extended project overhead, and extended traffic control will be allowed when such costs result from a delay meeting the criteria in the following table.

Contract Type	Cause of Delay	Length of Delay
Working Days	Article 108.04(b)(3) or Article 108.04(b)(4)	No working days have been charged for two consecutive weeks.
Completion Date	Article 108.08(b)(1) or Article 108.08(b)(7)	The Contractor has been granted a minimum two week extension of contract time, according to Article 108.08.

Payment for each of the various costs will be according to the following.

- (a) Escalated Material and/or Labor Costs. When the delay causes work, which would have otherwise been completed, to be done after material and/or labor costs have increased, such increases will be paid. Payment for escalated material costs will be limited to the increased costs substantiated by documentation furnished by the Contractor. Payment for escalated labor costs will be limited to those items in Article 109.04(b)(1) and (2), except the 35 percent and 10 percent additives will not be permitted.
- (b) Extended Project Overhead. For the duration of the delay, payment for extended project overhead will be paid as follows.
  - (1) Direct Jobsite and Offsite Overhead. Payment for documented direct jobsite overhead and documented direct offsite overhead, including onsite supervisory and administrative personnel, will be allowed according to the following table.

Original Contract Amount	Supervisory and Administrative Personnel
Up to \$5,000,000	One Project Superintendent
Over \$ 5,000,000 - up to \$25,000,000	One Project Manager, One Project Superintendent or Engineer, and One Clerk
Over \$25,000,000 - up to \$50,000,000	One Project Manager, One Project Superintendent, One Engineer, and

	One Clerk
Over \$50,000,000	One Project Manager, Two Project Superintendents, One Engineer, and One Clerk

(2) Home Office and Unabsorbed Overhead. Payment for home office and unabsorbed overhead will be calculated as 8 percent of the total delay cost.

(c) Extended Traffic Control. Traffic control required for an extended period of time due to the delay will be paid for according to Article 109.04.

When an extended traffic control adjustment is paid under this provision, an adjusted unit price as provided for in Article 701.20(a) for increase or decrease in the value of work by more than ten percent will not be paid.

Upon payment for a contract delay under this provision, the Contractor shall assign subrogation rights to the Department for the Department's efforts of recovery from any other party for monies paid by the Department as a result of any claim under this provision. The Contractor shall fully cooperate with the Department in its efforts to recover from another party any money paid to the Contractor for delay damages under this provision."

80384

## CONSTRUCTION AIR QUALITY – DIESEL RETROFIT (BDE)

Effective: June 1, 2010

Revised: November 1, 2014

The reduction of emissions of particulate matter (PM) for off-road equipment shall be accomplished by installing retrofit emission control devices. The term “equipment” refers to diesel fuel powered devices rated at 50 hp and above, to be used on the jobsite in excess of seven calendar days over the course of the construction period on the jobsite (including rental equipment).

Contractor and subcontractor diesel powered off-road equipment assigned to the contract shall be retrofitted using the phased in approach shown below. Equipment that is of a model year older than the year given for that equipment’s respective horsepower range shall be retrofitted:

Effective Dates	Horsepower Range	Model Year
June 1, 2010 <sup>1/</sup>	600-749	2002
	750 and up	2006
June 1, 2011 <sup>2/</sup>	100-299	2003
	300-599	2001
	600-749	2002
	750 and up	2006
June 1, 2012 <sup>2/</sup>	50-99	2004
	100-299	2003
	300-599	2001
	600-749	2002
	750 and up	2006

1/ Effective dates apply to Contractor diesel powered off-road equipment assigned to the contract.

2/ Effective dates apply to Contractor and subcontractor diesel powered off-road equipment assigned to the contract.

The retrofit emission control devices shall achieve a minimum PM emission reduction of 50 percent and shall be:

- a) Included on the U.S. Environmental Protection Agency (USEPA) *Verified Retrofit Technology List* (<http://www.epa.gov/cleandiesel/verification/verif-list.htm>), or verified by the California Air Resources Board (CARB) (<http://www.arb.ca.gov/diesel/verdev/vt/cvt.htm>); or
- b) Retrofitted with a non-verified diesel retrofit emission control device if verified retrofit emission control devices are not available for equipment proposed to be used on the project, and if the Contractor has obtained a performance certification from the retrofit

device manufacturer that the emission control device provides a minimum PM emission reduction of 50 percent.

Note: Large cranes (Crawler mounted cranes) which are responsible for critical lift operations are exempt from installing retrofit emission control devices if such devices adversely affect equipment operation.

Diesel powered off-road equipment with engine ratings of 50 hp and above, which are unable to be retrofitted with verified emission control devices or if performance certifications are not available which will achieve a minimum 50 percent PM reduction, may be granted a waiver by the Department if documentation is provided showing good faith efforts were made by the Contractor to retrofit the equipment.

Construction shall not proceed until the Contractor submits a certified list of the diesel powered off-road equipment that will be used, and as necessary, retrofitted with emission control devices. The list(s) shall include (1) the equipment number, type, make, Contractor/rental company name; and (2) the emission control devices make, model, USEPA or CARB verification number, or performance certification from the retrofit device manufacturer. Equipment reported as fitted with emissions control devices shall be made available to the Engineer for visual inspection of the device installation, prior to being used on the jobsite.

The Contractor shall submit an updated list of retrofitted off-road construction equipment as retrofitted equipment changes or comes on to the jobsite. The addition or deletion of any diesel powered equipment shall be included on the updated list.

If any diesel powered off-road equipment is found to be in non-compliance with any portion of this special provision, the Engineer will issue the Contractor a diesel retrofit deficiency deduction.

Any costs associated with retrofitting any diesel powered off-road equipment with emission control devices shall be considered as included in the contract unit prices bid for the various items of work involved and no additional compensation will be allowed. The Contractor's compliance with this notice and any associated regulations shall not be grounds for a claim.

### **Diesel Retrofit Deficiency Deduction**

When the Engineer determines that a diesel retrofit deficiency exists, a daily monetary deduction will be imposed for each calendar day or fraction thereof the deficiency continues to exist. The calendar day(s) will begin when the time period for correction is exceeded and end with the Engineer's written acceptance of the correction. The daily monetary deduction will be \$1,000.00 for each deficiency identified.

The deficiency will be based on lack of diesel retrofit emissions control.

If a Contractor accumulates three diesel retrofit deficiency deductions for the same piece of equipment in a contract period, the Contractor will be shutdown until the deficiency is corrected.

Such a shutdown will not be grounds for any extension of the contract time, waiver of penalties, or be grounds for any claim.

80261



## **DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION (BDE)**

Effective: September 1, 2000

Revised: March 2, 2019

FEDERAL OBLIGATION. The Department of Transportation, as a recipient of federal financial assistance, is required to take all necessary and reasonable steps to ensure nondiscrimination in the award and administration of contracts. Consequently, the federal regulatory provisions of 49 CFR Part 26 apply to this contract concerning the utilization of disadvantaged business enterprises. For the purposes of this Special Provision, a disadvantaged business enterprise (DBE) means a business certified by the Department in accordance with the requirements of 49 CFR Part 26 and listed in the Illinois Unified Certification Program (IL UCP) DBE Directory.

STATE OBLIGATION. This Special Provision will also be used by the Department to satisfy the requirements of the Business Enterprise for Minorities, Females, and Persons with Disabilities Act, 30 ILCS 575. When this Special Provision is used to satisfy state law requirements on 100 percent state-funded contracts, the federal government has no involvement in such contracts (not a federal-aid contract) and no responsibility to oversee the implementation of this Special Provision by the Department on those contracts. DBE participation on 100 percent state-funded contracts will not be credited toward fulfilling the Department's annual overall DBE goal required by the US Department of Transportation to comply with the federal DBE program requirements.

CONTRACTOR ASSURANCE. The Contractor makes the following assurance and agrees to include the assurance in each subcontract the Contractor signs with a subcontractor.

The Contractor, subrecipient, or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The Contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of contracts funded in whole or in part with federal or state funds. Failure by the Contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate, which may include, but is not limited to:

- (a) Withholding progress payments;
- (b) Assessing sanctions;
- (c) Liquidated damages; and/or
- (d) Disqualifying the Contractor from future bidding as non-responsible.

OVERALL GOAL SET FOR THE DEPARTMENT. As a requirement of compliance with 49 CFR Part 26, the Department has set an overall goal for DBE participation in its federally assisted contracts. That goal applies to all federal-aid funds the Department will expend in its federally assisted contracts for the subject reporting fiscal year. The Department is required to make a

good faith effort to achieve the overall goal. The dollar amount paid to all approved DBE companies performing work called for in this contract is eligible to be credited toward fulfillment of the Department's overall goal.

CONTRACT GOAL TO BE ACHIEVED BY THE CONTRACTOR. This contract includes a specific DBE utilization goal established by the Department. The goal has been included because the Department has determined the work of this contract has subcontracting opportunities that may be suitable for performance by DBE companies. The determination is based on an assessment of the type of work, the location of the work, and the availability of DBE companies to do a part of the work. The assessment indicates, in the absence of unlawful discrimination and in an arena of fair and open competition, DBE companies can be expected to perform \_\_\_\_\_% of the work. This percentage is set as the DBE participation goal for this contract. Consequently, in addition to the other award criteria established for this contract, the Department will only award this contract to a bidder who makes a good faith effort to meet this goal of DBE participation in the performance of the work. A bidder makes a good faith effort for award consideration if either of the following is done in accordance with the procedures set for in this Special Provision:

- (a) The bidder documents enough DBE participation has been obtained to meet the goal or,
- (b) The bidder documents a good faith effort has been made to meet the goal, even though the effort did not succeed in obtaining enough DBE participation to meet the goal.

DBE LOCATOR REFERENCES. Bidders shall consult the IL UCP DBE Directory as a reference source for DBE-certified companies. In addition, the Department maintains a letting and item specific DBE locator information system whereby DBE companies can register their interest in providing quotes on particular bid items advertised for letting. Information concerning DBE companies willing to quote work for particular contracts may be obtained by contacting the Department's Bureau of Small Business Enterprises at telephone number (217) 785-4611, or by visiting the Department's website at:

<http://www.idot.illinois.gov/doing-business/certifications/disadvantaged-business-enterprise-certification/il-ucp-directory/index>.

BIDDING PROCEDURES. Compliance with this Special Provision is a material bidding requirement and failure of the bidder to comply will render the bid not responsive.

The bidder shall submit a DBE Utilization Plan (form SBE 2026), and a DBE Participation Statement (form SBE 2025) for each DBE company proposed for the performance of work to achieve the contract goal, with the bid. If the Utilization Plan indicates the contract goal will not be met, documentation of good faith efforts shall also be submitted. The documentation of good faith efforts must include copies of each DBE and non-DBE subcontractor quote submitted to the bidder when a non-DBE subcontractor is selected over a DBE for work on the contract. The required forms and documentation must be submitted as a single .pdf file using the "Integrated Contractor Exchange (iCX)" application within the Department's "EBids System".

The Department will not accept a Utilization Plan if it does not meet the bidding procedures set forth herein and the bid will be declared not responsive. In the event the bid is declared not responsive, the Department may elect to cause the forfeiture of the penal sum of the bidder's proposal guaranty and may deny authorization to bid the project if re-advertised for bids.

GOOD FAITH EFFORT PROCEDURES. The contract will not be awarded until the Utilization Plan is approved. All information submitted by the bidder must be complete, accurate and adequately document enough DBE participation has been obtained or document the good faith efforts of the bidder, in the event enough DBE participation has not been obtained, before the Department will commit to the performance of the contract by the bidder. The Utilization Plan will be approved by the Department if the Utilization Plan documents sufficient commercially useful DBE work to meet the contract goal or the bidder submits sufficient documentation of a good faith effort to meet the contract goal pursuant to 49 CFR Part 26, Appendix A. This means the bidder must show that all necessary and reasonable steps were taken to achieve the contract goal. Necessary and reasonable steps are those which, by their scope, intensity and appropriateness to the objective, could reasonably be expected to obtain sufficient DBE participation, even if they were not successful. The Department will consider the quality, quantity, and intensity of the kinds of efforts the bidder has made. Mere *pro forma* efforts, in other words efforts done as a matter of form, are not good faith efforts; rather, the bidder is expected to have taken genuine efforts that would be reasonably expected of a bidder actively and aggressively trying to obtain DBE participation sufficient to meet the contract goal.

- (a) The following is a list of types of action that the Department will consider as part of the evaluation of the bidder's good faith efforts to obtain participation. These listed factors are not intended to be a mandatory checklist and are not intended to be exhaustive. Other factors or efforts brought to the attention of the Department may be relevant in appropriate cases and will be considered by the Department.
  - (1) Soliciting through all reasonable and available means (e.g. attendance at pre-bid meetings, advertising and/or written notices) the interest of all certified DBE companies that have the capability to perform the work of the contract. The bidder must solicit this interest within sufficient time to allow the DBE companies to respond to the solicitation. The bidder must determine with certainty if the DBE companies are interested by taking appropriate steps to follow up initial solicitations.
  - (2) Selecting portions of the work to be performed by DBE companies in order to increase the likelihood that the DBE goals will be achieved. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate DBE participation, even when the Contractor might otherwise prefer to perform these work items with its own forces.
  - (3) Providing interested DBE companies with adequate information about the plans, specifications, and requirements of the contract in a timely manner to assist them in responding to a solicitation.

- (4) a. Negotiating in good faith with interested DBE companies. It is the bidder's responsibility to make a portion of the work available to DBE subcontractors and suppliers and to select those portions of the work or material needs consistent with the available DBE subcontractors and suppliers, so as to facilitate DBE participation. Evidence of such negotiation includes the names, addresses, and telephone numbers of DBE companies that were considered; a description of the information provided regarding the plans and specifications for the work selected for subcontracting; and evidence as to why additional agreements could not be reached for DBE companies to perform the work.
  - b. A bidder using good business judgment would consider a number of factors in negotiating with subcontractors, including DBE subcontractors, and would take a firm's price and capabilities as well as contract goals into consideration. However, the fact that there may be some additional costs involved in finding and using DBE companies is not in itself sufficient reason for a bidder's failure to meet the contract DBE goal, as long as such costs are reasonable. Also the ability or desire of a bidder to perform the work of a contract with its own organization does not relieve the bidder of the responsibility to make good faith efforts. Bidders are not, however, required to accept higher quotes from DBE companies if the price difference is excessive or unreasonable. In accordance with the above Bidding Procedures, the documentation of good faith efforts must include copies of each DBE and non-DBE subcontractor quote submitted to the bidder when a non-DBE subcontractor was selected over a DBE for work on the contract.
- (5) Not rejecting DBE companies as being unqualified without sound reasons based on a thorough investigation of their capabilities. The bidder's standing within its industry, membership in specific groups, organizations, or associations and political or social affiliations (for example union vs. non-union employee status) are not legitimate causes for the rejection or non-solicitation of bids in the bidder's efforts to meet the project goal.
  - (6) Making efforts to assist interested DBE companies in obtaining bonding, lines of credit, or insurance as required by the recipient or Contractor.
  - (7) Making efforts to assist interested DBE companies in obtaining necessary equipment, supplies, materials, or related assistance or services.
  - (8) Effectively using the services of available minority/women community organizations; minority/women contractors' groups; local, state, and federal minority/women business assistance offices; and other organizations as allowed on a case-by-case basis to provide assistance in the recruitment and placement of DBE companies.
- (b) If the Department determines the bidder has made a good faith effort to secure the work commitment of DBE companies to meet the contract goal, the Department will award the contract provided it is otherwise eligible for award. If the Department determines the

bidder has failed to meet the requirements of this Special Provision or that a good faith effort has not been made, the Department will notify the responsible company official designated in the Utilization Plan that the bid is not responsive. The notification will also include a statement of reasons for the adverse determination. If the Utilization Plan is not approved because it is deficient as a technical matter, unless waived by the Department, the bidder will be notified and will be allowed no more than a five calendar day period to cure the deficiency.

- (c) The bidder may request administrative reconsideration of an adverse determination by emailing the Department at "[DOT.DBE.UP@illinois.gov](mailto:DOT.DBE.UP@illinois.gov)" within the five calendar days after the receipt of the notification of the determination. The determination shall become final if a request is not made on or before the fifth calendar day. A request may provide additional written documentation or argument concerning the issues raised in the determination statement of reasons, provided the documentation and arguments address efforts made prior to submitting the bid. The request will be reviewed by the Department's Reconsideration Officer. The Reconsideration Officer will extend an opportunity to the bidder to meet in person to consider all issues of documentation and whether the bidder made a good faith effort to meet the goal. After the review by the Reconsideration Officer, the bidder will be sent a written decision within ten working days after receipt of the request for reconsideration, explaining the basis for finding that the bidder did or did not meet the goal or make adequate good faith efforts to do so. A final decision by the Reconsideration Officer that a good faith effort was made shall approve the Utilization Plan submitted by the bidder and shall clear the contract for award. A final decision that a good faith effort was not made shall render the bid not responsive.

**CALCULATING DBE PARTICIPATION.** The Utilization Plan values represent work anticipated to be performed and paid for upon satisfactory completion. The Department is only able to count toward the achievement of the overall goal and the contract goal the value of payments made for the work actually performed by DBE companies. In addition, a DBE must perform a commercially useful function on the contract to be counted. A commercially useful function is generally performed when the DBE is responsible for the work and is carrying out its responsibilities by actually performing, managing, and supervising the work involved. The Department and Contractor are governed by the provisions of 49 CFR Part 26.55(c) on questions of commercially useful functions as it affects the work. Specific counting guidelines are provided in 49 CFR Part 26.55, the provisions of which govern over the summary contained herein.

- (a) DBE as the Contractor: 100 percent goal credit for that portion of the work performed by the DBE's own forces, including the cost of materials and supplies. Work that a DBE subcontracts to a non-DBE does not count toward the DBE goals.
- (b) DBE as a joint venture Contractor: 100 percent goal credit for that portion of the total dollar value of the contract equal to the distinct, clearly defined portion of the work performed by the DBE's own forces.

- (c) DBE as a subcontractor: 100 percent goal credit for the work of the subcontract performed by the DBE's own forces, including the cost of materials and supplies, excluding the purchase of materials and supplies or the lease of equipment by the DBE subcontractor from the Contractor or its affiliates. Work that a DBE subcontractor in turn subcontracts to a non-DBE does not count toward the DBE goal.
- (d) DBE as a trucker: 100 percent goal credit for trucking participation provided the DBE is responsible for the management and supervision of the entire trucking operation for which it is responsible. At least one truck owned, operated, licensed, and insured by the DBE must be used on the contract. Credit will be given for the following:
  - (1) The DBE may lease trucks from another DBE firm, including an owner-operator who is certified as a DBE. The DBE who leases trucks from another DBE receives credit for the total value of the transportation services the lessee DBE provides on the contract.
  - (2) The DBE may also lease trucks from a non-DBE firm, including from an owner-operator. The DBE who leases trucks from a non-DBE is entitled to credit only for the fee or commission it receives as a result of the lease arrangement.
- (e) DBE as a material supplier:
  - (1) 60 percent goal credit for the cost of the materials or supplies purchased from a DBE regular dealer.
  - (2) 100 percent goal credit for the cost of materials or supplies obtained from a DBE manufacturer.
  - (3) 100 percent credit for the value of reasonable fees and commissions for the procurement of materials and supplies if not a DBE regular dealer or DBE manufacturer.

**CONTRACT COMPLIANCE.** Compliance with this Special Provision is an essential part of the contract. The Department is prohibited by federal regulations from crediting the participation of a DBE included in the Utilization Plan toward either the contract goal or the Department's overall goal until the amount to be applied toward the goals has been paid to the DBE. The following administrative procedures and remedies govern the compliance by the Contractor with the contractual obligations established by the Utilization Plan. After approval of the Utilization Plan and award of the contract, the Utilization Plan and individual DBE Participation Statements become part of the contract. If the Contractor did not succeed in obtaining enough DBE participation to achieve the advertised contract goal, and the Utilization Plan was approved and contract awarded based upon a determination of good faith, the total dollar value of DBE work calculated in the approved Utilization Plan as a percentage of the awarded contract value shall become the amended contract goal. All work indicated for performance by an approved DBE shall be performed, managed, and supervised by the DBE executing the DBE Participation Commitment Statement.

- (a) NO AMENDMENT. No amendment to the Utilization Plan may be made without prior written approval from the Department's Bureau of Small Business Enterprises. All requests for amendment to the Utilization Plan shall be emailed to the Department at [DOT.DBE.UP@illinois.gov](mailto:DOT.DBE.UP@illinois.gov).
- (b) CHANGES TO WORK. Any deviation from the DBE condition-of-award or contract plans, specifications, or special provisions must be approved, in writing, by the Department as provided elsewhere in the Contract. The Contractor shall notify affected DBEs in writing of any changes in the scope of work which result in a reduction in the dollar amount condition-of-award to the contract. Where the revision includes work committed to a new DBE subcontractor, not previously involved in the project, then a Request for Approval of Subcontractor, Department form BC 260A or AER 260A, must be signed and submitted. If the commitment of work is in the form of additional tasks assigned to an existing subcontract, a new Request for Approval of Subcontractor will not be required. However, the Contractor must document efforts to assure the existing DBE subcontractor is capable of performing the additional work and has agreed in writing to the change.
- (c) SUBCONTRACT. The Contractor must provide copies of DBE subcontracts to the Department upon request. Subcontractors shall ensure that all lower tier subcontracts or agreements with DBEs to supply labor or materials be performed in accordance with this Special Provision.
- (d) ALTERNATIVE WORK METHODS. In addition to the above requirements for reductions in the condition of award, additional requirements apply to the two cases of Contractor-initiated work substitution proposals. Where the contract allows alternate work methods which serve to delete or create underruns in condition of award DBE work, and the Contractor selects that alternate method or, where the Contractor proposes a substitute work method or material that serves to diminish or delete work committed to a DBE and replace it with other work, then the Contractor must demonstrate one of the following:
- (1) The replacement work will be performed by the same DBE (as long as the DBE is certified in the respective item of work) in a modification of the condition of award; or
  - (2) The DBE is aware its work will be deleted or will experience underruns and has agreed in writing to the change. If this occurs, the Contractor shall substitute other work of equivalent value to a certified DBE or provide documentation of good faith efforts to do so; or
  - (3) The DBE is not capable of performing the replacement work or has declined to perform the work at a reasonable competitive price. If this occurs, the Contractor shall substitute other work of equivalent value to a certified DBE or provide documentation of good faith efforts to do so.

- (e) TERMINATION AND REPLACEMENT PROCEDURES. The Contractor shall not terminate or replace a DBE listed on the approved Utilization Plan, or perform with other forces work designated for a listed DBE except as provided in this Special Provision. The Contractor shall utilize the specific DBEs listed to perform the work and supply the materials for which each is listed unless the Contractor obtains the Department's written consent as provided in subsection (a) of this part. Unless Department consent is provided for termination of a DBE subcontractor, the Contractor shall not be entitled to any payment for work or material unless it is performed or supplied by the DBE in the Utilization Plan.

As stated above, the Contractor shall not terminate or replace a DBE subcontractor listed in the approved Utilization Plan without prior written consent. This includes, but is not limited to, instances in which the Contractor seeks to perform work originally designated for a DBE subcontractor with its own forces or those of an affiliate, a non-DBE firm, or with another DBE firm. Written consent will be granted only if the Bureau of Small Business Enterprises agrees, for reasons stated in its concurrence document, that the Contractor has good cause to terminate or replace the DBE firm. Before transmitting to the Bureau of Small Business Enterprises any request to terminate and/or substitute a DBE subcontractor, the Contractor shall give notice in writing to the DBE subcontractor, with a copy to the Bureau, of its intent to request to terminate and/or substitute, and the reason for the request. The Contractor shall give the DBE five days to respond to the Contractor's notice. The DBE so notified shall advise the Bureau and the Contractor of the reasons, if any, why it objects to the proposed termination of its subcontract and why the Bureau should not approve the Contractor's action. If required in a particular case as a matter of public necessity, the Bureau may provide a response period shorter than five days.

For purposes of this paragraph, good cause includes the following circumstances:

- (1) The listed DBE subcontractor fails or refuses to execute a written contract;
- (2) The listed DBE subcontractor fails or refuses to perform the work of its subcontract in a way consistent with normal industry standards. Provided, however, that good cause does not exist if the failure or refusal of the DBE subcontractor to perform its work on the subcontract results from the bad faith or discriminatory action of the Contractor;
- (3) The listed DBE subcontractor fails or refuses to meet the Contractor's reasonable, nondiscriminatory bond requirements;
- (4) The listed DBE subcontractor becomes bankrupt, insolvent, or exhibits credit unworthiness;
- (5) The listed DBE subcontractor is ineligible to work on public works projects because of suspension and debarment proceedings pursuant 2 CFR Parts 180, 215 and 1200 or applicable state law.



- (6) The Contractor has determined the listed DBE subcontractor is not a responsible contractor;
- (7) The listed DBE subcontractor voluntarily withdraws from the projects and provides written notice to the Contractor of its withdrawal;
- (8) The listed DBE is ineligible to receive DBE credit for the type of work required;
- (9) A DBE owner dies or becomes disabled with the result that the listed DBE subcontractor is unable to complete its work on the contract;
- (10) Other documented good cause that compels the termination of the DBE subcontractor. Provided, that good cause does not exist if the Contractor seeks to terminate a DBE it relied upon to obtain the contract so that the Contractor can self-perform the work for which the DBE contractor was engaged or so that the Contractor can substitute another DBE or non-DBE contractor after contract award.

When a DBE is terminated or fails to complete its work on the Contract for any reason, the Contractor shall make a good faith effort to find another DBE to substitute for the original DBE to perform at least the same amount of work under the contract as the terminated DBE to the extent needed to meet the established Contract goal. The good faith efforts shall be documented by the Contractor. If the Department requests documentation under this provision, the Contractor shall submit the documentation within seven days, which may be extended for an additional seven days if necessary at the request of the Contractor. The Department will provide a written determination to the Contractor stating whether or not good faith efforts have been demonstrated.

- (f) FINAL PAYMENT. After the performance of the final item of work or delivery of material by a DBE and final payment therefore to the DBE by the Contractor, but not later than 30 calendar days after payment has been made by the Department to the Contractor for such work or material, the Contractor shall submit a DBE Payment Agreement on Department form SBE 2115 to the Resident Engineer. If full and final payment has not been made to the DBE, the DBE Payment Agreement shall indicate whether a disagreement as to the payment required exists between the Contractor and the DBE or if the Contractor believes the work has not been satisfactorily completed. If the Contractor does not have the full amount of work indicated in the Utilization Plan performed by the DBE companies indicated in the Utilization Plan and after good faith efforts are reviewed, the Department may deduct from contract payments to the Contractor the amount of the goal not achieved as liquidated and ascertained damages. The Contractor may request an administrative reconsideration of any amount deducted as damages pursuant to subsection (h) of this part.
- (g) ENFORCEMENT. The Department reserves the right to withhold payment to the Contractor to enforce the provisions of this Special Provision. Final payment shall not be

made on the contract until such time as the Contractor submits sufficient documentation demonstrating achievement of the goal in accordance with this Special Provision or after liquidated damages have been determined and collected.

- (h) RECONSIDERATION. Notwithstanding any other provision of the contract, including but not limited to Article 109.09 of the Standard Specifications, the Contractor may request administrative reconsideration of a decision to deduct the amount of the goal not achieved as liquidated damages. A request to reconsider shall be delivered to the Contract Compliance Section and shall be handled and considered in the same manner as set forth in paragraph (c) of “Good Faith Effort Procedures” of this Special Provision, except a final decision that a good faith effort was not made during contract performance to achieve the goal agreed to in the Utilization Plan shall be the final administrative decision of the Department. The result of the reconsideration process is not administratively appealable to the U.S. Department of Transportation.

80029

## **ELASTOMERIC BEARINGS (BDE)**

Effective: January 1, 2019

Revise the first paragraph of Article 1083.01 of the Standard Specifications to read:

**“1083.01 Description.** Elastomeric bearings shall consist of steel laminated elastomeric pads or assemblies of steel laminated elastomeric pads with externally bonded structural steel bearing plates, structural steel top bearing plate, and required stainless steel and PTFE sheets, as shown on the plans and as specified herein. The manufacturer shall be listed as compliant through the NTPEP program. The Department will maintain a qualified producer list.”

80405

## **EQUIPMENT PARKING AND STORAGE (BDE)**

Effective: November 1, 2017

Replace the first paragraph of Article 701.11 of the Standard Specifications with the following.

**“701.11 Equipment Parking and Storage.** During working hours, all vehicles and/or nonoperating equipment which are parked, two hours or less, shall be parked at least 8 ft (2.5 m) from the open traffic lane. For other periods of time during working and for all nonworking hours, all vehicles, materials, and equipment shall be parked or stored as follows.

- (a) When the project has adequate right-of-way, vehicles, materials, and equipment shall be located a minimum of 30 ft (9 m) from the pavement.
- (b) When adequate right-of-way does not exist, vehicles, materials, and equipment shall be located a minimum of 15 ft (4.5 m) from the edge of any pavement open to traffic.
- (c) Behind temporary concrete barrier, vehicles, materials, and equipment shall be located a minimum of 24 in. (600 mm) behind free standing barrier or a minimum of 6 in. (150 mm) behind barrier that is either pinned or restrained according to Article 704.04. The 24 in. or 6 in. measurement shall be from the base of the non-traffic side of the barrier.
- (d) Behind other man-made or natural barriers meeting the approval of the Engineer.”

80388

## **MOBILIZATION (BDE)**

Effective: April 1, 2020

Replace Articles 671.02(a), (b), and (c) of the Standard Specifications with the following:

“(a) Upon execution of the contract, 90 percent of the pay item will be paid.

(b) When 90 percent of the adjusted contract value is earned, the remaining ten percent of the pay item will be paid along with any amount bid in excess of six percent of the original contract amount.”

80428

**PAVEMENT MARKING REMOVAL (BDE)**

Effective: July 1, 2016

Revise Article 783.02 of the Standard Specifications to read:

**“783.02 Equipment.** Equipment shall be according to the following.

Item	Article/Section
(a) Grinders (Note 1)	
(b) Water Blaster with Vacuum Recovery .....	1101.12

Note 1. Grinding equipment shall be approved by the Engineer.”

Revise the first paragraph of Article 783.03 of the Standard Specifications to read:

**“783.03 Removal of Conflicting Markings.** Existing pavement markings that conflict with revised traffic patterns shall be removed. If darkness or inclement weather prohibits the removal operations, such operations shall be resumed the next morning or when weather permits. In the event of removal equipment failure, such equipment shall be repaired, replaced, or leased so removal operations can be resumed within 24 hours.”

Revise the first and second sentences of the first paragraph of Article 783.03(a) of the Standard Specifications to read:

“The existing pavement markings shall be removed by the method specified and in a manner that does not materially damage the surface or texture of the pavement or surfacing. Small particles of tightly adhering existing markings may remain in place, if in the opinion of the Engineer, complete removal of the small particles will result in pavement surface damage.”

Revise the first paragraph of Article 783.04 of the Standard Specifications to read:

**“783.04 Cleaning.** The roadway surface shall be cleaned of debris or any other deleterious material by the use of compressed air or water blast.”

Revise the first paragraph of Article 783.06 of the Standard Specifications to read:

**“783.06 Basis of Payment.** This work will be paid for at the contract unit price per each for RAISED REFLECTIVE PAVEMENT MARKER REMOVAL, or at the contract unit price per square foot (square meter) for PAVEMENT MARKING REMOVAL – GRINDING and/or PAVEMENT MARKING REMOVAL – WATER BLASTING.”

Delete Article 1101.13 from the Standard Specifications.

80371

**PORTLAND CEMENT CONCRETE (BDE)**

Effective: November 1, 2017

Revise the Air Content % of Class PP Concrete in Table 1 Classes of Concrete and Mix Design Criteria in Article 1020.04 of the Standard Specifications to read:

"TABLE 1. CLASSES OF CONCRETE AND MIX DESIGN CRITERIA		
Class of Conc.	Use	Air Content %
PP	Pavement Patching Bridge Deck Patching (10)	4.0 - 8.0"
	PP-1	
	PP-2	
	PP-3	
	PP-4	
	PP-5	

Revise Note (4) at the end of Table 1 Classes of Concrete and Mix Design Criteria in Article 1020.04 of the Standard Specifications to read:

“(4) For all classes of concrete, the maximum slump may be increased to 7 in (175 mm) when a high range water-reducing admixture is used. For Class SC, the maximum slump may be increased to 8 in. (200 mm). For Class PS, the maximum slump may be increased to 8 1/2 in. (215 mm) if the high range water-reducing admixture is the polycarboxylate type.”

80389

## PORTLAND CEMENT CONCRETE BRIDGE DECK CURING (BDE)

Effective: April 1, 2015

Revised: November 1, 2019

Revise the following three entries and add the following footnote to the Index Table of Curing and Protection of Concrete Construction in Article 1020.13 of the Standard Specifications:

"INDEX TABLE OF CURING AND PROTECTION OF CONCRETE CONSTRUCTION"			
TYPE OF CONSTRUCTION	CURING METHODS	CURING PERIOD DAYS	LOW AIR TEMPERATURE PROTECTION METHODS
Superstructure (except deck)	1020.13(a)(1)(2)(3)(5)(6) <sup>8/ 19/</sup>	7	1020.13(d)(1)(2)
Superstructure (Approach Slab)	1020.13(a)(5)(6) <sup>19/</sup>	3	1020.13(d)(1)(2) <sup>17/</sup>
Deck	1020.13(a)(5)(6) <sup>19/</sup>	7	1020.13(d)(1)(2) <sup>17/</sup>

19/ The cellulose polyethylene or synthetic fiber with polymer polyethylene blanket method shall not be used on latex modified concrete, or vertical concrete surfaces greater than 1 ft (300 mm), e.g. parapets."

Add the following to Article 1020.13(a) of the Standard Specifications.

"(6)Cellulose Polyethylene Blanket Method and Synthetic Fiber with Polymer Polyethylene Blanket Method. After the surface of concrete has been textured or finished, it shall be covered immediately with a wetted cellulose polyethylene blanket or wetted synthetic fiber with polymer polyethylene blanket. The blankets shall be installed with the white perforated polyethylene side facing up. The blanket's fiber side shall be wetted immediately prior to placement or as the blanket is being placed, and the polyethylene side shall be thoroughly soaked with a gentle spray of water immediately after placement. For bridge decks, a foot bridge shall be used to place and wet the blankets.

Adjoining blankets shall overlap a minimum of 8 in. (200 mm). Bubbles and wrinkles shall be removed with a broom, squeegee, or as recommended by the manufacturer.

The blankets shall be maintained in a wetted condition until the concrete has hardened sufficiently to place soaker hoses without indentations to the concrete surface. The soaker hoses shall be placed on top of the blankets at a maximum 4 ft (1.2 m) spacing. The blankets shall be kept wet with a continuous supply of water for the remainder of the curing period. Other continuous wetting systems may be used if approved by the Engineer.

For areas inaccessible to the blankets, curing shall be according to Article 1020.13(a)(3). "



Revise the first paragraph of Article 1022.03 of the Standard Specifications to read:

**“1022.03 Waterproof Paper Blankets, White Polyethylene Sheeting, Burlap-Polyethylene Blankets, Cellulose Polyethylene Blankets, and Synthetic Fiber with Polymer Polyethylene Blankets.** These materials shall be white and according to ASTM C 171.

The cellulose polyethylene blanket shall consist of a perforated white polyethylene sheeting with cellulose fiber backing and shall be limited to single use only. The cellulose polyethylene blankets shall be delivered to the jobsite unused and in the manufacturer's unopened packaging until ready for installation. Each roll shall be clearly labeled on the product with product name, manufacturer, and manufacturer's certification of compliance with ASTM C 171.

The synthetic fiber with polymer polyethylene blanket shall consist of a perforated white polyethylene sheeting with absorbent synthetic fibers and super absorbent polymer backing, and shall be limited to single use only. The synthetic fiber with polymer polyethylene blankets shall be delivered to the jobsite unused and in the manufacturer's unopened packaging until ready for installation. Each roll shall be clearly labeled on the product with product name, manufacturer, and manufacturer's certification of compliance with ASTM C 171.”

80359

## REMOVAL AND DISPOSAL OF REGULATED SUBSTANCES (BDE)

Effective: January 1, 2019

Revised: January 1, 2020

Revise Section 669 of the Standard Specifications to read:

### “SECTION 669. REMOVAL AND DISPOSAL OF REGULATED SUBSTANCES

**669.01 Description.** This work shall consist of the transportation and proper disposal of regulated substances. This work shall also consist of the removal, transportation, and proper disposal of underground storage tanks (UST), their contents and associated underground piping to the point where the piping is above the ground, including determining the content types and estimated quantities.

**669.02 Equipment.** The Contractor shall notify the Engineer of the delivery of all excavation, storage, and transportation equipment to a work area location. The equipment shall comply with OSHA and American Petroleum Institute (API) guidelines and shall be furnished in a clean condition. Clean condition means the equipment does not contain any residual material classified as a non-special waste, non-hazardous special waste, or hazardous waste. Residual materials include, but are not limited to, petroleum products, chemical products, sludges, or any other material present in or on equipment.

Before beginning any associated soil or groundwater management activity, the Contractor shall provide the Engineer with the opportunity to visually inspect and approve the equipment. If the equipment contains any contaminated residual material, decontamination shall be performed on the equipment as appropriate to the regulated substance and degree of contamination present according to OSHA and API guidelines. All cleaning fluids used shall be treated as the contaminant unless laboratory testing proves otherwise.

**669.03 Pre-Construction Submittals and Qualifications.** Prior to beginning this work, or working in areas with regulated substances, the Contractor shall submit a “Regulated Substances Pre-Construction Plan (RSPCP)” to the Engineer for review and approval using form BDE 2730. The form shall be signed by an Illinois licensed Professional Engineer or Professional Geologist.

As part of the RSPCP, the Contractor(s) or firm(s) performing the work shall meet the following qualifications.

- (a) Regulated Substances Monitoring. Qualification for environmental observation and field screening of regulated substances work and environmental observation of UST removal shall require either pre-qualification in Hazardous Waste by the Department or demonstration of acceptable project experience in remediation and operations for contaminated sites in accordance with applicable Federal, State, or local regulatory requirements using BDE 2730.

Qualification for each individual performing regulated substances monitoring shall require a minimum of one-year of experience in similar activities as those required for the project.

- (b) Underground Storage Tank Removal. Qualification for underground storage tank (UST) removal work shall require licensing and certification with the Office of the State Fire Marshall (OSFM) and possession of all permits required to perform the work. A copy of the permit shall be provided to the Engineer prior to tank removal.

The qualified Contractor(s) or firm(s) shall also document it does not have any current or former ties with any of the properties contained within, adjoining, or potentially affecting the work.

The Engineer will require up to 21 calendar days for review of the RSPCP. The review may involve rejection or revision and resubmittal; in which case, an additional 21 days will be required for each subsequent review. Work shall not commence until the RSPCP has been approved by the Engineer. After approval, the RSPCP shall be revised as necessary to reflect changed conditions in the field and documented using BDE 2730A "Regulated Substances Pre-Construction Plan (RSPCP) Addendum" and submitted to the Engineer for approval.

## **CONSTRUCTION REQUIREMENTS**

**669.04 Regulated Substances Monitoring.** Regulated substances monitoring includes environmental observation and field screening during regulated substances management activities at the contract specific work areas. As part of the regulated substances monitoring, the monitoring personnel shall perform and document the applicable duties listed on form BDE 2732 "Regulated Substances Monitoring Daily Record (RSMDR)".

- (a) Environmental Observation. Prior to beginning excavation, the Contractor shall mark the limits of the contract specific work areas. Once work begins, the monitoring personnel shall be present on-site continuously during the excavation and loading of material.
- (b) Field Screening. Field screening shall be performed during the excavation and loading of material from the contract specific work areas, except for material classified according to Article 669.05(b)(1) or 669.05(c) where field screening is not required.

Field screening shall be performed with either a photoionization detector (PID) (minimum 10.6eV lamp) or a flame ionization detector (FID), and other equipment as appropriate, to monitor for potential contaminants associated with regulated substances. The PID or FID shall be calibrated on-site, and background level readings taken and recorded daily, and as field and weather conditions change. Field screen readings on the PID or FID in excess of background levels indicates the potential presence of regulated substances requiring handling as a non-special waste, special waste, or hazardous waste. PID or FID readings may be used as the basis of increasing the limits of removal with the approval of the Engineer but shall in no case be used to decrease the limits.

**669.05 Regulated Substances Management and Disposal.** The management and disposal of soil and/or groundwater containing regulated substances shall be according to the following:

- (a) Soil Analytical Results Exceed Most Stringent MAC. When the soil analytical results indicate detected levels exceed the most stringent maximum allowable concentration (MAC) for chemical constituents in soil established pursuant to Subpart F of 35 Ill. Adm. Code 1100.605, the soil shall be managed as follows:
  - (1) When analytical results indicate inorganic chemical constituents exceed the most stringent MAC, but still considered within area background levels by the Engineer, the excavated soil can be utilized within the right-of-way as embankment or fill, when suitable. If the soils cannot be utilized within the right-of-way, they shall be managed and disposed of at a landfill as a non-special waste.
  - (2) When analytical results indicate inorganic chemical constituents exceed the most stringent MAC but do not exceed the MAC for a Metropolitan Statistical Area (MSA) County identified in 35 Ill. Admin. Code 742 Appendix A. Table G, the excavated soil can be utilized within the right-of-way as embankment or fill, when suitable, or managed and disposed of at a clean construction and demolition debris (CCDD) facility or an uncontaminated soil fill operation (USFO) within an MSA County provided the pH of the soil is within the range of 6.25 - 9.0, inclusive.
  - (3) When analytical results indicate chemical constituents exceed the most stringent MAC but do not exceed the MAC for an MSA County excluding Chicago, or the MAC within the Chicago corporate limits, the excavated soil can be utilized within the right-of-way as embankment or fill, when suitable, or managed and disposed of off-site at a CCDD facility or an USFO within an MSA County excluding Chicago or within the Chicago corporate limits provided the pH of the soil is within the range of 6.25 - 9.0, inclusive.
  - (4) When analytical results indicate chemical constituents exceed the most stringent MAC but do not exceed the MAC for an MSA County excluding Chicago, the excavated soil can be utilized within the right-of-way as embankment or fill, when suitable, or managed and disposed of off-site at a CCDD facility or an USFO within an MSA County excluding Chicago provided the pH of the soil is within the range of 6.25 - 9.0, inclusive.
  - (5) When the Engineer determines soil cannot be managed according to Articles 669.05(a)(1) through (a)(4) above and the materials do not contain special waste or hazardous waste, as determined by the Engineer, the soil shall be managed and disposed of at a landfill as a non-special waste.
  - (6) When analytical results indicate soil is hazardous by characteristic or listing pursuant to 35 Ill. Admin. Code 721, contains radiological constituents, or the Engineer otherwise determines the soil cannot be managed according to Articles 669.05(a)(1)

through (a)(5) above, the soil shall be managed and disposed of off-site as a special waste or hazardous waste as applicable.

(b) Soil Analytical Results Do Not Exceed Most Stringent MAC. When the soil analytical results indicate that detected levels do not exceed the most stringent MAC, the excavated soil can be utilized within the right-of-way as embankment or fill, when suitable, or managed and disposed of off-site according to Article 202.03. However, the excavated soil cannot be taken to a CCDD facility or an USFO for any of the following reasons.

(1) The pH of the soil is less than 6.25 or greater than 9.0.

(2) The soil exhibited PID or FID readings in excess of background levels.

(c) Soil Analytical Results Exceed Most Stringent MAC but Do Not Exceed Tiered Approach to Corrective Action Objectives (TACO) Residential. When the soil analytical results indicate that detected levels exceed the most stringent MAC but do not exceed TACO Tier 1 Soil Remediation Objectives for Residential Properties pursuant to 35 Ill. Admin. Code 742 Appendix B Table A, the excavated soil can be utilized within the right-of-way as embankment or fill, when suitable, or managed and disposed of off-site according to Article 202.03. However, the excavated soil cannot be taken to a CCDD facility or an USFO.

(d) Groundwater. When groundwater analytical results indicate the detected levels are above Appendix B, Table E of 35 Ill. Admin. Code 742, the most stringent Tier 1 Groundwater Remediation Objectives for Groundwater Component of the Groundwater Ingestion Route for Class 1 groundwater, the groundwater shall be managed off-site as a special waste or hazardous waste as applicable. Special waste groundwater shall be containerized and trucked to an off-site treatment facility, or may be discharged to a sanitary sewer or combined sewer when permitted by the local sewer authority. Groundwater discharged to a sanitary sewer or combined sewer shall be pre-treated to remove particulates and measured with a calibrated flow meter to comply with applicable discharge limits. A copy of the permit shall be provided to the Engineer prior to discharging groundwater to the sanitary sewer or combined sewer.

Groundwater encountered within trenches may be managed within the trench and allowed to infiltrate back into the ground. If the groundwater cannot be managed within the trench, it may be discharged to a sanitary sewer or combined sewer when permitted by the local sewer authority, or it shall be containerized and trucked to an off-site treatment facility as a special waste or hazardous waste. The Contractor is prohibited from discharging groundwater within the trench through a storm sewer. The Contractor shall install backfill plugs within the area of groundwater contamination.

One backfill plug shall be placed down gradient to the area of groundwater contamination. Backfill plugs shall be installed at intervals not to exceed 50 ft (15 m). Backfill plugs are to be 4 ft (1.2 m) long, measured parallel to the trench, full trench width and depth. Backfill plugs shall not have any fine aggregate bedding or backfill, but shall be entirely cohesive

soil or any class of concrete. The Contractor shall provide test data that the material has a permeability of less than  $10^{-7}$  cm/sec according to ASTM D 5084, Method A or per another test method approved by the Engineer.

The Contractor shall use due care when transferring contaminated material from the area of origin to the transporter. Should releases of contaminated material to the environment occur (i.e., spillage onto the ground, etc.), the Contractor shall clean-up spilled material and place in the appropriate storage containers as previously specified. Clean-up shall include, but not be limited to, sampling beneath the material staging area to determine complete removal of the spilled material.

The Contractor shall provide engineered barriers, when required, and shall include materials sufficient to completely line excavation surfaces, including sloped surfaces, bottoms, and sidewall faces, within the areas designated for protection.

The Contractor shall obtain all documentation including any permits and/or licenses required to transport the material containing regulated substances to the disposal facility. The Contractor shall coordinate with the Engineer on the completion of all documentation. The Contractor shall make all arrangements for collection and analysis of landfill acceptance testing. The Contractor shall coordinate waste disposal approvals with the disposal facility.

The Contractor shall provide the Engineer with all transport-related documentation within two days of transport or receipt of said document(s). For management of special or hazardous waste, the Contractor shall provide the Engineer with documentation that the Contractor is operating with a valid Illinois special waste transporter permit at least two weeks before transporting the first load of contaminated material.

Transportation and disposal of material classified according to Article 669.05(a)(5) or 669.05(a)(6) shall be completed each day so that none of the material remains on-site by the close of business, except when temporary staging has been approved.

Any waste generated as a special or hazardous waste from a non-fixed facility shall be manifested off-site using the Department's county generator number provided by the Bureau of Design and Environment. An authorized representative of the Department shall sign all manifests for the disposal of the contaminated material and confirm the Contractor's transported volume. Any waste generated as a non-special waste may be managed off-site without a manifest, a special waste transporter, or a generator number.

The Contractor shall select a landfill permitted for disposal of the contaminant within the State of Illinois. The Department will review and approve or reject the facility proposed by the Contractor to use as a landfill. The Contractor shall verify whether the selected disposal facility is compliant with those applicable standards as mandated by their permit and whether the disposal facility is presently, has previously been, or has never been, on the United States Environmental Protection Agency (U.S. EPA) National Priorities List or the Resource Conservation and Recovery Act (RCRA) List of Violating Facilities. The use of a Contractor selected landfill shall in no manner delay the construction schedule or alter the Contractor's responsibilities as set forth.

**669.06 Non-Special Waste Certification.** An authorized representative of the Department shall sign and date all non-special waste certifications. The Contractor shall be responsible for providing the Engineer with the required information that will allow the Engineer to certify the waste is not a special waste.

(a) Definition. A waste is considered a non-special waste as long as it is not:

- (1) a potentially infectious medical waste;
- (2) a hazardous waste as defined in 35 Ill. Admin. Code 721;
- (3) an industrial process waste or pollution control waste that contains liquids, as determined using the paint filter test set forth in subdivision (3)(A) of subsection (m) of 35 Ill. Admin. Code 811.107;
- (4) a regulated asbestos-containing waste material, as defined under the National Emission Standards for Hazardous Air Pollutants in 40 CFR Part 61.141;
- (5) a material containing polychlorinated biphenyls (PCB's) regulated pursuant to 40 CFR Part 761;
- (6) a material subject to the waste analysis and recordkeeping requirements of 35 Ill. Admin. Code 728.107 under land disposal restrictions of 35 Ill. Admin. Code 728;
- (7) a waste material generated by processing recyclable metals by shredding and required to be managed as a special waste under Section 22.29 of the Environmental Protection Act; or
- (8) an empty portable device or container in which a special or hazardous waste has been stored, transported, treated, disposed of, or otherwise handled.

(b) Certification Information. All information used to determine the waste is not a special waste shall be attached to the certification. The information shall include but not be limited to:

- (1) the means by which the generator has determined the waste is not a hazardous waste;
- (2) the means by which the generator has determined the waste is not a liquid;
- (3) if the waste undergoes testing, the analytic results obtained from testing, signed and dated by the person responsible for completing the analysis;
- (4) if the waste does not undergo testing, an explanation as to why no testing is needed;

(5) a description of the process generating the waste; and

(6) relevant material safety data sheets.

**669.07 Temporary Staging.** Soil classified according to Articles 669.05(a)(2), (b)(1), or (c) may be temporarily staged at the Contractor's option. Soil classified according to Articles 669.05(a)(1), (a)(3), (a)(4), (a)(5), (a)(6), or (b)(2) shall be managed and disposed of without temporary staging to the greatest extent practicable. If circumstances beyond the Contractor's control require temporary staging of these latter materials, the Contractor shall request approval from the Engineer in writing.

Temporary staging shall be accomplished within the right-of-way and the Contractor's means and methods shall be described in the approved or amended RSPCP. Staging areas shall not be located within 200 feet (61 m) of a public or private water supply well; nor within 100 feet (30 m) of sensitive environmental receptor areas, including wetlands, rivers, streams, lakes, or designated habitat zones.

The method of staging shall consist of containerization or stockpiling as applicable for the type, classification, and physical state (i.e., liquid, solid, semisolid) of the material. Materials of different classifications shall be staged separately with no mixing or co-mingling.

When containers are used, the containers and their contents shall remain intact and inaccessible to unauthorized persons until the manner of disposal is determined. The Contractor shall be responsible for all activities associated with the storage containers including, but not limited to, the procurement, transport, and labeling of the containers. The Contractor shall not use a storage container if visual inspection of the container reveals the presence of free liquids or other substances that could cause the waste to be reclassified as a hazardous or special waste.

When stockpiles are used, they shall be covered with a minimum 20-mil plastic sheeting or tarps secured using weights or tie-downs. Perimeter berms or diversionary trenches shall be provided to contain and collect for disposal any water that drains from the soil. Stockpiles shall be managed to prevent or reduce potential dust generation.

When staging non-special waste, special waste, or hazardous waste, the following additional requirements shall apply:

- (a) **Non-Special Waste.** When stockpiling soil classified according to Article 669.05(a)(1) or 669.05(a)(5), an impermeable surface barrier between the materials and the ground surface shall be installed. The impermeable barrier shall consist of a minimum 20-mil plastic liner material and the surface of the stockpile area shall be clean and free of debris prior to placement of the liner. Measures shall also be taken to limit or discourage access to the staging area.
- (b) **Special Waste and Hazardous Waste.** Soil classified according to Article 669.05(a)(6) shall not be stockpiled but shall be containerized immediately upon generation in containers, tanks or containment buildings as defined by RCRA, Toxic Substances Control



Act (TSCA), and other applicable State or local regulations and requirements, including 35 Ill. Admin. Code Part 722, Standards Applicable to Generators of Hazardous Waste.

The staging area(s) shall be enclosed (by a fence or other structure) to restrict direct access to the area, and all required regulatory identification signs applicable to a staging area containing special waste or hazardous waste shall be deployed.

Storage containers shall be placed on an all-weather gravel-packed, asphalt, or concrete surface. Containers shall be in good condition and free of leaks, large dents, or severe rusting, which may compromise containment integrity. Containers must be constructed of, or lined with, materials that will not react or be otherwise incompatible with the hazardous or special waste contents. Containers used to store liquids shall not be filled more than 80 percent of the rated capacity. Incompatible wastes shall not be placed in the same container or comingled.

All containers shall be legibly labeled and marked using pre-printed labels and permanent marker in accordance with applicable regulations, clearly showing the date of waste generation, location and/or area of waste generation, and type of waste. The Contractor shall place these identifying markings on an exterior side surface of the container.

Storage containers shall be kept closed, and storage pads covered, except when access is needed by authorized personnel.

Special waste and hazardous waste shall be transported and disposed within 90 days from the date of generation.

**669.08 Underground Storage Tank Removal.** For the purposes of this section, an underground storage tank (UST) includes the underground storage tank, piping, electrical controls, pump island, vent pipes and appurtenances.

Prior to removing an UST, the Engineer shall determine whether the Department is considered an "owner" or "operator" of the UST as defined by the UST regulations (41 Ill. Adm. Code Part 176). Ownership of the UST refers to the Department's owning title to the UST during storage, use or dispensing of regulated substances. The Department may be considered an "operator" of the UST if it has control of, or has responsibility for, the daily operation of the UST. The Department may however voluntarily undertake actions to remove an UST from the ground without being deemed an "operator" of the UST.

In the event the Department is deemed not to be the "owner" or "operator" of the UST, the OSFM removal permit shall reflect who was the past "owner" or "operator" of the UST. If the "owner" or "operator" cannot be determined from past UST registration documents from OSFM, then the OSFM removal permit will state the "owner" or "operator" of the UST is the Department. The Department's Office of Chief Counsel (OCC) will review all UST removal permits prior to submitting any removal permit to the OSFM. If the Department is not the "owner" or "operator" of the UST then it will not register the UST or pay any registration fee.

The Contractor shall be responsible for obtaining permits required for removing the UST, notification to the OSFM, using an OSFM certified tank contractor, removal and disposal of the UST and its contents, and preparation and submittal of the OSFM Site Assessment Report in accordance with 41 Ill. Admin. Code Part 176.330.

The Contractor shall contact the Engineer and the OSFM's office at least 72 hours prior to removal to confirm the OSFM inspector's presence during the UST removal. Removal, transport, and disposal of the UST shall be according to the applicable portions of the latest revision of the "American Petroleum Institute (API) Recommended Practice 1604".

The Contractor shall collect and analyze tank content (sludge) for disposal purposes. The Contractor shall remove as much of the regulated substance from the UST system as necessary to prevent further release into the environment. All contents within the tank shall be removed, transported and disposed of, or recycled. The tank shall be removed and rendered empty according to IEPA definition.

The Contractor shall collect soil samples from the bottom and sidewalls of the excavated area in accordance with 35 Ill. Admin. Code Part 734.210(h) after the required backfill has been removed during the initial response action, to determine the level of contamination remaining in the ground, regardless if a release is confirmed or not by the OSFM on-site inspector.

In the event the UST is designated a leaking underground storage tank (LUST) by the OSFM's inspector, or confirmation by analytical results, the Contractor shall notify the Engineer and the District Environmental Studies Unit (DESU). Upon confirmation of a release of contaminants and notifications to the Engineer and DESU, the Contractor shall report the release to the Illinois Emergency Management Agency (IEMA) (e.g., by telephone or electronic mail) and provide them with whatever information is available ("owner" or "operator" shall be stated as the past registered "owner" or "operator", or the IDOT District in which the tank is located and the DESU Manager).

The Contractor shall perform the following initial response actions if a release is indicated by the OSFM inspector:

- (a) Take immediate action to prevent any further release of the regulated substance to the environment, which may include removing, at the Engineer's discretion, and disposing of up to 4 ft (1.2 m) of the contaminated material, as measured from the outside dimension of the tank;
- (b) Identify and mitigate fire, explosion and vapor hazards;
- (c) Visually inspect any above ground releases or exposed below ground releases and prevent further migration of the released substance into surrounding soils and groundwater; and
- (d) Continue to monitor and mitigate any additional fire and safety hazards posed by vapors and free product that have migrated from the tank excavation zone and entered into subsurface structures (such as sewers or basements).

The tank excavation shall be backfilled according to applicable portions of Sections 205, 208, and 550 with a material that will compact and develop stability. All uncontaminated concrete and soil removed during tank extraction may be used to backfill the excavation, at the discretion of the Engineer.

After backfilling the excavation, the site shall be graded and cleaned.

**669.09 Regulated Substances Final Construction Report.** Not later than 90 days after completing this work, the Contractor shall submit a “Regulated Substances Final Construction Report (RSFCR)” to the Engineer using form BDE 2733 and required attachments. The form shall be signed by an Illinois licensed Professional Engineer or Professional Geologist.

**669.10 Method of Measurement.** Non-special waste, special waste, and hazardous waste soil will be measured for payment according to Article 202.07(b) when performing earth excavation, Article 502.12(b) when excavating for structures, or by computing the volume of the trench using the maximum trench width permitted and the actual depth of the trench.

Groundwater containerized and transported off-site for management, storage, and disposal will be measured for payment in gallons (liters).

Backfill plugs will be measured in cubic yards (cubic meters) in place, except the quantity for which payment will be made shall not exceed the volume of the trench, as computed by using the maximum width of trench permitted by the Specifications and the actual depth of the trench, with a deduction for the volume of the pipe.

Engineered Barriers will be measured for payment in square yards (square meters).

**669.11 Basis of Payment.** The work of preparing, submitting and administering a Regulated Substances Pre-Construction Plan will be paid for at the contract lump sum price for REGULATED SUBSTANCES PRE-CONSTRUCTION PLAN.

Regulated substances monitoring, including completion of form BDE 2732 for each day of work, will be paid for at the contract unit price per calendar day, or fraction thereof to the nearest 0.5 calendar day, for REGULATED SUBSTANCES MONITORING.

The installation of engineered barriers will be paid for at the contract unit price per square yard (square meter) for ENGINEERED BARRIER.

The work of UST removal, soil excavation, soil and content sampling, the management of excavated soil and UST content, and UST disposal, will be paid for at the contract unit price per each for UNDERGROUND STORAGE TANK REMOVAL.

The transportation and disposal of soil and other materials from an excavation determined to be contaminated will be paid for at the contract unit price per cubic yard (cubic meter) for

**NON-SPECIAL WASTE DISPOSAL, SPECIAL WASTE DISPOSAL, or HAZARDOUS WASTE DISPOSAL.**

The transportation and disposal of groundwater from an excavation determined to be contaminated will be paid for at the contract unit price per gallon (liter) for SPECIAL WASTE GROUNDWATER DISPOSAL or HAZARDOUS WASTE GROUNDWATER DISPOSAL. When groundwater is discharged to a sanitary or combined sewer by permit, the cost will be paid for according to Article 109.05.

Backfill plugs will be paid for at the contract unit price per cubic yard (cubic meter) for BACKFILL PLUGS.

Payment for temporary staging of soil classified according to Articles 669.05(a)(1), (a)(3), (a)(4), (a)(5), (a)(6), or (b)(2) will be paid for according to Article 109.04. The Department will not be responsible for any additional costs incurred, if mismanagement of the staging area, storage containers, or their contents by the Contractor results in excess cost expenditure for disposal or other material management requirements.

Payment for accumulated stormwater removal and disposal will be according to Article 109.04. Payment will only be allowed if appropriate stormwater and erosion control methods were used.

Payment for decontamination, labor, material, and equipment for monitoring areas beyond the specified areas, with the Engineer's prior written approval, will be according to Article 109.04.

When the waste material for disposal requires sampling for landfill disposal acceptance, the samples shall be analyzed for TCLP VOCs, SVOCs, RCRA metals, pH, ignitability, and paint filter test. The analysis will be paid for at the contract unit price per each for SOIL DISPOSAL ANALYSIS using EPA Methods 1311 (extraction), 8260B for VOCs, 8270C for SVOCs, 6010B and 7470A for RCRA metals, 9045C for pH, 1030 for ignitability, and 9095A for paint filter.

The work of preparing, submitting and administering a Regulated Substances Final Construction Report will be paid for at the contract lump sum price REGULATED SUBSTANCES FINAL CONSTRUCTION REPORT."

80407

**SILT FENCE, INLET FILTERS, GROUND STABILIZATION AND RIPRAP FILTER FABRIC (BDE)**

Effective: November 1, 2019

Revised: April 1, 2020

Revise Article 280.02(m) and add Article 280.02(n) so the Standard Specifications read:

- “(m) Above Grade Inlet Filter (Fitted)..... 1081.15(j)
- “(n) Above Grade Inlet Filter (Non-Fitted)..... 1081.15(k)”

Revise the last sentence of the first paragraph in Article 280.04(c) of the Standard Specifications to read:

“The protection shall be constructed with hay or straw bales, silt filter fence, above grade inlet filters (fitted and non-fitted), or inlet filters.

Revise the first sentence of the second paragraph in Article 280.04(c) of the Standard Specifications to read:

“When above grade inlet filters (fitted and non-fitted) are specified, they shall be of sufficient size to completely span and enclose the inlet structure.”

Revise Article 1080.02 of the Standard Specifications to read:

**“1080.02 Geotextile Fabric.** The fabric for silt filter fence shall consist of woven fabric meeting the requirements of AASHTO M 288 for unsupported silt fence.

The fabric for ground stabilization shall consist of woven yarns or nonwoven filaments of polyolefins or polyesters. Woven fabrics shall be Class 2 and nonwoven fabrics shall be Class 1 according to AASHTO M 288.

The physical properties for silt fence and ground stabilization fabrics shall be according to the following.

PHYSICAL PROPERTIES			
	Silt Fence Woven <sup>1/</sup>	Ground Stabilization Woven <sup>2/</sup>	Ground Stabilization Nonwoven <sup>2/</sup>
Grab Strength, lb (N) <sup>3/</sup> ASTM D 4632	123 (550) MD 101 (450) XD	247 (1100) min. <sup>4/</sup>	202 (900) min. <sup>4/</sup>
Elongation/Grab Strain, % ASTM D 4632 <sup>4/</sup>	49 max.	49 max.	50 min.
Trapezoidal Tear Strength, lb (N) ASTM D 4533 <sup>4/</sup>	--	90 (400) min.	79 (350) min.

Puncture Strength, lb (N) ASTM D 6241 <sup>4/</sup>	--	494 (2200) min.	433 (1925) min.
Apparent Opening Size, Sieve No. (mm) ASTM D 4751 <sup>5/</sup>	30 (0.60) max.	40 (0.43) max.	40 (0.43) max.
Permittivity, sec <sup>-1</sup> ASTM D 4491	0.05 min.		
Ultraviolet Stability, % retained strength after 500 hours of exposure ASTM D 4355	70 min.	50 min.	50 min.

- 1/ NTPEP results or manufacturer's certification to meet test requirements.
- 2/ NTPEP results to meet test requirements. Manufacturer shall have public release status and current reports on laboratory results in Test Data of NTPEP's DataMine.
- 3/ MD = Machine direction. XD = Cross-machine direction.
- 4/ Values represent the minimum average roll value (MARV) in the weaker principle direction, MD or XD.
- 5/ Values represent the maximum average roll value."

Revise Article 1080.03 of the Standard Specifications to read:

**“1080.03 Filter Fabric.** The filter fabric shall consist of woven yarns or nonwoven filaments of polyolefins or polyesters. Woven fabrics shall be Class 3 for riprap gradations RR 4 and RR 5, and Class 2 for RR 6 and RR 7 according to AASHTO M 288. Woven slit film geotextiles (i.e. geotextiles made from yarns of a flat, tape-like character) shall not be permitted. Nonwoven fabrics shall be Class 2 for riprap gradations RR 4 and RR 5, and Class 1 for RR 6 and RR 7 according to AASHTO M 288. After forming, the fabric shall be processed so that the yarns or filaments retain their relative positions with respect to each other. The fabric shall be new and undamaged.

The filter fabric shall be manufactured in widths of not less than 6 ft (2 m). Sheets of fabric may be sewn together with thread of a material meeting the chemical requirements given for the yarns or filaments to form fabric widths as required. The sheets of filter fabric shall be sewn together at the point of manufacture or another approved location.

The filter fabric shall be according to the following.

PHYSICAL PROPERTIES <sup>1/</sup>				
	Gradation Nos. RR 4 & RR 5		Gradation Nos. RR 6 & RR 7	
	Woven	Nonwoven	Woven	Nonwoven
Grab Strength, lb (N) ASTM D 4632 <sup>2/</sup>	180 (800) min.	157 (700) min.	247 (1100) min.	202 (900) min.
Elongation/Grab Strain, % ASTM D 4632 <sup>2/</sup>	49 max.	50 min.	49 max.	50 min.
Trapezoidal Tear Strength, lb (N) ASTM D 4533 <sup>2/</sup>	67 (300) min.	56 (250) min.	90 (400) min.	79 (350) min.
Puncture Strength, lb (N) ASTM D 6241 <sup>2/</sup>	370 (1650) min.	309 (1375) min.	494 (2200) min.	433 (1925) min.
Ultraviolet Stability, % retained strength after 500 hours of exposure - ASTM D 4355	50 min.			

1/ NTPEP results to meet test requirements. Manufacturer shall have public release status and current reports on laboratory results in Test Data of NTPEP's DataMine.

2/ Values represent the minimum average roll value (MARV) in the weaker principle direction [machine direction (MD) or cross-machine direction (XD)].

As determined by the Engineer, the filter fabric shall meet the requirements noted in the following after an onsite investigation of the soil to be protected.

Soil by Weight (Mass) Passing the No. 200 sieve (75 µm), %	Apparent Opening Size, Sieve No. (mm) - ASTM D 4751 <sup>1/</sup>	Permittivity, sec <sup>-1</sup> ASTM D 4491
49 max.	60 (0.25) max.	0.2 min.
50 min.	70 (0.22) max.	0.1 min.

1/ Values represent the maximum average roll value.”

Revise Article 1081.15(h)(3)a of the Standard Specifications to read:

“a. Inner Filter Fabric Bag. The inner filter fabric bag shall be constructed of woven yarns or nonwoven filaments made of polyolefins or polyesters with a minimum silt and debris capacity of 2.0 cu ft (0.06 cu m). Woven fabric shall be Class 3 and nonwoven fabric shall be Class 2 according to AASHTO M 288. The fabric bag shall be according to the following.

PHYSICAL PROPERTIES		
	Woven	Nonwoven
Grab Strength, lb (N) ASTM D 4632 <sup>1/</sup>	180 (800) min.	157 (700) min.
Elongation/Grab Strain, % ASTM D 4632 <sup>1/</sup>	49 max.	50 min.
Trapezoidal Tear Strength, lb (N) ASTM D 4533 <sup>1/</sup>	67 (300) min.	56 (250) min.
Puncture Strength, lb (N) ASTM D 6241 <sup>1/</sup>	370 (1650) min.	309 (1375) min.
Apparent Opening Size, Sieve No. (mm) ASTM D 4751 <sup>2/</sup>	60 (0.25) max.	
Permittivity, sec <sup>-1</sup> ASTM D 4491	2.0 min.	
Ultraviolet Stability, % retained strength after 500 hours of exposure – ASTM D 4355	70 min.	

1/ Values represent the minimum average roll value (MARV) in the weaker principle direction [machine direction (MD) or cross-machine direction (XD)].

2/ Values represent the maximum average roll value.”

Revise Article 1081.15(i)(1) of the Standard Specifications to read:

“(i) Urethane Foam/Geotextile. Urethane foam/geotextile shall be triangular shaped having a minimum height of 10 in. (250 mm) in the center with equal sides and a minimum 20 in. (500 mm) base. The triangular shaped inner material shall be a low density urethane foam. The outer geotextile fabric cover shall consist of woven yarns or nonwoven filaments made of polyolefins or polyesters placed around the inner material and shall extend beyond both sides of the triangle a minimum of 18 in. (450 mm). Woven filter fabric shall be Class 3 and nonwoven filter fabric shall be Class 2 according to AASHTO M 288.

(1) The geotextile shall meet the following properties.

PHYSICAL PROPERTIES		
	Woven	Nonwoven
Grab Strength, lb (N) ASTM D 4632 <sup>1/</sup>	180 (800) min.	157 (700) min.
Elongation/Grab Strain, % ASTM D 4632 <sup>1/</sup>	49 max.	50 min.
Trapezoidal Tear Strength, lb (N) ASTM D 4533 <sup>1/</sup>	67 (300) min.	56 (250) min.
Puncture Strength, lb (N) ASTM D 6241 <sup>1/</sup>	370 (1650) min.	309 (1375) min.



Apparent Opening Size, Sieve No. (mm) ASTM D 4751 <sup>2/</sup>	30 (0.60) max.
Permittivity, sec <sup>-1</sup> ASTM D 4491	2.0 min.
Ultraviolet Stability, % retained strength after 500 hours of exposure – ASTM D 4355	70 min.

1/ Values represent the minimum average roll value (MARV) in the weaker principle direction [machine direction (MD) or cross-machine direction (XD)].

2/ Values represent the maximum average roll value.”

Add the following to Article 1081.15(i) of the Standard Specifications.

“(3) Certification. The manufacturer shall furnish a certificate with each shipment of urethane foam/geotextile assemblies stating the amount of product furnished and that the material complies with these requirements.”

Revise the title and first sentence of Article 1081.15(j) of the Standards Specifications to read:

“(j) Above Grade Inlet Filters (Fitted). Above grade inlet filters (fitted) shall consist of a rigid polyethylene frame covered with a fitted geotextile filter fabric.”

Revise Article 1081.15(j)(2) of the Standard Specifications to read:

(2) Fitted Geotextile Filter Fabric. The fitted geotextile filter fabric shall consist of woven yarns or nonwoven filaments made of polyolefins or polyesters. Woven filter fabric shall be Class 3 and nonwoven filter fabric shall be Class 2 according to AASHTO M 288. The filter shall be fabricated to provide a direct fit to the frame. The top of the filter shall integrate a coarse screen with a minimum apparent opening size of 1/2 in. (13 mm) to allow large volumes of water to pass through in the event of heavy flows. The filter shall have integrated anti-buoyancy pockets capable of holding a minimum of 3.0 cu ft (0.08 cu m) of stabilization material. Each filter shall have a label with the following information sewn to or otherwise permanently adhered to the outside: manufacturer’s name, product name, and lot, model, or serial number. The fitted geotextile filter fabric shall be according to the table in Article 1081.15(h)(3)a above.”

Add Article 1081.15(k) to the Standard Specifications to read:

“(k) Above Grade Inlet Filters (Non-Fitted). Above grade inlet filters (non-fitted) shall consist of a geotextile fabric surrounding a metal frame. The frame shall consist of either a) a circular cage formed of welded wire mesh, or b) a collapsible aluminum frame, as described below.

(1) Frame Construction.

- a) Welded Wire Mesh Frame. The frame shall consist of 6 in. x 6 in. (150 mm x 150 mm) welded wire mesh formed of #10 gauge (3.42 mm) steel conforming to ASTM A 185. The mesh shall be 30 in. (750 mm) tall and formed into a 42 in. (1.05 m) minimum diameter cylinder.
  - b) Collapsible Aluminum Frame. The collapsible aluminum frame shall consist of grade 6036 aluminum. The frame shall have anchor lugs that attach it to the inlet grate, which shall resist movement from water and debris. The collapsible joints of the frame shall have a locking device to secure the vertical members in place, which shall prevent the frame from collapsing while under load from water and debris.
- (2) Geotextile Fabric. The geotextile fabric shall consist of woven yarns or nonwoven filaments made of polyolefins or polyesters. The woven filter fabric shall be a Class 3 and the nonwoven filter fabric shall be a Class 2 according to AASHTO M 288. The geotextile fabric shall be according to the table in Article 1081.15(h)(3)a above.
- (3) Geotechnical Fabric Attachment to the Frame.
- a) Welded Wire Mesh Frame. The woven or nonwoven geotextile fabric shall be wrapped 3 in. (75 mm) over the top member of a 6 in. x 6 in. (150 mm x 150 mm) welded wire mesh frame and secured with fastening rings constructed of wire conforming to ASTM A 641, A 809, A 370, and A 938 at 6 in. (150 mm) on center. The fastening rings shall penetrate both layers of geotextile and securely close around the steel mesh. The geotextile shall be secured to the sides of the welded wire mesh with fastening rings at a spacing of 1 per sq ft (11 per sq m) and securely close around a steel member.
  - b) Collapsible Aluminum Frame. The woven or nonwoven fabric shall be secured to the aluminum frame along the top and bottom of the frame perimeter with strips of aluminum secured to the perimeter member, such that the anchoring system provides a uniformly distributed stress throughout the geotechnical fabric.
- (4) Certification. The manufacturer shall furnish a certificate with each shipment of above grade inlet filter assemblies stating the amount of product furnished and that the material complies with these requirements.”

80419

## **SUBCONTRACTOR MOBILIZATION PAYMENTS (BDE)**

Effective: November 2, 2017

Revised: April 1, 2019

Replace the second paragraph of Article 109.12 of the Standard Specifications with the following:

“This mobilization payment shall be made at least seven days prior to the subcontractor starting work. The amount paid shall be at the following percentage of the amount of the subcontract reported on form BC 260A submitted for the approval of the subcontractor’s work.

Value of Subcontract Reported on Form BC 260A	Mobilization Percentage
Less than \$10,000	25%
\$10,000 to less than \$20,000	20%
\$20,000 to less than \$40,000	18%
\$40,000 to less than \$60,000	16%
\$60,000 to less than \$80,000	14%
\$80,000 to less than \$100,000	12%
\$100,000 to less than \$250,000	10%
\$250,000 to less than \$500,000	9%
\$500,000 to \$750,000	8%
Over \$750,000	7%”

80391

**TEMPORARY PAVEMENT MARKING (BDE)**

Effective: April 1, 2012

Revised: April 1, 2017

Revise Article 703.02 of the Standard Specifications to read:

**“703.02 Materials.** Materials shall be according to the following.

- (a) Pavement Marking Tape, Type I and Type III ..... 1095.06
- (b) Paint Pavement Markings ..... 1095.02
- (c) Pavement Marking Tape, Type IV ..... 1095.11”

Revise the second paragraph of Article 703.05 of the Standard Specifications to read:

“Type I marking tape or paint shall be used at the option of the Contractor, except paint shall not be applied to the final wearing surface unless authorized by the Engineer for late season applications where tape adhesion would be a problem. Type III or Type IV marking tape shall be used on the final wearing surface when the temporary pavement marking will conflict with the permanent pavement marking such as on tapers, crossovers and lane shifts.”

Revise Article 703.07 of the Standard Specifications to read:

**“703.07 Basis of Payment.** This work will be paid for as follows.

- a) Short Term Pavement Marking. Short term pavement marking will be paid for at the contract unit price per foot (meter) for SHORT TERM PAVEMENT MARKING. Removal of short term pavement markings will be paid for at the contract unit price per square foot (square meter) for SHORT TERM PAVEMENT MARKING REMOVAL.
- b) Temporary Pavement Marking. Where the Contractor has the option of material type, temporary pavement marking will be paid for at the contract unit price per foot (meter) for TEMPORARY PAVEMENT MARKING of the line width specified, and at the contract unit price per square foot (square meter) for TEMPORARY PAVEMENT MARKING LETTERS AND SYMBOLS.

Where the Department specifies the use of pavement marking tape, the Type III or Type IV temporary pavement marking will be paid for at the contract unit price per foot (meter) for PAVEMENT MARKING TAPE, TYPE III or PAVEMENT MARKING TAPE, TYPE IV of the line width specified and at the contract unit price per square feet (square meter) for PAVEMENT MARKING TAPE, TYPE III - LETTERS AND SYMBOLS or PAVEMENT MARKING TAPE, TYPE IV – LETTERS AND SYMBOLS.

Removal of temporary pavement markings will be paid for at the contract unit price per square foot (square meter) for TEMPORARY PAVEMENT MARKING REMOVAL.

When temporary pavement marking is shown on the Standard, the cost of the temporary pavement marking and its removal will be included in the cost of the Standard.”

Add the following to Section 1095 of the Standard Specifications:

**“1095.11 Pavement Marking Tape, Type IV.** The temporary, preformed, patterned markings shall consist of a white or yellow tape with wet retroreflective media incorporated to provide immediate and continuing retroreflection during both wet and dry conditions. The tape shall be manufactured without the use of heavy metals including lead chromate pigments or other similar, lead-containing chemicals.

The white and yellow Type IV marking tape shall meet the Type III requirements of Article 1095.06 and the following.

- (a) Composition. The retroreflective pliant polymer pavement markings shall consist of a mixture of high-quality polymeric materials, pigments and glass beads distributed throughout its base cross-sectional area, with a layer of wet retroreflective media bonded to a durable polyurethane topcoat surface. The patterned surface shall have approximately 40% ± 10% of the surface area raised and presenting a near vertical face to traffic from any direction. The channels between the raised areas shall be substantially free of exposed beads or particles.
- (b) Retroreflectance. The white and yellow markings shall meet the following for initial dry and wet retroreflectance.
  - (1) Dry Retroreflectance. Dry retroreflectance shall be measured under dry conditions according to ASTM D 4061 and meet the values described in Article 1095.06 for Type III tape.
  - (2) Wet Retroreflectance. Wet retroreflectance shall be measured under wet conditions according to ASTM E 2177 and meet the values shown in the following table.

**Wet Retroreflectance, Initial R<sub>L</sub>**

<b>Color</b>	<b>R<sub>L</sub> 1.05/88.76</b>
White	300
Yellow	200

- (c) Color. The material shall meet the following requirements for daylight reflectance and color, when tested, using a color spectrophotometer with 45 degrees circumferential/zero degree geometry, illuminant D65, and a two degree observer angle. The color instrument shall measure the visible spectrum from 380 to 720 nm with a wavelength measurement interval and spectral bandpass of 10 nm.

<b>Color</b>	<b>Daylight Reflectance %Y</b>
White	65 minimum
*Yellow	36-59

\*Shall match Federal 595 Color No. 33538 and the chromaticity limits as follows.

x	0.490	0.475	0.485	0.530
y	0.470	0.438	0.425	0.456

- (d) Skid Resistance. The surface of the markings shall provide an average minimum skid resistance of 50 BPN when tested according to ASTM E 303.
- (e) Sampling, Testing, Acceptance, and Certification. Prior to approval and use of the wet reflective, temporary, removable pavement marking tape, the manufacturer shall submit a notarized certification from an independent laboratory, together with the results of all tests, stating that the material meets the requirements as set forth herein. The certification test report shall state the lot tested, manufacturer's name, and date of manufacture.

After approval by the Department, samples and certification by the manufacturer shall be submitted for each batch used. The manufacturer shall submit a certification stating that the material meets the requirements as set forth herein and is essentially identical to the material sent for qualification. The certification shall state the lot tested, manufacturer's name, and date of manufacture.

All costs of testing (other than tests conducted by the Department) shall be borne by the manufacturer."

80298

## **TRAFFIC CONTROL DEVICES - CONES (BDE)**

Effective: January 1, 2019

Revise Article 701.15(a) of the Standard Specifications to read:

“(a) Cones. Cones are used to channelize traffic. Cones used to channelize traffic at night shall be reflectorized; however, cones shall not be used in nighttime lane closure tapers or nighttime lane shifts.”

Revise Article 1106.02(b) of the Standard Specifications to read:

“(b) Cones. Cones shall be predominantly orange. Cones used at night that are 28 to 36 in. (700 to 900 mm) in height shall have two white circumferential stripes. If non-reflective spaces are left between the stripes, the spaces shall be no more than 2 in. (50mm) in width. Cones used at night that are taller than 36 in. (900 mm) shall have a minimum of two white and two fluorescent orange alternating, circumferential stripes with the top stripe being fluorescent orange. If non-reflective spaces are left between the stripes, the spaces shall be no more than 3 in. (75 mm) in width.

The minimum weights for the various cone heights shall be 4 lb for 18 in. (2 kg for 450 mm), 7 lb for 28 in. (3 kg for 700 mm), and 10 lb for 36 in. (5 kg for 900 mm) with a minimum of 60 percent of the total weight in the base. Cones taller than 36 in. shall be weighted per the manufacturer’s specifications such that they are not moved by wind or passing traffic.”

80409

## **WEEKLY DBE TRUCKING REPORTS (BDE)**

Effective: June 2, 2012

| Revised: April 2, 2015

| The Contractor shall submit a weekly report of Disadvantaged Business Enterprise (DBE) trucks hired by the Contractor or subcontractors (i.e. not owned by the Contractor or subcontractors) that are used for DBE goal credit.

| The report shall be submitted to the Engineer on Department form "SBE 723" within ten business days following the reporting period. The reporting period shall be Monday through Sunday for each week reportable trucking activities occur.

Any costs associated with providing weekly DBE trucking reports shall be considered as included in the contract unit prices bid for the various items of work involved and no additional compensation will be allowed.

80302



## GUIDE BRIDGE SPECIAL PROVISION INDEX/CHECK SHEET

Effective as of the: November 8, 2019 Letting

√	File Name	Title	Effective	Revised
	GBSP4	Polymer Modified Portland Cement Mortar	Jun 7, 1994	Apr 1, 2016
	GBSP12	Drainage System	Jun 10, 1994	Jun 24, 2015
	GBSP13	High-Load Multi-Rotational Bearings	Oct 13, 1988	Apr 1, 2016
	GBSP14	Jack and Remove Existing Bearings	Apr 20, 1994	April 13, 2018
	GBSP15	Three Sided Precast Concrete Structure	Jul 12, 1994	Dec 21, 2016
	GBSP16	Jacking Existing Superstructure	Jan 11, 1993	April 13, 2018
	GBSP17	Bonded Preformed Joint Seal	Jul 12, 1994	Aug 9, 2019
	GBSP18	Modular Expansion Joint	May 19, 1994	Aug 9, 2019
✓	GBSP21	Cleaning and Painting Contact Surface Areas of Existing Steel Structures	Jun 30, 2003	Aug 9, 2019
✓	GBSP25	Cleaning and Painting Existing Steel Structures	Oct 2, 2001	Apr 22, 2016
✓	GBSP26	Containment and Disposal of Lead Paint Cleaning Residues	Oct 2, 2001	Apr 22, 2016
	GBSP28	Deck Slab Repair	May 15, 1995	April 13, 2018
	GBSP29	Bridge Deck Microsilica Concrete Overlay	May 15, 1995	March 1, 2019
	GBSP30	Bridge Deck Latex Concrete Overlay	May 15, 1995	Oct 20, 2017
	GBSP31	Bridge Deck High-Reactivity Metakaolin (HRM) Conc Overlay	Jan 21, 2000	March 1, 2019
	GBSP33	Pedestrian Truss Superstructure	Jan 13, 1998	Dec 29, 2014
	GBSP34	Concrete Wearing Surface	Jun 23, 1994	Oct 4, 2016
	GBSP35	Silicone Bridge Joint Sealer	Aug 1, 1995	Oct 15, 2011
	GBSP45	Bridge Deck Thin Polymer Overlay	May 7, 1997	Feb 6, 2013
	GBSP51	Pipe Underdrain for Structures	May 17, 2000	Jan 22, 2010
✓	GBSP53	Structural Repair of Concrete	Mar 15, 2006	Aug 9, 2019
	GBSP55	Erection of Curved Steel Structures	Jun 1, 2007	
	GBSP56	Setting Piles in Rock	Nov 14, 1996	Apr 1, 2016
	GBSP59	Diamond Grinding and Surface Testing Bridge Sections	Dec 6, 2004	Mar 29, 2017
	GBSP60	Containment and Disposal of Non-Lead Paint Cleaning Residues	Nov 25, 2004	Apr 22, 2016
	GBSP61	Slipform Parapet	Jun 1, 2007	March 1, 2019
✓	GBSP67	Structural Assessment Reports for Contractor's Means and Methods	Mar 6, 2009	Oct 5, 2015
	GBSP71	Aggregate Column Ground Improvement	Jan 15, 2009	Oct 15, 2011
	GBSP72	Bridge Deck Fly Ash or GGBF Slag Concrete Overlay	Jan 18, 2011	March 1, 2019
	GBSP75	Bond Breaker for Prestressed Concrete Bulb-T Beams	Apr 19, 2012	
	GBSP77	Weep Hole Drains for Abutments, Wingwalls, Retaining Walls and Culverts	Apr 19, 2012	Oct 22, 2013
✓	GBSP78	Bridge Deck Construction	Oct 22, 2013	Dec 21, 2016
	GBSP79	Bridge Deck Grooving (Longitudinal)	Dec 29, 2014	Mar 29, 2017
	GBSP81	Membrane Waterproofing for Buried Structures	Oct 4, 2016	March 1, 2019
	GBSP82	Metallizing of Structural Steel	Oct 4, 2016	Oct 20, 2017
✓	GBSP83	Hot Dip Galvanizing For Structural Steel	Oct 4, 2016	Oct 20, 2017
	GBSP85	Micropiles	Apr 19, 1996	Aug 9, 2019
	GBSP86	Drilled Shafts	Oct 5, 2015	Oct 4, 2016
	GBSP87	Lightweight Cellular Concrete Fill	Nov 11, 2001	Apr 1, 2016
	GBSP88	Corrugated Structural Plate Structures	Apr 22, 2016	April 13, 2018
	GBSP89	Preformed Pavement Joint Seal	Oct 4, 2016	March 1, 2019
	GBSP90	Three Sided Precast Concrete Structure (Special)	Dec 21, 2016	April 13, 2018
	GBSP91	Crosshole Sonic Logging Testing of Drilled Shafts	Apr 20, 2016	Aug 9, 2019
	GBSP92	Thermal Integrity Profile Testing of Drilled Shafts	Apr 20, 2016	

√	<u>File Name</u>	<u>Title</u>	<u>Effective</u>	<u>Revised</u>
	GBSP93	Prefomed Bridge Joint Seal	Dec 21, 2016	March 1, 2019
✓	GBSP94	Warranty for Cleaning and Painting Steel Structures	Mar 3, 2000	Nov 24, 2004
	GBSP95	Bituminous Coated Aggregate Slopewall	April 13, 2018	
	GBSP96	Erection of Bridge Girders Over or Adjacent to Railroads	Aug 9, 2019	

LIST ADDITIONAL SPECIAL PROVISIONS BELOW


The following Guide Bridge Special Provisions have been incorporated into the 2016 Standard Specifications:

File Name	Title	Std Spec Location
GBSP32	Temporary Sheet Piling	522
GBSP38	Mechanically Stabilized Earth Retaining Walls	522
GBSP42	Drilled Soldier Pile Retaining Wall	522
GBSP43	Driven Soldier Pile Retaining Wall	522
GBSP44	Temporary Soil Retention System	522
GBSP46	Geotextile Retaining Walls	522
GBSP57	Temporary Mechanically Stabilized Earth Retaining Walls	522
GBSP62	Concrete Deck Beams	504
GBSP64	Segmental Concrete Block Wall	522
GBSP65	Precast Modular Retaining Wall	522
GBSP73	Cofferdams	2017 Supp
GBSP74	Permanent Steel Sheet Piling (LRFD)	522
GBSP76	Granular Backfill for Structures	2017 Supp
GBSP80	Fabric Reinforced Elastomeric	1028
GBSP84	Precast, Prestressed Concrete Beams	2017 Supp

The following Guide Bridge Special Provisions have been discontinued or have been superseded:

File Name	Title	Disposition:
GBSP70	Braced Excavation	Use TSRS per Sec 522
GBSP 95	Bridge Deck Concrete Sealer	Use July 1, 2012 version for Repair projects only

## **CLEANING AND PAINTING CONTACT SURFACE AREAS OF EXISTING STEEL STRUCTURES**

Effective: June 30, 2003

Revised: August 9, 2019

Description. This work shall consist of the surface preparation and painting of existing steel structures in areas that will be in contact with new steel.

The existing steel at primary connections (faying surfaces) shall be prepared, and primed as specified herein prior to connecting new structural steel to the existing structure.

The existing steel at secondary connections shall be prepared, and if bare metal is exposed, primed as specified herein prior to connecting new structural steel to the existing structure.

General. The existing coatings shall be assumed to contain lead and may also contain other toxic metals. Any plans that may be furnished for the work, and any dimensions or other information given regarding a structure, are only for the purpose of assisting bidders in determining the type and location of steel to be cleaned and painted. It is the responsibility of the Contractor to verify this information and the accuracy of the information provided shall in no way affect the price bid for structural steel.

Materials. The Bureau of Materials and Physical Research has established a list of all products that have met preliminary requirements. Each batch of material must be tested and approved before use.

The paint materials shall meet the requirements of the following articles of the Standard Specification:

<u>Item</u>	<u>Article</u>
a) Organic Zinc Rich Primer	1008.05
b) Aluminum Epoxy Mastic	1008.03

### Submittals:

- a) Manufacturer's application instructions and product data sheets. Copies of the paint manufacturer's application instructions and product data sheets shall be furnished to the Engineer at the field site before steel cleaning begins.
- b) Waste Management Plan. The Waste Management Plan shall address all aspects of waste handling, storage, testing, hauling and disposal. Include the names, addresses, and a contact person for the proposed licensed waste haulers and disposal facilities. Submit the name and qualifications of the laboratory proposed for Toxicity Characteristic Leaching Procedure (TCLP) analysis.
- c) Quality Control (QC) Program. The QC Program shall identify the following; the instrumentation that will be used, a schedule of required measurements and observations,

procedures for correcting unacceptable work, and procedures for improving surface preparation and painting quality as a result of quality control findings.

Construction Requirements. The Contractor shall perform first line, in process QC inspections. The Contractor shall implement the submitted and accepted QC Program to insure that the work accomplished complies with these specifications. The designated Quality Control inspector shall be onsite full time during any operations that affect the quality of the coating system (e.g., surface preparation, coating mixing and application, and evaluations between coats and upon completion of the work). The Contractor shall provide artificial lighting in areas where natural light is inadequate, as determined by the Engineer, to allow proper cleaning, inspection, and painting. Illumination for inspection shall be at least 30 foot candles (325 LUX). Illumination for cleaning and priming, including the working platforms, access, and entryways shall be at least 20 foot candles (215 LUX).

The Contractor shall be responsible for any damage caused to persons, vehicles, or property, except as indemnified by the Response Action Contractor Indemnification Act. Whenever the intended purposes of the protective devices are not being accomplished, as determined by the Engineer, work shall be immediately suspended until corrections are made. Painted surfaces damaged by any Contractor's operation shall be removed and repainted, as directed by the Engineer, at the Contractor's expense.

Weather Conditions. Surfaces to be primed after cleaning shall remain free of moisture and other contaminants. The Contractor shall control his/her operations to insure that dust, dirt, or moisture does not come in contact with surfaces cleaned prior to painting. Surfaces painted shall be protected until the coating is sufficiently cured to protect itself from damage.

Restrictions on ambient conditions shall be as per the coating manufacturer's written specifications.

Surface Preparation: Prior to making connections or painting, all loose abrasives, paint, and residue shall be contained, collected, removed from the surface area and properly disposed of as specified later in this specification.

Soluble Salt Remediation. The Contractor shall implement surface preparation procedures and processes that will remove chloride from the surfaces. Surfaces that may be contaminated with chloride include, but are not limited to, expansion joints and all areas that are subject to roadway splash or runoff such as fascia beams and stringers.

Methods of chloride removal may include, but are not limited to, steam cleaning or pressure washing with or without the addition of a chemical soluble salt remover as approved by the coating manufacturer, and scrubbing before or after initial paint removal. The Contractor may also elect to clean the steel and allow it to rust overnight followed by recleaning, or by utilizing blends of fine and coarse abrasives during blast cleaning, wet abrasive/water jetting methods of preparation, or combinations of the above. If steam or water cleaning methods of chloride removal are utilized over surfaces where the coating has been completely removed, and the water does not contact any lead containing coatings, the water does not have to be collected.

The Contractor shall provide the proposed procedures for chloride remediation in the Surface Preparation/Painting Plan.

Upon completion of the chloride remediation steps, the Contractor shall use cell methods of field chloride extraction and test procedures (e.g., silver dichromate) accepted by the Engineer, to test representative surfaces that were previously rusted (e.g., pitted steel) for the presence of remaining chlorides. Remaining chloride levels shall be no greater than  $7\mu\text{g}/\text{sq cm}$  as read directly from the surface without any multiplier applied to the results. The testing must be performed, and the results must be acceptable, prior to painting each day.

A minimum of 5 tests per 1000 sq. ft. (93 sq m) or fraction thereof completed in a given day, shall be conducted at project start up. If results greater than  $7\mu\text{g}/\text{sq cm}$  are detected, the surfaces shall be recleaned and retested at the same frequency. If acceptable results are achieved on three consecutive days in which testing is conducted, the test frequency may be reduced to 1 test per 1000 sq. ft. (93 sq. m) prepared each day provided the chloride remediation process remains unchanged. If unacceptable results are encountered, or the methods of chloride remediation are changed, the Contractor shall resume testing at a frequency of 5 tests per 1000 sq. ft. (93 sq. m).

Following successful chloride testing the chloride test areas shall be cleaned as specified below.

Painted surfaces of new steel damaged by abrasive blasting or by the Contractor's operations shall be repainted, as directed by the Engineer, at the Contractor's expense.

- a) Primary Connections. Primary connections shall be defined as faying (contact) surfaces of high-strength bolted connections specifically noted in plans.

The surfaces of existing steel in all areas that will be in direct contact with new steel shall be prepared according to SSPC-SP15, Commercial Grade Power Tool Cleaning using vacuum-shrouded power tools equipped with HEPA filtration. The surface preparation shall remove all rust, mill scale, and existing paint from the contact surface. At the Contractors option, vacuum blast cleaning according to SSPC-SP6, Commercial Blast Cleaning may be substituted for SSPC-SP15 at no additional cost to the Department. The surface profile for primary connection surfaces shall be 1.5 to 3.5 mils (38 to 90 microns).

- b) Secondary Connections. Secondary connections shall be defined as all surface areas of existing members that will be in contact with new steel except as previously defined as primary connections.

These surfaces of existing steel in all areas that will be in direct contact with new steel shall be prepared according to SSPC-SP3, Power Tool Cleaning using vacuum-shrouded power tools equipped with HEPA filtration. The surface preparation shall remove all loose rust, loose mill scale, and loose, checked, alligatored and peeling paint from the contact surface. At the Contractors option, vacuum blast cleaning according to SSPC-SP6, Commercial Blast Cleaning or SSPC-SP15, Commercial Grade Power Tool Cleaning may be substituted for SSPC-SP3 at no additional cost to the Department. The surface profile for abrasive blast

cleaning and Commercial Grade Power Tool Cleaning shall be 1.5 to 3.5 mils (38 to 90 microns).

Painting. The manufacturer's written instructions shall be followed for paint storage, mixing, thinning, application, ambient conditions, and drying times between coats. The surface shall be free of dirt, dust, and debris prior to the application of any coat. The coatings shall be applied as a continuous film of uniform thickness free of defects including, but not limited to, runs, sags, overspray, dryspray, pinholes, voids, skips, misses, and shadow-through. Defects such as runs and sags shall be brushed out immediately during application.

The Engineer will approve surface preparation prior to priming.

- a) For Primary connections the surface of the prepared steel cleaned to bare metal shall be primed with an organic zinc rich primer between 3.5 and 5.0 mils (90 and 125 microns) dry film thickness.
- b) For Secondary Connections the surface of the prepared steel cleaned to bare metal shall be painted with either one coat of epoxy mastic between 5 and 7 mils (125 microns to 180 microns) in thickness or one coat of an organic zinc rich primer between 3.5 and 5.0 mils (90 and 125 microns) in thickness. Areas not cleaned to bare metal need not be painted.

For primary connections, the primer on the surface of the prepared steel shall cure according to the manufacturers instructions prior to connecting new structural steel to the existing structure. For secondary connections, the primer on the surface of the prepared steel need only be dry to touch prior to connecting new steel to the existing structure.

The surrounding coating at each prepared location shall be feathered for a minimum distance of 1 1/2 in. (40 mm) to achieve a smooth transition between the prepared areas and the existing coating.

Collection, Temporary Storage, Transportation and Disposal of Waste. The Contractor and the Department are considered to be co-generators of the waste.

The Contractor is responsible for all aspects of waste collection, testing and identification, handling, storage, transportation, and disposal according to these specifications and all applicable Federal, State, and Local regulations. The Contractor shall provide for Engineer review and acceptance a Waste Management Plan that addresses all aspects of waste handling, storage, and testing, and provides the names, addresses, and a contact person for the proposed licensed waste haulers and disposal facilities. The Department will not perform any functions relating to the waste other than provide EPA identification numbers, provide the Contractor with the emergency response information, the emergency response telephone number required to be provided on the manifest, and to sign the waste manifest. The Engineer will obtain the identification numbers from the state and federal environmental protection agencies for the bridge(s) to be painted and furnish those to the Contractor.

All surface preparation/paint residues shall be collected daily and deposited in all-weather containers supplied by the Contractor as temporary storage. The storage area shall be secure

to prevent unauthorized entry or tampering with the containers. Acceptable measures include storage within a fully enclosed (e.g., fenced in) and locked area, within a temporary building, or implementing other reasonable means to reduce the possibility of vandalism or exposure of the waste to the public or the environment (e.g., securing the lids or covers of waste containers and roll-off boxes). Waste shall not be stored outside of the containers. Waste shall be collected and transferred to bulk containers taking extra precautions as necessary to prevent the suspension of residues in air or contamination of surrounding surfaces. Precautions may include the transfer of the material within a tarpaulin enclosure. Transfer into roll-off boxes shall be planned to minimize the need for workers to enter the roll-off box.

No residues shall remain on uncontained surfaces overnight. Waste materials shall not be removed through floor drains or by throwing them over the side of the bridge. Flammable materials shall not be stored around or under any bridge structures.

The all-weather containers shall meet the requirements for the transportation of hazardous materials and as approved by the Department. Acceptable containers include covered roll-off boxes and 55-gallon drums (17H). The Contractor shall insure that no breaks and no deterioration of these containers occurs and shall maintain a written log of weekly inspections of the condition of the containers. A copy of the log shall be furnished to the Engineer upon request. The containers shall be kept closed and sealed from moisture except during the addition of waste. Each container shall be permanently identified with the date that waste was placed into the container, contract number, hazardous waste name and ID number, and other information required by the IEPA.

The Contractor shall have each waste stream sampled for each project and tested by TCLP and according to EPA and disposal company requirements. The Engineer shall be notified in advance when the samples will be collected. The samples shall be collected and shipped for testing within the first week of the project, with the results due back to the Engineer within 10 days. The costs of testing shall be considered included in this work. Copies of the test results shall be provided to the Engineer prior to shipping the waste.

The existing paint removed, together with the surface preparation media (e.g. abrasive) shall be handled as a hazardous waste, regardless of the TCLP results. The waste shall be transported by a licensed hazardous waste transporter, treated by an IEPA permitted treatment facility to a non-hazardous special waste and disposed of at an IEPA permitted disposal facility in Illinois.

The treatment/disposal facilities shall be approved by the Engineer, and shall hold an IEPA permit for waste disposal and waste stream authorization for this cleaning residue. The IEPA permit and waste stream authorization must be obtained prior to beginning cleaning, except that if necessary, limited paint removal will be permitted in order to obtain samples of the waste for the disposal facilities. The waste shall be shipped to the facility within 90 days of the first accumulation of the waste in the containers. When permitted by the Engineer, waste from multiple bridges in the same contract may be transported by the Contractor to a central waste storage location(s) approved by the Engineer in order to consolidate the material for pick up, and to minimize the storage of waste containers at multiple remote sites after demobilization.

Arrangements for the final waste pickup shall be made with the waste hauler by the time blast cleaning operations are completed or as required to meet the 90 day limit stated above.

The Contractor shall submit a waste accumulation inventory table to the Engineer no later than the 5<sup>th</sup> day of the month. The table shall show the number and size of waste containers filled each day in the preceding month and the amount of waste shipped that month, including the dates of shipments.

The Contractor shall prepare a manifest supplied by the IEPA for off-site treatment and disposal before transporting the hazardous waste off-site. The Contractor shall prepare a land ban notification for the waste to be furnished to the disposal facility. The Contractor shall obtain the handwritten signature of the initial transporter and date of the acceptance of the manifest. The Contractor shall send one copy of the manifest to the IEPA within two working days of transporting the waste off-site. The Contractor shall furnish the generator copy of the manifest and a copy of the land ban notification to the Engineer. The Contractor shall give the transporter the remaining copies of the manifest.

All other project waste shall be removed from the site according to Federal, State and Local regulations, with all waste removed from the site prior to final Contractor demobilization.

The Contractor shall make arrangements to have other hazardous waste, which he/she generates, such as used paint solvent, transported to the Contractor's facility at the end of each day that this waste is generated. These hazardous wastes shall be manifested using the Contractor's own generator number to a treatment or disposal facility from the Contractor's facility. The Contractor shall not combine solvents or other wastes with cleaning residue wastes. All waste streams shall be stored in separate containers.

The Contractor is responsible for the payment of any fines and undertaking any clean up activities mandated by State or federal environmental agencies for improper waste handling, storage, transportation, or disposal.

Contractor personnel shall be trained in the proper handling of hazardous waste, and the necessary notification and clean up requirements in the event of a spill. The Contractor shall maintain a copy of the personnel training records at each bridge site.

It is understood and agreed that the cost of all work outlined above, unless otherwise specified, has been included in the bid, and no extra compensation will be allowed.

Basis of Payment: This work will be considered included in the cost of "Furnishing and Erecting Structural Steel", "Erecting Structural Steel", or "Structural Steel Repair", as applicable, according to the Standard Specifications, unless otherwise specified on the plans.



## **CLEANING AND PAINTING EXISTING STEEL STRUCTURES**

Effective: October 2, 2001

Revised: April 22, 2016

Description. This work shall consist of the preparation of all designated metal surfaces by the method(s) specified on the plans. This work also includes the painting of those designated surfaces with the paint system(s) specified on the plans. The Contractor shall furnish all materials, equipment, labor, and other essentials necessary to accomplish this work and all other work described herein and as directed by the Engineer.

Materials. All materials to be used on an individual structure shall be produced by the same manufacturer.

The Bureau of Materials and Physical Research has established a list of all products that have met preliminary requirements. Each batch of material, except for the penetrating sealer, shall be tested and assigned a MISTIC approval number before use. The specified colors shall be produced in the coating manufacturer's facility. Tinting of the coating after it leaves the manufacturer's facility is not allowed.

The paint materials shall meet the following requirements of the Standard Specification and as noted below:

<u>Item</u>	<u>Article</u>
(a) Waterborne Acrylic	1008.04
(b) Aluminum Epoxy Mastic	1008.03
(c) Organic Zinc Rich Primer	1008.05
(d) Epoxy/ Aliphatic Urethane	1008.05
(e) Penetrating Sealer (Note 1)	
(f) Moisture Cured Zinc Rich Urethane Primer (Note 2)	
(g) Moisture Cured Aromatic/Aliphatic Urethane (Note 2)	
(h) Moisture Cured Penetrating Sealer (Note 3)	

Note 1: The Epoxy Penetrating Sealer shall be a cross-linked multi component sealer. The sealer shall have the following properties:

- (a) The volume solids shall be 98 percent (plus or minus 2 percent).
- (b) Shall be clear or slightly tinted color.

Note 2: These material requirements shall be according to the Special Provision for the Moisture Cured Urethane Paint System.

Note 3: The Moisture Cured Penetrating Sealer manufacturer's certification will be required.

Submittals. The Contractor shall submit for Engineer review and acceptance, the following plans and information for completing the work. The submittals shall be provided within 30 days

of execution of the contract unless given written permission by the Engineer to submit them at a later date. Work cannot proceed until the submittals are accepted by the Engineer. Details for each of the plans are presented within the body of this specification.

- a) Contractor/Personnel Qualifications. Evidence of Contractor qualifications and the names and qualifications/experience/training of the personnel managing and implementing the Quality Control program and conducting the quality control tests, and certifications for the CAS (Coating Application Specialists) on SSPC-QP1 and QP2 projects.
- b) Quality Control (QC) Program. The QC Program shall identify the following; the instrumentation that will be used, a schedule of required measurements and observations, procedures for correcting unacceptable work, and procedures for improving surface preparation and painting quality as a result of quality control findings. The program shall incorporate at a minimum, the IDOT Quality Control Daily Report form, or a Contractor form (paper or electronic) that provides equivalent information.
- c) Inspection Access Plan. The inspection access plan for use by Contractor QC personnel for ongoing inspections and by the Engineer during Quality Assurance (QA) observations.
- d) Surface Preparation/Painting Plan. The surface preparation/painting plan shall include the methods of surface preparation and type of equipment to be utilized for washing, hand/power tool cleaning, removal of rust, mill scale, paint or foreign matter, abrasive blast or water jetting, and remediation of chloride. If detergents, additives, or inhibitors are incorporated into the water, the Contractor shall include the names of the materials and Safety Data Sheets (SDS). The Contractor shall identify the solvents proposed for solvent cleaning together with SDS.

If cleaning and painting over existing galvanized surfaces are specified, the plan shall address surface preparation, painting, and touch up/repair of the galvanized surfaces.

The plan shall also include the methods of coating application and equipment to be utilized.

If the Contractor proposes to heat or dehumidify the containment, the methods and equipment proposed for use shall be included in the Plan for the Engineer's consideration.

- e) Paint Manufacturer Certifications and Letters. When a sealer is used, the Contractor shall provide the manufacturer's certification of compliance with IDOT testing requirements listed under "Materials" above. A certification regarding the compatibility of the sealer with the specified paint system shall also be included.

When rust inhibitors are used, the Contractor shall provide a letter from the coating manufacturer indicating that the inhibitor is compatible with, and will not adversely affect the performance of the coating system.

If the use of a chemical soluble salt remover is proposed by the Contractor, provide a letter from the coating manufacturer indicating that the material will not adversely affect the performance of the coating system.

The paint manufacturer's most recent application and thinning instructions, SDS and product data sheets shall be provided, with specific attention drawn to storage temperatures, and the temperatures of the material, surface and ambient air at the time of application.

A letter or written instructions from the coating manufacturer shall be provided indicating the length of time that each coat must be protected from cold or inclement weather (e.g., exposure to rain) during its drying period, the maximum recoat time for each coat, and the steps necessary to prepare each coat for overcoating if the maximum recoat time is exceeded.

- f) Abrasives. Abrasives to be used for abrasive blast cleaning, including SDS. For expendable abrasives, the Contractor shall provide certification from the abrasive supplier that the abrasive meets the requirements of SSPC-AB1. For steel grit abrasives, the certification shall indicate that the abrasive meets the requirements of SSPC-AB3.
- g) Protective Coverings. Plan for containing or controlling paint debris (droplets, spills, overspray, etc.). Any tarpaulins or protective coverings proposed for use shall be fire retardant. For submittal requirements involving the containment used to remove lead paint, the Contractor shall refer to Special Provision for Containment and Disposal of Lead Paint Cleaning Residues.
- h) Progress Schedule. Progress schedule shall be submitted per Article 108.02 and shall identify all major work items (e.g., installation of rigging/containment, surface preparation, and coating application).

When the Engineer accepts the submittals, the Contractor will receive written notification. The Contractor shall not begin any paint removal work until the Engineer has accepted the submittals. The Contractor shall not construe Engineer acceptance of the submittals to imply approval of any particular method or sequence for conducting the work, or for addressing health and safety concerns. Acceptance of the programs does not relieve the Contractor from the responsibility to conduct the work according to the requirements of Federal, State, or Local regulations and this specification, or to adequately protect the health and safety of all workers involved in the project and any members of the public who may be affected by the project. The Contractor remains solely responsible for the adequacy and completeness of the programs and work practices, and adherence to them.

Contractor Qualifications. Unless indicated otherwise on the contract plans, for non lead abatement projects, the painting Contractor shall possess current SSPC–QP1 certification. Unless indicated otherwise on the plans, for lead abatement projects the Contractor shall also possess current SSPC-QP2 certification. The Contractor shall maintain certified status throughout the duration of the painting work under the contract. The Department reserves the right to accept Contractors documented to be currently enrolled in the SSPC-QP7, Painting Contractor Introductory Program, Category 2, in lieu of the QP certifications noted above.

Quality Control (QC) Inspections. The Contractor shall perform first line, in process QC inspections. The Contractor shall implement the submitted and accepted QC Program to insure that the work accomplished complies with these specifications. The designated Quality Control inspector shall be onsite full time during any operations that affect the quality of the coating system (e.g., surface preparation and chloride remediation, coating mixing and application, and evaluations between coats and upon project completion). The Contractor shall use the IDOT Quality Control Daily Report form to record the results of quality control tests. Alternative forms (paper or electronic) will be allowed provided they furnish equivalent documentation as the IDOT form, and they are accepted as part of the QC Program submittal. The completed reports shall be turned into the Engineer before work resumes the following day. The Engineer or designated representative will sign the report. The signature is an acknowledgment that the report has been received, but should not be construed as an agreement that any of the information documented therein is accurate.

Contractor QC inspections shall include, but not be limited to the following:

- Suitability of protective coverings and the means employed to control project debris and paint spills, overspray, etc.
- Ambient conditions
- Surface preparation (solvent cleaning, pressure washing including chalk tests, hand/power tool or abrasive blast cleaning, etc.)
- Chloride remediation
- Coating application (specified materials, mixing, thinning, and wet/dry film thickness)
- Recoat times and cleanliness between coats
- Coating continuity and coverage (freedom from runs, sags, overspray, dryspray, pinholes, shadow-through, skips, misses, etc.)

The personnel managing the Contractor's QC Program shall possess a minimum classification of Society of Protective Coatings (SSPC) BCI certified, National Association of Corrosion Engineers (NACE) Coating Inspector Level 2 - Certified, and shall provide evidence of successful inspection of 3 bridge projects of similar or greater complexity and scope that have been completed in the last 2 years. Copies of the certification and experience shall be provided. References for experience shall be provided and shall include the name, address, and telephone number of a contact person employed by the bridge owner.

The personnel performing the QC tests shall be trained in coatings inspection and the use of the testing instruments. Documentation of training shall be provided. The QC personnel shall not

perform hands on surface preparation or painting activities. Painters shall perform wet film thickness measurements, with QC personnel conducting random spot checks of the wet film. The Contractor shall not replace the QC personnel assigned to the project without advance notice to the Engineer, and acceptance of the replacement(s), by the Engineer.

The Contractor shall supply all necessary equipment with current calibration certifications to perform the QC inspections. Equipment shall include the following at a minimum:

- Sling psychrometer or digital psychrometer for the measurement of dew point and relative humidity, together with all necessary weather bureau tables or psychrometric charts. In the event of a conflict between readings with the sling psychrometer and the digital psychrometer, the readings with the sling psychrometer shall prevail.
- Surface temperature thermometer
- SSPC Visual Standards VIS 1, Guide and Reference Photographs for Steel Surfaces Prepared by Dry Abrasive Blast Cleaning; SSPC-VIS 3, Visual Standard for Power and Hand-Tool Cleaned Steel; SSPC-VIS 4, Guide and Reference Photographs for Steel Prepared by Water Jetting, and/or SSPC-VIS 5, Guide and Reference Photographs for Steel Prepared by Wet Abrasive Blast Cleaning, as applicable.
- Test equipment for determining abrasive cleanliness (oil content and water-soluble contaminants) according to SSPC abrasive specifications AB1, AB2, and AB3.
- Commercially available putty knife of a minimum thickness of 40 mils (1mm) and a width between 1 and 3 in. (25 and 75 mm). Note that the putty knife is only required for projects in which the existing coating is being feathered and tested with a dull putty knife.
- Testex Press-O-Film Replica Tape and Micrometer compliant with Method C of ASTM D4417, Standard Test Methods for Field Measurement of Surface Profile of Blast Cleaned Steel, or digital profile depth micrometer compliant with ASTM D4417, Method B. In the event of a conflict between measurements with the two instruments on abrasive blast cleaned steel, the results with the Testex Tape shall prevail. Note that for measuring the profile of steel power tool cleaned to SSPC-SP15, Commercial Grade Power Tool Cleaning, the digital profile depth micrometer shall be used.
- Bresle Cell Kits or CHLOR\*TEST kits for chloride determinations, or equivalent
- Wet Film Thickness Gage
- Blotter paper for compressed air cleanliness checks
- Type 2 Electronic Dry Film Thickness Gage per SSPC - PA2, Procedure for Determining Conformance to Dry Coating Thickness Requirements
- Standards for verifying the accuracy of the dry film thickness gage
- Light meter for measuring light intensity during paint removal, painting, and inspection activities
- All applicable ASTM and SSPC Standards used for the work (reference list attached)

The accuracy of the instruments shall be verified by the Contractor's personnel according to the equipment manufacturer's recommendations and the Contractor's QC Program. All inspection equipment shall be made available to the Engineer for QA observations on an as needed basis.

Hold Point Notification. Specific inspection items throughout this specification are designated as Hold Points. Unless other arrangements are made at the project site, the Contractor shall

provide the Engineer with a minimum 4-hour notification before a Hold Point inspection will be reached. If the 4-hour notification is provided and the Work is ready for inspection at that time, the Engineer will conduct the necessary observations. If the Work is not ready at the appointed time, unless other arrangements are made, an additional 4-hour notification is required. Permission to proceed beyond a Hold Point without a QA inspection will be granted solely at the discretion of the Engineer, and only on a case by case basis.

Quality Assurance (QA) Observations. The Engineer will conduct QA observations of any or all phases of the work. The presence or activity of Engineer observations in no way relieves the Contractor of the responsibility to provide all necessary daily QC inspections of his/her own and to comply with all requirements of this Specification.

The Engineer has the right to reject any work that was performed without adequate provision for QA observations.

Inspection Access and Lighting. The Contractor shall facilitate the Engineer's observations as required, including allowing ample time to view the work. The Contractor shall furnish, erect and move scaffolding or other mechanical equipment to permit close observation of all surfaces to be cleaned and painted. This equipment shall be provided during all phases of the work. Examples of acceptable access structures include:

- Mechanical lifting equipment, such as, scissor trucks, hydraulic booms, etc.
- Platforms suspended from the structure comprised of trusses or other stiff supporting members and including rails and kick boards.
- Simple catenary supports are permitted only if independent life lines for attaching a fall arrest system according to Occupational Safety and Health Administration (OSHA) regulations are provided.

When the surface to be inspected is more than 6 ft. (1.8 m) above the ground or water surface, and fall prevention is not provided (e.g., guardrails are not provided), the Contractor shall provide the Engineer with a safety harness and a lifeline according to OSHA regulations. The lifeline and attachment shall not direct the fall into oncoming traffic. The Contractor shall provide a method of attaching the lifeline to the structure independent of the inspection facility or any support of the platform. When the inspection facility (e.g., platform) is more than 2 1/2 ft. (800 mm) above the ground, the Contractor shall provide an approved means of access onto the platform.

The Contractor shall provide artificial lighting in areas both inside and outside the containment where natural light is inadequate, as determined by the Engineer, to allow proper cleaning, inspection, and painting. Illumination for inspection shall be at least 30 foot candles (325 LUX). Illumination for cleaning and painting, including the working platforms, access and entryways shall be at least 20 foot candles (215 LUX). General work area illumination outside the containment shall be employed at the discretion of the Engineer and shall be at least 5 foot candles. The exterior lighting system shall be designed and operated so as to avoid glare that interferes with traffic, workers, and inspection personnel.

Surface Preparation and Painting Equipment. All cleaning and painting equipment shall include gages capable of accurately measuring fluid and air pressures and shall have valves capable of regulating the flow of air, water or paint as recommended by the equipment manufacturer. The equipment shall be maintained in proper working order.

Diesel or gasoline powered equipment shall be positioned or vented in a manner to prevent deposition of combustion contaminants on any part of the structure.

Hand tools, power tools, pressure washing, water jetting, abrasive blast cleaning equipment, brushes, rollers, and spray equipment shall be of suitable size and capacity to perform the work required by this specification. All power tools shall be equipped with vacuums and High Efficiency Particulate Air (HEPA) filtration. Appropriate filters, traps and dryers shall be provided for the compressed air used for abrasive blast cleaning and conventional spray application. Paint pots shall be equipped with air operated continuous mixing devices unless prohibited by the coating manufacturer.

Test Sections. Prior to surface preparation, the Contractor shall prepare a test section(s) on each structure to be painted in a location(s) which the Engineer considers to be representative of the existing surface condition and steel type for the structure as a whole. More than one test section may be needed to represent the various design configurations of the structure. The purpose of the test section(s) is to demonstrate the use of the tools and degree of cleaning required (cleanliness and profile) for each method of surface preparation that will be used on the project. Each test section shall be approximately 10 sq. ft. (0.93 sq m). The test section(s) shall be prepared using the same equipment, materials and procedures as the production operations. The Contractor shall prepare the test section(s) to the specified level of cleaning according to the appropriate SSPC visual standards, modified as necessary to comply with the requirements of this specification. The written requirements of the specification prevail in the event of a conflict with the SSPC visual standards. Only after the test section(s) have been approved shall the Contractor proceed with surface preparation operations. Additional compensation will not be allowed the Contractor for preparation of the test section(s).

For the production cleaning operations, the specifications and written definitions, the test section(s), and the SSPC visual standards shall be used in that order for determining compliance with the contractual requirements.

Protective Coverings and Damage. All portions of the structure that could be damaged by the surface preparation and painting operations (e.g., utilities), including any sound paint that is allowed to remain according to the contract documents, shall be protected by covering or shielding. Tarpaulins drop cloths, or other approved materials shall be employed. The Contractor shall comply with the provisions of the Illinois Environmental Protection Act. Paint drips, spills, and overspray are not permitted to escape into the air or onto any other surfaces or surrounding property not intended to be painted. Containment shall be used to control paint drips, spills, and overspray, and shall be dropped and all equipment secured when sustained wind speeds of 40 mph (64 kph) or greater occur, unless the containment design necessitates action at lower wind speeds. The contractor shall evaluate project-specific conditions to determine the specific type and extent of containment needed to control the paint emissions and

shall submit a plan for containing or controlling paint debris (droplets, spills, overspray, etc.) to the Engineer for acceptance prior to starting the work. Acceptance by the Engineer shall not relieve the Contractor of their ultimate responsibility for controlling paint debris from escaping the work zone.

When the protective coverings need to be attached to the structure, they shall be attached by bolting, clamping, or similar means. Welding or drilling into the structure is prohibited unless approved by the Engineer in writing. When removing coatings containing lead the containment and disposal of the residues shall be as specified in the Special Provision for Containment and Disposal of Lead Paint Cleaning Residues contained elsewhere in this Contract. When removing coatings not containing lead the containment and disposal of the residues shall be as specified in the Special Provision for Containment and Disposal of Non-Lead Paint Cleaning Residues contained elsewhere in this Contract.

The Contractor shall be responsible for any damage caused to persons, vehicles, or property, except as indemnified by the Response Action Contractor Indemnification Act. Whenever the intended purposes of the controls or protective devices used by the Contractor are not being accomplished, work shall be immediately suspended until corrections are made. Damage to vehicles or property shall be repaired by the Contractor at the Contractor's expense. Painted surfaces damaged by any Contractor's operation shall be repaired, removed and/or repainted, as directed by the Engineer, at the Contractor's expense.

Weather Conditions. Surfaces to be painted after cleaning shall remain free of moisture and other contaminants. The Contractor shall control his/her operations to insure that dust, dirt, or moisture do not come in contact with surfaces cleaned or painted that day.

- a) The surface temperature shall be at least 5°F (3°C) above the dew point during final surface preparation operations. The manufacturers' published literature shall be followed for specific temperature, dew point, and humidity restrictions during the application of each coat.
- b) If the Contractor proposes to control the weather conditions inside containment, proposed methods and equipment for heating and/or dehumidification shall be included in the work plans for the Engineer's consideration. Only indirect fired heating equipment shall be used to prevent the introduction of moisture and carbon monoxide into the containment. The heating unit(s) shall be ventilated to the outside of the containment. Any heating/dehumidification proposals accepted by the Engineer shall be implemented at no additional cost to the department.
- c) Cleaning and painting shall be done between April 15 and October 31 unless authorized otherwise by the Engineer in writing.

The Contractor shall monitor temperature, dew point, and relative humidity every 4 hours during surface preparation and coating application in the specific areas where the work is being performed. The frequency of monitoring shall increase if weather conditions are changing. If



the weather conditions after application and during drying are forecast to be outside the acceptable limits established by the coating manufacturer, coating application shall not proceed. If the weather conditions are forecast to be borderline relative to the limits established by the manufacturer, monitoring shall continue at a minimum of 4-hour intervals throughout the drying period. The Engineer has the right to reject any work that was performed, or drying that took place, under unfavorable weather conditions. Rejected work shall be removed, recleaned, and repainted at the Contractor's expense.

Compressed Air Cleanliness. Prior to using compressed air for abrasive blast cleaning, blowing down the surfaces, and painting with conventional spray, the Contractor shall verify that the compressed air is free of moisture and oil contamination according to the requirements of ASTM D 4285. The tests shall be conducted at least one time each shift for each compressor system in operation. If air contamination is evident, the Contractor shall change filters, clean traps, add moisture separators or filters, or make other adjustments as necessary to achieve clean, dry air. The Contractor shall also examine the work performed since the last acceptable test for evidence of defects or contamination caused by the compressed air. Effectuated work shall be repaired at the Contractor's expense.

Low Pressure Water Cleaning and Solvent Cleaning (HOLD POINT). The Contractor shall notify the Engineer 24 hours in advance of beginning surface preparation operations.

- a) Water Cleaning of Lead Containing Coatings Prior to Overcoating. Prior to initiating any mechanical cleaning such as hand/power tool cleaning on surfaces that are painted with lead, all surfaces to be prepared and painted, and the tops of pier and abutment caps shall be washed. Washing is not required if the surfaces will be prepared by water jetting.

Washing shall involve the use of potable water at a minimum of 1000 psi (7 MPa) and less than 5000 psi (34 MPa) according to "Low Pressure Water Cleaning" of SSPC-SP WJ-4. There are no restrictions on the presence of flash rusting of bare steel after cleaning. Paint spray equipment shall not be used to perform the water cleaning. The cleaning shall be performed in such a manner as to remove dust, dirt, chalk, insect and animal nests, bird droppings, loose coating, loose mill scale, loose rust and other corrosion products, and other foreign matter. Water cleaning shall be supplemented with scrubbing as necessary to remove the surface contaminants. . The water, debris, and any loose paint removed by water cleaning shall be collected for proper disposal. The washing shall be completed no more than 2 weeks prior to surface preparation.

If detergents or other additives are added to the water, the detergents/additives shall be included in the submittals and not used until accepted by the Engineer. When detergents or additives are used, the surface shall be rinsed with potable water before the detergent water dries.

After washing has been accepted by the Engineer, all traces of asphaltic cement, oil, grease, diesel fuel deposits, and other soluble contaminants which remain on the steel surfaces to be painted shall be removed by solvent cleaning according to SSPC – SP1,

supplemented with scraping (e.g., to remove large deposits of asphaltic cement) as required. The solvent(s) used for cleaning shall be compatible with the existing coating system. The Contractor shall identify the proposed solvent(s) in the submittals. If the existing coating is softened, wrinkled, or shows other signs of attack from the solvents, the Contractor shall immediately discontinue their use. The name and composition of replacement solvents, together with MSDS, shall be submitted for Engineer acceptance prior to use.

Under no circumstances shall subsequent hand/power tool cleaning or abrasive blast cleaning be performed in areas containing surface contaminants or in areas where the Engineer has not accepted the washing and solvent cleaning. Surfaces prepared by hand/power tool cleaning or abrasive blast cleaning without approval of the washing and solvent cleaning may be rejected by the Engineer. Rejected surfaces shall be recleaned with both solvent and the specified mechanical means at the Contractor's expense.

After all washing and mechanical cleaning are completed, representative areas of the existing coating shall be tested to verify that the surface is free of chalk and other loose surface debris or foreign matter. The testing shall be performed according to ASTM D4214. Cleaning shall continue until a chalk rating of 6 or better is achieved in every case.

- b) Water Cleaning of Non-Lead Coatings Prior to Overcoating. Thoroughly clean the surfaces according to the steps defined above for "Water Cleaning of Lead Containing Coatings Prior to Overcoating." The wash water does not need to be collected, but paint chips, insect and animal nests, bird droppings and other foreign matter shall be collected for proper disposal. If the shop primer is inorganic zinc, the chalk rating does not apply. All other provisions are applicable.
- c) Water Cleaning/Debris Removal Prior to Total Coating Removal. When total coating removal is specified, water cleaning of the surface prior to coating removal is not required by this specification and is at the option of the Contractor. If the Contractor chooses to use water cleaning, the above provisions for water cleaning of lead and non-lead coatings apply as applicable, including collection and disposal of the waste.

Whether or not the surfaces are pre-cleaned using water, the tops of the pier caps and abutments shall be cleaned free of dirt, paint chips, insect and animal nests, bird droppings and other foreign matter and the debris collected for proper disposal. Cleaning can be accomplished by wet or dry methods.

Prior to mechanical cleaning, oil, grease, and other soluble contaminants on bare steel or rusted surfaces shall be removed by solvent cleaning according to SSPC-SP1.

- d) Water Cleaning Between Coats. When foreign matter has accumulated on a newly applied coat, washing and scrubbing shall be performed prior to the application of subsequent coats. The water does not need to be collected unless it contacts existing lead containing coatings.

Laminar and Stratified Rust. All laminar and stratified rust that has formed on the existing steel surfaces shall be removed. Pack rust formed along the perimeter of mating surfaces of connected plates or shapes of structural steel shall be removed to the extent feasible without mechanically detaching the mating surface. Any pack rust remaining after cleaning the mating surfaces shall be tight and intact when examined using a dull putty knife. The tools used to remove these corrosion products shall be identified in the submittals and accepted by the Engineer. If the surface preparation or removal of rust results in nicks or gouges in the steel, the work shall be suspended, and the damaged areas repaired to the satisfaction of the Engineer, at the Contractor's expense. The Contractor shall also demonstrate that he/she has made the necessary adjustments to prevent a reoccurrence of the damage prior to resuming work. If surface preparation reveals holes or section loss, or creates holes in the steel, the Contractor shall notify the Engineer. Whenever possible, the Department will require that the primer be applied to preserve the area, and allow work to proceed, with repairs and touch up performed at a later date.

Surface Preparation (HOLD POINT). One or more of the following methods of surface preparation shall be used as specified on the plans. When a method of surface preparation is specified, it applies to the entire surface, including areas that may be concealed by the containment connection points. In each case, as part of the surface preparation process, soluble salts shall be remediated as specified under "Soluble Salt Remediation." The Contractor shall also note that the surface of the steel beneath the existing coating system may contain corrosion and/or mill scale. Removal of said corrosion and/or mill scale, when specified, shall be considered included in this work and no extra compensation will be allowed.

When a particular cleaning method is specified for use in distinct zones on the bridge, the cleaning shall extend into the existing surrounding paint until a sound border is achieved. The edge of the existing paint is considered to be sound and intact after cleaning if it cannot be lifted by probing the edge with a dull putty knife. The sound paint shall be feathered for a minimum of 1 1/2 in. (40 mm) to achieve a smooth transition between the prepared steel and the existing coatings. Sanders with vacuum attachments, which have been approved by the Engineer, shall be used as necessary to accomplish the feathering.

- a) Limited Access Areas: A best effort with the specified methods of cleaning shall be performed in limited access areas such as the backsides of rivets inside built up box members. The equipment being used for the majority of the cleaning may need to be supplemented with other commercially available equipment, such as angle nozzles, to properly clean the limited access areas. The acceptability of the best effort cleaning in these areas is at the sole discretion of the Engineer.
- b) Near-White Metal Blast Cleaning: This surface preparation shall be accomplished according to the requirements of Near-White Metal Blast Cleaning SSPC-SP 10. Unless otherwise specified in the contract, the designated surfaces shall be prepared by dry abrasive blast cleaning, wet abrasive blast cleaning, or water jetting with abrasive injection. A Near-White Metal Blast Cleaned surface, when viewed without

magnification, shall be free of all visible oil, grease, dirt, dust, mill scale, rust, paint, oxides, corrosion products, and other foreign matter, except for staining.

Random staining shall be limited to no more than 5 percent of each 9 sq. in. (58 sq. cm) of surface area and may consist of light shadows, slight streaks, or minor discoloration caused by stains of rust, stains of mill scale, or stains of previously applied paint. With the exception of crevices as defined below, surface discoloration is considered to be a residue that must be removed, rather than a stain, if it possesses enough mass or thickness that it can be removed as a powder or in chips when scraped with a pocketknife.

A surface profile shall be created on the steel as defined later under "Surface Profile."

At the discretion of the Engineer, after a best effort cleaning, slight traces of existing coating may be permitted to remain within crevices such as those created between the steel and rivets or bolts/washers/nuts, and between plates. When traces of coating are permitted to remain, the coating shall be tightly bonded when examined by probing with a dull putty knife. The traces of coating shall be confined to the bottom portion of the crevices only, and shall not extend onto the surrounding steel or plate or onto the outer surface of the rivets or bolts. Pitted steel is excluded from exemption considerations and shall be cleaned according to SSPC-SP10.

If hackles or slivers are visible on the steel surface after cleaning, the Contractor shall remove them by grinding followed by reblast cleaning. At the discretion of the Engineer, the use of power tools to clean the localized areas after grinding, and to establish a surface profile acceptable to the coating manufacturer, can be used in lieu of blast cleaning.

If the surfaces are prepared using wet abrasive methods, attention shall be paid to tightly configured areas to assure that the preparation is thorough. After surface preparation is completed, the surfaces, surrounding steel, and containment materials/scaffolding shall be rinsed to remove abrasive dust and debris. Potable water shall be used for all operations. An inhibitor shall be added to the supply water and/or rinse water to prevent flash rusting. With the submittals, the Contractor shall provide a sample of the proposed inhibitor together with a letter from the coating manufacturer indicating that the inhibitor is suitable for use with their products and that the life of the coating system will not be reduced due to the use of the inhibitor. The surfaces shall be allowed to completely dry before the application of any coating.

- c) Commercial Grade Power Tool Cleaning: This surface preparation shall be accomplished according to the requirements of SSPC-SP15. The designated surfaces shall be completely cleaned with power tools. A Commercial Grade Power Tool Cleaned surface, when viewed without magnification, is free of all visible oil, grease, dirt, rust, coating, oxides, mill scale, corrosion products, and other foreign matter, except for staining. In previously pitted areas, slight residues of rust and paint may also be left in the bottoms of pits.

Random staining shall be limited to no more than 33 percent of each 9 sq. in. (58 sq. cm) of surface area. Allowable staining may consist of light shadows, slight streaks, or minor discoloration caused by stains of rust, stains of mill scale, or stains of previously applied paint. Surface discoloration is considered to be a residue that must be removed, rather than a stain, if it possesses enough mass or thickness that it can be removed as a powder or in chips when scraped with a pocketknife.

A surface profile shall be created on the steel as defined later under "Surface Profile."

At the Contractor's option, Near-White Metal Blast Cleaning may be substituted for Power Tool Cleaning – Commercial Grade, as long as containment systems appropriate for abrasive blast cleaning are utilized and there is no additional cost to the Department.

- d) Power Tool Cleaning – Modified SP3: This surface preparation shall be accomplished according to the requirements of SSPC-SP3, Power Tool Cleaning except as modified as follows. The designated surfaces shall be cleaned with power tools. A power tool cleaned surface shall be free of all loose rust, loose mill scale, loose and peeling paint, and loose rust that is bleeding through and/or penetrating the coating. All locations of visible corrosion and rust bleed, exposed or lifting mill scale, and lifting or loose paint shall be prepared using the power tools, even if the material is tight.

Upon completion of the cleaning, rust, rust bleed, mill scale and surrounding paint are permitted to remain if they can not be lifted using a dull putty knife.

- e) Power Tool Cleaning of Shop Coated Steel. When shop-coated steel requires one or more coats to be applied in the field, the surface of the shop coating shall be cleaned as specified under "Water Cleaning of Non-Lead Coatings Prior to Overcoating." If the damage is to a fully applied shop system, water cleaning is not required unless stipulated in the contract. Damaged areas of shop coating shall be spot cleaned according to Power Tool Cleaning - Modified SSPC-SP3. If the damage extends to the substrate, spot cleaning shall be according to SSPC-SP15. The edges of the coating surrounding all spot repairs shall be feathered.

- f) Galvanized Surfaces: If galvanized surfaces are specified to be painted, they shall be prepared by brush-off blast cleaning in accordance with SSPC-SP 16 or by using proprietary solutions that are specifically designed to clean and etch (superficially roughen) the galvanized steel for painting. If cleaning and etching solutions are selected, the Contractor shall submit the manufacturer's technical product literature and SDS for Engineer's review and written acceptance prior to use.

Abrasives. Unless otherwise specified in the contract, when abrasive blast cleaning is specified, it shall be performed using either expendable abrasives (other than silica sand) or recyclable steel grit abrasives. Expendable abrasives shall be used one time and disposed of. Abrasive suppliers shall certify that the expendable abrasives meet the requirements of SSPC-AB1 and that recyclable steel grit abrasives meet SSPC-AB3. Tests to confirm the cleanliness of new

abrasives (oil and water-soluble contamination) shall be performed by the Contractor according to the requirements and frequencies of SSPC-AB1 and SSPC-AB3, as applicable. On a daily basis, the Contractor shall verify that recycled abrasives are free of oil and water-soluble contamination by conducting the tests specified in SSPC-AB2.

All surfaces prepared with abrasives not meeting the SSPC-AB1, AB2, or AB3 requirements, as applicable, shall be solvent cleaned or low pressure water cleaned as directed by the Engineer, and reblast cleaned at the Contractor's expense.

Surface Profile (HOLD POINT). The abrasives used for blast cleaning shall have a gradation such that the abrasive will produce a uniform surface profile of 1.5 to 4.5 mils (38 to 114 microns). If the profile requirements of the coating manufacturer are more restrictive, advise the Engineer and comply with the more restrictive requirements. For recycled abrasives, an appropriate operating mix shall be maintained in order to control the profile within these limits.

The surface profile for SSPC-SP15 power tool cleaned surfaces shall be within the range specified by the coating manufacturer, but not less than 2.0 mils (50 microns).

The surface profile produced by abrasive blast cleaning shall be determined by replica tape or digital profile depth micrometer according to SSPC-PA 17 at the beginning of the work, and each day that surface preparation is performed. Areas having unacceptable profile measurements shall be further tested to determine the limits of the deficient area. When replica tape is used, it shall be attached to the daily report. In the event of a conflict between measurements taken with the replica tape and digital profile depth micrometer, the measurements with the replica tape shall prevail.

The surface profile produced by power tools to SSPC-SP15, shall be measured using the digital profile depth micrometer only. Replica tape shall not be used.

When unacceptable profiles are produced, work shall be suspended. The Contractor shall submit a plan for the necessary adjustments to insure that the correct surface profile is achieved on all surfaces. The Contractor shall not resume work until the new profile is verified by the QA observations, and the Engineer confirms, in writing, that the profile is acceptable.

Soluble Salt Remediation (HOLD POINT). The Contractor shall implement surface preparation procedures and processes that will remove chloride from the surfaces. Surfaces that may be contaminated with chloride include, but are not limited to, expansion joints and all areas that are subject to roadway splash or run off such as fascia beams and stringers.

Methods of chloride removal may include, but are not limited to, steam cleaning or pressure washing with or without the addition of a chemical soluble salt remover as approved by the coating manufacturer, and scrubbing before or after initial paint removal. The Contractor may also elect to clean the steel and allow it to rust overnight followed by recleaning, or by utilizing blends of fine and coarse abrasives during blast cleaning, wet abrasive/water jetting methods of preparation, or combinations of the above. If steam or water cleaning methods of chloride removal are utilized over surfaces where the coating has been completely removed, and the

water does not contact any lead containing coatings, the water does not have to be collected. The Contractor shall provide the proposed procedures for chloride remediation in the Surface Preparation/Painting Plan.

Upon completion of the chloride remediation steps, the Contractor shall use cell methods of field chloride extraction and test procedures (e.g., silver dichromate) accepted by the Engineer, to test representative surfaces that were previously rusted (e.g., pitted steel) for the presence of remaining chlorides. Remaining chloride levels shall be no greater than  $7\mu\text{g}/\text{sq cm}$  as read directly from the surface without any multiplier applied to the results. The testing must be performed, and the results must be acceptable, prior to painting each day.

A minimum of 5 tests per 1000 sq. ft. (93 sq m) or fraction thereof completed in a given day, shall be conducted at project start up. If results greater than  $7\mu\text{g}/\text{sq cm}$  are detected, the surfaces shall be recleaned and retested at the same frequency. If acceptable results are achieved on three consecutive days in which testing is conducted, the test frequency may be reduced to 1 test per 1000 sq. ft. (93 sq. m) prepared each day provided the chloride remediation process remains unchanged. If unacceptable results are encountered, or the methods of chloride remediation are changed, the Contractor shall resume testing at a frequency of 5 tests per 1000 sq. ft. (93 sq. m).

Following successful chloride testing the chloride test areas shall be cleaned. SSPC-SP15, Commercial Grade Power Tool Cleaning can be used to clean the test locations when the specified degree of cleaning is SSPC-SP10.

Surface Condition Prior to Painting (HOLD POINT). Prepared surfaces, shall meet the requirements of the respective degrees of cleaning immediately prior to painting, and shall be painted before rusting appears on the surface. If rust appears or bare steel remains unpainted for more than 12 hours, the affected area shall be prepared again at the expense of the Contractor.

All loose paint and surface preparation cleaning residue on bridge steel surfaces, scaffolding and platforms, containment materials, and tops of abutments and pier caps shall be removed prior to painting. When lead paint is being disturbed, cleaning shall be accomplished by HEPA vacuuming unless it is conducted within a containment that is designed with a ventilation system capable of collecting the airborne dust and debris created by sweeping and blowing with compressed air.

The quality of surface preparation and cleaning of surface dust and debris must be accepted by the Engineer prior to painting. The Engineer has the right to reject any work that was performed without adequate provision for QA observations to accept the degree of cleaning. Rejected coating work shall be removed and replaced at the Contractor's expense.

General Paint Requirements. Paint storage, mixing, and application shall be accomplished according to these specifications and as specified in the paint manufacturer's written instructions and product data sheets for the paint system used. In the event of a conflict between these specifications and the coating manufacturers' instructions and data sheets, the

Contractor shall advise the Engineer and comply with the Engineer's written resolution. Until a resolution is provided, the most restrictive conditions shall apply.

Unless noted otherwise, if a new concrete deck or repair to an existing deck is required, painting shall be done after the deck is placed and the forms have been removed.

- a) **Paint Storage and Mixing.** All Paint shall be stored according to the manufacturer's published instructions, including handling, temperatures, and warming as required prior to mixing. All coatings shall be supplied in sealed containers bearing the manufacturer's name, product designation, batch number and mixing/thinning instructions. Leaking containers shall not be used.

The Contractor shall only use batches of material that have an IDOT MISTIC approval number. For multi-component materials, the batch number from one component is tested with specific batch numbers from the other component(s). Only the same batch number combinations that were tested and approved shall be mixed together for use.

Mixing shall be according to the manufacturer's instructions. Thinning shall be performed using thinner provided by the manufacturer, and only to the extent allowed by the manufacturer's written instructions. In no case shall thinning be permitted that would cause the coating to exceed the local Volatile Organic Compound (VOC) emission restrictions. For multiple component paints, only complete kits shall be mixed and used. Partial mixing is not allowed.

The ingredients in the containers of paint shall be thoroughly mixed by mechanical power mixers according to the manufacturer's instructions, in the original containers before use or mixing with other containers of paint. The paint shall be mixed in a manner that will break up all lumps, completely disperse pigment and result in a uniform composition. Paint shall be carefully examined after mixing for uniformity and to verify that no unmixed pigment remains on the bottom of the container. Excessive skinning or partial hardening due to improper or prolonged storage will be cause for rejection of the paint, even though it may have been previously inspected and accepted.

Multiple component coatings shall be discarded after the expiration of the pot life. Single component paint shall not remain in spray pots, paint buckets, etc. overnight. It shall be stored in a covered container and remixed before use.

The Engineer reserves the right to sample field paint (individual components and/or the mixed material) and have it analyzed. If the paint does not meet the product requirements due to excessive thinning or because of other field problems, the coating shall be removed from that section of the structure and replaced as directed by the Engineer.

- b) **Application Methods.** Unless prohibited by the coating manufacturer's written instructions, paint may be applied by spray methods, rollers, or brushes. If applied with



conventional or airless spray methods, paint shall be applied in a uniform layer with overlapping at the edges of the spray pattern.

The painters shall monitor the wet film thickness of each coat during application. The wet film thickness shall be calculated based on the solids by volume of the material and the amount of thinner added. When the new coating is applied over an existing system, routine QC inspections of the wet film thickness shall be performed in addition to the painter's checks in order to establish that a proper film build is being applied.

When brushes or rollers are used to apply the coating, additional applications may be required to achieve the specified thickness per layer.

- c) Field Touch Up of Shop-Coated Steel. After cleaning, rusted and damaged areas of shop-primed inorganic zinc shall be touched up using epoxy mastic. Damaged areas of shop-applied intermediate shall be touched-up using the same intermediate specified for painting the existing structure. Following touch up, the remaining coats (intermediate and finish, or finish only, depending on the number of coats applied in the shop) shall be the same materials specified for painting the existing structure. When inorganic zinc has been used as the shop primer, a mist coat of the intermediate coat shall be applied before the application of the full intermediate coat in order to prevent pinholing and bubbling.
- d) Recoating and Film Continuity (HOLD POINT for each coat). Paint shall be considered dry for recoating according to the time/temperature/humidity criteria provided in the manufacturer's instructions and when an additional coat can be applied without the development of film irregularities; such as lifting, wrinkling, or loss of adhesion of the under coat. The coating shall be considered to be too cured for recoating based on the maximum recoat times stipulated by the coating manufacturer. If the maximum recoat times are exceeded, written instructions from the manufacturer for preparing the surface to receive the next coat shall be provided to the Engineer. Surface preparation and application shall not proceed until the recommendations are accepted by the Engineer in writing. If surfaces are contaminated, washing shall be accomplished prior to intermediate and final coats. Wash water does not have to be collected unless the water contacts existing lead containing coatings.

Painting shall be done in a neat and workmanlike manner. Each coat of paint shall be applied as a continuous film of uniform thickness free of defects including, but not limited to, runs, sags, overspray, dryspray, pinholes, voids, skips, misses, and shadow-through. Defects such as runs and sags shall be brushed out immediately during application. Dry spray on the surface of previous coats shall be removed prior to the application of the next coat.

Paint Systems. The paint system(s) from the list below shall be applied as specified.

The paint manufacturer's relative humidity, dew point, and material, surface, and ambient temperature restrictions shall be provided with the submittals and shall be strictly followed.

Written recommendations from the paint manufacturer for the length of time each coat must be protected from cold or inclement weather (e.g., exposure to rain), during the drying period shall be included in the submittals. Upon acceptance by the Engineer, these times shall be used to govern the duration that protection must be maintained during drying.

Where stripe coats are indicated, the Contractor shall apply an additional coat to edges, rivets, bolts, crevices, welds, and similar surface irregularities. The stripe coat shall be applied by brush or spray, but if applied by spray, it shall be followed immediately by brushing to thoroughly work the coating into or on the irregular surfaces, and shall extend onto the surrounding steel a minimum of 1 in. (25 mm) in all directions. The purpose of the stripe coat is to assure complete coverage of crevices and to build additional thickness on edges and surface irregularities. If the use of the brush on edges pulls the coating away, brushing of edges can be eliminated, provided the additional coverage is achieved by spray. Measurement of stripe coat thickness is not required, but the Contractor shall visually confirm that the stripe coats are providing the required coverage.

The stripe coat may be applied as part of the application of the full coat unless prohibited by the coating manufacturer. If applied as part of the application process of the full coat, the stripe coat shall be allowed to dry for a minimum of 10 minutes in order to allow Contractor QC personnel to verify that the coat was applied. If a wet-on-wet stripe coat is prohibited by the coating manufacturer or brush or roller application of the full coat pulls the underlying stripe coat, the stripe coat shall dry according to the manufacturers' recommended drying times prior to the application of the full coat. In the case of the prime coat, the full coat can also be applied first to protect the steel, followed by the stripe coat after the full coat has dried.

The thicknesses of each coat as specified below shall be measured according to SSPC-PA2, using Coating Thickness Restriction Level 3 (spot measurements 80% of the minimum and 120% of the maximum, provided the entire area complies with the specified ranges).

- a) System 1 – OZ/E/U – for Bare Steel: System 1 shall consist of the application of a full coat of organic (epoxy) zinc-rich primer, a full intermediate coat of epoxy, and a full finish coat of aliphatic urethane. Stripe coats of the prime and finish coats shall be applied. The film thicknesses of the full coats shall be as follows:
- One full coat of organic zinc-rich primer between 3.5 and 5.0 mils (90 and 125 microns) dry film thickness. The prime coat shall be tinted to a color that contrasts with the steel surface.
  - One full intermediate coat of epoxy between 3.0 and 6.0 mils (75 and 150 microns) dry film thickness. The intermediate coat shall be a contrasting color to both the first coat and finish coat.
  - One full finish coat of aliphatic urethane between 2.5 and 4.0 mils (65 and 100 microns) dry film thickness. Finish coat color shall be according to contract plans.

The total dry film thickness for this system, exclusive of areas receiving the stripe coats, shall be between 9.0 and 15.0 mils (225 and 375 microns).

- b) System 2 – PS/EM/U – for Overcoating an Existing System: System 2 shall consist of the application of a full coat of epoxy penetrating sealer, a spot intermediate coat of aluminum epoxy mastic and a stripe and full finish coat of aliphatic urethane.

A full coat of epoxy penetrating sealer shall be applied to all surfaces following surface preparation. A spot intermediate coat shall consist of the application of one coat of the aluminum epoxy mastic on all areas where rust is evident and areas where the old paint has been removed, feathered and/or damaged prior to, during or after the cleaning and surface preparation operations. After the spot intermediate, a stripe coat and full finish coat of aliphatic urethane shall be applied. The film thicknesses shall be as follows:

- One full coat of epoxy penetrating sealer between 1.0 and 2.0 mils (25 and 50 microns) dry film thickness.
- One spot coat of aluminum epoxy mastic between 5.0 and 7.0 mils (125 and 175 microns) dry film thickness. The color shall contrast with the finish coat.
- One full finish coat of aliphatic urethane between 2.5 and 4.0 mils (65 and 100 microns) dry film thickness. Finish coat color shall be according to contract plans.

The total dry film thickness for this system, exclusive of the stripe coat, shall be between 8.5 and 13.0 mils (215 and 325 microns). The existing coating thickness to remain under the overcoat must be verified in order to obtain accurate total dry film thickness measurements.

- c) System 3 – EM/EM/AC – for Bare Steel: System 3 shall consist of the application of two full coats of aluminum epoxy mastic and a full finish coat of waterborne acrylic. Stripe coats for first coat of epoxy mastic and the finish coat shall be applied. The film thicknesses of the full coats shall be as follows:

- One full coat of aluminum epoxy mastic between 5.0 and 7.0 mils (125 and 175 microns) dry film thickness. The first coat of aluminum epoxy mastic shall be tinted a contrasting color with the blast cleaned surface and the second coat.
- One full intermediate coat of aluminum epoxy mastic between 5.0 and 7.0 mils (125 and 175 microns) dry film thickness. The intermediate coat shall be a contrasting color to the first coat and the finish coat.
- A full finish coat of waterborne acrylic between 2.0 and 4.0 mils (50 and 100 microns) dry film thickness. Finish coat color shall be according to contract plans.

The total dry film thickness for this system, exclusive of areas receiving the stripe coats, shall be between 12.0 and 18.0 mils (360 and 450 microns).

- d) System 4 – PS/EM/AC – for Overcoating an Existing System: System 4 shall consist of the application of a full coat of epoxy penetrating sealer, a spot intermediate coat of aluminum epoxy mastic and a stripe and full finish coat of waterborne acrylic.

A full coat of epoxy penetrating sealer shall be applied to all surfaces following surface preparation. A spot intermediate coat shall consist of the application of one coat of the aluminum epoxy mastic on all areas where rust is evident and areas where the old paint has been removed, feathered and/or damaged prior to, during or after the cleaning and surface preparation operations. After the spot intermediate, a stripe coat and full finish coat of waterborne acrylic shall be applied. The film thicknesses shall be as follows:

- One full coat of epoxy penetrating sealer between 1.0 and 2.0 mils (25 and 50 microns) dry film thickness.
- One spot coat of aluminum epoxy mastic between 5.0 and 7.0 mils (125 and 175 microns) dry film thickness. The color shall contrast with the finish coat.
- One full finish coat of waterborne acrylic between 2.0 and 4.0 mils (50 and 100 microns) dry film thickness. Finish coat color shall be according to contract plans.

The total dry film thickness for this system, exclusive of the stripe coat, shall be between 8.0 and 13.0 mils (200 and 325 microns). The existing coating thickness to remain under the overcoat must be verified in order to obtain accurate total dry film thickness measurements.

- e) System 5 – MCU – for Bare Steel: System 5 shall consist of the application of a full coat of moisture cure urethane (MCU) zinc primer, a full coat of MCU intermediate, and a full coat of MCU finish. Stripe coats of the prime and finish coats shall be applied. The Contractor shall comply with the manufacturer's requirements for drying times between the application of the stripe coats and the full coats. The film thicknesses of the full coats shall be as follows:

- One full coat of MCU zinc primer between 3.0 and 5.0 mils (75 and 125 microns) dry film thickness. The prime coat shall be tinted to a color that contrasts with the steel surface.
- One full MCU intermediate coat between 3.0 and 4.0 mils (75 and 100 microns) dry film thickness. The intermediate coat shall be a contrasting color to both the first coat and finish coat.
- One full MCU finish coat between 2.0 and 4.0 mils (50 and 100 microns) dry film thickness. Finish coat color shall be according to contract plans.

The total dry film thickness for this system, exclusive of areas receiving the stripe coats, shall be between 8.0 and 13.0 mils (200 and 325 microns).

- f) System 6 – MCU – for Overcoating an Existing System: System 6 shall consist of the application of a full coat of moisture cure urethane (MCU) penetrating sealer, a spot coat of MCU intermediate, and a stripe and full coat of MCU finish.

A full coat of MCU penetrating sealer shall be applied to all surfaces following surface preparation. A spot intermediate coat shall consist of the application of one coat of MCU intermediate on all areas where rust is evident and areas where the old paint has been removed, feathered and/or damaged prior to, during or after the cleaning and surface preparation operations. After the spot intermediate, a stripe coat and full coat of MCU finish shall be applied. The Contractor shall comply with the manufacturer's requirements for drying time between the application of the stripe coat and the full finish coat. The film thicknesses shall be as follows:

- One full coat of MCU sealer between 1.0 and 2.0 mils (25 and 50 microns) dry film thickness.
- One full MCU intermediate coat between 3.0 and 4.0 mils (75 and 100 microns) dry film thickness. The color shall contrast with the finish coat.
- One full MCU finish coat 2.0 and 4.0 mils (50 and 100 microns) dry film thickness. Finish coat color shall be according to contract plans.

The total dry film thickness for this system, exclusive of areas receiving the stripe coats, shall be between 6.0 and 10.0 mils (150 and 250 microns). The existing coating thickness to remain under the overcoat must be verified in order to obtain accurate total dry film thickness measurements.

**Application of Paint System over Galvanizing:** If galvanized surfaces are present and specified to be painted, the Contractor shall apply one of the following as designated on the plans:

- A 2-coat system consisting of a full aluminum epoxy mastic coat and a full waterborne acrylic finish coat from System 3. If red rust is visible, rusted areas shall be spot primed with aluminum epoxy mastic prior to the application of the full coat of aluminum epoxy mastic.
- A 2-coat system consisting of a full epoxy coat and a full urethane coat from System 1. If red rust is visible, rusted areas shall be spot primed with organic zinc prior to the application of the full coat of epoxy.

**Surface Preparation and Painting of Galvanized Fasteners:** The Contractor shall prepare all fasteners (i.e., galvanized nuts, bolts, etc.) by power tool cleaning in accordance with SSPC-SP 2 or SSPC-SP3 to remove loose material. Following hand/power tool cleaning and prior to painting, the surfaces shall be solvent cleaned according to SSPC-SP 1. Slight stains of torquing compound dye may remain after cleaning provided the dye is not transferred to a

cloth after vigorous rubbing is acceptable. If any dye is transferred to a cloth after vigorous rubbing, additional cleaning is required.

The fasteners shall be coated with one coat of an aluminum epoxy mastic meeting the requirements of Article 1008.03 and the same acrylic or urethane topcoat specified above for use on galvanized members.

Repair of Damage to New Coating System and Areas Concealed by Containment. The Contractor shall repair all damage to the newly installed coating system and areas concealed by the containment/protective covering attachment points, at no cost to the Department. The process for completing the repairs shall be included in the submittals. If the damage extends to the substrate and the original preparation involved abrasive blast cleaning, the damaged areas shall be prepared to SSPC-SP15 Power Tool Cleaning - Commercial Grade. If the original preparation was other than blast cleaning or the damage does not extend to the substrate, the loose, fractured paint shall be cleaned to Power Tool Cleaning – Modified SP3.

The surrounding coating at each repair location shall be feathered for a minimum distance of 1 1/2 in. (40 mm) to achieve a smooth transition between the prepared areas and the existing coating.

If the bare steel is exposed, all coats shall be applied to the prepared area. For damaged galvanizing, the first coat shall be aluminum epoxy mastic. If only the intermediate and finish coats are damaged, the intermediate and finish shall be applied. If only the finish coat is damaged, the finish shall be applied.

#### Special Instructions.

- a) At the completion of the work, the Contractor shall stencil the painting date and the paint code on the bridge. The letters shall be capitals, not less than 2 in. (50 mm) and not more than 3 in. (75 mm) in height.

The stencil shall contain the following wording "PAINTED BY (insert the name of the Contractor)" and shall show the month and year in which the painting was completed, followed by the appropriate code for the coating material applied, all stenciled on successive lines:

CODE U (for field applied System 3 or System 4).

CODE Z (for field applied System 1 or System 2).

CODE AA (for field applied System 5 or System 6).

This information shall be stenciled on the cover plate of a truss end post near the top of the railing, or on the outside face of an outside stringer near one end of the bridge, or at some equally visible surface near the end of the bridge, as designated by the Engineer.

- b) All surfaces painted inadvertently shall be cleaned immediately.

It is understood and agreed that the cost of all work outlined above, unless otherwise specified, has been included in the bid, and no extra compensation will be allowed.

**Basis of Payment.** This work shall be paid for at the contract Lump Sum price for CLEANING AND PAINTING STEEL BRIDGE, at the designated location, or for CLEANING AND PAINTING the structure or portions thereof described. Payment will not be authorized until all requirements for surface preparation and painting have been fulfilled as described in this specification, including the preparation and submittal of all QC documentation. Payment will also not be authorized for non-conforming work until the discrepancy is resolved in writing.

### **Appendix 1 – Reference List**

The Contractor shall maintain the following regulations and references on site for the duration of the project:

- Illinois Environmental Protection Act
- ASTM D 4214, Standard Test Method for Evaluating Degree of Chalking of Exterior Paint Films
- ASTM D 4285, Standard Test Method for Indicating Oil or Water in Compressed Air
- ASTM D4417, Standard Test Methods for Field Measurement of Surface Profile of Blast Cleaned Steel
- SSPC-AB 1, Mineral and Slag Abrasives
- SSPC-AB 2, Cleanliness of Recycled Ferrous Metallic Abrasives
- SSPC-AB 3, Ferrous Metallic Abrasive
- SSPC-PA 2, Procedure for Determining Conformance to Dry Coating Thickness Requirements
- SSPC-PA 17, Procedure for Determining Conformance to Steel Profile/Surface Roughness/Peak Count Requirements
- SSPC-QP 1, Standard Procedure for Evaluating Painting Contractors (Field Application to Complex Structures)
- SSPC-QP 2, Standard Procedure for Evaluating the Qualifications of Painting Contractors to Remove Hazardous Paint
- SSPC-SP 1, Solvent Cleaning
- SSPC-SP 2, Hand Tool Cleaning
- SSPC-SP 3, Power Tool Cleaning
- SSPC-SP 10/NACE No. 2, Near White Metal Blast Cleaning
- SSPC-SP WJ-4, Waterjet Cleaning of Metals – Light Cleaning
- SSPC-SP 15, Commercial Grade Power Tool Cleaning
- SSPC-SP 16, Brush-Off Blast Cleaning of Coated and Uncoated Galvanized Steel, Stainless Steels, and Non-Ferrous Metals
- SSPC-VIS 1, Guide and Reference Photographs for Steel Surfaces Prepared by Dry Abrasive Blast Cleaning
- SSPC-VIS 3, Visual Standard for Power- and Hand-Tool Cleaned Steel

- SSPC-VIS 4, Guide and Reference Photographs for Steel Cleaned by Water Jetting
- SSPC-VIS 5, Guide and Reference Photographs for Steel Prepared by Wet Abrasive Blast Cleaning
- The paint manufacturer's application instructions, MSDS and product data sheets



## **CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES**

Effective: October 2, 2001

Revised: April 22, 2016

Description. This work shall consist of the containment, collection, temporary storage, transportation and disposal of waste from lead paint removal projects. Waste requiring containment and control includes, but is not limited to, old paint, spent abrasives, corrosion products, mill scale, dirt, dust, grease, oil, salts, and water used for cleaning the surface of existing lead coatings prior to overcoating.

General. The existing coatings contain lead and may also contain other toxic metals. This specification provides the requirements for containment and for the protection of the public, and the environment from exposure to harmful levels of toxic metals that may be present in the paint being removed or repaired. The Contractor shall take reasonable and appropriate precautions to protect the public from the inhalation or ingestion of dust or debris from the operations, and is responsible for the clean-up of all spills of waste at no additional cost to the Department.

The Contractor shall comply with the requirements of this Specification and all applicable Federal, State, and Local laws, codes, and regulations, including, but not limited to the regulations of the United States Environmental Protection Agency (USEPA), Occupational Safety and Health Administration (OSHA), and Illinois Environmental Protection Agency (IEPA). The Contractor shall comply with all applicable regulations even if the regulation is not specifically referenced herein. If a Federal, State, or Local regulation is more restrictive than the requirements of this Specification, the more restrictive requirements shall prevail.

Submittals. The Contractor shall submit for Engineer review and acceptance, the following drawings and plans for accomplishing the work. The submittals shall be provided within 30 days of execution of the contract unless given written permission by the Engineer to submit them at a later date. Work cannot proceed until the submittals are accepted by the Engineer. Details for each of the plans are presented within the body of this specification. The Contractor shall also maintain on site, copies of the standards and regulations referenced herein (list provided in appendix 1).

- a) Containment Plans. The containment plans shall include drawings, equipment specifications, and calculations (wind load, air flow and ventilation when negative pressure is specified). The plans shall include copies of the manufacturer's specifications for the containment materials and equipment that will be used to accomplish containment and ventilation.

When required by the contract plans, the submittal shall provide calculations that assure the structural integrity of the bridge when it supports the containment and the calculations and drawings shall be signed and sealed by a Structural Engineer licensed in the state of Illinois.

When working over the railroad or navigable waterways, the Department will notify the respective agencies that work is being planned. Unless otherwise noted in the plans, the Contractor is responsible for follow up contact with the agencies, and shall provide evidence

that the railroad, Coast Guard, Corps of Engineers, and other applicable agencies are satisfied with the clearance provided and other safety measures that are proposed.

- b) Environmental Monitoring Plan. The Environmental Monitoring Plan shall address the visual inspections and clean up of the soil and water that the Contractor will perform, including final project inspection and cleanup. The plan shall address the daily visible emissions observations that will be performed and the corrective action that will be implemented in the event emissions or releases occur. When high volume ambient air monitoring is required, an Ambient Air Monitoring Plan shall be developed. The plan shall include:
- Proposed monitor locations and power sources in writing. A site sketch shall be included, indicating sensitive receptors, monitor locations, and distances and directions from work area.
  - Equipment specification sheet for monitors to be used, and a written commitment to calibrate and maintain the monitors.
  - Include a procedure for operation of monitors per 40 CFR 50, Appendix B, including use of field data chain-of-custody form. Include a sample chain of custody form.
  - Describe qualifications/training of monitor operator.
  - The name, contact information (person's name and number), and certification of the laboratory performing the filter analysis. Laboratory shall be accredited by one of the following: 1) the American Industrial Hygiene Association (AIHA) for lead (metals) analysis, 2) Environmental Lead Laboratory Accreditation Program (ELLAP) for metals analysis, 3) State or federal accreditation program for ambient air analysis or, 4) the EPA National Lead Laboratory Accreditation Program (NLLAP) for lead analysis. The laboratory shall provide evidence of certification, a sample laboratory chain-of-custody form, and sample laboratory report that provides the information required by this specification. The laboratory shall also provide a letter committing to do the analysis per 40 CFR 50, Appendix G. If the analysis will not be performed per 40 CFR Appendix G, a proposed alternate method shall be described, together with the rationale for using it. The alternate method can not be used unless specifically accepted by the Engineer in writing.
- c) Waste Management Plan. The Waste Management Plan shall address all aspects of handling, storage, testing, hauling and disposal of all project waste, including waste water. Include the names, addresses, and a contact person for the proposed licensed waste haulers and disposal facilities. Submit the name and qualifications of the laboratory proposed for Toxicity Characteristic Leaching Procedure (TCLP) analysis. If the use of abrasive additives is proposed, provide the name of the additive, the premixed ratio of additive to abrasive being provided by the supplier, and a letter from the supplier of the additive indicating IEPA acceptance of the material. Note that the use of any steel or iron based material, such as but not limited to grit, shot, fines, or filings as an abrasive additive is prohibited. The plan shall address weekly inspections of waste storage, maintaining an inspection log, and preparing a monthly waste accumulation inventory table.
- d) Contingency Plan. The Contractor shall prepare a contingency plan for emergencies including fire, accident, failure of power, failure of dust collection system, failure of supplied air system or any other event that may require modification of standard operating

procedures during lead removal. The plan shall include specific procedures to ensure safe egress and proper medical attention in the event of an emergency.

When the Engineer accepts the submittals, the Contractor will receive written notification. The Contractor shall not begin any work until the Engineer has accepted the submittals. The Contractor shall not construe Engineer acceptance of the submittals to imply approval of any particular method or sequence for conducting the work, or for addressing health and safety concerns. Acceptance of the plans does not relieve the Contractor from the responsibility to conduct the work according to the requirements of Federal, State, or Local regulations, this specification, or to adequately protect the health and safety of all workers involved in the project and any members of the public who may be affected by the project. The Contractor remains solely responsible for the adequacy and completeness of the programs and work practices, and adherence to them.

Quality Control (QC) Inspections. The Contractor shall perform first line, in process QC inspections of all environmental control and waste handling aspects of the project to verify compliance with these specification requirements and the accepted drawings and plans. The Contractor shall use the IDOT Environmental Daily Report form to record the results of the inspections. Alternative forms (paper or electronic) will be allowed provided they furnish equivalent documentation as the IDOT form, and they are accepted as part of the QC Program submittal. The completed reports shall be turned into the Engineer before work resumes the following day. Contractor QC inspections shall include, but not be limited to the following:

- Proper installation and continued performance of the containment system(s) in accordance with the approved drawings.
- Visual inspections of emissions into the air and verification that the cause(s) for any unacceptable emissions is corrected.
- Set up, calibration, operation, and maintenance of the regulated area and high volume ambient air monitoring equipment, including proper shipment of cassettes/filters to the laboratory for analysis. Included is verification that the Engineer receives the results within the time frames specified and that appropriate steps are taken to correct work practices or containment in the event of unacceptable results.
- Visual inspections of spills or deposits of contaminated materials into the water or onto the ground, pavement, soil, or slope protection. Included is verification that proper cleanup is undertaken and that the cause(s) of unacceptable releases is corrected.
- Proper implementation of the waste management plan including laboratory analysis and providing the results to the Engineer within the time frames specified herein.
- Proper implementation of the contingency plans for emergencies.

The personnel providing the QC inspections shall possess current SSPC-C3 certification or equal, including the annual training necessary to maintain that certification (SSPC-C5 or equal), and shall provide evidence of successful completion of 2 bridge lead paint removal projects of similar or greater complexity and scope that have been completed in the last 2 years. References shall include the name, address, and telephone number of a contact person employed by the bridge owner. Proof of initial certification and the current annual training shall also be provided.

Quality Assurance (QA) Observations. The Engineer will conduct QA observations of any or all of the QC monitoring inspections that are undertaken. The presence or activity of Engineer observations in no way relieves the Contractor of the responsibility to provide all necessary daily QC inspections of its own and to comply with all requirements of this Specification.

Containment Requirements. The Contractor shall install and maintain containment systems surrounding the work for the purpose of controlling emissions of dust and debris according to the requirements of this specification. Working platforms and containment materials that are used shall be firm and stable and platforms shall be designed to support the workers, inspectors, spent surface preparation media (e.g., abrasives), and equipment during all phases of surface preparation and painting. Platforms, cables, and other supporting structures shall be designed according to OSHA regulations. If the containment needs to be attached to the structure, the containment shall be attached by bolting, clamping, or similar means. Welding or drilling into the structure is prohibited unless approved by the Engineer in writing.

The containment shall be dropped in the event of sustained winds of 40 mph (64 kph) or greater and all materials and equipment secured.

The Contractor shall provide drawings showing the containment system and indicating the method(s) of supporting the working platforms and containment materials to each other and to the bridge. When the use of negative pressure and airflow inside containment is specified, the Contractor shall provide all ventilation calculations and details on the equipment that will be used for achieving the specified airflow and dust collection.

When directed in the contract plans, the Contractor shall submit calculations and drawings, signed and sealed by a Structural Engineer licensed in the state of Illinois, that assure the structural integrity of the bridge under the live and dead loads imposed, including the design wind loading.

When working over railroads, the Contractor shall provide evidence that the proposed clearance and the safety provisions that will be in place (e.g., flagman) are acceptable to the railroad. In the case of work over navigable waters, the Contractor shall provide evidence that the proposed clearance and provisions for installing or moving the containment out of navigation lanes is acceptable to authorities such as the Coast Guard and Army Corps of Engineers. The Contractor shall include plans for assuring that navigation lighting is not obscured, or if it is obscured, that temporary lighting is acceptable to the appropriate authorities (e.g., Coast Guard) and will be utilized.

Engineer review and acceptance of the drawings and calculations shall not relieve the Contractor from the responsibility for the safety of the working platforms and containment, and for providing ample ventilation to control worker and environmental exposures. After the work platforms and containment materials are erected additional measures may be needed to ensure worker safety according to OSHA regulations. The Contractor shall institute such measures at no additional cost to the Department.

Containment for the cleaning operation of this contract is defined as follows:

- The containment system shall maintain the work area free of visible emissions of dust and debris according to all provisions of this Specification, with no debris permitted outside of the regulated area at any time. All debris within the regulated area and within the containment shall be collected at the end of the last shift each day, and properly stored in sealed containers. Cleaning shall be accomplished by HEPA vacuuming unless it is conducted within a containment that is designed with a ventilation system capable of collecting the airborne dust and debris created by sweeping and blowing with compressed air. The ventilation system shall be in operation during the cleaning.
- The containment systems shall comply with the specified SSPC Guide 6 classifications as presented in Table 1 for the method of paint removal utilized.
- TSP-lead in the air at monitoring locations selected by the Contractor shall comply with the requirements specified herein.

The Contractor shall take appropriate action to avoid personnel injury or damage to the structure from the installation and use of the containment system. If the Engineer determines that there is the potential for structural damage caused by the installed containment system, the Contractor shall take appropriate action to correct the situation.

In addition to complying with the specific containment requirements in Table 1 for each method of removal, the Contractor shall provide and maintain coverage over the ground in the areas to be cleaned. This coverage shall be capable of catching and containing surface preparation media, paint chips, and paint dust in the event of an accidental escape from the primary containment. The containment materials shall be cleaned of loose material prior to relocation or dismantling. Acceptable methods of cleaning include blowing down the surfaces with compressed air while the ventilation system is in operation, HEPA vacuuming, and/or wet wiping. If paint chips or dust is observed escaping from the containment materials during moving, all associated operations shall be halted and the materials and components recleaned.

The containment systems shall also meet the following requirements:

a) Dry Abrasive Blast Cleaning - Full Containment with Negative Pressure (SSPC Class 1A)

The enclosure shall be designed, installed, and maintained to sustain maximum anticipated wind forces, including negative pressure. Flapping edges of containment materials are prohibited and the integrity of all containment materials, seams, and seals shall be maintained for the duration of the project. Airflow inside containment shall be designed to provide visibility and reduce worker exposures to toxic metals according to OSHA regulations and as specified in Table 1 and its accompanying text. When the location of the work on the bridge, or over lane closures permit, the blast enclosure shall extend a minimum of 3 ft. (1 m) beyond the limits of surface preparation to allow the workers to blast away from, rather than into the seam between the containment and the structure. The blast enclosure shall have an airlock or resealable door entryway to allow entrance and exit from the enclosure without allowing the escape of blasting residue.

If recyclable metallic abrasives are used, the Contractor shall operate the equipment in a manner that minimizes waste generation. Steps shall also be taken to minimize dust generation during the transfer of all abrasive/paint debris (expendable or recyclable abrasives) for recycling or disposal. Acceptable methods include, but are not limited to vacuuming, screw or belt conveyance systems, or manual conveyance. However manual conveyance is only permitted if the work is performed inside a containment that is equipped with an operating ventilation system capable of controlling the dust that is generated.

Appropriate filtration shall be used on the exhaust air of dust collection and abrasive recycling equipment as required to comply with IEPA regulations. The equipment shall be cleaned/maintained, enclosed, or replaced if visible dust and debris are being emitted and/or the regulated area or high volume monitor lead levels are not in compliance.

Areas beneath containment connection points that were shielded from abrasive blast cleaning shall be prepared by vacuum blast cleaning or vacuum-shrouded power tool cleaning after the containment is removed.

b) Vacuum Blast Cleaning within Containment (SSPC-Class 4A)

Vacuum blasting equipment shall be fully automatic and capable of cleaning and recycling the abrasive. The system shall be designed to deliver cleaned, recycled blasting abrasives and provide a closed system containment during blasting. The removed coating, mill scale, and corrosion shall be separated from the abrasive, and stored for disposal.

The Contractor shall attach containment materials around and under the work area to catch and contain abrasive and waste materials in the event of an accidental escape from the vacuum shroud. This containment is in addition to the ground covers specified earlier.

It is possible that the close proximity of some structural steel members, such as the end diaphragms or end cross-frames underneath transverse deck expansion joints, preclude the use of the vacuum blasting equipment for the removal of the old paint. For surfaces that are inaccessible for the nozzles of the vacuum blasting equipment, the Contractor shall remove the paint by means of full containment inside a complete enclosure as directed by the Engineer.

c) Vacuum-Shrouded Power Tool Cleaning within Containment (SSPC-Class 3P)

The Contractor shall utilize power tools equipped with vacuums and High Efficiency Particulate Air (HEPA) filters. The Contractor shall attach containment walls around the work area, and install containment materials beneath the work area to catch and contain waste materials in the event of an accidental escape from the vacuum shroud. This containment is in addition to the ground covers specified earlier and shall be installed within 10 ft. (3m) of the areas being cleaned.

d) Power Tool Cleaning without Vacuum, within Containment (SSPC-Class 2P)

When the use of power tools without vacuum attachments is authorized by the Engineer, the Contractor shall securely install containment walls and flooring around the work area to capture and collect all debris that is generated. The containment material requirements for this Class 2P are similar to Class 3P used for vacuum-shrouded tools, but the supporting structure will be more substantial in Class 2P to better secure the containment materials from excessive movement that could lead to the loss of waste paint chips and debris. Containment beneath the work shall be within 10 ft. (3m) of the areas being cleaned, and is in addition to the ground covers specified earlier.

e) Water Washing, Water Jetting or Wet Abrasive Blast Cleaning within Containment (SSPC Class 2W-3W)

Water washing of the bridge for the purpose of removing chalk, dirt, grease, oil, bird nests, and other surface debris, and water jetting or wet abrasive blast cleaning for the purpose of removing paint and surface debris shall be conducted within a containment designed, installed, and maintained in order to capture and contain all water and waste materials. The containment shall consist of impermeable floors and lower walls to prevent the water and debris from escaping. Permeable upper walls and ceilings are acceptable provided the paint chips, debris, and water, other than mists, are collected. A fine mist passing through the permeable upper walls is acceptable, provided the environmental controls specified below are met. If paint chips, debris, or water, other than mists, escape the containment system, impermeable walls and ceilings shall be installed.

When water is used for surface cleaning, the collected water shall be filtered to separate the particulate from the water. Recycling of the water is preferred in order to reduce the volume of waste that is generated. The water after filtration shall be collected and disposed of according to the waste handling portions of this specification.

When a slurry is created by injecting water into the abrasive blast stream, the slurry need not be filtered to separate water from the particulate.

Environmental Controls and Monitoring. The Contractor shall prepare and submit to the Engineer for review and acceptance, an Environmental Monitoring Plan. The purpose of the plan is to address the observations and equipment monitoring undertaken by the Contractor to confirm that project dust and debris are not escaping the containment into the surrounding air, soil, and water.

a) Soil and Water. Containment systems shall be maintained to prevent the escape of paint chips, abrasives, and other debris into the water, and onto the ground, soil, slope protection, and pavements. Releases or spills of, paint chips, abrasives, dust and debris that have become deposited on surrounding property, structures, equipment or vehicles, and bodies of water are unacceptable. If there are inadvertent spills or releases, the Contractor shall immediately shut down the emissions-producing operations, clean up the debris, and change work practices, modify the containment, or take other appropriate corrective action as needed to prevent similar releases from occurring in the future.

Water booms, boats with skimmers, or other means as necessary shall be used to capture and remove paint chips or project debris that falls or escapes into the water.

At the end of each workday at a minimum, the work area inside and outside of containment, including ground tarpaulins, shall be inspected to verify that paint debris is not present. If debris is observed, it shall be removed by hand and HEPA-vacuuuming. If wet methods of preparation are used, the damp debris can remain overnight provided it is protected from accidental release by securely covering the waste, folding the waste into the ground tarps, or by other acceptable methods. Prior to commencing work the next day, the debris from the folded ground tarps shall be removed.

Upon project completion, the ground and water in and around the project site are considered to have been properly cleaned if paint chips, paint removal media (e.g., spent abrasives), fuel, materials of construction, litter, or other project debris have been removed.

NOTE: All project debris must be removed even if the debris (e.g., spent abrasive and paint chips) was a pre-existing condition.

- b) Visible Emissions. The Contractor shall conduct observations of visible emissions and releases on an ongoing daily basis when dust-producing activities are underway, such as paint removal, clean up, waste handling, and containment dismantling or relocation. Note that visible emissions observations do not apply to the fine mist that may escape through permeable containment materials when wet methods of preparation are used.

Visible emissions in excess of SSPC-TU7, Method A (Timing Method), Level 1 (1% of the workday) are unacceptable. In an 8-hour workday, this equates to emissions of a cumulative duration no greater than 5 minutes.. This criterion applies to scattered, random emissions of short duration. Sustained emissions from a given location (e.g., 1 minute or longer), regardless of the total length of emissions for the workday, are unacceptable and action shall be initiated to halt the emission.

If unacceptable visible emissions or releases are observed, the Contractor shall immediately shut down the emission-producing operations, clean up the debris, and change work practices, modify the containment, or take other appropriate corrective action as needed to prevent similar releases from occurring in the future.

- c) Ambient Air Monitoring. The Contractor shall perform ambient air monitoring according to the following:
- Monitor Siting. The Contractor shall collect and analyze air samples to evaluate levels of TSP-lead if there are sensitive receptors within 5 times the height of the structure or within 1000 ft. (305 m) of the structure, whichever is greater. If sensitive receptors are not located within these limits, monitoring is not required. Sensitive receptors are areas of public presence or access including, but not limited to, homes, schools, parks, playgrounds, shopping areas, livestock areas, and businesses. The motoring public is not considered to be a sensitive receptor for the purpose of ambient air monitoring.



The Contractor shall locate the monitors according to Section 7.3 of SSPC-TU-7, in areas of public exposure and in areas that will capture the maximum pollutant emissions resulting from the work. The Contractor shall identify the recommended monitoring sites in the Ambient Air Monitoring Plan, including a sketch identifying the above. The monitors shall not be sited until the Engineer accepts the proposed locations. When possible, monitors shall be placed at least 30 feet (9 m) away from highway traffic.

- **Equipment Provided by Contractor.** The Contractor shall provide up to 4 monitors per work site and all necessary calibration and support equipment, power to operate them, security (or arrangements to remove and replace the monitors daily), filters, flow chart recorders and overnight envelopes for shipping the filters to the laboratory. The number of monitors required will be indicated in the Plan Notes. Each monitor shall be tagged with the calibration date.
- **Duration of Monitoring.** Monitoring shall be performed for the duration of dust-producing operations (e.g., paint removal, waste handling, containment clean-up and movement, etc.) or a minimum of 8 hours each day (when work is performed).

The monitoring schedule shall be as follows:

1. For dry abrasive blast cleaning monitoring shall be conducted full time during all days of dust-producing operations (e.g., paint removal, waste handling, containment movement, etc.).
2. For wet abrasive blast cleaning, water jetting, or power tool cleaning, monitoring shall be conducted for the first 5 days of dust producing operations. If the results after 5 days are acceptable, monitoring may be discontinued. If the results are unacceptable, corrective action shall be initiated to correct the cause of the emissions, and monitoring shall continue for an additional 5 days. If the results are still unacceptable, the Engineer may direct that the monitoring continue full time.

When monitoring is discontinued, if visible emissions are observed and/or the Contractor's containment system changes during the course of the project, then air monitoring will again be required for a minimum of two consecutive days until compliance is shown.

- **Background Monitoring.** Background samples shall be collected for two days prior to the start of work while no dust producing operations are underway to provide a baseline. The background monitoring shall include one weekday and one weekend day. The background monitoring shall coincide with the anticipated working hours for the paint removal operations, but shall last for a minimum of 8 hours each day.
- **Monitor Operation and Laboratory Analysis.**

The Contractor shall calibrate the monitors according to the manufacturer's written instructions upon mobilization to the site and quarterly. Each monitor shall be tagged with the calibration date, and calibration information shall be provided to the Engineer upon request.

All ambient air monitoring shall be performed by the Contractor according to the accepted Ambient Air Monitoring Plan and according to EPA regulations 40 CFR Part 50 Appendix B, Reference Method for the Determination of Suspended Particulate Matter in the Atmosphere (High-Volume Method), and 40 CFR Part 50 Appendix G, Reference Method for the Determination of Lead in Suspended Particulate Matter Collected from Ambient Air.

Filters shall be placed in monitors and monitors operated each day prior to start of dust-producing operations and the filters removed upon completion each day. The Contractor shall advise the Engineer in advance when the filters will be removed and replaced. The monitor operator shall record the following information, at a minimum, on field data and laboratory chain-of-custody forms (or equivalent):

1. Monitor location and serial number
2. Flow rate, supported by flow charts
3. Start, stop times and duration of monitoring
4. Work activities and location of work during the monitoring period
5. Wind direction/speed

For the first 5 days of monitoring, the Contractor shall submit the filters, field data and laboratory chain-of-custody forms together with the flow chart recorders (i.e. monitor flow rate and the duration of monitoring) on a daily basis in an overnight envelope to the laboratory for analysis. The laboratory must provide the Engineer with written results no later than 72 hours after the completion of each day's monitoring. At the discretion of the Engineer, if the initial 5 days of monitoring on full time monitoring projects is acceptable, the filters may be sent to the laboratory every 3 days rather than every day. Written results must be provided to the Engineer no later than 5 days after the completion of monitoring for the latest of the 3 days.

- Ambient Air Monitoring Results. The laboratory shall provide the report directly to the Engineer with a copy to the contractor. The report shall include:
  1. Monitor identification and location
  2. Work location and activities performed during monitoring period
  3. Monitor flow rate, duration, and volume of air sampled
  4. Laboratory methods used for filter digestion / analysis
  5. Sample results for the actual duration of monitoring
  6. Sample results expressed in terms of a 24 hour time weighted average. Assume zero for period not monitored.
  7. Comparison of the results with the acceptance criteria indicating whether the emissions are compliant.
  8. Field data and chain-of-custody records used to derive results.

Should revised reports or any information regarding the analysis be issued by the laboratory directly to the Contractor at any time, the contractor shall immediately provide

a copy to the Engineer and advise the laboratory that the Engineer is to receive all information directly from the laboratory.

- Acceptance Criteria. TSP-lead results at each monitor location shall be less than 1.5 µg/cu m per calendar quarter converted to a daily allowance using the formulas from SSPC- TU7 as follows, except that the maximum 24-hour daily allowance shall be no greater than 6 µg/cu m.

The formula for determining a 24-hour daily value based on the actual number of paint disturbance days expected to occur during the 90-day quarter is:

$$DA = (90 \div PD) \times 1.5 \text{ } \mu\text{g/cu m, where}$$

DA is the daily allowance, and

PD is the number of preparation days anticipated in the 90-day period

If the DA calculation is > 6.0 µg/cu m, use 6.0 µg/cu m.

Regulated Areas. Physically demarcated regulated area(s) shall be established around exposure producing operations at the OSHA Action Level for the toxic metal(s) present in the coating. The Contractor shall provide all required protective clothing and personal protective equipment for personnel entering into a regulated area. Unprotected street clothing is not permitted within the regulated areas.

Hygiene Facilities/Protective Clothing/Blood Tests. The Contractor shall provide clean lavatory and hand washing facilities according to OSHA regulations and confirm that employees wash hands, forearms, and face before breaks. The facilities shall be located at the perimeter of the regulated area in close proximity to the paint removal operation. Shower facilities shall be provided when workers' exposures exceed the Permissible Exposure Limit. Showers shall be located at each bridge site, or if allowed by OSHA regulations, at a central location to service multiple bridges. The shower and wash facilities shall be cleaned at least daily during use.

All wash and shower water shall be filtered and containerized. The Contractor is responsible for filtration, testing, and disposal of the water.

The Contractor shall make available to all IDOT project personnel a base line and post project blood level screening for lead and zinc protoporphyrin (ZPP) (or the most current OSHA requirement) levels as determined by the whole blood lead method, utilizing the Vena-Puncture technique. This screening shall be made available every 2 months for the first 6 months, and every 6 months thereafter.

The Contractor shall provide IDOT project personnel with all required protective clothing and equipment, including disposal or cleaning. Clothing and equipment includes but is not limited to disposable coveralls with hood, booties, disposable surgical gloves, hearing protection, and safety glasses. The protective clothing and equipment shall be provided and maintained on the

job site for the exclusive, continuous and simultaneous use by the IDOT personnel. This equipment shall be suitable to allow inspection access to any area in which work is being performed.

All handwash and shower facilities shall be fully available for use by IDOT project personnel.

#### Site Emergencies.

a) Stop Work. The Contractor shall stop work at any time the conditions are not within specifications and take the appropriate corrective action. The stoppage will continue until conditions have been corrected. Standby time and cost required for corrective action is at the Contractor's expense. The occurrence of the following events shall be reported in writing to IDOT and shall require the Contractor to automatically stop lead paint removal and initiate clean up activities.

- Airborne lead levels at any of the high volume ambient air monitoring locations that exceed the limits in this specification, or airborne lead in excess of the OSHA Action Level at the boundary of the regulated area.
- Break in containment barriers.
- Visible emissions in excess of the specification tolerances.
- Loss of negative air pressure when negative air pressure is specified (e.g., for dry abrasive blast cleaning).
- Serious injury within the containment area.
- Fire or safety emergency
- Respiratory system failure
- Power failure

b) Contingency Plans and Arrangements. The Engineer will refer to the contingency plan for site specific instructions in the case of emergencies.

The Contractor shall prepare a contingency plan for emergencies including fire, accident, failure of power, failure of dust collection system, failure of supplied air system or any other event that may require modification of standard operating procedures during lead removal. The plan shall include specific procedures to ensure safe egress and proper medical attention in the event of an emergency. The Contractor shall post the telephone numbers and locations of emergency services including fire, ambulance, doctor, hospital, police, power company and telephone company on clean side of personnel decontamination area.

A two-way radio, or equal, as approved by the Engineer, capable of summoning emergency assistance shall be available at each bridge during the time the Contractor's personnel are at the bridge site under this contract. The following emergency response equipment described in the contingency plan (generic form attached) shall be available during this time as well: an appropriate portable fire extinguisher, a 55 gal (208 L) drum, a 5 gal (19 L) pail, a long handled shovel, absorbent material (one bag).

A copy of the contingency plan shall be maintained at each bridge during cleaning operations and during the time the Contractor's personnel are at the bridge site under this contract. The Contractor shall designate the emergency coordinator(s) required who shall be responsible for the activities described.

An example of a contingency plan is included at the end of this Special Provision.

Collection, Temporary Storage, Transportation and Disposal of Waste. The Contractor and the Department are considered to be co-generators of the waste.

The Contractor is responsible for all aspects of waste collection, testing and identification, handling, storage, transportation, and disposal according to these specifications and all applicable Federal, State, and Local regulations. The Contractor shall provide for Engineer review and acceptance a Waste Management Plan that addresses all aspects of waste handling, storage, and testing, and provides the names, addresses, and a contact person for the proposed licensed waste haulers and disposal facilities. The Department will not perform any functions relating to the waste other than provide EPA identification numbers, provide the Contractor with the emergency response information, the emergency response telephone number required to be provided on the manifest, and to sign the waste manifest. The Engineer will obtain the identification numbers from the state and federal environmental protection agencies for the bridge(s) to be painted and furnish those to the Contractor.

All surface preparation/paint residues shall be collected daily and deposited in all-weather containers supplied by the Contractor as temporary storage. The storage area shall be secure to prevent unauthorized entry or tampering with the containers. Acceptable measures include storage within a fully enclosed (e.g., fenced in) and locked area, within a temporary building, or implementing other reasonable means to reduce the possibility of vandalism or exposure of the waste to the public or the environment (e.g., securing the lids or covers of waste containers and roll-off boxes). Waste shall not be stored outside of the containers. Waste shall be collected and transferred to bulk containers taking extra precautions as necessary to prevent the suspension of residues in air or contamination of surrounding surfaces. Precautions may include the transfer of the material within a tarpaulin enclosure. Transfer into roll-off boxes shall be planned to minimize the need for workers to enter the roll-off box.

No residues shall remain on surfaces overnight, either inside or outside of containment. Waste materials shall not be removed through floor drains or by throwing them over the side of the bridge. Flammable materials shall not be stored around or under any bridge structures.

The all-weather containers shall meet the requirements for the transportation of hazardous materials and as approved by the Department. Acceptable containers include covered roll-off boxes and 55-gallon drums (17H). The Contractor shall insure that no breaks and no deterioration of these containers occurs and shall maintain a written log of weekly inspections of the condition of the containers. A copy of the log shall be furnished to the Engineer upon request. The containers shall be kept closed and sealed from moisture except during the addition of waste. Each container shall be permanently identified with the date that waste was placed into the container, contract number, hazardous waste name and ID number, and other information required by the IEPA.

The Contractor shall have each waste stream sampled for each project and tested by TCLP and according to EPA and disposal company requirements. The Engineer shall be notified in advance when the samples will be collected. The samples shall be collected and shipped for testing within the first week of the project, with the results due back to the Engineer within 10 days. Testing shall be considered included in the pay item for "Containment and Disposal of Lead Paint Cleaning Residues." Copies of the test results shall be provided to the Engineer prior to shipping the waste.

Waste water generated from bridge washing, hygiene purposes, and cleaning of equipment shall be filtered on site to remove particulate and disposed of at a Publicly Owned Treatment Works (POTW) according to State regulations. The Contractor shall provide the Engineer with a letter from the POTW indicating that they will accept the waste water. If the POTW allows the filtered water to be placed into the sanitary sewer system, the Contractor shall provide a letter from the POTW indicating that based on the test results of the water, disposal in the sanitary sewer is acceptable to them. Water shall not be disposed of until the above letter(s) are provided to, and accepted by, the Engineer.

If approved abrasive additives are used that render the waste non-hazardous as determined by TCLP testing, the waste shall be classified as a non-hazardous special waste, transported by a licensed waste transporter, and disposed of at an IEPA permitted disposal facility in Illinois.

When paint is removed from the bridge without the use of abrasive additives, the paint, together with the surface preparation media (e.g. abrasive) shall be handled as a hazardous waste, regardless of the TCLP results. The waste shall be transported by a licensed hazardous waste transporter, treated by an IEPA permitted treatment facility to a non-hazardous special waste and disposed of at an IEPA permitted disposal facility in Illinois.

The treatment/disposal facilities shall be approved by the Engineer, and shall hold an IEPA permit for waste disposal and waste stream authorization for this cleaning residue. The IEPA permit and waste stream authorization must be obtained prior to beginning cleaning, except that if necessary, limited paint removal will be permitted in order to obtain samples of the waste for the disposal facilities. The waste shall be shipped to the facility within 90 days of the first accumulation of the waste in the containers. When permitted by the Engineer, waste from multiple bridges in the same contract may be transported by the Contractor to a central waste storage location(s) approved by the Engineer in order to consolidate the material for pick up, and to minimize the storage of waste containers at multiple remote sites after demobilization. Arrangements for the final waste pickup shall be made with the waste hauler by the time blast cleaning operations are completed or as required to meet the 90 day limit stated above.

The Contractor shall submit a waste accumulation inventory table to the Engineer no later than the 5<sup>th</sup> day of the month. The table shall show the number and size of waste containers filled each day in the preceding month and the amount of waste shipped that month, including the dates of shipments.

The Contractor shall prepare a manifest supplied by the IEPA for off-site treatment and disposal before transporting the hazardous waste off-site. The Contractor shall prepare a land ban

notification for the waste to be furnished to the disposal facility. The Contractor shall obtain the handwritten signature of the initial transporter and date of the acceptance of the manifest. The Contractor shall send one copy of the manifest to the IEPA within two working days of transporting the waste off-site. The Contractor shall furnish the generator copy of the manifest and a copy of the land ban notification to the Engineer. The Contractor shall give the transporter the remaining copies of the manifest.

All other project waste shall be removed from the site according to Federal, State and Local regulations, with all waste removed from the site prior to final Contractor demobilization.

The Contractor shall make arrangements to have other hazardous waste, which he/she generates, such as used paint solvent, transported to the Contractor's facility at the end of each day that this waste is generated. These hazardous wastes shall be manifested using the Contractor's own generator number to a treatment or disposal facility from the Contractor's facility. The Contractor shall not combine solvents or other wastes with cleaning residue wastes. All waste streams shall be stored in separate containers.

The Contractor is responsible for the payment of any fines and undertaking any clean up activities mandated by State or federal environmental agencies for improper waste handling, storage, transportation, or disposal.

Contractor personnel shall be trained in the proper handling of hazardous waste, and the necessary notification and clean up requirements in the event of a spill. The Contractor shall maintain a copy of the personnel training records at each bridge site.

Basis of Payment. The soil, water, and air monitoring, containment, collection, temporary storage, transportation, testing and disposal of all project waste, and all other work described herein will be paid for at the contract lump sum price for CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES at the designated location. Payment will not be authorized until all requirements have been fulfilled as described in this specification, including the preparation and submittal of all QC documentation, submittal of environmental monitoring and waste test results, and disposal of all waste.

## Appendix 1 – Reference List

The Contractor shall maintain the following reference standards and regulations on site for the duration of the project:

- Illinois Environmental Protection Agency – Information Statement on the Removal of Lead-Based Paint from Exterior Surfaces, latest revision
- Illinois Environmental Protection Act
- SSPC Guide 6, Guide for Containing Debris Generated During Paint Removal Operations
- 29 CFR 1926.62, Lead in Construction
- 40 CFR Part 50, Appendix B, Reference Method for the Determination of Suspended Particulate Matter in the Atmosphere (High-Volume Method)
- 40 CFR Part 50, Appendix G, Reference Method for the Determination of Lead in Suspended Particulate Matter Collected from Ambient Air
- SSPC Guide 16, Guide to Specifying and Selecting Dust Collectors
- SSPC TU-7, Conducting Ambient Air, Soil, and Water Sampling Activities During Surface Preparation and Paint Disturbance Activities.



<b>Table 1 Containment Criteria for Removal of Paint Containing Lead and Other Toxic Metals<sup>1</sup></b>					
<b>Removal Method</b>	<b>SSPC Class<sup>2</sup></b>	<b>Containment Material Flexibility</b>	<b>Containment Material Permeability<sup>3</sup></b>	<b>Containment Support Structure</b>	<b>Containment Material Joints<sup>4</sup></b>
Hand Tool Cleaning	3P <sup>6</sup>	Rigid or Flexible	Permeable or Impermeable	Minimal	Partially Sealed
Power Tool Cleaning w/ Vacuum	3P <sup>6</sup>	Rigid or Flexible	Permeable or Impermeable	Minimal	Partially Sealed
Power Tool Cleaning w/o Vacuum	2P	Rigid or Flexible	Permeable or Impermeable	Rigid or Flexible	Fully or Partially Sealed
Water Jetting Wet Ab Blast Water Cleaning <sup>7</sup>	2W-3W	Rigid or Flexible	Permeable and Impermeable <sup>7</sup>	Rigid, Flexible, or Minimal	Fully and Partially Sealed
Abrasive Blast Cleaning	1A	Rigid or Flexible	Impermeable	Rigid or Flexible	Fully Sealed
Vacuum Blast Cleaning	4A <sup>6</sup>	Rigid or Flexible	Permeable	Minimal	Partially Sealed

<b>Table 1 (Continued) Containment Criteria for Removal of Paint Containing Lead and Other Toxic Metals<sup>1</sup></b>					
<b>Removal Method</b>	<b>SSPC Class<sup>2</sup></b>	<b>Containment Entryway</b>	<b>Ventilation System Required<sup>5</sup></b>	<b>Negative Pressure Required</b>	<b>Exhaust Filtration Required</b>
Hand Tool Cleaning	3P <sup>6</sup>	Overlapping or Open Seam	Natural	No	No
Power Tool Cleaning w/ Vacuum	3P <sup>6</sup>	Overlapping or Open Seam	Natural	No	No
Power Tool Cleaning w/o Vacuum	2P	Overlapping or Open Seam	Natural	No	No
Water Jetting Wet Ab Blast Water Cleaning <sup>7</sup>	2W-3W	Overlapping or Open Seam	Natural	No	No
Abrasive Blast Cleaning	1A	Airlock or Resealable	Mechanical	Yes	Yes
Vacuum Blast Cleaning	4A <sup>6</sup>	Open Seam	Natural	No	No

Notes:

<sup>1</sup>This table provides general design criteria only. It does not guarantee that specific controls over emissions will occur because unique site conditions must be considered in the design. Other combinations of materials may provide controls over emissions equivalent to or greater than those combinations shown above.

<sup>2</sup>The SSPC Classification is based on SSPC Guide 6. Note that for work over water, water booms or boats with skimmers must be employed, where feasible, to contain spills or releases. Debris must be removed daily at a minimum.

<sup>3</sup>Permeability addresses both air and water as appropriate. In the case of water removal methods, the containment materials must be resistant to water. Ground covers should always be impermeable, and of sufficient strength to withstand the impact and weight of the debris and the equipment used for collection and clean-up. Ground covers must also extend beyond the containment boundary to capture escaping debris.

<sup>4</sup> If debris escapes through the seams, then additional sealing of the seams and joints is required.

<sup>5</sup>When "Natural" is listed, ventilation is not required provided the emissions are controlled as specified in this Special Provision, and provided worker exposures are properly controlled. If unacceptable emissions or worker exposures to lead or other toxic metals occur, incorporate a ventilation system into the containment.

<sup>6</sup>Ground covers and wall tarpaulins may provide suitable controls over emissions without the need to completely enclose the work area.

<sup>7</sup>This method applies to water cleaning to remove surface contaminants, and water jetting (with and without abrasive) and wet abrasive blast cleaning where the goal is to remove paint. Although both permeable and impermeable containment materials are included, ground covers and the lower portions of the containment must be water impermeable with fully sealed joints, and of sufficient strength and integrity to facilitate the collection and holding of the water and debris for proper disposal. If water or debris, other than mist, escape through upper sidewalls or ceiling areas constructed of permeable materials, they shall be replaced with impermeable materials. Permeable materials for the purpose of this specification are defined as materials with openings measuring 25 mils (1 micron) or less in greatest dimension.

- A. Containment Components - The basic components that make up containment systems are defined below. The components are combined in Table 1 to establish the minimum containment system requirements for the method(s) of paint removal specified for the Contract.
1. Rigidity of Containment Materials - Rigid containment materials consist of solid panels of plywood, aluminum, rigid metal, plastic, fiberglass, composites, or similar materials. Flexible materials consist of screens, tarps, drapes, plastic sheeting, or similar materials. When directed by the Engineer, do not use flexible materials for horizontal surfaces directly over traffic lanes or vertical surfaces in close proximity to traffic lanes. If the Engineer allows the use of flexible materials, The Contractor shall take special precautions to completely secure the materials to prevent any interference with traffic.
  2. Permeability of Containment Materials - The containment materials are identified as air impenetrable if they are impervious to dust or wind such as provided by rigid panels, coated solid tarps, or plastic sheeting. Air penetrable materials are those that are formed or woven to allow air flow. Water impermeable materials are those that are capable of containing and controlling water when wet methods of preparation are used. Water permeable materials allow the water to pass through. Chemical resistant materials are those resistant to chemical and solvent stripping solutions. Use fire retardant materials in all cases.
  3. Support Structure - Rigid support structures consist of scaffolding and framing to which the containment materials are affixed to minimize movement of the containment cocoon. Flexible support structures are comprised of cables, chains, or similar systems to which the containment materials are affixed. Use fire retardant materials in all cases.
  4. Containment Joints - Fully sealed joints require that mating surfaces between the containment materials and to the structure being prepared are completely sealed. Sealing measures include tape, caulk, Velcro, clamps, or other similar material capable of forming a continuous, impenetrable or impermeable seal. When materials are overlapped, a minimum overlap of 8 in. (200 mm) is required.
  5. Entryway - An airlock entryway involves a minimum of one stage that is fully sealed to the containment and which is maintained under negative pressure using the ventilation system of the containment. Resealable door entryways involve the use of flexible or rigid doors capable of being repeatedly opened and resealed. Sealing methods include the use of zippers, Velcro, clamps, or similar fasteners. Overlapping door tarpaulin entryways consist of two or three overlapping door tarpaulins.

6. Mechanical Ventilation - The requirement for mechanical ventilation is to ensure that adequate air movement is achieved to reduce worker exposure to toxic metals to as low as feasible according to OSHA regulations (e.g., 29 CFR 1926.62), and to enhance visibility. Design the system with proper exhaust ports or plenums, adequately sized ductwork, adequately sized discharge fans and air cleaning devices (dust collectors) and properly sized and distributed make-up air points to achieve a uniform air flow inside containment for visibility. The design target for airflow shall be a minimum of 100 ft. (30.5m) per minute cross-draft or 60 ft. (18.3 m) per minute downdraft. Increase these minimum airflow requirements if necessary to address worker lead exposures. Natural ventilation does not require the use of mechanical equipment for moving dust and debris through the work area.
7. Negative Pressure - When specified, achieve a minimum of 0.03 in. (7.5 mm) water column (W.C.) relative to ambient conditions, or confirm through visual assessments for the concave appearance of the containment enclosure.
8. Exhaust Ventilation - When mechanical ventilation systems are used, provide filtration of the exhaust air, to achieve a filtration efficiency of 99.9 percent at 0.02 mils (0.5 microns).

HAZARDOUS WASTE  
CONTINGENCY PLAN  
FOR  
LEAD BASED PAINT REMOVAL PROJECTS

Bridge No.: \_\_\_\_\_  
Location: \_\_\_\_\_  
USEPA Generator No.: \_\_\_\_\_  
IEPA Generator No.: \_\_\_\_\_

Note:

1. A copy of this plan must be kept at the bridge while the Contractor's employees are at the site.
2. A copy of the plan must be mailed to the police and fire departments and hospital identified herein.

Primary Emergency Coordinator

Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
City: \_\_\_\_\_  
Phone: (Work) \_\_\_\_\_  
(Home) \_\_\_\_\_

Alternate Emergency Coordinator

Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
City: \_\_\_\_\_  
Phone: (Work) \_\_\_\_\_  
(Home) \_\_\_\_\_

Emergency Response Agencies

POLICE:

1. State Police (if bridge not in city) Phone: \_\_\_\_\_  
District No. \_\_\_\_\_  
Address: \_\_\_\_\_
2. County Sheriff \_\_\_\_\_ Phone: \_\_\_\_\_  
County: \_\_\_\_\_  
Address: \_\_\_\_\_
3. City Police \_\_\_\_\_ Phone: \_\_\_\_\_  
District No. \_\_\_\_\_  
Address: \_\_\_\_\_

Arrangements made with police: (Describe arrangements or refusal by police to make arrangements):

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FIRE:

1. City \_\_\_\_\_ Phone: \_\_\_\_\_  
Name: \_\_\_\_\_  
Address: \_\_\_\_\_
2. Fire District \_\_\_\_\_ Phone: \_\_\_\_\_  
Name: \_\_\_\_\_  
Address: \_\_\_\_\_

3. Other \_\_\_\_\_ Phone: \_\_\_\_\_

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Arrangements made with fire departments: (Describe arrangements or refusal by fire departments to make arrangements):

\_\_\_\_\_

\_\_\_\_\_

HOSPITAL:

Name: \_\_\_\_\_ Phone: \_\_\_\_\_

Address: \_\_\_\_\_

Arrangements made with hospital: (Describe arrangements or refusal by hospital to make arrangements):

\_\_\_\_\_

\_\_\_\_\_

Properties of waste and hazard to health:

Places where employees working:

Location of Bridge:

Types of injuries or illness which could result:

Appropriate response to release of waste to the soil:

Appropriate response to release of waste to surface water:

### Emergency Equipment at Bridge

Emergency Equipment List	Location of Equipment	Description of Equipment	Capability of Equipment
1. Two-way radio	Truck		Communication
2. Portable Fire Extinguisher	Truck		Extinguishes Fire
3. Absorbent Material	Truck		Absorbs Paint or Solvent Spills
4. Hand Shovel	Truck		Scooping Material
5. 55 Gallon (208 L) Drum	Truck		Storing Spilled Material
6. 5 Gallon (19 L) Pail	Truck		Storing Spilled Material

### Emergency Procedure

1. Notify personnel at the bridge of the emergency and implement emergency procedure.
2. Identify the character, source, amount and extent of released materials.
3. Assess possible hazards to health or environment.
4. Contain the released waste or extinguish fire. Contact the fire department if appropriate.
5. If human health or the environment is threatened, contact appropriate police and fire department. In addition, the Emergency Services and Disaster Agency needs to be called using their 24-hour toll free number (800-782-7860) and the National Response Center using their 24-hour toll free number (800-824-8802).
6. Notify the Engineer that an emergency has occurred.
7. Store spilled material and soil contaminated by spill, if any, in a drum or pail. Mark and label the drum or pail for disposal.
8. Write a full account of the spill or fire incident including date, time, volume, material, and response taken.
9. Replenish stock of absorbent material or other equipment used in response.



## STRUCTURAL REPAIR OF CONCRETE

Effective: March 15, 2006

Revised: August 9, 2019

Description. This work shall consist of structurally repairing concrete.

Materials. Materials shall be according to the following.

Item	Article/Section
(a) Portland Cement Concrete (Note 1) .....	1020
(b) R1, R2, or R3 Concrete (Note 2)	
(c) Normal Weight Concrete (Notes 3 and 4)	
(d) Shotcrete (High Performance) (Notes 5 and 6)	
(e) Reinforcement Bars .....	1006.10
(f) Anchor Bolts .....	1006.09
(g) Water .....	1002
(h) Curing Compound .....	1022.01
(i) Cotton Mats .....	1022.02
(j) Protective Coat .....	1023.01
(k) Epoxy (Note 7) .....	1025
(l) Mechanical Bar Splicers .....	508.06(c)

Note 1. The concrete shall be Class SI, except the cement factor shall be a minimum 6.65 cwt/cu yd (395 kg/cu m), the coarse aggregate shall be a CA 16, and the strength shall be a minimum 4000 psi (27,500 kPa) compressive or 675 psi (4650 kPa) flexural at 14 days. A high range water-reducing admixture shall be used to obtain a 5-7 in. (125-175 mm) slump, but a cement factor reduction according to Article 1020.05(b)(8) is prohibited. A self-consolidating concrete mixture is also acceptable per Article 1020.04, except the mix design requirements of this note regarding the cement factor, coarse aggregate, strength, and cement factor reduction shall apply.

Note 2. The R1, R2, or R3 concrete shall be from the Department's qualified product list of Packaged, Dry, Rapid Hardening, Cementitious Materials for Concrete Repairs. The R1, R2, or R3 concrete shall comply with the air content and strength requirements for Class SI concrete as indicated in Note 1. Mixing shall be per the manufacturer's recommendations, except the water/cement ratio shall not exceed the value specified for Class SI concrete as indicated in Note 1. A high range water-reducing admixture shall be used to obtain a 5-7 in. (125-175 mm) slump, and a retarder may be required to allow time to perform the required field tests. The admixtures shall be per the manufacturer's recommendation, and the Department's qualified product list of Concrete Admixtures shall not apply.

Note 3. The "high slump" packaged concrete mixture shall be from the Department's qualified product list of Packaged, Dry, Formed, Concrete Repair Mixtures. The materials and preparation of aggregate shall be according to ASTM C 387. The

cement factor shall be 6.65 cwt/cu yd (395 kg/cu m) minimum to 7.05 cwt/cu yd (418 kg/cu m) maximum. Cement replacement with fly ash or ground granulated blast-furnace slag shall be according to Section 1020. The “high slump” packaged concrete mixture shall have a water soluble chloride ion content of less than 0.40 lb/cu yd (0.24 kg/cu m). The test shall be performed according to ASTM C 1218, and the “high slump” packaged concrete mixture shall have an age of 28 to 42 days at the time of test. The ASTM C 1218 test shall be performed by an independent lab a minimum of once every two years, and the test results shall be provided to the Department. The coarse aggregate shall be a maximum size of 1/2 in. (12.5 mm). The packaged concrete mixture shall comply with the air content and strength requirements for Class SI concrete as indicated in Note 1. Mixing shall be per the manufacturer’s recommendations, except the water/cement ratio shall not exceed the value specified for Class SI concrete as indicated in Note 1. A high range water-reducing admixture shall be used to obtain a 5-7 in. (125-175 mm) slump. The admixture shall be per the manufacturer’s recommendation, and the Department’s qualified product list of Concrete Admixtures shall not apply. A maximum slump of 10 in. (250 mm) may be permitted if no segregation is observed by the Engineer in a laboratory or field evaluation.

Note 4 The “self-consolidating concrete” packaged concrete mixture shall be from the Department’s qualified product list of Packaged, Dry, Formed, Concrete Repair Mixtures. The materials and preparation of aggregate shall be according to ASTM C 387. The cement factor shall be 6.65 cwt/cu yd (395 kg/cu m) minimum to 7.05 cwt/cu yd (418 kg/cu m) maximum. Cement replacement with fly ash or ground granulated blast-furnace slag shall be according to Section 1020. The “self-consolidating concrete” packaged concrete mixture shall have a water soluble chloride ion content of less than 0.40 lb/cu yd (0.24 kg/cu m). The test shall be performed according to ASTM C 1218, and the “self-consolidating concrete” packaged concrete mixture shall have an age of 28 to 42 days at the time of test. The ASTM C 1218 test shall be performed by an independent lab a minimum of once every two years, and the test results shall be provided to the Department. The concrete mixture should be uniformly graded, and the coarse aggregate shall be a maximum size of 1/2 in. (12.5 mm). The fine aggregate proportion shall be a maximum 50 percent by weight (mass) of the total aggregate used. The packaged concrete mixture shall comply with the air content and strength requirements for Class SI concrete as indicated in Note 1. Mixing shall be per the manufacturer’s recommendations, except the water/cement ratio shall not exceed the value specified for Class SI concrete as indicated in Note 1. The admixtures used to produce self-consolidating concrete shall be per the manufacturer’s recommendation, and the Department’s qualified product list of Concrete Admixtures shall not apply. The packaged concrete mixture shall meet the self-consolidating requirements of Article 1020.04.

Note 5. Packaged shotcrete that includes aggregate shall be from the Department’s qualified product list of Packaged High Performance Shotcrete, and independent

laboratory test results showing the product meets Department specifications will be required. The product shall be a packaged, pre-blended, and dry combination of materials, for the wet-mix shotcrete method according to ASTM C 1480. A non-chloride accelerator may be used according to the shotcrete manufacturer's recommendations. The shotcrete shall be Type FA or CA, Grade FR, and Class I. The fibers shall be Type III synthetic according to ASTM C 1116.

The packaged shotcrete shall have a water soluble chloride ion content of less than 0.40 lb/cu yd (0.24 kg/cu m). The test shall be performed according to ASTM C 1218, and the hardened shotcrete shall have an age of 28 to 42 days at the time of test. The ASTM C 1218 test shall be performed by an independent lab a minimum of once every two years, and the test results shall be provided to the Department.

Each individual aggregate used in the packaged shotcrete shall have either a maximum ASTM C 1260 expansion of 0.16 percent or a maximum ASTM C 1293 expansion of 0.040 percent. However, the ASTM C 1260 value may be increased to 0.27 percent for each individual aggregate if the cement total equivalent alkali content ( $\text{Na}_2\text{O} + 0.658\text{K}_2\text{O}$ ) does not exceed 0.60 percent. As an alternative to these requirements, ASTM C 1567 testing which shows the packaged shotcrete has a maximum expansion of 0.16 percent may be submitted. The ASTM C 1260, C 1293, or C 1567 test shall be performed a minimum of once every two years.

The 7 and 28 day compressive strength requirements in ASTM C 1480 shall not apply. Instead the shotcrete shall obtain a minimum compressive strength of 4000 psi (27,500 kPa) at 14 days.

The packaged shotcrete shall be limited to the following proportions:

The portland cement and finely divided minerals shall be 6.05 cwt/cu yd (360 kg/cu m) to 8.50 cwt/cu yd (505 kg/cu m) for Type FA and 6.05 cwt/cu yd (360 kg/cu. m) to 7.50 cwt/cu yd (445 kg/cu m) for Type CA. The portland cement shall not be below 4.70 cwt/cu yd (279 kg/cu m) for Type FA or CA.

The finely divided mineral(s) shall constitute a maximum of 35 percent of the total cement plus finely divided mineral(s).

Class F fly ash is optional and the maximum shall be 20 percent by weight (mass) of cement.

Class C fly ash is optional and the maximum shall be 25 percent by weight (mass) of cement.

Ground granulated blast-furnace slag is optional and the maximum shall be 30 percent by weight (mass) of cement.

Microsilica is required and shall be a minimum of 5 percent by weight (mass) of cement, and a maximum of 10 percent. As an alternative to microsilica, high-reactivity metakaolin may be used at a minimum of 5 percent by weight (mass) of cement, and a maximum of 10 percent.

Fly ash shall not be used in combination with ground granulated blast-furnace slag. Class F fly ash shall not be used in combination with Class C fly ash. Microsilica shall not be used in combination with high-reactivity metakaolin. A finely divided mineral shall not be used in combination with a blended hydraulic cement, except for microsilica or high-reactivity metakaolin.

The water/cement ratio as defined in Article 1020.06 shall be a maximum of 0.42.

The air content as shot shall be 4.0 – 8.0 percent.

Note 6 Packaged shotcrete that does not include pre-bled aggregate shall be from the Department's qualified product list of Packaged High Performance Shotcrete, and independent laboratory test results showing the product meets Department specifications will be required. The shotcrete shall be according to Note 5, except the added aggregate shall be according to Articles 1003.02 and 1004.02 in addition to each individual aggregate meeting the maximum expansion requirements of Note 5. The aggregate gradation shall be according to the manufacturer. The shotcrete shall be batched and mixed with added aggregate according to the manufacturer.

Note 7. In addition ASTM C 881, Type IV, Grade 2 or 3, Class A, B, or C may be used.

Equipment. Equipment shall be according to Article 503.03 and the following.

Chipping Hammer – The chipping hammer for removing concrete shall be a light-duty pneumatic or electric tool with a 15 lb. (7 kg) maximum class or less.

Blast Cleaning Equipment – Blast cleaning equipment for concrete surface preparation shall be the abrasive type, and the equipment shall have oil traps.

Hydrodemolition Equipment – Hydrodemolition equipment for removing concrete shall be calibrated, and shall use water according to Section 1002.

High Performance Shotcrete Equipment – The batching, mixing, pumping, hose, nozzle, and auxiliary equipment shall be for the wet-mix shotcrete method, and shall meet the requirements of ACI 506R.

### Construction Requirements

General. The repair methods shall be either formed concrete repair or shotcrete. The repair method shall be selected by the Contractor with the following rules.

- (a) Rule 1. For formed concrete repair, a subsequent patch to repair the placement point after initial concrete placement will not be allowed. As an example, this may occur in a vertical location located at the top of the repair.
- (b) Rule 2. Formed concrete repair shall not be used for overhead applications.
- (c) Rule 3. If formed concrete repair is used for locations that have reinforcement with less than 0.75 in. (19 mm) of concrete cover, the concrete mixture shall contain fly ash or ground granulated blast-furnace slag at the maximum cement replacement allowed.
- (d) Rule 4. Shotcrete shall not be used for any repair greater than 6 in. (150 mm) in depth, except in horizontal applications, where the shotcrete may be placed from above in one lift.
- (e) Rule 5. Shotcrete shall not be used for column repairs greater than 4 in. (100 mm) in depth, unless the shotcrete mixture contains 3/8 in. (9.5 mm) aggregate.

Temporary Shoring or Cribbing. When a temporary shoring or cribbing support system is required, the Contractor shall provide details and computations, prepared and sealed by an Illinois licensed Structural Engineer, to the Department for review and approval. When ever possible the support system shall be installed prior to starting the associated concrete removal. If no system is specified, but during the course of removal the need for temporary shoring or cribbing becomes apparent or is directed by the Engineer due to a structural concern, the Contractor shall not proceed with any further removal work until an appropriate and approved support system is installed.

Concrete Removal. The Contractor shall provide ladders or other appropriate equipment for the Engineer to mark the removal areas. Repair configurations will be kept simple, and squared corners will be preferred. The repair perimeter shall be sawed a depth of 1/2 in. (13 mm) or less, as required to avoid cutting the reinforcement. Any cut reinforcement shall be repaired or replaced at the expense of the Contractor. If the concrete is broken or removed beyond the limits of the initial saw cut, the new repair perimeter shall be recut. The areas to be repaired shall have all loose, unsound concrete removed completely by the use of chipping hammers, hydrodemolition equipment, or other methods approved by the Engineer. The concrete removal shall extend along the reinforcement bar until the reinforcement is free of bond inhibiting corrosion. Reinforcement bar with 50 percent or more exposed shall be undercut to a depth of 3/4 in. (19 mm) or the diameter of the reinforcement bar, whichever is greater.

If sound concrete is encountered before existing reinforcement bars are exposed, further removal of concrete shall not be performed unless the minimum repair depth is not met.

The repair depth shall be a minimum of 1 in. (25 mm). The substrate profile shall be  $\pm 1/16$  in. ( $\pm 1.5$  mm). The perimeter of the repair area shall have a vertical face.

If a repair is located at the ground line, any excavation required below the ground line to complete the repair shall be included in this work.

The Contractor shall have a maximum of 14 calendar days to complete each repair location with concrete or shotcrete, once concrete removal has started for the repair.

The Engineer shall be notified of concrete removal that exceeds 6 in. (150 mm) in depth, one fourth the cross section of a structural member, more than half the vertical column reinforcement is exposed in a cross section, more than 6 consecutive reinforcement bars are exposed in any direction, within 1.5 in. (38 mm) of a bearing area, or other structural concern. Excessive deterioration or removal may require further evaluation of the structure or installation of temporary shoring and cribbing support system.

Surface Preparation. Prior to placing the concrete or shotcrete, the Contractor shall prepare the repair area and exposed reinforcement by blast cleaning. The blast cleaning shall provide a surface that is free of oil, dirt, and loose material.

If a succeeding layer of shotcrete is to be applied, the initial shotcrete surface and remaining exposed reinforcement shall be free of curing compound, oil, dirt, loose material, rebound (i.e. shotcrete material leaner than the original mixture which ricochets off the receiving surface), and overspray. Preparation may be by lightly brushing or blast cleaning if the previous shotcrete surface is less than 36 hours old. If more than 36 hours old, the surface shall be prepared by blast cleaning.

The repair area and perimeter vertical face shall have a rough surface. Care shall be taken to ensure the sawcut face is roughened by blast cleaning. Just prior to concrete or shotcrete placement, saturate the repair area with water to a saturated surface-dry condition. Any standing water shall be removed.

Concrete or shotcrete placement shall be done within 3 calendar days of the surface preparation or the repair area shall be prepared again.

Reinforcement. Exposed reinforcement bars shall be cleaned of concrete and corrosion by blast cleaning. After cleaning, all exposed reinforcement shall be carefully evaluated to determine if replacement or additional reinforcement bars are required.

Reinforcing bars that have been cut or have lost 25 percent or more of their original cross sectional area shall be supplemented by new in kind reinforcement bars. New bars shall be lapped a minimum of 32 bar diameters to existing bars. A mechanical bar splicer shall be used when it is not feasible to provide the minimum bar lap. No welding of bars shall be performed.

Intersecting reinforcement bars shall be tightly secured to each other using 0.006 in. (1.6 mm) or heavier gauge tie wire, and shall be adequately supported to minimize movement during concrete placement or application of shotcrete.

For reinforcement bar locations with less than 0.75 in. (19 mm) of cover, protective coat shall be applied to the completed repair. The application of the protective coat shall be according to Article 503.19, 2nd paragraph, except blast cleaning shall be performed to remove curing compound.

The Contractor shall anchor the new concrete to the existing concrete with 3/4 in. (19 mm) diameter hook bolts for all repair areas where the depth of concrete removal is greater than 8 in. (205 mm) and there is no existing reinforcement extending into the repair area. The hook bolts shall be spaced at 15 in. (380 mm) maximum centers both vertically and horizontally, and shall be a minimum of 12 in. (305 mm) away from the perimeter of the repair. The hook bolts shall be installed according to Section 584.

Repair Methods. All repair areas shall be inspected and approved by the Engineer prior to placement of the concrete or application of the shotcrete.

- (a) Formed Concrete Repair. Falsework shall be according to Article 503.05. Forms shall be according to Article 503.06. Formwork shall provide a smooth and uniform concrete finish, and shall approximately match the existing concrete structure. Formwork shall be mortar tight and closely fitted where they adjoin the existing concrete surface to prevent leakage. Air vents may be provided to reduce voids and improve surface appearance. The Contractor may use exterior mechanical vibration, as approved by the Engineer, to release air pockets that may be entrapped.

The concrete for formed concrete repair shall be a Class SI Concrete, or a packaged R1, R2, or R3 Concrete,, or a packaged Normal Weight Concrete at the Contractor's option. The concrete shall be placed and consolidated according to Article 503.07. The concrete shall not be placed when frost is present on the surface of the repair area, or the surface temperature of the repair area is less than 40 °F (4 °C). All repaired members shall be restored as close as practicable to their original dimensions.

Curing shall be done according to Article 1020.13.

If temperatures below 45°F (7°C) are forecast during the curing period, protection methods shall be used. Protection Method I according to Article 1020.13(d)(1), or

Protection Method II according to Article 1020.13(d)(2) shall be used during the curing period.

The surfaces of the completed repair shall be finished according to Article 503.15.

- (b) Shotcrete. Shotcrete shall be tested by the Engineer for air content according to Illinois Modified AASHTO T 152. The sample shall be obtained from the discharge end of the nozzle by shooting a pile large enough to scoop a representative amount for filling the air meter measuring bowl. Shotcrete shall not be shot directly into the measuring bowl for testing.

For compressive strength of shotcrete, a 18 x 18 x 3.5 in. (457 x 457 x 89 mm) test panel shall be shot by the Contractor for testing by the Engineer. A steel form test panel shall have a minimum thickness of 3/16 in. (5 mm) for the bottom and sides. A wood form test panel shall have a minimum 3/4 in. (19 mm) thick bottom, and a minimum 1.5 in. (38 mm) thickness for the sides. The test panel shall be cured according to Article 1020.13 (a) (3) or (5) while stored at the jobsite and during delivery to the laboratory. After delivery to the laboratory for testing, curing and testing shall be according to ASTM C 1140.

The method of alignment control (i.e. ground wires, guide strips, depth gages, depth probes, and formwork) to ensure the specified shotcrete thickness and reinforcing bar cover is obtained shall be according to ACI 506R. Ground wires shall be removed after completion of cutting operations. Guide strips and formwork shall be of dimensions and a configuration that do not prevent proper application of shotcrete. Metal depth gauges shall be cut 1/4 in. (6 mm) below the finished surface. All repaired members shall be restored as close as practicable to their original dimensions.

For air temperature limits when applying shotcrete in cold weather, the first paragraph of Article 1020.14(b) shall apply. For hot weather, shotcrete shall not be applied when the air temperature is greater than 90°F (32°C). The applied shotcrete shall have a minimum temperature of 50°F (10°C) and a maximum temperature of 90°F (32°C). The shotcrete shall not be applied during periods of rain unless protective covers or enclosures are installed. The shotcrete shall not be applied when frost is present on the surface of the repair area, or the surface temperature of the repair area is less than 40°F (4°C). If necessary, lighting shall be provided to provide a clear view of the shooting area.

The shotcrete shall be applied according to ACI 506R, and shall be done in a manner that does not result in cold joints, laminations, sandy areas, voids, sags, or separations. In addition, the shotcrete shall be applied in a manner that results in maximum densification of the shotcrete. Shotcrete which is identified as being unacceptable while still plastic shall be removed and re-applied.

The nozzle shall normally be at a distance of 2 to 5 ft. (0.6 to 1.5 m) from the receiving surface, and shall be oriented at right angles to the receiving surface. Exceptions to this



requirement will be permitted to fill corners, encase large diameter reinforcing bars, or as approved by the Engineer. For any exception, the nozzle shall never be oriented more than 45 degrees from the surface. Care shall be taken to keep the front face of the reinforcement bar clean during shooting operations. Shotcrete shall be built up from behind the reinforcement bar. Accumulations of rebound and overspray shall be continuously removed prior to application of new shotcrete. Rebound material shall not be incorporated in the work.

Whenever possible, shotcrete shall be applied to the full thickness in a single layer. The maximum thickness shall be according to Rules 4 and 5 under Construction Requirements, General. When two or more layers are required, the minimum number shall be used and shall be done in a manner without sagging or separation. A flash coat (i.e. a thin layer of up to 1/4 in. (6 mm) applied shotcrete) may be used as the final lift for overhead applications.

Prior to application of a succeeding layer of shotcrete, the initial layer of shotcrete shall be prepared according to the surface preparation and reinforcement bar cleaning requirements. Upon completion of the surface preparation and reinforcement bar treatment, water shall be applied according to the surface preparation requirements unless the surface is moist. The second layer of shotcrete shall then be applied within 30 minutes.

Shotcrete shall be cut back to line and grade using trowels, cutting rods, screeds or other suitable devices. The shotcrete shall be allowed to stiffen sufficiently before cutting. Cutting shall not cause cracks or delaminations in the shotcrete. For depressions, cut material may be used for small areas. Rebound material shall not be incorporated in the work. For the final finish, a wood float shall be used to approximately match the existing concrete texture. A manufacturer approved finishing aid may be used. Water shall not be used as a finishing aid. All repaired members shall be restored as close as practicable to their original dimensions.

Contractor operations for curing shall be continuous with shotcrete placement and finishing operations. Curing shall be accomplished using wetted cotton mats, membrane curing, or a combination of both. Cotton mats shall be applied according to Article 1020.13(a)(5) except the exposed layer of shotcrete shall be covered within 10 minutes after finishing, and wet curing shall begin immediately. Curing compound shall be applied according to Article 1020.13(a)(4), except the curing compound shall be applied as soon as the shotcrete has hardened sufficiently to prevent marring the surface, and each of the two separate applications shall be applied in opposite directions to ensure coverage. The curing compound shall be according to Article 1022.01. Note 5 of the Index Table in Article 1020.13 shall apply to the membrane curing method.

When a shotcrete layer is to be covered by a succeeding shotcrete layer within 36 hours, the repair area shall be protected with intermittent hand fogging, or wet curing with either burlap or cotton mats shall begin within 10 minutes. Intermittent hand fogging may be used only for the first hour. Thereafter, wet curing with burlap or cotton mats shall be

used until the succeeding shotcrete layer is applied. Intermittent hand fogging may be extended to the first hour and a half if the succeeding shotcrete layer is applied by the end of this time.

The curing period shall be for 7 days, except when there is a succeeding layer of shotcrete. In this instance, the initial shotcrete layer shall be cured until the surface preparation and reinforcement bar treatment is started.

If temperatures below 45°F (7°C) are forecast during the curing period, protection methods shall be used. Protection Method I according to Article 1020.13(d)(1), or Protection Method II according to Article 1020.13(d)(2) shall be used during the curing period

Inspection of Completed Work. The Contractor shall provide ladders or other appropriate equipment for the Engineer to inspect the repaired areas. After curing but no sooner than 28 days after placement of concrete or shooting of shotcrete, the repair shall be examined for conformance with original dimensions, cracks, voids, and delaminations. Sounding for delaminations will be done with a hammer or by other methods determined by the Engineer.

The acceptable tolerance for conformance of a repaired area shall be within 1/4 in. (6 mm) of the original dimensions. A repaired area not in dimensional conformance or with delaminations shall be removed and replaced.

A repaired area with cracks or voids shall be considered as nonconforming. Exceeding one or more of the following crack and void criteria shall be cause for removal and replacement of a repaired area.

1. The presence of a single surface crack greater than 0.01 in. (0.25 mm) in width and greater than 12 in. (300 mm) in length.
2. The presence of two or more surface cracks greater than 0.01 in. (0.25 mm) in width that total greater than 24 in. (600 mm) in length.
3. The presence of map cracking in one or more regions totaling 15 percent or more of the gross surface area of the repair.
4. The presence of two or more surface voids with least dimension 3/4 in. (19 mm) each.

A repaired area with cracks or voids that do not exceed any of the above criteria may remain in place, as determined by the Engineer.

If a nonconforming repair is allowed to remain in place, cracks greater than 0.007 in. (0.2 mm) in width shall be repaired with epoxy according to Section 590. For cracks less than or equal to 0.007 in. (0.2 mm) in width, the epoxy may be applied to the surface of the crack. Voids shall be repaired according to Article 503.15.

Publications and Personnel Requirements. The Contractor shall provide a current copy of ACI 506R to the Engineer a minimum of one week prior to start of construction.

The shotcrete personnel who perform the work shall have current American Concrete Institute (ACI) nozzle men certification for vertical wet and overhead wet applications, except one individual may be in training. This individual shall be adequately supervised by a certified ACI nozzle men as determined by the Engineer. A copy of the nozzle men certificate(s) shall be given to the Engineer.

Method of Measurement. This work will be measured for payment in place and the area computed in square feet (square meters). For a repair at a corner, both sides will be measured.

Basis of Payment. This work will be paid for at the contract unit price per square foot (square meter) for STRUCTURAL REPAIR OF CONCRETE (DEPTH GREATER THAN 5 IN. (125 MM)), STRUCTURAL REPAIR OF CONCRETE (DEPTH EQUAL TO OR LESS THAN 5 IN. (125 MM)).

When not specified to be paid for elsewhere, the work to design, install, and remove the temporary shoring and cribbing will be paid for according to Article 109.04.

With the exception of reinforcement damaged by the Contractor during removal, the furnishing and installation of supplemental reinforcement bars, mechanical bar splicers, hook bolts, and protective coat will be paid according to Article 109.04.

## **STRUCTURAL ASSESSMENT REPORTS FOR CONTRACTOR'S MEANS AND METHODS**

Effective: March 6, 2009

Revised October 5, 2015

Description. This item shall consist of preparing and submitting, to the Engineer for approval, Structural Assessment Reports (SARs) for proposed work on structure(s) or portions thereof. Unless noted otherwise, a SAR shall be required when the Contractor's means and methods apply loads to the structure or change its structural behavior. A SAR shall be submitted and approved prior to beginning the work covered by that SAR. Separate portions of the work may be covered by separate SARs which may be submitted at different times or as dictated by the Contractor's schedule.

Existing Conditions. An Existing Structure Information Package (ESIP) will be provided by the Department to the Contractor upon request. This package will typically include existing or "As-Built" plans, and the latest National Bridge Inspection Standards (NBIS) inspection report. The availability of structural information from the Department is solely for the convenience and information of the Contractor and shall not relieve the Contractor of the duty to make, and the risk of making, examinations and investigations as required to assess conditions affecting the work. Any data furnished in the ESIP is for information only and does not constitute a part of the Contract. The Department makes no representation or warranty, express or implied, as to the information conveyed or as to any interpretations made from the data.

Removal SARs. A SAR for removal of existing structures, or portions thereof, shall demonstrate that the Contractor's proposed means and methods to accomplish the work do not compromise the structural adequacy of the bridge, or portions thereof that are to remain in service, at any time during the work activities being performed. Each phase of the operation shall be accounted for, as well as the existing condition of the structure.

Construction SARs. A SAR for new construction or for construction utilizing existing components shall demonstrate that the Contractor's proposed means and methods to accomplish the work do not compromise the structural adequacy of the bridge or portions thereof at any time during the work activities being performed. For construction activities applying less than 10 tons (9 metric tons) of total combined weight of equipment and stockpiled materials on the structure at any one time, a SAR submittal shall not be required provided the Contractor submits written verification to the Engineer stating the applied loads do not exceed this threshold. The verification shall be submitted prior to the start of the activity. This SAR exemption shall not relieve the Contractor from responsibility for the structure. A SAR shall be submitted in all cases where the existing structure is posted for less than legal loads or the Contract plans indicate a live load restriction is in place.

### Requirements

a) General. All work specified shall be performed according to the Contract plans, Special Provisions and/or Standard Specifications governing that work.

Submittals for falsework and forming for concrete construction shall be according to Articles 503.05 and 503.06 and does not require a SAR. Moving construction equipment across a structure, or portions thereof, open to traffic shall be addressed according to Article 107.16 and does not require a SAR. Operating equipment on an in-service structure and/or using a portion of an in-service structure as a work platform shall require a SAR and Article 107.16 shall not apply.

The Contractor may move vehicles across the existing bridge without a SAR after closure and prior to removal of any portion of the structure provided:

- The vehicles satisfy the requirements of Section 15-111 of the Illinois Vehicle Code (described in the IDOT document “Understanding the Illinois Size & Weight Laws”) or of the Federal Highway Administration document “Bridge Formula Weights” (available at: [http://www.ops.fhwa.dot.gov/freight/publications/brdg\\_frm\\_wghts/index.htm](http://www.ops.fhwa.dot.gov/freight/publications/brdg_frm_wghts/index.htm))
- The Contractor submits written verification to the Engineer stating the vehicles meet these requirements. The verification shall be submitted prior to allowing the vehicles on the structure.

This SAR exemption shall not relieve the Contractor from responsibility for the structure. This SAR exemption shall not be allowed where the existing structure is posted for less than legal loads or the Contract plans indicate a live load restriction is in place. No stockpiling of material is allowed under this exemption.

All SARs shall detail the procedures and sequencing necessary to complete the work in a safe and controlled manner. When appropriate, supporting design calculations shall be provided verifying the following:

- The effects of the applied loads do not exceed the capacity at Operating level for any portions of the structure being utilized in the demolition of the structure provided those portions are not to be reused.
- The effects of the applied loads do not exceed the capacity at Inventory level for new construction or for portions of the existing structure that are to be reused.
- The condition of the structure and/or members has been considered.

See AASHTO Manual for Bridge Evaluation for further information on determining the available capacities at the Operating and Inventory levels.

- b) Confidential Documents. Due to the sensitivity of the inspection reports and bridge condition reports to bridge security, the following confidentiality statement applies to these reports:

“Reports used by the Contractor and the contents thereof are the property of the Department, and are subject to the control of the Department in accordance with State and Federal law. The distribution, dissemination, disclosure, duplication or release of these reports or the content thereof in any manner, form or format without the express permission of the keeper of this record is prohibited. The owner is the official keeper of these records, except for state owned bridges, where the official keeper of these records is the Regional Engineer.”

c) Submittals. The Contractor shall be pre-approved to prepare SAR(s) or shall retain the services of a pre-qualified engineering firm to provide these services. Pre-approval of the Contractor will be determined by the Illinois Department of Transportation and will allow SAR(s) preparation by the Contractor unless otherwise noted on the plans. For engineering firms, pre-qualification shall be according to the Department in the category of "Highway Bridges-Typical" unless otherwise noted on the plans. Firms involved in any part of the project (plan development or project management) will not be eligible to provide these services. Evidence of pre-approval/pre-qualification shall be submitted with all SAR(s). The SAR(s) shall be prepared and sealed by an Illinois Licensed Structural Engineer. The Contractor shall submit SAR(s), complete with working drawings and supporting design calculations, to the Engineer for approval, at least 30 calendar days prior to start of that portion of the work.

At a minimum a Structural Assessment Report shall include the following:

1. A plan outlining the procedures and sequence for the work, including staging when applicable.
2. A demolition plan (when removal is included as an item of work in the contract) including details of the proposed methods of removal.
3. A beam erection plan (when beam erection is included as an item of work in the contract) including details of the proposed methods of erection.
4. Pertinent specifications for equipment used during the work activity.
5. The allowable positions for that equipment during the work activity.
6. The allowable positions and magnitudes of stockpiled materials and/or spoils, if planned to be located on the structure.
7. Design and details for temporary shoring and/or bracing, if required by the Contractor's means and methods.

Approval or acceptance of a Structural Assessment Report shall not relieve the Contractor of any responsibility for the successful completion of the work.

Revisions to the Contractor's means and methods resulting in no increased load effects to the structure, as determined by the Contractor's Structural Engineer, shall not require a SAR resubmittal. However, the Contractor's Structural Engineer shall submit to the Engineer written verification that there is no increased load effect. The written verification shall specify the revisions and shall be submitted prior to the start of the revised activities.

The Contractor shall be responsible for following the approved SAR related to the work involved.

Method of Measurement. Structural Assessment Reports will not be measured for payment.

Basis of payment. Structural Assessment Reports will not be paid for separately but shall be considered as included in the contract unit price(s) for the work item(s) specified.

## **BRIDGE DECK CONSTRUCTION**

Effective: October 22, 2013

Revised: December 21, 2016

When Diamond Grinding of Bridge Sections is specified, hand finishing of the deck surface shall be limited to areas not finished by the finishing machine and to address surface corrections according to Article 503.16(a)(2). Hand finishing shall be limited as previously stated solely for the purpose of facilitating a more timely application of the curing protection. In addition the requirements of 503.16(a)(3)a. and 503.16(a)(4) will be waived.

### **Revise the Second Paragraph of Article 503.06(b) to read as follows.**

“When the Contractor uses cantilever forming brackets on exterior beams or girders, additional requirements shall be as follows.”

### **Revise Article 503.06(b)(1) to read as follows.**

- “(1) Bracket Placement. The spacing of brackets shall be per the manufacturer’s published design specifications for the size of the overhang and the construction loads anticipated. The resulting force of the leg brace of the cantilever bracket shall bear on the web within 6 inches (150 mm) of the bottom flange of the beam or girder.”

### **Revise Article 503.06(b)(2) to read as follows.**

- “(2) Beam Ties. The top flange of exterior steel beams or girders supporting the cantilever forming brackets shall be tied to the bottom flange of the next interior beam. The top flange of exterior concrete beams supporting the cantilever forming brackets shall be tied to the top flange of the next interior beam. The ties shall be spaced at 4 ft (1.2 m) centers. Permanent cross frames on steel girders may be considered a tie. Ties shall be a minimum of 1/2 inch (13 mm) diameter threaded rod with an adjusting mechanism for drawing the tie taut. The ties shall utilize hanger brackets or clips which hook onto the flange of steel beams. No welding will be permitted to the structural steel or stud shear connectors, or to reinforcement bars of concrete beams, for the installation of the tie bar system. After installation of the ties and blocking, the tie shall be drawn taut until the tie does not vary from a straight line from beam to beam. The tie system shall be approved by the Engineer.”

### **Revise Article 503.06(b)(3) to read as follows.**

- “(3) Beam Blocks. Suitable beam blocks of 4 in x 4 in (100 x 100 mm) timbers or metal structural shapes of equivalent strength or better, acceptable to the Engineer, shall be wedged between the webs of the two beams tied together, within 6 inches (150 mm) of the bottom flange at each location where they are tied. When it is not feasible to have

the resulting force from the leg brace of the cantilever brackets transmitted to the web within 6 inches (150 mm) of the bottom flange, then additional blocking shall be placed at each bracket to transmit the resulting force to within 6 inches (150 mm) of the bottom flange of the next interior beam or girder.”

**Delete the last paragraph of Article 503.06(b).**



## **HOT DIP GALVANIZING FOR STRUCTURAL STEEL**

Effective: June 22, 1999

Revised: October 20, 2017

Description. This work shall consist of surface preparation and hot dip galvanizing all structural steel specified on the plans and painting of galvanized structural steel when specified on the plans.

Materials. Fasteners shall be ASTM F 3125, Grade 325, Type 1, High Strength bolts with matching nuts and washers.

Fabrication Requirements. Hot-dip galvanizing shall be indicated on the shop drawings. The fabricator shall coordinate with the galvanizer to incorporate additional steel details required to facilitate galvanizing of the steel. These additional details shall be indicated on the shop drawings.

To insure identification after galvanizing, piece marks shall be supplemented with metal tags for all items where fit-up requires matching specific pieces.

After fabrication (cutting, welding, drilling, etc.) is complete, all holes shall be deburred and all fins, scabs or other surface/edge anomalies shall be ground or repaired per ASTM A6. The items shall then be cleaned per Steel Structures Painting Council's Surface Preparation Specification SSPC-SP1 (Solvent Cleaning) and SSPC-SP6 (Commercial Blast Cleaning). All surfaces shall be inspected to verify no fins, scabs or other similar defects are present.

The Contractor shall consult with the galvanizer to insure proper removal of grease, paint and other deleterious materials prior to galvanizing.

### **Surface Preparation and Hot Dip Galvanizing**

General. Surfaces of the structural steel specified on the plans shall be prepared and hot dip galvanized as described herein.

Cleaning Structural Steel. If rust, mill scale, dirt, oil, grease or other foreign substances have accumulated prior to galvanizing, steel surfaces shall be cleaned by a combination of caustic cleaning and cleaning according to SSPC-SP8 (Pickling).

Special attention shall be given to the cleaning of corners and reentrant angles.

Surface Preparation. A flux shall be applied to all steel surfaces to be galvanized. Any surfaces which will receive field-installed stud shear connectors shall not be galvanized within 2 in. (50 mm) of the stud location. Either the entire area receiving studs or just individual stud locations may be left ungalvanized. The following steel surfaces of bearings shall not be galvanized: stainless steel surfaces, surfaces which will be machined (except for fixed bearing sole plates), and surfaces which will have TFE, elastomer, or stainless steel parts bonded to them.

The cleaned surfaces shall be galvanized within 24 hours after cleaning, unless otherwise authorized by the Engineer.

Application of Hot Dip Galvanized Coating. Steel members, fabrications and assemblies shall be galvanized by the hot dip process in the shop according to AASHTO M 111.

Bolts, nuts, and washers shall be galvanized according to ASTM F 2329.

All steel shall be safeguarded against embrittlement according to ASTM A 143. Water quenching or chromate conversion coating shall not be used on any steel work that is to be painted. All galvanized steel work shall be handled in such a manner as to avoid any mechanical damage and to minimize distortion.

Beams and girders shall be handled, stored and transported with their webs vertical and with proper cushioning to prevent damage to the member and coating. Members shall be supported and externally stiffened during galvanizing to prevent permanent distortion.

Hot Dip Galvanized Coating Requirements. Coating weight, surface finish, appearance and adhesion shall conform to requirements of ASTM A 385, ASTM F2329, AASHTO M 111 or AASHTO M 232, as appropriate.

Any high spots of zinc coating, such as metal drip lines and rough edges, left by the galvanizing operation in areas that are to be field connected or in areas that are to be painted shall be removed by cleaning per SSPC-SP2 (Hand Tool Cleaning) or SSPC-SP3 (Power Tool Cleaning). The zinc shall be removed until it is level with the surrounding area, leaving at least the minimum required zinc thickness.

Shop assemblies producing field splices shall provide 1/8 in. (3 mm) minimum gaps between ends of members to be galvanized. At field splices of beams or girders, galvanizing exceeding 0.08 in. (2 mm) on the cross-sectional (end) face shall be partially removed until it is 0.04 in. to 0.08 in. (1 to 2 mm) thick.

Testing of Hot Dip Galvanized Coating. Inspection and testing of hot dip galvanized coatings shall follow the guidelines provided in the American Galvanizers Association publication "*Inspection of Products Hot Dip Galvanized After Fabrication*". Sampling, inspection, rejection and retesting for conformance with requirements shall be according to AASHTO M 111 or AASHTO M 232, as applicable. Coating thickness shall be measured according to AASHTO M 111, for magnetic thickness gage measurement or AASHTO M 232, as applicable.

All steel shall be visually inspected for finish and appearance.

Bolts, nuts, washers, and steel components shall be packaged according to ASTM F 2329. Identity of bolts, nuts and washers shall be maintained for lot-testing after galvanizing according to Article 505.04(f)(2) for high strength steel bolts.

A notarized certificate of compliance with the requirements listed herein shall be furnished. The certificate shall include a detailed description of the material processed and a statement that the processes used met or exceeded the requirements for successful galvanizing of the surface, where applicable. The certificate shall be signed by the galvanizer.

Repair of Hot Dip Galvanized Coating. Surfaces with inadequate zinc thickness shall be repaired in the shop according to ASTM A 780 and AASHTO M 111.

Surfaces of galvanized steel that are damaged after the galvanizing operation shall be repaired according to ASTM A 780 whenever damage exceeds 3/16 in. (5 mm) in width and/or 4 in. (100 mm) in length. Damage that occurs in the shop shall be repaired in the shop. Damage that occurs during transport or in the field shall be repaired in the field.

Connection Treatment. After galvanizing and prior to shipping, contact surfaces for any bolted connections shall be roughened by hand wire brushing or according to SSPC-SP7 (Brush-Off Blast Cleaning). Power wire brushing is not allowed.

All bolt holes shall be reamed or drilled to their specified diameters after galvanizing. All bolts shall be installed after galvanizing.

### **Surface Preparation and Painting**

Surface Preparation. When galvanized steel surfaces are specified to be painted they shall be clean and free of oil, grease, and other foreign substances. Surface preparation necessary to provide adequate adhesion of the coating shall be performed according to ASTM D6386. Surface preparation shall include, but not be limited to the following:

- All galvanized steel surfaces that are to be painted shall be cleaned according to SSPC-SP1 (Solvent Cleaning). After cleaning, all chemicals shall be thoroughly rinsed from the surface with a suitable solvent. The steel shall be allowed to completely dry prior to coating application.
- All galvanized steel surfaces that are to be painted shall be checked for the presence of chromate conversion coating according to ASTM D 6386 Appendix X1. Surfaces where chromate conversion coating is found shall be cleaned according to the same appendix and blown down with clean, compressed air according to ASTM D 6386 Section 6.1.
- All galvanized steel surfaces that are to be painted shall be checked for the presence of wet storage stain. Surfaces where wet storage stain is found shall be cleaned, rinsed and completely dried according to ASTM D 6386 Section 6.2.
- Following galvanizing, thickness readings shall verify the acceptable thickness of the galvanizing according to AASHTO M111/ASTM A123.

Paint Requirements. The paint materials (epoxy intermediate coat and aliphatic urethane finish coat) shall meet the requirements of the Articles 1008.05(d) and (e) of the Standard Specification.

All paint materials for the shop and field shall be supplied by the same manufacturer, and samples of components submitted for approval by the Department, before use.

Paint storage, mixing, and application shall be according to Section 506 of the Standard Specifications and the paint manufacturer's written instructions and product data sheets. In the event of a conflict the Contractor shall advise the Engineer and comply with the Engineer's written resolution. Until a resolution is provided, the most restrictive conditions shall apply.

Shop Application of the Paint System. The areas to be painted shall receive one full coat of an epoxy intermediate coat and one full coat of an aliphatic urethane finish coat. The film thickness of each coat shall be according to Article 506.09(f)(2).

Construction Requirements. The contact surfaces of splice flange connections (mating flange faces and areas under splice bolt heads and nuts) shall be free of paint prior to assembly. If white rust is visible on the mating flange surfaces, the steel shall be prepared by hand wire brushing or brush-off blasting according to SSPC-SP7. Power wire brushing is not allowed.

After field erection, the following areas shall be prepared by cleaning according to SSPC-SP1 (Solvent Cleaning), tie- or wash-coated if applicable, and then painted or touched up with the paint specified for shop application (the intermediate coat and/or the finish coat):

- exposed unpainted areas at bolted connections
- areas where the shop paint has been damaged
- any other unpainted, exposed areas as directed by the Engineer.

Special Instructions. Painting Date/System Code. At the completion of the work, the Contractor shall stencil in contrasting color paint the date of painting the bridge and the paint type code from the Structure Information and Procedure Manual for the system used according to Article 506.10(i). The code designation for galvanizing is "V". If painting of the structural steel is not specified then the word "PAINTED" may be omitted, the month and year shall then correspond to the date the stencil is applied.

Basis of Payment. The cost of all surface preparation, galvanizing, painting and all other work described herein shall be considered as included in the unit price bid for the applicable pay items to be galvanized and painted, according to the Standard Specifications.

## **WARRANTY FOR CLEANING AND PAINTING STEEL STRUCTURES**

Effective: March 3, 2000

Revised: November 24, 2004

Description. This work consists of providing a warranty for the cleaning and painting of existing steel structures as performed under the following pay items; CLEANING AND PAINTING STEEL BRIDGE and CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES, and/or CONTAINMENT AND DISPOSAL OF NON-LEAD PAINT CLEANING RESIDUES at the designated location(s).

The Contractor shall unconditionally warrant to the Illinois Department of Transportation (IDOT) that all work completed under the above contract pay items, including all materials and workmanship furnished by the Contractor and subcontractors, shall comply with the Contract, and that the cleaning and painting system applied to the bridge be free of defects, as hereinafter defined for a period of two years after the Warranty Period Start Date.

The work associated with the above stated pay items shall be accomplished according to all contract documents and the Special Provisions for Cleaning and Painting Existing Steel Structures and Containment and Disposal of Lead Paint Cleaning Residues. Acceptance by the Engineer, of any portion of the work during the original contract for cleaning and painting, will not relieve the Contractor of the requirements of this warranty.

The Contractor guarantees that after receipt of notice from the Department as provided herein, he/she shall perform the warranty work specified in the notice in accordance with the original specifications including all necessary incidental work to complete the work and restore the complete facility. The Contractor shall also guarantee to repair all damage to adjoining structures caused by failure of the warranted work, including but not limited to removal, engineering, material procurement, reinstallation, or replacement all at the Contractor's cost and expense. The Department's remedies under this warranty are not exclusive but are in addition to any other remedies provided by this contract or law. The additional obligations undertaken by the Contractor to provide this express warranty and to perform in accordance herewith shall be secured by a performance and payment bond provided by the Contractor in a form furnished by the Department, and said bond to remain in full force and effect for the duration of the warranty period.

### Definitions.

**Conflict Resolution Team (CRT).** A three-member team responsible for resolving disputes between the Department and the Contractor regarding any claims of non-compliance of the warranty requirements.

**Warranty Bond.** A bond that guarantees the cleaning and painting installed under the contract, against defects in materials and/or workmanship, which may develop after the Warranty Period Start Date for the specified Warranty Period. The warranty bond shall be in force continuously, from the date of the first Warranty Period Start Date, until release from the warranty on the last warranted portion of the work.

**Warranted Distress.** The cleaning and painting will be considered distressed if any occurrence of visible rust or rust breakthrough, paint blistering, peeling, or scaling are discovered during the Warranty Period.

**Warranty Period.** A two year duration initiating on the Warranty Period Start Date.

**Warranty Period Start Date.** The date the Engineer and Contractor document and execute the final inspection will constitute the start date for the warranty period for the project.

Under Contracts where the cleaning and painting of more than one structure is to be warranted under this item, the Warranty Period Start Date shall be the date the final inspection is executed for the last structure to be cleaned and painted.

**Warranty Work.** Corrective action taken to bring the Warranted Distress into compliance for release of the Warranty Bond. If corrective action is required for more than 40 percent of the structure during the warranty period, the paint system for the entire structure or structures shall be removed and replaced as directed by the Department.

**Working Days.** Any calendar day between May 1 and November 30 inclusive except Saturdays, Sundays, or legal holidays observed by the Contractor's entire workforce in Illinois.

Commencement of Warranty Period. At the final inspection according to Article 105.13, the Engineer and Contractor shall review the cleaning and painting for compliance with the contract, including any written documentation from the Contractor required by the contract. The Engineer and the Contractor shall document and execute the final inspection on a form furnished by the Department when the cleaning and painting of the structure(s) is determined by the Engineer to be in compliance with the Contract. This date is then the Warranty Period Start Date.

Acceptance by the Engineer of work that used material from deficient lots, or otherwise accepted per Article 105.03, will not relieve the Contractor of meeting the warranty requirements for the cleaning and painting of the structure(s).

Warranty Bond. The Contractor shall furnish the Department a performance and payment bond with good and sufficient sureties in the full amount equal to 20 percent of the as bid total for all the applicable pay items related to the cleaning and painting of the structure(s) in this contract as the penal sum. The surety shall be acceptable to the Department, shall waive notice of any changes and extensions of time, and shall submit its bond on the form furnished by the Department. The bond will ensure completion of required Warranty Work, including payments for all labor, equipment, materials, and closure periods used to remediate any Warranted Distress.

At the end of the two year Warranty Period and remedy of any distress occurring within the Warranty Period, the Contractor will be released, in writing, from further Warranty Work, provided all previous Warranty Work has been completed and approved by the Engineer.

Warranty Requirements. During the warranty period, the Contractor may monitor the warranted work using non-destructive procedures. All laboratories and equipment used for independent testing shall be approved by the Department.

The Department will notify the Contractor of the need for Warranty Work. If the Contractor disputes the Department's request for Warranty Work written notification of the dispute shall be provided to the Department within 30 days. However, any dispute by the Contractor shall be based on the appraisals and technical merit of a NACE Certified Inspector. If the Contractor and the Department are not able to resolve the matter between them, either party may seek resolution of the dispute by the Conflict Resolution Team (CRT). The Department will provide final notification to the Contractor within 14 days of receipt of the CRT's final judgment.

The Contractor shall perform Warranty Work promptly as defined in the notification. The notification will provide a requested start date for performance of Warranty Work covered by the notice, and a number of working days estimated to complete the Warranty Work. The Department and the Contractor may agree upon a start date and a reasonable period of performance to define prompt completion.

If the Contractor fails to promptly complete the warranty work specified in the notice or as specified by the CRT, or otherwise breaches its obligations under this provision, the Department may declare the Contractor to be in default, and may proceed to terminate the rights of the Contractor and to cause the completion of the work in the manner approved in Article 108.10 of the Standard Specifications. The Contractor agrees to indemnify and hold harmless the Department on account of default, including but not limited to the cost and expense of any future warranty work required.

The Contractor shall repair all distressed areas, identified by the Engineer, according to the original painting specifications. A repair procedure shall be submitted in writing to the Engineer for review and approval prior to commencing any work. All paint repair work will be done the same season as the inspection, unless the seasonal limitations stated in the painting specifications prevents the completion that season. In this case, the corrective work will be completed the following season. The Engineer shall be allowed full inspection of all operations and provided safe access to the areas being repaired.

The Contractor may perform preventative action with the approval of the Department, at no cost to the Department. Prior to proceeding with any work, the Contractor shall obtain a permit from the Department. A Traffic Control Plan shall be submitted and approved by the Department prior to any lane closures. The Department may restrict the time of work according to the traffic needs surrounding the structure.

Evaluation of the warranted work will be accomplished on a per bridge basis. Warranty work by the Contractor shall be approved by the Department and meet the same requirements of the original warranted work specified herein.

If warranty work or elective preventative action performed by the Contractor necessitates a corrective action to the structure, then such corrective action to those areas shall be the responsibility of the Contractor.

The Department may perform routine maintenance during the warranty such as Bridge washing, applying de-icing chemicals, repairs to safety appurtenances, etc. Such work shall not relieve the Contractor of their responsibilities as specified herein.

#### Rights and Responsibilities of the Department.

The Department:

- a. Is responsible for notifying the Contractor, in writing, of any required warranty work.
- b. Reserves the right to approve the date(s) and time(s) requested by the Contractor to perform preventative maintenance and warranty work.
- c. Reserves the right to approve all materials and methods used in preventative maintenance and warranty work.
- d. Reserves the right to determine if warranty work performed by the Contractor meets the contract requirements.
- e. Reserves the right to perform, or have performed, routine maintenance during the warranty period. This routine maintenance will not relieve the Contractor from meeting the warranty requirement of this Special Provision.
- f. Shall document the condition of the paint system prior to and after any warranty work.

Rights and Responsibilities of the Contractor.

The Contractor:

- a. Shall unconditionally warrant to the Department that the cleaning and painting of the structural steel shall be free of defects in materials and workmanship as defined by the warranty requirements as set forth above, for a period of two years from the Warranty Period Start Date for the project.
- b. Shall submit to the Department the warranty and the Warranty Bond, on forms furnished by the Department, prior to the Warranty Period Start Date.
- c. Is responsible for performing all warranty work, including, but not limited to, traffic control, obtaining railroad liability insurance where applicable at no additional cost to the Department.
- d. Shall retain all records for a period of one year beyond the end of the Warranty Period or the completion of any warranted repairs, whichever is later.
- e. Is responsible for replacing all temporary repairs, resulting from the painting system being in non-compliance with the warranty requirements, with Department approved materials and methods.
- f. Shall follow all traffic control and work zone safety requirements of the contract when any warranty work is performed.
- g. Shall complete all warranty work in a neat and uniform manner and shall meet the requirements specified in the contract.
- h. Is required to supply to the Department original documentation pursuant to Section 107 of the Standard Specifications that all insurance required by the contract is in effect during the period(s) that any warranty work is being performed.
- i. Shall notify the Department and shall submit a written course of action proposing appropriate corrective measures for the needed warranty work. Approval by the Department must be obtained prior to the anticipated commencement of any warranty work.

Conflict Resolution Team. The sole responsibility of the Conflict Resolution Team (CRT) is to provide a decision on disputed matters between the Department and the Contractor regarding the interpretation of non-compliance of the warranty requirements. It is the intention of the parties that the CRT be assembled with the full cooperation of both parties, and that the Contractor and Department will devote their full attention to the prompt consideration of the



matter by the CRT. Neither party shall neglect its obligation of good faith hereunder nor shall unreasonable delay be imposed that would hinder the prompt decision of the CRT. The decision of the CRT shall be final and binding on the Contractor and Department.

The CRT will consist of three members:

- a. One selected, provided and compensated by the Department.
- b. One selected, provided and compensated by the Contractor.
- c. One third party, mutually selected by the Department and the Contractor. Compensation for the third party member will be equally shared by the Department and the Contractor.

The team members will be identified in writing at the preconstruction meeting and will be knowledgeable in the terms and conditions of this warranty, as well as the methods used to determine paint system distress. Changes to the team membership will be made in writing for the warranty period.

Basis of Payment. This work will be paid for at the contract unit price per lump sum for BRIDGE CLEANING AND PAINTING WARRANTY, at the designated location(s). Payment will be made at the commencement of the warranty period, after the Warranty Bond form has been submitted.

**ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS**

**WARRANTY  
PAINT QUALITY  
1 OF 2**

THIS WARRANTY, made by \_\_\_\_\_  
(Contractor)

of \_\_\_\_\_ hereinafter  
called "Warrantor", in favor of the Illinois Department of Transportation, hereinafter called  
"Department";

WITNESSETH:

RECITALS:

The Department has contracted for the cleaning and painting structural steel on the  
\_\_\_\_\_ Bridge(s) on the \_\_\_\_\_ Highway in  
\_\_\_\_\_ County, Illinois.

Under the provision of Contract No. \_\_\_\_\_, pertaining in part to painting  
of structural steel, entered into by

\_\_\_\_\_, and the Department,  
(Contractor)

the \_\_\_\_\_ is required  
(Contractor)

to furnish the Department a written warranty for the paint system warranting against defect as  
stated in said contract for a period(s) of two years from the date(s) of final inspection by the

Engineer, of \_\_\_\_\_'s work under said contract.  
(Contractor)

**ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS**

**WARRANTY  
PAINT QUALITY  
2 OF 2**

NOW, THEREFORE, in consideration of the foregoing, Warrantor hereby agrees and warrants that in every case in which any defect, as described in Contract Number

\_\_\_\_\_, occurs within said two years period(s), Warrantor shall, forthwith upon receipt of written notice of such defect, repair said defective area.

It is expressly understood and agreed that the warranty and obligations herein set forth are made and undertaken by warrantor to and for the benefit of the Department.

IN WITNESS WHEREOF, Warrantor have set his/her hands as of this

\_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

\_\_\_\_\_  
(Contractor)

ATTEST:

By: \_\_\_\_\_

\_\_\_\_\_

Title: \_\_\_\_\_

**ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS**

**SUPPLEMENTAL PERFORMANCE BOND  
1 OF 2**

KNOW ALL MEN BY THESE PRESENTS,

That we \_\_\_\_\_ as principal,

and \_\_\_\_\_ as surety, a corporation duly organized and existing under and by virtue of the laws of the State of

\_\_\_\_\_ and duly authorized to transact the business of surety in the State of Illinois, are jointly and severally held and bound unto the Illinois Department of

Transportation in the sum of \_\_\_\_\_ Dollars, for the payment of which we jointly and severally bind ourselves, our heirs and executors, administrators, successors and assigns firmly by these presents.

Whereas, the principal herein has, on the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, made and entered into a certain agreement with the State of Illinois, by and through the Illinois Department of Transportation, which agreement is more fully described as

\_\_\_\_\_ ,

Contract Number \_\_\_\_\_, underwhich agreement the principal agrees to furnish certain materials and to perform certain work which he agrees to do in accordance with the terms, conditions, and requirements as set out in said agreement, and whereas, in connection with said contract, the principal has executed a written warranty, a copy of which warranty is attached hereto and by this reference made a part hereof;

And, whereas, the principal has therein undertaken to warrant the work of cleaning and painting structural steel against any defects, as therein defined, for a period(s) of at least two years form the date(s) of final inspection of the project by the Engineer.

**ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS**

**SUPPLEMENTAL PERFORMANCE BOND  
2 OF 2**

NOW, THEREFORE, THE CONDITION OF THIS BOND IS SUCH THAT if the principal herein shall faithfully and truly observe and comply with the terms of such warranty and shall well and truly perform all matters and things by him/her undertaken to be performed under said warranty upon the terms proposed therein and shall do all things required of said principal by the laws of this state and shall indemnify and save the harmless the State of Illinois and Illinois Department of Transportation against any direct or indirect damages of every kind and description that shall be suffered or claimed to be suffered in connection with or arising out of the performance of the said warranty by the Contractor or subcontractors, then this obligation is to be void, otherwise to remain in full force and effect.

In no event shall the obligations under this bond be terminated without written consent of Illinois Department of Transportation.

Signed and sealed this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

SURETY \_\_\_\_\_ PRINCIPAL \_\_\_\_\_

BY \_\_\_\_\_ BY \_\_\_\_\_  
(Attorney-in-fact) (Official Capacity)

Countersigned:

\_\_\_\_\_  
(Resident Agent)                      Attest: \_\_\_\_\_  
(Secretary)

# SPECIAL PROVISIONS CHECK LIST

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		<b>County:</b>	<b>Cook</b>

√	Dir	File Name	Spec Title	Spec Dates
√	DES\	<a href="#">1048945R.DOC</a>	Maintenance of Roadways	E 9/30/85 R 11/1/96
	DES\	<a href="#">1078948R.DOC</a>	Tollway Permit and Bond	E 01/13/89
	DES\	<a href="#">1080301.doc</a>	Restriction on Working Days After a Completion Date	E 01/21/03 R 01/01/07
	DES\	<a href="#">1086587r.doc</a>	Failure to Complete the Work on Time	E 09/30/85 R 01/01/07
	DES\	<a href="#">1088949R.DOC</a>	Completion Date Plus Working Days	E 09/30/85 R 01/01/07
	DES\	<a href="#">1088951R.DOC</a>	Incentive Payment Plan	E 10/01/95 R 01/01/07
	DES\	<a href="#">2080101.doc</a>	RAP For Non-Porous Embankment and Backfill	E 04/01/01 R 01/01/07
	DES\	<a href="#">4020211.doc</a>	Aggregate Surface Course for Temporary Access	E 04/01/01 R 01/02/07
	DES\	<a href="#">4408955R.DOC</a>	Pavement Removal, Special	E 01/13/89 R 01/01/07
	DES\	<a href="#">5028956R.DOC</a>	Rock Excavation for Structures, Special	E 09/30/85 R 01/01/07
	DES\	<a href="#">5038957R.DOC</a>	Rustication Finish For Retaining Walls	E 05/01/90 R 01/01/07
	DES\	<a href="#">5501234R.DOC</a>	Storm Sewer Adjacent to or Crossing Water Main	E 02/01/96 R 01/01/07
	DES\	<a href="#">5508960R.DOC</a>	Storm Sewers & Sewer Connections to City of Chicago Sewers	E 09/30/85 R 01/01/07
	DES\	<a href="#">6008961R.DOC</a>	Slotted Drain	E 09/30/85 R 01/01/07
	DES\	<a href="#">6028962R.DOC</a>	Cleaning Existing Drainage Structures	E 09/30/85 R 12/01/11
	DES\	<a href="#">6068964R.DOC</a>	Concrete Curb, Type B (Modified)	E 09/30/85 R 01/01/07
	DES\	<a href="#">6068965R.doc</a>	Stabilized Median Surface	E 09/30/85 R 03/02/17
	DES\	<a href="#">6370499.doc</a>	Aggregate For Concrete Barrier (D-1)	E 03/11/04 R 01/24/08
	DES\	<a href="#">7016789.DOC</a>	Traffic Control & Protection (Arterials)	E 02/01/96 R 03/01/11
	DES\	<a href="#">9018967R.DOC</a>	Traffic Control Plan	E 09/30/85 R 01/01/07
	DES\	<a href="#">Adjustments-Reconstructs.doc</a>	Adjustments and Reconstructions	E 03/15/11
	DES\	<a href="#">AGG SUBGR IMPROVEMENT(D1).doc</a>	AGGREGATE SUBGRADE IMPROVEMENT (D1)	E 02/22/12 R 04/01/16
	DES\	<a href="#">Bit Coated Agg Slopewall.doc</a>	Bituminous Coated Aggregate Slopewall	E 01/01/07
	DES\	<a href="#">CA Backfill Trench Backfill Bedding (D1).doc</a>	Coarse Aggregate for Backfill, Trench Backfill and Bedding (D-1)	E 11/01/11 R 11/01/13
	DES\	<a href="#">Cofferdam (Type 1) (InStream_Wetland Work)(D-1).docx</a>	COFFERDAM (TYPE 1) (IN-STREAM/WETLAND WORK) (D-1)	E 01/01/19 R
	DES\	<a href="#">Conc Noise Abate Wall(D1).docx</a>	Concrete Noise Abatement Walls (Absorptive & Reflective)(Dist 1)	E 09/05/08 R 12/18/18
	DES\	<a href="#">Construction Layout Special For Resurfacing With ADA and Stand Alone ADA (D-1).docx</a>	Construction Layout Special for resurfacing with ada and stand alone ada (D1)	E 01/01/17 R 04/17/17
	DES\	<a href="#">CTA Flag Coordination.doc</a>	CTA Flagger and Coordination	E 05/14/98 R 08/27/09
	DES\	<a href="#">Detectable Warnings (Special) in City of Chicago (D-1).docx</a>	Detectable Warnings (Special) in City of Chicago	E 07/20/17
	DES\	<a href="#">Drain_Inlet_Prot_Undr_Traff(D1).doc</a>	DRAINAGE AND INLET PROTECTION UNDER TRAFFIC (D-1)	E 04/01/11 R 04/02/11
	DES\	<a href="#">Embankment I.doc</a>	EMBANKMENT I	E 03/01/11 R 11/01/13
	DES\	<a href="#">Embankment II.doc</a>	EMBANKMENT II	E 03/01/11 R 11/01/13
	DES\	<a href="#">ENG FIELD OFF TY A (SP).doc</a>	ENGINEER'S FIELD OFFICE TYPE A (SPECIAL)	E 12/01/11 R 05/01/13
	DES\	<a href="#">Friction Agg(D-1).doc</a>	FRICTION AGGREGATE (D-1)	E 01/01/11 R 04/26/16
	DES\	<a href="#">Grade Shape Shldr.doc</a>	Grading and Shaping Shoulders	E 12/28/01 R 01/01/07
	DES\	<a href="#">GTR Modified Binder(D-1).doc</a>	Ground Tire Rubber (GTR) Modified Asphalt Binder (D-1)	E 06/29/06 R 04/01/16

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	DES\	<a href="#">HMA Binder and Surface Course (D-1).docx</a>	HMA-Binder and Surface Course (D-1)	E 11/01/19
	DES\	<a href="#">Hot in Place Recycle.doc</a>	Pavement Rehabilitation by Hot In-Place Recycling	E 07/11/03 R 05/05/14
	DES\	<a href="#">LightwtCellularConcFill(D1).docx</a>	Lightweight Cellular Concrete Fill (D-1)	E 11/11/01 R 06/18/18
√	DES\	<a href="#">Pub Conv Sfty(D1).doc</a>	Public Convenience and Safety (D-1)	E 05/01/12 R 07/15/12
√	DES\	<a href="#">RAP-RAS(D1).doc</a>	Reclaimed Asphalt Pavement (RAP) and Reclaimed Asphalt Shingles (RAS) (D-1)	E 11/01/12 R 11/01/19
	DES\	<a href="#">Slipform Paving (D-1).doc</a>	SLIPFORM PAVING (D-1)	E 11/01/14
	DES\	<a href="#">Status Utility (D-1).doc</a>	STATUS OF UTILITIES (D-1)	E 06/01/2016
	DES\	<a href="#">TEMP PVMT.doc</a>	TEMPORARY PAVEMENT	E 03/01/03 R 04/10/08
	DES\	<a href="#">WINTERIZED TEMP ACCESS 3-5-12.doc</a>	WINTERIZED TEMPORARY ACCESS	E 01/01/12 R 03/05/12
<b><u>Bureau of Electrical Special Provisions</u></b>				
	ELE\	<a href="#">810.02-UNDERGROUND RACEWAYS.doc</a>	Underground Raceways	E 3/1/2015
	ELE\	<a href="#">Combination Controllor 2018.doc</a>	Combination Lighting Controller	E 2/1/2015 R 4/1/2018
	ELE\	<a href="#">Elec Serv Disc lgt sig 2012.doc</a>	ELECTRIC SERVICE DISCONNECT, LIGHTING AND TRAFFIC SIGNAL	E: 1/1/2012
	ELE\	<a href="#">Fiber Optic Cable SM 2013 v2.doc</a>	Fiber Optic Cable	E 3/15/2013
	ELE\	<a href="#">Fiber Optic Cable SM Micro 2018 v1.doc</a>	Fiber Optic Cable	E 2/1/18
	ELE\	<a href="#">Fiber Optic Cable Splice 2014 v1.doc</a>	Fiber Optic Cable	E 6/1/2014
	ELE\	<a href="#">General Electrical Provisions 2016 V3.doc</a>	General Electrical Requirements GPS	E 6/1/2016
	ELE\	<a href="#">Highmast Luminaire LED 2017 v2.docx</a>	Luminaire, Highmast, LED	E 4/1/17
	ELE\	<a href="#">HPS Underpass 2012.doc</a>	UNDERPASS LUMINAIRE, HPS, STAINLESS STEEL HOUSING	E 1/1/2012
	ELE\	<a href="#">Innerduct v4 2014.doc</a>	Wire and Cable	E 10/1/2014
	ELE\	<a href="#">Junction Box Embedded 2012.doc</a>	Junction Box Embedded in Structure	E 1/1/2012
	ELE\	<a href="#">Light Tower 2016 Galvanized AASHTO exception v2.doc</a>	LIGHT TOWER	E 4/1/2016
	ELE\	<a href="#">Lighting Controller SCADA 2012.doc</a>	Lighting Controller, Radio Control, Duplex, Console Type	E 1/1/2012
	ELE\	<a href="#">Lighting Maint 2017.doc</a>	Maintenance of Lighting Systems	E 3/1/2017
	ELE\	<a href="#">Luminaire 2012.doc</a>	Luminaire	E 1/1/2012
	ELE\	<a href="#">Luminaire LED 2017 v2.docx</a>	Luminaire, LED	E 1/1/17 R 4/1/18
	ELE\	<a href="#">Luminaire safety cable 2012.DOC</a>	Luminaire Safety Cable Assembly	E 1/1/2012
	ELE\	<a href="#">Microduct 2018.doc</a>	UNDERGROUND CONDUIT, MULTI-DUCT, 16MM MICRODUCTS	E 1/1/18
	ELE\	<a href="#">Microduct 2018 v2.doc</a>	UNDERGROUND CONDUIT, MULTI-DUCT, 16MM MICRODUCTS	E 10/1/18
	ELE\	<a href="#">Protect Underpass LightingSystem 2012.doc</a>	Protect & Maintain Underpass Luminaires	E 1/1/2012
	ELE\	<a href="#">Raceway Exposed 2012.DOC</a>	Exposed Raceways	E 1/1/2012
	ELE\	<a href="#">Service Connection 2012.doc</a>	Electric Utility Service Connection (ComEd)	E 1/1/2012
	ELE\	<a href="#">Service Install 2012.doc</a>	Electric Service Installation	E 1/1/2012
	ELE\	<a href="#">Temp light SingleLaneStg 2012.doc</a>	Temporary Lighting For Single Lane Staging	E 01/01/2012
	ELE\	<a href="#">Temp pole install 2012.DOC</a>	Temporary Wood Pole, Install Only	E 1/1/2012
	ELE\	<a href="#">Underpass Luminaire LED 2018 v2.docx</a>	Luminaire, Underpass, LED	E 1/1/17 R 8/1/18
	ELE\	<a href="#">Unit Duct 2012.DOC</a>	Unit Duct	E 1/01/2012
	ELE\	<a href="#">Wire Cable 2012.doc</a>	Wire and Cable	E 1/1/2012

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<u>Guide Bridge Special Provisions</u>				
	GBS\	<a href="#">gbsp04.doc</a>	Polymer Modified Portland Cement Mortar	E 6/7/94 R 04/01/16
	GBS\	<a href="#">gbsp12.doc</a>	Drainage System	E 6/10/94 R 6/24/15
	GBS\	<a href="#">gbsp13.doc</a>	High Load Multi-Rotational Bearings	E 10/13/88 R 04/01/16
	GBS\	<a href="#">gbsp14.doc</a>	Jack and Remove Existing Bearings	E 4/20/94 R 4/13/18
	GBS\	<a href="#">gbsp15.doc</a>	Three Sided Precast Concrete Structure	E 7/12/94 R 12/21/16
	GBS\	<a href="#">gbsp16.doc</a>	Jacking Existing Superstructure	E 1/11/93 R 4/13/18
	GBS\	<a href="#">gbsp17.doc</a>	Bonded Preformed Joint Seal	E 7/12/94 R 04/01/16
	GBS\	<a href="#">gbsp18.doc</a>	Modular Expansion Joint	E 5/19/94 R 12/29/14
	GBS\	<a href="#">gbsp21.doc</a>	Cleaning and Painting Contact Surfaces of Existing Steel Structures	E 5/15/91 R 4/13/18
√	GBS\	<a href="#">GBSP25.doc</a>	Cleaning and Painting Existing Steel Structures	E 10/02/01 R 04/22/16
√	GBS\	<a href="#">GBSP26.doc</a>	Containment and Disposal of Lead Paint Cleaning Residues	E 10/02/01 R 04/22/16
	GBS\	<a href="#">gbsp28.doc</a>	Deck Slab Repair	E 5/15/95 R 4/13/18
	GBS\	<a href="#">gbsp29.doc</a>	Bridge Deck Microsilica Concrete Overlay	E 5/15/95 R 10/20/17
	GBS\	<a href="#">gbsp30.doc</a>	Bridge Deck Latex Concrete Overlay	E 5/15/95 R 10/20/17
	GBS\	<a href="#">gbsp31.doc</a>	Bridge Deck HRM Concrete Overlay	E 1/21/00 R 3/1/19
	GBS\	<a href="#">gbsp33.doc</a>	Pedestrian Truss Superstructure	E 1/13/98 R 12/29/14
	GBS\	<a href="#">GBSP34.doc</a>	Concrete Wearing Surface	E 6/23/94 R 10/04/16
	GBS\	<a href="#">GBSP35.doc</a>	Silicone Bridge Joint Sealer	E 8/1/95 R 10/15/11
	GBS\	<a href="#">GBSP45.doc</a>	Bridge Deck Thin Polymer Overlay	E 05/07/97 R 02/06/13
	GBS\	<a href="#">GBSP51.doc</a>	Pipe Underdrains for Structures	E 5/17/00 R 01/22/10
√	GBS\	<a href="#">GBSP53.doc</a>	Structural Repair of Concrete	E 03/15/06 R 04/01/16
	GBS\	<a href="#">GBSP55.doc</a>	Erection of Curved Steel Structures	E 06/01/07 R
	GBS\	<a href="#">GBSP56.doc</a>	Setting Piles In Rock	E 11/14/96 R 04/01/16
	GBS\	<a href="#">GBSP59.docx</a>	Diamond Grinding and Surface Testing Bridge Sections	E 12/6/04 R 12/21/16
	GBS\	<a href="#">GBSP60.doc</a>	Containment and Disposal of Non Lead Paint Cleaning Residues	E 11/25/04 R 04/22/16
	GBS\	<a href="#">GBSP61.doc</a>	Slipform Parapet	E 06/01/07 R 03/01/19
√	GBS\	<a href="#">gbsp67.doc</a>	Structural Assessment Reports for Contractor's Means and Methods	E 03/06/09 R 10/05/15
	GBS\	<a href="#">GBSP71.doc</a>	Aggregate Column Ground Improvement	E 01/15/09 R 10/15/11
	GBS\	<a href="#">GBSP72.doc</a>	Bridge Deck Fly Ash or Ground Granulated Blast-Furnace Concrete Overlay	E 1/18/11 R 3/1/19
	GBS\	<a href="#">GBSP75.doc</a>	Bond Breaker for Prestressed Concrete Bulb-T Beams	E 04/19/12 R
	GBS\	<a href="#">GBSP77.doc</a>	Weep Hole Drains for Abutments, Wingwalls, Retaining Walls and Culverts	E 04/19/12 R 10/22/13
√	GBS\	<a href="#">GBSP78.doc</a>	Bridge Deck Construction	E 10/22/13 R 12/21/16
	GBS\	<a href="#">GBSP79.doc</a>	Bridge Deck Grooving (Longitudinal)	E 12/29/14 R 4/1/16
	GBS\	<a href="#">GBSP81.docx</a>	Membrane Waterproofing for buried Structures	E 10/04/16 R 3/1/19
	GBS\	<a href="#">GBSP82.docx</a>	Metallizing of Structural Steel	E 10/4/16 R 10/20/17
√	GBS\	<a href="#">GBSP83.docx</a>	Hot Dip Galvanizing for Structural Steel	E 6/22/99 R 10/20/17
	GBS\	<a href="#">GBSP85.doc</a>	Micropiles	E 04/19/96 R 10/5/15



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	GBS\	<a href="#">GBSP86.doc</a>	Drilled Shafts	E 10/05/15 R 10/04/16
	GBS\	<a href="#">GBSP87.doc</a>	Lightweight Cellular Concrete Fill	E 11/11/01 R 04/01/16
	GBS\	<a href="#">GBSP88.doc</a>	Corrugated Structural Plate Structures	E 4/22/16 R 4/13/18
	GBS\	<a href="#">GBSP89.docx</a>	Preformed Pavement Joint Seal	E 10/4/16 R 3/1/19
	GBS\	<a href="#">gbsp90.doc</a>	Three Sided Precast Concrete Structure	E 12/21/16 R 4/13/18
	GBS\	<a href="#">GBSP91.docx</a>	Crosshole Sonic Logging Testing of Drilled Shafts	E 12/21/16 R
	GBS\	<a href="#">GBSP92.docx</a>	Thermal Integrity Testing of Drilled Shafts	E 04/20/16 R
	GBS\	<a href="#">GBSP93.docx</a>	Preformed Bridge Joint Seal	E 12/21/16 R 3/1/19
√	GBS\	<a href="#">GBSP94.doc</a>	Warranty for Cleaning and Painting Steel Structures	E 3/3/00 R 11/24/04
	GBS\	<a href="#">GBSP95.doc</a>	Bituminous Coated Aggregate Slopewall	E 3/21/97 R 4/13/18
√	GBS\	<a href="#">index.doc</a>	GBSP Check Sheet	

### Bridge and Roadway Maintenance Special Provisions

	MNT1\	<a href="#">ADJRCK.doc</a>	Adjust Rocker and Sole Plate	E 01/23/95 R 01/01/07
	MNT1\	<a href="#">APPR_SLAB_REM&amp;REPL.doc</a>	APPROACH SLAB REMOVAL & REPLACEMENT	E 12/28/01 R 08/01/15
	MNT1\	<a href="#">APSLRP.DOC</a>	Approach Slab Repair	E 03/13/97 R 09/25/09
	MNT1\	<a href="#">Bmstrt.doc</a>	Beam Straightening	E 12/06/94 R 01/01/07
	MNT1\	<a href="#">Brgpad.doc</a>	Bearing Pad Adjustment	E 07/27/94 R 01/01/07
	MNT1\	<a href="#">Bridge_Drain_Sys_Repair.doc</a>	BRIDGE DRAINAGE SYSTEM REPAIRS	E 11/16/10 R 09/15/11
	MNT1\	<a href="#">BRR.doc</a>	Bridge Rail Removal	E 04/15/99 R 01/01/07
	MNT1\	<a href="#">Cleaning Drainage System.doc</a>	Cleaning Drainage System	E 06/21/04 R 08/30/10
	MNT1\	<a href="#">Concscar.doc</a>	CONCRETE BRIDGE DECK SCARIFICATION [w/new HMA overlay w/o WMS]	E 11/22/02 R 01/01/07
	MNT1\	<a href="#">CWS.DOC</a>	Concrete Wearing Surface [Use on Slab Bridges - for PPC Dk Bms use GBSP34]	E 06/23/94 R 01/01/07
	MNT1\	<a href="#">Debris Removal.doc</a>	DEBRIS REMOVAL	E 06/27/02
	MNT1\	<a href="#">dowelrp.doc</a>	Dowel Repair	E 07/27/94 R 01/01/07
	MNT1\	<a href="#">EPXINJ.DOC</a>	Epoxy Injection	E 12/06/94 R 01/01/07
	MNT1\	<a href="#">Fldrex.doc</a>	Floor Drain Extension	E 02/01/96 R 04/07/98
	MNT1\	<a href="#">Grade Shape Foreslope.doc</a>	GRADING AND SHAPING FORESLOPES	E 04/01/08
	MNT1\	<a href="#">Groutrp.doc</a>	Grout Repair	E 07/27/94 R 01/01/07
	MNT1\	<a href="#">HMArm1.doc</a>	Hot-Mix Asphalt Surface Removal Complete	E 12/08/93 R 01/01/07
	MNT1\	<a href="#">HMArm2.DOC</a>	Hot-Mix Asphalt Surface Removal [Use w/ PPC Deck Beams]	E 07/27/94 R 01/01/07
	MNT1\	<a href="#">HMArm3.doc</a>	Hot-Mix Asphalt Surface Removal (Deck)	E 04/29/96 R 01/01/07
	MNT1\	<a href="#">HMArm4.doc</a>	Hot-Mix Asphalt Surface Removal [Use w/Deck Slab Repairs]	E 07/27/94 R 01/01/07
	MNT1\	<a href="#">Jckcrb.doc</a>	Jacking and Cribbing	E 10/05/99 R 01/01/07
	MNT1\	<a href="#">JKRPBR.DOC</a>	Jack and Reposition Bearings	E 12/15/93 R 07/15/96
	MNT1\	<a href="#">Keep Toll Open To Traffic.doc</a>	Keeping the Tollway Open to Traffic	E 03/22/96 R 10/12/10
	MNT1\	<a href="#">Keywyrp.doc</a>	Keyway Repair	E 07/27/94 R 08/12/11
	MNT1\	<a href="#">NIGHT_WZ_LIGHT(D1).doc</a>	NIGHTTIME WORK ZONE LIGHTING (D1)	E 11/01/08 R 06/15/10
	MNT1\	<a href="#">PINLNK.DOC</a>	Pin and Link Replacement	E 11/20/95 R 06/20/96
	MNT1\	<a href="#">PINRR.DOC</a>	Pin Replacement	E 06/11/96 R 06/20/96
	MNT1\	<a href="#">plexdd.doc</a>	Plug Existing Deck Drains	E 11/06/96 R 01/01/07
	MNT1\	<a href="#">PPROSH.DOC</a>	Permanent Protective Shield System	E 10/03/96 R 06/27/08

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MNT1\	<a href="#">PrGrAng.doc</a>	Pressure Grouting Angles	E 06/01/93	R 01/01/07
MNT1\	<a href="#">reancr.doc</a>	Re-Anchor Existing Expansion Joint Angles	E 02/20/98	
MNT1\	<a href="#">REBAR.DOC</a>	Cleaning and Painting Exposed Rebar	E 03/20/97	R 01/01/07
MNT1\	<a href="#">RECIbm.doc</a>	Removal of Existing Concrete I-Beam	E 07/09/98	R 05/05/99
MNT1\	<a href="#">REXPPCDB.doc</a>	Removal of Existing Precast Prestressed Concrete Deck Beams	E 10/28/98	R 01/01/07
MNT1\	<a href="#">RREXRL.DOC</a>	Removing and Re-Erecting Existing Railing	E 10/31/96	R 01/01/07
MNT1\	<a href="#">Scarify.doc</a>	Concrete Bridge Deck Scarification	E 05/15/95	R 01/01/07
MNT1\	<a href="#">SteelRem.doc</a>	Structural Steel Removal	E 10/03/97	R 01/01/07
MNT1\	<a href="#">steelrep.doc</a>	Structural Steel Repair	E 12/15/00	R 01/01/07
MNT1\	<a href="#">STRBM.DOC</a>	Straighten Bent Members	E 01/23/97	R 06/19/06
MNT1\	<a href="#">StructRepConcr(SP).doc</a>	STRUCTURAL REPAIR OF CONCRETE (SPECIAL)	E 04/02/07	
MNT1\	<a href="#">Tmpsh1.doc</a>	Temporary Shoring & Cribbing [when req'd for damaged beam replacement; requires SE]	E 06/16/92	R 03/11/03
MNT1\	<a href="#">Tmpsh1a.doc</a>	Temporary Shoring & Cribbing [when "May be req'd" for or Day Labor beam replacement; No SE req'd]	E 06/16/92	R 04/22/03
MNT1\	<a href="#">Tmpsh2.doc</a>	Temporary Shoring and Cribbing [for use w/longitudinal joint. closure on slab bridges]	E 07/27/94	R 03/11/03
MNT1\	<a href="#">TMPSH3.DOC</a>	Temporary Shoring and Cribbing [Use during Pile Repair]	E 07/16/92	R 03/11/03
MNT1\	<a href="#">TMPSH4.DOC</a>	Temporary Shoring and Cribbing [Use to support Beams over substructure repair]	E 7/16/92	R 10/17/11
MNT1\	<a href="#">TMPSH5.DOC</a>	Temporary Shoring and Cribbing [Support Slab Bridge during Joint reconstruction]	E 07/16/92	R 03/11/03
MNT1\	<a href="#">TMPSH6.DOC</a>	Temporary Shoring and Cribbing [support effected beam during beam end repairs]	E 10/22/04	R 11/09/04
MNT1\	<a href="#">TMPSLB.DOC</a>	Temporary Slab Support System [use with beam replacement]	E 07/27/94	R 03/11/03
MNT1\	<a href="#">TMPSP1.DOC</a>	Temporary Support System [Use for Pin & Link Replacement]	E 11/20/95	R 04/04/97
MNT1\	<a href="#">TMPSP2.DOC</a>	Temporary Support System [Use if Pins over RR]	E 11/20/95	R 03/11/03
MNT1\	<a href="#">Work_Zone_Traff_Ctrl(D1-M).doc</a>	WORK ZONE TRAFFIC CONTROL (D-1 MAINTENANCE)	E 05/30/96	R 06/15/10
MNT2\	<a href="#">COARSE SAND PLACEMENT.doc</a>	Coarse Sand Placement	E 02/07/07	
MNT2\	<a href="#">GENERAL REQUIREMENTS FOR WEED CONTROL SPRAYING.doc</a>	General Requirements For Weed Control Spraying	E 02/07/07	
MNT2\	<a href="#">MULCH PLACEMENT FOR WOODY PLANTS.doc</a>	Mulch Placement For Woody Plants	E 02/07/07	
MNT2\	<a href="#">Pruning-safety.doc</a>	Pruning For Safety And Equipment Clearance	E 10/31/06	
MNT2\	<a href="#">SELECTIVE CLEARING.doc</a>	Selective Clearing	E 02/08/07	
MNT2\	<a href="#">WEED CONTROL PRE-EMERGENT GRANULAR HERBICIDE.doc</a>	Weed Control, Pre-Emergent Granular Herbicide	E 07/29/02	R 02/07/07
MNT2\	<a href="#">WEED CONTROL, NON-SELECTIVE AND NON-RESIDUAL.doc</a>	Weed Control, Non-Selective And Non-Residual	E 02/07/07	
MNT2\	<a href="#">WEED CONTROL, TEASEL (POUND).doc</a>	Weed Control, Teasel (Pound)	E 02/07/07	

**Bureau of Traffic Special Provisions**

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	TRF\	<a href="#">701.01T-KEEPING THE EXPRESSWEAY OPEN TO TRAFFIC.doc</a>	Keeping The Expressway Open To Traffic	E 03/22/96 R 01/21/15
√	TRF\	<a href="#">701.02T-FAILURE TO OPEN TRAFFIC LANES TO TRAFFIC.docx</a>	Failure To Open Traffic Lanes To Traffic	E 03/22/96 R 02/09/05
	TRF\	<a href="#">701.03T-TRAFFIC CONTROL AND PROTECTION (EXPRESSWAYS).doc</a>	Traffic Control And Protection (Expressways)	E 03/08/96 R 04/01/19
	TRF\	<a href="#">701.04T-TRAFFIC CONTROL SURVIELLANCE (EXPRESSWAYS).doc</a>	Traffic Control Surveillance (Expressways)	E 10/25/95 R 01/21/15
√	TRF\	<a href="#">701.06T-TEMPORARY INFORMATION SIGNING.docx</a>	Temporary Information Signing	E 11/13/96 R 01/02/07
	TRF\	<a href="#">701.07T-TRAFFIC CONTROL FOR WORK ZONE AREAS.docx</a>	Traffic Control For Work Zone Areas	E 09/14/95 R 01/01/07
	TRF\	<a href="#">701.08Ta-KEEPING ARTERIAL ROADWAYS OPEN TO TRAFFIC (LANE CLOSURES ONLY).docx</a>	Keeping Arterial Roadways Open To Traffic (Lane Closures Only)	E 01/22/03 R 08/10/17
	TRF\	<a href="#">701.08Tb-KEEPING ARTERIAL ROADWAYS OPEN TO TRAFFIC (WITH 15 MIN FULL STOPS).docx</a>	Keeping Arterial Roadways Open To Traffic (With 15 MIN Full Stops)	E 01/22/03 R 08/10/17
	TRF\	<a href="#">701.15T-SPEED DISPLAY TRAILER (D1).docx</a>	Speed Display Trailer (D1)	E 4/01/15; R 1/1/17
	TRF\	<a href="#">720.01TS-MAST ARM SIGN PANELS.docx</a>	Mast Arm Sign Panels	E 05/22/02 R 07/01/15
	TRF\	<a href="#">720.02TS-SIGN SHOP DRAWING SUBMITTAL.docx</a>	Sign Shop Drawing Submittal	E 01/22/13 R 07/01/15
	TRF\	<a href="#">733.09T-OVERHEAD SIGN STRUCTURE BRIDGE MOUNTED.docx</a>	Overhead Sign Structure - Bridge Mounted	E 07/01/15 R 3/1/2017
	TRF\	<a href="#">780.01T-45 MIL HOT SPRAY THERMOPLASTIC PAVEMENT MARKING.docx</a>	45 Mil Hot Spray Thermoplastic Pavement Marking	E 02/28/94 R 12/18/12
	TRF\	<a href="#">800.01TS-TRAFFIC SIGNAL GENERAL REQUIREMENTS.docx</a>	Traffic Signal General Requirements	E 05/22/02 R 03/25/16
	TRF\	<a href="#">800.02TS-OPTIMIZE TRAFFIC SIGNAL SYSTEM.docx</a>	Optimize Traffic Signal System	E 05/22/02 R 07/01/15
	TRF\	<a href="#">800.03TS-RE-OPTIMIZE TRAFFIC SIGNAL SYSTEM.docx</a>	Re-Optimize Traffic Signal System	E 05/22/02 R 07/01/15
	TRF\	<a href="#">805.01TS-SERVICE INSTALLATION (TRAFFIC SIGNALS).docx</a>	Service Installation (Traffic Signals)	E 05/22/02 R 06/15/16
	TRF\	<a href="#">806.01TS-GROUNDING OF TRAFFIC SIGNAL SYSTEMS.docx</a>	Grounding Of Traffic Signal Systems	E 05/22/02 R 07/01/15
	TRF\	<a href="#">810.01TS-COILABLE NON-METALLIC CONDUIT.docx</a>	Coilable Non-Metallic Conduit	E 05/22/02 R 07/01/15
	TRF\	<a href="#">810.02TS-UNDERGROUND RACEWAYS.docx</a>	Underground Raceways	E 05/22/02 R 07/01/15
	TRF\	<a href="#">810.03TS-ROD AND CLEAN EXISTING CONDUIT.docx</a>	Rod And Clean Existing Conduit	E 01/01/15 R 07/01/15
	TRF\	<a href="#">814.01TS-HANDHOLES.docx</a>	Handholes	E 01/01/02 R 07/01/18
	TRF\	<a href="#">817.02TS-FIBER OPTIC TRACER CABLE.docx</a>	Fiber Optic Tracer Cable	E 05/22/02 R 07/01/15
	TRF\	<a href="#">850.01TS-MAINTENANCE OF EXISTING TRAFFIC SIGNAL AND FLASHING BEACON INSTALLATION.docx</a>	Maintenance Of Existing Traffic Signal Installation	E 05/22/02 R 07/01/15
	TRF\	<a href="#">851.01TS-TRAFFIC SIGNAL PAINTING.docx</a>	Traffic Signal Painting	E 05/22/02 R 07/01/15
	TRF\	<a href="#">857.01TS-FULL-ACTUATED CONTROLLER (SPECIAL).docx</a>	Full-Actuated Controller (Special)	E 09/26/95 R 07/01/18

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TRF\	<a href="#">857.02TS-FULL-ACTUATED CONTROLLER AND CABINET.docx</a>	Full-Actuated Controller And Cabinet	E 01/01/02 R 07/01/18
TRF\	<a href="#">857.03TS-RAILROAD, FULL-ACTUATED CONTROLLER AND CABINET.docx</a>	Railroad, Full-Actuated Controller And Cabinet	E 01/01/02 R 07/01/18
TRF\	<a href="#">860.01TS-MASTER CONTROLLER.docx</a>	Master Controller	E 05/22/02 R 07/01/15
TRF\	<a href="#">862.01TS-UNINTERRUPTABLE POWER SUPPLY, SPECIAL.docx</a>	Uninterruptable Power Supply, Special	E 01/01/13 R 05/19/16
TRF\	<a href="#">862.02TS-UNINTERRUPTABLE POWER SUPPLY, GROUND MOUNTED.docx</a>	Uninterruptable Power Supply, Ground Mounted	E 01/01/12 R 07/01/15
TRF\	<a href="#">871.01TS-FIBER OPTIC CABLE.docx</a>	Fiber Optic Cable	E 05/22/02 R 07/01/15
TRF\	<a href="#">873.01TS-ELECTRIC CABLE.docx</a>	Electric Cable	E 05/22/02 R 07/01/15
TRF\	<a href="#">873.02TS-GROUNDING EXISTING HANDHOLE FRAME AND COVER.docx</a>	Grounding Existing Handhole Frame And Cover	E 05/22/02 R 07/01/15
TRF\	<a href="#">873.03TS-EVP SYSTEM LINE SENSOR CABLE, NO. 20 3C.docx</a>	Emergency Vehicle Priority System Line Sensor Cable, No. 20 3/C	E 01/01/13 R 07/01/15
TRF\	<a href="#">873.04TS-RAILROAD INTERCONNECT CABLE.docx</a>	Railroad Interconnect Cable	E 05/22/02 R 07/01/15
TRF\	<a href="#">875.01TS-TRAFFIC SIGNAL POST.docx</a>	Traffic Signal Post	E 05/22/02 R 07/01/15
TRF\	<a href="#">876.01TS-PEDESTRIAN PUSH-BUTTON POST.docx</a>	Pedestrian Push-Button Post	E 05/22/02 R 07/01/15
TRF\	<a href="#">877.01TS-MAST ARM ASSEMBLY AND POLE.docx</a>	Mast Arm Assembly And Pole	E 05/22/02 R 07/01/15
TRF\	<a href="#">878.01TS-CONCRETE FOUNDATIONS.docx</a>	Concrete Foundations	E 05/22/02 R 07/01/15
TRF\	<a href="#">878.02TS-REMOVE AND REPLACE ANCHOR BOLTS.docx</a>	Remove And Replace Anchor Bolts	E 01/01/14 R 07/01/15
TRF\	<a href="#">880.01TS-LED SIGNAL HEAD AND OPTICALLY PROGRAMMED LED SIGNAL HEAD.docx</a>	Light Emitting Diode (Led) Signal Head And Optically Programmed Led Signal Head	E 05/22/02 R 07/01/15
TRF\	<a href="#">880.02TS-FLASHING BEACON INSTALLATION, RELOCATION AND REMOVAL.docx</a>	Flashing Beacon Installation, Relocation And Removal	E 01/01/07 R 07/01/15
TRF\	<a href="#">881.01TS-LED PEDESTRIAN SIGNAL HEAD.docx</a>	Light Emitting Diode (Led) Pedestrian Signal Head	E 05/22/02 R 07/01/15
TRF\	<a href="#">882.01TS-TRAFFIC SIGNAL BACKPLATE.docx</a>	Traffic Signal Backplate	E 05/22/02 R 07/01/15
TRF\	<a href="#">886.01TS-DETECTOR LOOP.docx</a>	Detector Loop	E 05/22/02 R 07/01/18
TRF\	<a href="#">886.02TS-DETECTOR LOOP REPLACEMENT AND OR INSTALLATION.docx</a>	Detector Loop Replacement And/Or Installation (Roadway Grinding, Resurfacing, & Patching Operations)	E 01/01/85 R 01/05/16
TRF\	<a href="#">886.03TS-RADAR VEHICLE DETECTION SYSTEM.docx</a>	Radar Vehicle Detection System	E 07/01/15 R 05/09/17
TRF\	<a href="#">887.01TS-EMERGENCY VEHICLE PRIORITY SYSTEM.docx</a>	Emergency Vehicle Priority System	E 05/22/02 R 07/01/15
TRF\	<a href="#">887.02TS-RELOCATE EXISTING EVP SYSTEM, DETECTOR UNIT.docx</a>	Relocate Existing Emergency Vehicle Priority System, Detector Unit	E 01/01/02 R 07/01/15
TRF\	<a href="#">887.03TS-RELOCATE EXISTING EVP SYSTEM, PHASING UNIT.docx</a>	Relocate Existing Emergency Vehicle Priority System, Phasing Unit	E 01/01/02 R 07/01/15
TRF\	<a href="#">887.04TS-CONFIRMATION BEACON.docx</a>	Confirmation Beacon	E 01/01/02 R 07/01/15
TRF\	<a href="#">888.01TS-PEDESTRIAN PUSH-BUTTON.docx</a>	Pedestrian Push-Button	E 05/22/02 R 07/01/15
TRF\	<a href="#">888.02TS-ACCESSIBLE PEDESTRIAN SIGNALS.docx</a>	Accessible Pedestrian Signals	E 04/01/03 R 07/01/15

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TRF\	<a href="#">890.01TS-TEMPORARY TRAFFIC SIGNAL INSTALLATION.docx</a>	Temporary Traffic Signal Installation	E 05/22/02 R 01/01/17
TRF\	<a href="#">890.02TS-TEMPORARY TRAFFIC SIGNAL TIMING.docx</a>	Temporary Traffic Signal Timing	E 05/22/02 R 07/01/15
TRF\	<a href="#">891.01TS-ILLUMINATED SIGN, LED.docx</a>	Illuminated Sign, Led	E 05/22/02 R 07/01/15
TRF\	<a href="#">891.02TS-LED INTERNALLY ILLUMINATED STREET NAME SIGN.docx</a>	Led Internally Illuminated Street Name Sign	E 05/22/02 R 07/01/18
TRF\	<a href="#">895.01TS-MODIFY EXISTING CONTROLLER CABINET.docx</a>	Modify Existing Controller Cabinet	E 05/22/02 R 07/01/15
TRF\	<a href="#">895.02TS-REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT.docx</a>	Remove Existing Traffic Signal Equipment	E 05/22/02 R 07/01/15
TRF\	<a href="#">895.03TS-MODIFY EXISTING TYPE D FOUNDATION.docx</a>	Modify Existing Type "D" Foundation	E 01/01/02 R 07/01/15
TRF\	<a href="#">895.04TS-REBUILD EXISTING HANDHOLE.docx</a>	Rebuild Existing Handhole	E 01/01/02 R 07/01/15
TRF\	<a href="#">895.05TS-REBUILD EXISTING HANDHOLE TO HEAVY-DUTY HANDHOLE.docx</a>	Rebuild Existing Handhole To Heavy-Duty Handhole	E 01/01/02 R 07/01/15
TRF\	<a href="#">895.06TS-RELOCATE EXISTING PEDESTRIAN PUSH-BUTTON.docx</a>	Relocate Existing Pedestrian Push-Button	E 08/04/17

**FOLLOWING ARE THE CURRENT BDE SPECIAL PROVISIONS ISSUED BY THE CENTRAL BUREAU OF DESIGN AND ENVIRONMENT. PRELIMINARY AND FINAL SPECIAL PROVISIONS THAT ARE DISTRIBUTED FOR DISTRICT OR OUTSIDE AGENCY REVIEW SHOULD INCLUDE A COPY OF EACH APPLICABLE BDE SPECIAL PROVISION. FINAL SUBMITTAL TO THE CENTRAL OFFICE SHOULD ONLY INCLUDE THE BDE SPECIAL PROVISION CHECK SHEET WITH THE APPLICABLE SPECIAL PROVISIONS CHECKED**

	ZD&E\	<a href="#">20338.doc</a>	TRAINING SPECIAL PROVISIONS	E 10/15/75
	ZD&E\	<a href="#">34261.doc</a>	RAILROAD PROTECTIVE LIABILITY INSURANCE	E 12/01/86 R 01/01/06
	ZD&E\	<a href="#">50261.doc</a>	BUILDING REMOVAL - CASE I (NON-FRIABLE AND FRIABLE ASBESTOS ABATEMENT)	E 09/01/90 R 04/01/10
	ZD&E\	<a href="#">50481.doc</a>	BUILDING REMOVAL - CASE II (NON-FRIABLE ASBESTOS ABATEMENT)	E 09/01/90 R 04/01/10
	ZD&E\	<a href="#">50491.doc</a>	BUILDING REMOVAL - CASE III (FRIABLE ASBESTOS ABATEMENT)	E 09/01/90 R 04/01/10
	ZD&E\	<a href="#">50531.doc</a>	BUILDING REMOVAL - CASE IV (NO ASBESTOS)	E 09/01/90 R 04/01/10
√	ZD&E\	<a href="#">80029.docx</a>	DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION (BDE)	E 09/01/00 R 03/2/19
	ZD&E\	<a href="#">80045.doc</a>	MATERIAL TRANSFER DEVICE	E 06/15/99 R 08/01/14
	ZD&E\	<a href="#">80071.doc</a>	WORKING DAYS	E 01/01/02
	ZD&E\	<a href="#">80099.doc</a>	ACCESSIBLE PEDESTRIAN SIGNALS (APS)	E 04/01/03 R 01/01/14
	ZD&E\	<a href="#">80127.doc</a>	STEEL COST ADJUSTMENT	E 04/02/04 R 08/01/17
	ZD&E\	<a href="#">80157.docx</a>	RAILROAD PROTECTIVE LIABILITY INSURANCE (5 and 10)	E 01/01/06
	ZD&E\	<a href="#">80165.doc</a>	MOISTURE CURED URETHANE PAINT SYSTEM	E 11/01/06 R 01/01/10
	ZD&E\	<a href="#">80173.doc</a>	BITUMINOUS MATERIALS COST ADJUSTMENTS	E 11/2/06 R 08/01/17
	ZD&E\	<a href="#">80192.doc</a>	AUTOMATED FLAGGER ASSISTANCE DEVICES	E 01/01/08

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	ZD&E\	<a href="#">80198.doc</a>	COMPLETION DATE (VIA CALENDAR DAYS)	E 04/01/08
	ZD&E\	<a href="#">80199.doc</a>	COMPLETION DATE (VIA CALENDAR DAYS) PLUS WORKING DAYS	E 04/01/08
	ZD&E\	<a href="#">80229.doc</a>	FUEL COST ADJUSTMENT	E 04/01/09 R 08/01/17
	ZD&E\	<a href="#">80241.doc</a>	BRIDGE DEMOLITION DEBRIS	E 07/01/09
√	ZD&E\	<a href="#">80261.doc</a>	CONSTRUCTION AIR QUALITY-DIESEL RETROFIT	E 06/01/10 R 11/01/14
	ZD&E\	<a href="#">80274.doc</a>	AGGREGATE SUBGRADE IMPROVEMENT	E 04/01/12 R 04/01/16
	ZD&E\	<a href="#">80277.doc</a>	CONCRETE MIX DESIGN - DEPARTMENT PROVIDED	E 01/01/12 R 04/01/16
	ZD&E\	<a href="#">80288.doc</a>	WARM MIX ASPHALT	E 01/01/12 R 04/01/16
	ZD&E\	<a href="#">80293.doc</a>	CONCRETE BOX CULVERTS WITH SKEWS > 30 DEGREES AND DESIGN FILLS < 5 FEET	E 04/01/12 R 07/01/16
√	ZD&E\	<a href="#">80298.doc</a>	TEMPORARY PAVEMENT MARKING	E 04/01/16 R 04/01/17
	ZD&E\	<a href="#">80300.doc</a>	PREFORMED PLASTIC PAVEMENT MARKING TYPE D - INLAID	E 04/01/12 R 04/01/16
√	ZD&E\	<a href="#">80302.doc</a>	WEEKLY DBE TRUCKING REPORTS	E 06/02/12 R 04/02/15
	ZD&E\	<a href="#">80304.doc</a>	GROOVING FOR RECESSED PAVEMENT MARKINGS	E 11/01/12 R 11/01/17
	ZD&E\	<a href="#">80306.docx</a>	RECLAIMED ASPHALT PAVEMENT AND RECLAIMED ASPHALT SHINGLES	E 11/01/12 R 07/02/19
	ZD&E\	<a href="#">80311.doc</a>	CONCRETE END SECTIONS FOR PIPE CULVERTS	E 01/01/13 R 04/01/16
	ZD&E\	<a href="#">80317.docx</a>	SURFACE TESTING OF HOT-MIX ASPHALT OVERLAYS	E 01/01/13 R 08/01/19
	ZD&E\	<a href="#">80318.doc</a>	TRAVERSABLE PIPE GRATE FOR CONCRETE END SECTIONS	E 01/01/13 R 01/01/18
√	ZD&E\	<a href="#">80328.doc</a>	PROGRESS PAYMENTS	E 11/02/13
	ZD&E\	<a href="#">80336.doc</a>	LONGITUDINAL JOINT AND CRACK PATCHING	E 04/01/14 R 04/01/16
	ZD&E\	<a href="#">80340.doc</a>	SPEED DISPLAY TRAILER	E 04/02/14 R 01/01/17
	ZD&E\	<a href="#">80347.docx</a>	HOT MIX ASPHALT - PAY FOR PERFORMANCE USING PERCENT WITHIN LIMITS -JOBSITE SAMPLING	E 11/01/14 R 07/02/19
	ZD&E\	<a href="#">80349.doc</a>	PAVEMENT MARKING BLACKOUT TAPE	E 11/01/14 R 04/01/16
√	ZD&E\	<a href="#">80359.docx</a>	PORTLAND CEMENT CONCRETE BRIDGE DECK CURING	E 04/01/15 R 11/01/19
√	ZD&E\	<a href="#">80371.doc</a>	PAVEMENT MARKING REMOVAL	E 07/01/16
	ZD&E\	<a href="#">80378.docx</a>	DOWEL BAR INSERTER (BDE)	E 01/01/17 R 01/01/18
	ZD&E\	<a href="#">80383.docx</a>	HOT MIX ASPHALT – QUALITY CONTROL FOR PERFORMANCE	E 04/01/17 R 07/02/19
√	ZD&E\	<a href="#">80384.docx</a>	COMPENSABLE DELAY COSTS (BDE)	E 06/02/17 R 04/01/19
	ZD&E\	<a href="#">80387.doc</a>	CONTRAST PREFORMED PLASTIC PAVEMENT MARKING	E 11/01/17
√	ZD&E\	<a href="#">80388.doc</a>	EQUIPMENT PARKING AND STORAGE	E 11/01/17
√	ZD&E\	<a href="#">80389.doc</a>	PORTLAND CEMENT CONCRETE	E 11/01/17
√	ZD&E\	<a href="#">80390.doc</a>	PAYMENTS TO SUBCONTRACTORS	E 11/02/17
√	ZD&E\	<a href="#">80391.docx</a>	SUBCONTRACTOR MOBILIZATION PAYMENTS (BDE)	E 11/02/17 R 04/01/19
√	ZD&E\	<a href="#">80392.doc</a>	LIGHTS ON BARRICADES	E 01/01/18

# SPECIAL PROVISIONS CHECK LIST

## Generated - 7/26/19 Revised – 8/9/19

Designer:  
Contract No.:

WSP USA  
E-1-525

FAP:  
Section:  
County:

1388  
11-E1525-00-BR  
Cook

	ZD&E\	<a href="#">80393.docx</a>	MANHOLES, VALVE VAULTS, AND FLAT SLAB TOPS (BDE)	E 01/01/18 R 03/01/19
	ZD&E\	<a href="#">80394.doc</a>	METAL FLARED END SECTION FOR PIPE CULVERTS	E 01/01/18 R 04/01/18
	ZD&E\	<a href="#">80395.doc</a>	SLOPED METAL END SECTION FOR PIPE CULVERTS	E 01/01/18
	ZD&E\	<a href="#">80397.docx</a>	SUBCONTRACTOR AND DBE PAYMENT REPORTING	E 04/02/18
	ZD&E\	<a href="#">80398.docx</a>	HOT-MIX ASPHALT – LONGITUDINAL JOINT SEALANT	E 08/01/18 R 11/01/19
	ZD&E\	<a href="#">80400.docx</a>	MAST ARM ASSEMBLY AND POLE	E 08/01/18
	ZD&E\	<a href="#">80402.docx</a>	DISPOSAL FEES	E 11/01/18
	ZD&E\	<a href="#">80403.docx</a>	TRAFFIC BARRIER TERMINAL, TYPE 1 SPECIAL	E 11/01/18
	ZD&E\	<a href="#">80404.docx</a>	COARSE AGGREGATE QUALITY FOR MICRO-SURFACING AND CAPE SEALS	E 01/01/19
	ZD&E\	<a href="#">80405.docx</a>	ELASTOMERIC BEARINGS	E 01/01/19
√	ZD&E\	<a href="#">80406.docx</a>	HOT-MIX ASPHALT – MIXTURE DESIGN VERIFICATION AND PRODUCTION (MODIFIED FOR I-FIT PROJECTS)	E 01/01/19 R 11/01/19
	ZD&E\	<a href="#">80407.docx</a>	REMOVAL AND DISPOSAL OF REGULATED SUBSTANCES	E 01/01/19
	ZD&E\	<a href="#">80408.docx</a>	STEEP PLATE BEAM GUARDRAIL MANUFACTURING	E 01/01/19
	ZD&E\	<a href="#">80409.docx</a>	TRAFFIC CONTROL DEVICES - CONES	E 01/01/19
	ZD&E\	<a href="#">80410.docx</a>	TRAFFIC SPOTTERS	E 01/01/19
	ZD&E\	<a href="#">80411.docx</a>	LUMINAIRES, LED (BDE)	E 04/01/19
	ZD&E\	<a href="#">80412.docx</a>	OBSTRUCTION WARNING LUMINAIRES, LED	E 08/01/19
	ZD&E\	<a href="#">80413.docx</a>	STRUCTURAL TIMBER	E 08/01/19
	ZD&E\	<a href="#">80414.docx</a>	WOOD FENCE SIGHT SCREEN	E 08/01/19
	ZD&E\	<a href="#">80415.docx</a>	EMULSIFIED ASPHALTS	E 08/01/19
	ZD&E\	<a href="#">80416.docx</a>	HOT-MIX ASPHALT – BINDER AND SURFACE COURSE	E 07/02/19 R 11/01/19
	ZD&E\	<a href="#">80417.docx</a>	GEOTECHNICAL FABRIC FOR PIPE UNDERDRAINS AND FRENCH DRAINS	E 11/01/19
	ZD&E\	<a href="#">80418.docx</a>	MECHANICALLY STABILIZED EARTH RETAINING WALLS	E 11/01/19
	ZD&E\	<a href="#">80419.docx</a>	SILT FENCE, GROUND STABILIZATION AND RIPRAP FILTER FABRIC	E 11/01/19
	ZD&E\	<a href="#">80420.docx</a>	GEOTEXTILE RETAINING WALLS	E 11/01/19

## **FAILURE TO OPEN TRAFFIC LANES TO TRAFFIC**

Effective: March 22, 1996

Revised: February, 2005

Should the Contractor fail to completely open and keep open all the traffic lanes to traffic in accordance with the limitations specified under the Special Provisions for "Keeping the Expressway Open to Traffic", the Contractor shall be liable to the Department for the amount of:

One lane or ramp blocked = **\$1900 / 15 min**

Two lanes blocked = **\$3900 / 15 min**

Not as a penalty but as liquidated and ascertained damages for each and every 15 minute interval or a portion thereof that a lane is blocked outside the allowable time limitations. Such damages may be deducted by the Department from any monies due the Contractor. These damages shall apply during the contract time and during any extensions of the contract time.



## **MAINTENANCE OF ROADWAYS (DIST 1)**

Effective: September 30, 1985

Revised: November 1, 1996

Beginning on the date that work begins on this project, the Contractor shall assume responsibility for normal maintenance of all existing roadways within the limits of the improvement. This normal maintenance shall include all repair work deemed necessary by the Engineer, but shall not include snow removal operations. Traffic control and protection for maintenance of roadways will be provided by the Contractor as required by the Engineer.

If items of work have not been provided in the contract, or otherwise specified for payment, such items, including the accompanying traffic control and protection required by the Engineer, will be paid for in accordance with Article 109.04 of the Standard Specifications.

## **PUBLIC CONVENIENCE AND SAFETY (DIST 1)**

Effective: May 1, 2012

Revised: July 15, 2012

Add the following to the end of the fourth paragraph of Article 107.09:

“If the holiday is on a Saturday or Sunday, and is legally observed on a Friday or Monday, the length of Holiday Period for Monday or Friday shall apply.”

Add the following sentence after the Holiday Period table in the fourth paragraph of Article 107.09:

“The Length of Holiday Period for Thanksgiving shall be from 5:00 AM the Wednesday prior to 11:59 PM the Sunday After”

Delete the fifth paragraph of Article 107.09 of the Standard Specifications:

“On weekends, excluding holidays, roadways with Average Daily Traffic of 25,000 or greater, and all lanes shall be open to traffic from 3:00 P.M. Friday to midnight Sunday except where structure construction or major rehabilitation makes it impractical.”

## **RECLAIMED ASPHALT PAVEMENT AND RECLAIMED ASPHALT SHINGLES (D-1)**

Effective: November 1, 2012

Revise: November 1, 2019

Revise Section 1031 of the Standard Specifications to read:

### **“SECTION 1031. RECLAIMED ASPHALT PAVEMENT AND RECLAIMED ASPHALT SHINGLES**

**1031.01 Description.** Reclaimed asphalt pavement and reclaimed asphalt shingles shall be according to the following.

- (a) Reclaimed Asphalt Pavement (RAP). RAP is the material resulting from cold milling or crushing an existing hot-mix asphalt (HMA) pavement. RAP will be considered processed FRAP after completion of both crushing and screening to size. The Contractor shall supply written documentation that the RAP originated from routes or airfields under federal, state, or local agency jurisdiction.
- (b) Reclaimed Asphalt Shingles (RAS). Reclaimed asphalt shingles (RAS). RAS is from the processing and grinding of preconsumer or post-consumer shingles. RAS shall be a clean and uniform material with a maximum of 0.5 percent unacceptable material, as defined in Central Bureau of Materials Policy Memorandum, “Reclaimed Asphalt Shingle (RAS) Sources”, by weight of RAS. All RAS used shall come from a Central Bureau of Materials approved processing facility where it shall be ground and processed to 100 percent passing the 3/8 in. (9.5 mm) sieve and 90 percent passing the #4 (4.75 mm) sieve. RAS shall meet the testing requirements specified herein. In addition, RAS shall meet the following Type 1 or Type 2 requirements.
  - (1) Type 1. Type 1 RAS shall be processed, preconsumer asphalt shingles salvaged from the manufacture of residential asphalt roofing shingles.
  - (2) Type 2. Type 2 RAS shall be processed post-consumer shingles only, salvaged from residential, or four unit or less dwellings not subject to the National Emission Standards for Hazardous Air Pollutants (NESHAP).

**1031.02 Stockpiles.** RAP and RAS stockpiles shall be according to the following.

- (a) RAP Stockpiles. The Contractor shall construct individual, sealed RAP stockpiles meeting one of the following definitions. Additional processed RAP (FRAP) shall be stockpiled in a separate working pile, as designated in the QC Plan, and only added to the sealed stockpile when test results for the working pile are complete and are found to meet tolerances specified herein for the original sealed FRAP stockpile. Stockpiles shall be sufficiently separated to prevent intermingling at the base. All stockpiles (including unprocessed RAP and FRAP) shall be identified by signs indicating the type as listed below (i.e. “Non- Quality, FRAP -#4 or Type 2 RAS”, etc...).

- (1) Fractionated RAP (FRAP). FRAP shall consist of RAP from Class I, HMA (High and Low ESAL) or equivalent mixtures. The coarse aggregate in FRAP shall be crushed aggregate and may represent more than one aggregate type and/or quality, but shall be at least C quality. All FRAP shall be processed prior to testing and sized into fractions with the separation occurring on or between the #4 (4.75 mm) and 1/2 in. (12.5 mm) sieves. Agglomerations shall be minimized such that 100 percent of the RAP in the coarse fraction shall pass the maximum sieve size specified for the mixture composition of the mix design.
- (2) Restricted FRAP (B quality) stockpiles shall consist of RAP from Class I, HMA (High ESAL), or HMA (High ESAL). If approved by the Engineer, the aggregate from a maximum 3.0 in. (75 mm) single combined pass of surface/binder milling will be classified as B quality. All millings from this application will be processed into FRAP as described previously.
- (3) Conglomerate. Conglomerate RAP stockpiles shall consist of RAP from Class I, HMA (High and Low ESAL) or equivalent mixtures. The coarse aggregate in this RAP shall be crushed aggregate and may represent more than one aggregate type and/or quality, but shall be at least C quality. This RAP may have an inconsistent gradation and/or asphalt binder content prior to processing. All conglomerate RAP shall be processed (FRAP) prior to testing. Conglomerate RAP stockpiles shall not contain steel slag or other expansive material as determined by the Department.
- (4) Conglomerate "D" Quality (DQ). Conglomerate DQ RAP stockpiles shall consist of RAP from HMA shoulders, bituminous stabilized subbases or HMA (Low ESAL)/HMA (Low ESAL) IL-19.0L binder mixture. The coarse aggregate in this RAP may be crushed or round but shall be at least D quality. This RAP may have an inconsistent gradation and/or asphalt binder content. Conglomerate DQ RAP stockpiles shall not contain steel slag or other expansive material as determined by the Department.
- (5) Non-Quality. RAP stockpiles that do not meet the requirements of the stockpile categories listed above shall be classified as "Non-Quality".

RAP or FRAP containing contaminants, such as earth, brick, sand, concrete, sheet asphalt, bituminous surface treatment (i.e. chip seal), pavement fabric, joint sealants, plant cleanout etc., will be unacceptable unless the contaminants are removed to the satisfaction of the Engineer. Sheet asphalt shall be stockpiled separately.

- (b) RAS Stockpiles. Type 1 and Type 2 RAS shall be stockpiled separately and shall be sufficiently separated to prevent intermingling at the base. Each stockpile shall be signed indicating what type of RAS is present.

However, a RAS source may submit a written request to the Department for approval to blend mechanically a specified ratio of Type 1 RAS with Type 2 RAS. The source will not be permitted to change the ratio of the blend without the Department prior written

approval. The Engineer's written approval will be required, to mechanically blend RAS with any fine aggregate produced under the AGCS, up to an equal weight of RAS, to improve workability. The fine aggregate shall be "B Quality" or better from an approved Aggregate Gradation Control System source. The fine aggregate shall be one that is approved for use in the HMA mixture and accounted for in the mix design and during HMA production.

Records identifying the shingle processing facility supplying the RAS, RAS type, and lot number shall be maintained by project contract number and kept for a minimum of three years.

**1031.03 Testing.** FRAP and RAS testing shall be according to the following.

(a) FRAP Testing. When used in HMA, the FRAP shall be sampled and tested either during processing or after stockpiling. It shall also be sampled during HMA production.

(1) During Stockpiling. For testing during stockpiling, washed extraction samples shall be run at the minimum frequency of one sample per 500 tons (450 metric tons) for the first 2000 tons (1800 metric tons) and one sample per 2000 tons (1800 metric tons) thereafter. A minimum of five tests shall be required for stockpiles less than 4000 tons (3600 metric tons).

(2) Incoming Material. For testing as incoming material, washed extraction samples shall be run at a minimum frequency of one sample per 2000 tons (1800 metric tons) or once per week, whichever comes first.

(3) After Stockpiling. For testing after stockpiling, the Contractor shall submit a plan for approval to the District proposing a satisfactory method of sampling and testing the RAP/FRAP pile either in-situ or by restockpiling. The sampling plan shall meet the minimum frequency required above and detail the procedure used to obtain representative samples throughout the pile for testing.

Before extraction, each field sample of FRAP, shall be split to obtain two samples of test sample size. One of the two test samples from the final split shall be labeled and stored for Department use. The Contractor shall extract the other test sample according to Department procedure. The Engineer reserves the right to test any sample (split or Department-taken) to verify Contractor test results.

(b) RAS Testing. RAS shall be sampled and tested during stockpiling according to Central Bureau of Materials Policy Memorandum, "Reclaimed Asphalt Shingle (RAS) Sources". The Contractor shall also sample as incoming material at the HMA plant.

(1) During Stockpiling. Washed extraction and testing for unacceptable materials shall be run at the minimum frequency of one sample per 200 tons (180 metric tons) for the first 1000 tons (900 metric tons) and one sample per 1000 tons (900 metric tons) thereafter. A minimum of five samples are required for stockpiles less than

1000 tons (900 metric tons). Once a  $\leq 1000$  ton (900 metric ton), five-sample/test stockpile has been established it shall be sealed. Additional incoming RAS shall be in a separate working pile as designated in the Quality Control plan and only added to the sealed stockpile when the test results of the working pile are complete and are found to meet the tolerances specified herein for the original sealed RAS stockpile.

- (2) Incoming Material. For testing as incoming material at the HMA plant, washed extraction shall be run at the minimum frequency of one sample per 250 tons (227 metric tons). A minimum of five samples are required for stockpiles less than 1000 tons (900 metric tons). The incoming material test results shall meet the tolerances specified herein.

The Contractor shall obtain and make available all test results from start of the initial stockpile sampled and tested at the shingle processing facility in accordance with the facility's QC Plan.

Before extraction, each field sample shall be split to obtain two samples of test sample size. One of the two test samples from the final split shall be labeled and stored for Department use. The Contractor shall extract the other test sample according to Department procedures. The Engineer reserves the right to test any sample (split or Department-taken) to verify Contractor test results.

**1031.04 Evaluation of Tests.** Evaluation of test results shall be according to the following.

- (a) Evaluation of FRAP Test Results. All test results shall be compiled to include asphalt binder content, gradation and, when applicable (for slag),  $G_{mm}$ . A five test average of results from the original pile will be used in the mix designs. Individual extraction test results run thereafter, shall be compared to the average used for the mix design, and will be accepted if within the tolerances listed below.

Parameter	FRAP
No. 4 (4.75 mm)	$\pm 6 \%$
No. 8 (2.36 mm)	$\pm 5 \%$
No. 30 (600 $\mu\text{m}$ )	$\pm 5 \%$
No. 200 (75 $\mu\text{m}$ )	$\pm 2.0 \%$
Asphalt Binder	$\pm 0.3 \%$
$G_{mm}$	$\pm 0.03$ <sup>1/</sup>

1/ For stockpile with slag or steel slag present as determined in the current Manual of Test Procedures Appendix B 21, "Determination of Reclaimed Asphalt Pavement Aggregate Bulk Specific Gravity".

If any individual sieve and/or asphalt binder content tests are out of the above tolerances when compared to the average used for the mix design, the FRAP stockpile shall not be

used in Hot-Mix Asphalt unless the FRAP representing those tests is removed from the stockpile. All test data and acceptance ranges shall be sent to the District for evaluation.

The Contractor shall maintain a representative moving average of five tests to be used for Hot-Mix Asphalt production.

With the approval of the Engineer, the ignition oven may be substituted for extractions according to the ITP, "Calibration of the Ignition Oven for the Purpose of Characterizing Reclaimed Asphalt Pavement (RAP)" or Illinois Modified AASHTO T-164-11, Test Method A.

- (b) Evaluation of RAS Test Results. All of the test results, with the exception of percent unacceptable materials, shall be compiled and averaged for asphalt binder content and gradation. A five test average of results from the original pile will be used in the mix designs. Individual test results run thereafter, when compared to the average used for the mix design, will be accepted if within the tolerances listed below.

Parameter	RAS
No. 8 (2.36 mm)	± 5 %
No. 16 (1.18 mm)	± 5 %
No. 30 (600 µm)	± 4 %
No. 200 (75 µm)	± 2.5 %
Asphalt Binder Content	± 2.0 %

If any individual sieve and/or asphalt binder content tests are out of the above tolerances when compared to the average used for the mix design, the RAS shall not be used in Hot-Mix Asphalt unless the RAS representing those tests is removed from the stockpile. All test data and acceptance ranges shall be sent to the District for evaluation.

- (c) Quality Assurance by the Engineer. The Engineer may witness the sampling and splitting conduct assurance tests on split samples taken by the Contractor for quality control testing a minimum of once a month.

The overall testing frequency will be performed over the entire range of Contractor samples for asphalt binder content and gradation. The Engineer may select any or all split samples for assurance testing. The test results will be made available to the Contractor as soon as they become available.

The Engineer will notify the Contractor of observed deficiencies.

Differences between the Contractor's and the Engineer's split sample test results will be considered acceptable if within the following limits.

Test Parameter	Acceptable Limits of Precision

% Passing: <sup>1/</sup>	FRAP	RAS
1/2 in.	5.0%	
No. 4	5.0%	
No. 8	3.0%	4.0%
No. 30	2.0%	4.0%
No. 200	2.2%	4.0%
Asphalt Binder Content	0.3%	3.0%
G <sub>mm</sub>	0.030	

1/ Based on washed extraction.

In the event comparisons are outside the above acceptable limits of precision, the Engineer will immediately investigate.

- (d) Acceptance by the Engineer. Acceptable of the material will be based on the validation of the Contractor's quality control by the assurance process.

**1031.05 Quality Designation of Aggregate in RAP and FRAP.**

- (a) RAP. The aggregate quality of the RAP for homogeneous, conglomerate, and conglomerate "D" quality stockpiles shall be set by the lowest quality of coarse aggregate in the RAP stockpile and are designated as follows.

- (1) RAP from Class I, HMA (High ESAL), or (Low ESAL) IL-9.5L surface mixtures are designated as containing Class B quality coarse aggregate.
- (2) RAP from HMA (Low ESAL) IL-19.0L binder mixture is designated as Class D quality coarse aggregate.
- (3) RAP from Class I, HMA (High ESAL) binder mixtures, bituminous base course mixtures, and bituminous base course widening mixtures are designated as containing Class C quality coarse aggregate.
- (4) RAP from bituminous stabilized subbase and BAM shoulders are designated as containing Class D quality coarse aggregate.

- (b) FRAP. If the Engineer has documentation of the quality of the FRAP aggregate, the Contractor shall use the assigned quality provided by the Engineer.

If the quality is not known, the quality shall be determined as follows. Fractionated RAP stockpiles containing plus #4 (4.75 mm) sieve coarse aggregate shall have a maximum tonnage of 5,000 tons (4,500 metric tons). The Contractor shall obtain a representative sample witnessed by the Engineer. The sample shall be a minimum of 50 lb (25 kg). The sample shall be extracted according to Illinois Modified AASHTO T 164 by a consultant laboratory prequalified by the Department for the specified testing. The consultant laboratory shall submit the test results along with the recovered aggregate to



the District Office. The cost for this testing shall be paid by the Contractor. The District will forward the sample to the Central Bureau of Materials Aggregate Lab for MicroDeval Testing, according to ITP 327. A maximum loss of 15.0 percent will be applied for all HMA applications. The fine aggregate portion of the fractionated RAP shall not be used in any HMA mixtures that require a minimum of "B" quality aggregate or better, until the coarse aggregate fraction has been determined to be acceptable thru a MicroDeval Testing.

**1031.06 Use of FRAP and/or RAS in HMA.** The use of FRAP and/or RAS shall be the Contractor's option when constructing HMA in all contracts.

- (a) FRAP. The use of FRAP in HMA shall be as follows.
- (1) Coarse Aggregate Size (after extraction). The coarse aggregate in all FRAP shall be equal to or less than the nominal maximum size requirement for the HMA mixture to be produced.
  - (2) Steel Slag Stockpiles. FRAP stockpiles containing steel slag or other expansive material, as determined by the Department, shall be homogeneous and will be approved for use in HMA (High ESAL and Low ESAL) mixtures regardless of lift or mix type.
  - (3) Use in HMA Surface Mixtures (High and Low ESAL). FRAP stockpiles for use in HMA surface mixtures (High and Low ESAL) shall have coarse aggregate that is Class B quality or better. FRAP shall be considered equivalent to limestone for frictional considerations unless produced/screened to minus 3/8 inch.
  - (4) Use in HMA Binder Mixtures (High and Low ESAL), HMA Base Course, and HMA Base Course Widening. FRAP stockpiles for use in HMA binder mixtures (High and Low ESAL), HMA base course, and HMA base course widening shall be FRAP in which the coarse aggregate is Class C quality or better.
  - (5) Use in Shoulders and Subbase. FRAP stockpiles for use in HMA shoulders and stabilized subbase (HMA) shall be FRAP, Restricted FRAP, conglomerate, or conglomerate DQ.
- (b) RAS. RAS meeting Type 1 or Type 2 requirements will be permitted in all HMA applications as specified herein.
- (c) FRAP and/or RAS Usage Limits. Type 1 or Type 2 RAS may be used alone or in conjunction with FRAP in HMA mixtures up to a maximum of 5.0 percent by weight of the total mix.

When FRAP is used alone or FRAP is used in conjunction with RAS, the percent of virgin asphalt binder replacement (ABR) shall not exceed the amounts listed below for a given N Design.

Maximum Asphalt Binder Replacement (ABR) for FRAP with RAS Combination

HMA Mixtures <i>1/ 2/ 4/</i>	Maximum % ABR		
	Ndesign	Binder <sup>5/</sup>	Surface <sup>5/</sup>
30L	50	40	30
50	40	35	30
70	40	30	30
90	40	30	30
SMA			30
IL-4.75			40

1/ For Low ESAL HMA shoulder and stabilized subbase, the percent asphalt binder replacement shall not exceed 50 % of the total asphalt binder in the mixture.

2/ When the binder replacement exceeds 15 % for all mixes, except for SMA and IL-4.75, the high and low virgin asphalt binder grades shall each be reduced by one grade (i.e. 25 % binder replacement using a virgin asphalt binder grade of PG64-22 will be reduced to a PG58-28). When constructing full depth HMA and the ABR is less than 15 %, the required virgin asphalt binder grade shall be PG64-28.

3/ When the ABR for SMA or IL-4.75 is 15 % or less, the required virgin asphalt binder shall be SBS PG76-22 and the elastic recovery shall be a minimum of 80. When the ABR for SMA or IL-4.75 exceeds 15%, the virgin asphalt binder grade shall be SBS PG70-28 and the elastic recovery shall be a minimum of 80.

4/ When FRAP or RAS is used alone, the maximum percent asphalt binder replacement designated on the table shall be reduced by 10 %.

5/ When the mix has Illinois Flexibility Index Test (I-FIT) requirements, the maximum percent asphalt binder replacement designated on the table may be increased by 5%.

**1031.07 HMA Mix Designs.** At the Contractor's option, HMA mixtures may be constructed utilizing FRAP and/or RAS material meeting the detailed requirements specified herein.

(a) FRAP and/or RAS. FRAP and /or RAS mix designs shall be submitted for verification. If additional FRAP or RAS stockpiles are tested and found to be within tolerance, as defined under "Evaluation of Tests" herein, and meet all requirements herein, the

additional FRAP or RAS stockpiles may be used in the original design at the percent previously verified.

(b) RAS. Type 1 and Type 2 RAS are not interchangeable in a mix design.

The RAP, FRAP and RAS stone specific gravities ( $G_{sb}$ ) shall be according to the "Determination of Aggregate Bulk (Dry) Specific Gravity ( $G_{sb}$ ) of Reclaimed Asphalt Pavement (RAP) and Reclaimed Asphalt Shingles (RAS)" procedure in the Department's Manual of Test Procedures for Materials.

**1031.08 HMA Production.** HMA production utilizing FRAP and/or RAS shall be as follows.

A scalping screen, gator, crushing unit, or comparable sizing device approved by the Engineer shall be used in the RAS and FRAP feed system to remove or reduce oversized and agglomerated material.

If during mix production, corrective actions fail to maintain FRAP, RAS or QC/QA test results within control tolerances or the requirements listed herein, the Contractor shall cease production of the mixture containing FRAP or RAS and conduct an investigation that may require a new mix design.

(a) FRAP. The coarse aggregate in all FRAP used shall be equal to or less than the nominal maximum size requirement for the HMA mixture being produced.

(b) RAS. RAS shall be incorporated into the HMA mixture either by a separate weight depletion system or by using the RAP weigh belt. Either feed system shall be interlocked with the aggregate feed or weigh system to maintain correct proportions for all rates of production and batch sizes. The portion of RAS shall be controlled accurately to within  $\pm 0.5$  percent of the amount of RAS utilized. When using the weight depletion system, flow indicators or sensing devices shall be provided and interlocked with the plant controls such that the mixture production is halted when RAS flow is interrupted.

(c) HMA Plant Requirements. HMA plants utilizing FRAP and/or RAS shall be capable of automatically recording and printing the following information.

(1) Dryer Drum Plants.

a. Date, month, year, and time to the nearest minute for each print.

b. HMA mix number assigned by the Department.

c. Accumulated weight of dry aggregate (combined or individual) in tons (metric tons) to the nearest 0.1 ton (0.1 metric ton).

- d. Accumulated dry weight of RAS and FRAP in tons (metric tons) to the nearest 0.1 ton (0.1 metric ton).
  - e. Accumulated mineral filler in revolutions, tons (metric tons), etc. to the nearest 0.1 unit.
  - f. Accumulated asphalt binder in gallons (liters), tons (metric tons), etc. to the nearest 0.1 unit.
  - g. Residual asphalt binder in the RAS and FRAP material as a percent of the total mix to the nearest 0.1 percent.
  - h. Aggregate RAS and FRAP moisture compensators in percent as set on the control panel. (Required when accumulated or individual aggregate and RAS and FRAP are printed in wet condition.)
  - i. When producing mixtures with FRAP and/or RAS, a positive dust control system shall be utilized.
  - j. Accumulated mixture tonnage.
  - k. Dust Removed (accumulated to the nearest 0.1 ton (0.1 metric ton))
- (2) Batch Plants.
- a. Date, month, year, and time to the nearest minute for each print.
  - b. HMA mix number assigned by the Department.
  - c. Individual virgin aggregate hot bin batch weights to the nearest pound (kilogram).
  - d. Mineral filler weight to the nearest pound (kilogram).
  - e. RAS and FRAP weight to the nearest pound (kilogram).
  - f. Virgin asphalt binder weight to the nearest pound (kilogram).
  - g. Residual asphalt binder in the RAS and FRAP material as a percent of the total mix to the nearest 0.1 percent.

The printouts shall be maintained in a file at the plant for a minimum of one year or as directed by the Engineer and shall be made available upon request. The printing system will be inspected by the Engineer prior to production and verified at the beginning of each construction season thereafter.

**1031.09 RAP in Aggregate Surface Course and Aggregate Wedge Shoulders, Type B.**

The use of RAP in aggregate surface course and aggregate shoulders shall be as follows.

- (a) Stockpiles and Testing. RAP stockpiles may be any of those listed in Article 1031.02, except “Non-Quality” and “FRAP”. The testing requirements of Article 1031.03 shall not apply. RAP used shall be according to the current Central Bureau of Materials Policy Memorandum, “Reclaimed Asphalt Pavement (RAP) for Aggregate Applications”.
- (b) Gradation. The RAP material shall meet the gradation requirements for CA 6 according to Article 1004.01(c), except the requirements for the minus No. 200 (75 µm) sieve shall not apply. The sample for the RAP material shall be air dried to constant weight prior to being tested for gradation.”

## TEMPORARY INFORMATION SIGNING

Effective: November 13, 1996

Revised: January 29, 2020

### Description.

This work shall consist of furnishing, installing, maintaining, relocating for various states of construction and eventually removing temporary informational signs. Included in this item may be ground mount signs, skid mount signs, truss mount signs, bridge mount signs, and overlay sign panels which cover portions of existing signs.

### Materials.

Materials shall be according to the following Articles of Section 1000 - Materials:

	<b><u>Item</u></b>	<b><u>Article/Section</u></b>
a.)	Sign Base (Note 1)	1090
b.)	Sign Face (Note 2)	1091
c.)	Sign Legends	1091
d.)	Sign Supports	1093
e.)	Overlay Panels (Note 3)	1090.02

Note 1. The Contractor may use 5/8 inch (16 mm) instead of 3/4 inch (19 mm) thick plywood.

Note 2. The sign face material shall be in accordance with the Department's Fabrication of Highway Signs Policy.

Note 3. The overlay panels shall be 0.08 inch (2 mm) thick.

## GENERAL CONSTRUCTION REQUIREMENTS

### Installation.

The sign sizes and legend sizes shall be verified by the Contractor prior to fabrication.

Signs which are placed along the roadway and/or within the construction zone shall be installed according to the requirements of Article 701.14 and Article 720.04. The signs shall be 7 ft (2.1 m) above the near edge of the pavement and shall be a minimum of 2 ft (600 mm) beyond the edge of the paved shoulder. A minimum of two (2) posts shall be used.

The attachment of temporary signs to existing bridges, sign structures or sign panels shall be approved by the Engineer. Any damage to the existing signs and/or structures due to the Contractor's operations shall be repaired or signs replaced, as determined by the Engineer, at the Contractor's expense.

### Method of Measurement.

This work shall be measured for payment in square feet (square meters) edge to edge (horizontally and vertically).

All hardware, posts or skids, supports, bases for ground mounted signs, connections, which are required for mounting these signs will be included as part of this pay item.

Basis Of Payment.

This work shall be paid for at the contract unit price per square foot (square meter) for TEMPORARY INFORMATION SIGNING.



**PROJECT MAP**

END IMPROVEMENT  
WEBSTER AVENUE  
STA. 9+01.62

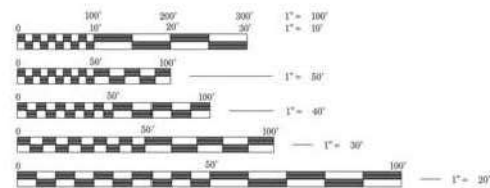
BEGIN IMPROVEMENT  
WEBSTER AVENUE  
STA. 15+24.78

**TRAFFIC DATA**

ADT (CURRENT) = 7,650  
ADT (2040) = 8,800  
DESIGN YEAR = 2050



SEE SHEET G-1 FOR INDEX OF SHEETS



FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED SIZE PLANS, THE ABOVE SCALES MAY NOT BE USED.



**CITY OF CHICAGO**

LORI LIGHTFOOT, MAYOR

DEPARTMENT OF TRANSPORTATION  
GIA BIAGI, COMMISSIONER

DIVISION OF ENGINEERING  
DANIEL BURKE, P.E., S.E., CHIEF ENGINEER

CITY OF CHICAGO  
DEPARTMENT OF TRANSPORTATION  
DATE: December 17, 2020  
APPROVED: *Charlene Howell* PROJECT MANAGER  
APPROVED: *Jude Osei Bonsu* CHIEF BRIDGE ENGINEER  
APPROVED: *Daniel Burke* CHIEF ENGINEER, DIVISION OF ENGINEERING  
APPROVED: *[Signature]* CHIEF ENGINEER

CONTRACT PLANS FOR  
**WEBSTER AVENUE BRIDGE OVER THE  
NORTH BRANCH OF THE CHICAGO RIVER**

FROM ASHLAND AVENUE TO DOMINICK STREET

C.D.O.T. PROJECT NO. E-1-525  
SPECIFICATION NO. 1188838

NET LENGTH OF IMPROVEMENT: 623.16 FEET  
(0.118 MILES)

ISSUED BY:  
DEPARTMENT OF PROCUREMENT SERVICES  
SHANNON E. ANDREWS, CHIEF PROCUREMENT OFFICER



MOHAMED MANSOUR AHMED, P.E.  
WSP USA INC.  
LICENSE NO.: 062-068573  
EXPIRES: November 30, 2021  
DATE: 03/31/20  
SHEETS G-1 THRU G-7,  
C-1 THRU C-12 &  
PMK-1 THRU PMK-3



JUDE OSEI BONSU, P.E.  
WSP USA INC.  
LICENSE NO.: 062-069421  
EXPIRES: November 30, 2021  
DATE: 4/1/2020  
SHEETS M-1 THRU M-8



JAMAL GRAINAWI, S.E., P.E.  
WSP USA INC.  
LICENSE NO.: 081-005161  
EXPIRES: November 30, 2020  
DATE: 4/1/2020  
SHEETS S-1 THRU S-7,  
S-36 THRU S-93 &  
S-108 THRU S-113



MOUSSA A. ISSA, S.E., P.E.  
HBM ENGINEERING GROUP, LLC  
LICENSE NO.: 081-005738  
EXPIRES: November 30, 2020  
DATE: April 01, 2020  
SHEETS S-8 THRU S-35,  
& S-94 THRU S-107



CAROL ROSS BARNEY, AIA  
ROSS BARNEY ARCHITECTS  
LICENSE NO.: 001-008045  
EXPIRES: November 30, 2020  
DATE: April 01, 2020  
SHEETS A-0.0 THRU A-6.8



MOHAMMED K. RASHED, P.E.  
EJM ENGINEERING, INC.  
LICENSE NO.: 062-053645  
EXPIRES: November 30, 2021  
DATE: 04/02/2020  
SHEETS E-1 THRU E-13



SRIJAN ADHIKARI, P.E.  
EJM ENGINEERING, INC.  
LICENSE NO.: 062-069784  
EXPIRES: November 30, 2021  
DATE: 4/1/2020  
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PLAN	SURVEYED	DATE
	PLOTTED	BY
NOTE BOOK NO.	ALIGNMENT CHECKED	
	GRADE CHECKED	
	STRUCTURE NOTATIONS CHECKED	
	FILE NAME	

PROFILE	SURVEYED	DATE
	PLOTTED	BY
NOTE BOOK NO.	GRADES CHECKED	
	STRUCTURE NOTATIONS CHECKED	

0166057-E1525-G001-INDEX OF SHEETS.DGN

 WSP USA Inc. 30 N. LASALLE STREET SUITE 4200 CHICAGO, IL 60602 TEL: (312) 782-8150 FAX: (312) 782-1884	USER NAME = PJLAUX	DESIGNED - PJL	REVISED -	 CITY OF CHICAGO DEPARTMENT OF TRANSPORTATION DIVISION OF ENGINEERING	WEBSTER AVENUE BRIDGE OVER THE NORTH BRANCH CHICAGO RIVER	INDEX OF SHEETS	F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
	PLOT SCALE =	DRAWN - PJL	REVISED -				1388	11-E1525-00-BR	COOK	G-1
	PLOT DATE = SDATES	CHECKED - JIG	REVISED -				CDOT PROJECT NO. E-1-525		2 of 210	

## GENERAL NOTES

1. DUE TO THE POSSIBILITY OF UNDOCUMENTED MODIFICATIONS AND CHANGES TO THE STRUCTURE, IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE CORRECTNESS OF ALL REFERENCE DRAWINGS. PLAN DIMENSIONS AND DETAILS RELATIVE TO EXISTING STRUCTURES HAVE BEEN TAKEN FROM EXISTING PLANS AND ARE SUBJECT TO NOMINAL CONSTRUCTION VARIATIONS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY SUCH DIMENSIONS AND DETAILS IN THE FIELD AND MAKE NECESSARY APPROVED ADJUSTMENTS PRIOR TO CONSTRUCTION OR FABRICATION AND ORDERING OF MATERIALS. SUCH VARIATIONS ARE NOT CAUSE FOR ADDITIONAL COMPENSATION OR A CHANGE IN THE SCOPE OF WORK. HOWEVER, THE CONTRACTOR WILL BE PAID FOR THE QUANTITY ACTUALLY FURNISHED AT THE UNIT PRICE BID FOR THE WORK. CONTRACTOR SHALL NOT BE RELIEVED OF PERFORMING DETAILED SURVEY AS PART OF THIS WORK AND MAY REQUEST FOR DOCUMENTATION, IF ANY, OF PREVIOUS REPAIRS PERFORMED SINCE PREPARATION OF THESE DOCUMENTS.
2. ALL CONSTRUCTION MATERIALS AND CONSTRUCTION ACTIVITIES USED ON THIS CONTRACT MUST CONFORM TO THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION ADOPTED APRIL 1, 2016 BY THE ILLINOIS DEPARTMENT OF TRANSPORTATION, SPECIFIED SUPPLEMENTAL SPECIFICATIONS AND RECURRING SPECIAL PROVISIONS, DATED JANUARY 1, 2019 AND PROJECT DETAIL SPECIFICATIONS EXCEPT AS MODIFIED HEREIN.
3. THE CONTRACTOR SHOULD EXPECT THAT DUE TO THE NATURE OF THIS REHABILITATION PROJECT, THE EXACT EXTENT OF REPAIR WORK CANNOT ALWAYS BE ACCURATELY DETERMINED PRIOR TO COMMENCEMENT OF WORK. PRE-BID VISITS AND ACCESS TO THE SITE SHALL BE REQUIRED AND CAN BE ARRANGED THROUGH THE CHICAGO DEPARTMENT OF TRANSPORTATION, DIVISION OF ENGINEERING.
4. ALL AVAILABLE EXISTING PLANS WILL BE PROVIDED TO THE CONTRACTOR IN ELECTRONIC FORMAT AND WILL BE AVAILABLE AT CITY HALL ON THE DAY OF BID ADVERTISEMENT. THE CONTRACT PLANS REFERENCE THE APPLICABLE EXISTING PLAN FILE THAT IS USUALLY LOCATED IN THE BOTTOM RIGHT HAND CORNER OF THESE CONTRACT DOCUMENTS.
5. THE CONTRACTOR MUST PROTECT AND CAREFULLY PRESERVE ALL PERMANENT SURVEY MONUMENTS, BENCHMARKS OR PROPERTY MARKERS WHICH ARE ENCOUNTERED DURING THE COURSE OF HIS/HER WORK. IF IT IS NECESSARY TO REMOVE ANY SUCH MONUMENT OR MARKER, THE COMMISSIONER MUST BE NOTIFIED PRIOR TO REMOVAL. THE CONTRACTOR MUST PROTECT AND CAREFULLY PRESERVE ALL PROPERTY MARKERS AND MONUMENTS UNTIL THE COMMISSIONER, AN AUTHORIZED SURVEYOR, OR AGENT HAS WITNESSED OR OTHERWISE REFERENCED THEIR LOCATION. ANY SUCH MONUMENT OR MARKER WHICH HAS BEEN DISTURBED BY THE CONTRACTOR MUST BE RESET BY A REGISTERED PROFESSIONAL LAND SURVEYOR TO THE SATISFACTION OF THE COMMISSIONER AND AT NO ADDITIONAL EXPENSE TO THE CITY.
6. THE CONTRACTOR MUST TAKE ALL NECESSARY SAFETY PRECAUTIONS TO PROTECT ABUTTING PROPERTY, PEDESTRIANS, AND RIVER AND VEHICULAR TRAFFIC. THE CONTRACTOR MUST TAKE PRECAUTIONS TO PROTECT THE PUBLIC FROM FALLING DEBRIS. THE CONTRACTOR MUST SUBMIT PLANS FOR PEDESTRIAN, RIVER, AND VEHICULAR PROTECTION TO THE COMMISSIONER FOR APPROVAL PRIOR TO BEGINNING THE WORK. IF ANY DEBRIS FALLS INTO THE WATERWAY, THE CONTRACTOR SHALL REMOVE IT FROM THE RIVER TO THE COMMISSIONER'S SATISFACTION, AND AT NO ADDITIONAL COST TO THE CITY.
7. ALL TEMPORARY ITEMS INSTALLED WITHIN THE WATERWAY MUST BE COMPLETELY REMOVED. WORK BARGE OR ANY FLOATING WORK PLATFORM SHALL NOT REMAIN MOORED BENEATH DRAW OVERNIGHT OR WHILE WORK IS SUSPENDED.
8. THE CONTRACTOR MUST CALL DIGGER (CHICAGO UTILITY ALERT NETWORK) AT 312-744-7000 TO HAVE THE LOCATION OF EXISTING UNDERGROUND UTILITIES STAKED, 48 HOURS BEFORE STARTING EXCAVATION WORK.
9. THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF ALL UNDERGROUND AND OVERHEAD UTILITIES WITHIN THE PROJECT LIMITS WHETHER OR NOT THE UTILITIES ARE SHOWN ON THE PLANS. THE CONTRACTOR MUST INVESTIGATE THE WORK ZONE TO IDENTIFY LOCATIONS OF SIGNS, POLES, OR OTHER STRUCTURES WHICH WOULD IMPACT THE PROPOSED WORK LOCATIONS. COST ASSOCIATED WITH PROTECTION OF EXISTING UTILITIES IS INCLUDED IN THE COST OF "MOBILIZATION". ANY UTILITY THAT IS DAMAGED DURING CONSTRUCTION MUST BE REPAIRED OR REPLACED BY THE CONTRACTOR AT HIS/HER OWN EXPENSE TO THE SATISFACTION OF THE COMMISSIONER.

## GENERAL NOTES (CONTINUED)

10. ANY ADJUSTMENT REQUIRED TO EXISTING UTILITIES WILL BE CARRIED OUT BY THE PRIVATE UTILITY COMPANIES OR THEIR CONTRACTORS. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH EACH UTILITY COMPANY. COST ASSOCIATED WITH COORDINATING WITH UTILITY COMPANIES IS INCLUDED IN THE COST OF "MOBILIZATION".
11. WHEN ARTIFICIAL LIGHTING IS USED IN NIGHT OPERATIONS THE CONTRACTOR SHALL EXERCISE UTMOST PRECAUTIONS IN PREVENTING ADVERSE VISIBILITY TO THE MOTORING PUBLIC, MARINE TRAFFIC ON THE RIVER, AND ADJOINING COMMERCIAL AND RESIDENTIAL AREAS IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS (MUTCD) AND THE ILLINOIS SUPPLEMENT TO THE NATIONAL MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
12. ALL ELEVATIONS SHOWN ON THE PLANS ARE REFERENCED TO THE CHICAGO CITY DATUM: 579.48 FEET ABOVE MEAN SEA LEVEL, 1929 ADJUSTMENT.
13. DO NOT SCALE PLANS.
14. FOR ADDITIONAL GENERAL NOTES, SEE SHEETS MOT-1, S-3, A-1, E-1, LT-1, AND M-1.
15. ALL DIMENSIONS SHOWN ON THE ROADWAY PLANS ARE TO THE FACE OF THE CURB, UNLESS OTHERWISE SPECIFIED.
16. THE ENTIRE AREA WHICH IS TO RECEIVE 'BITUMINOUS MATERIAL PRIME COAT' SHALL BE SWEEP CLEAN BEFORE THE MATERIAL APPLICATION. SWEEPING SHALL NOT BE DEPOSITED IN THE GUTTER OR ON THE CURB, PARKWAY, OR SIDEWALK, BUT SHALL BE PICKED UP AND DISPOSED OF PROPERLY BEYOND THE LIMITS OF THE PROJECT ON THE SAME DAY THAT SWEEPING IS DONE. THIS WORK SHALL BE INCLUDED IN THE COST OF BITUMINOUS MATERIAL (PRIME COAT) AND NO ADDITIONAL COMPENSATION SHALL BE ALLOWED.
17. SAW CUT (FULL DEPTH) SHALL BE REQUIRED AT THE JOINT BETWEEN PAVEMENT, SIDEWALK, CURB AND GUTTER TO BE REMOVED AND THE LEFT IN PLACE OR AS DIRECTED BY THE COMMISSIONER. THIS WORK WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE COST OF THE REMOVAL ITEMS.
18. THE CONTRACTOR SHALL MAKE HIS OWN INVESTIGATION TO DETERMINE THE EXISTENCE, NATURE AND EXACT LOCATION OF ALL UTILITY LINES AND APPURTENANCES WITHIN THE LIMITS OF IMPROVEMENT. THE COST OF THIS WORK WILL BE CONSIDERED INCIDENTAL TO THE CONTRACT.
19. ONE-HALF INCH (1/2") THICK EXPANSION JOINTS SHALL BE PLACED BETWEEN THE SIDEWALK, AND ALL STRUCTURES SUCH AS LIGHT STANDARDS, TRAFFIC LIGHT STANDARDS AND MANHOLES WHICH EXTEND THROUGH THE SIDEWALK IN ACCORDANCE WITH SECTION 424.07 OF THE STANDARD SPECIFICATIONS
20. CONSTRUCTION OF THE ADA RAMPS MUST MEET ALL CRITERIA SET FORTH IN THE STANDARDS. ALL SIDEWALK RAMPS CONTAINING TILES AND RAMP FLARES SHALL BE 8" THICK UNLESS OTHERWISE NOTED. ALL LANDING AREAS (KEYSTONE), RAMPS WITHOUT TILES, AND TRANSITION PANEL SHALL BE 8" THICK UNLESS OTHERWISE NOTED.
21. THERMOPLASTIC PAVEMENT MARKING LINE AND/OR LETTERS AND SYMBOLS SHALL BE DONE AT EACH LOCATION WHERE PAVEMENT MARKINGS ARE REQUIRED WITHIN 3 WORKING DAYS AFTER FINAL BITUMINOUS SURFACE IS IN PLACE.
22. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE STORAGE OF EXISTING SIGN PANELS AND POLE ASSEMBLIES WHICH ARE TO BE SALVAGED AND REINSTALLED UNDER PAY ITEM REMOVE, STORE AND RE-ERECT SIGN PANEL. THE CONTRACTOR SHALL BE RESPONSIBLE TO REPLACE, AT NO ADDITIONAL COST TO THE CONTRACT, ANY SIGNS AND/OR POLE ASSEMBLIES DAMAGED DURING STORAGE AND/OR DURING THE TRANSPORTATION TO AND FROM THE STORAGE LOCATIONS.
23. THE LATEST REVISION NUMBER OF THE IDOT HIGHWAY STANDARD AT THE TIME OF LETTING SHALL APPLY TO THIS CONTRACT.
24. A PERMIT IS REQUIRED FROM THE DEPARTMENT OF WATER MANAGEMENT PRIOR TO THE CONSTRUCTION OF, OR REPAIR TO UNDERGROUND SEWERS, DRAIN CONNECTIONS OR SEWER STRUCTURES, INCLUDING ADJUSTMENT OF SEWER STRUCTURES AND REMOVAL/REPLACEMENT OF FRAMES AND LIDS. THE PERMIT MUST BE OBTAINED BY A DRAINLAYER CURRENTLY LICENSED BY THE DEPARTMENT OF SEWERS.

## GENERAL NOTES (CONTINUED)

25. THE CITY DOES NOT GUARANTEE THE COMPLETENESS OR ACCURACY OF THE INFORMATION SHOWN ON THE PLANS REGARDING UTILITIES, EITHER PUBLIC OR PRIVATE, SUCH AS SEWERS, MANHOLES, CATCH BASINS, GAS AND WATER MAINS, TELEPHONE AND ELECTRICAL DUCT LINES AND SIMILAR STRUCTURES. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF ALL UTILITIES THAT MAY INTERFERE WITH CONSTRUCTION OPERATIONS, AND SHALL REPORT TO THE COMMISSIONER ANY OMISSIONS AND DIFFERENCES FROM THE LOCATIONS SHOWN ON THE PLANS. THE COST OF THIS WORK WILL BE CONSIDERED INCLUDED IN THE COST OF MOBILIZATION.
26. THE CONTRACTOR SHALL MAINTAIN THE SURFACE DRAINAGE OF THE ROAD DURING CONSTRUCTION OF THIS PROJECT.
27. PRIOR TO STARTING CONSTRUCTION AN INSPECTION OF EXISTING MANHOLES AND CATCH BASINS WILL BE MADE BY THE CITY AND THE CONTRACTOR TO DETERMINE THE AMOUNT OF EXISTING DEBRIS IN THESE STRUCTURES. UPON COMPLETION OF THE CONTRACT, THE CONTRACTOR SHALL CLEAN ONLY THOSE STRUCTURES WHERE DEBRIS HAS BEEN ADDED DUE TO CONSTRUCTION. THIS WORK WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE CONSIDERED INCLUDED IN THE COST OF MOBILIZATION.
28. WHEN DIRECTED BY THE COMMISSIONER EXISTING CATCH BASINS SHALL BE REMOVED AND REPLACED WITH NEW DEPARTMENT OF WATER MANAGEMENT (DOWM) STANDARD CATCH BASINS. THIS WORK SHALL BE PAID FOR UNDER REMOVING CATCH BASINS AND UNDER CATCH BASINS, TYPE 1, 4' DIAMETER (INCLUDING FRAMES AND LIDS).
29. WHERE PROPOSED CATCH BASINS CAN NOT BE INSTALLED DUE TO EXISTING CONFLICTS, INLETS MAY BE SUBSTITUTED PENDING APPROVAL OF THE COMMISSIONER WITH CONCURRENCE OF THE DEPARTMENT OF WATER MANAGEMENT.
30. EXISTING CATCH BASIN LATERALS TO BE REUSED MUST BE RODDED AND FLUSHED IN THE PRESENCE OF THE DEPARTMENT OF WATER MANAGEMENT INSPECTOR. A NEW CONNECTION TO THE MAIN SEWER IS REQUIRED IF THE EXISTING CATCH BASIN LATERAL IS NOT APPROVED BY THE SEWER INSPECTOR. THE FLUSHING OF THE EXISTING LATERAL WILL BE CONSIDERED INCLUDED IN THE COST OF THE SEWER AND CATCH BASIN WORK ITEMS.
31. IN LOCATIONS WHERE THE MAIN SEWER IS NOT BEING REPLACED AND THE EXISTING DRAINAGE FACILITIES ARE DISTURBED OR DAMAGED DURING CONSTRUCTION BY THE CONTRACTOR, IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO RESTORE AND REPLACE THE DAMAGED FACILITIES AT HIS EXPENSE TO THE SATISFACTION OF THE COMMISSIONER.

## CONSTRUCTION NOTES

1. THE CONTRACTOR MUST OBTAIN ALL NECESSARY PERMITS FROM THE CITY OF CHICAGO PRIOR TO COMMENCING CONSTRUCTION. THE COSTS ARE CONSIDERED INCLUDED IN THE COST OF "MOBILIZATION".
2. WORK ON THE RETAINING WALL TO THE NORTHEAST, SOUTHEAST AND SOUTHWEST, ACCESS WILL BE THROUGH ADJACENT PROPERTIES. THE ACCESS WILL OCCUR ON 7-FOOT TO 10-FOOT OR 10-FOOT WIDE TEMPORARY EASEMENT ACCESS AREAS ADJACENT TO WEBSTER AVENUE. WORK ON THESE PROPERTIES WILL BE ONLY FOR A LIMITED PERIOD OF TIME WHEN THE ACTUAL WORK IS BEING COMPLETED. PRIOR WRITTEN NOTIFICATION OF 2-WEEKS FOR WORK START IS REQUIRED FOR ALL 3 PROPERTIES. NO HEAVY EQUIPMENT, NOR VEHICLES, INCLUDING CONCRETE TRUCKS, WILL BE ALLOWED ON ANY OF THE THREE TEMPORARY ACCESS AREAS. WORK ON THE ENCLOSURE WALLS NEED TO BE PERFORMED FROM THE BRIDGE LEVEL. MATERIALS CANNOT BE STORED WITHIN THE TEMPORARY ACCESS AREAS. THE CONTRACTOR SHALL NOT DAMAGE THE ADJACENT PROPERTIES INSIDE AND OUTSIDE THE ACCESS AREAS, AND SHALL AT THE CONTRACTOR'S EXPENSE, REPAIR ANY DAMAGE THAT THE CONTRACTOR OR SUBCONTRACTOR MAY CAUSE. ANY DAMAGE SHALL BE REPAIRED TO PRE-CONSTRUCTION CONDITION, INCLUDING LANDSCAPING, PLANTERS, AND BENCHES.

THE CONTRACTOR SHALL ERECT AND MAINTAIN A 7-FOOT TO 10-FOOT OR 10-FOOT WIDE PERIMETER FENCE AROUND THE ACCESS AREA TO THE NORTHEAST AND SOUTHEAST. ON THE SOUTHEAST PROPERTY, THE FENCE SHALL NOT ENCAPSULATE THE EXISTING PLANTERS AND BENCHES. ON THE NORTHEAST PROPERTY, THERE IS AN EXISTING FENCE. THIS EXISTING FENCE SHALL BE TEMPORARILY ROLLED BACK TO ALLOW FOR ACCESS TO THE ACCESS AREA AND THIS EXISTING FENCE WILL BE CLOSED OFF DURING CONSTRUCTION.

FOR THE MWRD TEMPORARY ACCESS AREA, THE CONTRACTOR SHALL CONTACT JOSEPH MEYER, ENGINEERING TECHNICIAN V OF THE DISTRICT'S MAINTENANCE & OPERATIONS DEPARTMENT AT (847)568-8224 OR VIA EMAIL AT MEYERJ1@MWRD.ORG, PRIOR TO COMMENCING ANY ACTIVITY, AND JEFFREY YOURELL, DISTRICT INVESTIGATOR AT (312)751-6552 TO COORDINATE ACCESS TO THE ACCESS PREMISES. CONTRACTOR WILL NOT LEAVE THE MWRD PROPERTY OPEN WHEN NOT WORKING ON SITE.

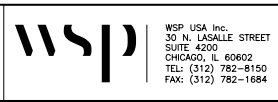
## CONSTRUCTION NOTES (CONTINUED)

3. A US COAST GUARD (USCG) PERMIT IS NOT REQUIRED, HOWEVER, THE CONTRACTOR MUST PROVIDE A DETAILED DESCRIPTION OF CONSTRUCTION MEANS AND METHODS AND AN EXPECTED DURATION OF CONSTRUCTION ACTIVITIES TO THE USCG A MINIMUM OF 30 DAYS PRIOR TO INITIATING MOBILIZATION AND CONSTRUCTION ACTIVITIES. THE DIMENSIONS OF ANY IN-WATER EQUIPMENT, TO INCLUDE THE LENGTH, BEAM, AND DRAFT OF ANY NEEDED CONSTRUCTION BARGES, SHOULD ALSO BE INCLUDED. AS BUILT PLANS MUST ALSO BE SUBMITTED TO THE NINTH COAST GUARD DISTRICT OFFICE AT THE COMPLETION OF THE PROJECT.
4. STORAGE OF CONSTRUCTION EQUIPMENT AND CONSTRUCTION MATERIAL IS NOT PERMITTED ON THE BRIDGE. THE CONTRACTOR SHALL WORK WITH THE CITY OF CHICAGO TO DETERMINE AN APPROPRIATE CONSTRUCTION STORAGE LOCATION.
5. THE CONTRACTOR IS PROHIBITED FROM STORING A BARGE IN THE RIVER WITHOUT PRIOR APPROVAL FROM THE US COAST GUARD AND THE COMMISSIONER.
6. BEARING SEAT SURFACES SHALL BE CONSTRUCTED OR ADJUSTED TO THE DESIGNATED ELEVATIONS WITHIN A TOLERANCE OF 1/8 INCH. ADJUSTMENT SHALL BE MADE EITHER BY GRINDING THE SURFACE OR BY SHIMMING THE BEARING. TWO ADJUSTING SHIMS OF THE DIMENSIONS OF THE BOTTOM OF THE PLATE SHALL BE PROVIDED FOR EACH BEARING PLACED AS DETAILED. THE FINAL NUMBER AND THICKNESS OF SHIM PLATES MUST BE DETERMINED IN THE FIELD. THE COST OF THE SHIM PLATES IS INCLUDED IN THE COST OF "FURNISHING AND ERECTING STRUCTURAL STEEL".
7. NO CONSTRUCTION JOINT EXCEPT THOSE SHOWN ON THE PLANS WILL BE ALLOWED UNLESS ORDERED OR APPROVED BY THE COMMISSIONER.
8. THE CONTRACTOR SHALL COMPLETE ALL CONSTRUCTION OPERATIONS (MOVABLE PART) DETAILED IN THE CONTRACT PLANS AND SPECIFICATIONS WHILE THE BASCULE BRIDGE LEAVES ARE IN THE CLOSED POSITION UNLESS PERMISSION IS OBTAINED FROM THE COMMISSIONER.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE STABILITY OF THE BASCULE BRIDGE IN ALL PHASES OF CONSTRUCTION. PRIOR TO REPLACEMENT OF STEEL MEMBERS DETAILED ON THE STRUCTURAL DRAWINGS, THE CONTRACTOR SHALL SUBMIT A CONSTRUCTION PROCEDURE SHOWING EACH STEP OF THE REMOVAL AND REPLACEMENT PROCESS. THE CONTRACTOR SHALL ALSO SUBMIT CALCULATIONS SEALED BY A LICENSED STRUCTURAL ENGINEER IN THE STATE OF ILLINOIS SHOWING THAT ALL MEMBERS WILL REMAIN STABLE AND NOT BECOME OVERSTRESSED DURING ANY STEP OF THE REMOVAL AND REPLACEMENT PROCESS. THE COST ASSOCIATED WITH PREPARING CALCULATIONS AND REMOVAL AND REPLACEMENT PROCEDURE IS INCLUDED IN THE COST OF REMOVAL OF EXISTING STRUCTURAL STEEL.
10. THE CONTRACTOR SHALL UTILIZE APPROPRIATE CONSTRUCTION PROCEDURES TO ENSURE THAT ALL STRUCTURAL MEMBERS ARE SQUARE DURING THE INSTALLATION OF THE LATERAL BRACING FOR THE ROADWAY STRINGERS, SIDEWALK STRINGERS, FLOORBEAMS AND THE CHORDS OF THE MAIN TRUSS MEMBERS.
11. THE CONTRACTOR IS RESPONSIBLE FOR PROPER ALIGNMENT OF THE TWO LEAVES IN ORDER TO ENGAGE THE NEW CENTER LOCK BAR AND ALLOW FOR PROPER FIT. THE ALIGNMENT IS NECESSARY TO ENSURE THAT THE CENTERLINE OF THE BOTTOM CHORD MEMBERS OF EACH LEAF CONFORM TO THE DESIGN GRADES AND ALIGN WITHIN A TOLERANCE OF ±1/8" AT THE CENTER OF THE STRUCTURE. NECESSARY VERTICAL ADJUSTMENTS CAN BE MADE AT THE ANCHOR COLUMN BUMPERS AND LIVE LOAD SHOES BY THE USE OF SHIM PLATES TO ENSURE THAT THE BOTTOM CHORDS OF EACH LEAF ARE ALIGNED.
12. THE CONTRACTOR IS RESPONSIBLE FOR TRAFFIC CONTROL ON LOCAL ROADS AND CITY STREETS NEAR THE PROJECT SITE. REFER TO MAINTENANCE OF TRAFFIC SHEETS FOR DETAILS. THE CONTRACTOR SHALL COORDINATE CONSTRUCTION STAGING AND TRAFFIC CONTROL OPERATIONS WITH ADJOINING OR OVERLAPPING CONSTRUCTION CONTRACTS, INCLUDING BARRICADE PLACEMENT NECESSARY TO PROVIDE A UNIFORM DETOUR PATTERN PRIOR TO AND THROUGHOUT THE DURATION OF THE PROJECT. SEE SPECIAL PROVISIONS.
13. PEDESTRIAN TRAFFIC ACROSS WEBSTER AVE BASCULE BRIDGE MUST BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION.
14. DURING A LIMITED ASBESTOS SURVEY CONDUCTED IN SEPTEMBER 2013, ASBESTOS CONTAINING MATERIALS (ACM) WERE IDENTIFIED ON EXISTING CLOTH WIRE INSULATION AND PIPE FITTINGS LOCATED INSIDE THE BRIDGE HOUSES. SHOULD SIMILAR MATERIAL BE FOUND IN CURRENTLY UNEXPOSED AREAS OF THE BUILDING, IT SHOULD ASSUMED TO BE ASBESTOS CONTAINING MATERIAL AND TREATED ACCORDINGLY. THE CONTRACTOR SHALL TAKE APPROPRIATE PRECAUTIONS TO DEAL WITH THE PRESENCE OF ASBESTOS ON THIS PROJECT. SEE SPECIAL PROVISIONS.

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WSP USA Inc.  
30 N. LASALLE STREET  
SUITE 4000  
CHICAGO, IL 60602  
TEL: (312) 782-8150  
FAX: (312) 782-1884

USER NAME =	PJLAUX
PLOT SCALE =	
PLOT DATE =	1/5/2021

DESIGNED -	IJL
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**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

**GENERAL NOTES - SHEET 1 OF 2**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	<b>G-2</b>
CDOT PROJECT NO. E-1-525			3 of 210

## STEEL FABRICATION NOTES

- DOMESTIC STEEL ACT: ALL IRON AND STEEL PRODUCTS, WHICH ARE TO BE INCORPORATED INTO STATE PROJECTS SHALL BE DOMESTICALLY MANUFACTURED OR PRODUCED AND FABRICATED. THE CONTRACTOR SHALL OBTAIN FROM THE IRON OR STEEL PRODUCER AND/OR FABRICATOR, IN ADDITION TO THE MILL ANALYSIS, A CERTIFICATION THAT ALL IRON OR STEEL MATERIALS MEET THESE DOMESTIC SOURCE REQUIREMENTS. THE APPLICATION OF ALL COATINGS, EPOXY, GALVANIZING, PAINTING, ETC., TO METAL PRODUCTS SHALL BE DOMESTICALLY APPLIED.
- ALL STRUCTURAL STEEL IS TO BE AASHTO M270, (ASTM A709 GRADE 50) UNLESS OTHERWISE NOTED.
- FASTENERS ARE TO BE 7/8" DIAMETER HIGH STRENGTH BOLTS, AASHTO M164 (ASTM A325), TYPE 1 MECHANICALLY GALVANIZED, UNLESS NOTED OTHERWISE. OPEN HOLES ARE TO BE 1 1/16" DIAMETER, UNLESS OTHERWISE NOTED, AND EXCEPT AS REQUIRED BY THE EXISTING DETAILS.
- ALL CONTACT SURFACES ON NEW AND EXISTING STEEL, INCLUDING CONNECTION BOLTS, NUT OR WASHER CONTACT AREAS, ARE TO BE FREE OF SCALE, BURRS, DIRT, OTHER FOREIGN MATERIALS, OIL, PREVIOUSLY APPLIED PAINT, LACQUER, OR OTHER COATINGS THAT WOULD PREVENT SOLID SEATING OF THE CONNECTED PARTS.
- FIELD WELDING IS NOT ALLOWED EXCEPT WHEN APPROVED BY THE COMMISSIONER.
- FIELD SPLICES SHALL BE AS SHOWN ON THE PLANS OR OTHERWISE APPROVED IN WRITING BY THE COMMISSIONER.
- FABRICATION DRAWINGS SHALL SHOW THE WEIGHT OF ALL PARTS.
- ROLLED SHAPED MEMBERS SHALL BE FABRICATED WITH NATURAL CAMBER UP.
- MAIN TRUSS CONNECTIONS ARE TO BE CONSIDERED SLIP-CRITICAL IN ACCORDANCE WITH AASHTO CRITERIA. CONTACT SURFACES OF BOLTED PARTS MUST MEET THE REQUIREMENTS OF CLASS A AS DESIGNATED IN AASHTO CRITERIA.
- THE FABRICATOR SHALL NOTE THAT BOLTS ARE USED IN PLACE OF ORIGINAL RIVETS. IT IS ANTICIPATED THAT THIS CHANGE MAY CAUSE SOME INTERFERENCES AND ERECTION CONFLICTS FOR BOLT INSTALLATION. THE CONTRACTOR AND THE FABRICATOR SHALL REVIEW THE DRAWINGS FOR SUCH CONFLICTS IN DETAIL AND BRING THEM TO THE ATTENTION OF THE COMMISSIONER FOR RESOLUTION PRIOR TO FABRICATION. LIKEWISE, THE CONTRACTOR SHALL VERIFY THE FIT AND CLEARANCE OF ALL NEW COMPONENTS THAT CONNECT TO EXISTING OR REPLACED SECTIONS OF THE PRIMARY TRUSS MEMBERS. WHERE INTERFERENCES OCCUR, THE CONTRACTOR SHALL USE CLIPPED WASHERS, TRIM THE EDGE OF INTERFERING MEMBER OR INSTALL COUNTERSUNK BOLTS AS POSSIBLE MITIGATING SOLUTIONS. ALL MODIFICATIONS MUST BE APPROVED BY THE COMMISSIONER PRIOR TO IMPLEMENTATION.
- AT LOCATIONS WHERE RIVETS ARE TO BE REPLACED WITH HIGH STRENGTH BOLTS, THE BOLTS SHALL BE ORIENTED SO THAT THE HEAD OF THE BOLT IS PLACED ON THE OUTSIDE EXPOSED SURFACE OF THE MEMBER.
- BOLTS, WASHERS AND NUTS ARE NOT INCLUDED IN THE ESTIMATED WEIGHT OF STRUCTURAL STEEL, BUT ARE CONSIDERED PART OF THE MEMBER TO BE PROVIDED. THE COST OF THESE ITEMS ARE INCLUDED IN THE COST OF "FURNISHING AND ERECTING STRUCTURAL STEEL".
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO TAKE MEASUREMENTS OF THE EXISTING STRUCTURE WHEREVER NEW STEEL IS TO BE INSTALLED OR CONNECTED INTO THE EXISTING MATERIAL PRIOR TO ORDERING OR FABRICATING NEW STEEL. THE CONTRACTOR IS RESPONSIBLE FOR THE PROPER FITTING AND ASSEMBLY OF ALL PARTS OF THIS WORK. THE CONTRACTOR'S SHOP DRAWINGS MUST INDICATE WHICH DIMENSIONS WERE OBTAINED BY ACTUAL FIELD MEASUREMENTS.
- THE LOCATION AND DIAMETER OF HOLES IN NEW CONNECTING MATERIAL MUST MATCH HOLES IN THE EXISTING STRUCTURE. HOLES IN EXISTING STRUCTURE MAY BE ENLARGED ONLY WITH THE PERMISSION OF COMMISSIONER AND IN ACCORDANCE WITH THE SPECIFICATIONS. HOLES MAY BE SUB-DRILLED OR SUB-PUNCHED IN NEW MATERIAL WHERE HOLES IN EXISTING MATERIAL ARE TO BE MATCHED. FIELD REAMING OF HOLES IN NEW MATERIAL THAT ARE SUB-PUNCHED OR SUB-DRILLED AND ARE TO MATCH EXISTING HOLES IS ACCEPTABLE, PROVIDED THE SUB-HOLE IS FULLY CONTAINED IN THE OUTLINE OF THE REAMED HOLE. FINAL HOLES MUST BE ROUND AND MAY NOT BE OVERSIZED.
- BOLT AND RIVET SPACINGS AND SIZES MUST BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO ORDERING MATERIAL FOR FABRICATION.
- BOTTOM FLANGES AND WEBS OF FLOORBEAMS SHALL BE CONSIDERED NON-REDUNDANT MAIN LOAD CARRYING ELEMENTS SUBJECT TO TENSILE STRESSES REQUIRING CONFORMANCE TO FRACTURE CRITICAL MEMBER REQUIREMENTS, FCM, UNLESS OTHERWISE NOTED (SEE SPECIAL PROVISIONS). FABRICATION OF SUCH ELEMENTS SHALL BE ACCORDING TO CLAUSE 12 OF THE AASHTO/AWS D1.5 BRIDGE WELDING CODE.

## REMOVAL OF EXISTING STRUCTURAL STEEL NOTES

- THE CONTRACTOR MUST PERFORM ALL WORK WITH CARE SUCH THAT ALL MATERIALS WHICH ARE TO REMAIN IN PLACE WILL NOT BE DAMAGED. IF THE CONTRACTOR DAMAGES ANY MATERIALS WHICH ARE TO REMAIN IN PLACE, THE DAMAGED MATERIALS MUST BE REPAIRED OR REPLACED IN A MANNER SATISFACTORY TO THE COMMISSIONER AT NO ADDITIONAL EXPENSE TO THE CITY.
- FLAME CUTTING OF EXISTING STRUCTURAL STEEL MEMBERS WHICH ARE TO REMAIN IN PLACE IS NOT ALLOWED.
- EXISTING RIVETS ARE TO BE REMOVED AND REPLACED WITH HIGH STRENGTH BOLTS BY MECHANICAL METHODS, FLAME CUTTING FOR THE PURPOSE OF REMOVING EXISTING RIVETS WILL NOT BE ALLOWED.
- EXISTING RIVETS ARE TO BE REMOVED ONE RIVET AT A TIME AND REPLACED WITH A HIGH STRENGTH BOLT BEFORE REMOVING THE NEXT RIVET.
- ALTHOUGH PLANS DESIGNATE EXISTING HOLES AS CONTAINING RIVETS, SOME RIVETS MAY HAVE BEEN REPLACED WITH H.S. BOLTS UNDER PREVIOUS REPAIR CONTRACTS. WHERE THESE LOCATIONS REQUIRE RIVET REMOVAL AND REPLACEMENT WITH H.S. BOLTS, REPLACE EXISTING H.S. BOLTS WITH NEW H.S. BOLTS.
- WHERE EXISTING STRUCTURAL STEEL TO REMAIN HAS BEEN CUT OR NEW HOLES HAVE BEEN DRILLED, THE EDGES MUST BE DRESSED TO A SMOOTH, UNIFORM SURFACE WITH NO NOTCHES OR GOUGES.
- REMOVAL OF EXISTING BRIDGE STRUCTURAL STEEL SHALL BE DONE IN A MANNER AND SEQUENCE CONSISTENT WITH THE REHABILITATION OF THE BRIDGE.
- THE EXISTING STRUCTURAL STEEL COATING ON THE BRIDGE IS ASSUMED TO CONTAIN LEAD. THE CONTRACTOR SHALL TAKE APPROPRIATE PRECAUTIONS TO DEAL WITH THE PRESENCE OF LEAD ON THIS PROJECT. SEE SPECIAL PROVISIONS.
- THE EXISTING COATINGS INSIDE THE BRIDGE HOUSES ON THE STRUCTURAL STEEL, CONDUIT, STAIRS, SAFETY RAILING, DOORS, DOOR FRAMES, WINDOW FRAMES, WALLS, AND MACHINERY ARE ASSUMED TO CONTAIN LEAD. THE CONTRACTOR SHALL TAKE APPROPRIATE PRECAUTIONS TO DEAL WITH THE PRESENCE OF LEAD ON THIS PROJECT. SEE SPECIAL PROVISIONS.

## HIGHWAY STANDARDS

000001-05	STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
001001-01	AREAS OF REINFORCEMENT REBARS
001006	DECIMAL OF AN INCH AND OF A FOOT
280001-04	TEMPORARY EROSION CONTROL SYSTEMS
420001-07	PAVEMENT JOINTS
420401-06	BRIDGE APPROACH PAVEMENT
424001-05	CURB RAMPS FOR SIDEWALKS
701606-10	MULTILANE, SINGLE LANE CLOSURE, 2W W/ MOUNTABLE SIGN
701901-08	TRAFFIC CONTROL DEVICES
704001-04	TEMPORARY CONCRETE BARRIER
420406	PAVEMENT CONNECTOR (HMA) FOR BRIDGE APPROACH SLAB
515001	NAME PLATE

## PROJECT COMMITMENTS

- STRICT ADHERENCE BY THE CONTRACTOR TO BEST MANAGEMENT PRACTICES FOR EROSION AND SEDIMENT CONTROL SHALL BE USED TO MINIMIZE THE POSSIBILITY OF ANY ADVERSE IMPACTS TO THE NORTH BRANCH OF THE CHICAGO RIVER AND THE VICINITY LISTED SPECIES.

## CONCRETE AND REINFORCEMENT NOTES

- ALL CONCRETE ON NEW BRIDGE DECK SHALL BE HIGH PERFORMANCE CONCRETE (HPC). SEE SPECIAL PROVISIONS.
- REINFORCEMENT BARS SHALL BE NEW, DEFORMED, EPOXY COATED BARS CONFORMING TO THE REQUIREMENTS OF AASHTO M31 OR M322, GRADE 60.
- ALL CONSTRUCTION JOINTS SHALL BE BONDED ACCORDING TO IDOT STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION ARTICLE 503.09, UNLESS OTHERWISE NOTED.
- REINFORCEMENT BARS MUST CONFORM TO THE REQUIREMENTS OF ASTM A706, GRADE 60. SEE SPECIAL PROVISIONS.
- ALL REINFORCING BARS SHALL BE EPOXY COATED UNLESS OTHERWISE NOTED.
- HORIZONTAL AND VERTICAL CONSTRUCTION JOINTS SHOWN OR NOTED ON THE PLANS ARE RECOMMENDED. ANY DEVIATION FROM THOSE SHOWN MUST HAVE APPROVAL OF THE COMMISSIONER.
- ALL CONSTRUCTION JOINTS SHALL BE BONDED ACCORDING TO IDOT STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION ART 503.09, UNLESS OTHERWISE NOTED.
- ALL EXPOSED EDGES OF CONCRETE MUST BE CHAMFERED 3/4" UNLESS OTHER MEMBERS ARE ERECTED FLUSH WITH THEM AND UNLESS OTHERWISE NOTED IN THE PLANS.
- ALL EXPOSED CONCRETE SURFACES MUST BE TREATED WITH SILICONE SEALER. LINSEED OIL OR OTHER SURFACE TREATMENTS ARE NOT ACCEPTABLE.
- CONCRETE COVER FOR REINFORCEMENT:

EXCEPT AS OTHERWISE NOTED OR SHOWN ON THE DRAWINGS, REINFORCEMENT SHALL HAVE A MINIMUM CONCRETE COVER AS FOLLOWS.

- BOTTOM OF FOUNDATIONS 3"
- BACKFILLED SURFACES 2 1/2"
- SURFACES IN CONTACT WITH WATER 2 1/2"
- INTERIOR SURFACES (NOT EXPOSED TO WATER) 2"
- EXTERIOR WALLS AND SLABS (ABOVE GROUND SURFACE) 2"

## SUBSTRUCTURE, BEARINGS AND ANCHOR BOLT NOTES

- REINFORCEMENT BARS SHALL BE NEW, DEFORMED, EPOXY COATED BARS CONFORMING TO THE REQUIREMENTS OF AASHTO M31 OR M322, GRADE 60.
- ANCHOR RODS SHALL CONFORM TO ASTM F1554 GRADE 105 WITH SUPPLEMENTARY REQUIREMENT S4. TOP ENDS OF ANCHOR RODS SHALL BE GROUND FLAT AT 90 DEGREES TO ROD AXIS, FINAL SURFACE ROUGHNESS SHALL NOT EXCEED 125 MICRO-INCH.
- ANCHOR ROD WASHERS SHALL CONFORM TO ASTM F436.
- ANCHOR ROD NUTS SHALL CONFORM TO ASTM A563, GRADE DH WITH SUPPLEMENTARY REQUIREMENTS S1 AND S2.

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	STRUCTURE NOTATIONS CHECKED	

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 WSP USA Inc. 30 N. LASALLE STREET SUITE 4200 CHICAGO, IL 60602 TEL: (312) 782-8150 FAX: (312) 782-1884	USER NAME = IJLOPEZ	DESIGNED - IJL	REVISED -	 CITY OF CHICAGO DEPARTMENT OF TRANSPORTATION DIVISION OF ENGINEERING	WEBSTER AVENUE BRIDGE OVER THE NORTH BRANCH CHICAGO RIVER	GENERAL NOTES - SHEET 2 OF 2	F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
	PLOT SCALE =	DRAWN - IJL	REVISED -				1388	11-E1525-00-BR	COOK	G-3
	PLOT DATE = SDATES	CHECKED - JIG	REVISED -				CDOT PROJECT NO. E-1-525			4 of 210

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	STRUCTURE NOTATIONS CHECKED	

ITEM NO.	CODE NO.	ITEM	UNIT	TOTAL QUANTITY
1	66900200	NON-SPECIAL WASTE DISPOSAL	CU YD	70
2	66900530	SOIL DISPOSAL ANALYSIS	EACH	2
3	66901001	REGULATED SUBSTANCES PRE-CONSTRUCTION PLAN	LUMP SUM	1
4	66901002	ON-SITE MONITORING OF REGULATED SUBSTANCES	CAL DA	30
5	66901003	REGULATED SUBSTANCES FINAL CONSTRUCTION REPORT	LUMP SUM	1
6	67100100	MOBILIZATION	LUMP SUM	1
7	CDOT6700010	ENGINEER'S FIELD OFFICE	CAL MO	15
8	Z0076600	TRAINEES	ALLOWANCE	1,000
9	*****	FURNISH AND INSTALL PROJECT SIGN, TYPE A	EACH	2
10	*****	FURNISH AND INSTALL PROJECT SIGN, TYPE B	EACH	1
11	*****	FURNISH AND INSTALL PROJECT SIGN, BANNER	EACH	1
12	*****	ASBESTOS ABATEMENT	ALLOWANCE	35,000
13	*****	LEAD-BASED PAINT ABATEMENT	ALLOWANCE	150,000
14	*****	HAZARDOUS MATERIALS ABATEMENT	ALLOWANCE	30,000
15	20200100	EARTH EXCAVATION	CU YD	70
16	25200110	SODDING, SALT TOLERANT	SQ YD	81
17	28000510	INLET FILTERS	EACH	4
18	31101200	SUBBASE GRANULAR MATERIAL, TYPE B 4"	SQ YD	440
19	35501320	HOT-MIX ASPHALT BASE COURSE, 9"	SQ YD	33
20	40600275	BITUMINOUS MATERIALS (PRIME COAT)	POUND	74
21	40600290	BITUMINOUS MATERIALS (TACK COAT)	POUND	576
22	40603080	HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N50	TON	139
23	40603340	HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N70	TON	82
24	42000070	PAVEMENT CONNECTOR (HMA) FOR BRIDGE APPROACH SLAB	SQ YD	48
25	44000100	PAVEMENT REMOVAL	SQ YD	201
26	44000155	HOT-MIX ASPHALT SURFACE REMOVAL, 1 1/2"	SQ YD	15
27	44000165	HOT-MIX ASPHALT SURFACE REMOVAL, 4"	SQ YD	841
28	44000500	COMBINATION CURB AND GUTTER REMOVAL	FOOT	245
29	44000600	SIDEWALK REMOVAL	SQ FT	2,903
30	72000100	SIGN PANEL - TYPE 1	SQ FT	11
31	78000100	THERMOPLASTIC PAVEMENT MARKING - LETTERS AND SYMBOLS	SQ FT	69
32	78000200	THERMOPLASTIC PAVEMENT MARKING - LINE 4"	FOOT	523
33	78000650	THERMOPLASTIC PAVEMENT MARKING - LINE 24"	FOOT	516
34	78008200	POLYUREA PAVEMENT MARKING TYPE I - LETTERS AND SYMBOLS	SQ FT	180
35	78008210	POLYUREA PAVEMENT MARKING TYPE I - LINE 4"	FOOT	906
36	78008230	POLYUREA PAVEMENT MARKING TYPE I - LINE 6"	FOOT	201
37	78008250	POLYUREA PAVEMENT MARKING TYPE I - LINE 12"	FOOT	20
38	78008270	POLYUREA PAVEMENT MARKING TYPE I - LINE 24"	FOOT	23
39	CDOT4240010	PORTLAND CEMENT CONCRETE SIDEWALK 5 INCH	SQ FT	2,507
40	CDOT4240020	PORTLAND CEMENT CONCRETE SIDEWALK 8 INCH	SQ FT	419.5
41	CDOT4240040	PORTLAND CEMENT CONCRETE ADA RAMP 8 INCH	SQ FT	436
42	CDOT4240065	RADIAL DETECTABLE WARNING TILES (CAST IRON)	SQ FT	61.5

0166057-E1525-G004-S00.DGN

PLAN	SURVEYED	DATE
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PROFILE	SURVEYED	DATE
	PLOTTED	BY
NOTE BOOK NO.	GRADES CHECKED	
	STRUCTURE NOTATIONS CHECKED	

ITEM NO.	CODE NO.	ITEM	UNIT	TOTAL QUANTITY
43	CDOT6020010	CATCH BASINS, TYPE 1, 4'-DIAMETER, TYPE 1 FRAME, OPEN LID (CITY OF CHICAGO)	EACH	5
44	CDOT6050020	REMOVING CATCH BASINS	EACH	2
45	CDOT6060020	COMBINATION CURB AND GUTTER TYPE B V.12	FOOT	265.5
46	X0326243	SEDIMENT CONTROL, SILT CURTAIN	LUMP SUM	1
47	X0327980	PAVEMENT MARKING REMOVAL - WATER BLASTING	SQ FT	516
48	*****	REMOVE, STORE AND RE-ERECT SIGN PANEL	EACH	8
49	*****	SIDEWALK REMOVAL (SPECIAL)	SQ FT	805
50	*****	STORM SEWERS, TYPE 2, 8-INCH (EXTRA STRENGTH VITRIFIED CLAY PIPE)	FOOT	5
51	CDOT6640010	TEMPORARY CHAIN LINK FENCE WITH SCREENING, 6'	FOOT	80
52	X1400347	DETOUR TRAFFIC SIGNAL MODIFICATIONS AND MAINTENANCE	EACH	1
53	X7010218	TRAFFIC CONTROL AND PROTECTION, (SPECIAL)	LUMP SUM	1
54	20900110	POROUS GRANULAR BACKFILL	CU YD	375.0
55	50157300	PROTECTIVE SHIELD	SQ YD	1,188
56	50200100	STRUCTURE EXCAVATION	CU YD	86.0
57	50300260	BRIDGE DECK GROOVING	SQ YD	588
58	50300285	FORM LINER TEXTURED SURFACE	SQ FT	2,732
59	50500505	STUD SHEAR CONNECTORS	EACH	6,492
60	51500100	NAME PLATES	EACH	1
61	52100010	ELASTOMERIC BEARING ASSEMBLY, TYPE I	EACH	32
62	50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	108,630
63	52000110	PREFORMED JOINT STRIP SEAL	FOOT	108
64	52100520	ANCHOR BOLTS, 1"	EACH	64
65	59000200	EPOXY CRACK INJECTION	FOOT	176
66	CDOT5010030	CONCRETE REMOVAL	CU YD	253.8
67	CDOT5030020	HIGH PERFORMANCE CONCRETE STRUCTURES	CU YD	258.0
68	CDOT5030030	HIGH PERFORMANCE CONCRETE SUPERSTRUCTURES	CU YD	256.3
69	CDOT5030050	CLASS "SI" CONCRETE (MISCELLANEOUS)	CU YD	32.6
70	CDOT5870010	PROTECTIVE CONCRETE SEALER	SQ YD	1,100
71	X0323444	DECORATIVE STEEL RAILING	FOOT	210
72	X0326519	STEEL RAILING REMOVAL	FOOT	206
73	Z0001903	STRUCTURAL STEEL REMOVAL	POUND	486,420
74	Z0007101	CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES NO. 1	LUMP SUM	1
75	Z0012754	STRUCTURAL REPAIR OF CONCRETE (DEPTH EQUAL TO OR LESS THAN 5 INCHES)	SQ FT	589
76	Z0012755	STRUCTURAL REPAIR OF CONCRETE (DEPTH GREATER THAN 5 INCHES)	SQ FT	99
77	*****	BALANCING OF BRIDGE AND ALTERATION OF COUNTERWEIGHTS	LUMP SUM	1
78	*****	BRIDGE OPERATION AND MAINTENANCE	LUMP SUM	1
79	*****	CLEANING AND PAINTING EXISTING STEEL STRUCTURES	LUMP SUM	1
80	*****	COUNTERWEIGHT PIT CLEANING	EACH	2
81	*****	DOLPHINS	EACH	4
82	*****	DRAINAGE SYSTEM	LUMP SUM	1
83	*****	FURNISHING AND ERECTING 5-INCH GRATING, HALF CONCRETE FILLED	SQ FT	6,114
84	*****	FURNISHING AND ERECTING FRP GRATING	SQ FT	3,227

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PLAN	SURVEYED	DATE
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PROFILE	SURVEYED	DATE
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NOTE BOOK NO.	GRADES CHECKED	
	STRUCTURE NOTATIONS CHECKED	

ITEM NO.	CODE NO.	ITEM	UNIT	TOTAL QUANTITY
85	*****	FURNISHING AND ERECTING STRUCTURAL STEEL	LUMP SUM	1
86	*****	FURNISHING AND ERECTING STRUCTURAL STEEL, FIELD DISCOVERED CONDITIONS REPAIRED AS DIRECTED BY THE COMMISSIONER	POUND	20,000
87	*****	FLOOR ACCESS HATCH	EACH	4
88	*****	METAL LADDERS	EACH	4
89	*****	PIER PROTECTION REPLACEMENT	FOOT	301
90	*****	REMOVAL OF DETERIORATED CONNECTORS AND REPLACEMENT WITH HIGH STRENGTH BOLTS	EACH	51
91	*****	REFURBISHING OF LIVE LOAD BEARINGS	EACH	4
92	*****	REMOVAL OF EXISTING SUPERSTRUCTURES	EACH	1
93	*****	REMOVAL OF EXISTING GRID DECK	LUMP SUM	1
94	64300240	IMPACT ATTENUATORS (FULLY REDIRECTIVE, NARROW), TEST LEVEL 2	EACH	4
95	*****	STEEL RAILING (SPECIAL)	FOOT	506
96	*****	STRUCTURAL STEEL REPAIRS	POUND	61,620
97	*****	TEMPORARY SUPPORT	LUMP SUM	1
98	*****	REMOVE EXISTING BRIDGE HOUSES	EACH	2
99	*****	REMOVE EXISTING CONCRETE RAILINGS	LIN FOOT	180
100	*****	PRECAST CONCRETE WALL	SQ FT	1,500
101	*****	PRECAST CONCRETE RAILINGS	LIN FOOT	180
102	*****	METAL CLADDED WALL ASSEMBLY	SQ FT	590
103	*****	PAINT GYPSUM BOARD CEILING	SQ FT	320
104	*****	LIFE RINGS	EACH	2
105	*****	INTERIOR PAINTING	SQ FT	400
106	*****	INSTALL AND PAINT STAIR RAILINGS	FOOT	100
107	*****	PAINT CONCRETE FLOORS AND STAIRS	SQ FT	1,600
108	*****	ALUMINUM FRAMED WINDOWS	SQ FT	485
109	*****	STANDING SEAM METAL ROOFING	SQ FT	320
110	*****	EXTERIOR DOORS	EACH	4
111	*****	BREAKDOWN FOUNDATION	EACH	5
112	*****	BRIDGE HOUSE ELECTRICAL WORK	LUMP SUM	2
113	*****	CHICAGO 2000 LUMINAIRE ARM, 8 FOOT, WITH SCROLL, 8'	EACH	4
114	*****	CHICAGO 2000 MAST HEAD AND FINIAL FOR 10" POLE	EACH	7
115	*****	CHICAGO 2000 POLE BASE	EACH	11
116	*****	CLEAN EXISTING MANHOLE OR HANDHOLE	EACH	2
117	*****	COILABLE CONDUIT, HDPE, SCH# 80, DIRECTIONAL BORING, 2"	LIN FOOT	473
118	*****	COILABLE CONDUIT, HDPE, SCH# 80, DIRECTIONAL BORING, 3"	LIN FOOT	229
119	*****	CONCRETE FOUNDATION, 28" DIAMETER, 1 1/4" ANCHOR RODS, 15" BOLT CIRCLE, 7 FEET	LIN FOOT	28
120	*****	CONTROLLER STREET LIGHTING, RESIDENTIAL, 240V	EACH	1
121	*****	DRILL EXISTING MANHOLE OR HANDHOLE	EACH	3
122	*****	ELECTRICAL CABLE IN CONDUIT, 1/C #10	LIN FOOT	1,200
123	*****	ELECTRICAL CABLE IN CONDUIT, 1/C #12	LIN FOOT	600
124	*****	ELECTRICAL CABLE IN CONDUIT, 1/C #350 KCMIL	LIN FOOT	1410
125	*****	ELECTRICAL CABLE IN CONDUIT, 1/C #2/0	LIN FOOT	840
126	*****	ELECTRICAL CABLE IN CONDUIT, TRIPLEX 2 1/C NO.6, 1/C NO.8	LIN FOOT	1,893

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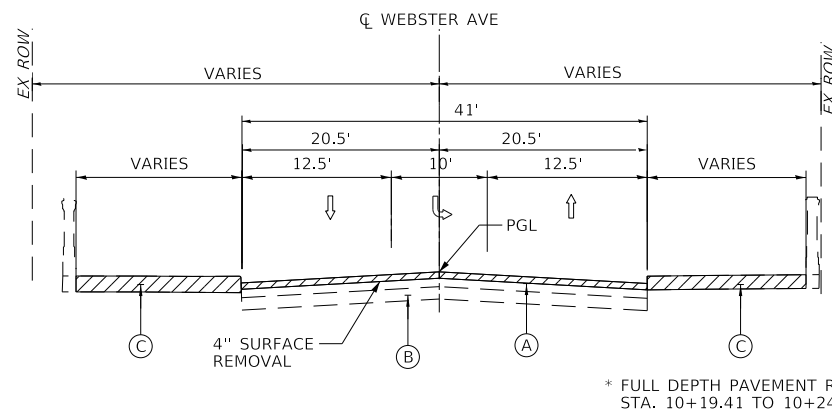






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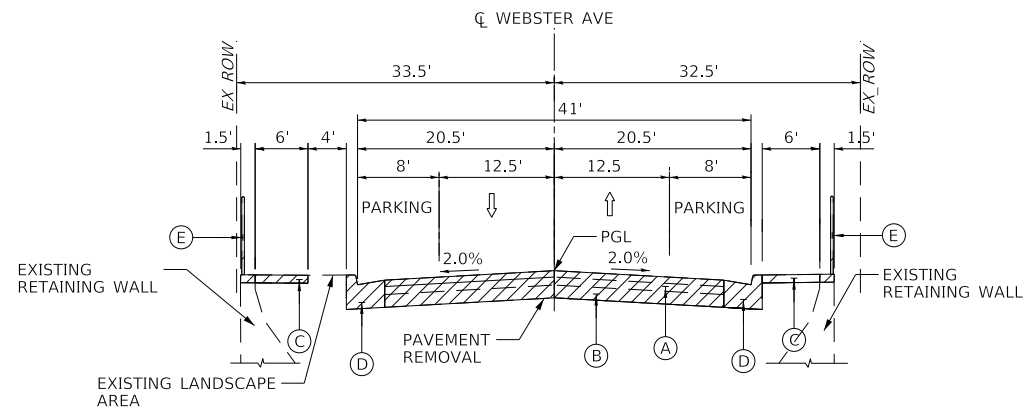
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STRUCTURE NOTATION CHECKED	
NOTE BOOK NO.	
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\* FULL DEPTH PAVEMENT REMOVAL  
STA. 10+19.41 TO 10+24.41

**EXISTING ROADWAY TYPICAL SECTION**

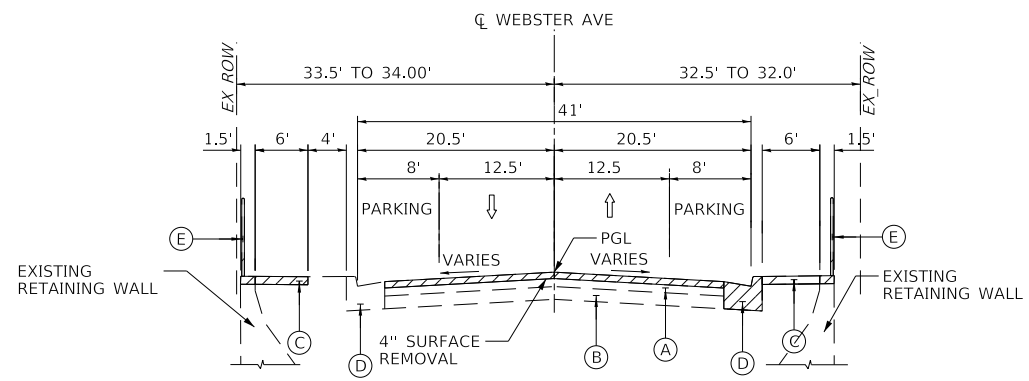
STA 10+02.43 TO STA 10+24.41  
BRIDGE OMMISION  
STA 10+24.41 TO 13+14.35



\* CURB AND GUTTER REMOVAL  
STA. 13+14.15 TO 13+44.37

**EXISTING ROADWAY TYPICAL SECTION**

STA 13+14.35 TO STA 13+55.19



**EXISTING ROADWAY TYPICAL SECTION**

STA 13+55.19 TO STA 15+20.65

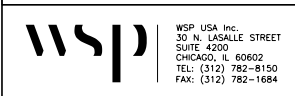
**EXISTING**

- (A) 6" HMA PAVEMENT
- (B) 6" BRICK PAVERS
- (C) 5" PCC SIDEWALK
- (D) CURB AND GUTTER
- (E) PEDESTRIAN RAILING
- REMOVAL

**NOTES**

1. TYPICAL SECTIONS NOT TO SCALE.
2. SEE PROPOSED STRUCTURE PLANS FOR TOP OF THE WALL RECONSTRUCTION.
3. AS INDICATED ON THE ROADWAY PLANS, TYPICAL PROPOSED SIDEWALK MUST HAVE A CROSS SLOPE OF 1:64 OR LESS.
4. EXISTING PAVEMENT STRUCTURE HAS BEEN OBTAINED FROM PAVEMENT CORING, EXACT PAVEMENT LAYERS ARE NOT KNOWN.

E1525-SHT-TYPICAL-01.DGN



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PLOT DATE = SDATES	CHECKED - RPH	REVISED -



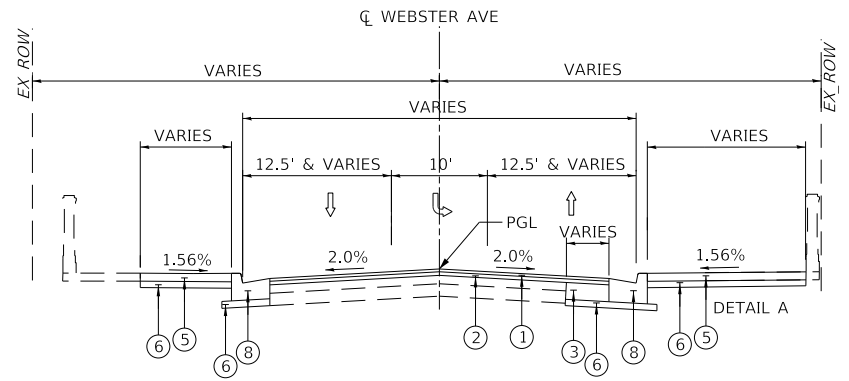
**WEBSTER AVENUE BRIDGE OVER THE NORTH BRANCH CHICAGO RIVER**

**TYPICAL SECTIONS**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	C-2
CDOT PROJECT NO. E-1-525			10 of 210

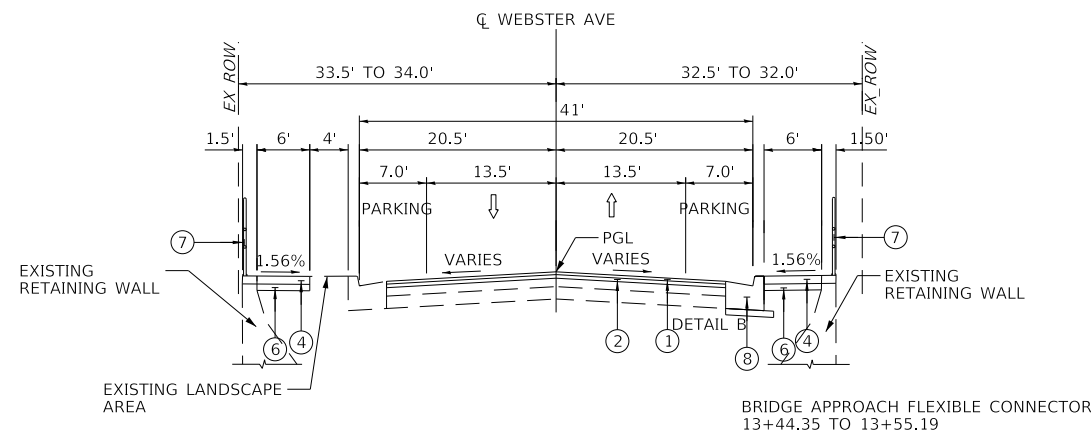
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PROFILE	SURVEYED	DATE
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	GRADES	
	CHECKED	
	STRUCTURE	
	NOTATION	
	NO.	



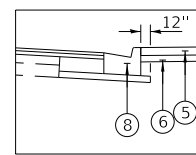
**PROPOSED ROADWAY TYPICAL SECTION**

STA 10+02.43 TO STA 10+24.41



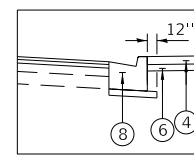
**PROPOSED ROADWAY TYPICAL SECTION**

STA 13+50.35 TO STA 15+20.65



**DETAIL A**

AGGREGATE SUB-BASE AT  
CONCRETE CURB AND GUTTER TY B V.12  
WEST OF THE WEBSTER STRUCTURE



**DETAIL B**

AGGREGATE SUB-BASE AT  
CONCRETE CURB AND GUTTER TY B V.12  
EAST OF THE WEBSTER STRUCTURE

BRIDGE OMMISION  
STA 10+24.41 TO 13+14.35  
BRIDGE APPROACH  
STA 13+14.35 TO 13+44.35  
BRIDGE APPROACH FLEXIBLE CONNECTOR  
13+44.35 TO 13+55.19

**PROPOSED**

- ① HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N70. 1.5"
- ② HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N50, 2.5"
- ③ HOT-MIX ASPHALT BASE COURSE, 9"
- ④ PORTLAND CEMENT CONCRETE SIDEWALK 5 INCH
- ⑤ PORTLAND CEMENT CONCRETE SIDEWALK 8 INCH
- ⑥ SUBBASE GRANULAR MATERIAL, TYPE B 4"
- ⑦ PEDESTRAIN RAILING (SEE STRUCTURAL PLANS)
- ⑧ CONCRETE CURB AND GUTTER TYPE B V.12

**NOTES**

- 1. TYPICAL SECTIONS NOT TO SCALE.
- 2. SEE PROPOSED STRUCTURE PLANS FOR TOP OF THE WALL RECONSTRUCTION.
- 3. AS INDICATED ON THE ROADWAY PLANS, TYPICAL PROPOSED SIDEWALK MUST HAVE A CROSS SLOPE OF 1:64 OR LESS.
- 4. EXISTING PAVEMENT STRUCTURE HAS BEEN OBTAINED FROM PAVEMENT CORING, EXACT PAVEMENT LAYERS ARE NOT KNOWN.

HOT-MIX ASPHALT MIXTURE REQUIREMENTS		QUALITY MANAGEMENT
MIXTURE TYPE	AIR VOIDS @ NDES	
<b>PAVEMENT RESURFACING</b>		
HMA SURFACE COURSE, MIX "D", N70	4% @ 70 Gyr.	QC/QA OR QCP
HMA BINDER COURSE, IL-19.0, N50	4% @ 50 Gyr.	QC/QA OR QCP
<b>PAVEMENT WIDENING</b>		
HMA SURFACE COURSE, MIX "D", N70	4% @ 70 Gyr.	QC/QA OR QCP
HMA BINDER COURSE, IL-19.0, N50	4% @ 50 Gyr.	QC/QA OR QCP
HMA BASE COURSE, N50	4% @ 50 Gyr.	QC/QA OR QCP

E1525-SHT-TYPICAL-02.DGN



WSP USA Inc.  
30 N. LASALLE STREET  
SUITE 4200  
CHICAGO, IL 60602  
TEL: (312) 782-8150  
FAX: (312) 782-1884

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PLOT SCALE =	DRAWN - MMA	REVISED -
PLOT DATE = SDATES	CHECKED - MMA	REVISED -

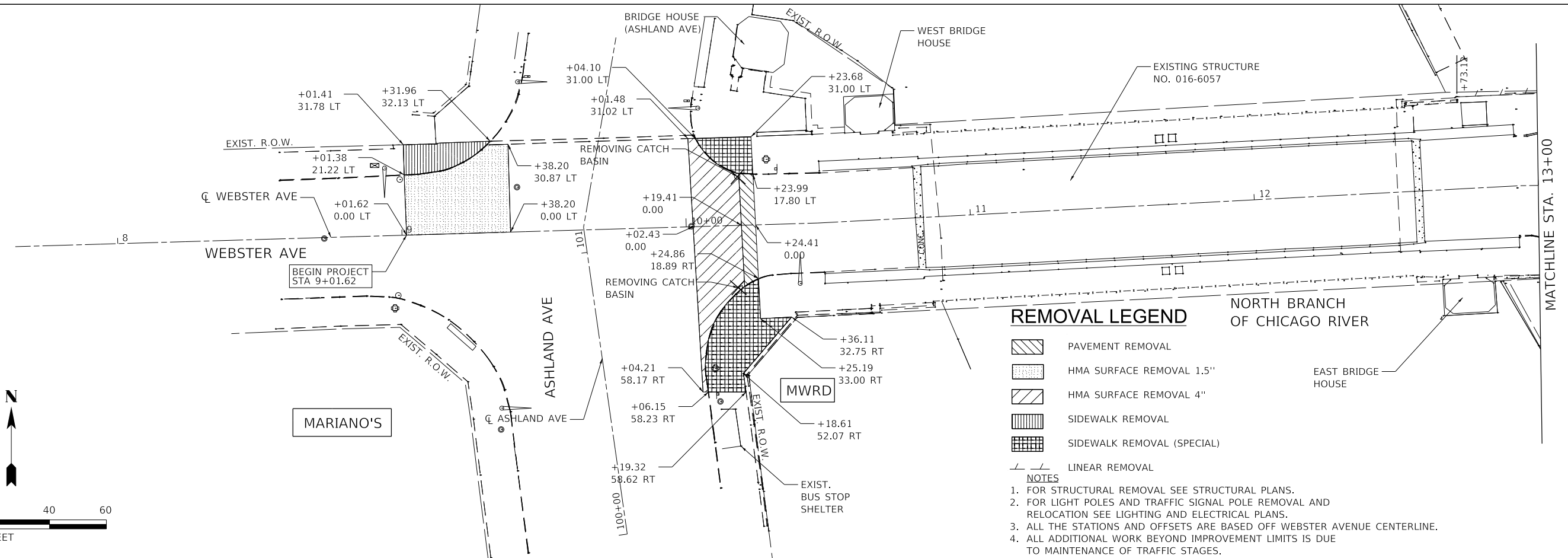
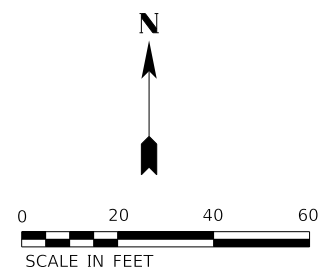
**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

**TYPICAL SECTIONS**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	C-3
CDOT PROJECT NO. E-1-525			11 of 210

PLAN	SURVEYED	DATE
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	NOTE BOOK	
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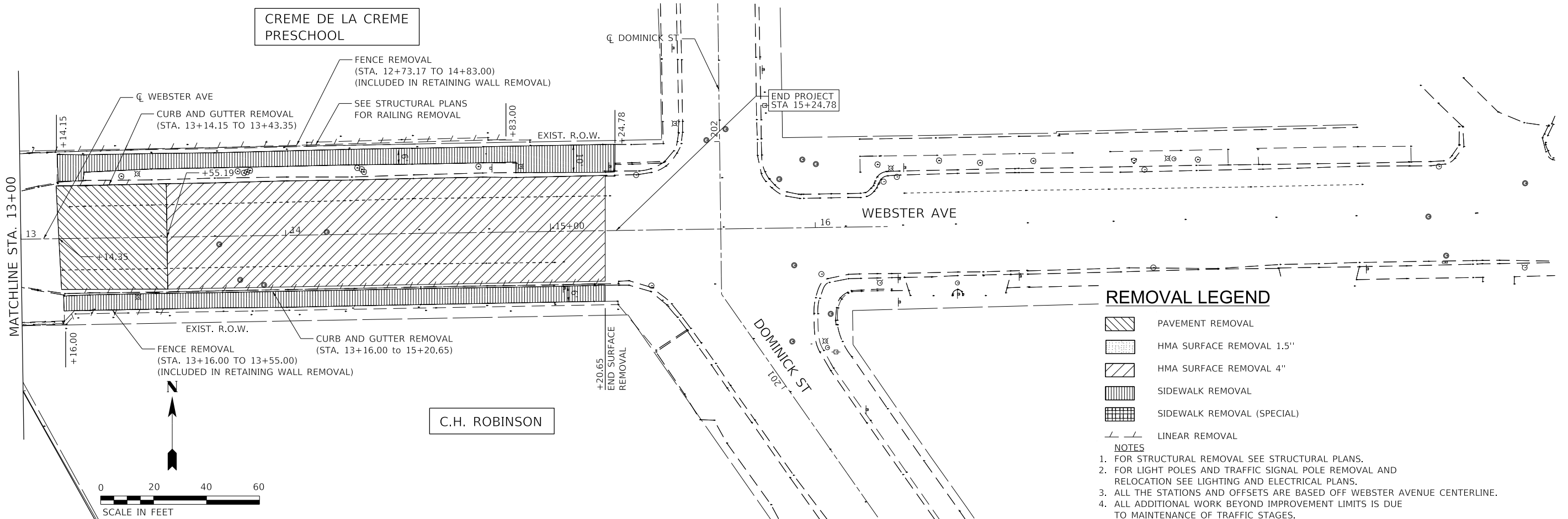
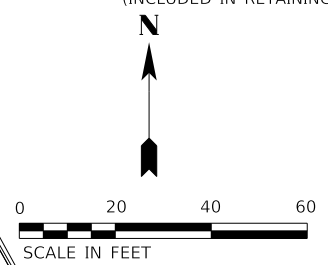
**REMOVAL LEGEND**

- PAVEMENT REMOVAL
- HMA SURFACE REMOVAL 1.5"
- HMA SURFACE REMOVAL 4"
- SIDEWALK REMOVAL
- SIDEWALK REMOVAL (SPECIAL)
- LINEAR REMOVAL

**NOTES**

1. FOR STRUCTURAL REMOVAL SEE STRUCTURAL PLANS.
2. FOR LIGHT POLES AND TRAFFIC SIGNAL POLE REMOVAL AND RELOCATION SEE LIGHTING AND ELECTRICAL PLANS.
3. ALL THE STATIONS AND OFFSETS ARE BASED OFF WEBSTER AVENUE CENTERLINE.
4. ALL ADDITIONAL WORK BEYOND IMPROVEMENT LIMITS IS DUE TO MAINTENANCE OF TRAFFIC STAGES.

PROFILE	SURVEYED	DATE
	PLOTTED	
	GRADES CHECKED	
	NOTE BOOK	
	NO.	
	FILE NAME	
	NO.	



**REMOVAL LEGEND**

- PAVEMENT REMOVAL
- HMA SURFACE REMOVAL 1.5"
- HMA SURFACE REMOVAL 4"
- SIDEWALK REMOVAL
- SIDEWALK REMOVAL (SPECIAL)
- LINEAR REMOVAL

**NOTES**

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2. FOR LIGHT POLES AND TRAFFIC SIGNAL POLE REMOVAL AND RELOCATION SEE LIGHTING AND ELECTRICAL PLANS.
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E1525-SHT-REMOVAL-01.DGN



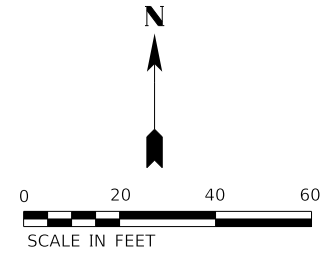
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	CHECKED - RPH	REVISED -
PLOT SCALE =	DRAWN - MMA	REVISED -
PLOT DATE = SDATES	CHECKED - RPH	REVISED -

**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

**ROADWAY REMOVAL PLAN**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	C-4
CDOT PROJECT NO. E-1-525			12 of 210



DATE	BY

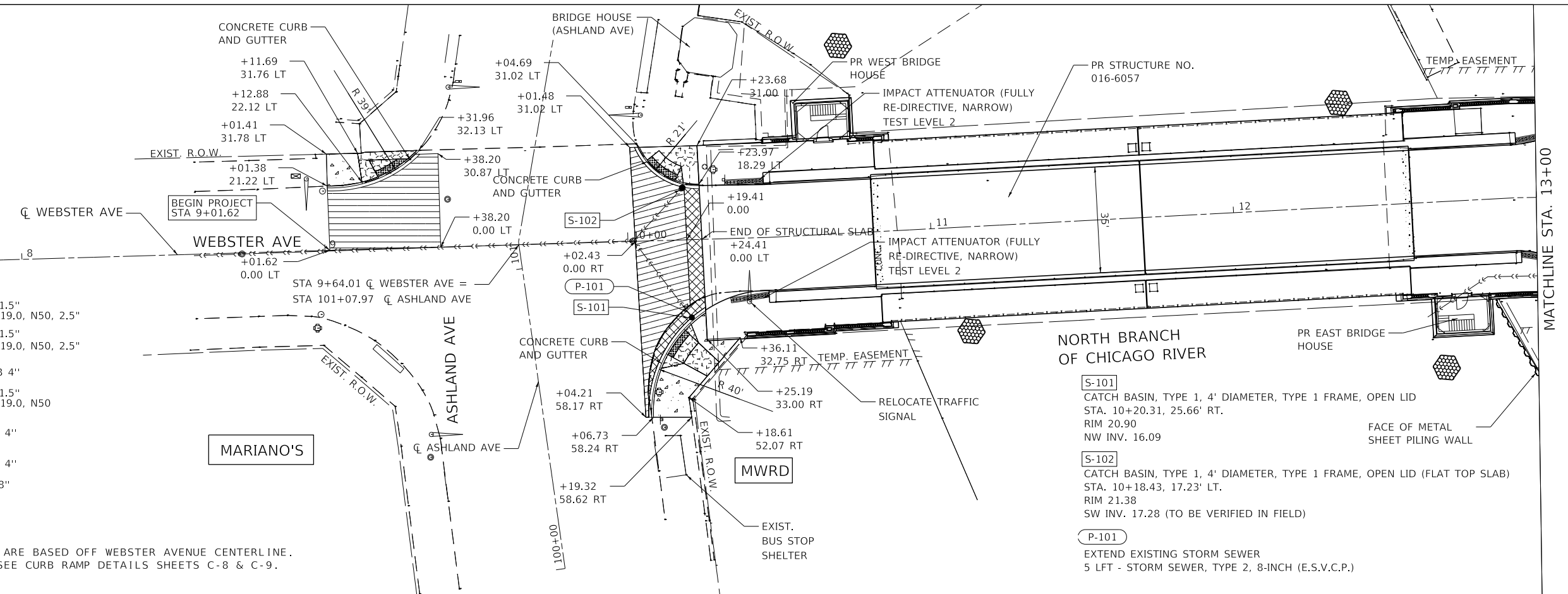
DATE	BY

**PROPOSED LEGEND**

- HMA SURFACE COURSE, MIX "D", N70 1.5"  
HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N50, 2.5"
- HMA SURFACE COURSE, MIX "D", N70 1.5"  
HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N50, 2.5"  
HOT-MIX ASPHALT BASE COURSE, 9"  
SUBBASE GRANULAR MATERIAL, TYPE B 4"
- HMA SURFACE COURSE, MIX "D", N70 1.5"  
HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N50
- PCC SIDEWALK 5"  
SUBBASE GRANULAR MATERIAL TYPE B 4"
- PCC SIDEWALK 8"  
SUBBASE GRANULAR MATERIAL TYPE B 4"
- PORTLAND CEMENT CONCRETE ADA 8"
- DETECTABLE WARNINGS

**NOTES**

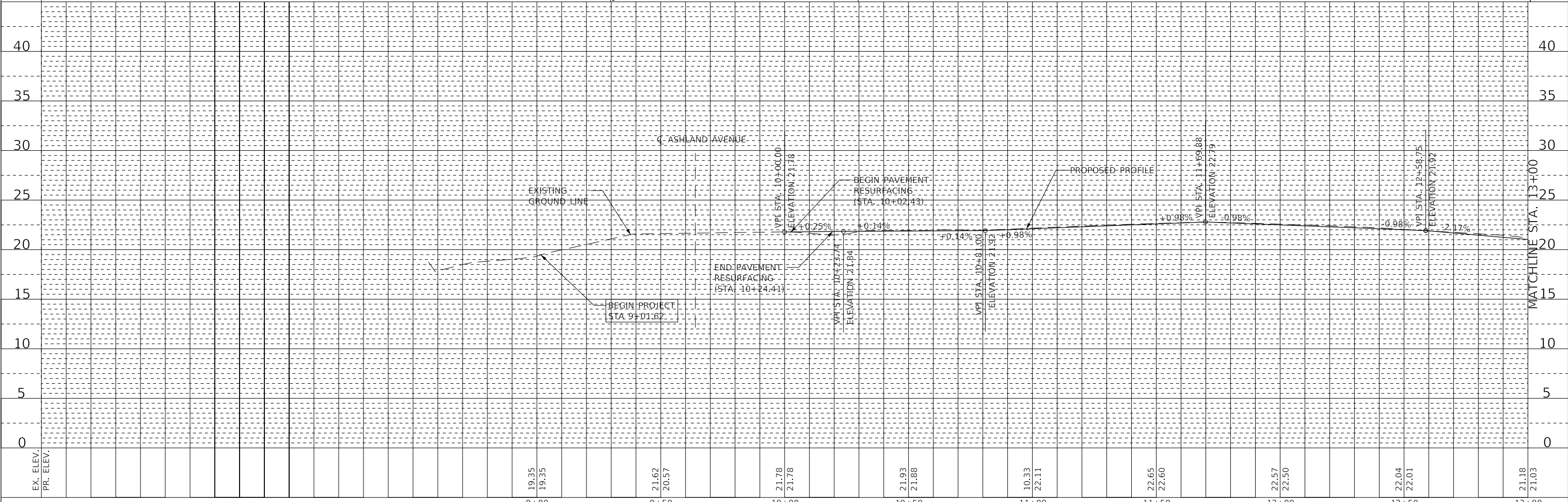
1. ALL THE STATIONS AND OFFSETS NOTED ARE BASED OFF WEBSTER AVENUE CENTERLINE.
2. FOR CURB RAMP OFFSETS AND SLOPES, SEE CURB RAMP DETAILS SHEETS C-8 & C-9.
3. SEE BRIDGE PLANS FOR SN 016-6057.



DATE	BY

DATE	BY



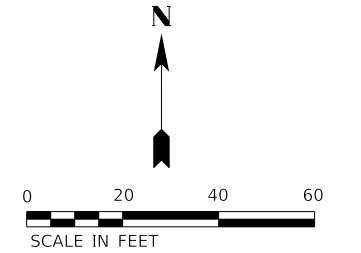
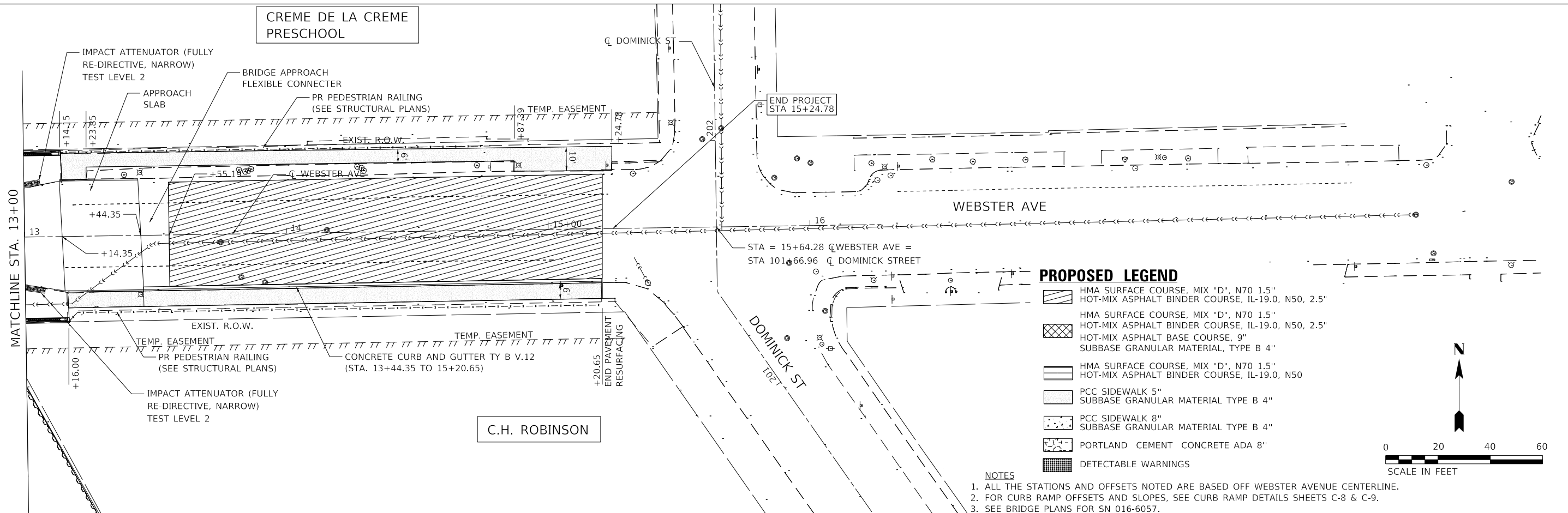
<b>wsp</b>	WSP USA Inc. 30 N. LASALLE STREET SUITE 4200 CHICAGO, IL 60602 TEL: (312) 782-8150 FAX: (312) 782-1684	USER NAME = MMA	DESIGNED - MMA	REVISED -	<b>CITY OF CHICAGO</b> DEPARTMENT OF TRANSPORTATION DIVISION OF ENGINEERING	<b>WEBSTER AVENUE BRIDGE OVER          THE NORTH BRANCH CHICAGO RIVER</b>	<b>PLAN AND PROFILE</b>	F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
		PLOT SCALE =	DRAWN - RPH	REVISED -				1388	11-E1525-00-BR	COOK	C-5
		PLOT DATE = SDATES	CHECKED - MMA	REVISED -				CDOT PROJECT NO. E-1525			
			DATE - RPH	REVISED -				13 of 210			

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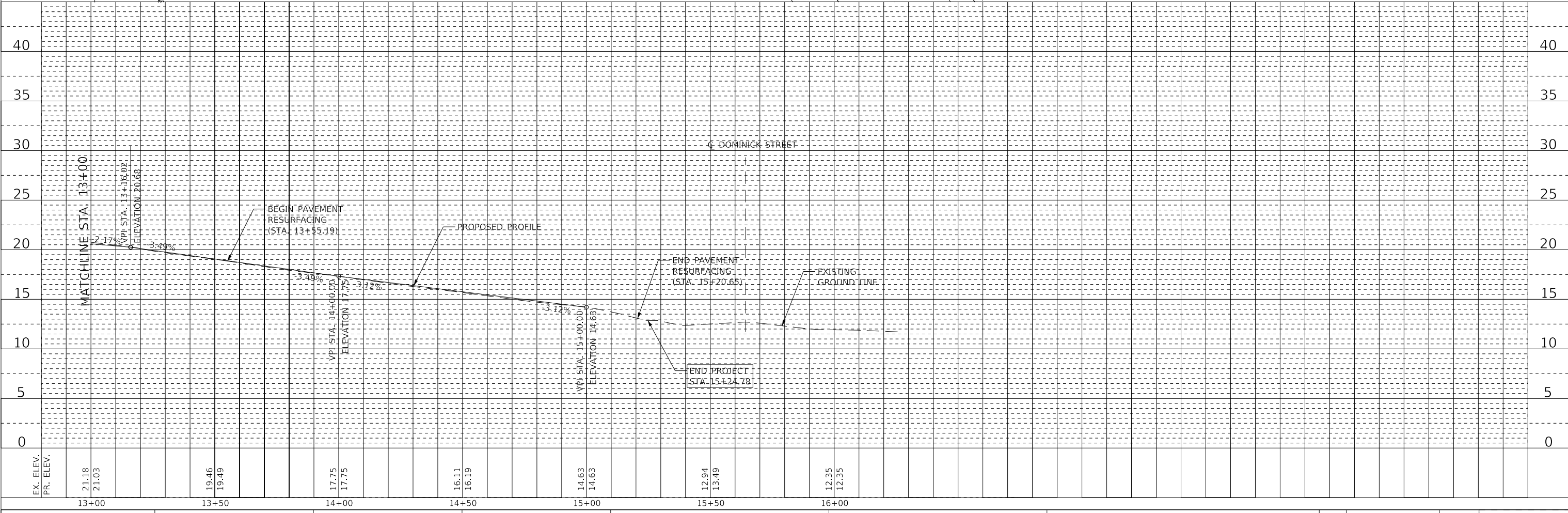
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FILE NAME	

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NOTE BOOK NO.	

CREME DE LA CREME  
PRESCHOOL



C.H. ROBINSON

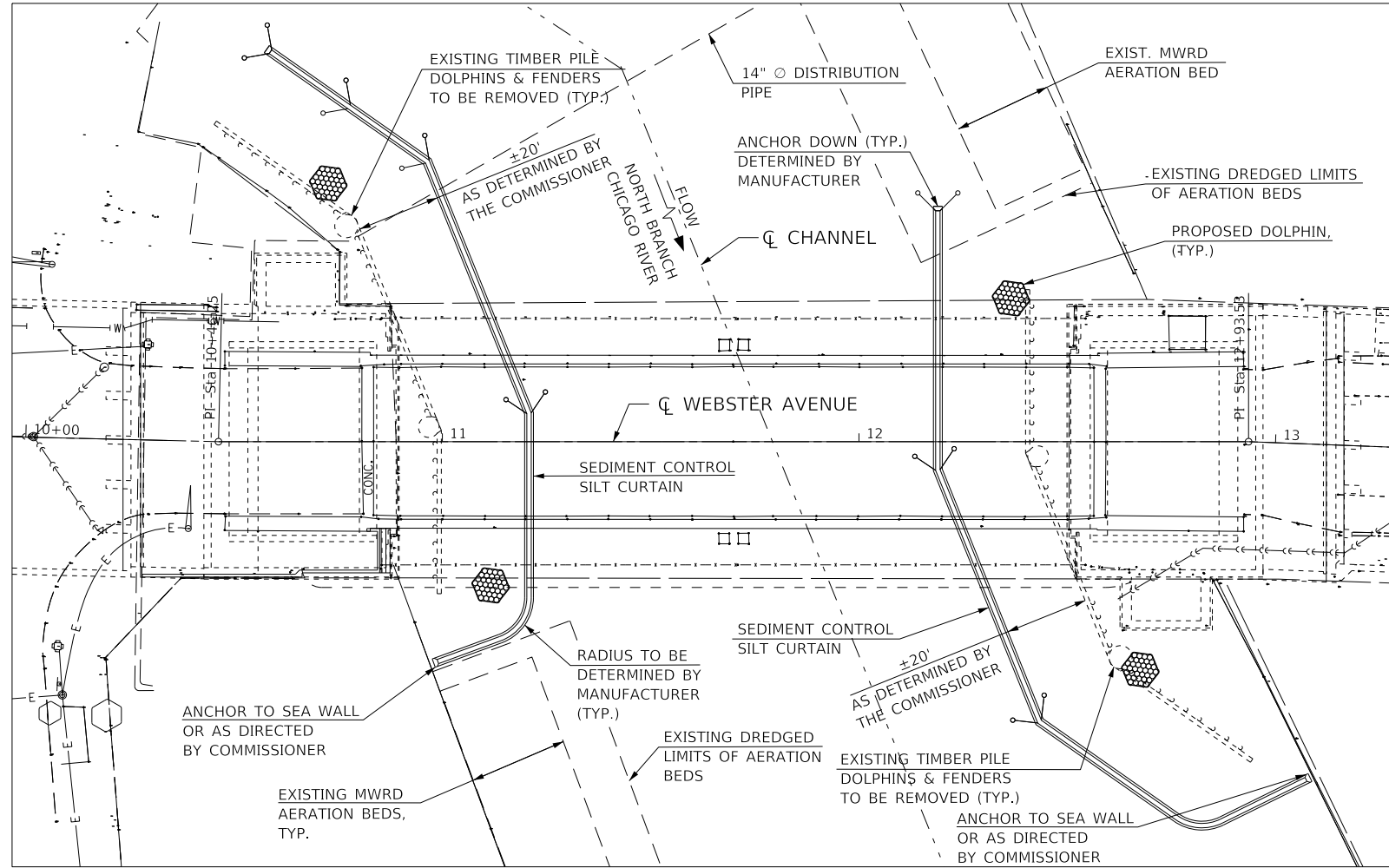


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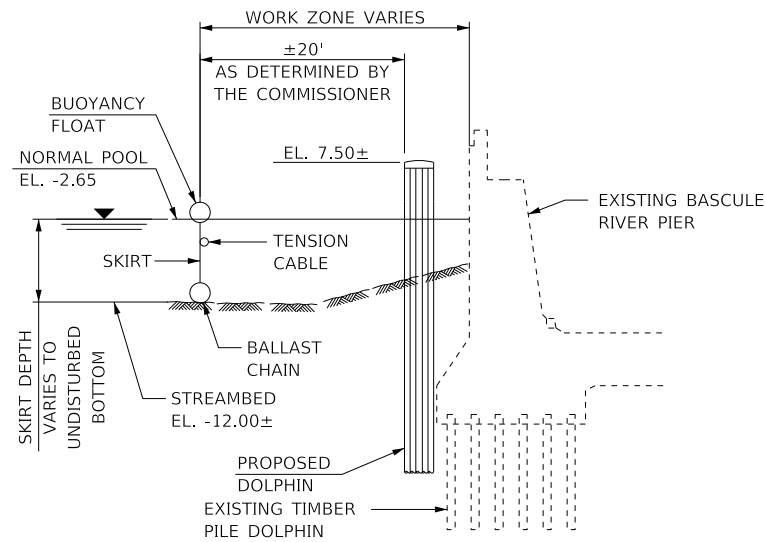
<p>WSP USA Inc. 30 N. LA SALLE STREET SUITE 4200 CHICAGO, IL 60602 TEL: (312) 782-8150 FAX: (312) 782-1884</p>	USER NAME = MMA	DESIGNED - MMA	REVISED -	<p>CITY OF CHICAGO DEPARTMENT OF TRANSPORTATION DIVISION OF ENGINEERING</p>	<p>WEBSTER AVENUE BRIDGE OVER THE NORTH BRANCH CHICAGO RIVER</p>	<p>PLAN AND PROFILE</p>	F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
	PLOT SCALE =	CHECKED - MMA	REVISED -				1388	11-E1525-00-BR	COOK	C-6
	PLOT DATE = SDATES	DATE - RPH	REVISED -				CDOT PROJECT NO. E-1-525		14 of 210	

PLAN	SURVEYED	DATE
	PLOTTED	BY
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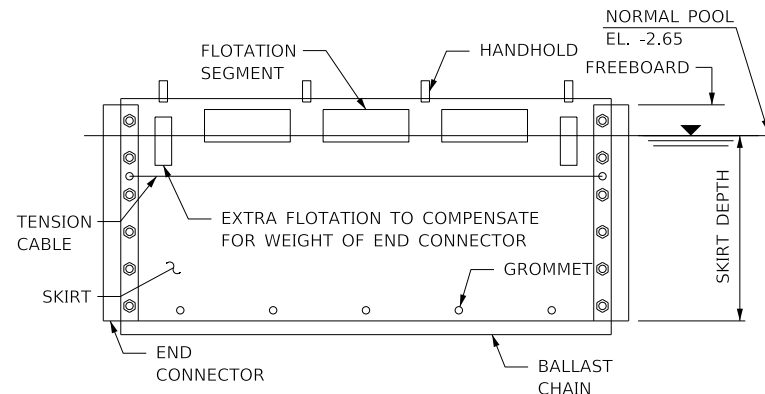
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	GRADES CHECKED	
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	FILE NAME	
	NO.	



**PLAN**



**CROSS SECTION  
THRU WORKZONE**



**TYPICAL  
ELEVATION**

**SEDIMENT CONTROL SILT CURTAIN DETAILS  
(NTS)**

**NOTES:**

1. THE CONTRACTOR SHALL INSTALL A FLOATING BOOM AROUND THE WORK BARGE AREA IN THE EVENT OF OIL AND/OR FUEL LEAKAGE FROM CONSTRUCTION EQUIPMENT AND TO ACCUMULATE EXCESS BROKEN TIMBER PILE PIECES DURING THE DOLPHIN REMOVAL ACTIVITIES. THIS COST SHALL BE INCLUDED IN "SEDIMENT CONTROL SILT CURTAIN."
2. ANCHOR CURTAIN TO MAINTAIN STATIONARY LOCATION THROUGHOUT CONSTRUCTION.
3. SEE SPECIAL PROVISIONS FOR SEDIMENT CONTROL SILT CURTAIN.

E1525-SHT-SEDEROS-01.DGN



USER NAME = P_JLAUX	DESIGNED - P_JL	REVISED -
PLOT SCALE =	CHECKED - KKS	REVISED -
PLOT DATE = SDATES	DRAWN - P_JL	REVISED -
	CHECKED - KKS	REVISED -

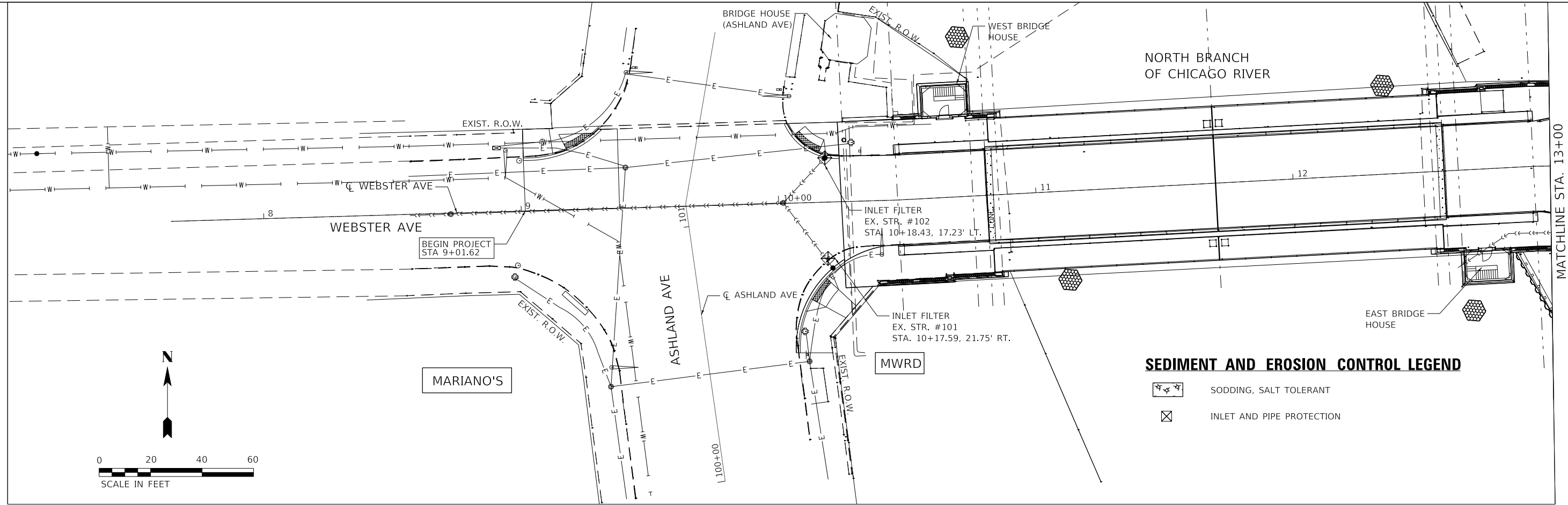
**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

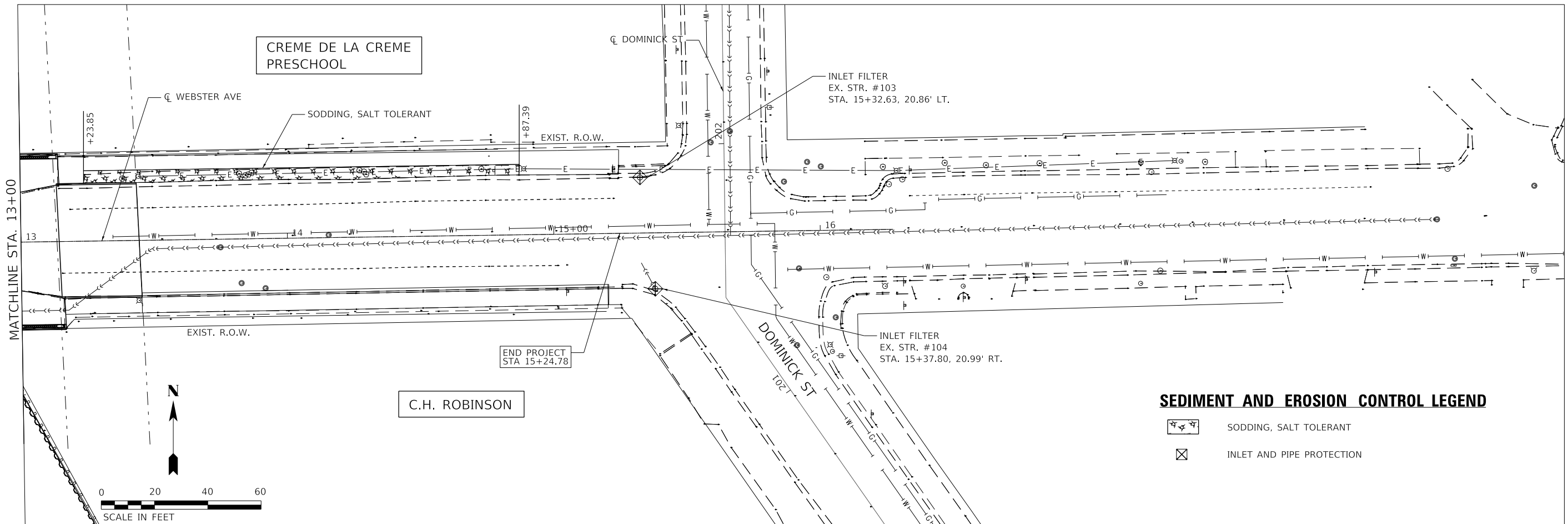
**SEDIMENT CONTROL SILT CURTAIN**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	C-7
CDOT PROJECT NO. E-1-525			15 of 210

PLAN	SURVEYED	DATE
	PLOTTED	
	ALIGNMENT CHECKED	
	NOTE BOOK	
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	FILE NAME	
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PROFILE	SURVEYED	DATE
	PLOTTED	
	GRADES CHECKED	
	NOTE BOOK	
	NO.	
	STRUCTURE NOTATION	
	NO.	



**SEDIMENT AND EROSION CONTROL LEGEND**

- SODDING, SALT TOLERANT
- INLET AND PIPE PROTECTION

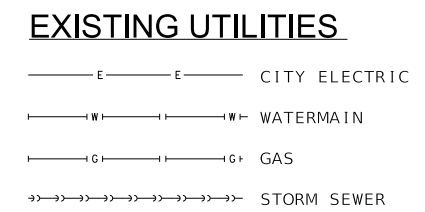
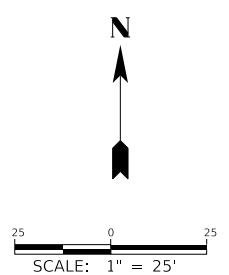
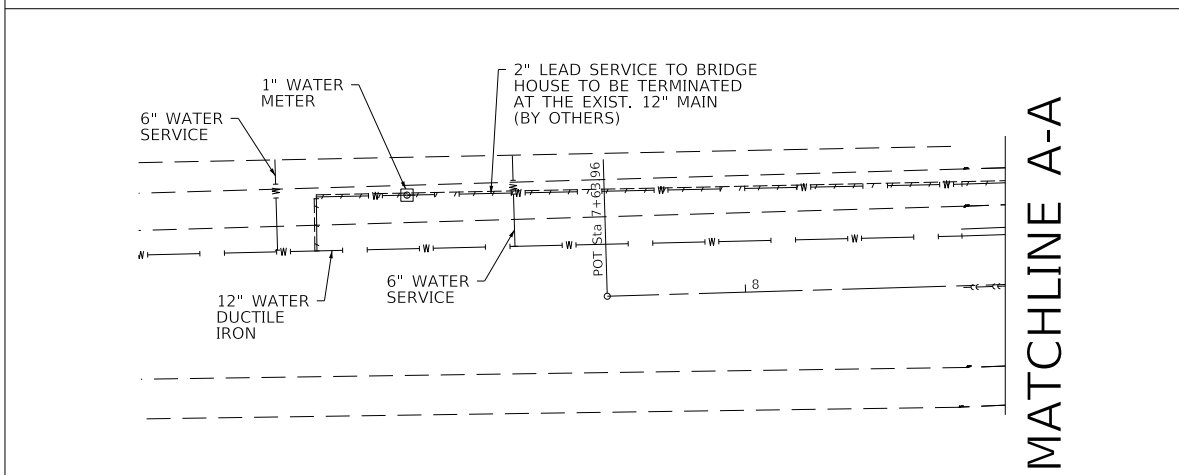
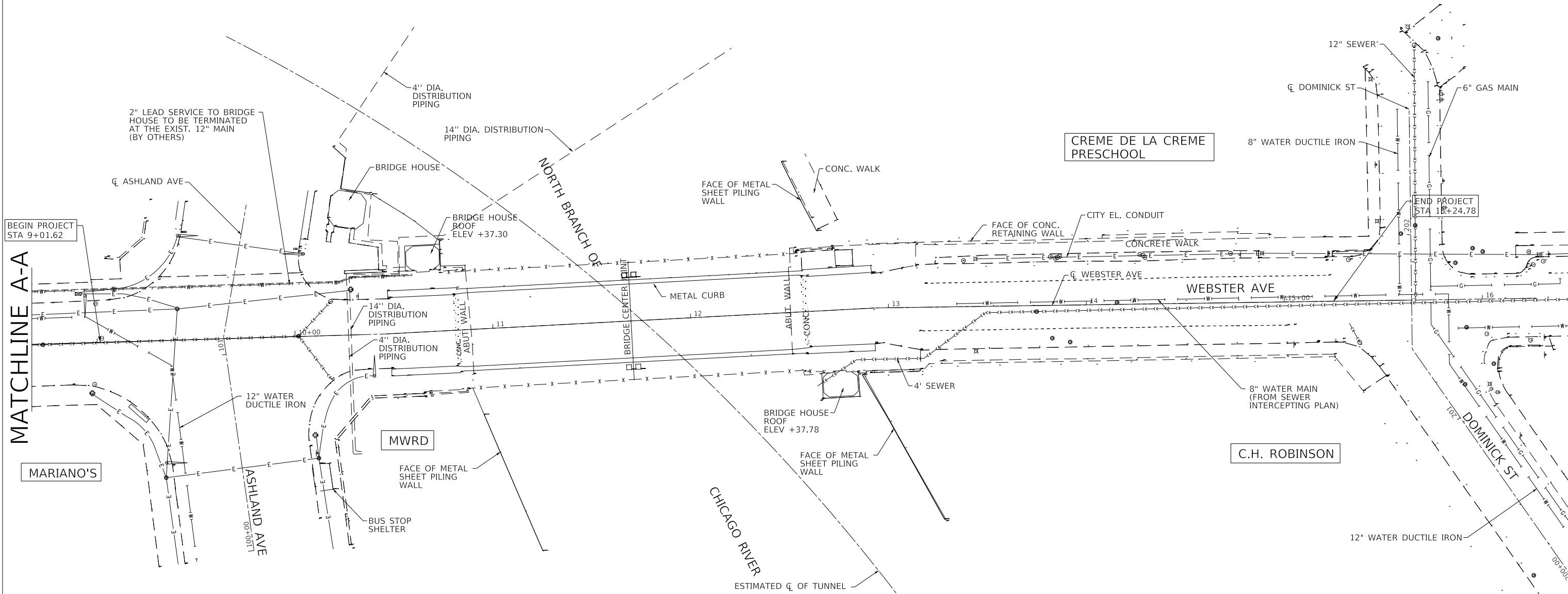
**SEDIMENT AND EROSION CONTROL LEGEND**

- SODDING, SALT TOLERANT
- INLET AND PIPE PROTECTION

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ALIGNMENT CHECKED	
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PROFILE	
NO.	
NOTE BOOK	
NO.	
GRADES CHECKED	
STRUCTURE NOTATION CHECKED	



**wsp**  
 WSP USA Inc.  
 30 N. LASALLE STREET  
 SUITE 4200  
 CHICAGO, IL 60602  
 TEL: (312) 782-8150  
 FAX: (312) 782-1884

USER NAME = MMA	DESIGNED - MMA	REVISED -
	CHECKED - RPH	REVISED -
PLOT SCALE =	DRAWN - MMA	REVISED -
PLOT DATE = SDATES	CHECKED - RPH	REVISED -

**CITY OF CHICAGO**  
 DEPARTMENT OF TRANSPORTATION  
 DIVISION OF ENGINEERING

**WEBSTER AVENUE BRIDGE OVER  
 THE NORTH BRANCH CHICAGO RIVER**

**UTILITY PLAN**

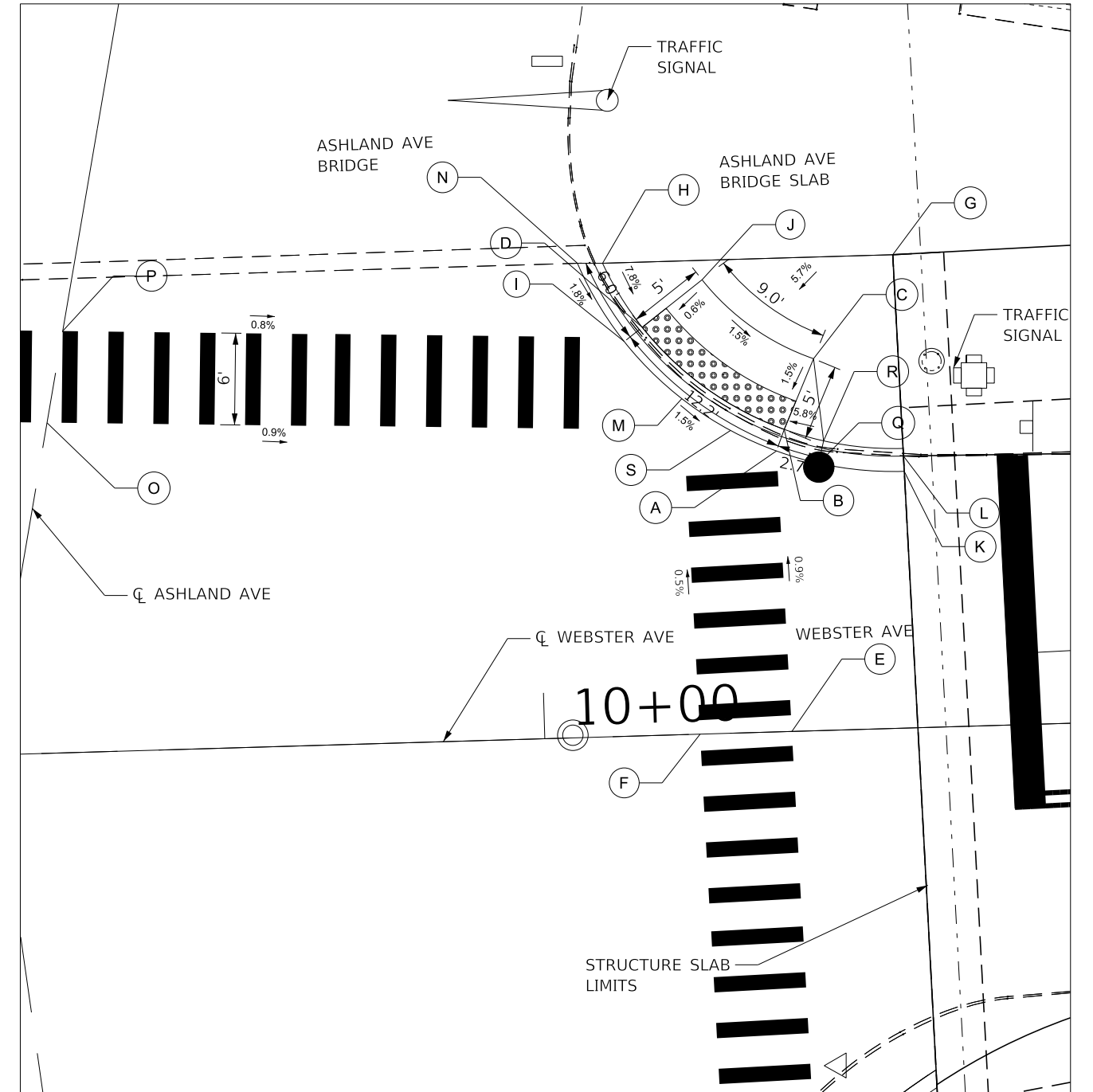
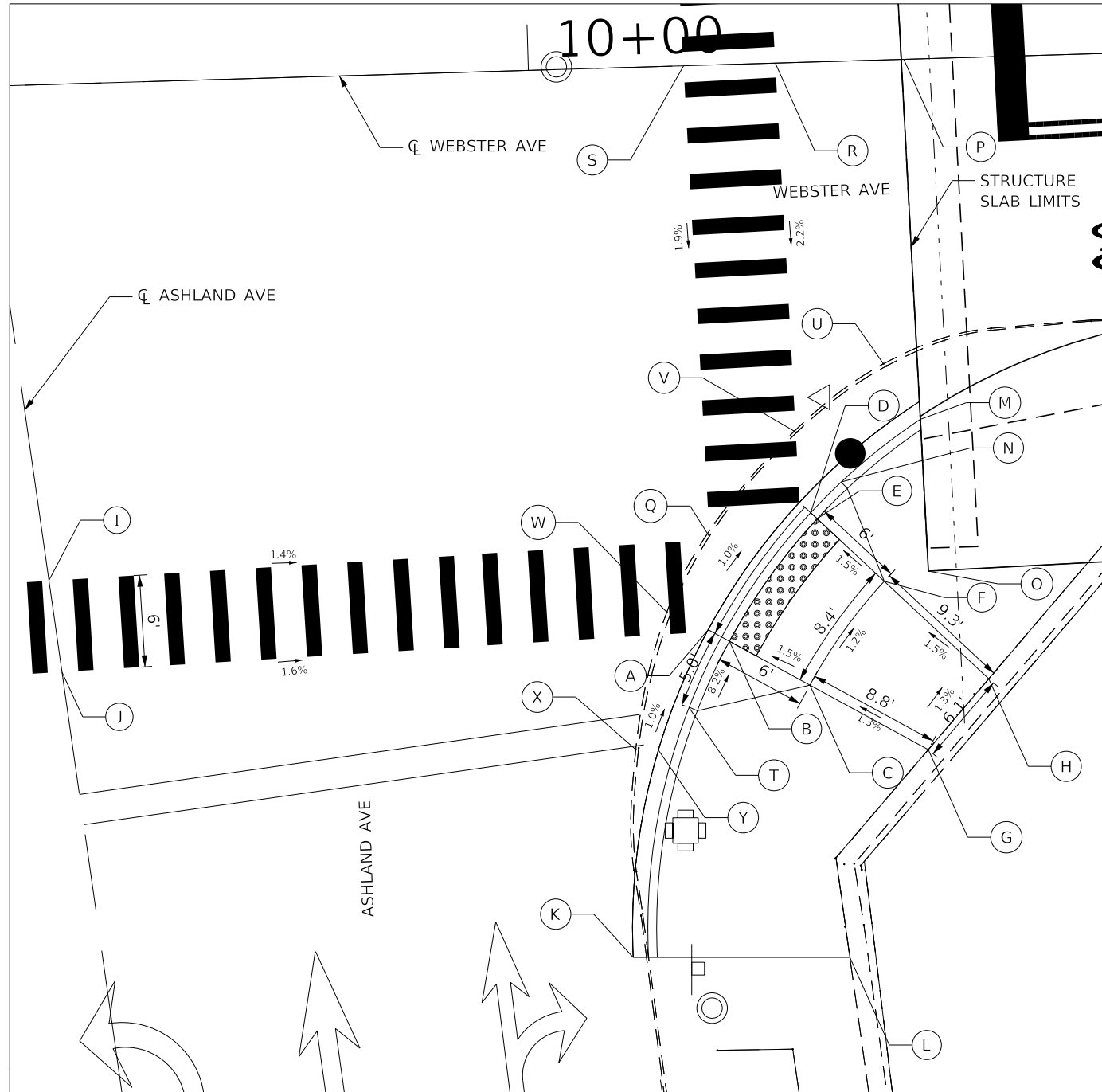
F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	C-9
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E1525-SHT-UTILITY.DGN



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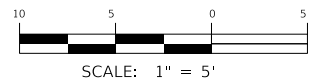


STATION	OFFSET	ELEVATION	STATION	OFFSET	ELEVATION		
A	10+10.70	36.90' R	21.57	P	10+24.58	0.00' R	21.84
B	10+12.60	37.71' R	21.57	Q	10+10.95	30.83' R	21.21
C	10+17.23	40.73' R	21.66	R	10+16.16	00.00' R	21.82
D	10+17.62	29.46' R	21.47	S	10+10.16	00.00' R	21.81
E	10+18.03	29.87' R	21.47	T	10+09.28	41.97' R	21.45
F	10+22.29	34.09' R	21.56	U	10+22.66	19.87' R	21.72
G	10+24.85	45.18' R	21.78	V	10+16.70	24.10' R	21.37
H	10+28.94	40.66' R	21.70	W	10+08.01	35.68' R	21.34
I	9+67.66	32.42' R	21.80	X	10+05.72	44.61' R	21.21
J	9+68.34	38.45' R	21.73	Y	10+07.19	44.68' R	21.12
K	10+05.15	58.20' R	21.26				
L	10+19.32	58.61' R	22.05				
M	10+25.10	23.56' R	22.07				
N	10+19.68	27.51' R	21.68				
O	10+25.20	33.51' R	21.92				

NOTES:  
ALL STATIONS AND OFFSETS NOTED ARE BASED OFF WEBSTER AVENUE CENTERLINE.

STATION	OFFSET	ELEVATION	M	10+09.61	21.96' L	21.70	
A	10+15.69	18.37' L	21.62	N	10+03.05	31.00' L	21.91
B	10+16.25	19.76' L	21.62	O	9+68.59	24.18' L	22.07
C	10+18.71	25.24' L	21.70	P	9+69.80	30.21' L	22.09
D	10+07.15	26.71' L	21.80	Q	10+20.84	17.01' L	21.38
E	10+16.16	00.00' L	21.82	R	10+21.05	18.49' L	21.80
F	10+10.16	00.00' L	21.81	S	10+12.74	19.80' L	21.66
G	10+23.69	31.87' L	22.33				
H	10+04.69	30.97' L	22.26				
I	10+05.95	25.82' L	21.80				
J	10+11.57	30.86' L	21.83				
K	10+24.01	16.79' L	21.74				
L	10+24.14	18.29' L	22.34				

NOTES:  
ALL STATIONS AND OFFSETS NOTED ARE BASED OFF WEBSTER AVENUE CENTERLINE.



E1525-SHT-ADA1.DGN



WSP USA Inc.  
30 N. LA SALLE STREET  
SUITE 4200  
CHICAGO, IL 60602  
TEL: (312) 782-8150  
FAX: (312) 782-1884

USER NAME = MMA	DESIGNED - MMA	REVISED -
PLOT SCALE =	CHECKED - KSD	REVISED -
PLOT DATE = SDATES	DRAWN - MMA	REVISED -
	CHECKED - KSD	REVISED -

**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER

ADA RAMPS DETAILS

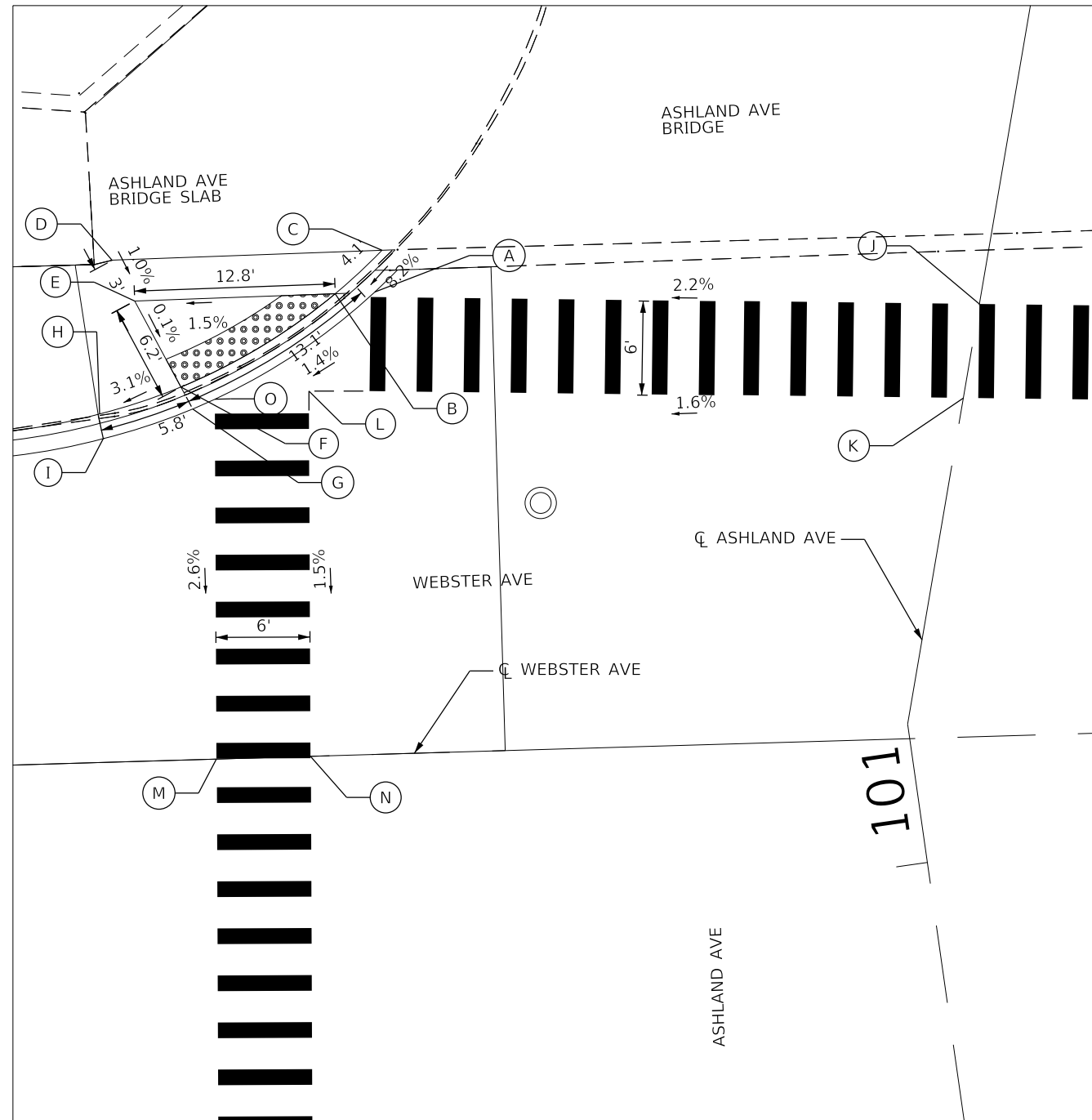
F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	C-10
CDOT PROJECT NO. E-1-525			18 of 210

WEBSTER AVE & ASHLAND AVE - NW CORNER

ADA DETAILS FOR WEBSTER AVE

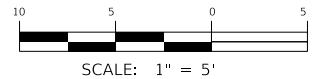
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	STRUCTURE NOTATIONS CHECKED	
	NOTE BOOK NO.	
	CADD FILE NAME	



	STATION	OFFSET	ELEVATION
A	9+30.74	29.48' L	21.28
B	9+28.22	29.44' L	21.28
C	9+31.28	32.13' L	21.62
D	9+14.09	32.00' L	21.12
E	9+15.42	29.35' L	21.09
F	9+18.20	23.79' L	21.09
G	9+18.91	22.36' L	21.09
H	9+12.87	22.20' L	20.91
I	9+13.15	20.64' L	20.33
J	9+69.80	30.21' L	20.42
K	9+68.59	24.18' L	21.84
L	9+21.15	23.30' L	21.18
M	9+19.77	00.00' L	20.51
N	9+25.77	00.00' L	20.84
O	9+20.34	22.94' L	21.11

NOTES:  
ALL STATIONS AND OFFSETS NOTED ARE BASED OFF WEBSTER AVENUE CENTERLINE.



E1525-SHT-ADA2.DGN



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30 N. LASALLE STREET  
SUITE 4200  
CHICAGO, IL 60602  
TEL: (312) 782-8150  
FAX: (312) 782-1884

USER NAME = MMA	DESIGNED - MMA	REVISED -
PLOT SCALE =	CHECKED - KSD	REVISED -
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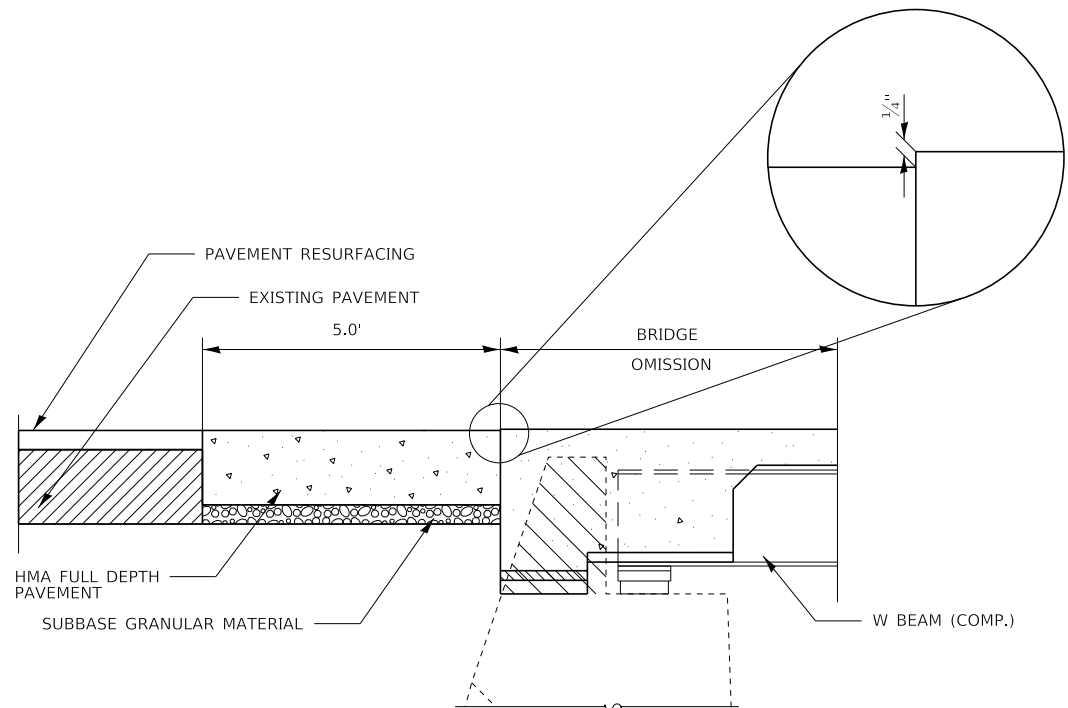
**CITY OF CHICAGO**  
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DIVISION OF ENGINEERING

WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER

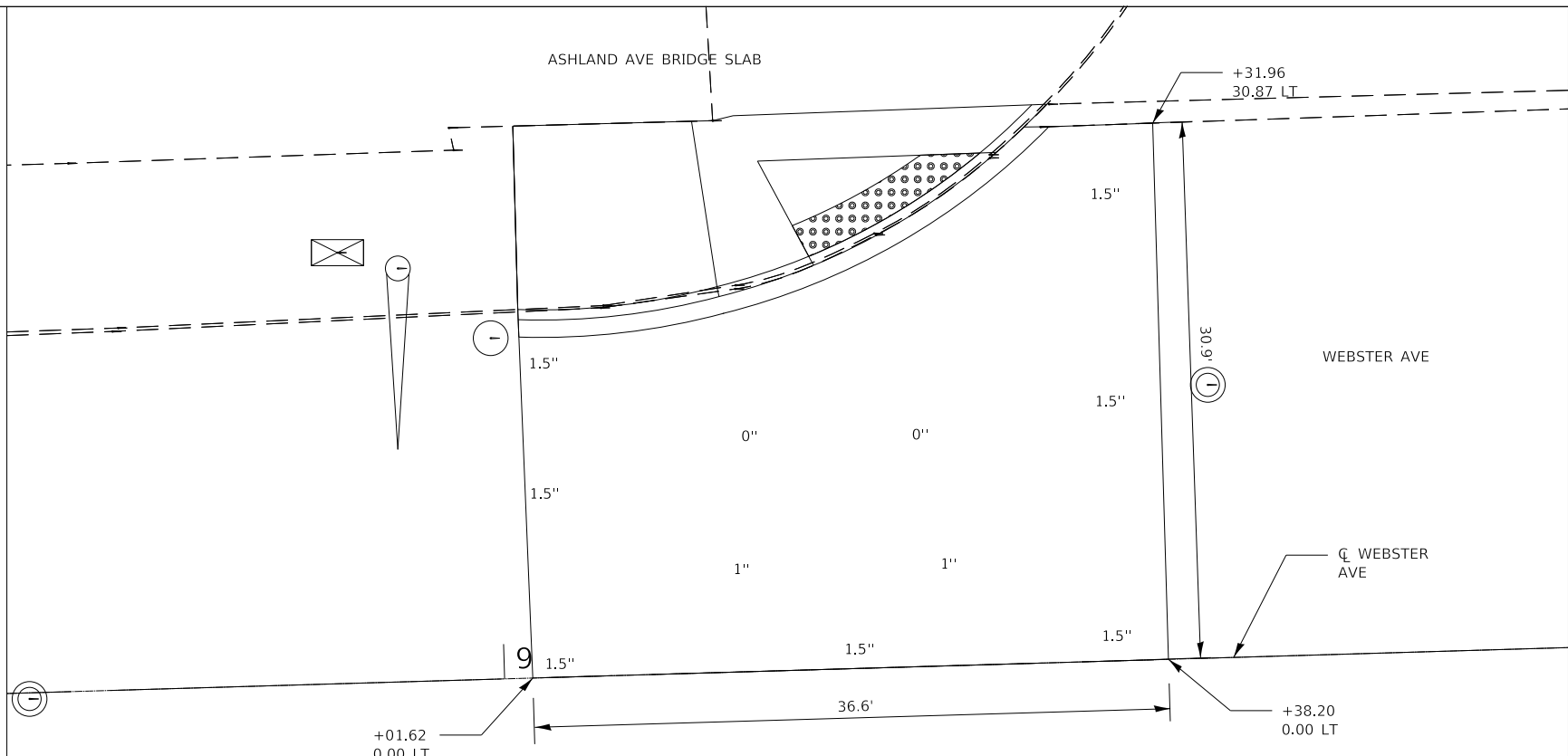
ADA RAMPS DETAILS

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1388	11-E1525-00-BR	COOK	C-11
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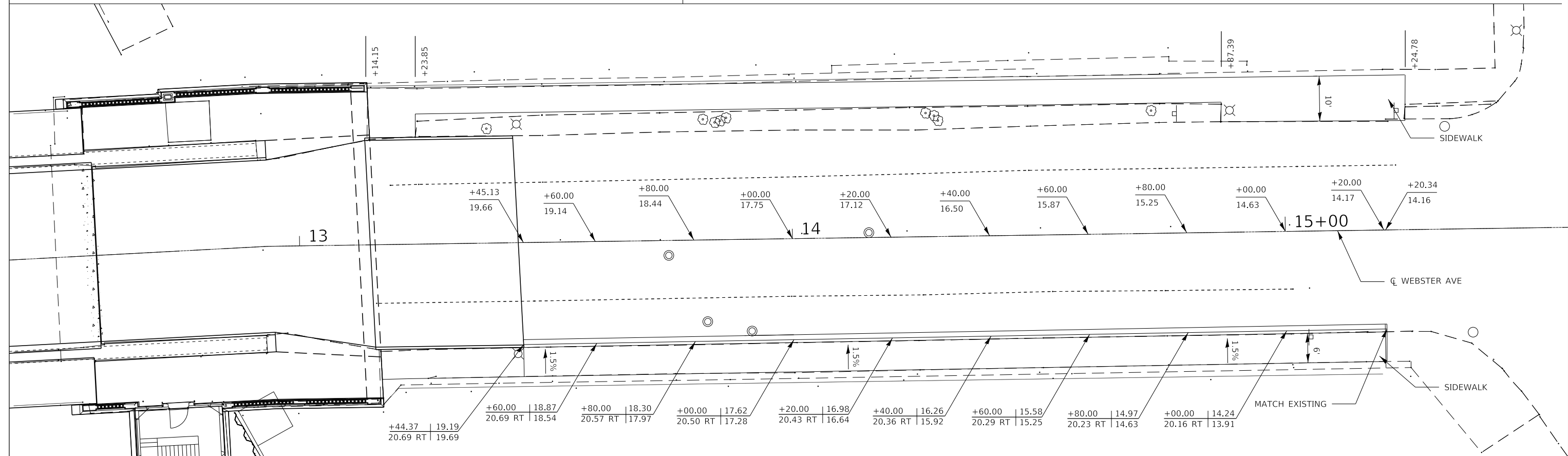
**SECTION THRU THE WEST END OF WEBSTER AVE STRUCTURE**



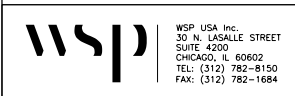
NOTE:  
START BINDER COURSE BUILDUP GRADUALLY FROM WEBSTER AVE CENTER LINE TOWARDS CURB AND GUTTER, BUT MAINTAIN A 1.5\"/>

**HMA SURFACE REMOVAL DETAIL**

DATE	
BY	
PROFILE	
SURVEYED	
PLOTTED	
GRADES CHECKED	
NOTE BOOK NO.	
STRUCTURE NOTATION SHOWN	



**CURB GRADING DETAIL**



USER NAME = MMA	DESIGNED - MMA	REVISED -
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PLOT SCALE =	DRAWN - MMA	REVISED -
PLOT DATE = SDATES	CHECKED - P.JL	REVISED -

**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

**WEBSTER AVENUE BRIDGE OVER THE NORTH BRANCH CHICAGO RIVER**

**ROADWAY DETAIL**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
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E1525-SHT-DETAIL

## MAINTENANCE OF TRAFFIC AND DETOUR GENERAL NOTES

1. THE CONTRACTOR'S ATTENTION IS DIRECTED TO THE FACT THAT WHEN WORK COMMENCES, THE CONTRACTOR SHALL ASSUME THE MAINTENANCE OF ANY PAVEMENT, DRAINAGE FACILITIES, TRAFFIC CONTROL SIGNS, TRAFFIC SIGNALS, LIGHTING, PAVEMENT MARKINGS, AND OTHER APPURTENANCES OF ROADWAYS WITHIN THE LIMITS OF THE CONTRACT WHICH ARE USED BY THE PUBLIC DURING CONSTRUCTION.
2. THE CONTRACTOR SHALL RETAIN THIS MAINTENANCE RESPONSIBILITY UNTIL THE CITY ASSUMES THE MAINTENANCE. THE NEED FOR SNOW AND ICE CONTROL FOR THE DETOUR ROUTE DURING THE CONSTRUCTION PERIOD WILL BE ACCOMMODATED FOR BY OTHERS.
3. DETOUR TRAFFIC CONTROL SIGNS SHALL BE INSTALLED AT THE DIRECTION AND UNDER THE SUPERVISION OF THE ENGINEER. SEVEN (7) DAYS NOTICE SHALL BE GIVEN TO THE ENGINEER.
4. CHANGEABLE MESSAGE SIGN ONE EACH SHALL BE PLACED AT EASTBOUND AND WESTBOUND WEBSTER AVENUE AS DIRECTED BY THE ENGINEER. ALL CHANGEABLE MESSAGE SIGNS SHALL BE INSTALLED TWO WEEKS PRIOR TO ANY CONSTRUCTION ACTIVITY.
5. THE CONTRACTOR SHALL BE REQUIRED TO PROVIDE AND MAINTAIN ACCESS TO ALL PRIVATE AND COMMERCIAL PROPERTY WITHIN THE WORK AREAS DURING THE CONSTRUCTION PERIOD, WHICH MAY INCLUDE THE PROVISION OF TEMPORARY AGGREGATE IN THE WORK ZONE TO ALLOW TRUCKS TO TURN INTO LOADING BAYS.
6. DURING CONSTRUCTION OPERATIONS, THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT ADJACENT TRAFFIC LANES OPEN TO TRAFFIC FROM DEBRIS BEING BLOWN OR OTHERWISE REMOVED FROM THE CONSTRUCTION AREAS. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR KEEPING DEBRIS OFF THE ADJACENT TRAVELED LANE SURFACE.
7. THE CONTRACTOR'S VEHICLES SHALL ALWAYS MOVE WITH AND NOT AGAINST OR ACROSS THE FLOW OF TRAFFIC. THESE VEHICLES SHALL ENTER AND LEAVE WORK AREAS IN A MANNER THAT WILL NOT BE HAZARDOUS TO OR INTERFERE WITH NORMAL TRAFFIC AND SHALL NOT STOP OR PARK EXCEPT WITHIN DESIGNATED WORK AREAS. PERSONAL VEHICLES SHALL NOT BE PERMITTED TO PARK WITHIN THE RIGHT-OF-WAY EXCEPT IN SPECIFIC AREAS DESIGNATED BY THE COMMISSIONER.
8. THE CONTRACTOR SHALL WALK THROUGH THE JOB BEFORE CONSTRUCTION ALONG WITH AUTHORIZED REPRESENTATIVE OF THE CITY OF CHICAGO TO CONFIRM THE COUNT OF STREET SIGNS. CONTRACTOR SHALL NOTIFY THE CITY OF CHICAGO AT LEAST 48 HOURS PRIOR TO SCHEDULE THE WALK THROUGH.
9. ALL CONSTRUCTION SIGNS, BARRICADES, LIGHT AND FLAGGER SHALL BE PROVIDED BY THE CONTRACTOR.
10. ADDITIONAL TRAFFIC CONTROL SIGNS MAY BE REQUIRED AS DIRECTED BY THE DIVISION OF INFRASTRUCTURE MANAGEMENT. THE COST SHALL BE CONSIDERED INCLUDED IN THE COST OF TRAFFIC CONTROL AND PROTECTION.
11. ALL SIGNS SHALL MEET MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES STANDARDS AND SHALL MEET WITH APPROVAL OF THE DIVISION OF INFRASTRUCTURE MANAGEMENT, REGARDING LOCATION, TYPE, SIZE, NUMBER, AND DURATION, OR AS DIRECTED BY THE ENGINEER.
12. ALL SIDEWALK CLOSURES SHALL FOLLOW CDOT STANDARD CROSSWALK AND SIDEWALK CLOSURE SHEET A-6-11. THE SIDEWALK SHALL BE OPEN ON AT LEAST ONE SIDE OF THE STREET AT ALL TIMES. THE CONTRACTOR SHALL INSTALL TEMPORARY ADA RAMPS WHEN EXISTING RAMPS CANNOT BE USED. THIS SHALL NOT BE PAID FOR SEPARATELY AND SHALL BE INCLUDED IN THE COST OF TRAFFIC CONTROL AND PROTECTION, SPECIAL.
13. AT LEAST ONE SIDEWALK SHALL BE OPEN AT ALL TIMES.
14. THE CONTRACTOR SHALL NOT BLOCK ACCESS TO DOMINICK STREET.
15. THE SUGGESTED TRAFFIC CONTROL CAN BE ALTERED WITH APPROVAL OF COMMISSIONER.
16. ALL DETOUR ROUTE SIGNS SHALL BE COVERED AFTER DETOUR IS REMOVED.
17. ALL WORK DESCRIBED IN GENERAL NOTES SHALL BE INCIDENTAL TO TRAFFIC CONTROL AND PROTECTION, SPECIAL UNLESS STATED OTHERWISE.

## STAGING DESCRIPTION

WORK: WEBSTER BRIDGE  
TRAFFIC: DETOUR

WORK: ADA RAMPS AND TRAFFIC SIGNAL POLE ON ASHLAND  
TRAFFIC: SINGLE LANE CLOSURE (OFF PEAK) ON ASHLAND.

OFF PEAK LANE CLOSURE HOURS	
ASHLAND AVENUE	9:30 AM TO 3:30 PM MONDAY THROUGH FRIDAY  8:00 PM TO 6:00 AM EVERY NIGHT  EXCEPT HOLIDAY/ HOLIDAY WEEKENDS
ASHLAND AVENUE	8:00 PM TO 6:00 AM MONDAY THROUGH FRIDAY  EXCEPT HOLIDAY/ HOLIDAY WEEKENDS

\$\$\$DGN\$\$\$  
\$\$TIMES



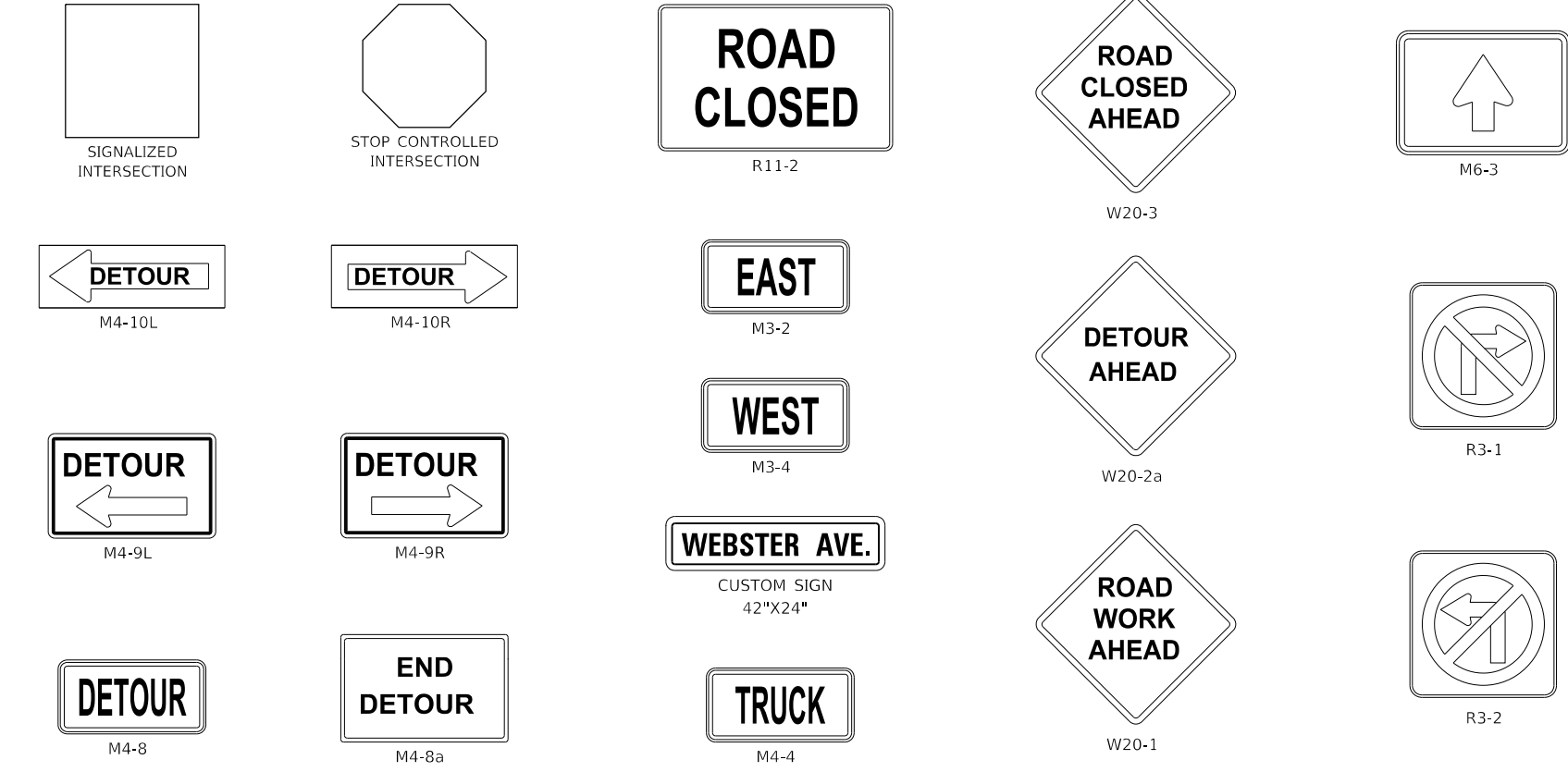
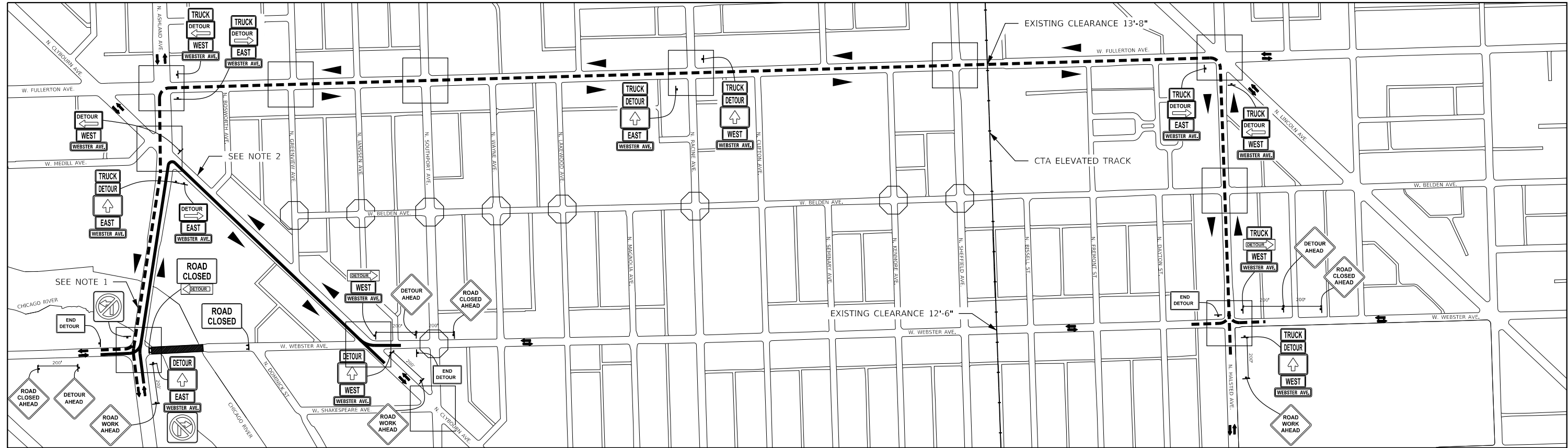
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	CHECKED - SA	REVISED -
PLOT SCALE = N.T.S.	DRAWN - JJT	REVISED -
PLOT DATE = 12/10/2020	CHECKED - SA	REVISED -

**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER

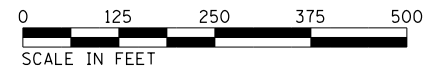
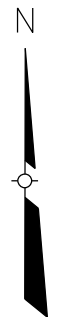
DETOUR GENERAL NOTES  
(STRUCTURE NO. 016-6057)

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	MOT-1
CDOT PROJECT NO. E-1-525			21 OF 210



**NOTES**

1. INSTALL BARRICADES TO CLOSE SOUTHBOUND LEFT TURN LANE AT INTERSECTION OF ASHLAND AVENUE AND WEBSTER AVENUE.
2. RESTRICT PARKING ALONG NORTH SIDE OF CLYBOURN AVENUE BETWEEN ASHLAND AVENUE AND BOSWORTH AVENUE. INSTALL TEMPORARY LEFT TURN BAY FOR THE NORTHWESTBOUND LEFT TURN AT INTERSECTION OF CLYBOURN AVENUE AND ASHLAND AVENUE.



**LEGEND**

- TYPE III BARRICADE
- CONSTRUCTION ZONE
- TRUCK DETOUR ROUTE
- PASSENGER VEHICLE DETOUR ROUTE
- LOCAL TRAFFIC DIRECTION
- TRAFFIC DIRECTION/DETOUR ROUTE

TransSmart E/M  
 411 S. WELLS STREET  
 SUITE 1000  
 CHICAGO, IL 60607  
 TEL: (312) 922-1700  
 FAX: (312) 922-3311

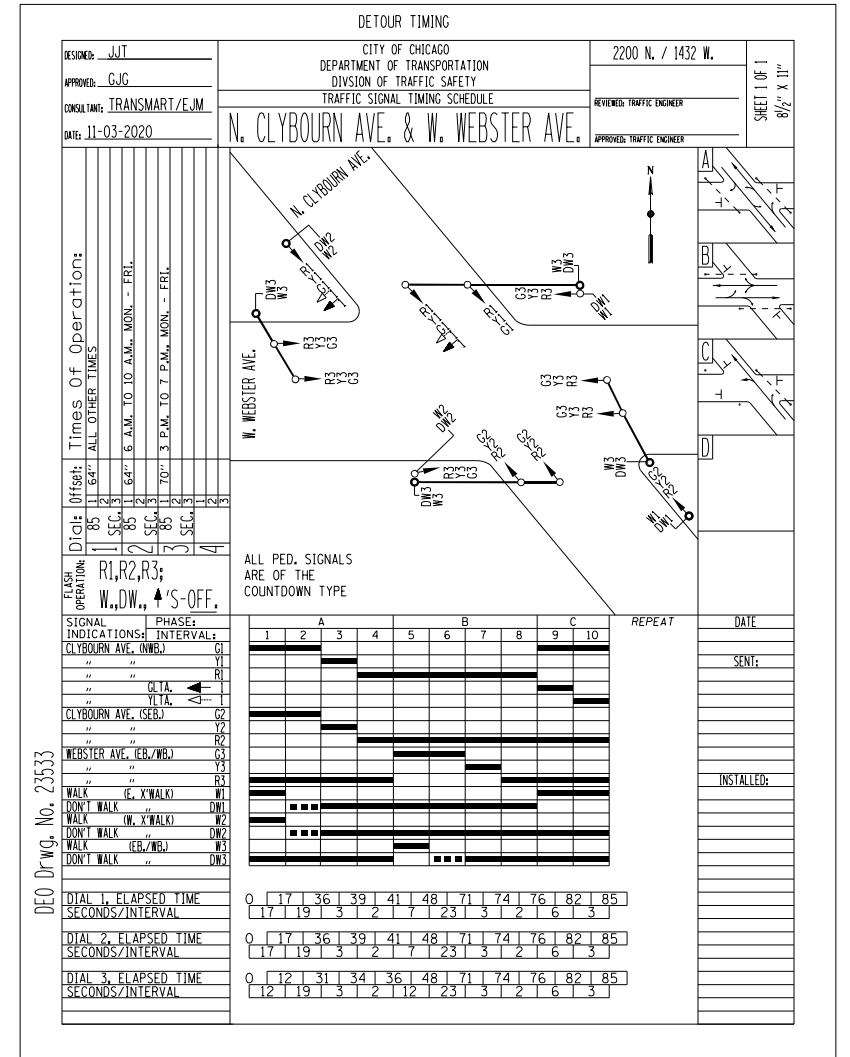
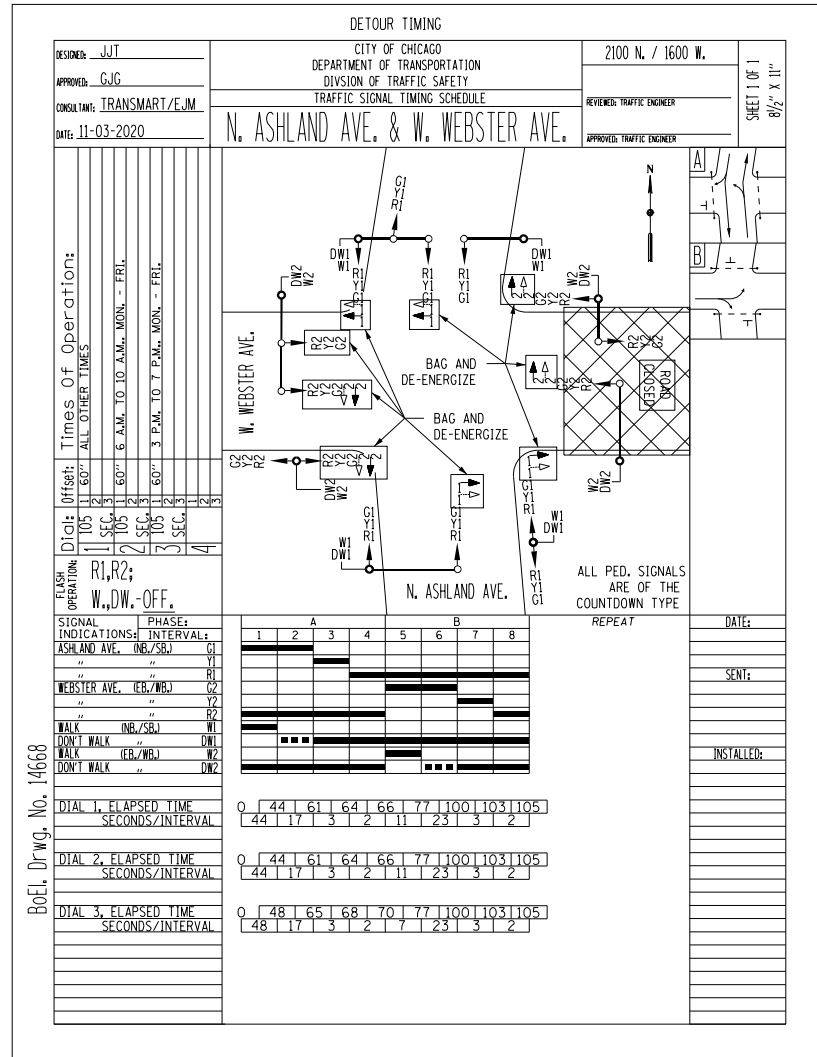
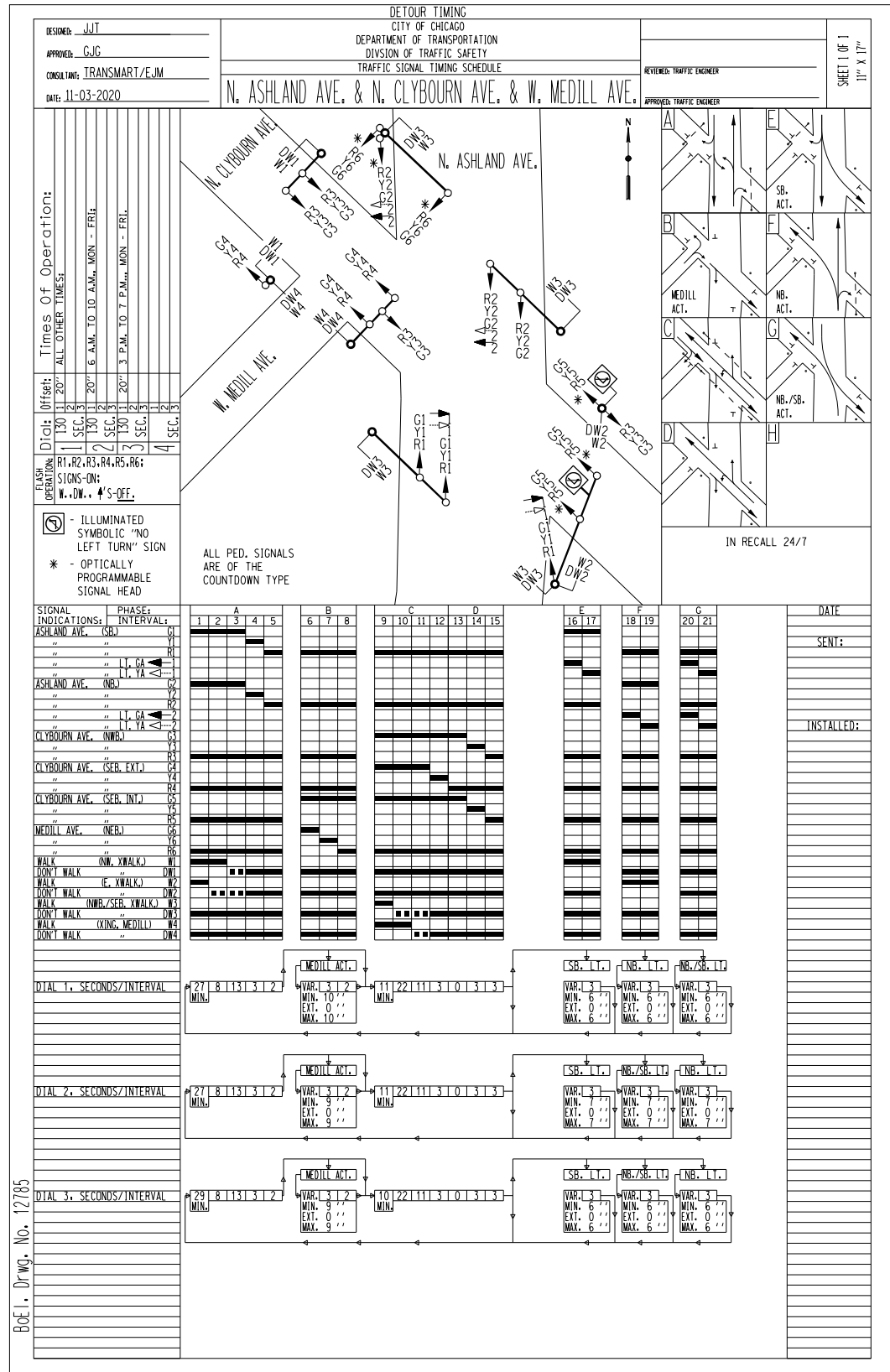
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PLOT DATE = 12/10/2020	DRAWN - JJT	REVISED -
	CHECKED - SA	REVISED -

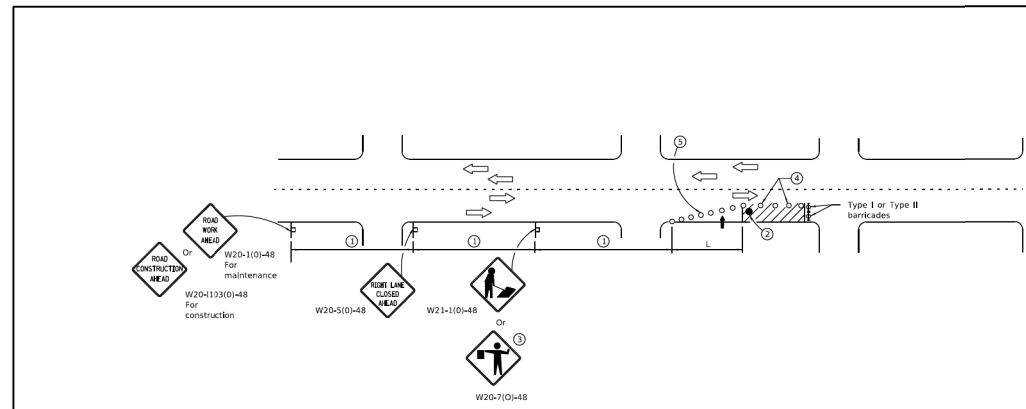
**CITY OF CHICAGO**  
 DEPARTMENT OF TRANSPORTATION  
 DIVISION OF ENGINEERING

**WEBSTER AVENUE BRIDGE OVER  
 THE NORTH BRANCH CHICAGO RIVER**

**DETOUR PLAN  
 (STRUCTURE NO. 016-6057)**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	MOT-2
CDOT PROJECT NO. E-1-525			22 OF 210





Posted Speed	Sign Spacing
>45	350' (107 m)
35-45	330' (101 m)
<45	200' (61 m)

**SYMBOLS**

- ➔ Arrow board
- Cone, drum or barricade
- ▭ Sign on portable or permanent support
- ▨ Work area
- ⚡ Barricade or drum with flashing light
- Flagger with traffic control sign

- 1 Refer to SIGN SPACING TABLE for distances.
- 2 Required for speeds > 40 mph.
- 3 Use flagger sign only when flagger is present.
- 4 Cones at 25' (8 m) centers for 25P (75 m). Additional cones may be placed at 50' (15 m) centers. When drums or Type I or Type II barricades are used, the interval between devices may be doubled.
- 5 Cones, drums or barricades at 20' (6 m) centers in taper.

**GENERAL NOTES**

This Standard is used where at any time, day or night, any vehicle, equipment, workers or their activities encroach on the pavement requiring the closure of one traffic lane in an urban area.

Calculate L as follows:

**SPEED LIMIT FORMULAS (Metric)**

40 mph (70 km/h) or less:  $L = \frac{WS^2}{60}$      $L = \frac{WS^2}{150}$

45 mph (80 km/h) or greater:  $L = W(S/5)$      $L = 0.65(W/S)$

W = Width of offset in feet (meters).

S = Normal posted speed mph (km/h).

All dimensions are in inches (millimeters) unless otherwise shown.

DATE	REVISIONS
1-1-13	Renamed standard. Moved case on Sheet 2 to new Highway Standard.
1-1-14	Revised workers sign number to agree with current MUTCD.

**URBAN SINGLE LANE CLOSURE, MULTILANE, 2W WITH MOUNTABLE MEDIAN**

STANDARD 70160E-10

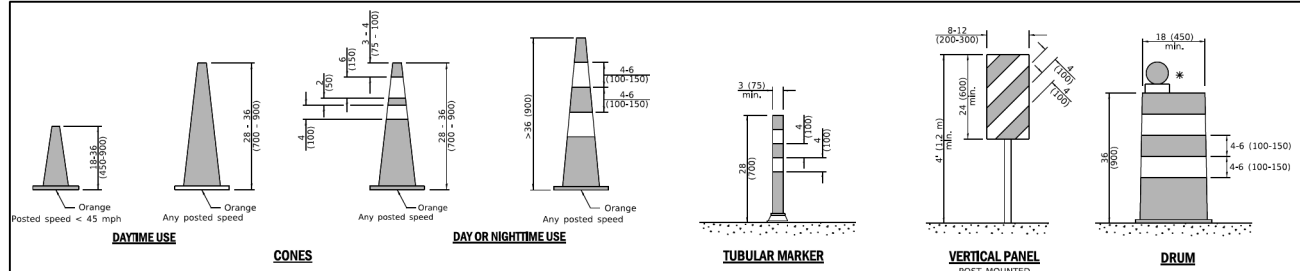
Illinois Department of Transportation

APPROVED: [Signature] January 1, 2019

ENGINEER OF SAFETY PROGRAM AND TRAINING

APPROVED: [Signature] January 1, 2019

ENGINEER OF TRAFFIC CONTROL DEVICES



**TYPE I BARRICADE**

**TYPE II BARRICADE**

**TYPE III BARRICADE**

**DIRECTION INDICATOR BARRICADE**

**VERTICAL BARRICADE**

**DETECTABLE PEDESTRIAN CHANNELIZING BARRICADE**

**GENERAL NOTES**

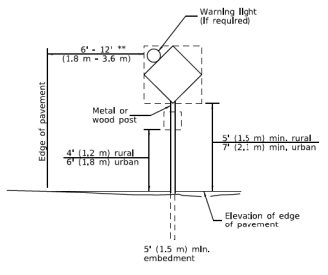
All heights shown shall be measured above the pavement surface.

All dimensions are in inches (millimeters) unless otherwise shown.

DATE	REVISIONS
1-1-19	Revised cone usage and added cones > 35° (900 m) height.
1-1-18	Revised END WORK ZONE SPEED LIMIT sign from orange to white background.

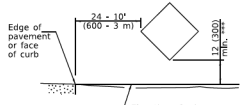
**TRAFFIC CONTROL DEVICES**

STANDARD 701901-08



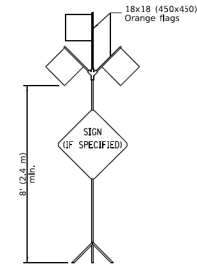
**POST MOUNTED SIGNS**

\*\* When curb or paved shoulder are present this dimension shall be 24 (600) to the face of curb or 6' (1.8 m) to the outside edge of the paved shoulder.



**SIGNS ON TEMPORARY SUPPORTS**

\*\*\* When work operations exceed four days, this dimension shall be 5' (1.5 m) min. If located behind other devices, the height shall be sufficient to be seen completely above the devices.



**HIGH LEVEL WARNING DEVICE**



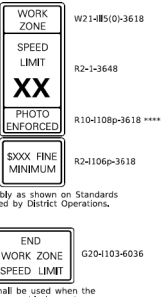
This signing is required for all projects 2 miles (3200 m) or more in length.

ROAD CONSTRUCTION NEXT X MILES sign shall be placed 500' (150 m) in advance of project limits.

END CONSTRUCTION sign shall be erected at the end of the job unless another job is within 2 miles (3200 m).

Dual sign displays shall be utilized on multi-lane highways.

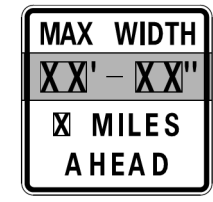
**WORK LIMIT SIGNING**



Sign assembly as shown on Standards or as followed by District Operations.

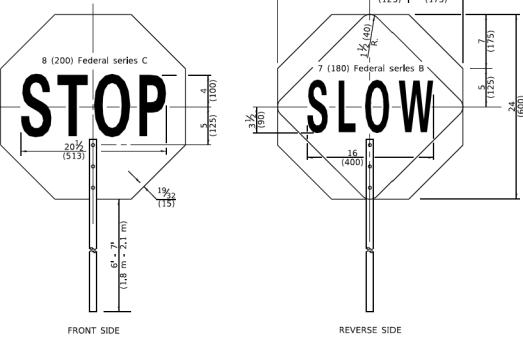
This sign shall be used when the above sign assembly is used.

\*\*\*\* R10-108p shall only be used along roadways under the jurisdiction of the State.



**WIDTH RESTRICTION SIGN**

XX'-XX" width and X miles are variable.



**FLAGGER TRAFFIC CONTROL SIGN**

**TRAFFIC CONTROL DEVICES**

STANDARD 701901-08

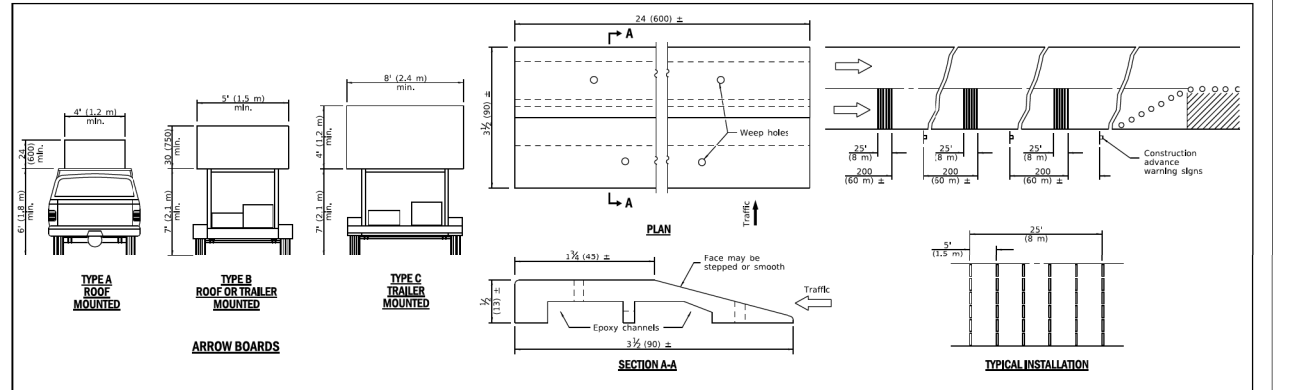
Illinois Department of Transportation

APPROVED: [Signature] January 1, 2019

ENGINEER OF SAFETY PROGRAM AND TRAINING

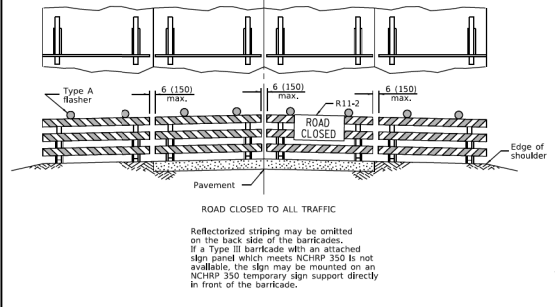
APPROVED: [Signature] January 1, 2019

ENGINEER OF TRAFFIC CONTROL DEVICES

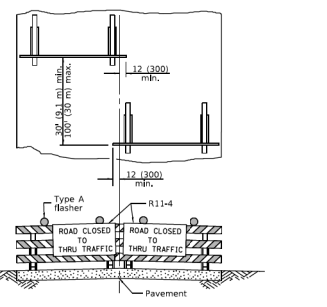


**ARROW BOARDS**

**TEMPORARY RUMBLE STRIPS**



**TYPICAL APPLICATIONS OF TYPE III BARRICADES CLOSING A ROAD**



ReflectORIZED striping shall appear on both sides of the barricades. If a Type III barricade with an attached sign panel which meets NCHRP 350 is not available, the sign may be mounted on NCHRP 350 temporary sign supports directly in front of the barricade.

**TRAFFIC CONTROL DEVICES**

STANDARD 701901-08

Illinois Department of Transportation

APPROVED: [Signature] January 1, 2019

ENGINEER OF SAFETY PROGRAM AND TRAINING

APPROVED: [Signature] January 1, 2019

ENGINEER OF TRAFFIC CONTROL DEVICES

PLAN	SURVEYED	DATE
	PLOTTED	
	ALIGNMENT CHECKED	
	GRADE CHECKED	
	STRUCTURE NOTATION CHECKED	
	FILE NAME	
	NO.	

PROFILE	SURVEYED	DATE
	PLOTTED	
	GRADES CHECKED	
	STRUCTURE NOTATION CHECKED	
	FILE NAME	
	NO.	

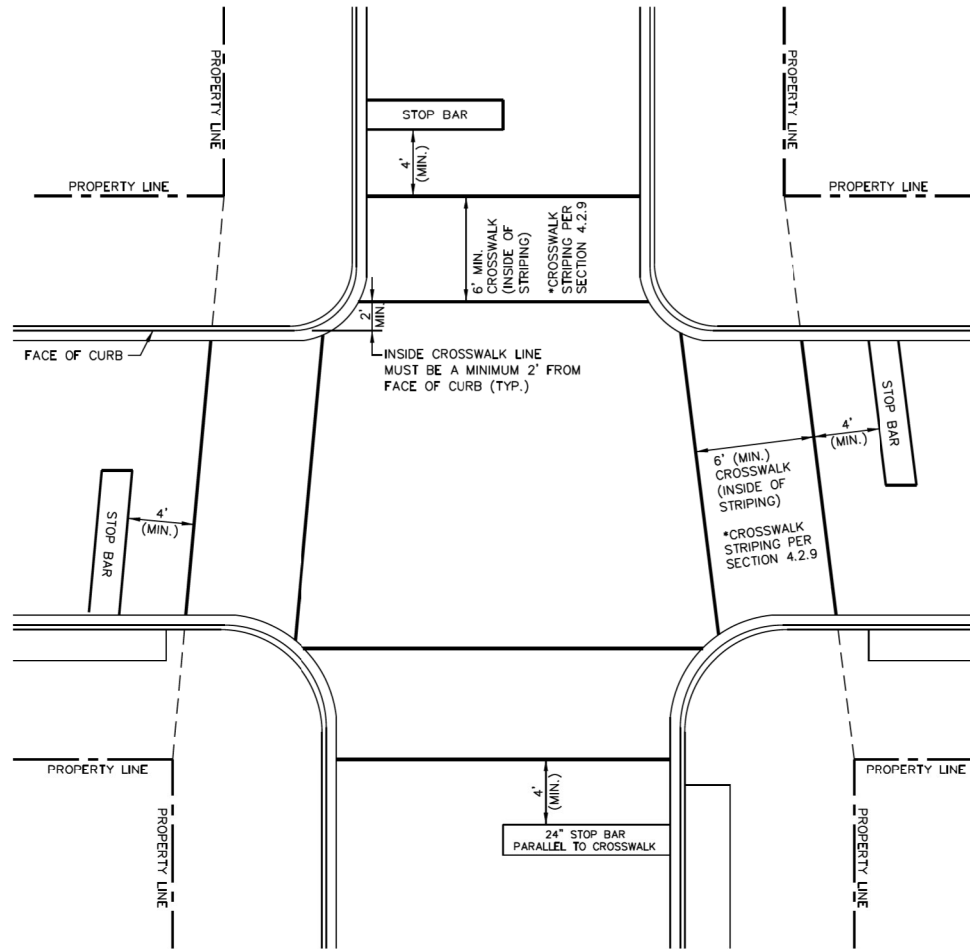
**NOTES:**

TYPICAL CROSSWALK CONSISTS OF TWO PROJECTED LINES, ONE OF THEM A PROJECTION OF THE PROPERTY LINE AND THE OTHER PARALLEL AS DEFINED BY SIDEWALK WIDTH.

WHERE CROSSWALK LOCATIONS ARE DEFINED BY SPECIFIC CURB RAMP SITUATIONS, THE ABOVE TYPICAL LAYOUT MAY NOT APPLY. SEE CURB RAMP LAYOUTS IN APPENDIX B FOR ADDITIONAL CROSSWALK DETAILS.

FOR CROSSWALKS AT INTERSECTIONS WHERE PROPERTY LINES ARE NOT AT 90 DEGREES, ALIGN THE PROPERTY LINES (SEE DASHED LINE BELOW) TO LOCATE INNER CROSSWALK LINE.

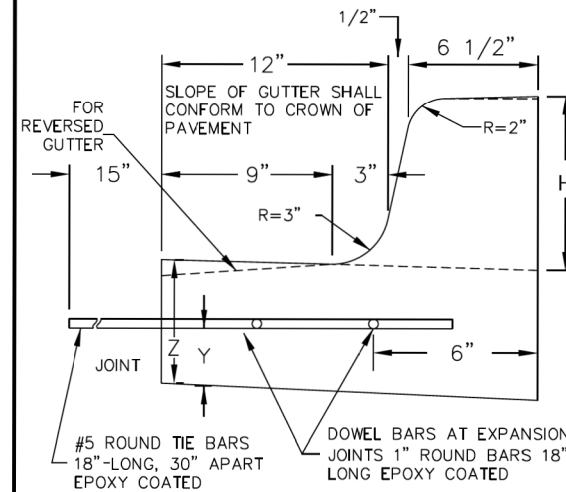
SEE SECTION 4.2.9 AND SHEET A-7-1 FOR GUIDELINES REGARDING THE LAYOUT OF CONTINENTAL AND LADDER MARKINGS.



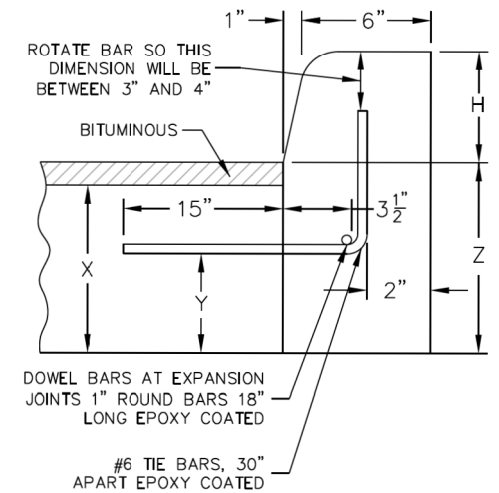
<b>CDOT</b> CHICAGO DEPARTMENT OF TRANSPORTATION	DATE	REVISION	CITY OF CHICAGO		
	1/1/2014	REVISION 1	INTERSECTION CROSSWALK LAYOUT		
	DATE	SHEET	DRAWN BY		
	01/10/07	A-1-3	CDOT		

NOTE: H = VARIABLE 3" TO 9"  
 X = THICKNESS OF PAVEMENT  
 Y = ONE HALF THE THICKNESS OF CONCRETE PAVEMENT OR CONCRETE BASE.  
 Z = 10" OR THICKNESS OF PAVEMENT - WHICHEVER IS GREATER

**TYPE BV, 12 OR TYPE 3 CURB & GUTTER**



**TYPE B OR TYPE 4 CURB BARRIER CURB**



**JOINTS IN CURB, COMBINED CURB & GUTTER**

TRANSVERSE JOINTS OF A TYPE SIMILAR TO THAT USED IN THE ADJACENT PAVEMENT SHALL BE INSTALLED IN THE CURB, GUTTER AND COMBINED CURB & GUTTER IN PROLONGATION WITH THE JOINTS IN THE PAVEMENT. THE DETAILS OF THE TRANSVERSE JOINTS IN THE CURB, GUTTER AND COMBINED CURB & GUTTER SHALL BE APPROVED BY THE COMMISSIONER. CURB, GUTTER OR COMBINED CURB & GUTTER IS CONSTRUCTED ADJACENT TO A FLEXIBLE BASE PAVEMENT, 1" THICK EXPANSION JOINTS COMPOSED OF BITUMINOUS PERFORMED JOINT FILLER SHALL BE INSTALLED IN THE CURB AND/OR GUTTER AT POINTS OF CURVATURE AND AT CONSTRUCTION JOINTS. CONTRACTION JOINTS SHALL ALSO BE PLACED BETWEEN THESE EXPANSION JOINTS AT DISTANCES NOT EXCEEDING 20 FEET. ALL TIE BARS SHALL BE DEFORMED-ALL DOWEL BARS SHALL BE SMOOTH.

NOTE: ALL TIE BARS AND DOWEL BARS TO BE EPOXY COATED.

\*AT LOCATIONS REQUIRING DEPRESSED CURBS SEE THE ADA STANDARDS FOR CONSTRUCTION DETAILS

<b>CDOT</b> CHICAGO DEPARTMENT OF TRANSPORTATION	DATE	REVISION	CITY OF CHICAGO		
	1/1/2014	REVISION 1	CONCRETE CURB & GUTTER DETAIL		
	DATE	SHEET	DRAWN BY		
	12/12/06	A-2-6	CDOT		

E1525-SHT-STANDARDS-01.DGN



USER NAME = MMA	DESIGNED - MMA	REVISED -
	CHECKED -	REVISED -
PLOT SCALE =	DRAWN - MMA	REVISED -
PLOT DATE = SDATES	CHECKED -	REVISED -

**CITY OF CHICAGO**  
 DEPARTMENT OF TRANSPORTATION  
 DIVISION OF ENGINEERING

**WEBSTER AVENUE BRIDGE OVER THE NORTH BRANCH CHICAGO RIVER**

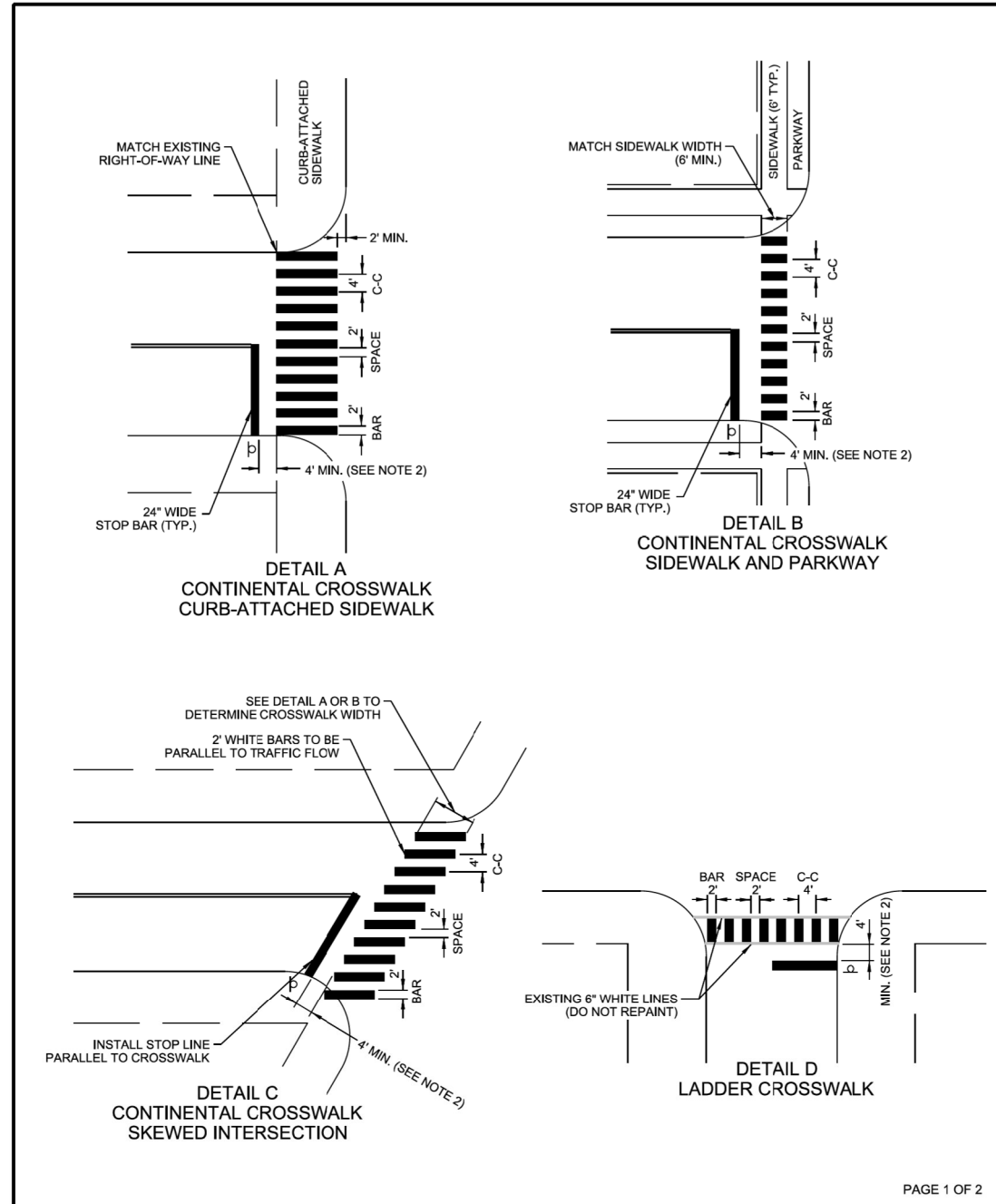
**CDOT STANDARDS**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	SD-1
CDOT PROJECT NO. E-1-525			25 of 210

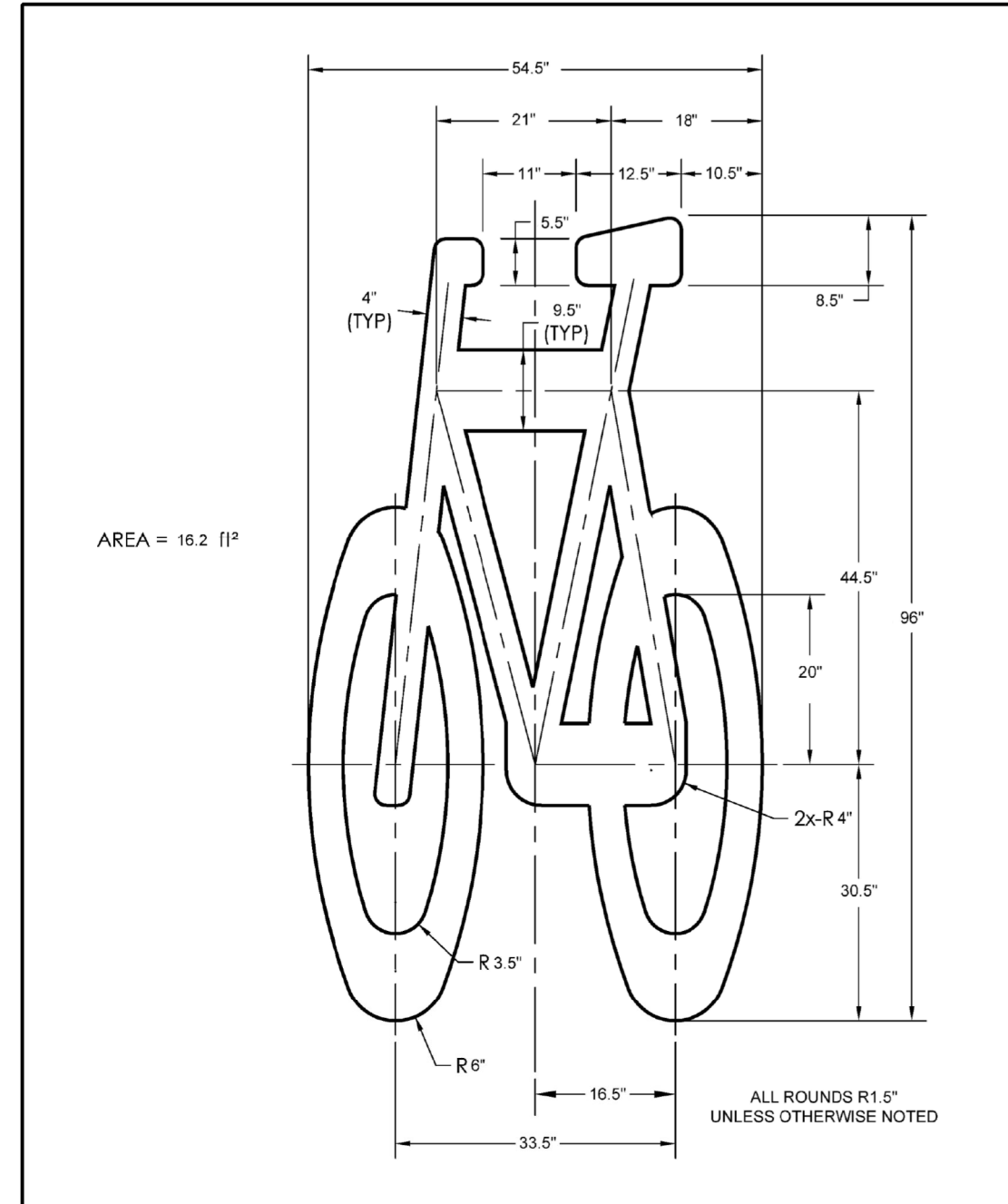


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	PLOTTED	BY
	ALIGNMENT CHECKED	
	GRADE CHECKED	
	STRUCTURE NOTATION CHECKED	
	NOTE BOOK NO.	
	CADD FILE NAME	

PROFILE	SURVEYED	DATE
	PLOTTED	BY
	GRADES CHECKED	
	STRUCTURE NOTATION CHECKED	
	NOTE BOOK NO.	
	CADD FILE NAME	



<b>CDOT</b> CHICAGO DEPARTMENT OF TRANSPORTATION	DATE	REVISION	CITY OF CHICAGO		
	1/1/2014	REVISION 1	CROSSWALK MARKING DETAIL		
	DATE	SHEET	DRAWN BY		
	06/25/12	A-7-1A	CDOT		



<b>CDOT</b> CHICAGO DEPARTMENT OF TRANSPORTATION	DATE	REVISION	CITY OF CHICAGO		
	1/1/2014	REVISION 1	8' BIKE SYMBOL		
	DATE	SHEET	DRAWN BY		
	06/25/12	A-7-3	CDOT		

E:\1525-SHT-STANDARDS-02.DGN



WSP USA Inc.  
30 N. LA SALLE STREET  
SUITE 4200  
CHICAGO, IL 60602  
TEL: (312) 782-8150  
FAX: (312) 782-1884

USER NAME = MMA	DESIGNED - MMA	REVISED -
	CHECKED -	REVISED -
PLOT SCALE =	DRAWN - MMA	REVISED -
PLOT DATE = SDATES	CHECKED -	REVISED -

**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

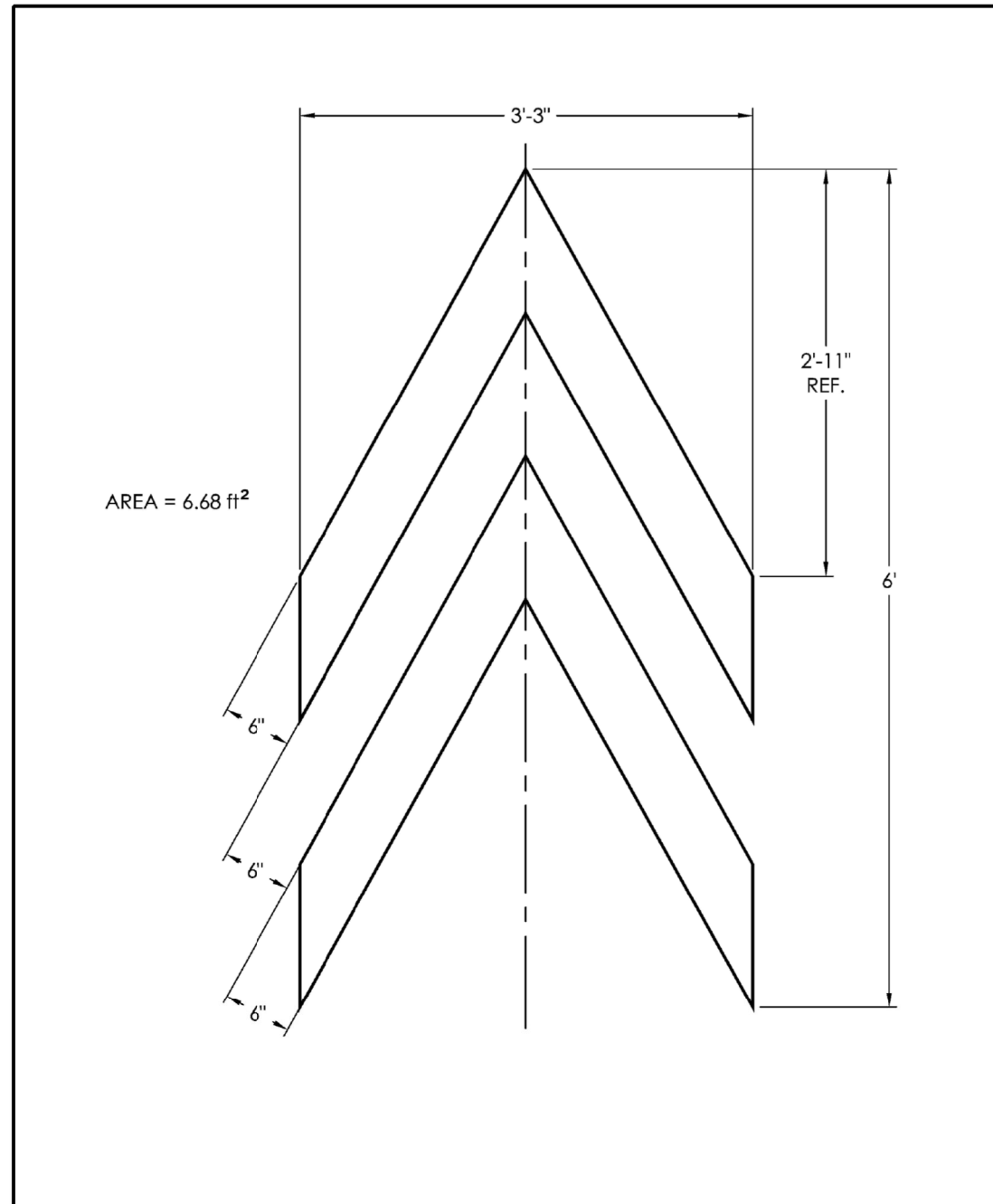
WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER

CDOT STANDARDS

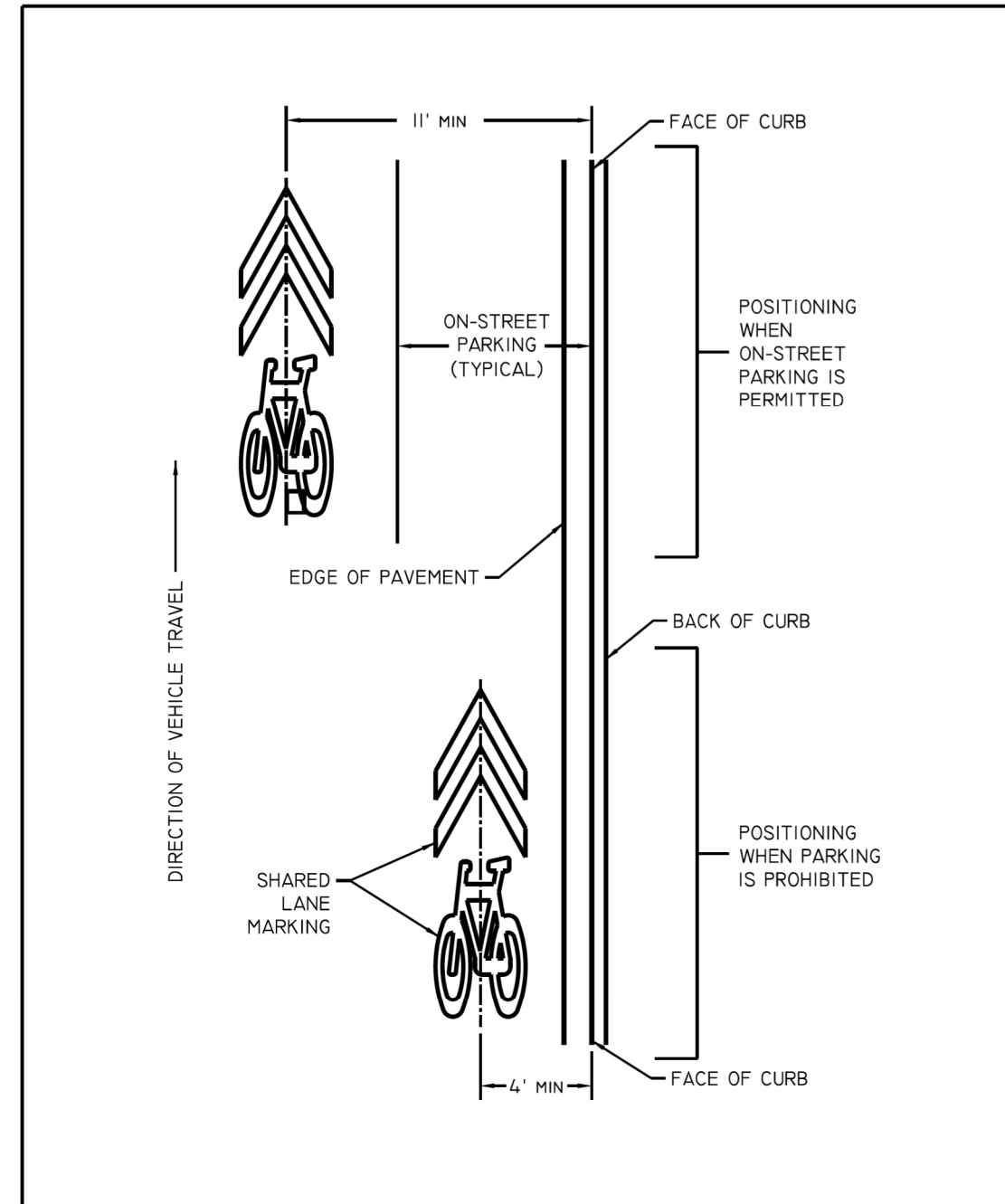
F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	SD-2
CDOT PROJECT NO. E-1-525			26 of 210

PLAN	SURVEYED	DATE
	PLOTTED	BY
	ALIGNMENT CHECKED	
	GRADE CHECKED	
	STRUCTURE NOTATION CHECKED	
	NOTE BOOK NO.	
	CADD FILE NAME	

PROFILE	SURVEYED	DATE
	PLOTTED	BY
	GRADES CHECKED	
	STRUCTURE NOTATION CHECKED	
	NOTE BOOK NO.	
	CADD FILE NAME	



<b>CDOT</b> CHICAGO DEPARTMENT OF TRANSPORTATION	DATE	REVISION	CITY OF CHICAGO		
	1/1/2014	REVISION 1	BIKE CHEVRON		
			DATE	SHEET	DRAWN BY
			06/25/12	A-7-6	CDOT



<b>CDOT</b> CHICAGO DEPARTMENT OF TRANSPORTATION	DATE	REVISION	CITY OF CHICAGO		
	1/1/2014	REVISION 1	SHARED LANE MARKING LATERAL POSITIONING		
			DATE	SHEET	DRAWN BY
			09/15/05	A-7-8	CDOT

E:\1525-SHT-STANDARDS-03.DGN

**wsp**  
WSP USA Inc.  
30 N. LA SALLE STREET  
SUITE 4200  
CHICAGO, IL 60602  
TEL: (312) 782-8150  
FAX: (312) 782-1884

USER NAME = MMA	DESIGNED - MMA	REVISED -
	CHECKED -	REVISED -
PLOT SCALE =	DRAWN - MMA	REVISED -
PLOT DATE = SDATES	CHECKED -	REVISED -

**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

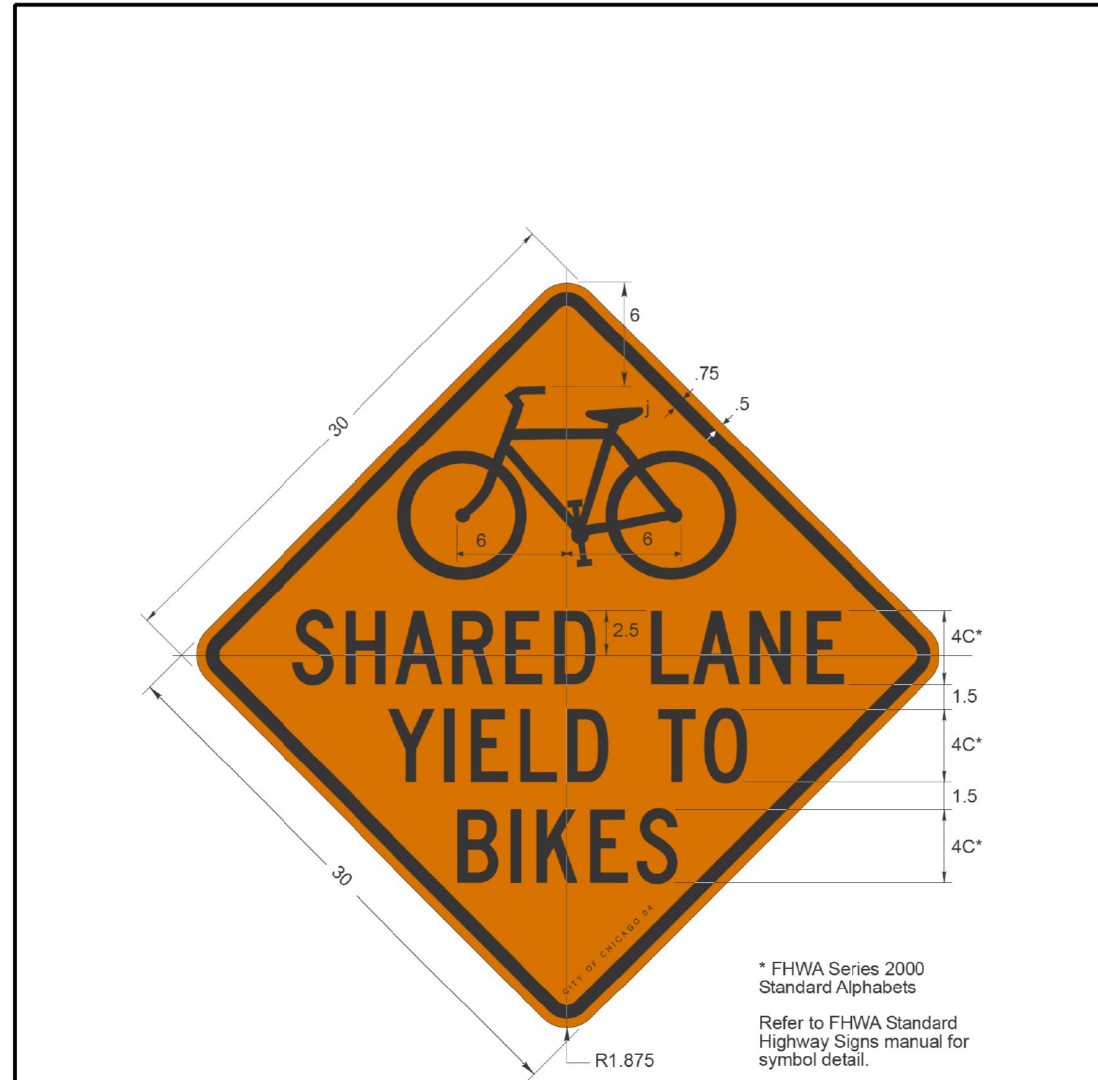
**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

**CDOT STANDARDS**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	SD-3
CDOT PROJECT NO. E-1-525			27 of 210

PLAN	SURVEYED	DATE
	PLOTTED	
	ALIGNMENT CHECKED	
	AS-BUILT FILE NAME	
	NO.	

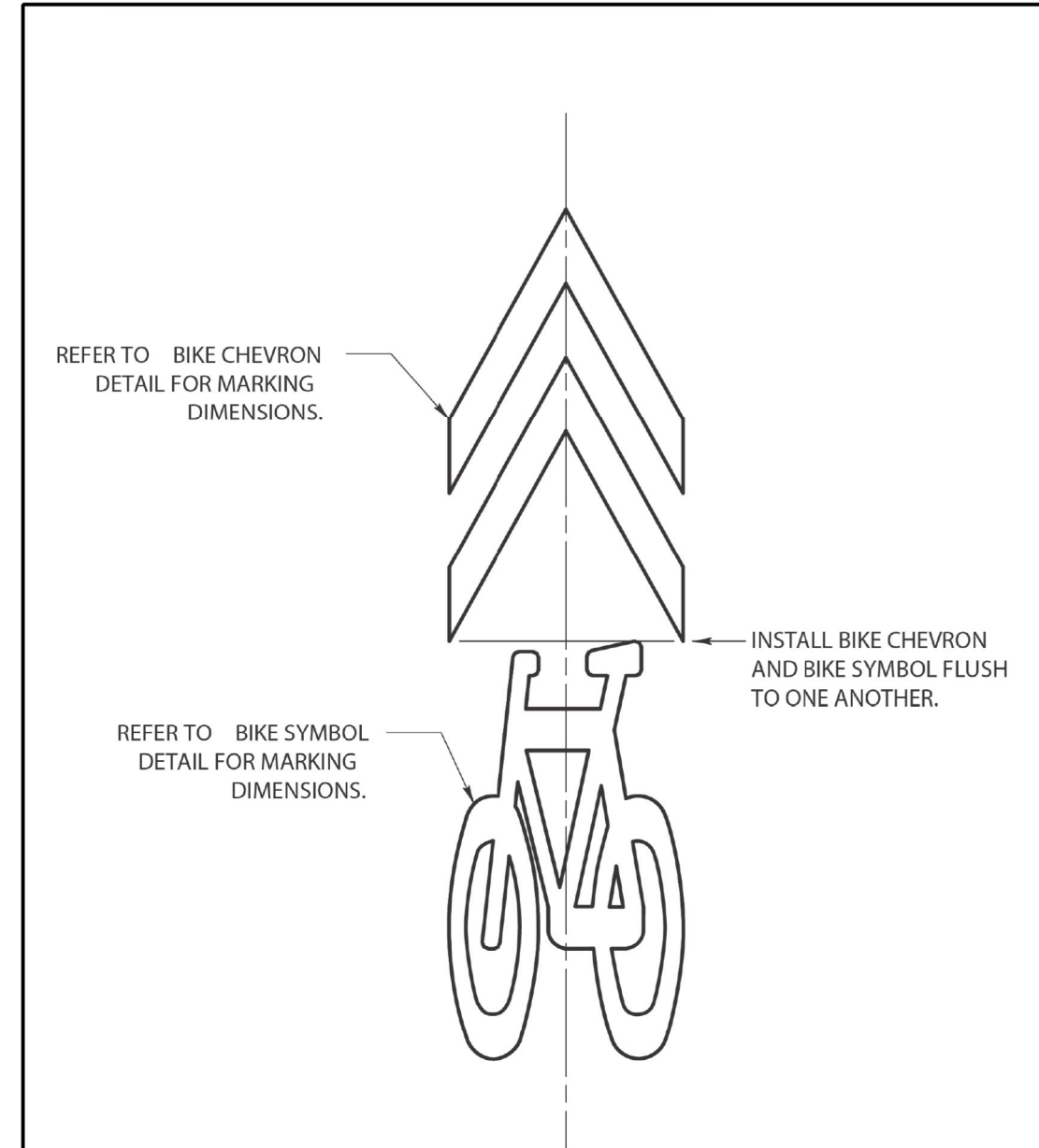
PROFILE	SURVEYED	DATE
	PLOTTED	
	GRADES CHECKED	
	STRUCTURE NOTATIONS CHECKED	
	NO.	



Colors: Legend -Black  
Background -Orange

\* FHWA Series 2000 Standard Alphabets  
Refer to FHWA Standard Highway Signs manual for symbol detail.

<b>CDOT</b> CHICAGO DEPARTMENT OF TRANSPORTATION	DATE	REVISION	CITY OF CHICAGO		
			SHARED LANE YIELD TO BIKES SIGN		
	DATE	SHEET	DRAWN BY		
	1/1/14	A-7-9	CDOT		

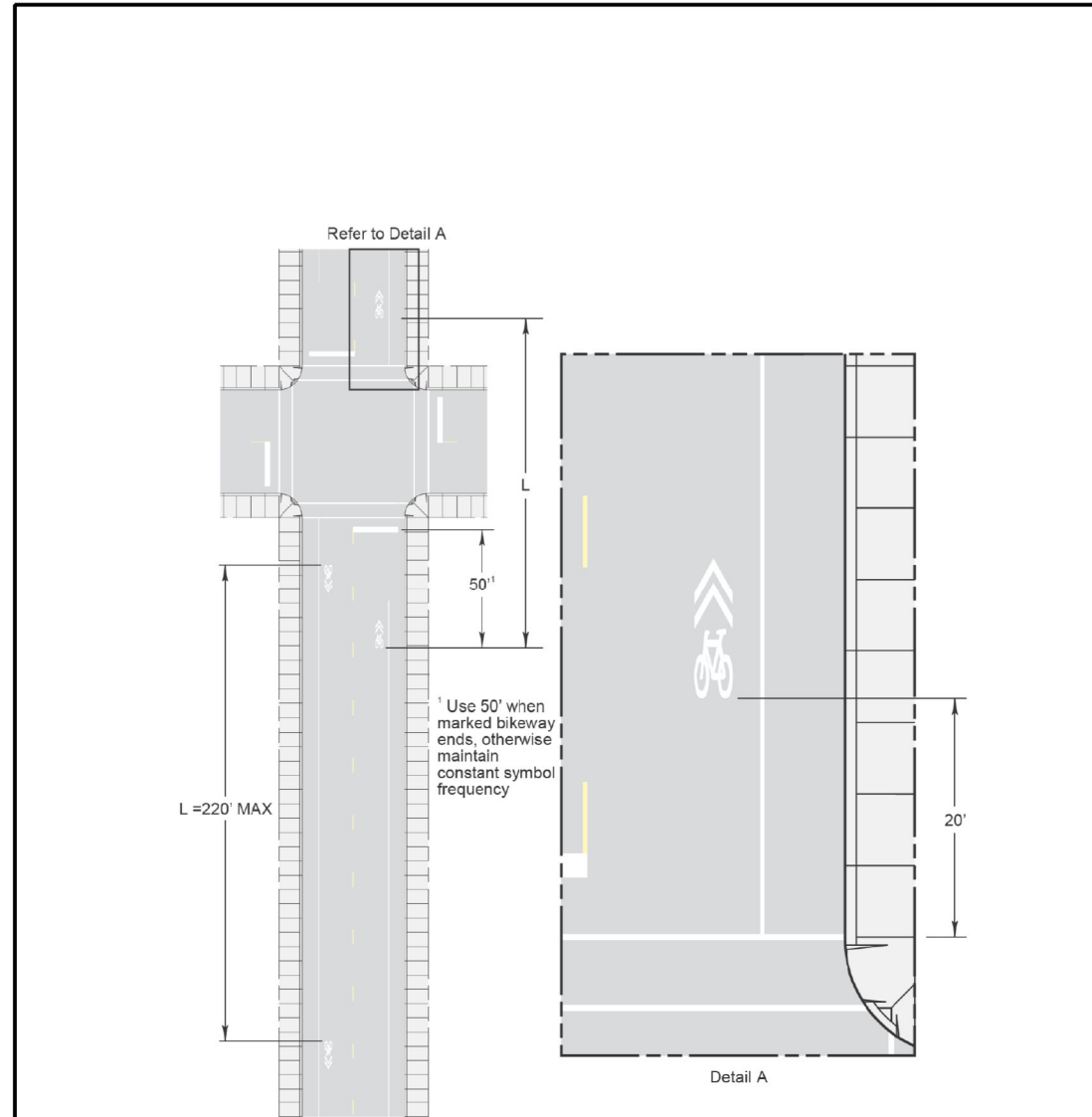


<b>CDOT</b> CHICAGO DEPARTMENT OF TRANSPORTATION	DATE	REVISION	CITY OF CHICAGO		
	1/1/2014	REVISION 1	SHARED LANE MARKING		
	DATE	SHEET	DRAWN BY		
	10/02/07	A-7-11	CDOT		

E:\1525-SHT-STANDARDS-04.DGN

PLAN	SURVEYED	BY	DATE
	PLOTTED		
NOTE BOOK NO.	ALIGNMENT CHECKED		
	AS-BUILT FILE NAME		

PROFILE	SURVEYED	BY	DATE
	PLOTTED		
NOTE BOOK NO.	GRADES CHECKED		
	STRUCTURE NOTATION CHECKED		



	DATE	REVISION	CITY OF CHICAGO		
	1/1/2014	REVISION 1	SHARED LANE MARKING - LONGITUDINAL SPACING		
			DATE	SHEET	DRAWN BY
			12/12/07	A-7-12	CDOT

E:\1525-SHT-STANDARDS-05.DGN

**wsp**  
 WSP USA Inc.  
 30 N. LA SALLE STREET  
 SUITE 4200  
 CHICAGO, IL 60602  
 TEL: (312) 782-8150  
 FAX: (312) 782-1884

USER NAME = MMA	DESIGNED - MMA	REVISED -
	CHECKED -	REVISED -
PLOT SCALE =	DRAWN - MMA	REVISED -
PLOT DATE = SDATES	CHECKED -	REVISED -

**CITY OF CHICAGO**  
 DEPARTMENT OF TRANSPORTATION  
 DIVISION OF ENGINEERING

**WEBSTER AVENUE BRIDGE OVER THE NORTH BRANCH CHICAGO RIVER**

CDOT STANDARDS

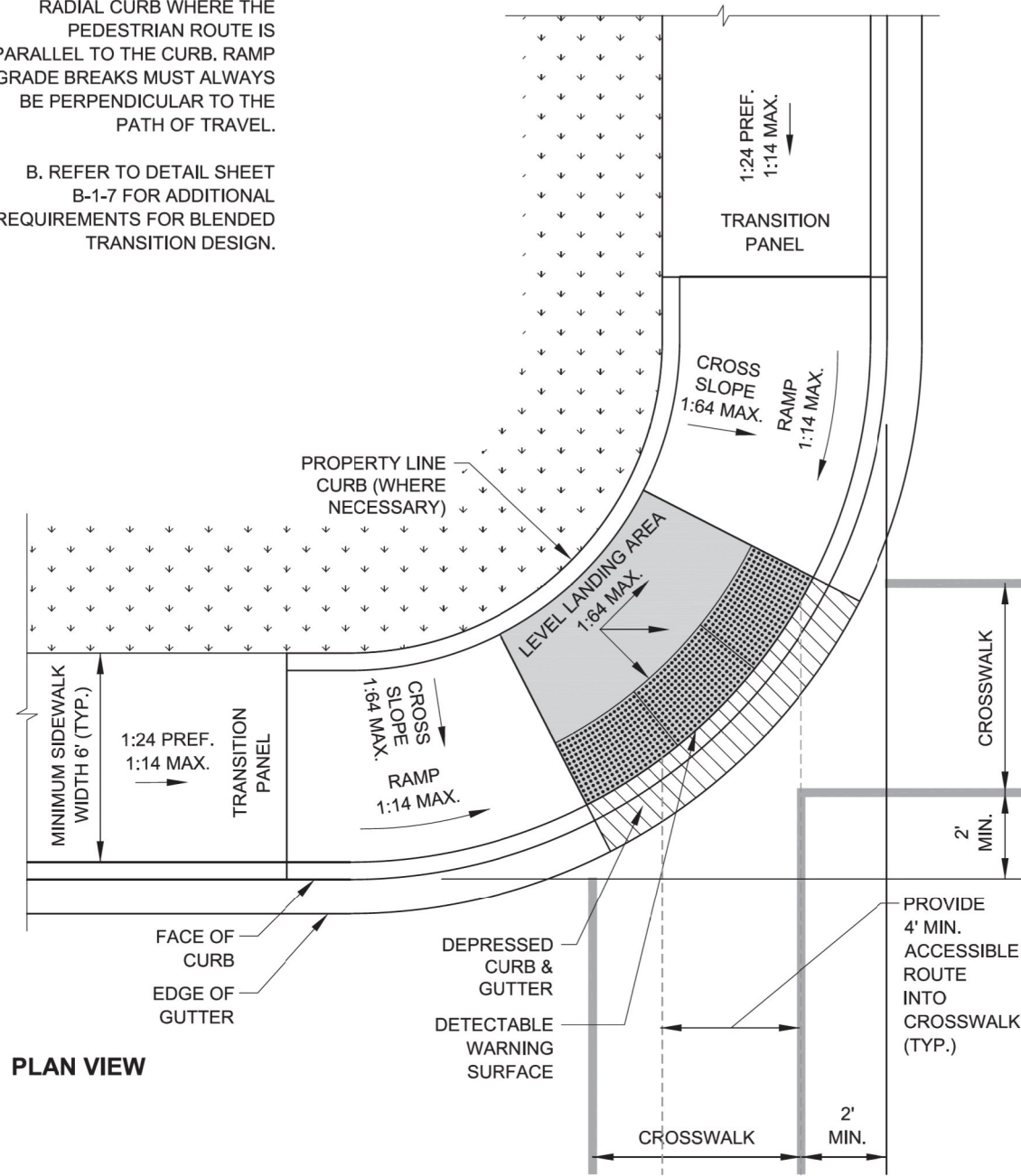
F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	SD-5
CDOT PROJECT NO. E-1-525			29 of 210

PLAN	SURVEYED	DATE
	PLOTTED	BY
	ALIGNED	
	CHECKED	
	FILED	
	NO.	

PROFILE	SURVEYED	DATE
	PLOTTED	BY
	GRADES	
	CHECKED	
	STRUCTURE	
	NOTARIS	
	CURVD	
	NO.	

**NOTES:**

- A. IT IS ACCEPTABLE TO RAMP DOWN PARALLEL TO THE RADIAL CURB WHERE THE PEDESTRIAN ROUTE IS PARALLEL TO THE CURB. RAMP GRADE BREAKS MUST ALWAYS BE PERPENDICULAR TO THE PATH OF TRAVEL.
- B. REFER TO DETAIL SHEET B-1-7 FOR ADDITIONAL REQUIREMENTS FOR BLENDED TRANSITION DESIGN.



**PLAN VIEW**



DATE	REVISION
02/20/07	REVISION 1
11/15/07	REVISION 2
11/14/08	REVISION 3
11/02/09	REVISION 4
08/10/12	REVISION 5

CITY OF CHICAGO  
 BLENDED TRANSITION AT CORNER WITH  
 LARGE CURB RADIUS  
**SHEET B-1-13**  
 SCALE: NOT TO SCALE  
 DATE: 10/23/2006  
 DRAWN BY: CDOT  
 CHECKED BY: LCM

**GENERAL NOTES:**

1. THE DETECTABLE WARNING USED SHALL BE CHOSEN FROM THE CHICAGO DEPARTMENT OF TRANSPORTATION LIST OF APPROVED DETECTABLE WARNING PRODUCTS (AVAILABLE ON THE CITY OF CHICAGO WEBSITE). IT IS NOT ACCEPTABLE TO INSTALL TWO DIFFERENT DETECTABLE WARNING PRODUCTS ADJACENT TO ONE ANOTHER AT ANY LOCATION. IN THE CENTRAL BUSINESS DISTRICT, GRANITE OR OTHER SPECIALTY PAVING MATERIALS MAY BE SUBMITTED TO THE COMMISSIONER FOR APPROVAL.
2. THE DETECTABLE WARNING MUST BE INSTALLED A MAXIMUM OF 8" OR LESS FROM FACE OF CURB (SEE DETAIL SHEET B-4-2).
3. THE DETECTABLE WARNING MUST COVER FULL WIDTH OF RAMP EXCLUDING SIDE FLARES FOR A MINIMUM UNOBSTRUCTED DEPTH OF 24". THE DETECTABLE WARNING LOCATED ON THE SURFACES OF RAMPS IS TYPICALLY ORIENTED PERPENDICULAR TO THE RUN OF THE RAMP UNLESS SPECIAL CIRCUMSTANCES OCCUR (SEE DETAIL SHEET B-1-5). THE DETECTABLE WARNING MUST BE PROVIDED FOR A MINIMUM DEPTH OF 24" FOR THE ENTIRE LENGTH OF THE SIDEWALK WHERE THE SIDEWALK IS FLUSH WITH THE STREET (DEPRESSED CURB OR FLUSH TRANSITION). IF IT IS NECESSARY TO CUT A UNIT(S) IN THE PROVISION OF A COMPLIANT RAMP OR SIDEWALK WITH 24" MINIMUM DEPTH OF DETECTABLE WARNING, THE UNITS SHALL BE CUT IN A NEAT AND WORKMAN LIKE MANNER PER MANUFACTURER'S REQUIREMENTS WITH A MINIMUM OF THREE PINS OR ANCHOR POINTS (WHERE APPLICABLE). THE UNITS SHALL BE ARRANGED SO THAT THE CUT UNITS ARE LARGE ENOUGH TO BE PROPERLY AND ADEQUATELY SECURED. CUT UNITS SHALL NOT BE USED UNLESS ALL OTHER DESIGN OPTIONS HAVE BEEN EXHAUSTED. THE USE OF SALVAGE PIECES FROM UNITS THAT ARE CUT WILL NOT BE PERMITTED WITHOUT WRITTEN APPROVAL OF THE COMMISSIONER. CUT UNIT SALVAGE PIECES NOT APPROVED FOR USE MUST BE REMOVED FROM THE SITE AND DISPOSED OF PROPERLY.
4. WHERE APPLICABLE, A COMBINATION OF STRAIGHT AND RADIAL DETECTABLE WARNING UNITS MAY BE USED ON COMPOUND AND LARGE RADII. CONTRACTOR MUST MAKE THIS DETERMINATION AND VERIFY IN FIELD.
5. THE DETECTABLE WARNING MUST CONTRAST WITH ADJACENT PAVEMENT. IF LIGHT COLORED PAVEMENT IS USED THE DETECTABLE WARNING COLOR SHALL BE RED. IF A DARK COLORED PAVEMENT IS USED THE DETECTABLE WARNING COLOR SHALL BE YELLOW. CONTRACTOR TO VERIFY THAT PROPER CONTRAST IS OBTAINED.
6. PRIOR TO PLACING CONCRETE FOR DEPRESSED CURBS, RAMPS, OR SIDEWALKS THE CONTRACTOR SHALL VERIFY THAT LAYOUT OR DESIGN COMPLIES WITH THE REQUIREMENTS OF THE CDOT ADA STANDARDS.
7. RAMP WIDTH MUST BE A MINIMUM OF 6'-0" AND IN INCREMENTS OF 1'-0", EXCEPT WHEN USING THE PERPENDICULAR RAMP AT CORNER (OR OTHER SPECIAL CDOT APPROVED CONDITIONS), WHICH HAS A MINIMUM WIDTH OF 4'-0".
8. THE MAXIMUM ALLOWABLE RAMP RUNNING SLOPE IS 1:14, MEASURED AT ANY PORTION OF THE RAMP. IF POSSIBLE, A MORE GRADUAL SLOPE SHALL BE USED. GRADE BREAKS AT THE TOP AND BOTTOM OF RAMPS SHALL BE PERPENDICULAR TO THE DIRECTION OF RAMP RUN.
9. THE MAXIMUM ALLOWABLE RAMP CROSS SLOPE IS 1:64, MEASURED AT ANY PORTION OF THE RAMP. IF POSSIBLE, A MORE GRADUAL SLOPE SHALL BE USED.
10. THE MAXIMUM ALLOWABLE RAMP LANDING SLOPE IS 1:64, MEASURED AT ANY LOCATION AND IN ANY DIRECTION ON THE LANDING. THE RAMP LANDING WIDTH SHALL MATCH THE FULL WIDTH OF THE RAMP FOR A MINIMUM UNOBSTRUCTED DEPTH OF 4'-0". RAMP LANDINGS SHALL BE PROVIDED AT THE TOP AND/OR BOTTOM OF RAMPS WHERE TURNING IS REQUIRED.
11. RAMP SIDE FLARES SHALL BE INSTALLED AT ANY LOCATION WHERE THE SURFACE ADJACENT TO THE RAMP SURFACE IS INTENDED FOR PEDESTRIAN USE. TRIPPING HAZARDS, INCLUDING STEPS, DROP-OFFS, OR CURBS SHALL NOT BE LOCATED WITHIN THE LIMITS OF THE SIDEWALK. RAMP SIDE FLARES ARE NOT REQUIRED WHERE THE SURFACE ADJACENT TO THE RAMP SURFACE IS LANDSCAPED OR IS OCCUPIED BY A BARRIER THAT BLOCKS PEDESTRIAN ACCESS. EXCEPTIONS TO THIS RULE MAY BE SUBMITTED TO THE COMMISSIONER FOR APPROVAL.



DATE	REVISION
02/20/07	REVISION 1
11/15/07	REVISION 2
11/14/08	REVISION 3
11/02/09	REVISION 4
08/10/12	REVISION 5

CITY OF CHICAGO  
 GENERAL NOTES  
**SHEET B-3-2**  
 SCALE: NOT TO SCALE  
 DATE: 10/23/2006  
 DRAWN BY: CDOT  
 CHECKED BY: LCM

E:\1525-SHT-STANDARDS-06.DGN



WSP USA Inc.  
 30 N. LA SALLE STREET  
 SUITE 4200  
 CHICAGO, IL 60602  
 TEL: (312) 782-8150  
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WEBSTER AVENUE BRIDGE OVER  
 THE NORTH BRANCH CHICAGO RIVER

ADA STANDARDS


F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	SD-6
CDOT PROJECT NO. E-1-525			30 of 210

PLAN	SURVEYED	DATE
	PLOTTED	BY
NOTE BOOK	ALIGNMENT CHECKED	
	CADD FILE NAME	

PROFILE	SURVEYED	DATE
	PLOTTED	BY
NOTE BOOK	GRADES CHECKED	
	STRUCTURE NOTATIONS CHECKED	

**GENERAL NOTES (CONTINUED):**

12. UTILITIES, SUCH AS LIGHT POLES, TRAFFIC POLES AND HYDRANTS, MAY BE LOCATED IN THE FLARE OF THE RAMP BUT ARE NOT ALLOWED ON THE RAMP SURFACE OR LANDING AREAS. EXISTING UTILITY STRUCTURE LIDS MAY REMAIN WITHIN THE FLARE OR ON THE SURFACE OF THE RAMP IF THE REQUIREMENTS OF GENERAL NOTE #19 ARE MET.
13. ALL LOCATIONS WITH TYPE 4 OR TYPE B CURB (EXCEPT ALLEY APRONS) SHALL BE CONSTRUCTED AS CURB AND GUTTER TYPE BV.12 THROUGH THE LIMITS OF THE CORNER AND THE CURB RAMPS.
14. ALTERATIONS SHALL NOT DECREASE THE ACCESSIBILITY TO EXISTING FACILITIES, SIDEWALKS LEADING TO EXISTING FACILITIES, OR DOOR OR GATE ACCESS POINTS TO FACILITIES. THE ELEVATION AT THE EXISTING PROPERTY LINE OR FACILITY ACCESS POINT SHALL BE MAINTAINED AT A MINIMUM. ANY ALTERATIONS ADJACENT TO OR AFFECTING A FACILITY ACCESS POINT SHALL RESULT IN IMPROVED ACCESS OR AT A MINIMUM A REPLICATION OF EXISTING CONDITIONS, INCLUDING SIDEWALK SLOPES AND SURFACE CONDITIONS. FACILITIES INCLUDE, BUT ARE NOT LIMITED TO PRIVATE BUSINESSES, PUBLIC BUILDINGS, RESIDENCES, BUS STOPS, PUBLIC BENCHES, PAY PHONES, AND PARKING METERS.
15. THE MINIMUM CROSSWALK WIDTH IS 6'-0". CROSSWALKS SHALL BE LOCATED AS SHOWN IN THE PLAN SHEETS DEPENDING ON THE TYPE OF CURB RAMP USED. BEYOND THE CURB FACE AT THE BASE OF CURB RAMPS, A CLEAR SPACE OF 4'-0" BY 4'-0" MINIMUM SHALL BE PROVIDED WITHIN THE STRIPES OF THE CROSSWALK (WHERE PROVIDED).
16. IF SIDEWALK AND ALLEY ARE AT THE SAME GRADE, A RAMP IS NOT REQUIRED. IF SIDEWALK AND DRIVEWAY ARE AT THE SAME GRADE, A RAMP IS NOT REQUIRED BUT DETECTABLE WARNING UNITS ARE STILL REQUIRED IF THE DRIVEWAY HAS TRAFFIC CONTROL DEVICES (I.E. TRAFFIC SIGNALS).
17. MAIN LINE SIDEWALK SHALL HAVE A MAXIMUM CROSS SLOPE NOT TO EXCEED 1:64 FOR THE FULL WIDTH OF WALK UNLESS OTHERWISE APPROVED BY THE COMMISSIONER. WHERE TURNING IS REQUIRED AND WHERE SIDEWALKS INTERSECT, THE SLOPE OF THE SIDEWALK SHALL NOT EXCEED 1:64 IN ANY DIRECTION.
18. MAIN LINE SIDEWALK RUNNING SLOPES SHALL NOT EXCEED 1:24 OR THE GENERAL GRADE ESTABLISHED FOR THE ADJACENT STREET, WHICH EVER IS HIGHER.
19. THERE SHALL BE NO VERTICAL LEVEL DIFFERENCES BETWEEN SURFACES GREATER THAN 1/4" ON THE MAIN LINE SIDEWALK. THERE SHALL BE NO HORIZONTAL GAPS OR OPENINGS GREATER THAN 1/2" ON THE MAIN LINE SIDEWALK.
20. WHERE OBSTRUCTIONS EXIST ON THE MAINLINE SIDEWALK, THE CLEAR WIDTH OF USEABLE SIDEWALK SHALL NOT BE LESS THAN 4'-0". OBSTRUCTIONS INCLUDE, BUT ARE NOT LIMITED TO SIDEWALK BENCHES, FIRE HYDRANTS, SIGNAL OR LIGHT POLES, NEWSPAPER DISPENSERS, TRASH RECEPTACLES, AND UTILITY PEDESTALS.
21. CURB RAMPS AND LANDING (KEYSTONE) TO BE CONSTRUCTED WITH 8" THICK CONCRETE AT ALL TRAFFIC SIGNALIZED INTERSECTIONS AND INDUSTRIAL STREET INTERSECTIONS. AT ALL OTHER LOCATIONS, 5" THICK CONCRETE TO BE USED.
22. DEPRESSED CURB, RAMP, OR SIDEWALK DESIGNS OR LAYOUTS SHALL MAINTAIN OR IMPROVE EXISTING DRAINAGE AND THE EXISTING INTERSECTION GEOMETRY SHALL NOT BE MODIFIED WITHOUT CDOT APPROVAL.
23. ALL CONSTRUCTION DOCUMENTS MUST BE STAMPED BY A LICENSED ARCHITECT/LANDSCAPE ARCHITECT/ENGINEER TO CERTIFY THAT THEY ARE IN ACCORDANCE WITH THE AMERICANS WITH DISABILITIES ACT (ADA) AND ALL CODES AND BUILDING ORDINANCES OF THE CITY OF CHICAGO AND THE STATE OF ILLINOIS.
24. NO DEVIATIONS FROM THESE STANDARDS ARE ALLOWED WITHOUT WRITTEN APPROVAL FROM THE COMMISSIONER.

 City of Chicago Rahm Emanuel, Mayor Department of Transportation Division of Engineering www.cityofchicago.org	DATE	REVISION	CITY OF CHICAGO GENERAL NOTES (CONTINUED) <b>SHEET B-3-3</b> SCALE: NOT TO SCALE DATE: 10/23/2006 DRAWN BY: CDOT CHECKED BY: GK
	02/20/07	REVISION 1	
	11/15/07	REVISION 2	
	11/14/08	REVISION 3	
	11/02/09	REVISION 4	
	08/10/12	REVISION 5	
01/01/14	REVISION 6		

**ADA COMPLIANCE AND TRANSITION GUIDELINES**

POLICY STATEMENT: ANY ALTERATION OF THE PUBLIC WAY MUST BE RESTORED IN AN ADA COMPLIANT MANNER

**I. STREET/ALLEY RESTORATION**

- FOR ANY PROJECT WHERE, WITHIN THE PROJECT LIMITS, A CROSSWALK IS ENCOUNTERED OR WHERE THE PROJECT LIMITS TERMINATE WITHIN 4' OR LESS OF A CROSSWALK, THOSE CROSSWALKS AND THE ASSOCIATED CURB RAMPS MUST BE IMPROVED TO CURRENT ADA STANDARDS IF THEY ARE NOT COMPLIANT (SEE APPENDIX A.)
- WHEN A PROJECT CALLS FOR ONLY AN INTERSECTION TO BE REPAVED, THE INTERSECTION LIMITS AS DEFINED BY THE AREA OUTLINED BY OUTERMOST CROSSWALK LINES AND ADJACENT CURB FACES AND ALL ADJOINING CROSSWALKS AND CURB RAMPS MUST BE IMPROVED TO CURRENT ADA STANDARDS IF THEY ARE NOT COMPLIANT (SEE APPENDIX A).
- WHEN WORK IS LIMITED TO A SINGLE CORNER OF AN INTERSECTION, THE CURB RAMP MUST BE IMPROVED TO CURRENT ADA STANDARDS AND THE ADJACENT PAVEMENT MUST BE RESURFACED, AS NECESSARY TO PROVIDE FOR A FLUSH TRANSITION (SEE APPENDIX A).
- WHEN ADA WORK IS LIMITED TO A SINGLE CORNER OF AN INTERSECTION, THE ADJACENT PAVEMENT MUST BE RESTORED TO THE 1/4-POINT OF THE ROADWAY.
- FOR ANY CONSTRUCTION WHERE, WITHIN THE PROJECT LIMITS, AN ALLEY APRON IS ENCOUNTERED, THE ASSOCIATED CURB RAMPS, ALLEY APRON, AND SIDEWALKS MUST BE IMPROVED TO CURRENT ADA STANDARDS IF THEY ARE NOT COMPLIANT (SEE APPENDIX A).

**II. SIDEWALK INSTALLATION / REPAIRS / RECONSTRUCTION**

THE LIMITS OF ANY MAINLINE SIDEWALK REPLACEMENT, GREATER THAN TEN FEET (10') IN LENGTH, THAT ABUT AN EXISTING RAMP, KEYSTONE, TRANSITION PANEL, AND/OR LANDING AREA (THIS TOTAL LENGTH INCLUDES THE PRIOR ELEMENTS), SHALL BE EXTENDED TO INCLUDE THE AFFECTED RAMPS AND THESE RAMPS SHALL BE RECONSTRUCTED TO CURRENT ADA STANDARDS. IN ADDITION, ALL NEWLY PLACED SIDEWALK TEN FEET (10') OR MORE IN LENGTH SHALL BE CONSTRUCTED IN ACCORDANCE WITH ALL CURRENT APPLICABLE STANDARDS WHICH INCLUDE PROVIDING A MINIMUM FOUR FEET (4') WIDTH ACCESSIBLE PATHWAY WITH A CROSS SLOPE NOT TO EXCEED 1:64 (SEE APPENDIX A).

**III. GUIDELINES FOR TRANSITIONING TO EXISTING NON-COMPLIANT CONDITION**

**NEW SIDEWALK PLACEMENTS GREATER THAN TEN FEET IN CONTIGUOUS LENGTH:**

THE LIMITS OF ANY MAINLINE SIDEWALK REPLACEMENT, GREATER THAN TEN FEET (10') IN LENGTH, MUST BE EXTENDED FOR A MINIMUM FIVE ADDITIONAL FEET (5') EITHER SIDE IN ORDER TO PROVIDE A TRANSITION TO MATCH THE EXISTING SIDEWALK. THE LENGTH OF TRANSITION SHALL BE LENGTHENED AS NECESSARY TO ENSURE THAT THE RUNNING SLOPE OF THE TRANSITION DOES NOT EXCEED A SLOPE OF 1:24 (PREFERRED) OR 1:14 (MAXIMUM) AT ANY POINT.


**NEW SIDEWALK REPLACEMENTS TEN FEET OR LESS IN CONTIGUOUS LENGTH (REPAIRS):**

IT IS ACCEPTABLE PRACTICE TO MATCH ADJACENT SIDEWALKS AT THE EXISTING SLOPE.

**CURB RAMP REPLACEMENTS**

WHEN REPLACING AN ADA RAMP, THE SIDEWALK REPLACEMENT MUST EXTEND BEYOND THE LIMITS OF THE LANDING AREA AND/OR THE "KEYSTONE" A MINIMUM OF AN ADDITIONAL FIVE FEET (5') ON EITHER SIDE IN ORDER TO PROVIDE A TRANSITION TO MATCH THE EXISTING SIDEWALK. THE TRANSITION PANEL SHALL BE LENGTHENED AS NECESSARY TO ENSURE THAT THE RUNNING SLOPE OF THE TRANSITION PANEL DOES NOT EXCEED A SLOPE OF 1:24 (PREFERRED) OR 1:14 (MAXIMUM) AT ANY POINT.

NO EXCEPTIONS TO THE ABOVE WILL BE ALLOWED WITHOUT WRITTEN APPROVAL FROM THE COMMISSIONER.

 City of Chicago Rahm Emanuel, Mayor Department of Transportation Division of Engineering www.cityofchicago.org	DATE	REVISION	CITY OF CHICAGO ADA COMPLIANCE AND TRANSITION GUIDELINES <b>SHEET B-3-4</b> SCALE: NOT TO SCALE DATE: 10/23/2006 DRAWN BY: CDOT CHECKED BY: GK
	02/20/07	REVISION 1	
	11/15/07	REVISION 2	
	11/14/08	REVISION 3	
	11/02/09	REVISION 4	
	08/10/12	REVISION 5	
01/01/14	REVISION 6		

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PLOT DATE = SDATES	DRAWN - MMA	REVISED -
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**WEBSTER AVENUE BRIDGE OVER THE NORTH BRANCH CHICAGO RIVER**

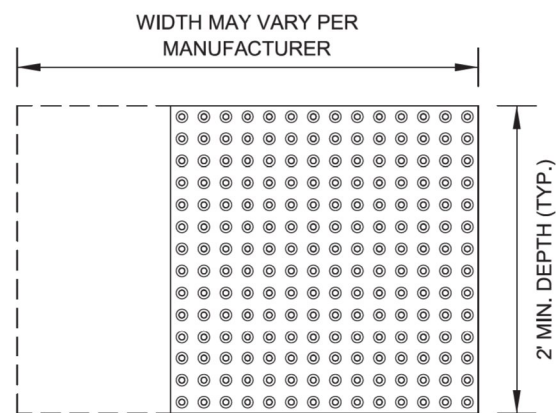
**ADA STANDARDS**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	SD-7
CDOT PROJECT NO. E-1-525			31 of 210

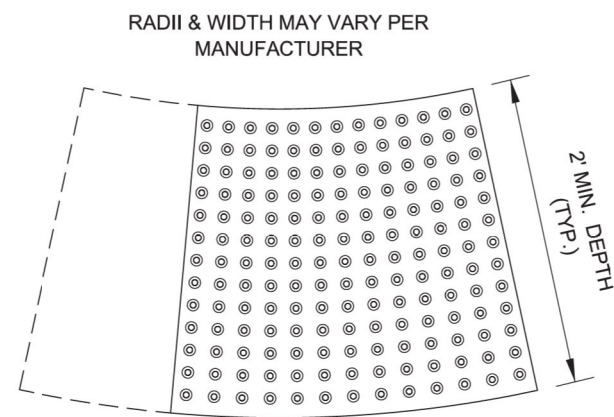
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	STRUCTURE NOTATION CHECKED	
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PROFILE	SURVEYED	DATE
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	GRADES CHECKED	
	STRUCTURE NOTATION CHECKED	
	NOTE BOOK NO.	
	BY	

### STRAIGHT DETECTABLE WARNING UNITS



### RADIAL DETECTABLE WARNING UNITS



### DETECTABLE WARNING UNIT SIZES

- VERIFY ALL DIMENSIONS WITH THE PRODUCT MANUFACTURER.
- IF USING RADIAL UNITS, VERIFY THAT THE CURB RADIUS MATCHES AVAILABLE UNIT RADII WITH THE PRODUCT MANUFACTURER.
- APPROVED LIST OF DETECTABLE WARNING PRODUCTS CAN BE FOUND ON CDOT'S WEBSITE ([www.cityofchicago.org](http://www.cityofchicago.org)).

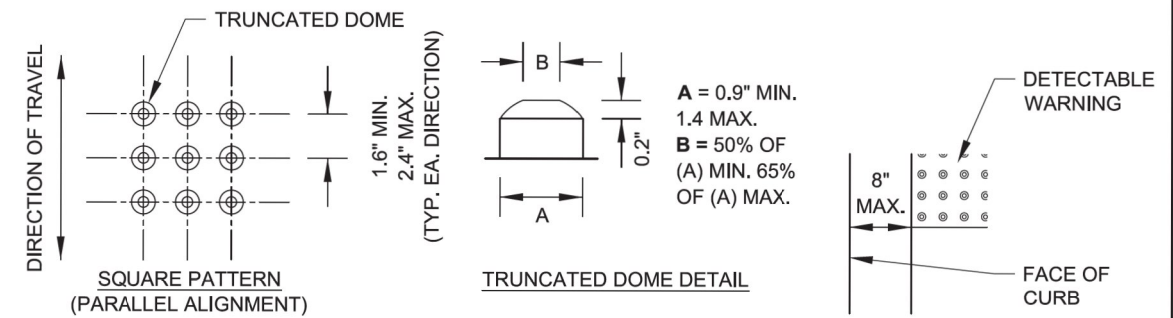


DATE	REVISION
02/20/07	REVISION 1
11/15/07	REVISION 2
11/14/08	REVISION 3
11/02/09	REVISION 4
08/10/12	REVISION 5

CITY OF CHICAGO  
DETECTABLE WARNING UNIT SIZES  
**SHEET B-4-1**  
SCALE: NOT TO SCALE  
DATE: 10/23/2006  
DRAWN BY: CDOT  
CHECKED BY: LCM

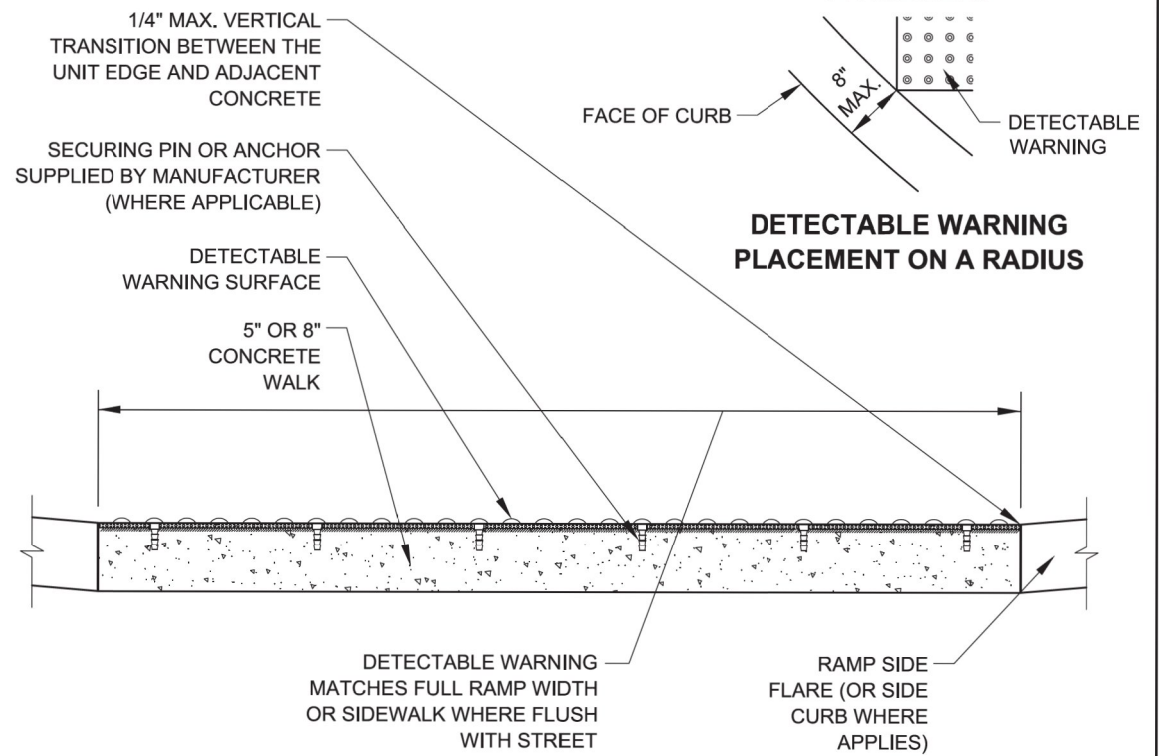
### GENERAL NOTE:

THE ROWS OF DOMES IN THE DETECTABLE WARNING MATERIAL MUST BE ALIGNED WITH THE PATH OF WHEELCHAIR TRAVEL WHICH IS REQUIRED TO BE PERPENDICULAR TO THE GRADE BREAK AT THE BOTTOM OF THE RAMP TO PERMIT TRACKING BETWEEN DOME ROWS. ON BLENDED TRANSITIONS OR FLUSH TRANSITIONS, WHERE RADIAL UNITS ARE SITUATED ABOUT THE CURB RADIUS, DOME ORIENTATION IS NOT SIGNIFICANT.



### UNIT PATTERN & DOME DETAIL

### TYPICAL DETECTABLE WARNING PLACEMENT



### DETECTABLE WARNING UNIT SECTION



DATE	REVISION
02/20/07	REVISION 1
11/15/07	REVISION 2
11/14/08	REVISION 3
11/02/09	REVISION 4
08/10/12	REVISION 5

CITY OF CHICAGO  
DETECTABLE WARNING UNIT DETAILS  
**SHEET B-4-2**  
SCALE: NOT TO SCALE  
DATE: 10/23/2006  
DRAWN BY: CDOT  
CHECKED BY: LCM

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**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

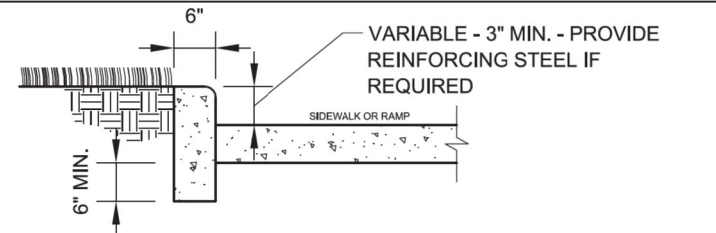
WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER

ADA STANDARDS

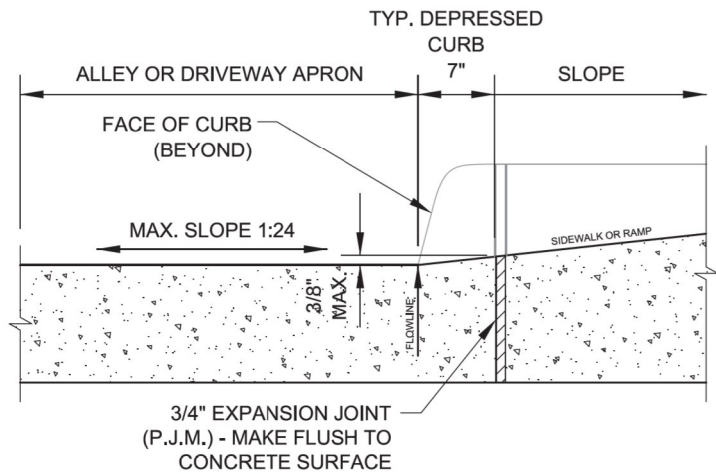
F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	SD-8
CDOT PROJECT NO. E-1-525			32 of 210

DATE	
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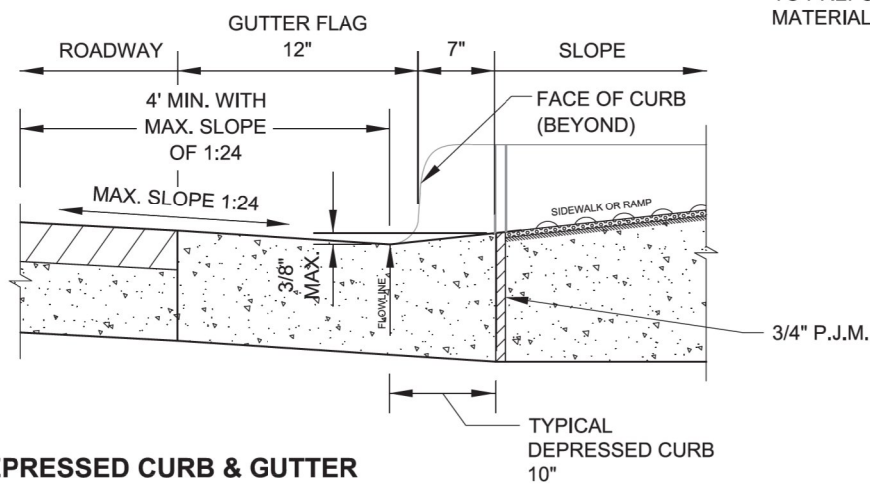
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**SIDE CURB - SECTION**



**DEPRESSED CURB & GUTTER AT ALLEY/DRIVEWAY APRON (TYPE 4 OR B CURB)**



**DEPRESSED CURB & GUTTER AT BOTTOM OF TYPICAL CURB RAMP**

- NOTES FOR CURB & GUTTER DETAILS THIS SHEET:**
- A. CROSS SLOPE AT DEPRESSED CURB & GUTTER NOT TO EXCEED 1:64.
  - B. DETECTABLE WARNING SURFACE AT DRIVEWAYS REQUIRED ONLY FOR COMMERCIAL DRIVEWAYS WITH TRAFFIC CONTROL DEVICES, I.E. SIGNALS.
  - C. REFER TO *REGULATIONS FOR OPENINGS, CONSTRUCTION AND REPAIR IN THE PUBLIC WAY (CDOT)* FOR ADDITIONAL REQUIREMENTS FOR CURB AND GUTTER INSTALLATION.
  - D. RAMP SIDE FLARES SHALL BE INSTALLED AT ANY LOCATION WHERE THE SURFACE ADJACENT TO THE RAMP SURFACE IS INTENDED FOR PEDESTRIAN USE. TRIPPING HAZARDS, INCLUDING STEPS, DROP-OFFS, OR SIDE CURBS SHALL NOT BE LOCATED WITHIN THE LIMITS OF THE SIDEWALK.
  - E. 'P.J.M.' THIS SHEET REFERS TO PREFORMED JOINT MATERIAL.



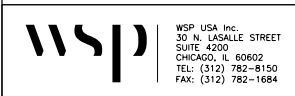
DATE	REVISION
02/20/07	REVISION 1
11/15/07	REVISION 2
11/14/08	REVISION 3
11/02/09	REVISION 4
08/10/12	REVISION 5

CITY OF CHICAGO  
CURB & GUTTER DETAILS  
**SHEET B-4-3**

SCALE: NOT TO SCALE  
DATE: 10/23/2006

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**WEBSTER AVENUE BRIDGE OVER THE NORTH BRANCH CHICAGO RIVER**

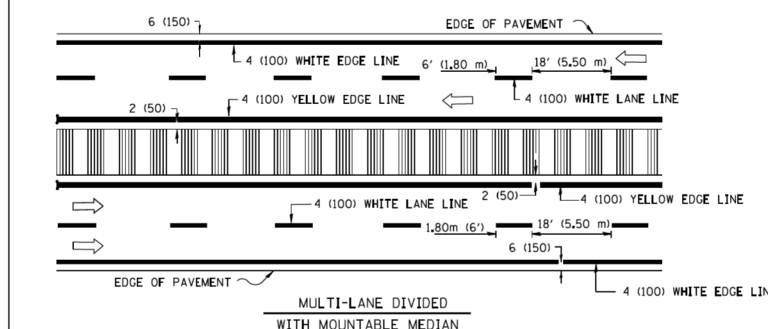
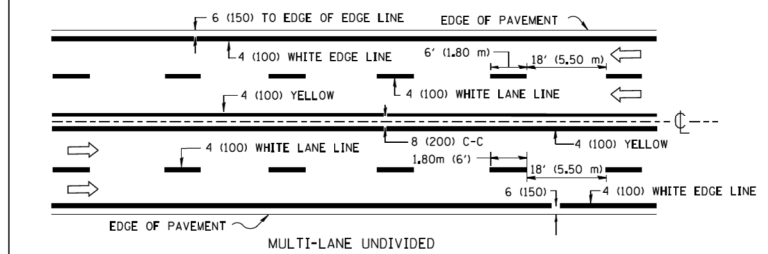
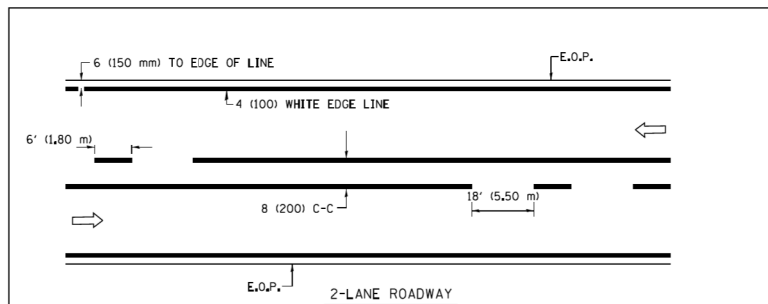
**ADA STANDARDS**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	SD-9
CDOT PROJECT NO. E-1-525			33 of 210

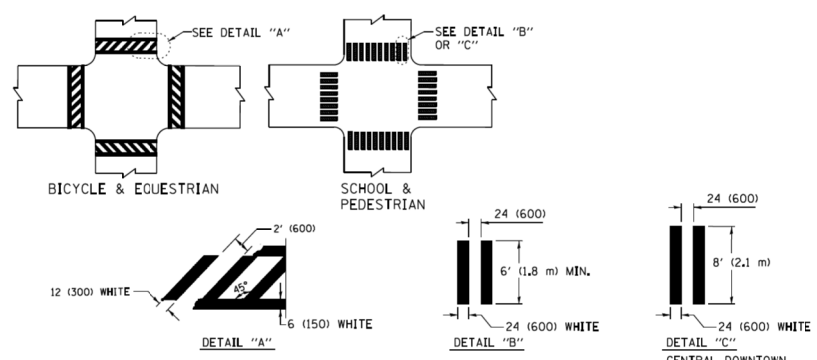


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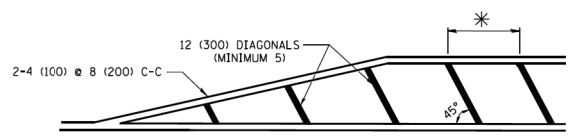
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NOTE: MEDIANS WITH BARRIER CURB DO NOT REQUIRE AN EDGE LINE  
**TYPICAL LANE AND EDGE LINE MARKING**

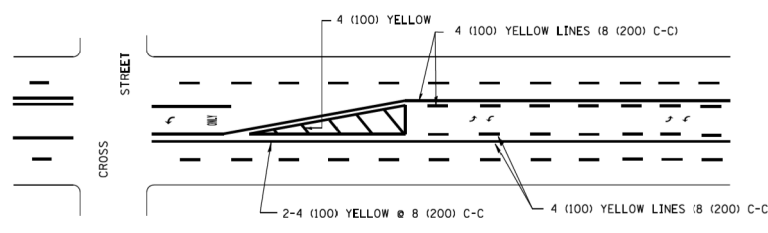


**TYPICAL CROSSWALK MARKING**



\*FOR MEDIAN LENGTHS WHERE DIAGONAL SPACING CANNOT BE ATTAINED, USE 5 (FIVE) EQUALLY SPACED DIAGONAL LINES.  
 \* DIAGONAL LINE SPACING: 20' (6.1 m) C-C

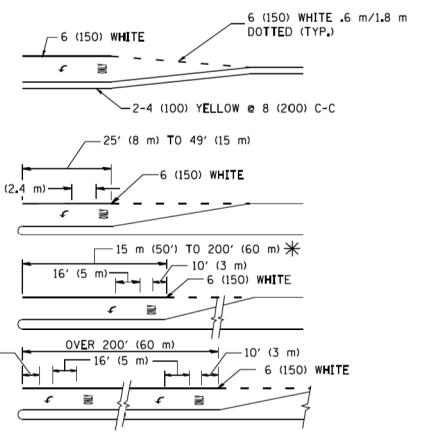
**PAINTED MEDIANS**



A MINIMUM OF TWO PAIRS OF TURN ARROWS SHALL BE USED, WHITE IN COLOR. ADDITIONAL PAIRS SHALL BE PLACED AT 200' (60 m) TO 300' (90 m) INTERVALS.

**MEDIAN WITH TWO-WAY LEFT TURN LANE**

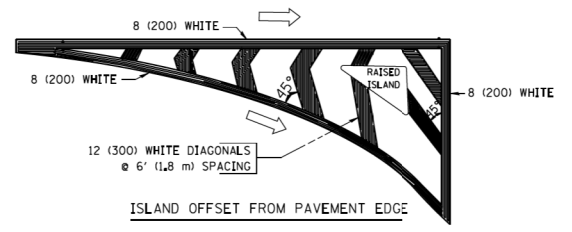
**TYPICAL PAINTED MEDIAN MARKING**



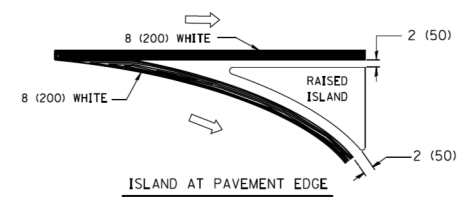
FULL SIZE LETTERS 8' (2.1 m) AND ARROWS SHALL BE USED.  
 AREA = 15.8 SQ. FT. (1.47 m<sup>2</sup>) ONLY AREA = 22.9 SQ. FT. (2.13 m<sup>2</sup>)  
 \* TURN LANES IN EXCESS OF 400' (120 m) IN LENGTH MAY HAVE AN ADDITIONAL SET OF ARROW - "ONLY" INSTALLED MIDWAY BETWEEN THE OTHER TWO SETS OF ARROW - "ONLY".

**TYPICAL LEFT (OR RIGHT) TURN LANE**

**TYPICAL TURN LANE MARKING**



**ISLAND OFFSET FROM PAVEMENT EDGE**



**ISLAND AT PAVEMENT EDGE**

**TYPICAL ISLAND MARKING**

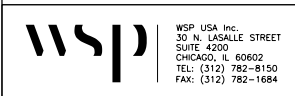
TYPE OF MARKING	WIDTH OF LINE	PATTERN	COLOR	SPACING / REMARKS
CENTERLINE ON 2 LANE PAVEMENT	4 (100)	SKIP-DASH	YELLOW	6' (1.80 m) LINE WITH 18' (5.50 m) SPACE
CENTERLINE ON MULTI-LANE UNDIVIDED PAVEMENT	2 @ 4 (100)	SOLID	YELLOW	8 (200) C-C
NO PASSING ZONE LINES FOR ONE DIRECTION FOR BOTH DIRECTIONS	4 (100) 2 @ 4 (100)	SOLID SOLID	YELLOW YELLOW	8 (200) C-C
LANE LINES	4 (100) 5 (125) ON FREEWAYS	SKIP-DASH SKIP-DASH	WHITE WHITE	6' (1.80 m) LINE WITH 18' (5.50 m) SPACE
DOTTED LINES (EXTENSIONS OF CENTER, LANE OR TURN LANE MARKINGS)	SAME AS LINE BEING EXTENDED	SKIP-DASH	SAME AS LINE BEING EXTENDED	2' (600) LINE WITH 6' (1.8) SPACE
EDGE LINES	4 (100)	SOLID	YELLOW-LEFT WHITE-RIGHT	OUTLINE MOUNTABLE MEDIANS IN YELLOW; EDGE LINES ARE NOT USED NEXT TO BARRIER CURB
TURN LANE MARKINGS	6 (150) LINE; FULL SIZE LETTERS & SYMBOLS (8' (2.4 m))	SOLID	WHITE	SEE TYPICAL TURN LANE MARKING DETAIL
TWO WAY LEFT TURN MARKING	2 @ 4 (100) EACH DIRECTION 8' (2.4 m) LEFT ARROW	SKIP-DASH AND SOLID IN PAIRS	YELLOW WHITE	6' (1.8 m) LINE WITH 18' (5.50 m) SPACE FOR SKIP-DASH; 8 (200) C-C BETWEEN SOLID LINE AND SKIP-DASH LINE SEE TYPICAL TWO-WAY LEFT TURN MARKING DETAIL
CROSSWALK LINES: A. DIAGONALS (BIKE & EQUESTRIAN) B. LONGITUDINAL BARS (SCHOOL & PEDESTRIAN)	12 (300) @ 45° 24 (600) @ 90°	SOLID SOLID	WHITE WHITE	2' (600) APART 2' (600) APART SEE TYPICAL CROSSWALK MARKING DETAILS.
STOP LINES	24 (600)	SOLID	WHITE	PLACE 4' (1.2 m) IN ADVANCE OF AND PARALLEL TO CROSSWALK, IF PRESENT. OTHERWISE, PLACE AT DESIRED STOPPING POINT, PARALLEL TO CROSSROAD CENTERLINE, WHERE POSSIBLE
PAINTED MEDIANS	2 @ 4 (100) WITH 12 (300) DIAGONALS @ 45°	SOLID	YELLOW: TWO WAY TRAFFIC WHITE: ONE WAY TRAFFIC	8 (200) C-C FOR THE DOUBLE LINE SEE TYPICAL PAINTED MEDIAN MARKING.
CORE MARKING AND CHANNELIZING LINES	8 (200) WITH 12 (300) DIAGONALS @ 45°	SOLID	WHITE	DIAGONALS: 20' (6.1 m) (LESS THAN 30 MPH (50 km/h))
RAILROAD CROSSING	24 (600) TRANSVERSE LINES; "RR" IS 6' (1.8 m) LETTERS; 16 (400) LINE FOR "X"	SOLID	WHITE	SEE STATE STANDARD 780001 AREA OF: "R"=3.6 SQ. FT. (0.33m <sup>2</sup> ) EACH "X"=54.0 SQ. FT. (5.0 m <sup>2</sup> )

FOR FURTHER DETAILS ON PAVEMENT MARKING REFER TO STREET MARKING STANDARDS, PRINTED BY CITY OF CHICAGO, DEPARTMENT OF TRANSPORTATION, BUREAU OF TRAFFIC.

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.

FILE NAME = ca:\pw\work\pwsdot\drsvakosgn\d0108315\td4.dgn	USER NAME = drsvakosgn	DESIGNED - T. RAMMACH 12-07-00	REVISED - T. RAMMACH 12-07-00	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>CITY OF CHICAGO TYPICAL PAVEMENT MARKINGS</b>			F.A.U. - RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
		DRAWN -	REVISED - K. ENG 02-28-12		SCALE: NONE	SHEET NO. 1 OF 3	SHEETS	STA.	TO STA.	FED. ROAD DIST. NO. 1	ILLINOIS FED. AID PROJECT	CONTRACT NO.	
		CHECKED -	REVISED -										
		DATE -	REVISED -										

E1525-SHT-STANDARDS-10



USER NAME = MMA	DESIGNED - MMA	REVISED -
	CHECKED -	REVISED -
PLOT SCALE =	DRAWN - MMA	REVISED -
PLOT DATE = SDATES	CHECKED -	REVISED -

**CITY OF CHICAGO**  
 DEPARTMENT OF TRANSPORTATION  
 DIVISION OF ENGINEERING

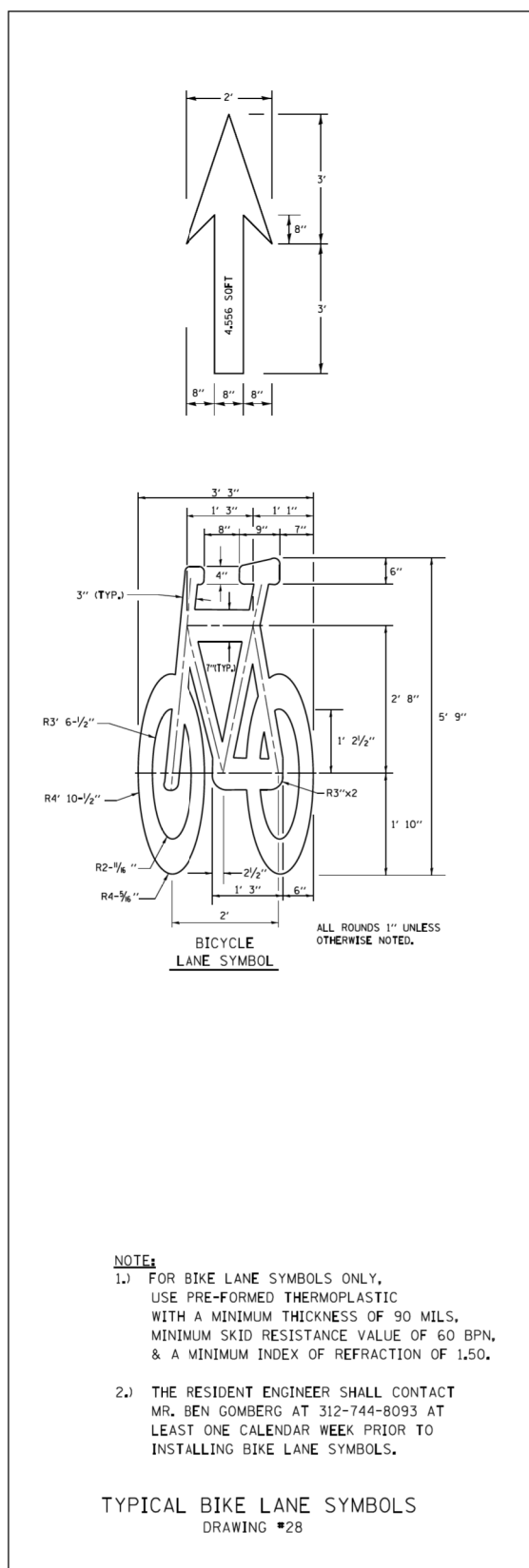
**WEBSTER AVENUE BRIDGE OVER  
 THE NORTH BRANCH CHICAGO RIVER**

**IDOT STANDARDS**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	SD-10
CDOT PROJECT NO. E-1-525			34 of 210

PLAN	SURVEYED	DATE
	PLOTTED	BY
	ALIGNED	
	CHECKED	
	FILE NAME	
	NO.	

PROFILE	SURVEYED	DATE
	PLOTTED	BY
	GRADES	
	CHECKED	
	STRUCTURE	
	NOTATION	
	CHWD	
	NO.	



**NOTE:**  
 1.) FOR BIKE LANE SYMBOLS ONLY, USE PRE-FORMED THERMOPLASTIC WITH A MINIMUM THICKNESS OF 90 MILS, MINIMUM SKID RESISTANCE VALUE OF 60 BPN, & A MINIMUM INDEX OF REFRACTION OF 1.50.  
 2.) THE RESIDENT ENGINEER SHALL CONTACT MR. BEN GOMBERG AT 312-744-8093 AT LEAST ONE CALENDAR WEEK PRIOR TO INSTALLING BIKE LANE SYMBOLS.

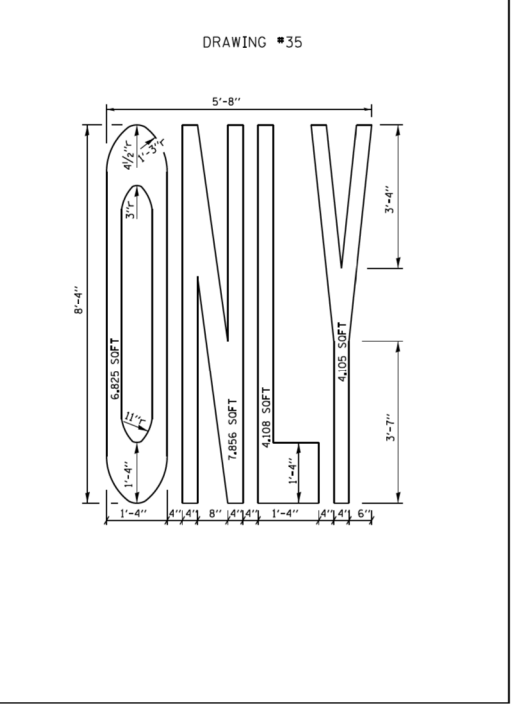
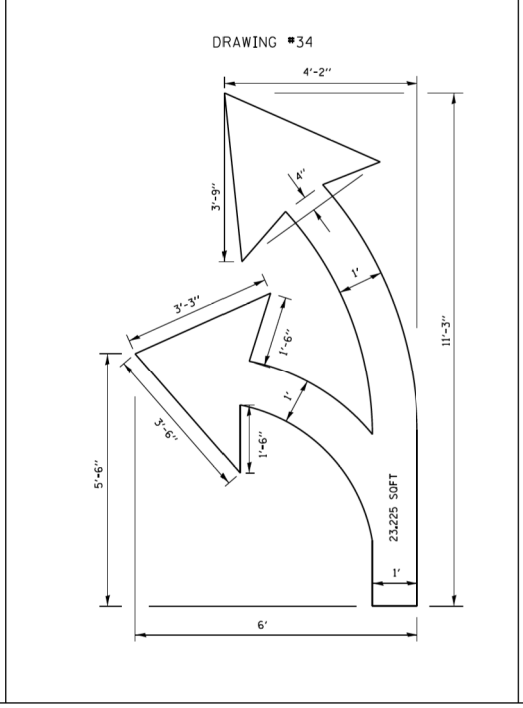
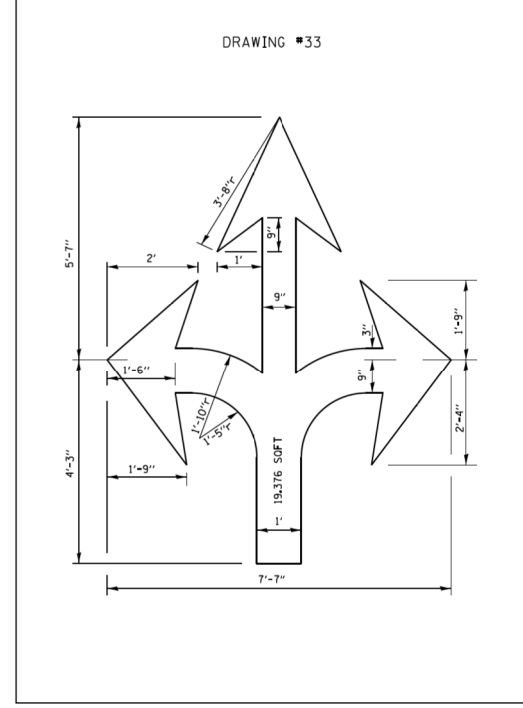
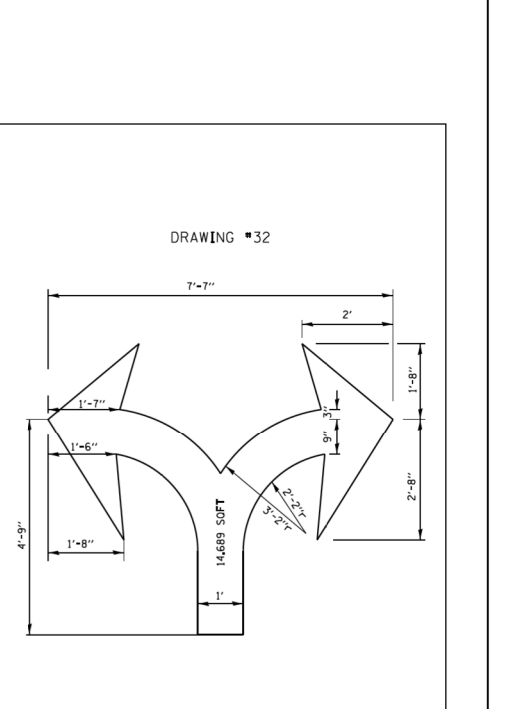
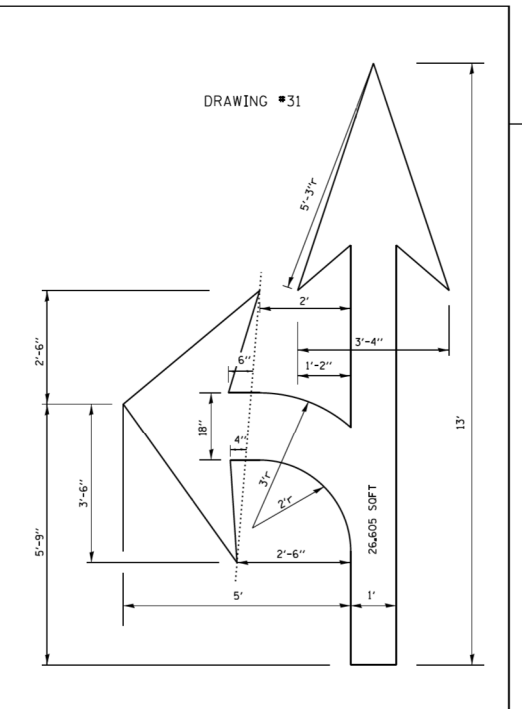
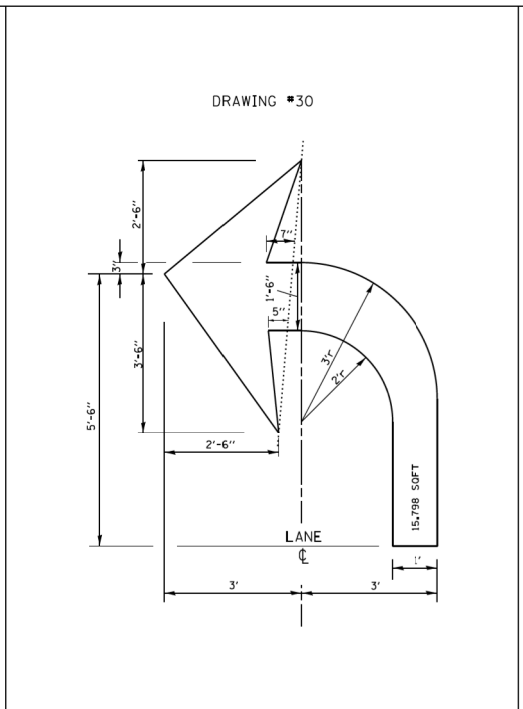
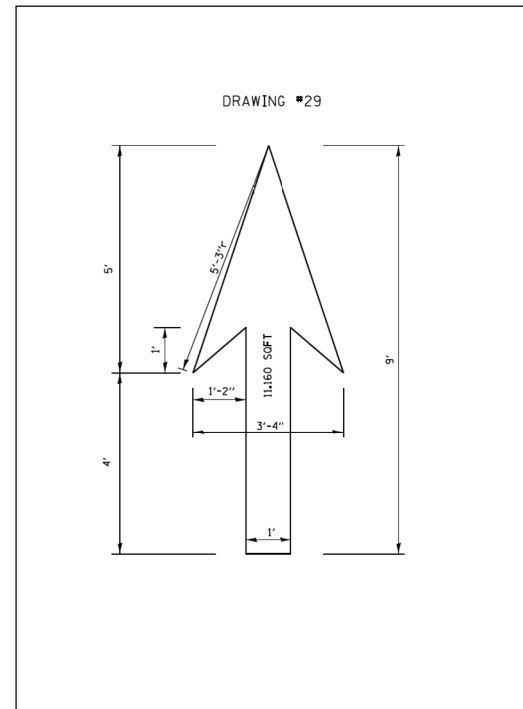
TYPICAL BIKE LANE SYMBOLS  
DRAWING #28

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		DRAWN -	REVISED -
		-	-K. ENG 02-28-12
		CHECKED -	REVISED -
		-	-
		DATE -	REVISED -
		-	-
PLOT SCALE =			
50,000' / 1"			
PLOT DATE =			
3/29/2012			

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

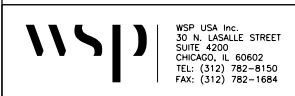
CITY OF CHICAGO			
TYPICAL PAVEMENT MARKINGS			
SCALE: NONE	SHEET NO. 2 OF 3	SHEETS STA.	TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1388	11-E1525-00-BR	COOK		SD-11
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				CONTRACT NO.
TC-24				
CDOT PROJECT NO. E-1-525				35 of 210



**NOTE:**  
ALL MARKINGS SHALL BE SOLID WHITE UNLESS OTHERWISE NOTED IN THE PLANS

E1525-SHT-STANDARDS-11



USER NAME =	DESIGNED -	REVISED -
MMA	MMA	-
	CHECKED -	REVISED -
	-	-
PLOT SCALE =	DRAWN -	REVISED -
	MMA	-
PLOT DATE =	CHECKED -	REVISED -
SDATES	-	-

CITY OF CHICAGO  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

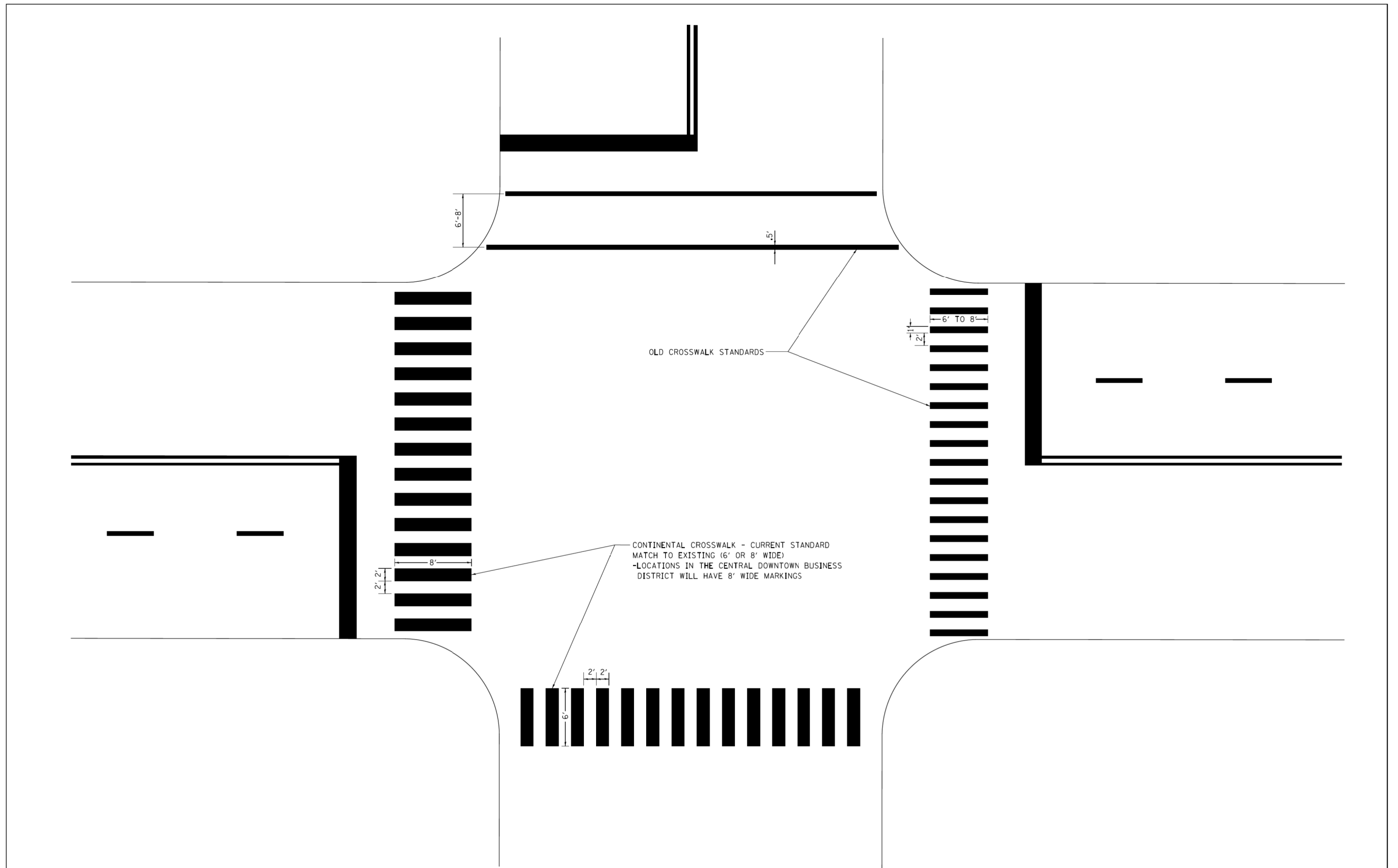
WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER

IDOT STANDARDS

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	SD-11
CDOT PROJECT NO. E-1-525			35 of 210

PLAN	SURVEYED	DATE
	PLOTTED	BY
NOTE BOOK NO.	ALIGNMENT CHECKED	
	FIELD FILE NAME	

PROFILE	SURVEYED	DATE
	PLOTTED	BY
NOTE BOOK NO.	GRADES CHECKED	
	STRUCTURE NOTATIONS CHECKED	



FILE NAME =	USER NAME = drvakosgn	DESIGNED -	REVISED - T. RAMMACHER 12-07-00
ca:\pw\work\pwsdot\drvakosgn\d0108315\td	4.dgn	DRAWN -	REVISED - K. ENG 02-28-12
PLOT SCALE = 50,000' / in.	CHECKED -	REVISED -	
PLOT DATE = 3/29/2012	DATE -	REVISED -	

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

CITY OF CHICAGO		F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TYPICAL PAVEMENT MARKINGS			TC-24			
SCALE: NONE	SHEET NO. 3 OF 3 SHEETS	STA.	TO STA.		FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT	

E1525-SHT-STANDARDS-12



USER NAME = MMA	DESIGNED - MMA	REVISED -
	CHECKED -	REVISED -
PLOT SCALE =	DRAWN - MMA	REVISED -
PLOT DATE = SDATES	CHECKED -	REVISED -

CITY OF CHICAGO  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

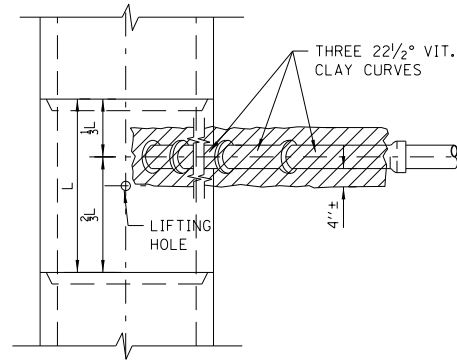
WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER

IDOT STANDARDS

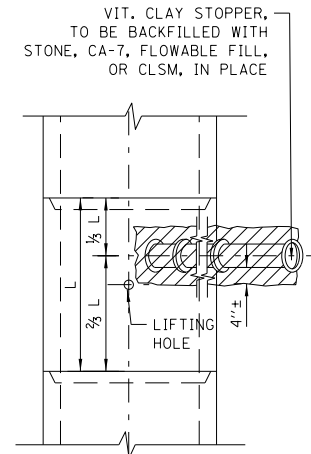
F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	SD-12
CDOT PROJECT NO. E-1-525			36 of 210

PLAN	SURVEYED	DATE
	PLOTTED	BY
	ALIGNMENT CHECKED	
	GRADE CHECKED	
	STRUCTURE NOTATION CHECKED	
	NOTE BOOK NO.	
	FILE NAME	

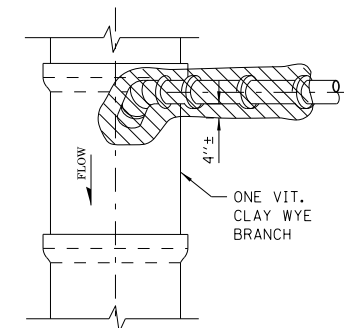
PROFILE	SURVEYED	DATE
	PLOTTED	BY
	GRADES CHECKED	
	STRUCTURE NOTATION CHECKED	
	NOTE BOOK NO.	
	FILE NAME	



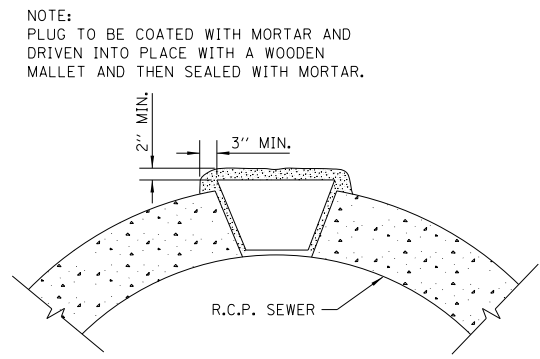
PLAN



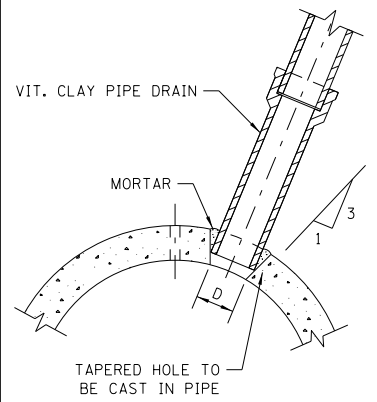
PLAN



PLAN

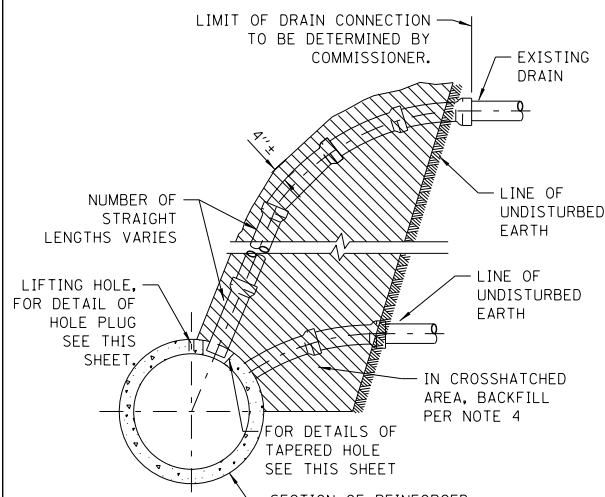


LIFTING HOLE PLUG DETAIL FOR CONCRETE PIPE

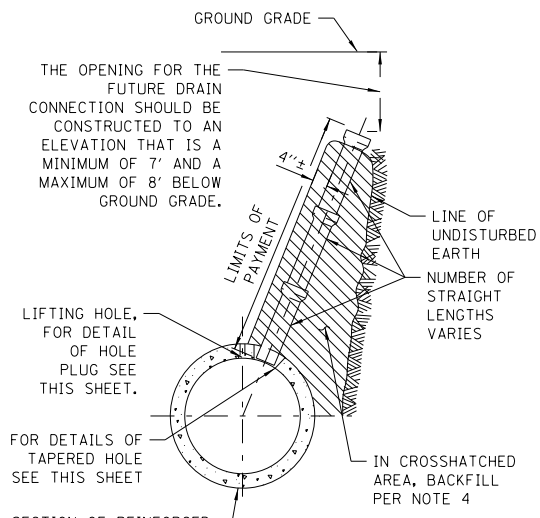


DETAIL OF TAPERED HOLE

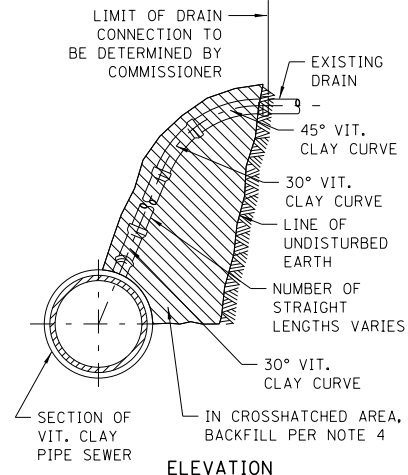
SIZE OF DRAIN	"D"
6"	6 7/8"
8"	9 1/8"
10"	11 1/8"
12"	13 1/2"
15"	17"
18"	20 1/4"
21"	23 7/8"



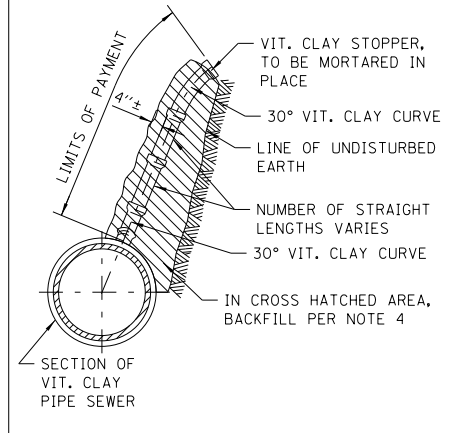
TYPICAL DRAIN CONNECTIONS FOR EXISTING DRAINS



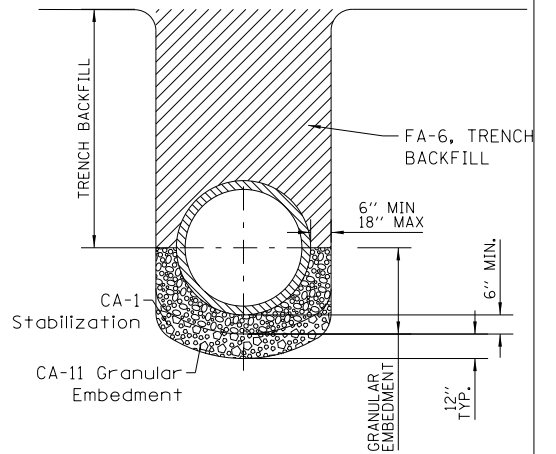
TYPICAL DRAIN STACKS FOR FUTURE USE



TYPICAL DRAIN CONNECTIONS FOR EXISTING DRAINS



TYPICAL DRAIN STACKS FOR FUTURE USE



NOTE:  
 1. FOR TRENCH BACKFILL, USE FA-6 SAND, CRUSHED CONCRETE SAND OR STONE SAND.  
 2. FOR GRANULAR EMBEDMENT, USE CA-11, CRUSHED GRAVEL, CRUSHED STONE, OR CRUSHED CONCRETE.  
 3. 12" OF CA-1 STONE IS ONLY REQUIRED WHEN UNSTABLE MATERIAL IS ENCOUNTERED AT TRENCH BOTTOM.

SEWER TRENCH DETAIL

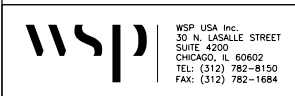
- NOTES:  
 1. ALL DRAIN CONNECTION JOINTS MUST BE MADE AS SPECIFIED IN SPECIFICATIONS..  
 2. FOR DUCTILE IRON PIPE DRAIN CONNECTIONS SEE SHEET NO. A.2.  
 3. FOR ALL GRANULAR EMBANKMENT, USE CA-7 OR CA-11  
 4. FOR BACKFILL OF HATCHED SUPPORT AREAS, USE CONCRETE, CA-11, FLOWABLE FILL, OR CLSM.

STANDARD REVISIONS	
DATE	DESCRIPTION
2/24/15	APPROVED PLAN

PERCENT COMPLETE	DATE
30	
60	
75	
90	
100	
BULLETIN	

CITY OF CHICAGO DEPARTMENT OF WATER MANAGEMENT BUREAU OF ENGINEERING SERVICES		DRAWN: SBW DESIGNED: [blank] CHECKED: GO, GC, SO REVIEWED: [blank]	A.1
VITRIFIED CLAY PIPE DRAIN CONNECTIONS		OF	PN

E1525-SHT-STANDARDS-13



USER NAME = KSD	DESIGNED - KSD	REVISED -
	CHECKED -	REVISED -
PLOT SCALE =	DRAWN - KSD	REVISED -
PLOT DATE = SDATES	CHECKED -	REVISED -

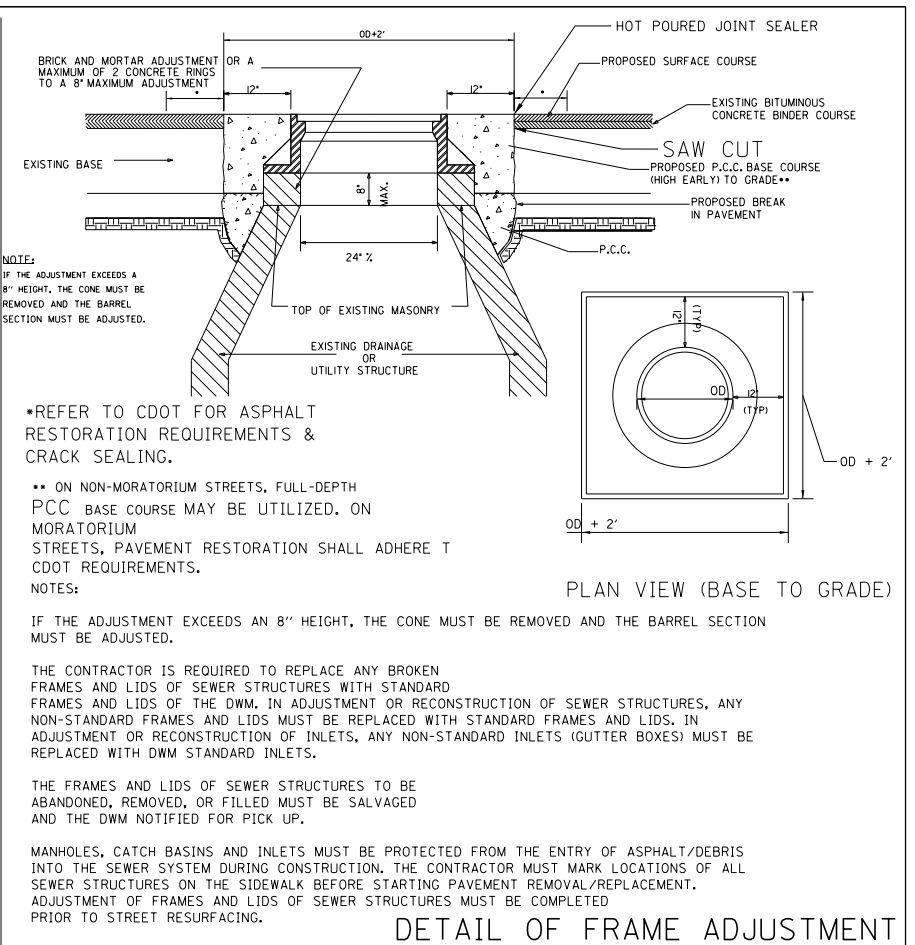
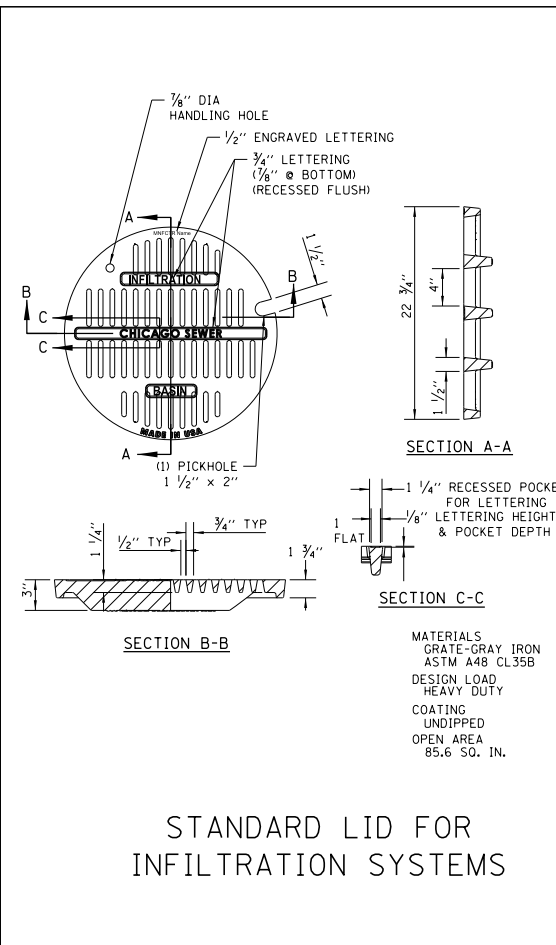
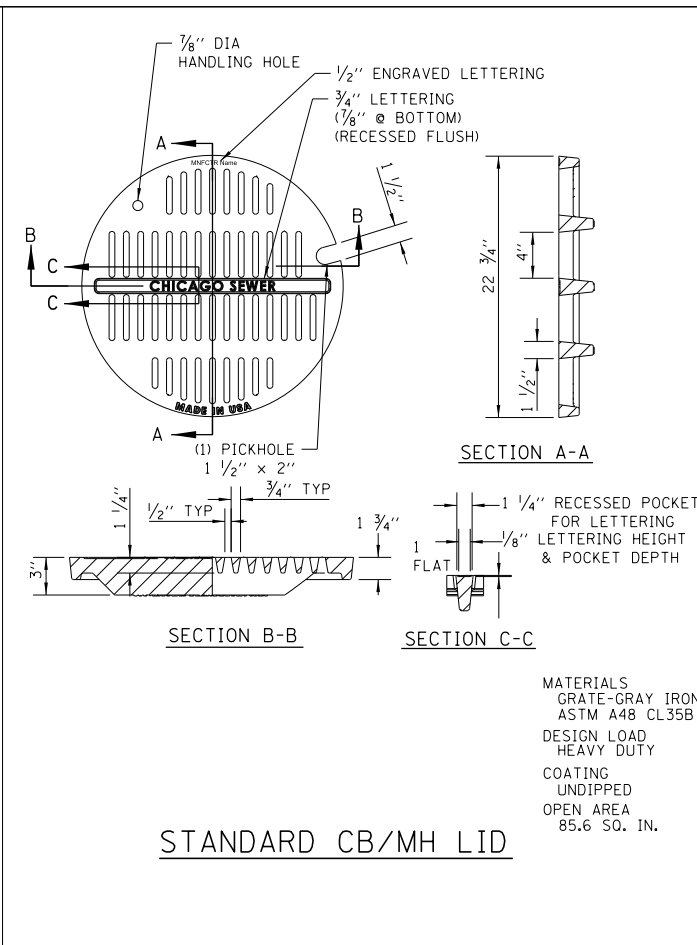
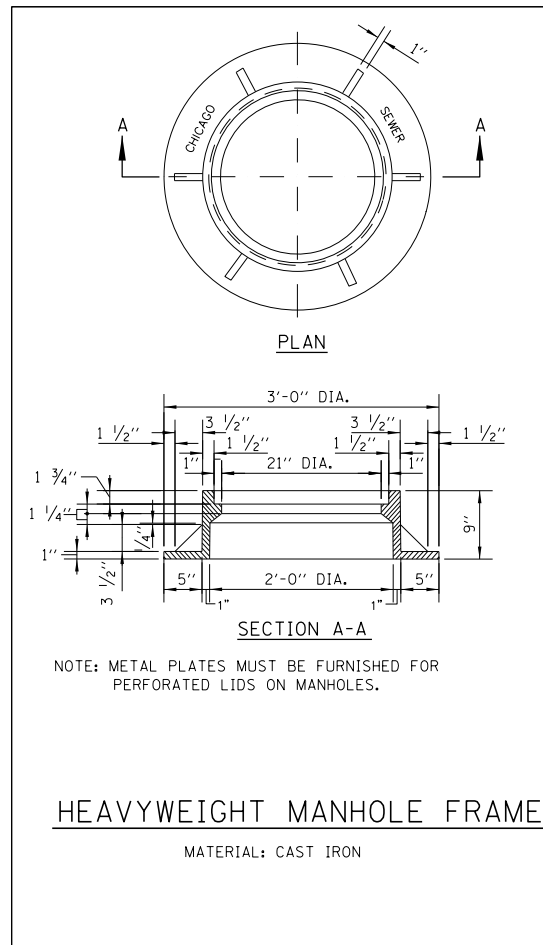
**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

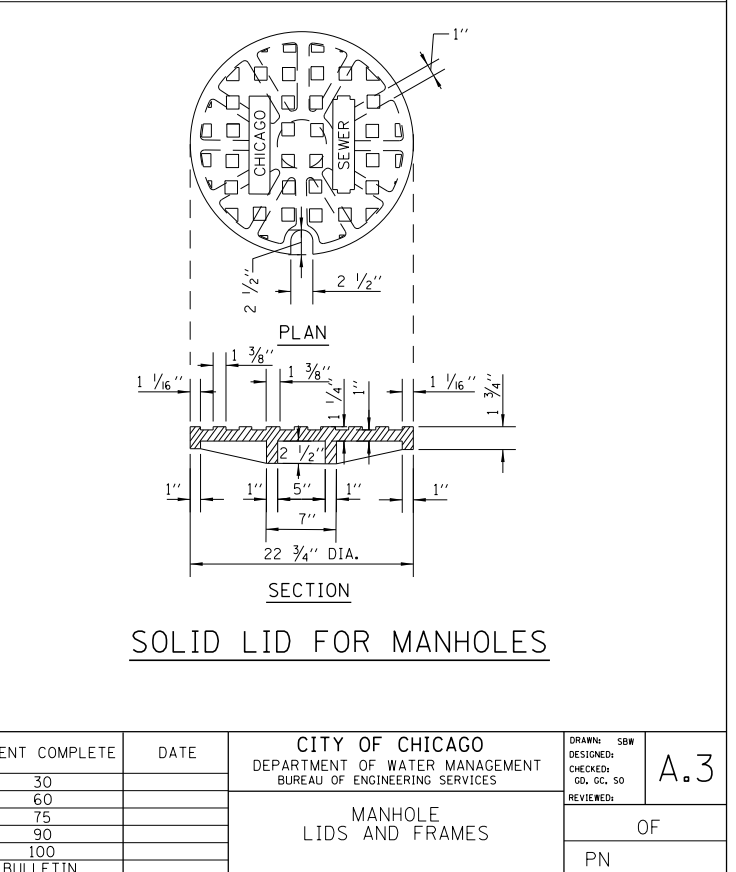
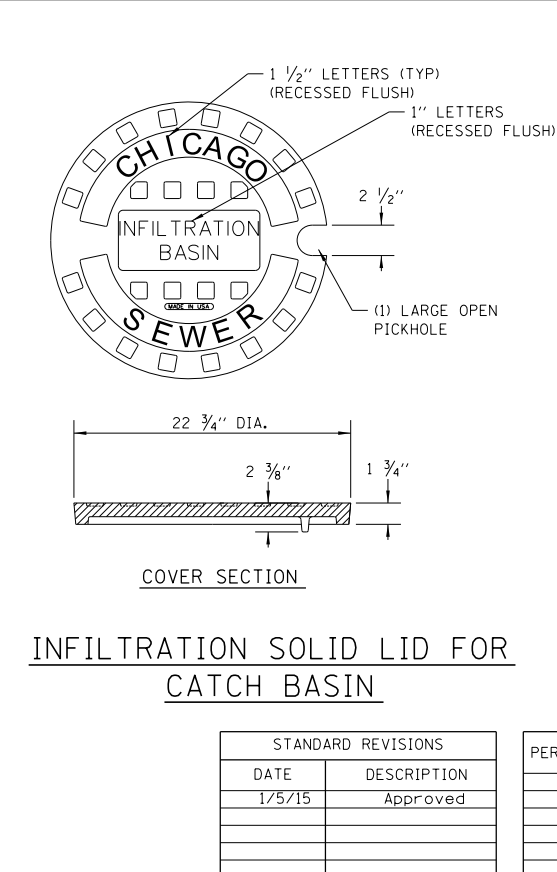
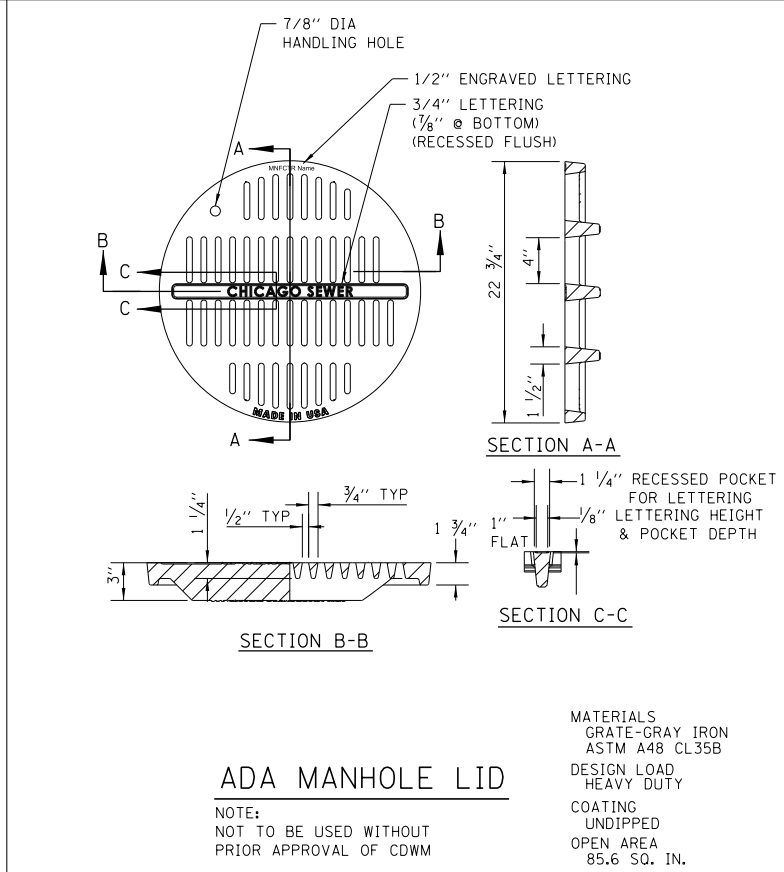
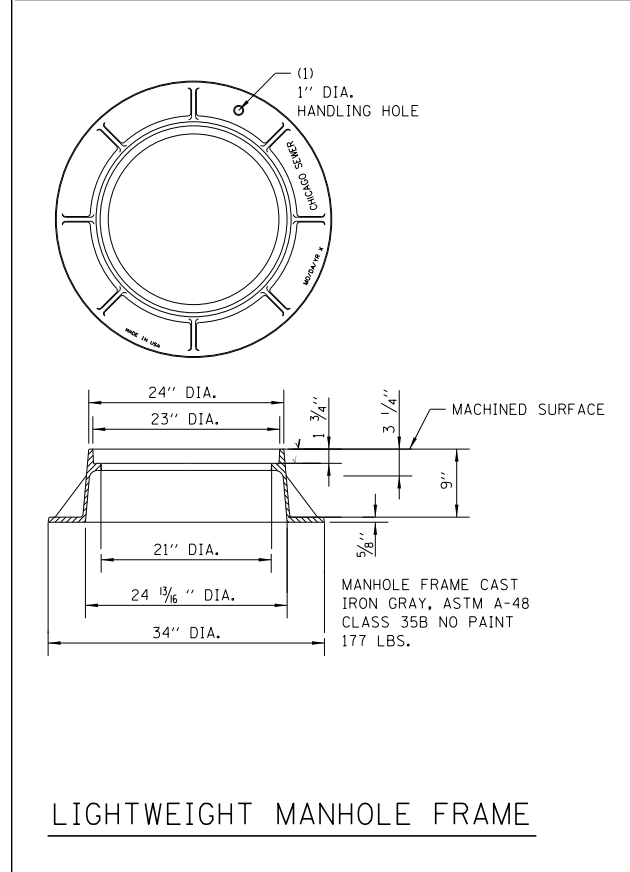
CDOT STANDARDS

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	SD-13
CDOT PROJECT NO. E-1-525			37 of 210

DATE	
BY	
REVISIONS	
NO.	
DATE	
BY	
REVISIONS	
NO.	
DATE	
BY	
REVISIONS	
NO.	



DATE	
BY	
REVISIONS	
NO.	
DATE	
BY	
REVISIONS	
NO.	
DATE	
BY	
REVISIONS	
NO.	

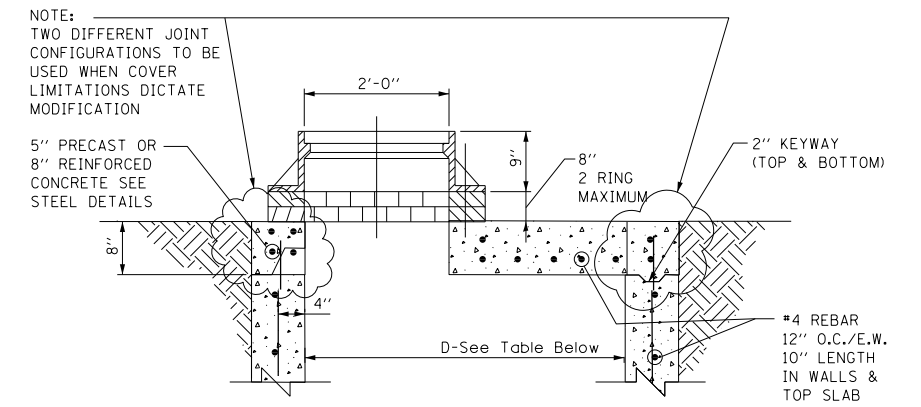
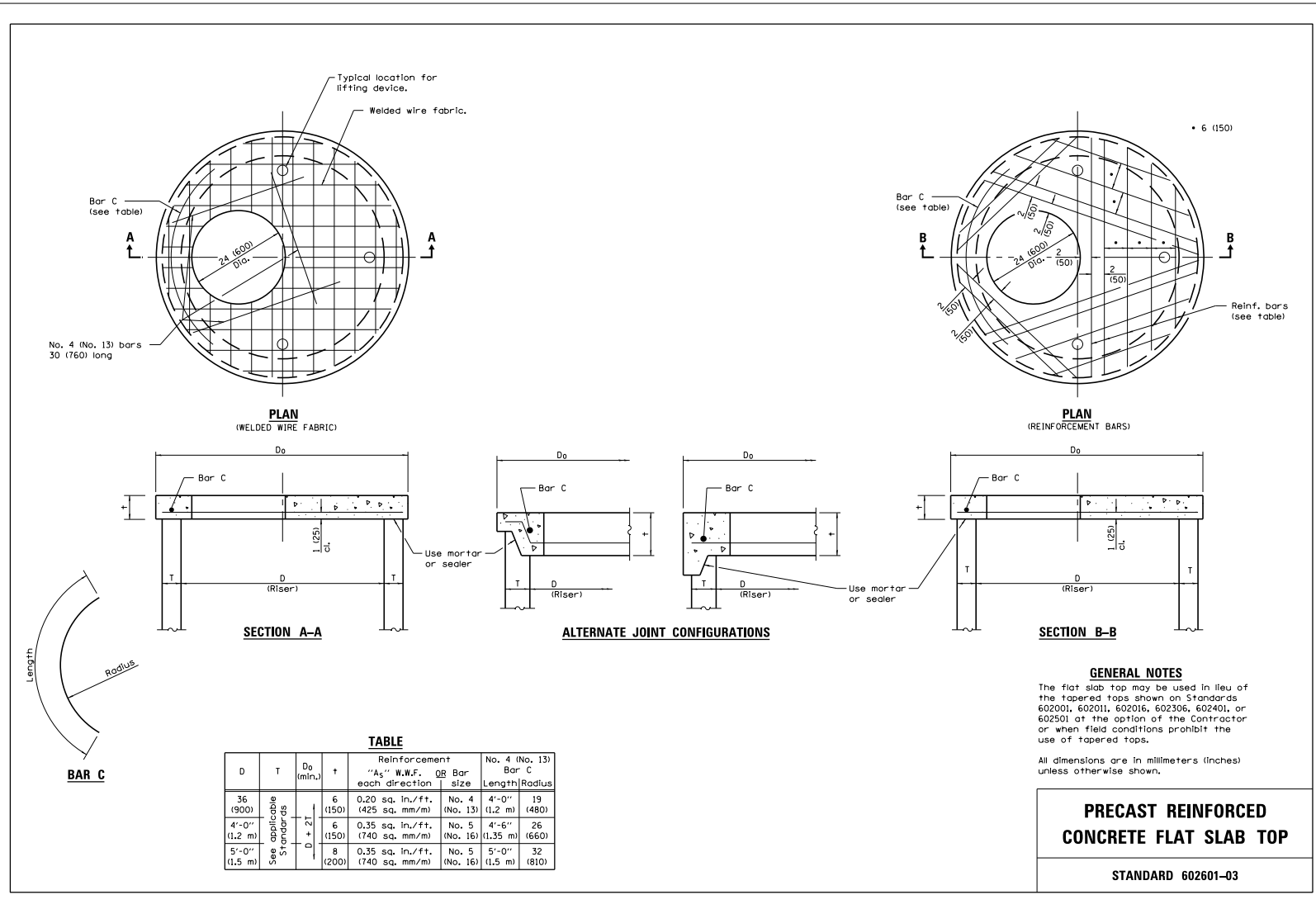


STANDARD REVISIONS	
DATE	DESCRIPTION
1/5/15	Approved

PERCENT COMPLETE	DATE
30	
60	
75	
90	
100	
BULLETIN	

CITY OF CHICAGO DEPARTMENT OF WATER MANAGEMENT BUREAU OF ENGINEERING SERVICES		DRAWN: SBW DESIGNED: A.3 CHECKED: GO, GC, SO REVIEWED:
MANHOLE LIDS AND FRAMES		OF
		PN

SPECIAL DRAINAGE STRUCTURES  
FOR PUBLIC STREETS AND ALLEYS



STANDARD FLAT TOP SLAB  
FOR CATCH BASINS

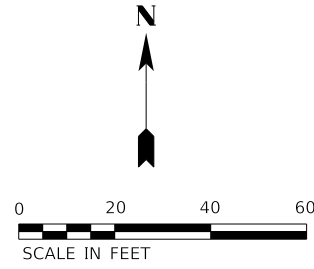
NOTES:  
FLAT TOP SLAB APPLICATION CAN ONLY BE USED WITH WRITTEN PERMISSION FROM CDWM.  
USE LATEST IDOT DETAIL, #602601

DATE	
BY	
PLAN	
SURVEYED	
PLOTTED	
ALIGNMENT CHECKED	
GRADE CHECKED	
STRUCTURE NOTATION CHECKED	
NOTE BOOK NO.	
CADD FILE NAME	

DATE	
BY	
PROFILE	
SURVEYED	
PLOTTED	
GRADES CHECKED	
STRUCTURE NOTATION CHECKED	
NOTE BOOK NO.	
CADD FILE NAME	

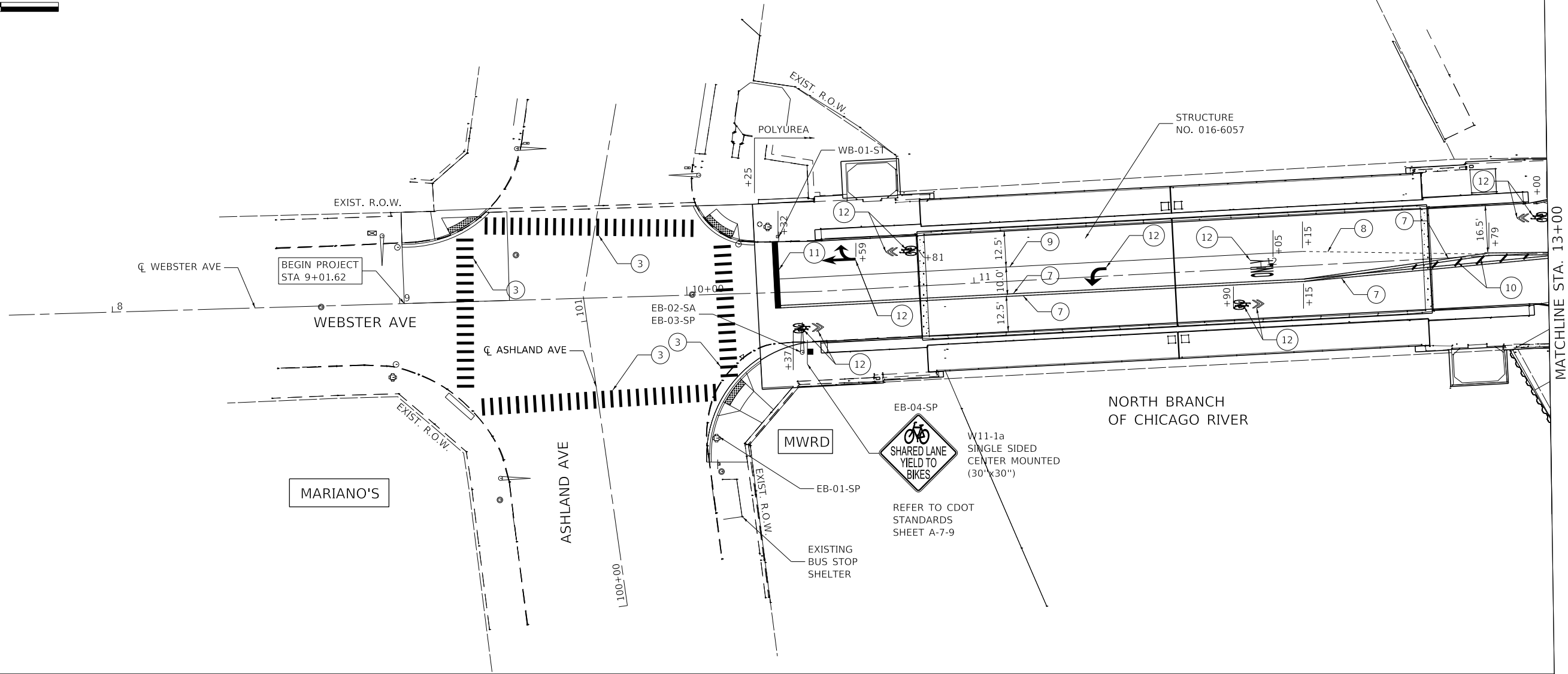
STANDARD REVISIONS		PERCENT COMPLETE	DATE	CITY OF CHICAGO DEPARTMENT OF WATER MANAGEMENT BUREAU OF ENGINEERING SERVICES	DRAWN: SBW DESIGNED: CHECKED: REVIEWED:	A.4
DATE	DESCRIPTION					
1/5/15	APPROVED PLAN	30		FLAT TOP SLAB DETAILS	OF	PN
		60				
		75				
		90				
		100				
		BULLETIN				





PLAN	SURVEYED	DATE
	PLOTTED	
	ALIGNMENT CHECKED	
	GRADE CHECKED	
	STRUCTURE NOTATION	
	FILE NAME	
	NO.	

PROFILE	SURVEYED	DATE
	PLOTTED	
	GRADES CHECKED	
	STRUCTURE NOTATION	
	FILE NAME	
	NO.	

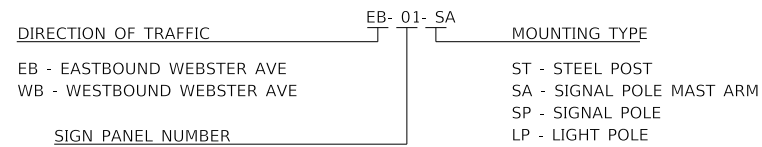


**LEGEND**

- ① THERMOPLASTIC PAVEMENT MARKING - LINE 4" (WHITE)
- ② THERMOPLASTIC PAVEMENT MARKING - LINE 4" (6' DASH-18' SKIP YELLOW)
- ③ THERMOPLASTIC PAVEMENT MARKING - LINE 24" (WHITE)
- ④ THERMOPLASTIC PAVEMENT MARKING - LETTERS AND SYMBOLS
- ⑤ POLYUREA PAVEMENT MARKING TYPE I - LINE 4" (WHITE)
- ⑥ POLYUREA PAVEMENT MARKING TYPE I - LINE 4" (6' DASH-18' SKIP YELLOW)
- ⑦ POLYUREA PAVEMENT MARKING TYPE I - LINE 4" (YELLOW)
- ⑧ POLYUREA PAVEMENT MARKING TYPE I - LINE 6" (2' DASH-6' SKIP WHITE)
- ⑨ POLYUREA PAVEMENT MARKING TYPE I - LINE 6" (WHITE)
- ⑩ POLYUREA PAVEMENT MARKING TYPE I - LINE 12" (YELLOW)
- ⑪ POLYUREA PAVEMENT MARKING TYPE I - LINE 24" (WHITE)
- ⑫ POLYUREA PAVEMENT MARKING TYPE I - LETTERS AND SYMBOLS
- SIGN

**SIGN NUMBERING CODE**

**EXAMPLE**



**NOTES:**

1. STATIONS AND OFFSETS ARE FROM WEBSTER AVE CENTERLINE.
2. FOR ADDITIONAL DETAILS SEE IDOT DISTRICT 1 STANDARD TC-24
3. FOR SIGN PANEL DETAILS SEE THE MOST CURRENT EDITION OF "SIGN FABRICATION AND INSTALLATIONS" MANUALS.
4. PLACE THE SHARED LANE MARKINGS 5 FEET (ON CENTER) FROM FACE OF THE BRIDGE CURB.

E1525-SHT-PMK-01



WSP USA Inc.  
30 N. LASALLE STREET  
SUITE 4200  
CHICAGO, IL 60602  
TEL: (312) 782-8150  
FAX: (312) 782-1884

USER NAME = MMA	DESIGNED - MMA	REVISED -
	CHECKED - RPH	REVISED -
PLOT SCALE =	DRAWN - MMA	REVISED -
PLOT DATE = SDATES	CHECKED - RPH	REVISED -

**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

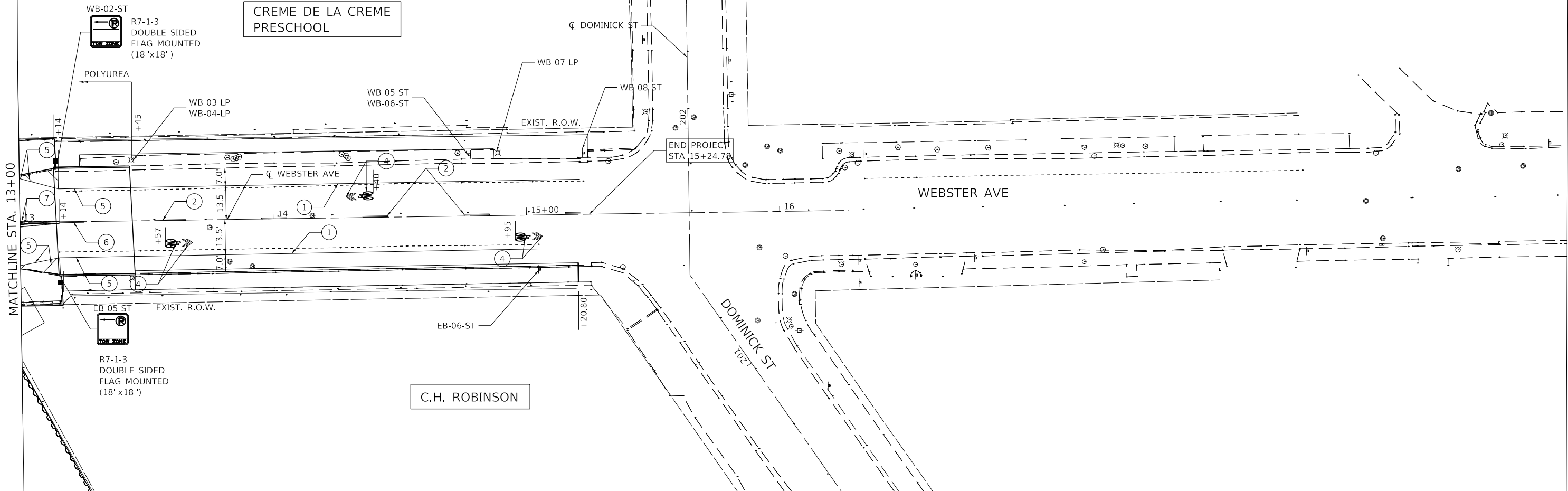
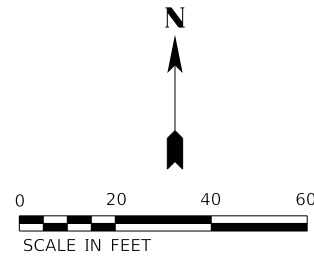
**PAVEMENT MARKING AND SIGNING**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	PMK-1
CDOT PROJECT NO. E-1-525			41 of 210



DATE	
BY	
PLAN	
SURVEYED	
PLOTTED	
ALIGNMENT CHECKED	
GRADE CHECKED	
STRUCTURE NOTATION CHECKED	
NOTE BOOK NO.	
CADD FILE NAME	

DATE	
BY	
PROFILE	
SURVEYED	
PLOTTED	
GRADES CHECKED	
STRUCTURE NOTATION CHECKED	
NOTE BOOK NO.	
CADD FILE NAME	

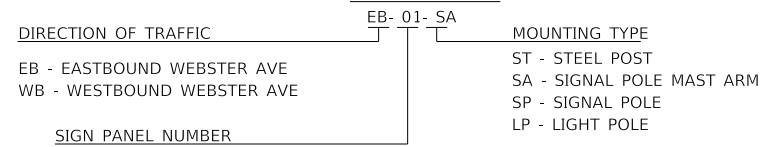


**LEGEND**

- ① THERMOPLASTIC PAVEMENT MARKING - LINE 4" (WHITE)
- ② THERMOPLASTIC PAVEMENT MARKING - LINE 4" (6' DASH-18' SKIP YELLOW)
- ③ THERMOPLASTIC PAVEMENT MARKING - LINE 24" (WHITE)
- ④ THERMOPLASTIC PAVEMENT MARKING - LETTERS AND SYMBOLS
- ⑤ POLYUREA PAVEMENT MARKING TYPE I - LINE 4" (WHITE)
- ⑥ POLYUREA PAVEMENT MARKING TYPE I - LINE 4" (6' DASH-18' SKIP YELLOW)
- ⑦ POLYUREA PAVEMENT MARKING TYPE I - LINE 4" (YELLOW)
- ⑧ POLYUREA PAVEMENT MARKING TYPE I - LINE 6" (2' DASH-6' SKIP WHITE)
- ⑨ POLYUREA PAVEMENT MARKING TYPE I - LINE 6" (WHITE)
- ⑩ POLYUREA PAVEMENT MARKING TYPE I - LINE 12" (YELLOW)
- ⑪ POLYUREA PAVEMENT MARKING TYPE I - LINE 24" (WHITE)
- ⑫ POLYUREA PAVEMENT MARKING TYPE I - LETTERS AND SYMBOLS
- SIGN

**SIGN NUMBERING CODE**

**EXAMPLE**



- NOTES:
1. STATIONS AND OFFSETS ARE FROM WEBSTER AVE CENTERLINE.
  2. FOR ADDITIONAL DETAILS SEE IDOT DISTRICT 1 STANDARD TC-24
  3. FOR SIGN PANEL DETAILS SEE THE MOST CURRENT EDITION OF "SIGN FABRICATION AND INSTALLATIONS" MANUALS.
  4. PLACE THE SHARED LANE MARKINGS 5 FEET (ON CENTER) FROM FACE OF THE BRIDGE CURB.

E1525-SHT-PMK-02



WSP USA Inc.  
30 N. LASALLE STREET  
SUITE 4200  
CHICAGO, IL 60602  
TEL: (312) 782-8150  
FAX: (312) 782-1684

USER NAME = MMA	DESIGNED - MMA	REVISED -
	CHECKED - RPH	REVISED -
PLOT SCALE =	DRAWN - MMA	REVISED -
PLOT DATE = SDATES	CHECKED - RPH	REVISED -

**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

**PAVEMENT MARKING AND SIGNING**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	PMK-2
CDOT PROJECT NO. E-1-525			42 of 210

PLAN	SURVEYED	BY	DATE
	PLOTTED		
NOTE BOOK NO.	ALIGNMENT CHECKED		
	FIELD FILE NAME		

### PAVEMENT MARKING SCHEDULE

LOCATION	THERMOPLASTIC PAVEMENT MARKING - LETTERS AND SYMBOLS	THERMOPLASTIC PAVEMENT MARKING - LINE 4"	THERMOPLASTIC PAVEMENT MARKING - LINE 24"	POLYUREA PAVEMENT MARKING - LETTERS AND SYMBOLS	POLYUREA PAVEMENT MARKING TY 1 - LINE 4"	POLYUREA PAVEMENT MARKING TY 1 - LINE 6"	POLYUREA PAVEMENT MARKING TY 1 - LINE 12"	POLYUREA PAVEMENT MARKING TY 1 - LINE 24"	PAVEMENT MARKING REMOVAL - WATER BLASTING
	SQ FOOT	FOOT	FOOT	SQ FOOT	FOOT	FOOT	FOOT	FOOT	SQ FT
WEBSTER AVENUE	69	379	516	157	906	201	20	23	516
TOTAL	69	379	516	157	906	201	20	23	516

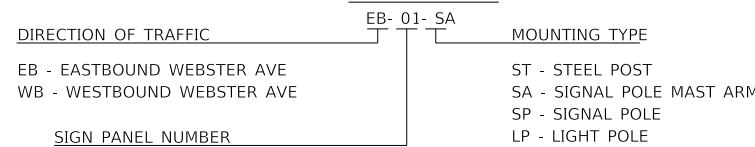
PROFILE	SURVEYED	BY	DATE
	PLOTTED		
NOTE BOOK NO.	GRADES CHECKED		
	STRUCTURE NOTATIONS CHECKED		

### SIGNING SCHEDULE

LOCATION	SIGN NO.	LEGEND / DESCRIPTION	CODE	MOUNTING TYPE	ACTION	LOCATION (STATION / OFFSET)				PROPOSED PANEL DIMENSIONS		STEEL POSTS (EACH)	SIGN PANEL TYPE 1 (SQ FT)	REMOVE, STORE AND RE-ERECT SIGN PANEL (EACH)
						EXISTING		PROPOSED		WIDTH (FT)	HEIGHT (FT)			
WEBSTER AVENUE	EB-01-SP	BRIDGE WEIGHT LIMITS-TONS	CUSTOM	TRAFFIC SIGNAL POLE	EXISTING SIGN TO REMAIN	10+08	45.0' RT	-	-					
	WB-01-ST	LANE CONTROL SIGN	R3-8	STEEL POST	REMOVE AND REINSTALL EXISTING SIGN	10+32	19.5' LT	10+32	19.5' LT					1
	EB-02-SA	BRIDGE WEIGHT LIMITS-TONS	CUSTOM	TRAFFIC SIGNAL MAST ARM	REMOVE AND RELOCATE EXISTING SIGN	10+39	16.0' RT	10+43	16.0' RT					1
	EB-03-SP	N ASHLAND AVE	D3-1	TRAFFIC SIGNAL POLE	REMOVE AND RELOCATE EXISTING SIGN	10+39	21.0' RT	10+43	21.0' RT					1
	EB-04-SP	SHARED LANE-YIELD TO BIKES	W11-1A	TRAFFIC SIGNAL POLE	FURNISH AND INSTALL	-	-	10+43	21.0' RT	2.5	2.5		6.25	
	WB-02-ST	NO PARKING TOW ZONE	R7-1-3	STEEL POST	FURNISH AND INSTALL	-	-	13+15	22.0' RT	1.5	1.5	1	2.25	
	EB-05-ST	NO PARKING TOW ZONE	R7-1-3	STEEL POST	FURNISH AND INSTALL	-	-	13+17	22.0' LT	1.5	1.5	1	2.25	
	WB-03-LP	ASHLAND	W16-8P	LIGHT POLE POST	REMOVE AND RELOCATE EXISTING SIGN	13+44	24.0' LT	13+22	24.5' LT					1
	WB-04-LP	LANE CONTROL SIGN	R3-8	LIGHT POLE POST	REMOVE AND RELOCATE EXISTING SIGN	13+44	24.0' LT	13+22	24.5' LT					1
	WB-05-ST	ASHLAND	W16-8P	STEEL POST	EXISTING SIGN TO REMAIN	14+78	24.0' LT	-	-					
	WB-06-ST	LEFT LANE MUST TURN LEFT	R3-7	STEEL POST	EXISTING SIGN TO REMAIN	14+78	24.0' LT	-	-					
	WB-07-LP	BRIDGE WEIGHT LIMITS-TONS	CUSTOM	LIGHT POLE POST	REMOVE AND RELOCATE EXISTING SIGN	14+89	24.5' LT	15+30	25.0' LT					1
EB-06-ST	NO PARKING TOW ZONE	R7-1-3	STEEL POST	REMOVE AND REINSTALL EXISTING SIGN	15+04	21.5' RT	15+04	21.5' RT					1	
WB-08-ST	NO PARKING TOW ZONE	R7-1-3	STEEL POST	REMOVE AND REINSTALL EXISTING SIGN	15+04	21.5' LT	15+23	24.0' LT					1	
TOTAL												2.00	11	8

### SIGN NUMBERING CODE

#### EXAMPLE



- NOTES:
- STATIONS AND OFFSETS ARE FROM WEBSTER AVE CENTERLINE.
  - FOR ADDITIONAL DETAILS SEE IDOT DISTRICT 1 STANDARD TC-24
  - FOR SIGN PANEL DETAILS SEE THE MOST CURRENT EDITION OF "SIGN FABRICATION AND INSTALLATIONS" MANUALS.
  - PLACE THE SHARED LANE MARKINGS 5 FEET (ON CENTER) FROM FACE OF THE BRIDGE CURB.

E1525-SHT-PMK-03



WSP USA Inc.  
30 N. LASALLE STREET  
SUITE 4200  
CHICAGO, IL 60602  
TEL: (312) 782-8150  
FAX: (312) 782-1684

USER NAME = MMA	DESIGNED - MMA	REVISED -
	CHECKED - RPH	REVISED -
PLOT SCALE =	DRAWN - MMA	REVISED -
PLOT DATE = SDATES	CHECKED - RPH	REVISED -

**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER

PAVEMENT MARKING AND  
SIGNING SCHEDULES

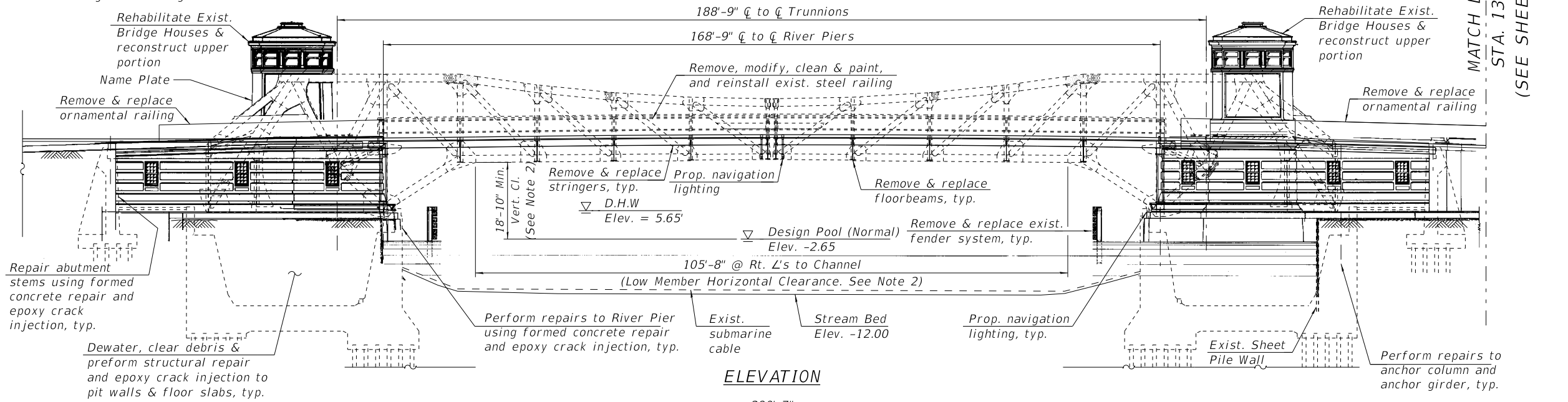
F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	PMK-3
CDOT PROJECT NO. E-1-525			43 of 210

Benchmark: Chiseled square at top of door sill of the southeast Ashland Ave Bridge House doorway. Elev. +24.00

Existing Structure: The Webster Avenue Movable Bridge over the North Branch of the Chicago River (S.N. 016-6057) is a double-leaf, trunnion bascule bridge. The bridge was constructed in 1916 and is approximately 290'-7" long (168'-9"  $\bar{C}$  to  $\bar{C}$  River Piers) and 60'-0" out-to-out bridge deck. In 1916, the substructure, superstructure, bridge houses, and enclosures were constructed and electrical equipment was installed by the City of Chicago Department of Public Works (designed in-house in 1914). In 1967, the superstructure was rehabilitated and the deck was replaced with a new open grid under M.F.T. Section 0809-C.5. In 1993, the bridge was rehabilitated in-house. The rehabilitation included stringer, truss, center lock, railing, bracing repairs, and the partial replacement of the bottom chords of Floorbeam 10. The bridge is no longer operable. It is locked at the center of the movable span and the mechanical and electrical equipment are no longer functional.

Traffic Control: Webster Avenue will be closed to vehicular traffic during construction and vehicular traffic will be detoured via local roads. Pedestrian traffic will be maintained by Contractor.

Salvage: No salvage.

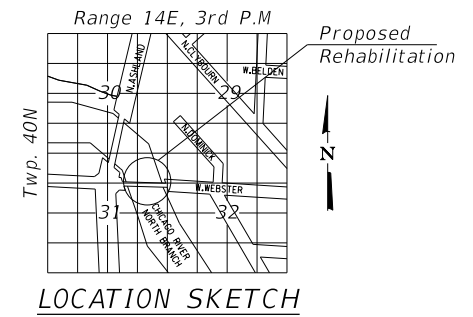


ELEVATION

MATCH LINE STA. 13+25 (SEE SHEET S-2)

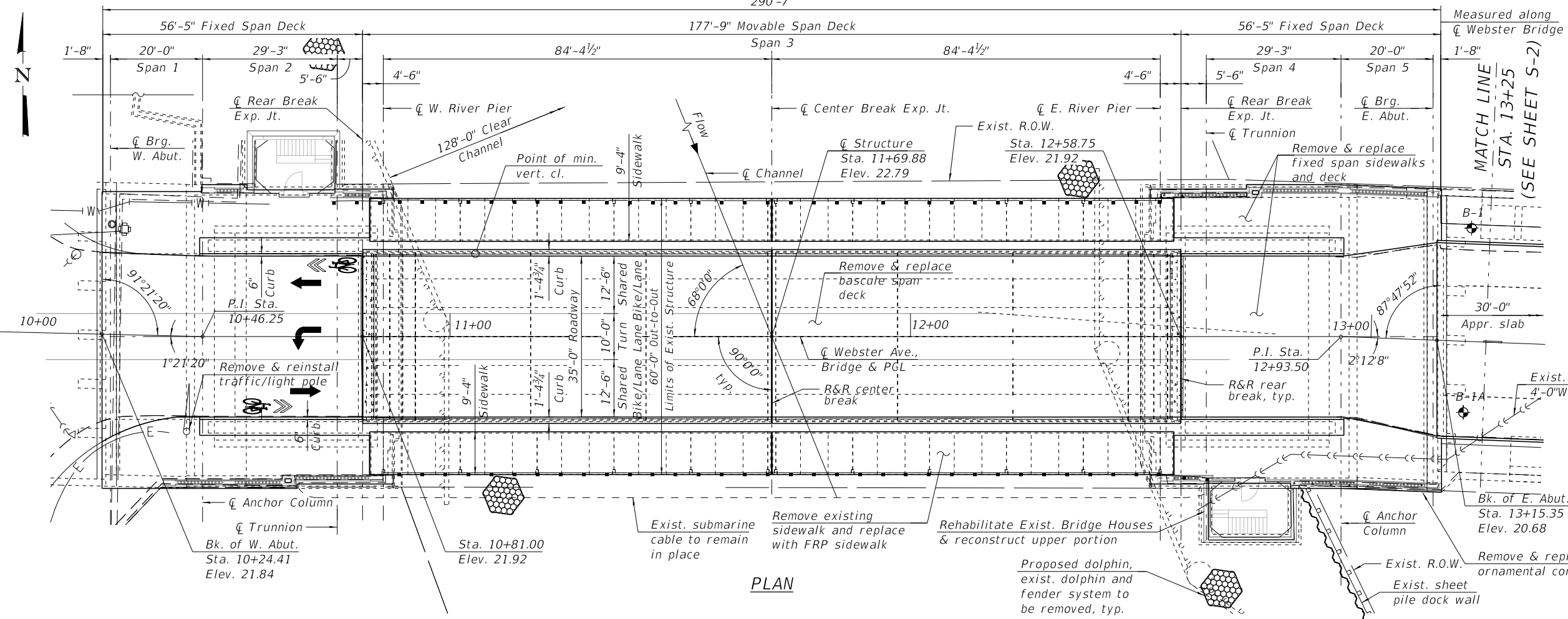
**Jamal Grainawi, S.E.**  
 II. Lic. No. 081-005161  
 Expires 11-30-2020  
 Applies to S-1 thru S-7,  
 S-36 thru S-93 &  
 S-108 thru S-113

**Moussa A. Issa, S.E.**  
 II. Lic. No. 081-005738  
 Expires 11-30-2020  
 Applies to S-8 thru S-35  
 & S-94 thru S-107



LOCATION SKETCH

- Notes:
- All elevations shown are based on the Chicago City Datum (CCD). The conversion equation from CCD to NAVD 88:  
NAVD 88 elevation = CCD + 579.19'
  - U.S. Coast Guard. requires min. vert. cl. of 18.00' above Low Water Datum for Lake Michigan, Elev. -1.40.
  - See sheet S-3 for Design Specifications, Loading, Design Stresses, and Seismic Data. See sheet S-2 for Waterway Information Table, Design Scour Elevation Table & Existing Profile Grade.



PLAN

MATCH LINE STA. 13+25 (SEE SHEET S-2)

**GENERAL PLAN**  
**WEBSTER AVE. OVER N. BRANCH**  
**CHICAGO RIVER (PUBLIC WATER)**  
**BRIDGE REHABILITATION**  
**F.A.U. ROUTE 1388**  
**SECTION 11-E1525-00-BR**  
**COOK COUNTY**  
**STATION 11+69.88**  
**STRUCTURE NO. 016-6057**

0166057-E1525-S001-GPE.DGN

	USER NAME = P.JLAUX	DESIGNED - FA, MA	REVISED -	<b>CITY OF CHICAGO</b> DEPARTMENT OF TRANSPORTATION DIVISION OF ENGINEERING	<b>WEBSTER AVENUE BRIDGE OVER</b> <b>THE NORTH BRANCH CHICAGO RIVER</b>	<b>GENERAL PLAN</b> (STRUCTURE NO. 016-6057)	F.A.U. RTE. 1388	SECTION 11-E1525-00-BR	COUNTY COOK	SHEET NO. S-1
	PLOT SCALE = N.T.S.	DRAWN - P.JL	REVISED -				CDOT PROJECT NO. E-1-525	44 of 210		
	PLOT DATE \$DATE\$	CHECKED - JIG	REVISED -							

**WATERWAY INFORMATION**

Drainage Area = 158 sq. mi. Low Beam Elev. 17.45

Flood	Freq. Yr.	Discharge C.F.S.	Opening Sq. Ft.		Nat. H.W.E.	Head - Ft.		Headwater El.	
			Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
Design	50	-	-	-	-2.65*	-	-	-	-
Base	100	-	-	-	5.65**	-	-	-	-
Overtopping	>500	-	-	-	***	-	-	-	-
Max. Calc.									

Note: The Chicago River has no natural flow and flow frequencies. It is an artificial channel with flows controlled by MWRDGC. Frequencies are shown for illustration purposes only of normal design.

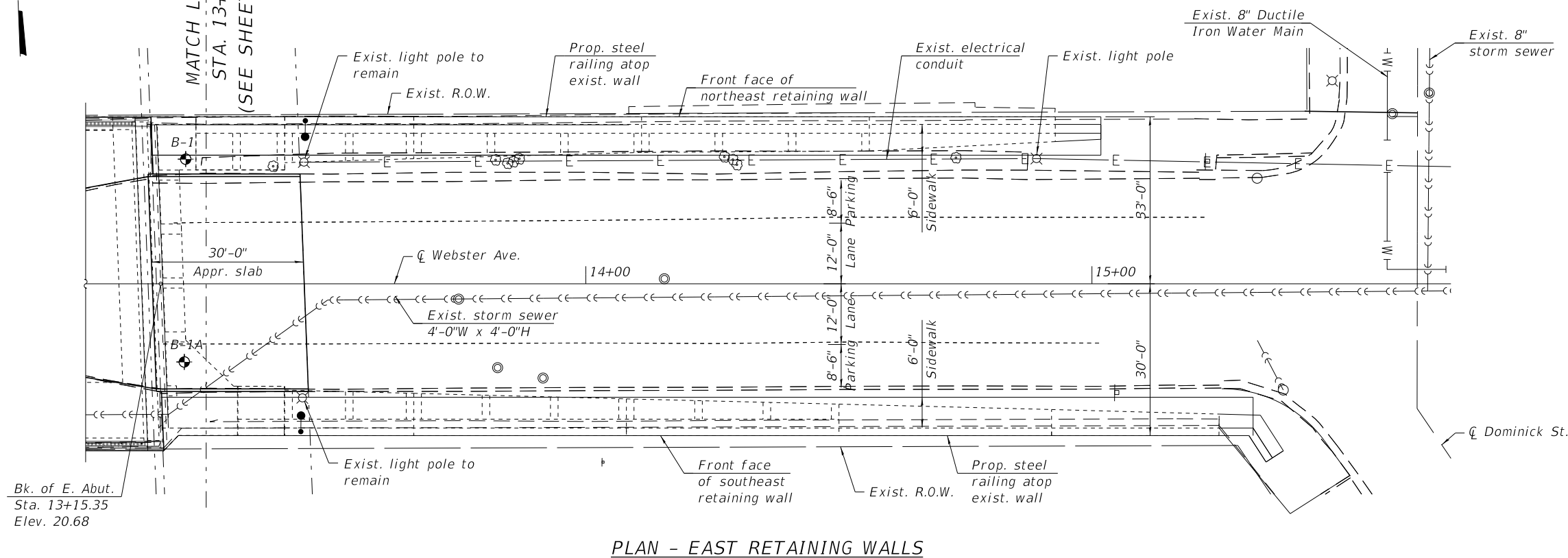
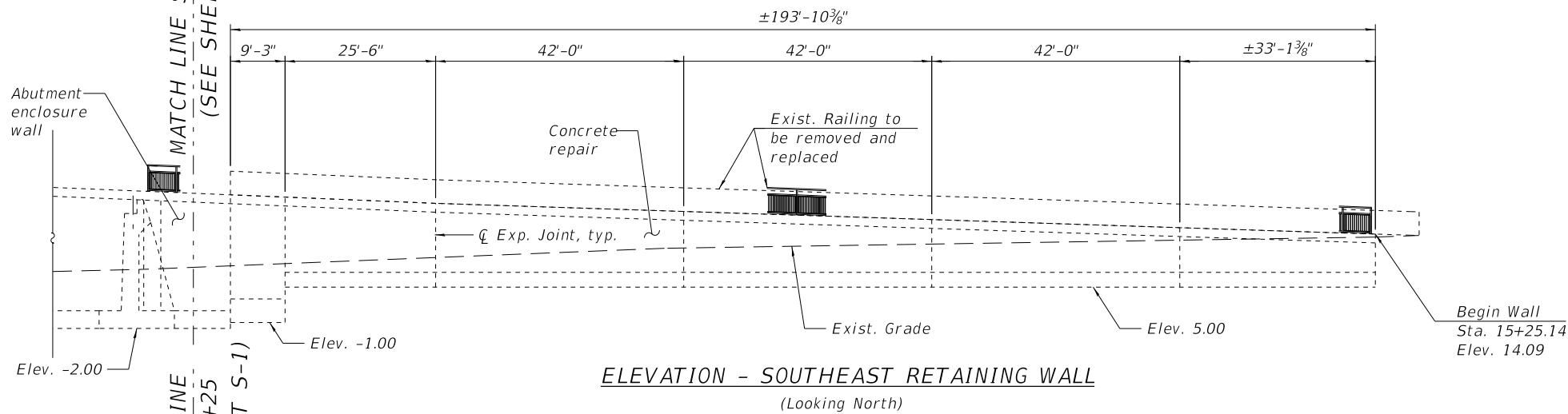
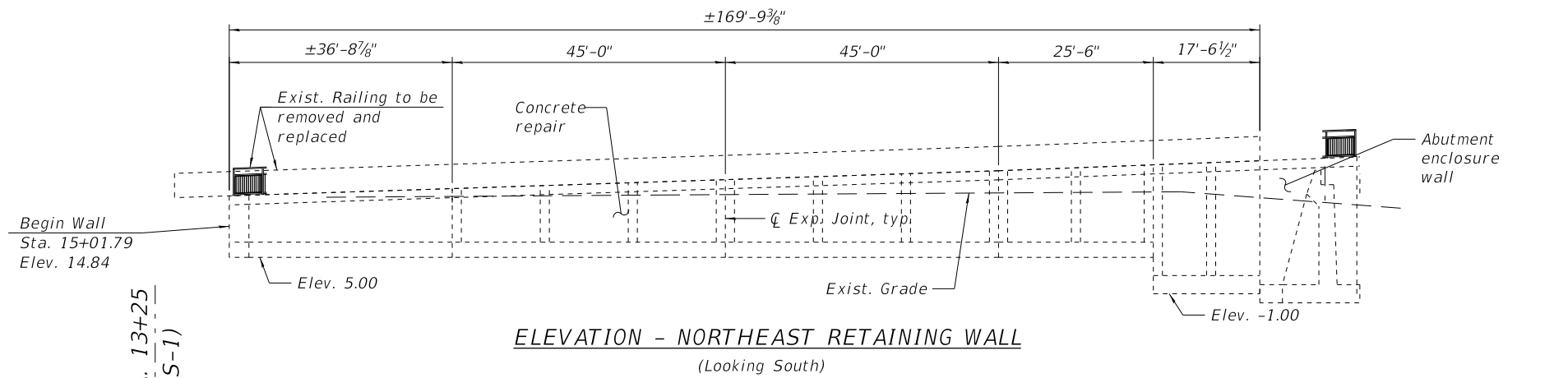
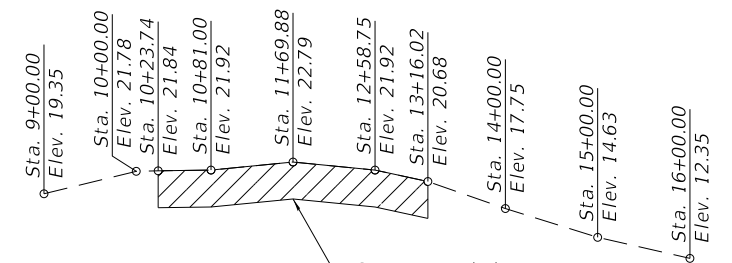
- \* Normal Elevation
- \*\* Record elevation on 8/16/1997
- \*\*\* Cannot overtop

Geometry of existing substructure will not be modified. The waterway opening clear width will not be altered. Conversion between USGS sea level datum and CCD datum: CCD = +579.48 feet above sea level

**DESIGN SCOUR ELEVATION TABLE**

Design Scour Elevations (CCD)	W. Pier	E. Pier
	-3.00****	-4.70****

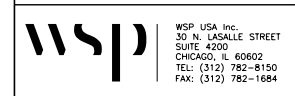
\*\*\*\* Actual Low River Bed Elevation at Pier Location



**EXISTING PROFILE GRADE**  
(along Webster Ave.)

**RETAINING WALL PLAN & DETAILS**  
**WEBSTER AVE. OVER N. BRANCH**  
**CHICAGO RIVER (PUBLIC WATER)**  
**BRIDGE REHABILITATION**  
**F.A.U. ROUTE 1388**  
**SECTION 11-E1525-00-BR**  
**COOK COUNTY**  
**STATION 11+69.88**  
**STRUCTURE NO. 016-6057**

0166057-E1525-S002-RETAININGWALL.DGN



USER NAME = PJLAUX	DESIGNED - FA, MA	REVISED -
DESIGNED - FA, MA	CHECKED - JIG	REVISED -
PLOT SCALE = N.T.S.	DRAWN - PJL	REVISED -
PLOT DATE = \$DATE\$	CHECKED - JIG	REVISED -

**CITY OF CHICAGO**  
 DEPARTMENT OF TRANSPORTATION  
 DIVISION OF ENGINEERING

**WEBSTER AVENUE BRIDGE OVER**  
**THE NORTH BRANCH CHICAGO RIVER**

**RETAINING WALL PLANS & DETAILS**  
**(STRUCTURE NO. 016-6057)**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-2
CDOT PROJECT NO. E-1-525			45 of 210

**GENERAL NOTES**

1. Calculated weight of Structural Steel = 166,600 lbs. (Fixed Spans)  
= 372,600 lbs. (Bascule Span)  
= 6,830 lbs. (Bridge Houses)
2. All structural steel shall be AASHTO M270 Grade 50, unless otherwise noted.
3. Fasteners shall be ASTM A325 Type 1, mechanically galvanized bolts. Bolts 7/8" Ø, holes 15/16" Ø, unless otherwise noted.
4. No field welding is permitted except as specified in the contract documents.
5. Reinforcement bars designated (E) shall be epoxy coated.
6. Plan dimensions and details relative to existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.
7. Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of 1/8 in. (0.01 ft.). Adjustments shall be made either by grinding the surface or by shimming the bearings.
8. Protective Concrete Sealer shall be applied to the designated areas of the abutments.
9. The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.
10. All new and existing steel shall be cleaned and painted utilizing Paint System 1 - Oz/E/U. The color of the final finish coat shall match Sherwin Williams Standard Glossy Color SW2717 (Bordeaux). Cost included in the cost of "Cleaning and Painting Structural Steel."
11. All new structural steel shall be shop primed, and faying surfaces shall be cleaned to base metal prior to erection.
12. All existing structural steel that is to remain in place in the movable and fixed spans of the bascule bridge shall be cleaned and painted. This includes, but is not limited to, truss members, floorbeams, stringers, lateral bracing, sidewalk support framing, sidewalk railing, anchor columns and girders, machinery framing, counterweight steel, and all connection steel.
13. The existing structural steel shall be cleaned per near white blast cleaning, SSPC-SP10, and painted as specified in the Special Provision for "Cleaning and Painting Existing Steel Structures."
14. As determined by the Commissioner, inaccessible areas shall be reviewed and possibly omitted from cleaning and painting.
15. All motors and machinery shall be properly protected from cleaning and painting work. No painting may be performed until protection has been approved by the Engineer.
16. If the Contractor elects to use cantilever forming brackets on the exterior beams of the fixed spans, the brackets shall be placed at the same locations as required for the hardwood blocks in Article 503.06(b) of the Standard Specifications. If additional cantilever forming brackets are required, hardwood blocking shall be wedged between the exterior and first interior beam at each of these additional bracket locations.
17. All temporary items within the waterway must be removed.
18. All elevations refer to Chicago City Datum.
19. The Contractor shall submit calculations and details demonstrations the structural integrity of the bridge is maintained under the additional imposed loads of the containment system. See special provisions.
20. A minimum of 4 air monitors will be required to monitor abrasive blasting operations at this site. See special provisions for Containment and Disposal of Lead Paint Cleaning Residues.
21. SSPC QP1 and SSPC QP2 Certifications are required for this Contract. removed.

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- S-1 General Plan
- S-2 Retaining Wall Plans & Details
- S-3 General Data I (General Notes & Index of Sheets)
- S-4 General Data II (Scope of Work & Total Bill of Material)
- S-5 Cross Sections
- S-6 Existing Plans and Removal - Fixed Spans
- S-7 Existing Plans and Removal - Bascule Span
- S-8 Top of Slab Elevations: West Fixed Spans I
- S-9 Top of Slab Elevations: West Fixed Spans II
- S-10 Top of Slab Elevations: East Fixed Spans I
- S-11 Top of Slab Elevations: East Fixed Spans II
- S-12 Top of Slab Elevations: East Approach Slab
- S-13 Superstructure Plan - West Fixed Spans
- S-14 Superstructure Plan Geometrics - West Fixed Spans
- S-15 Cross Sections - West Fixed Spans
- S-16 Diaphragm Details - West Fixed Spans
- S-17 Parapet Elevations and Details - West Fixed Spans
- S-18 Superstructure Details - West Fixed Spans
- S-19 Superstructure Plan - East Fixed Spans
- S-20 Superstructure Plan Geometrics - East Fixed Spans
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- S-22 Diaphragm Details - East Fixed Spans
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- S-24 Superstructure Details - East Fixed Spans
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- S-26 East Approach Slab Details
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- S-28 Framing Plan - East Fixed Spans
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- S-35 Bearing Details
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- S-37 Bascule Span: Deck Details
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- S-39 Bascule Span: Sidewalk Plan
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- S-42 Bascule Span: Rear Break Details
- S-43 Bascule Span: Framing Plan
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- S-45 Bascule Span: Gussets for Lower Lateral Bracing II
- S-46 Bascule Span: Lower Lateral Bracing I
- S-47 Bascule Span: Lower Lateral Bracing II
- S-48 Bascule Span: Floorbeam 0-0
- S-49 Bascule Span: Floorbeam 2-2, 4-4, 6-6 & 8-8
- S-50 Bascule Span: Floorbeam Details I
- S-51 Bascule Span: Floorbeam Details II
- S-52 Bascule Span: Floorbeam Details III
- S-53 Bascule Span: Floorbeam 10-10
- S-54 Bascule Span: Floorbeam 10-10 Details
- S-55 Bascule Span: SW Truss Repairs
- S-56 Bascule Span: SE Truss Repairs
- S-57 Bascule Span: NE Truss Repairs
- S-58 Bascule Span: NW Truss Repairs
- S-59 Bascule Span: Truss PP0 to PP2 Repairs
- S-60 Bascule Span: Truss PP4 to PP6 Repairs I
- S-61 Bascule Span: Truss PP4 to PP6 Repairs II
- S-62 Bascule Span: Truss PP8 Repairs I
- S-63 Bascule Span: Truss PP8 Repairs II
- S-64 Bascule Span: Truss PP10 Repairs I
- S-65 Bascule Span: Truss PP10 Repairs II
- S-66 Bascule Span: Truss PPT Repairs
- S-67 Bascule Span: Truss PP9 & PP15 to PP16 Repairs
- S-68 Bascule Span: Lattice Strut Repair Details
- S-69 Bascule Span: Moment and Reaction Tables
- S-70 Bascule Span: Bridge Balancing
- S-71 Suggested Temporary Support Detail at Counterweight Pit
- S-72 Live Load Bearing Refurbishing
- S-73 Anchor Column Replacement Details I
- S-74 Anchor Column Replacement Details II

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- S-75 Anchor Column Replacement Details III
- S-76 Trunnion Truss Repairs
- S-77 Trunnion Truss Bracing Repairs
- S-78 Longitudinal Girder & Machinery Girder Repair Details I
- S-79 Longitudinal Girder & Machinery Girder Repair Details II
- S-80 Enclosure Walls: Removal Details I
- S-81 Enclosure Walls: Removal Details II
- S-82 Enclosure Walls: Plan & Elevation - SW
- S-83 Enclosure Walls: Plan & Elevation - NW
- S-84 Enclosure Walls: Plan & Elevation - NE
- S-85 Enclosure Walls: Plan & Elevation - SE
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- S-87 Enclosure Walls: Details II
- S-88 Enclosure Walls: Details III
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- S-90 Enclosure Walls: House Stairwell Details
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- S-95 West Abutment Details II
- S-96 East Abutment Details I
- S-97 East Abutment Details II
- S-98 West River Pier Repair Details
- S-99 East River Pier Repair Details
- S-100 Platform And Ladder Details - West And East Fixed Spans
- S-101 West Pit Repair Details
- S-102 East Pit Repair Details
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- S-104 Northeast Retaining Wall Plan And Elevation II
- S-105 Southeast Retaining Wall Plan And Elevation I
- S-106 Southeast Retaining Wall Plan And Elevation II
- S-107 Southeast Retaining Wall Plan And Elevation III
- S-108 East Retaining Walls Railing Details
- S-109 Steel Railing Details
- S-110 Dolphins And Pier Protection I
- S-111 Dolphins And Pier Protection II
- S-112 Boring Logs I
- S-113 Boring Logs II

**DESIGN SPECIFICATIONS**

2017 AASHTO LRFD Bridge Design Specifications 8th Ed. (Prop. Rdwy. Stringers & Floorbeams)  
 2007 AASHTO LRFD Movable Highway Bridge Design Specifications 2nd Ed. with 2008, 2010, 2011, 2012, and 2014 Interim Revisions  
 2002 AASHTO 17th Ed. (Exist. Structure Rehabilitation)  
 2009 AASHTO LRFD Guide Specifications for the Design of Pedestrian Bridges, 2nd Ed. with 2015 Interim Revisions (Prop. Sdwk. Stringers)

**LOADING HS20-44 (ROADWAY)**

No allowance for future wearing surface

**LOADING (SIDEWALK)**

Uniform live load for 100psf (pedestrian)  
 H-5 (not in concurrence with pedestrian)

**DESIGN STRESSES**

FIELD UNITS (New Construction)

f'c = 3,500 psi  
 f'c = 4,000 psi (superstructure concrete)  
 fy = 60,000 psi (reinforcement)  
 fy = 50,000 psi (AASHTO M270, Gr. 50)

FIELD UNITS (Existing Construction)

f'c = 3,500 psi  
 fy = 40,000 psi (Reinforcement)  
 fy = 30,000 psi (Structural Steel)

**LEGEND**

- R&R Remove & replace
- ⊙ Truss Panel Point (PP) designation
- ⊙ Exist. fastener to remain
- Hole to match existing location
- New hole
- NW Northwest
- SE Southeast
- ⊕ Boring Location

**SEISMIC DATA**

Seismic Performance Category (SPC) = A  
 Horizontal Bedrock Acceleration  
 Coefficient (A) = 0.025g  
 Site Coefficient (S) = 1.0

0166057-E1525-S003-GENDATAIDGN

 WSP USA Inc. 30 N. LASALLE STREET SUITE 4000 CHICAGO, IL 60602 TEL: (312) 782-8150 FAX: (312) 782-1684	USER NAME = IJLOPEZ	DESIGNED - IJL	REVISED -	<b>CITY OF CHICAGO</b> DEPARTMENT OF TRANSPORTATION DIVISION OF ENGINEERING	WEBSTER AVENUE BRIDGE OVER THE NORTH BRANCH CHICAGO RIVER	GENERAL DATA I: GENERAL NOTES & INDEX OF SHEETS (STRUCTURE NO. 016-6057)	F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
	PLOT SCALE = N.T.S.	DRAWN - IJL	REVISED -				1388	11-E1525-00-BR	COOK	S-3
	PLOT DATE = 10/5/2020	CHECKED - JIG	REVISED -				CDOT PROJECT NO. E-1-525		46 of 210	

**SCOPE OF WORK**

1. Remove the existing open steel grid deck and replace with steel grid half-filled with concrete deck.
2. Remove existing 2" concrete filled steel grid sidewalk and replace with fiberglass sidewalk.
3. Remove and replace the existing fixed span decks and sidewalks.
4. Install expansion joint between bascule and fixed spans between bridge leaves at the center break.
5. Remove and replace steel stringers in the bascule span and remove and replace steel stringers in the fixed spans.
6. Remove all the jackbeams of the bascule span.
7. Remove and replace all floorbeams in the bascule span.
8. Remove and replace all curb and roadway stringers adjacent to the trusses.
9. Remove and replace the bottom lateral bracing and horizontal bracing in the movable spans and over the counterweight pits. Repair deteriorated members of the lattice truss.
10. Perform repairs to the anchor columns and the anchor column girder.
11. Repair and strengthen the main trusses in areas with documented section loss.
12. Clean and paint the entire steel superstructure and substructure (anchor columns) with containment and disposal of any existing lead based paint.
13. Remove, modify, clean and paint, and reinstall the steel railing of the bascule span.
14. Remove and replace the ornamental concrete railing on the fixed spans.
15. Repair and adjust the live load bearings.
16. Perform bridge balancing or counterweight adjustments to account for additional dead load on the bridge.
17. Dewater and clear debris from East and West counterweight pits followed by structural repair of concrete and epoxy crack injection to the pit walls and floor slab.
18. Repair damaged concrete at East and West River Piers using formed concrete repair and epoxy crack injection as required.
19. Remove and reconstruct broken machine room walls above the East River Pier.
20. Remove the existing damaged dolphins and fender system and replace with new dolphins and approved pier protection system.
21. Repair all damaged areas to the Northeast and Southeast Retaining walls using formed concrete repair and epoxy crack injections. Remove all graffiti from the faces of the walls. Remove and replace railing on top of the retaining walls with an ornamental steel railing.
22. Repair concrete abutment stems using formed concrete repair and epoxy crack injections.
23. Remove existing bearing pedestals, repair surrounding concrete and clean bearing area to accommodate new bearings.
24. Remove and replace the existing abutment backwalls to be replaced with semi-integral backwall. Construct approach slabs at east end.
25. Repair any holes or missing damaged portions of machine room enclosure walls. Tuck point where required and remove all graffiti from faces of walls.
26. For the rehabilitation of the bridge houses, remove the existing roof, reconstruct upper portion of third level and roof, repair existing, and remove hazardous materials.
27. Clean and paint existing mechanical equipment with exception of center lock assemblies. Remove existing auxiliary and mechanical center locks. Install new actuator-type locks with hand operation capability.
28. Stripe bridge deck for one 12'-6" wide shared bike lane in each direction (Eastbound and Westbound) and one 10'-0" wide left turn lane from Eastbound Webster Avenue to Southbound Ashland Avenue.
29. Reconstruct the sidewalk at the Northeast and Southeast corners of the Ashland Avenue and Webster Avenue intersection, all crosswalks at the intersection shall be constructed to current ADA standards.
30. Install electrical connection to the bridge.
31. Remove and install new navigational/obstruction lights.
32. Install two arterial street light poles and luminaires at the eastern end of the bridge. Install one davit arm light on each truss (four total).

**TOTAL BILL OF MATERIAL**

CODE NO.	ITEM	UNIT	TOTAL
20900110	POROUS GRANULAR BACKFILL	CU YD	375.0
50157300	PROTECTIVE SHIELD	SQ YD	1,188
50200100	STRUCTURE EXCAVATION	CU YD	86.0
50300260	BRIDGE DECK GROOVING	SQ YD	588
50300285	FORM LINER TEXTURED SURFACE	SQ FT	2,732
50500505	STUD SHEAR CONNECTORS	EACH	6,492
51500100	NAME PLATES	EACH	1
52100010	ELASTOMERIC BEARING ASSEMBLY, TYPE I	EACH	32
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	108,630
52000110	PREFORMED JOINT STRIP SEAL	FOOT	108
52100520	ANCHOR BOLTS, 1"	EACH	64
59000200	EPOXY CRACK INJECTION	FOOT	176
CDOT5010030	CONCRETE REMOVAL	CU YD	253.8
CDOT5030020	HIGH PERFORMANCE CONCRETE STRUCTURES	CU YD	258.0
CDOT5030030	HIGH PERFORMANCE CONCRETE SUPERSTRUCTURES	CU YD	256.3
CDOT5030050	CLASS SI CONCRETE MISC	CU YD	32.6
CDOT5870010	PROTECTIVE CONCRETE SEALER	SQ YD	1,100
X0323444	DECORATIVE STEEL RAILING	FOOT	210
X0326519	STEEL RAILING REMOVAL	FOOT	206
Z0001903	STRUCTURAL STEEL REMOVAL	POUND	486,420
Z0007101	CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES NO. 1	L SUM	1
Z0012754	STRUCTURAL REPAIR OF CONCRETE (DEPTH EQUAL TO OR LESS THAN 5 INCHES)	SQ FT	589
Z0012755	STRUCTURAL REPAIR OF CONCRETE (DEPTH GREATER THAN 5 INCHES)	SQ FT	99
*****	BALANCING OF BRIDGE AND ALTERATION OF COUNTERWEIGHTS	L SUM	1
*****	BRIDGE OPERATION AND MAINTENANCE	L SUM	1
*****	CLEANING AND PAINTING EXISTING STEEL STRUCTURES	L SUM	1
*****	COUNTERWEIGHT PIT CLEANING	EACH	2
*****	DOLPHINS	EACH	4
*****	DRAINAGE SYSTEM	L SUM	1
*****	FURNISHING AND ERECTING 5" GRATING, HALF CONCRETE FILLED	SQ FT	6,114
*****	FURNISHING AND ERECTING FRP GRATING	SQ FT	3,227
*****	FURNISHING AND ERECTING STRUCTURAL STEEL	L SUM	1
*****	FURNISHING AND ERECTING STRUCTURAL STEEL, FIELD DISCOVERED CONDITIONS REPAIRED AS DIRECTED BY THE COMMISSIONER	POUND	20,000
*****	FLOOR ACCESS HATCH	EACH	4
*****	METAL LADDERS	EACH	4
*****	PIER PROTECTION REPLACEMENT	FOOT	301
*****	REMOVAL OF DETERIORATED CONNECTORS AND REPLACEMENT WITH HIGH STRENGTH BOLTS	EACH	51
*****	REFURBISHING OF LIVE LOAD BEARINGS	EACH	4
*****	REMOVAL OF EXISTING SUPERSTRUCTURES	EACH	1
*****	REMOVAL OF EXISTING GRID DECK	L SUM	1
*****	STEEL RAILING (SPECIAL)	FOOT	506
*****	STRUCTURAL STEEL REPAIRS	POUND	61,620
*****	TEMPORARY SUPPORT	L SUM	1

WEBSTER AVENUE BRIDGE  
OVER  
NORTH BRANCH CHICAGO RIVER  
RE-BUILT 20-- BY  
CITY OF CHICAGO  
LOADING HS-20  
STRUCTURE NO. 016-6057

NAME PLATE  
See Std. 515001

0166057-E1525-S004-GENDATA1.DGN

**wsp**  
WSP USA Inc.  
30 N. LASALLE STREET  
SUITE 4000  
CHICAGO, IL 60602  
TEL: (312) 782-8150  
FAX: (312) 782-1684

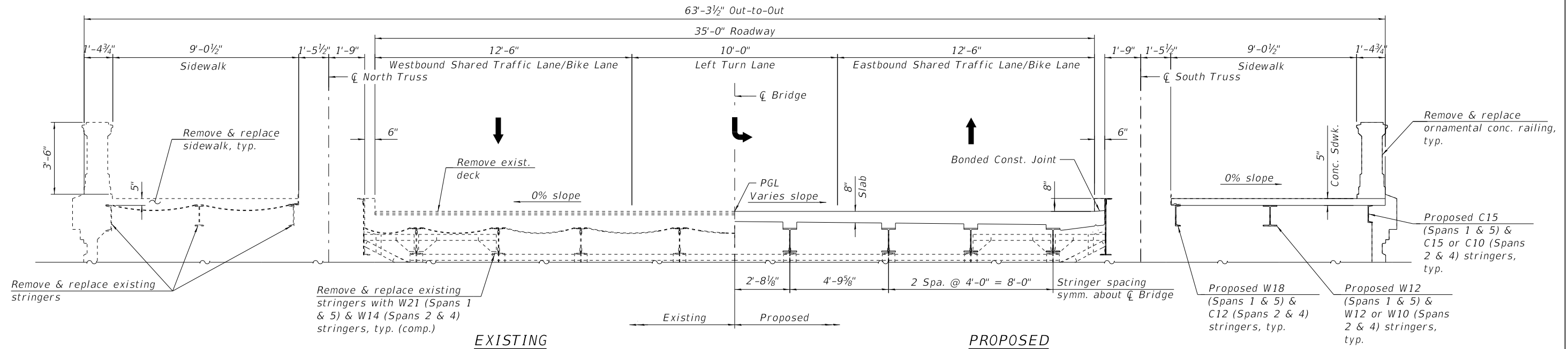
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**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

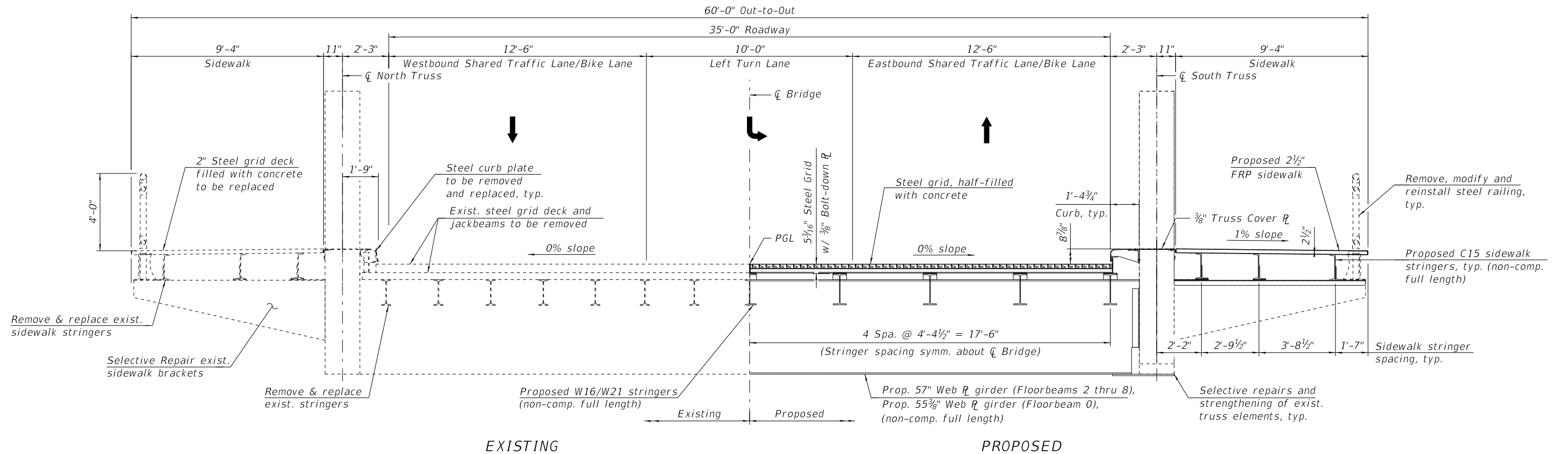
**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

**GENERAL DATA II:  
SCOPE OF WORK & TOTAL BILL OF MATERIAL  
(STRUCTURE NO. 016-6057)**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-4
CDOT PROJECT NO. E-1-525			47 of 210



**FIXED SPAN CROSS SECTION**  
 (Looking East, Sta. 10+24.57 to Sta. 10+81.00 and Sta. 12+58.75 to Sta. 13+15.19)



**BASCULE SPAN CROSS SECTION**  
 (Looking East, Sta. 10+81.00 to Sta. 12+58.75)

0166057-E1525-S005-CROSSSECTIONS.DGN



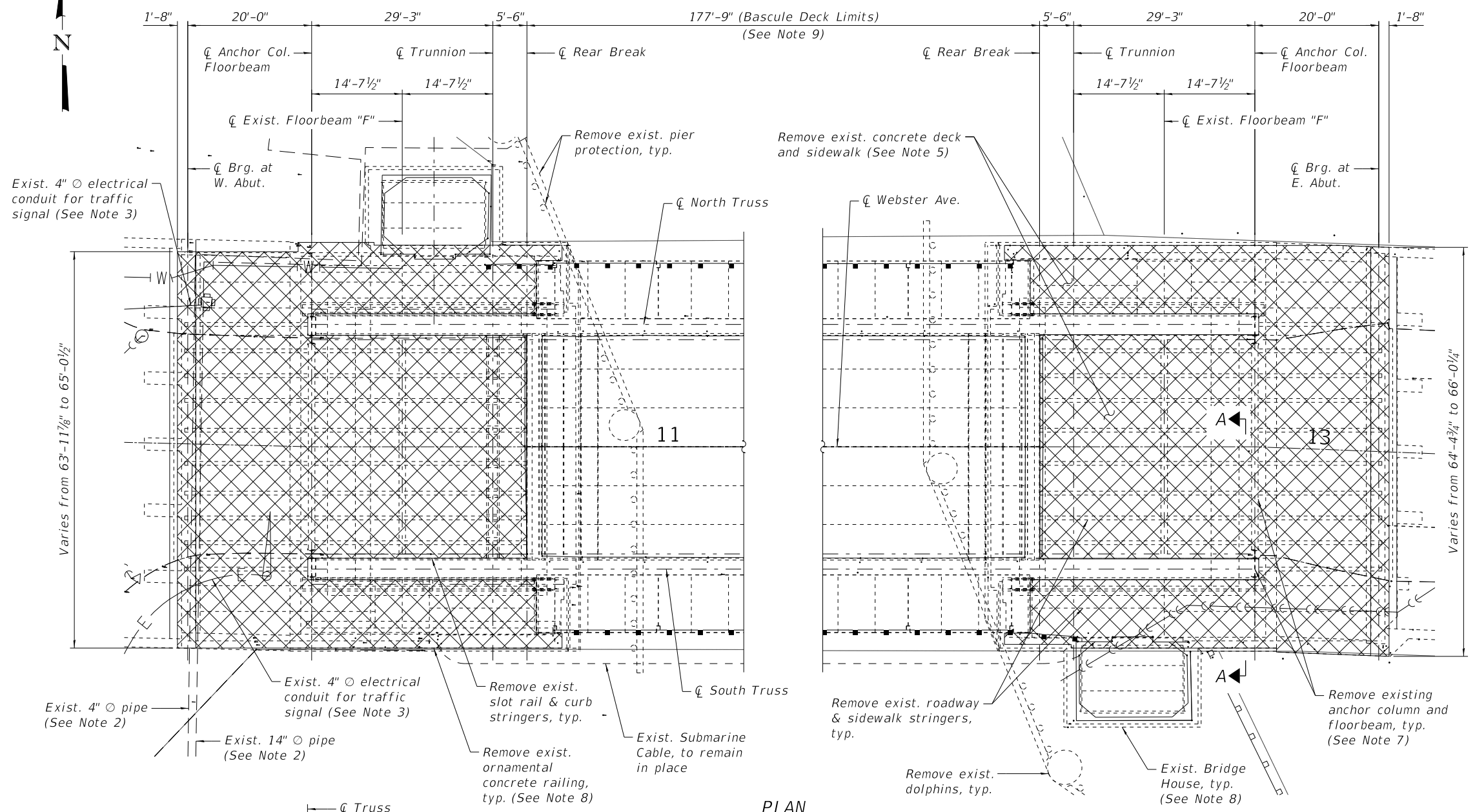
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**CITY OF CHICAGO**  
 DEPARTMENT OF TRANSPORTATION  
 DIVISION OF ENGINEERING

**WEBSTER AVENUE BRIDGE OVER  
 THE NORTH BRANCH CHICAGO RIVER**

**CROSS SECTIONS**  
 (STRUCTURE NO. 016-6057)

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
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CDOT PROJECT NO. E-1-525			48 of 210



PLAN

- Notes:
- Existing fixed span roadway and sidewalk decks are comprised of a concrete deck and steel buckle plates. Additionally, the roadway deck includes an asphalt wearing surface. Removal of existing roadway asphalt, concrete, and steel fixed deck and its supporting existing steel framing including bearings shall be included in the cost of "Removal of Existing Superstructures".
  - Existing pipes attached to existing fixed deck and steel framing shall be temporarily supported during construction. See Special Provisions.
  - Existing electrical conduits on West Approach connecting to existing traffic signals shall remain in place. Conduits shall be protected during removal operations.
  - The Contractor shall exercise extreme care during removal of abutment backwall and concrete deck to prevent damage to conduits. Any damage to the existing conduits to remain in place shall be repaired at the Contractor's expense.
  - Removal of existing dolphins is included in the cost of "Dolphins".
  - Removal of existing pier protection including all timber piles, wales, and anchors is included in the cost of "Pier Protection Replacement".
  - Removal of existing floorbeam between anchor columns is included in the cost of "Removal of Existing Superstructures" and the removal of existing anchor column is included in the cost of "Structural Steel Removal". See sheet S-73 for additional removal details of the anchor column and floorbeam.
  - For details of removal of existing railings, enclosure walls, and bridge houses, see sheets S-80 & S-81 and architectural special provisions.
  - See sheet S-7 for existing structure removal for bascule span.
  - See sheet S-5 for fixed span cross section.
  - Removal of existing steel railing on approach retaining walls is included in "Steel Railing Removal".

BILL OF MATERIAL

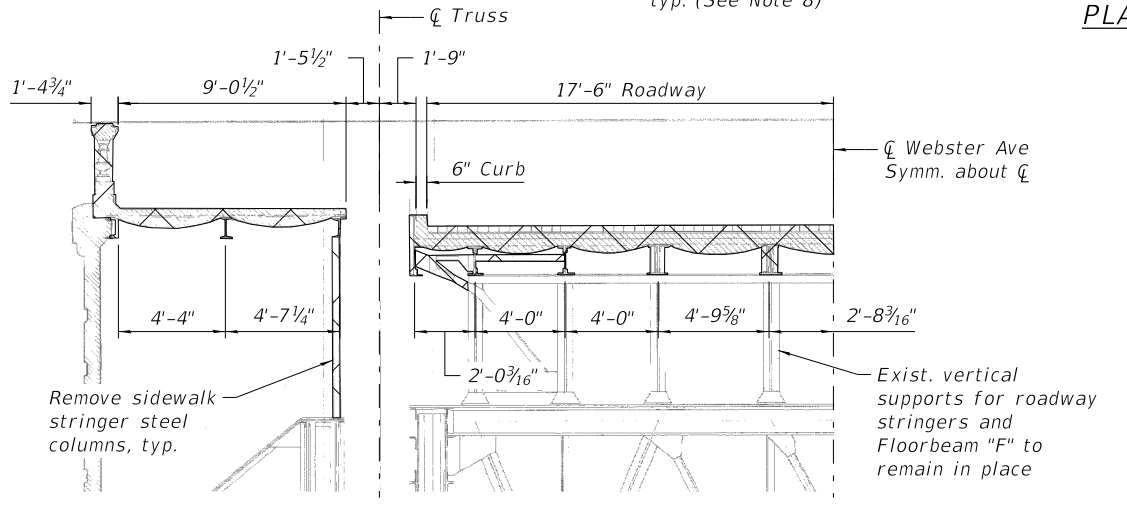
Item	Unit	Quantity
Removal of Existing Superstructures	Each	1

LEGEND:

⊗ Removal of Existing Superstructures

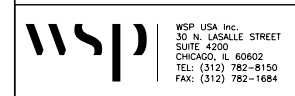
REFERENCE DRAWINGS

Drawing	Sheet No.
Fixed Part General Plan	1660570015
Fixed Part Roadway Stringers	1660570022
Fixed Part Sidewalk Stringers	1660570023



SECTION A-A - TYPICAL FIXED SPAN HALF SECTION

0166057-E1525-S006-EXISTSTRUCTREMOVED.DGN



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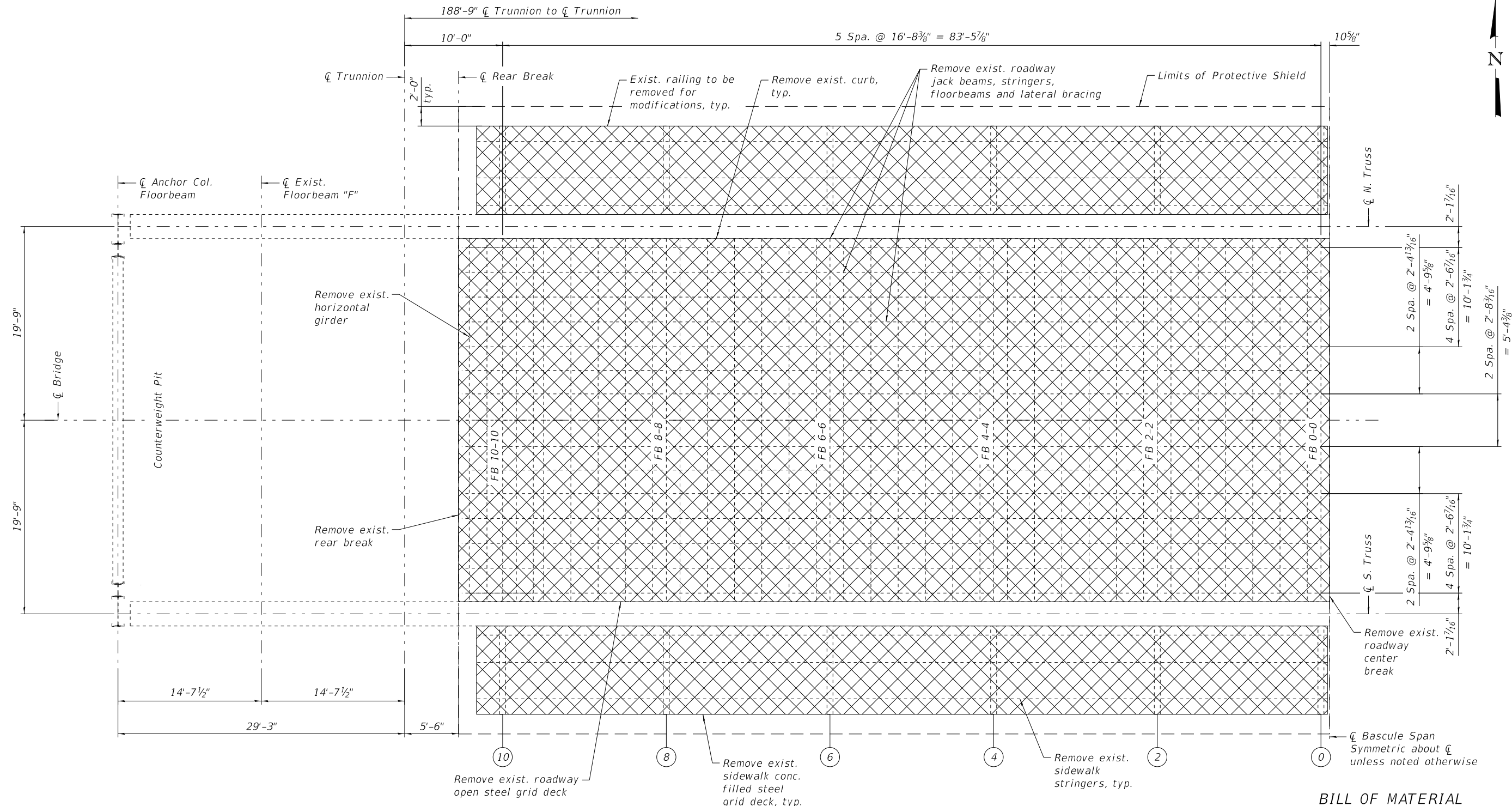
**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

**EXISTING PLANS AND REMOVAL  
FIXED SPANS  
(STRUCTURE NO. 016-6057)**

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**EXISTING STRUCTURE REMOVAL PLAN - BASCULE SPAN**  
(West Leaf shown, East Leaf opposite hand)

**Notes:**

1. Removal of existing roadway and sidewalk open steel and concrete filled grid shall be included in the cost of "Removal of Existing Grid Deck".
2. Removal of existing roadway rear breaks, center break, jack beams, stringers, floorbeams, lateral bracing, horizontal girders, and sidewalk stringers shall be included in the cost of "Structural Steel Removal".
3. See sheet S-109 for details of modifications to existing steel railings.
4. The existing lateral bracing has been modified from the original and is comprised of a cable system. The details of the existing cable system are not reflected in the existing drawings but can be found in the 2016 emergency repair plans. The Contractor shall take care to document and weigh the material removed in accordance with the Bridge Balancing special provision.
5. See sheet S-5 for bascule span cross section.
6. See sheet S-6 for existing structure removal for fixed spans.

**LEGEND:**

Removal of Existing Grid Deck

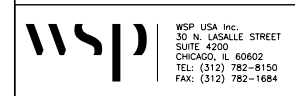
**BILL OF MATERIAL**

Item	Unit	Quantity
Structural Steel Removal	Pound	452,820
Removal of Existing Grid Deck	L. Sum	1
Protective Shield	Sq. Yd.	1,188

**REFERENCE DRAWINGS**

Drawing	Sheet No.
Movable Part- Stringers & Sub-Planking	1660570015
Stringers and Sidewalk Brackets	1660570209

0166057-E1525-S007-EXISTSTRUCTREMBASCULE.DGN



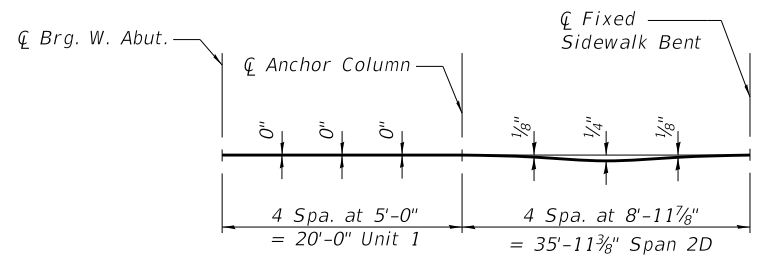
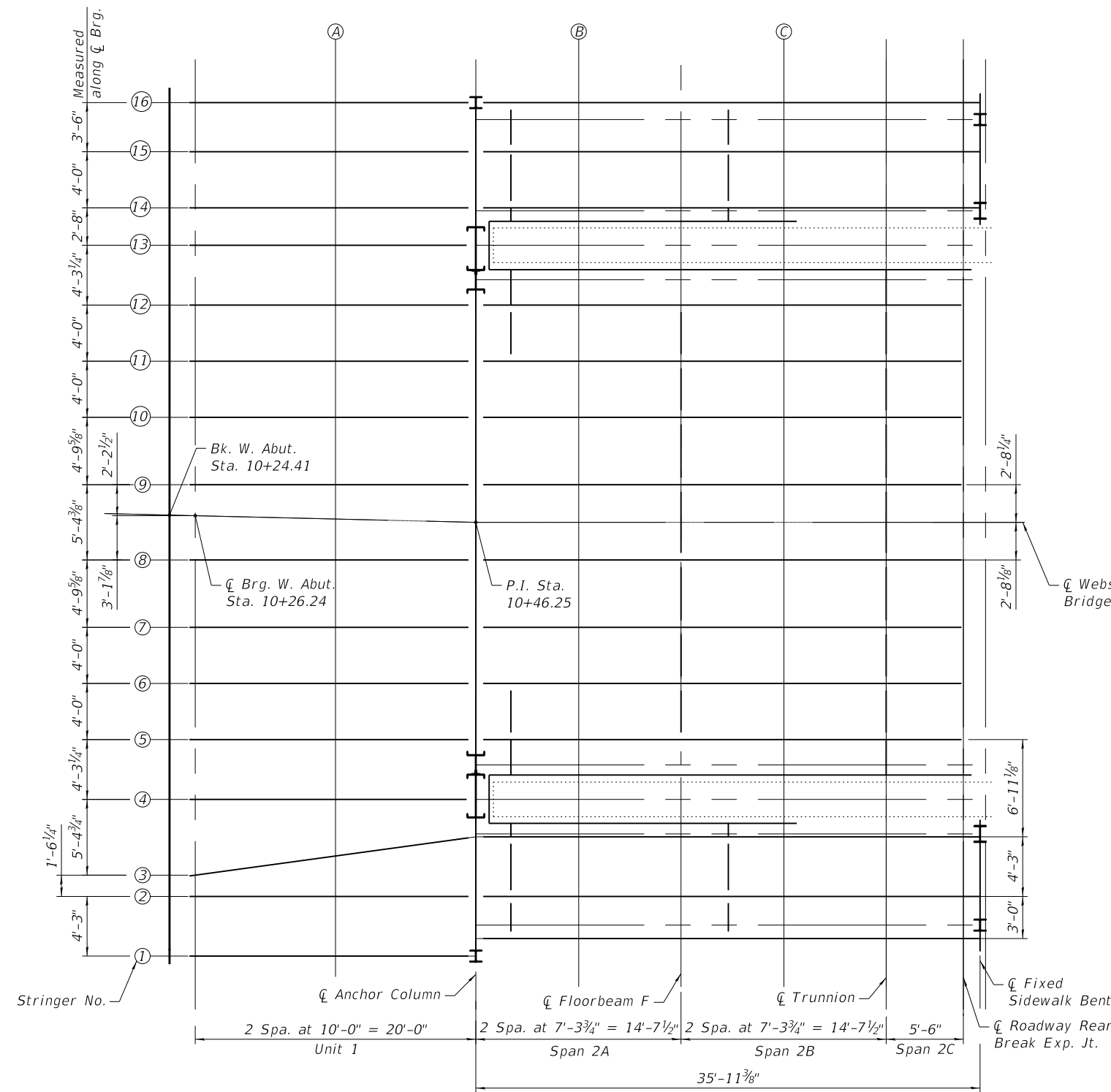
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**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

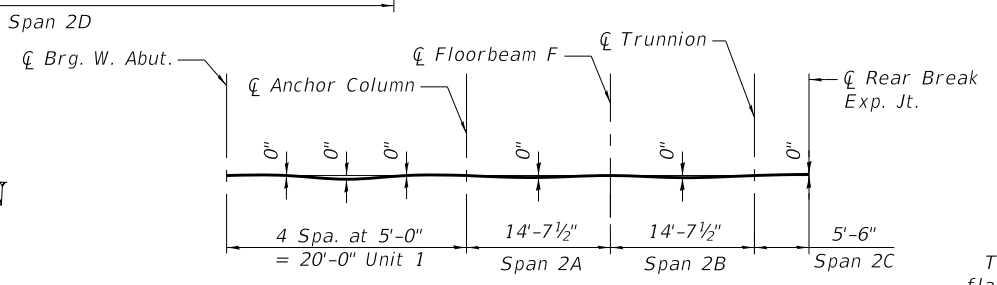
**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

**EXISTING PLANS AND REMOVAL  
BASCULE SPAN  
(STRUCTURE NO. 016-6057)**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
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**STRINGERS 1-4 & 13-16 DEAD LOAD DEFLECTION DIAGRAM**  
(Includes weight of concrete only.)



**STRINGERS 5-12 DEAD LOAD DEFLECTION DIAGRAM**  
(Includes weight of concrete only.)

Note:  
The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown on Sheets S-08 & S-09.

**STRINGER 1**

Location	Station	Offset	Theoretical Grade Elevations *	Theoretical Grade Elevations Adjusted For Dead Load Deflection*
Cl Brg. W. Abut.	10+26.99	31.38'	21.95	21.95
A	10+36.98	31.14'	22.16	22.16
Cl Anchor Column (Unit 1)	10+46.25	30.92'	22.36	22.36
Cl Anchor Column (Unit 2)	10+46.25	29.67'	22.36	22.36
B	10+53.56	29.67'	22.40	22.40
Cl Floorbeam F	10+60.87	29.67'	22.43	22.43
C	10+68.18	29.67'	22.45	22.45
Cl Trunnion	10+75.50	29.67'	22.48	22.48
Rear Break	10+81.00	29.67'	22.50	22.50

**STRINGER 2**

Location	Station	Offset	Theoretical Grade Elevations *	Theoretical Grade Elevations Adjusted For Dead Load Deflection*
Cl Brg. W. Abut.	10+26.88	27.13'	22.02	22.02
A	10+36.88	26.90'	22.22	22.22
Cl Anchor Column	10+46.25	26.67'	22.40	22.40
B	10+53.56	26.67'	22.43	22.43
Cl Floorbeam F	10+60.87	26.67'	22.46	22.46
C	10+68.18	26.67'	22.48	22.48
Cl Trunnion	10+75.50	26.67'	22.51	22.51
Rear Break	10+81.00	26.67'	22.53	22.53

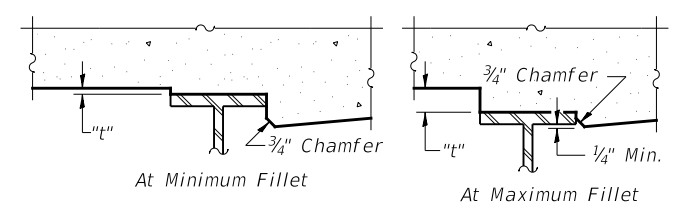
**STRINGER 3**

Location	Station	Offset	Theoretical Grade Elevations *	Theoretical Grade Elevations Adjusted For Dead Load Deflection*
Cl Brg. W. Abut.	10+26.85	25.62'	22.04	22.04
A	10+36.81	24.01'	22.25	22.25
Cl Anchor Column	10+46.25	22.42'	22.45	22.45
B	10+53.56	22.42'	22.47	22.47
Cl Floorbeam F	10+60.87	22.42'	22.50	22.50
C	10+68.18	22.42'	22.52	22.52
Cl Trunnion	10+75.50	22.42'	22.55	22.55
Rear Break	10+81.00	22.42'	22.57	22.57

**STRINGER 4**

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection	Theoretical Grade Elevations *	Theoretical Grade Elevations Adjusted For Dead Load Deflection*
Cl Brg. W. Abut.	10+26.72	20.22'	21.73	21.73	-	-
A	10+36.72	19.98'	21.76	21.76	22.43	22.43
Cl Anchor Column	10+46.25	19.75'	21.80	21.80	22.47	22.47

\*Top of Sidewalk Elevations



To determine "t": After all structural steel has been erected, elevations of the top flanges of the beams shall be taken at intervals shown below. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown on Sheets S-08 and S-09, minus slab thickness, equals the fillet heights "t" above top flange of beams.

**FILLET HEIGHTS**



USER NAME =	DESIGNED - LAB	REVISED -
DESIGNED - MI, MAI	CHECKED - MI, MAI	REVISED -
REVISIONS	DRAWN - LAB	REVISED -
REVISIONS	CHECKED - MI, MAI	REVISED -
REVISIONS		

**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

**WEBSTER AVENUE BRIDGE OVER THE NORTH BRANCH CHICAGO RIVER**

**TOP OF SLAB ELEVATIONS WEST FIXED SPANS I (STRUCTURE NO. 016-6057)**

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**STRINGER 5**

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
¢ Brg. W. Abut.	10+26.62	15.95'	21.75	21.75
A	10+36.62	15.72'	21.78	21.78
¢ Anchor Column	10+46.25	15.48'	21.82	21.82
B	10+53.56	15.48'	21.84	21.84
¢ Floorbeam F	10+60.87	15.48'	21.86	21.86
C	10+68.18	15.48'	21.88	21.88
¢ Trunnion	10+75.50	15.48'	21.90	21.90
Rear Break	10+81.00	15.48'	21.92	21.92

**STRINGER 6**

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
¢ Brg. W. Abut.	10+26.53	11.95'	21.78	21.78
A	10+36.52	11.72'	21.80	21.80
¢ Anchor Column	10+46.25	11.48'	21.83	21.83
B	10+53.56	11.48'	21.85	21.85
¢ Floorbeam F	10+60.87	11.48'	21.87	21.87
C	10+68.18	11.48'	21.89	21.89
¢ Trunnion	10+75.50	11.48'	21.91	21.91
Rear Break	10+81.00	11.48'	21.92	21.92

**STRINGER 7**

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
¢ Brg. W. Abut.	10+26.43	7.96'	21.80	21.80
A	10+36.43	7.72'	21.82	21.82
¢ Anchor Column	10+46.25	7.48'	21.84	21.84
B	10+53.56	7.48'	21.86	21.86
¢ Floorbeam F	10+60.87	7.48'	21.88	21.88
C	10+68.18	7.48'	21.89	21.89
¢ Trunnion	10+75.50	7.48'	21.91	21.91
Rear Break	10+81.00	7.48'	21.92	21.92

**STRINGER 8**

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
¢ Brg. W. Abut.	10+26.32	3.15'	21.83	21.83
A	10+36.31	2.92'	21.84	21.84
¢ Anchor Column	10+46.25	2.68'	21.86	21.86
B	10+53.56	2.68'	21.87	21.87
¢ Floorbeam F	10+60.87	2.68'	21.89	21.89
C	10+68.18	2.68'	21.90	21.90
¢ Trunnion	10+75.50	2.68'	21.91	21.91
Rear Break	10+81.00	2.68'	21.92	21.92

**¢ WEBSTER AVE. BRIDGE & PGL**

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
¢ Brg. W. Abut.	10+26.24	0.00'	21.84	21.84
A	10+36.25	0.00'	21.86	21.86
¢ Anchor Column	10+46.25	0.00'	21.87	21.87
B	10+53.56	0.00'	21.88	21.88
¢ Floorbeam F	10+60.87	0.00'	21.89	21.89
C	10+68.18	0.00'	21.90	21.90
¢ Trunnion	10+75.50	0.00'	21.91	21.91
Rear Break	10+81.00	0.00'	21.92	21.92

**STRINGER 12**

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
¢ Brg. W. Abut.	10+25.89	-15.01'	21.76	21.76
A	10+35.88	-15.24'	21.79	21.79
¢ Anchor Column	10+46.25	-15.48'	21.82	21.82
B	10+53.56	-15.48'	21.84	21.84
¢ Floorbeam F	10+60.87	-15.48'	21.86	21.86
C	10+68.18	-15.48'	21.88	21.88
¢ Trunnion	10+75.50	-15.48'	21.90	21.90
Rear Break	10+81.00	-15.48'	21.92	21.92

**STRINGER 13**

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection	Theoretical Grade Elevations *	Theoretical Grade Elevations Adjusted For Dead Load Deflection*
¢ Brg. W. Abut.	10+25.79	-19.27'	21.73	21.73	22.34	22.34
A	10+35.78	-19.51'	21.77	21.77	22.43	22.43
¢ Anchor Column	10+46.25	-19.75'	21.80	21.80	22.47	22.47

**STRINGER 9**

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
¢ Brg. W. Abut.	10+26.19	-2.21'	21.83	21.83
A	10+36.19	-2.44'	21.85	21.85
¢ Anchor Column	10+46.25	-2.68'	21.86	21.86
B	10+53.56	-2.68'	21.87	21.87
¢ Floorbeam F	10+60.87	-2.68'	21.89	21.89
C	10+68.18	-2.68'	21.90	21.90
¢ Trunnion	10+75.50	-2.68'	21.91	21.91
Rear Break	10+81.00	-2.68'	21.92	21.92

**STRINGER 14**

Location	Station	Offset	Theoretical Grade Elevations *	Theoretical Grade Elevations Adjusted For Dead Load Deflection*
¢ Brg. W. Abut.	10+25.72	-21.94'	22.34	22.34
A	10+35.72	-22.17'	22.39	22.39
¢ Anchor Column	10+46.25	-22.42'	22.44	22.44
B	10+53.56	-22.42'	22.48	22.48
¢ Floorbeam F	10+60.87	-22.42'	22.52	22.52
C	10+68.18	-22.42'	22.55	22.55
¢ Trunnion	10+75.50	-22.42'	22.59	22.59
Rear Break	10+81.00	-22.42'	22.62	22.62

**STRINGER 10**

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
¢ Brg. W. Abut.	10+26.08	-7.01'	21.80	21.80
A	10+36.07	-7.25'	21.82	21.82
¢ Anchor Column	10+46.25	-7.48'	21.84	21.84
B	10+53.56	-7.48'	21.86	21.86
¢ Floorbeam F	10+60.87	-7.48'	21.88	21.88
C	10+68.18	-7.48'	21.89	21.89
¢ Trunnion	10+75.50	-7.48'	21.91	21.91
Rear Break	10+81.00	-7.48'	21.92	21.92

**STRINGER 15**

Location	Station	Offset	Theoretical Grade Elevations *	Theoretical Grade Elevations Adjusted For Dead Load Deflection*
¢ Brg. W. Abut.	10+25.63	-25.94'	22.34	22.34
A	10+35.63	-26.17'	22.38	22.38
¢ Anchor Column	10+46.25	-26.42'	22.43	22.43
B	10+53.56	-26.42'	22.46	22.46
¢ Floorbeam F	10+60.87	-26.42'	22.49	22.49
C	10+68.18	-26.42'	22.52	22.52
¢ Trunnion	10+75.50	-26.42'	22.55	22.55
Rear Break	10+81.00	-26.42'	22.58	22.58

**STRINGER 11**

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
¢ Brg. W. Abut.	10+25.98	-11.01'	21.78	21.78
A	10+35.98	-11.24'	21.81	21.81
¢ Anchor Column	10+46.25	-11.48'	21.83	21.83
B	10+53.56	-11.48'	21.85	21.85
¢ Floorbeam F	10+60.87	-11.48'	21.87	21.87
C	10+68.18	-11.48'	21.89	21.89
¢ Trunnion	10+75.50	-11.48'	21.91	21.91
Rear Break	10+81.00	-11.48'	21.92	21.92

**STRINGER 16**

Location	Station	Offset	Theoretical Grade Elevations *	Theoretical Grade Elevations Adjusted For Dead Load Deflection*
¢ Brg. W. Abut.	10+25.55	-29.43'	22.34	22.34
A	10+35.54	-29.67'	22.38	22.38
¢ Anchor Column	10+46.25	-29.92'	22.42	22.42
B	10+53.56	-29.92'	22.44	22.44
¢ Floorbeam F	10+60.87	-29.92'	22.47	22.47
C	10+68.18	-29.92'	22.50	22.50
¢ Trunnion	10+75.50	-29.92'	22.52	22.52
Rear Break	10+81.00	-29.92'	22.54	22.54

\*Top of Sidewalk Elevations



**wsp** WSP USA Inc.  
30 N. LASALLE STREET  
SUITE 4000  
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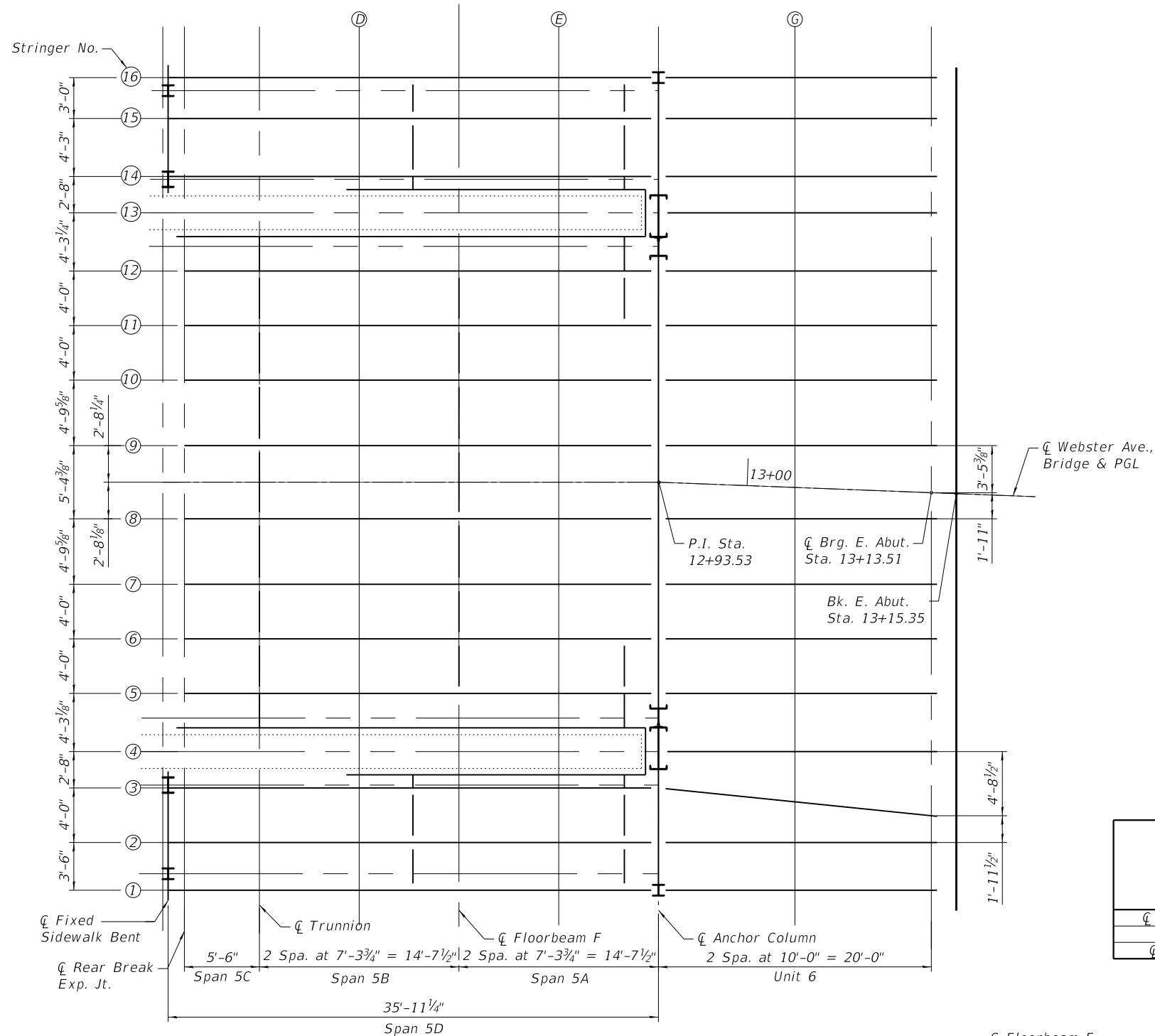
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PLOT SCALE = N.T.S.	DRAWN - LAB	REVISED -
PLOT DATE = 10/5/2020	CHECKED - MI, MAI	REVISED -

**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

**TOP OF SLAB ELEVATIONS  
WEST FIXED SPANS II  
(STRUCTURE NO. 016-6057)**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-09
CDOT PROJECT NO. E-1-525			52 of 210



**STRINGER 1**

Location	Station	Offset	Theoretical Grade Elevations*	Theoretical Grade Elevations Adjusted For Dead Load Deflection*
Rear Break	12+58.75	29.92'	22.54	22.54
☐ Trunnion	12+64.25	29.92'	22.46	22.46
D	12+71.56	29.92'	22.42	22.42
☐ Floorbeam F	12+78.88	29.92'	22.38	22.38
E	12+86.19	29.92'	22.16	22.16
☐ Anchor Column	12+93.50	29.92'	21.94	21.94
G	13+04.64	29.51'	21.64	21.64
☐ Brg. E. Abut.	13+14.63	29.13'	21.34	21.34

**STRINGER 2**

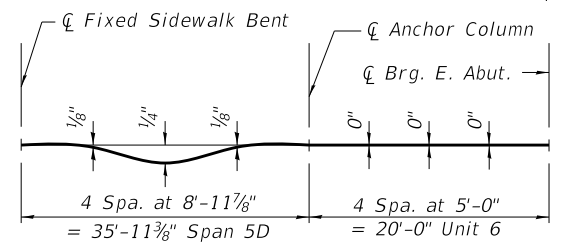
Location	Station	Offset	Theoretical Grade Elevations*	Theoretical Grade Elevations Adjusted For Dead Load Deflection*
Rear Break	12+58.75	26.42'	22.57	22.57
☐ Trunnion	12+64.25	26.42'	22.50	22.50
D	12+71.56	26.42'	22.46	22.46
☐ Floorbeam F	12+78.88	26.42'	22.42	22.42
E	12+86.19	26.42'	22.20	22.20
☐ Anchor Column	12+93.50	26.42'	21.97	21.97
G	13+04.50	26.01'	21.67	21.67
☐ Brg. E. Abut.	13+14.50	25.63'	21.37	21.37

**STRINGER 3**

Location	Station	Offset	Theoretical Grade Elevations*	Theoretical Grade Elevations Adjusted For Dead Load Deflection*
Rear Break	12+58.75	22.42'	22.61	22.61
☐ Trunnion	12+64.25	22.42'	22.54	22.54
D	12+71.56	22.42'	22.50	22.50
☐ Floorbeam F	12+78.88	22.42'	22.46	22.46
E	12+86.19	22.42'	22.24	22.24
☐ Anchor Column	12+93.50	22.42'	22.01	22.01
G	13+04.39	23.03'	21.70	21.70
☐ Brg. E. Abut.	13+14.42	23.67'	21.39	21.39

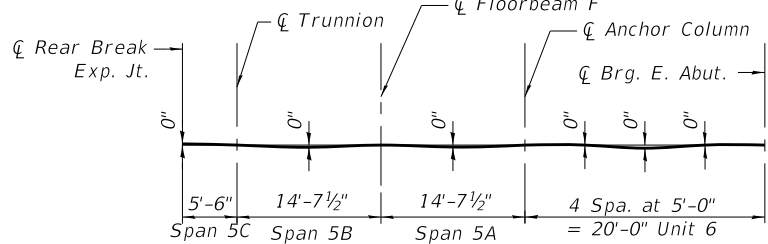
**STRINGER 4**

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection	Theoretical Grade Elevations*	Theoretical Grade Elevations Adjusted For Dead Load Deflection*
☐ Anchor Column	12+93.50	19.75'	21.37	21.37	22.03	22.03
G	13+04.25	19.35'	21.06	21.06	21.73	21.73
☐ Brg. E. Abut.	13+14.24	18.97'	20.76	20.76	-	-



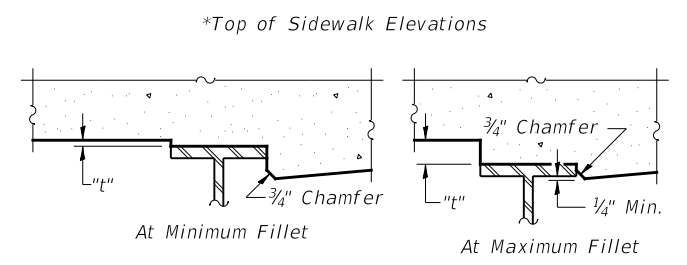
**STRINGERS 1-4 & 13-16 DEAD LOAD DEFLECTION DIAGRAM**

(Includes weight of concrete only.)



**STRINGERS 5-12 DEAD LOAD DEFLECTION DIAGRAM**

(Includes weight of concrete only.)



To determine "t": After all structural steel has been erected, elevations of the top flanges of the beams shall be taken at intervals shown below. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown on Sheets S-10 and S-11, minus slab thickness, equals the fillet heights "t" above top flange of beams.

**FILLET HEIGHTS**



USER NAME =	DESIGNED - LAB	REVISED -
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**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

**TOP OF SLAB ELEVATIONS  
EAST FIXED SPANS I  
(STRUCTURE NO. 016-6057)**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-10
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**STRINGER 5**

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Rear Break	12+58.75	15.48'	21.92	21.92
☉ Trunnion	12+64.25	15.48'	21.89	21.89
D	12+71.56	15.48'	21.85	21.85
☉ Floorbeam F	12+78.88	15.48'	21.81	21.81
E	12+86.19	15.48'	21.59	21.59
☉ Anchor Column	12+93.50	15.48'	21.37	21.37
G	13+04.08	15.09'	21.06	21.06
☉ Brg. E. Abut.	13+14.08	14.70'	20.76	20.76

**☉ WEBSTER AVE. BRIDGE & PGL**

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Rear Break	12+58.75	0.00'	21.92	21.92
☉ Trunnion	12+64.25	0.00'	21.89	21.89
D	12+71.56	0.00'	21.85	21.85
☉ Floorbeam F	12+78.88	0.00'	21.81	21.81
E	12+86.19	0.00'	21.59	21.59
☉ Anchor Column	12+93.50	0.00'	21.37	21.37
G	13+03.50	0.00'	21.06	21.06
☉ Brg. E. Abut.	13+13.51	0.00'	20.76	20.76

**STRINGER 12**

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Rear Break	12+58.75	-15.48'	21.92	21.92
☉ Trunnion	12+64.25	-15.48'	21.89	21.89
D	12+71.56	-15.48'	21.85	21.85
☉ Floorbeam F	12+78.88	-15.48'	21.81	21.81
E	12+86.19	-15.48'	21.59	21.59
☉ Anchor Column	12+93.50	-15.48'	21.37	21.37
G	13+02.89	-15.86'	21.06	21.06
☉ Brg. E. Abut.	13+12.89	-16.24'	20.76	20.76

**STRINGER 6**

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Rear Break	12+58.75	11.48'	21.92	21.92
☉ Trunnion	12+64.25	11.48'	21.89	21.89
D	12+71.56	11.48'	21.85	21.85
☉ Floorbeam F	12+78.88	11.48'	21.81	21.81
E	12+86.19	11.48'	21.59	21.59
☉ Anchor Column	12+93.50	11.48'	21.37	21.37
G	13+03.93	11.09'	21.06	21.06
☉ Brg. E. Abut.	13+13.92	10.71'	20.76	20.76

**STRINGER 13**

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection	Theoretical Grade Elevations*	Theoretical Grade Elevations Adjusted For Dead Load Deflection*
☉ Anchor Column	12+93.50	-19.75'	21.37	21.37	22.03	22.03
G	13+02.73	-20.12'	21.06	21.06	21.73	21.73
☉ Brg. E. Abut.	13+12.72	-20.50'	20.76	20.76	-	-

**STRINGER 7**

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Rear Break	12+58.75	7.48'	21.92	21.92
☉ Trunnion	12+64.25	7.48'	21.89	21.89
D	12+71.56	7.48'	21.85	21.85
☉ Floorbeam F	12+78.88	7.48'	21.81	21.81
E	12+86.19	7.48'	21.59	21.59
☉ Anchor Column	12+93.50	7.48'	21.37	21.37
G	13+03.78	7.09'	21.06	21.06
☉ Brg. E. Abut.	13+13.77	6.71'	20.76	20.76

**STRINGER 9**

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Rear Break	12+58.75	-2.68'	21.92	21.92
☉ Trunnion	12+64.25	-2.68'	21.89	21.89
D	12+71.56	-2.68'	21.85	21.85
☉ Floorbeam F	12+78.88	-2.68'	21.81	21.81
E	12+86.19	-2.68'	21.59	21.59
☉ Anchor Column	12+93.50	-2.68'	21.37	21.37
G	13+03.39	-3.06'	21.06	21.06
☉ Brg. E. Abut.	13+13.38	-3.45'	20.76	20.76

**STRINGER 14**

Location	Station	Offset	Theoretical Grade Elevations*	Theoretical Grade Elevations Adjusted For Dead Load Deflection*
Rear Break	12+58.75	-22.42'	22.61	22.61
☉ Trunnion	12+64.25	-22.42'	22.54	22.54
D	12+71.56	-22.42'	22.50	22.50
☉ Floorbeam F	12+78.88	-22.42'	22.46	22.46
E	12+86.19	-22.42'	22.24	22.24
☉ Anchor Column	12+93.50	-22.42'	22.01	22.01
G	13+02.63	-22.78'	21.71	21.71
☉ Brg. E. Abut.	13+12.62	-23.17'	21.40	21.40

**STRINGER 8**

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Rear Break	12+58.75	2.68'	21.92	21.92
☉ Trunnion	12+64.25	2.68'	21.89	21.89
D	12+71.56	2.68'	21.85	21.85
☉ Floorbeam F	12+78.88	2.68'	21.81	21.81
E	12+86.19	2.68'	21.59	21.59
☉ Anchor Column	12+93.50	2.68'	21.37	21.37
G	13+03.59	2.30'	21.06	21.06
☉ Brg. E. Abut.	13+13.59	1.91'	20.76	20.76

**STRINGER 10**

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Rear Break	12+58.75	-7.48'	21.92	21.92
☉ Trunnion	12+64.25	-7.48'	21.89	21.89
D	12+71.56	-7.48'	21.85	21.85
☉ Floorbeam F	12+78.88	-7.48'	21.81	21.81
E	12+86.19	-7.48'	21.59	21.59
☉ Anchor Column	12+93.50	-7.48'	21.37	21.37
G	13+03.20	-7.86'	21.06	21.06
☉ Brg. E. Abut.	13+13.19	-8.25'	20.76	20.76

**STRINGER 15**

Location	Station	Offset	Theoretical Grade Elevations*	Theoretical Grade Elevations Adjusted For Dead Load Deflection*
Rear Break	12+58.75	-26.67'	22.57	22.57
☉ Trunnion	12+64.25	-26.67'	22.50	22.50
D	12+71.56	-26.67'	22.46	22.46
☉ Floorbeam F	12+78.88	-26.67'	22.42	22.42
E	12+86.19	-26.67'	22.19	22.19
☉ Anchor Column	12+93.50	-26.67'	21.97	21.97
G	13+02.47	-27.03'	21.66	21.66
☉ Brg. E. Abut.	13+12.46	-27.42'	21.36	21.36

**STRINGER 11**

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Rear Break	12+58.75	-11.48'	21.92	21.92
☉ Trunnion	12+64.25	-11.48'	21.89	21.89
D	12+71.56	-11.48'	21.85	21.85
☉ Floorbeam F	12+78.88	-11.48'	21.81	21.81
E	12+86.19	-11.48'	21.59	21.59
☉ Anchor Column	12+93.50	-11.48'	21.37	21.37
G	13+03.05	-11.86'	21.06	21.06
☉ Brg. E. Abut.	13+13.04	-12.24'	20.76	20.76

**STRINGER 16**

Location	Station	Offset	Theoretical Grade Elevations*	Theoretical Grade Elevations Adjusted For Dead Load Deflection*
Rear Break	12+58.75	-29.67'	22.54	22.54
☉ Trunnion	12+64.25	-29.67'	22.47	22.47
D	12+71.56	-29.67'	22.43	22.43
☉ Floorbeam F	12+78.88	-29.67'	22.39	22.39
E	12+86.19	-29.67'	22.16	22.16
☉ Anchor Column	12+93.50	-29.67'	21.94	21.94
G	13+02.35	-30.03'	21.63	21.63
☉ Brg. E. Abut.	13+12.34	-30.41'	21.33	21.33

\*Top of Sidewalk Elevation



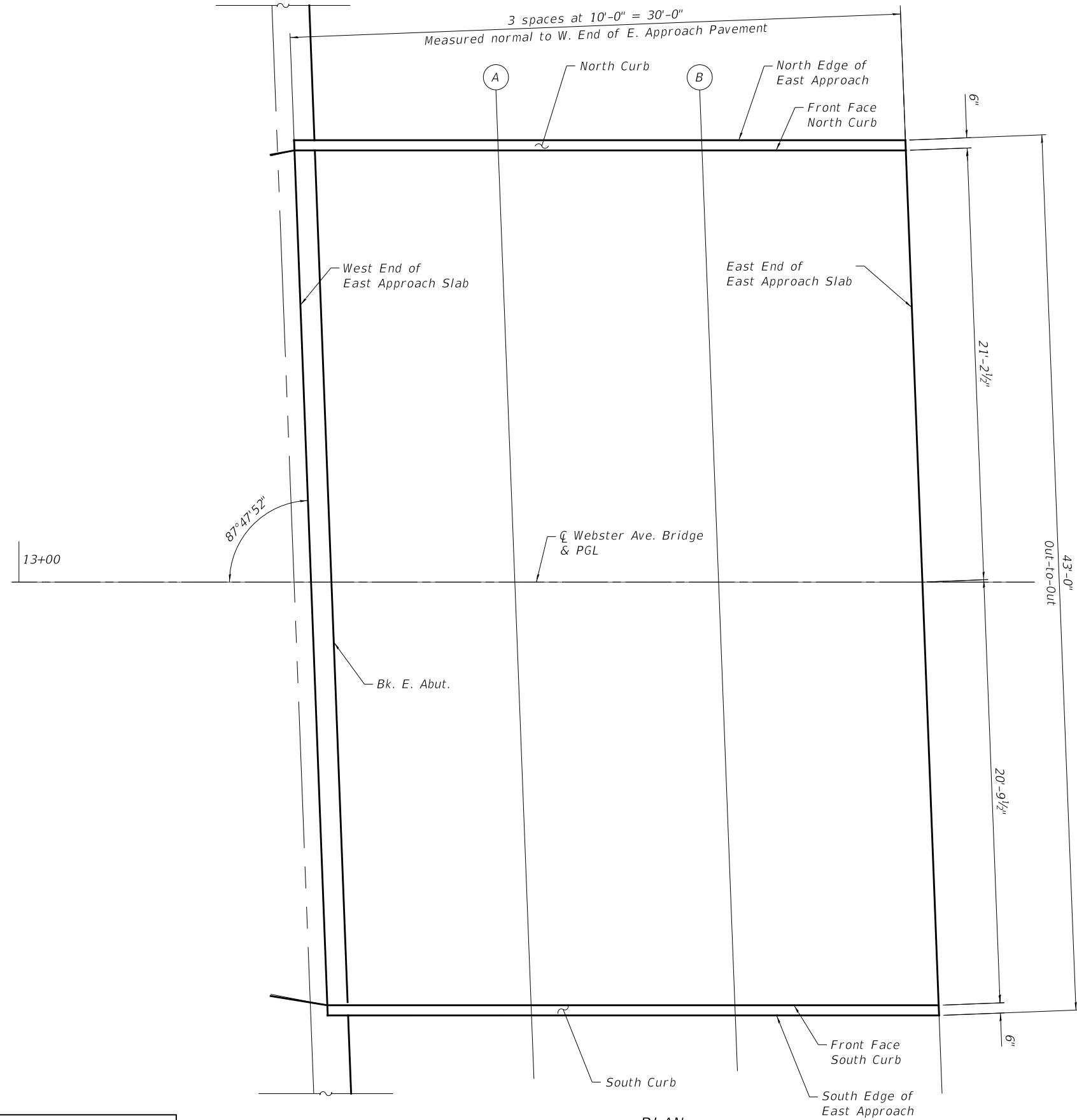
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**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

**TOP OF SLAB ELEVATIONS  
EAST FIXED SPANS II  
(STRUCTURE NO. 016-6057)**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-11
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PLAN

FRONT FACE OF NORTH CURB

Location	Station	Offset	Theoretical Grade Elevations
W. End of E. Appr. Slab	13+13.53	-21.19'	20.76
A	13+23.54	-21.19'	20.31
B	13+33.55	-21.19'	19.86
E. End of E. Appr. Slab	13+43.55	-21.19'	19.42

CL WEBSTER AVE. BRIDGE & PGL

Location	Station	Offset	Theoretical Grade Elevations
W. End of E. Appr. Slab	13+14.35	0.00'	20.73
A	13+24.35	0.00'	20.43
B	13+34.36	0.00'	20.12
E. End of E. Appr. Slab	13+44.37	0.00'	19.82

FRONT FACE OF SOUTH CURB

Location	Station	Offset	Theoretical Grade Elevations
W. End of E. Appr. Slab	13+15.14	20.77'	20.71
A	13+25.15	20.77'	20.26
B	13+35.16	20.77'	19.82
E. End of E. Appr. Slab	13+45.17	20.77'	19.38



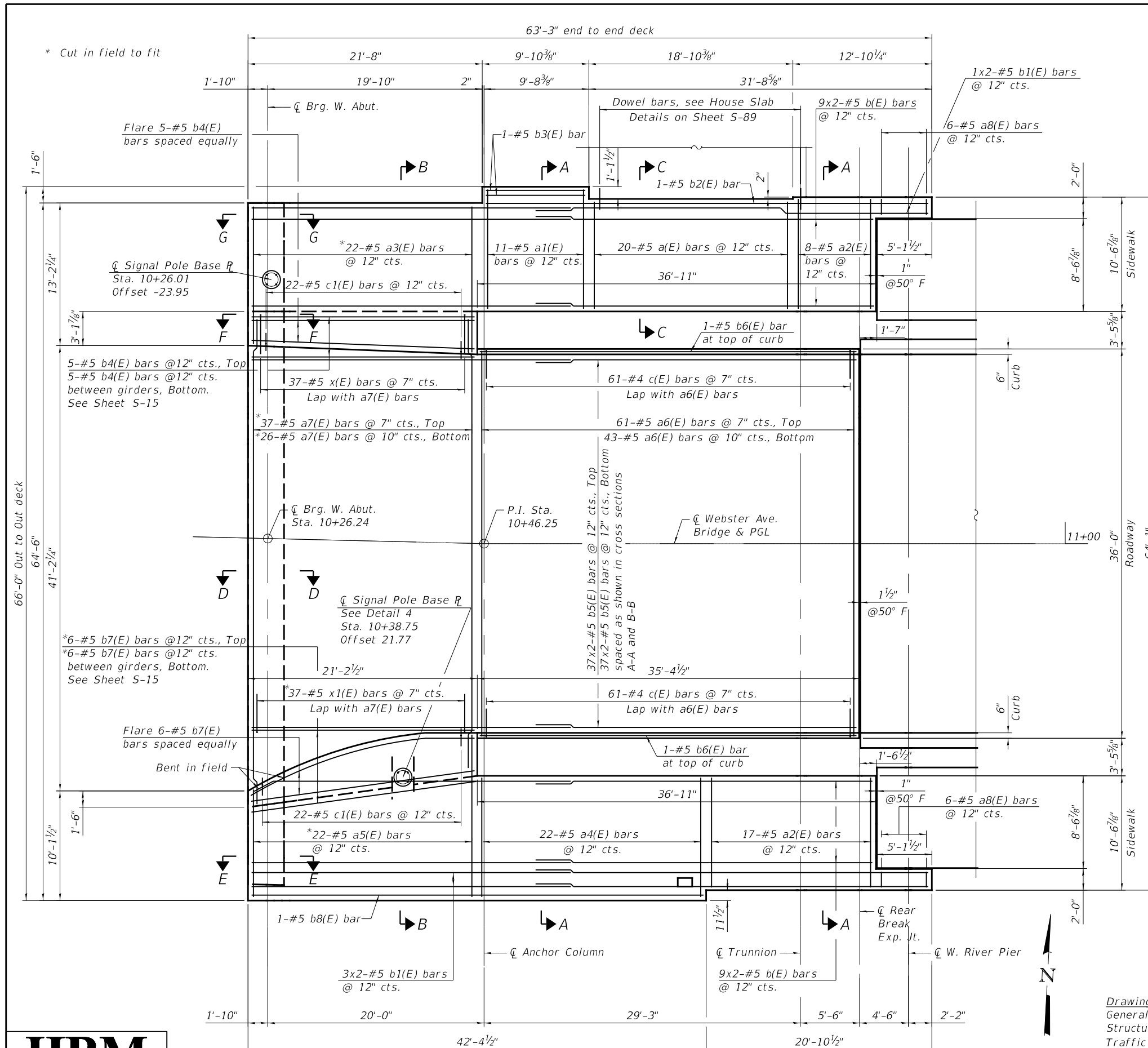
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**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

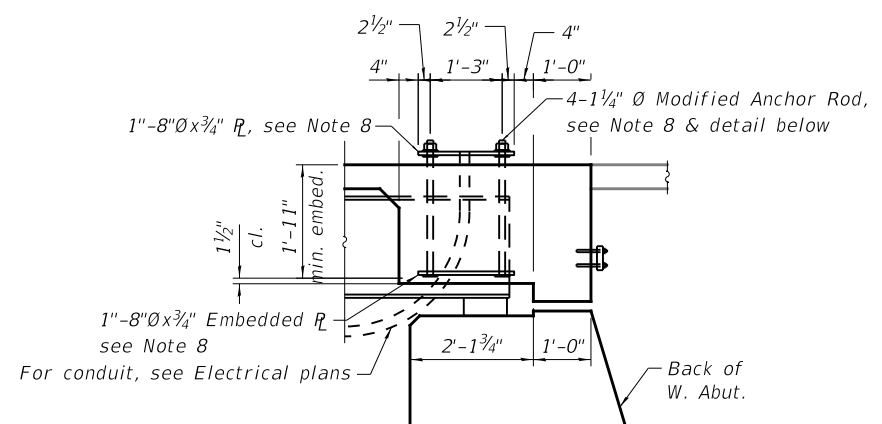
**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

**TOP OF SLAB ELEVATIONS  
EAST APPROACH SLAB  
(STRUCTURE NO. 016-6057)**

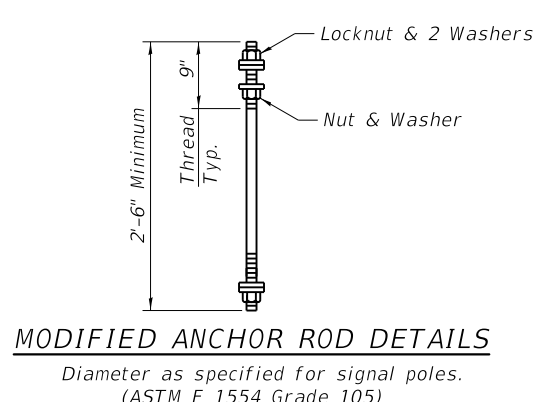
F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-12
CDOT PROJECT NO. E-1-525			55 of 210



- NOTES:**
1. Reinforcement bars designated (E) shall be epoxy coated.
  2. Bars indicated as 9x2-#5 etc. indicates 9 lines of bars with two lengths per line.
  3. For more dimensions, see Sheet S-14.
  4. For sections A-A, B-B, and C-C, see Sheet S-15.
  5. For sections D-D, E-E, and F-F, see Sheet S-16.
  6. For Detail 4, bar diagrams and Bill of Material, see Sheet S-18.
  7. For preformed joint filler quantities & details between the sidewalks and concrete deck, see civil plans.
  8. The cost of furnishing and erecting all signal poles base plates and anchor rods shall be included with High Performance Concrete Superstructures.



**SECTION G-G**  
(Showing Signal pole connection, reinforcement not shown for clarity. For reinforcement & additional details, see Sheet S-16.)



**REFERENCE DRAWINGS**

Drawing  
General Plan - Substructure and Superstructure  
Structural Repairs, Redecking and Rehabilitation  
Traffic and Construction Staging

Sheet No.  
1660570004  
1660300566  
1660570259

**MINIMUM BAR LAP**  
#5 bar = 3'-6"



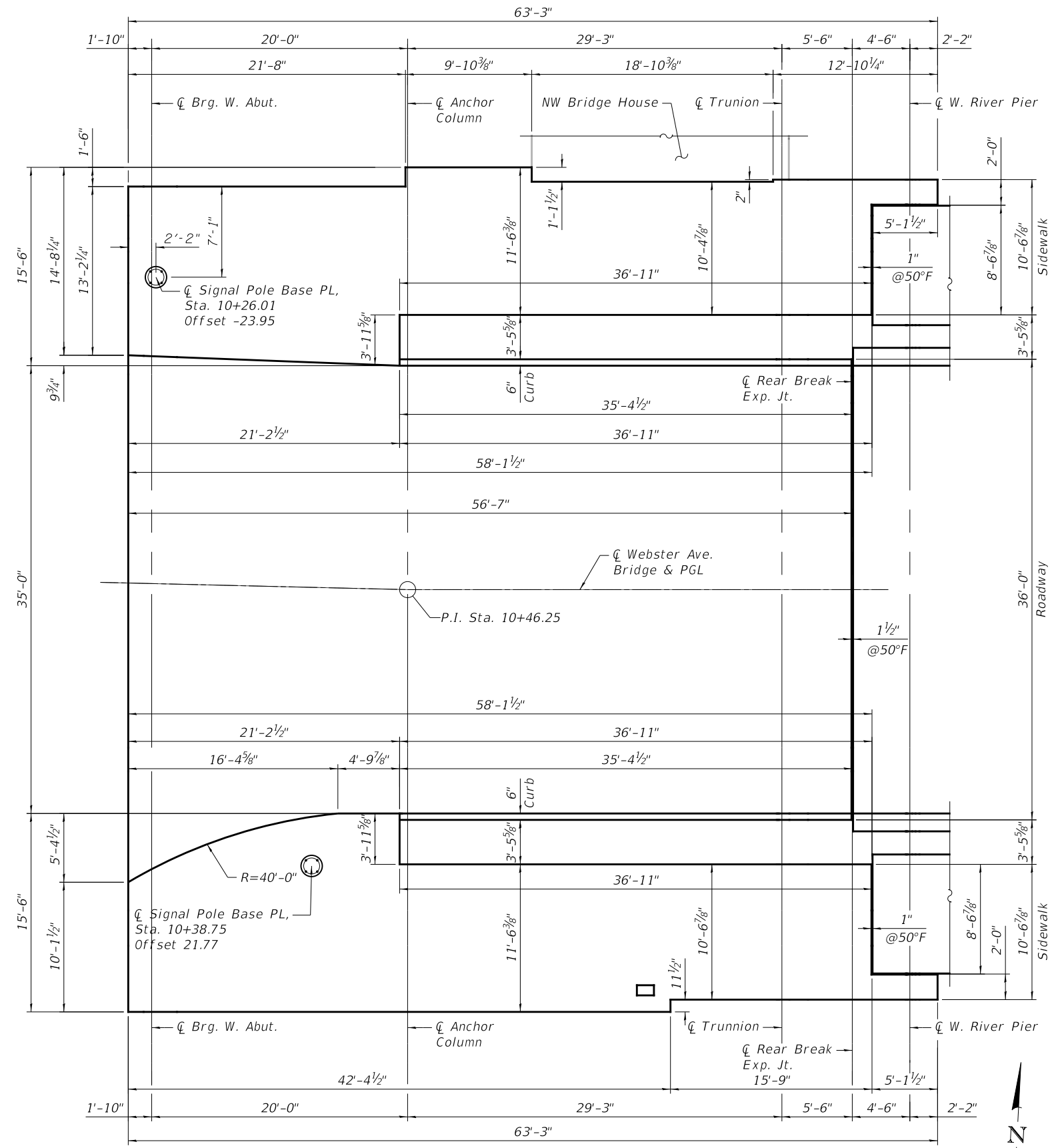
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**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

**SUPERSTRUCTURE PLAN  
WEST FIXED SPANS  
(STRUCTURE NO. 016-6057)**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-13
CDOT PROJECT NO. E-1-525			56 of 210



PLAN



WSP USA Inc.  
30 N. LA SALLE STREET  
SUITE 4200  
CHICAGO, IL 60602  
TEL: (312) 782-8150  
FAX: (312) 782-1884

USER NAME =	DESIGNED - SK	REVISED -
PLOT SCALE = N.T.S.	CHECKED - MI	REVISED -
PLOT DATE = 10/5/2020	DRAWN - SK	REVISED -
	CHECKED - MI	REVISED -

**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

**SUPERSTRUCTURE PLAN GEOMETRICS  
WEST FIXED SPANS  
(STRUCTURE NO. 016-6057)**

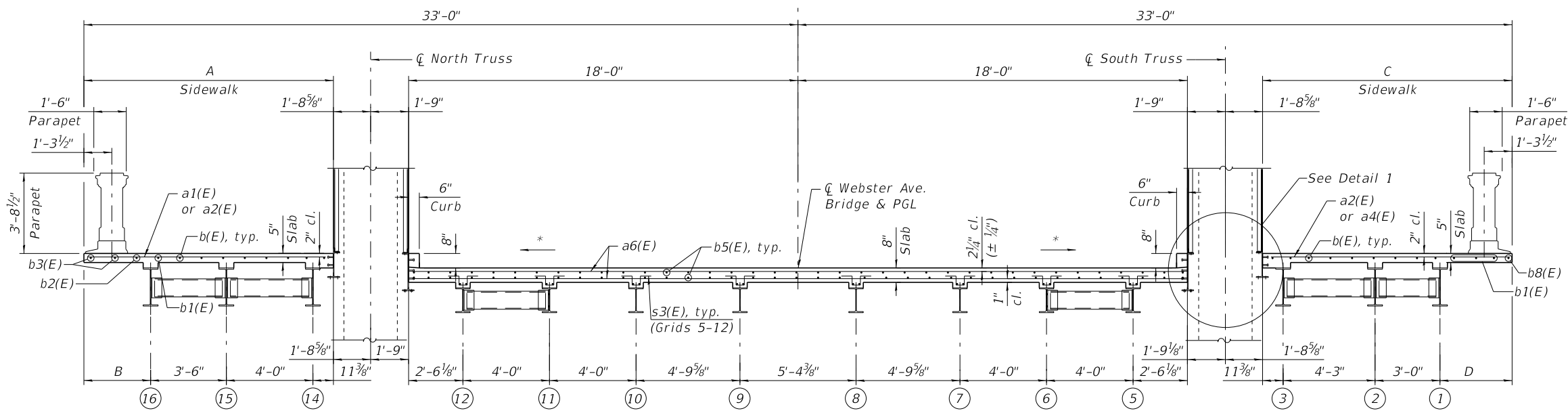
F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-14
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**NOTES:**

1. For additional notes, see Sheet S-13.
2. For bar diagrams and Bill of Material, see Sheet S-18.

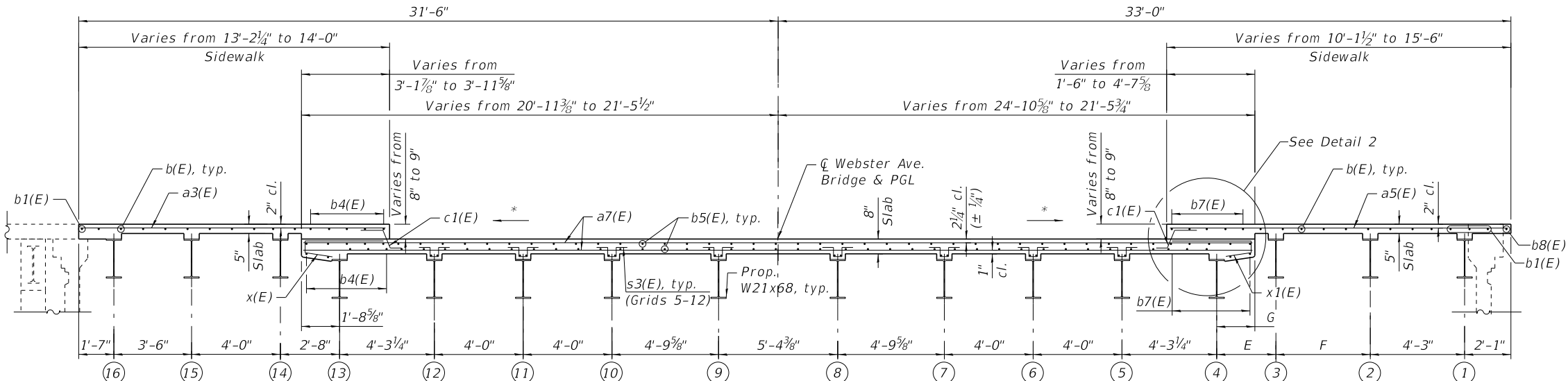
\* Slope varies from 0% at Rear Break to 0.57% at West Abutment.



From Sta. 10+45.30 to Sta. 10+55.94 - A = 11'-6<sup>3</sup>/<sub>8</sub>" ; B = 3'-1"  
 From Sta. 10+55.94 to Sta. 10+74.81 - A = 10'-4<sup>3</sup>/<sub>8</sub>" ; B = 1'-11<sup>1</sup>/<sub>2</sub>"  
 From Sta. 10+74.81 to Sta. 10+82.50 - A = 10'-6<sup>3</sup>/<sub>8</sub>" ; B = 2'-1<sup>1</sup>/<sub>2</sub>"

**SECTION A-A**  
 (Reinforcement in curb is not shown for clarity)

From Sta. 10+46.13 to Sta. 10+66.79 - C = 11'-6<sup>3</sup>/<sub>8</sub>" ; D = 3'-4"  
 From Sta. 10+66.79 to Sta. 10+82.50 - C = 10'-6<sup>3</sup>/<sub>8</sub>" ; D = 2'-4<sup>1</sup>/<sub>2</sub>"

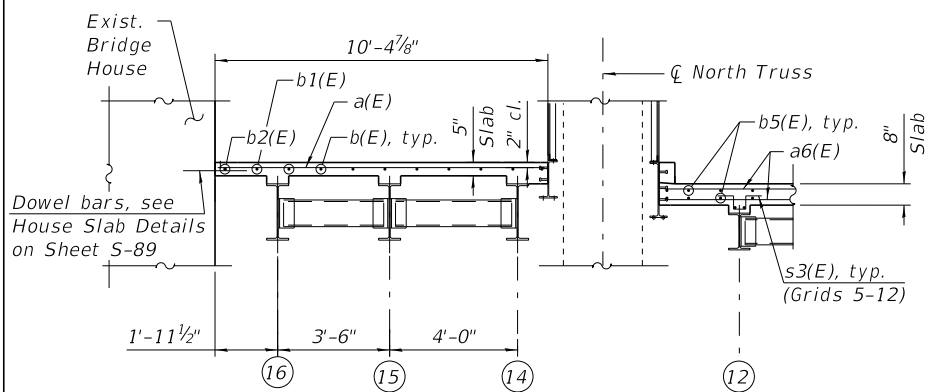


**FILLET REINFORCEMENT**

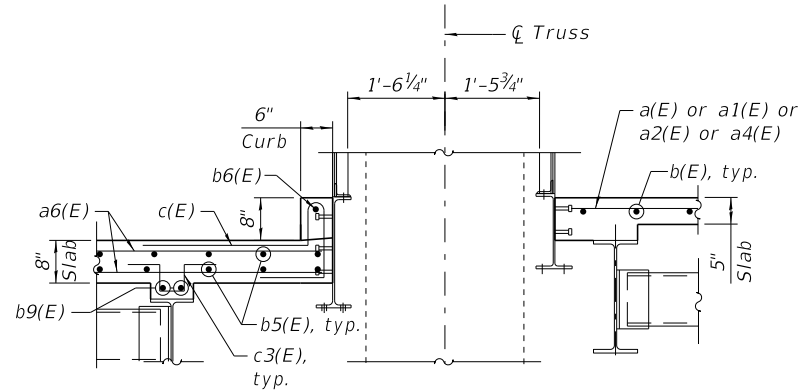
Additional reinforcement is required for fillet heights in excess of 6" as shown above. Bars s3(E) are detailed in the bar list. However, the placement of the bars is not shown in the plans. s3(E) are to be placed above beams at Grids 5 thru 12. The Contractor shall place the bars b9(E) between shear reinforcement in accordance with the above detail.

E = Varies from 2'-8" at East End to 5'-4<sup>3</sup>/<sub>4</sub>" at West End  
 F = Varies from 4'-3" at East End to 1'-6<sup>1</sup>/<sub>4</sub>" at West End  
 G = Varies from 1'-8<sup>5</sup>/<sub>8</sub>" at East End to 4'-7<sup>3</sup>/<sub>8</sub>" at West End

**SECTION B-B**

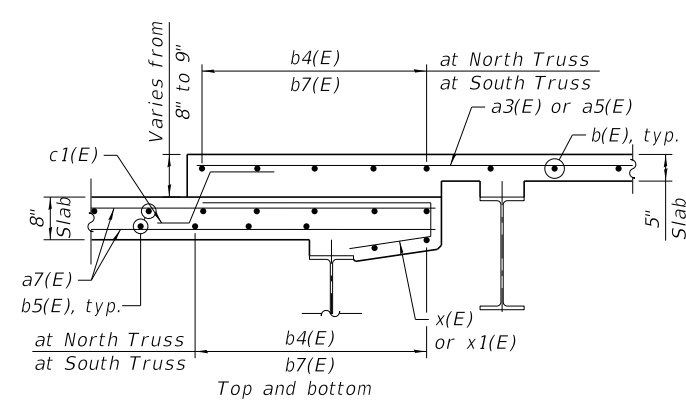


**SECTION C-C**



**DETAIL 1**

(South Truss shown. North Truss similar opposite hand)



**DETAIL 2**

(South Truss shown. North Truss similar opposite hand)



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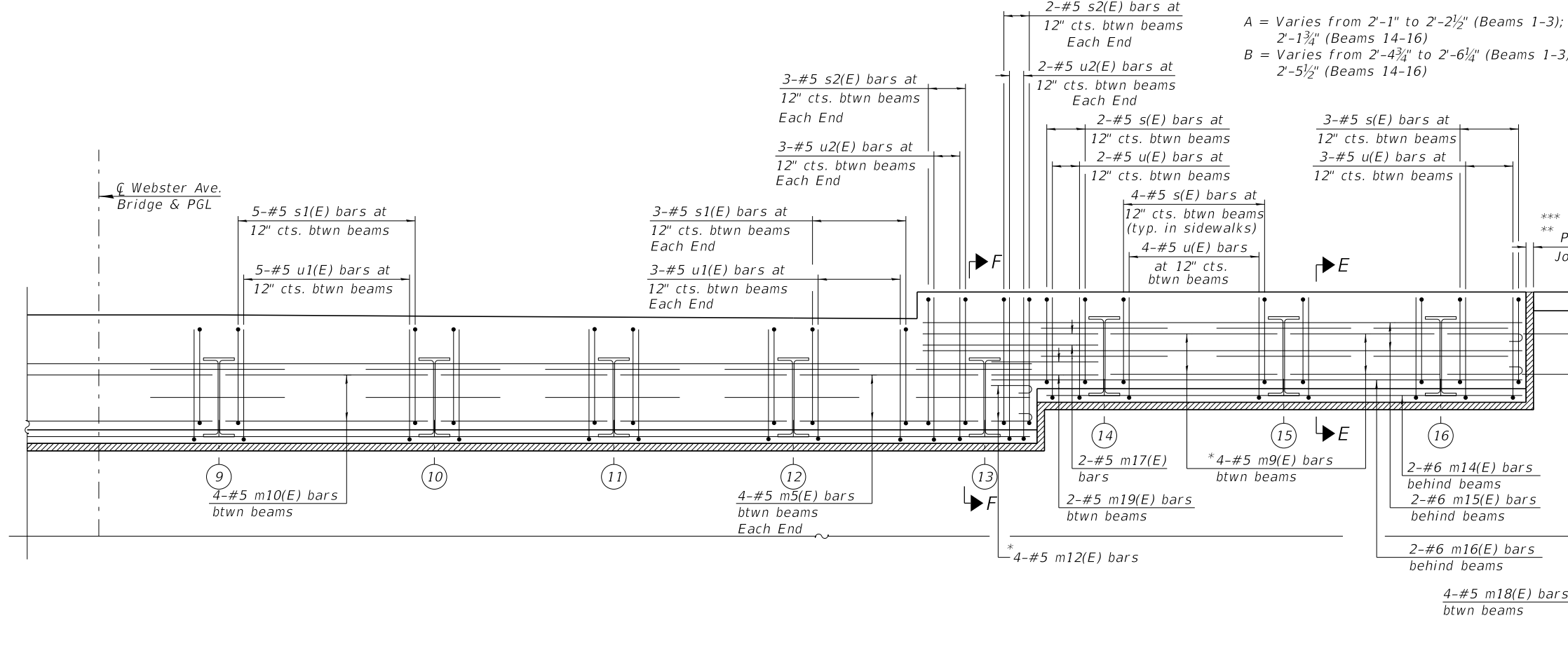
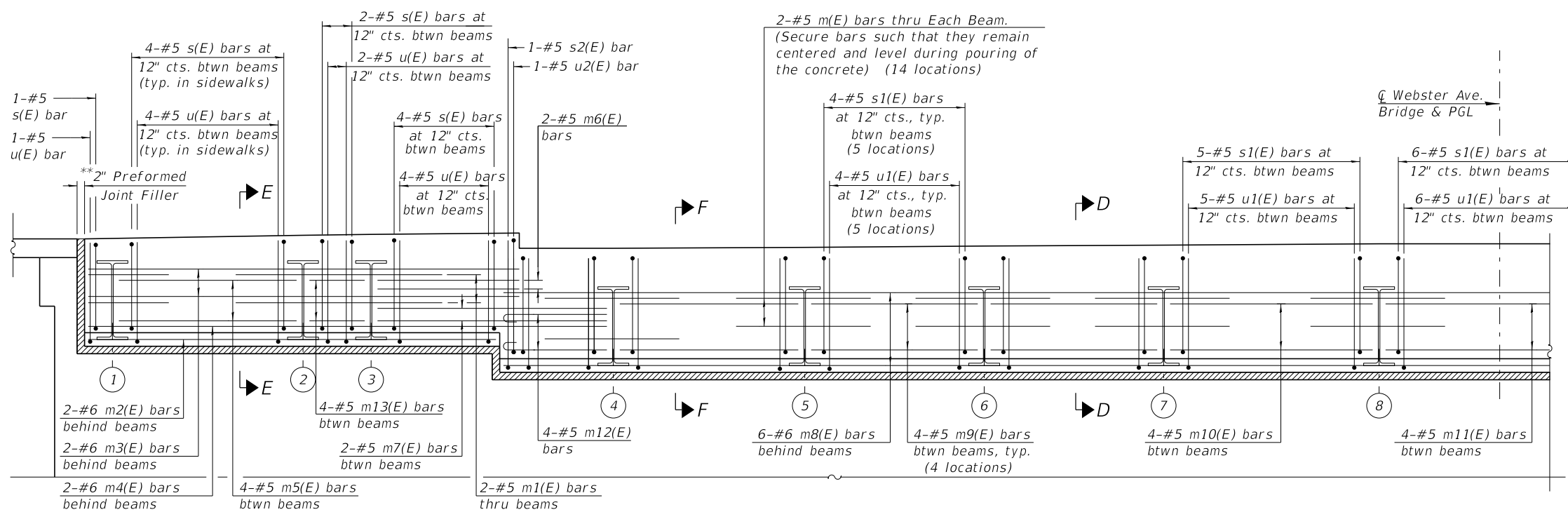
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PLOT DATE = \$DATE\$	DRAWN - SK	REVISED -
	CHECKED - MI	REVISED -

**CITY OF CHICAGO**  
 DEPARTMENT OF TRANSPORTATION  
 DIVISION OF ENGINEERING

**WEBSTER AVENUE BRIDGE OVER  
 THE NORTH BRANCH CHICAGO RIVER**

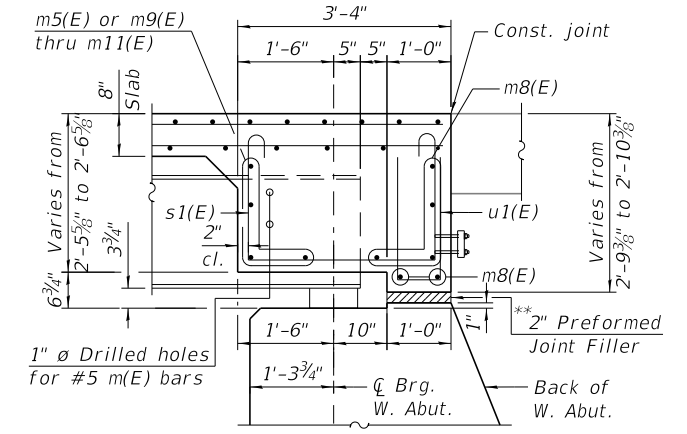
**CROSS SECTIONS  
 WEST FIXED SPANS  
 (STRUCTURE NO. 016-6057)**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-15
CDOT PROJECT NO. E-1-525			58 of 210

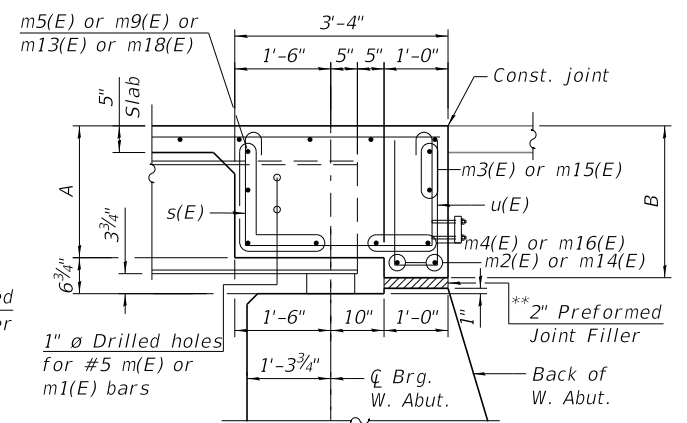


WEST ABUTMENT DIAPHRAGM ELEVATION

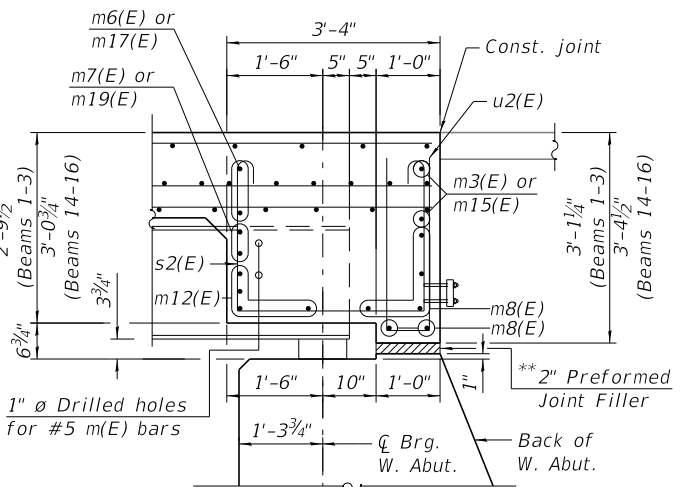
- NOTES:**
1. Reinforcement bars in diaphragm are billed with superstructure.
  2. Concrete in diaphragm is included with High Performance Concrete Superstructure.
  3. For Bill of Material and bar diagrams, see sheet S-18.
  4. For bearing details, see sheet S-35.
  5. Beams shall be braced for stability during erection and remain braced until deck is poured and cured.



SECTION D-D



SECTION E-E & SECTION G-G  
(For signal pole at Section G-G, see sheet S-13)



SECTION F-F

- \* Cut in field to fit
- \*\* 2" PJF (per Article 1051.09 of the Standard Specifications) full width and vertically at edges bonded to abutment cap with suitable adhesive as recommended by supplier.
- \*\*\* Width varies from 5 3/8" to 6 1/4"



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**CITY OF CHICAGO**  
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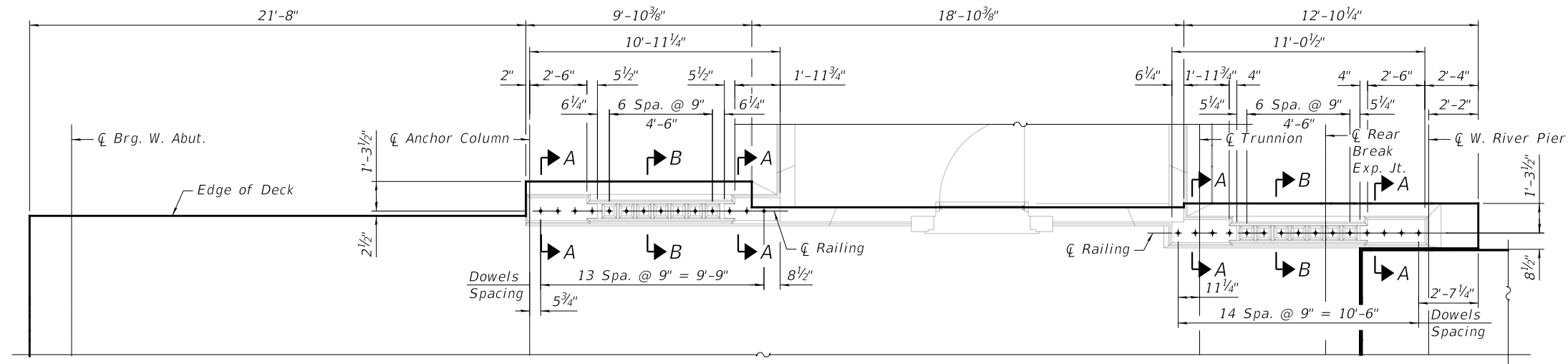
**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

**DIAPHRAGM DETAILS  
WEST FIXED SPANS  
(STRUCTURE NO. 016-6057)**

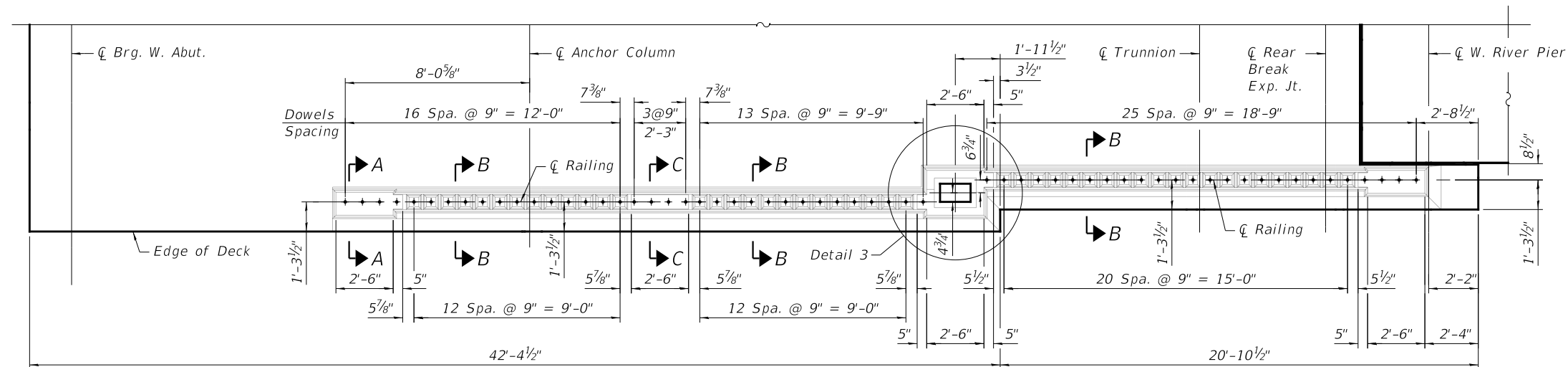
F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-16
CDOT PROJECT NO. E-1-525			59 of 210

**NOTES:**

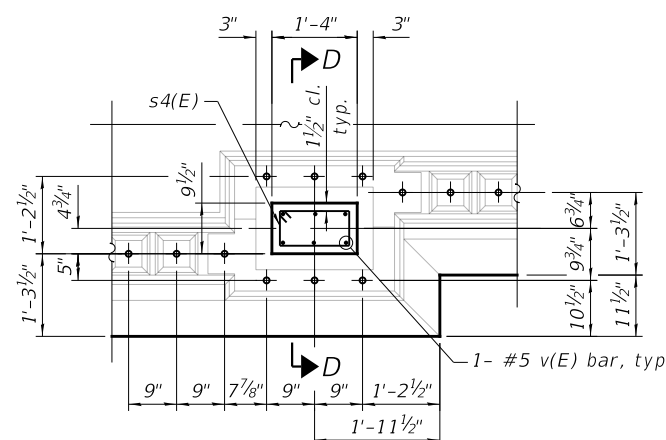
1. Reinforcement bars designated (E) shall be epoxy coated.
2. See sheet S-15 for deck cross sections.
3. For bar diagrams and Bill of material, see sheet S-18
4. See architectural (A-series) sheets for precast railing details.
5. The Contractor must use approved single straight coil loop inserts when pendant mounting threaded rods to a sidewalk. The single straight loop inserts must be cast into the concrete sidewalk.



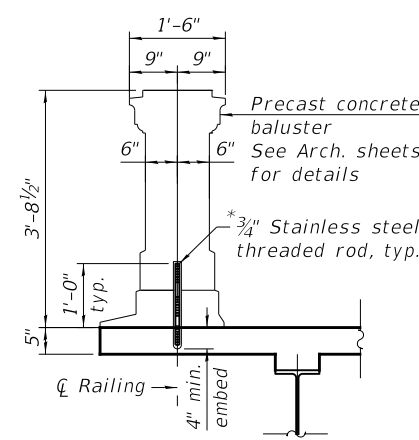
**NORTH RAILING PARTIAL LAYOUT PLAN**



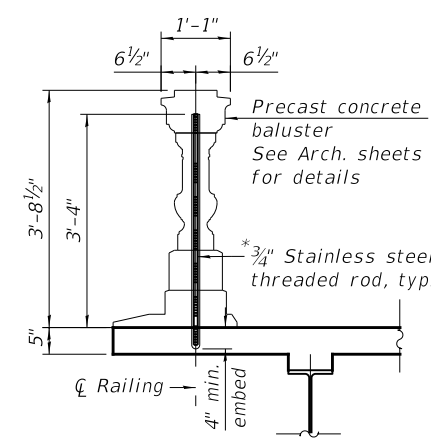
**SOUTH RAILING PARTIAL LAYOUT PLAN**



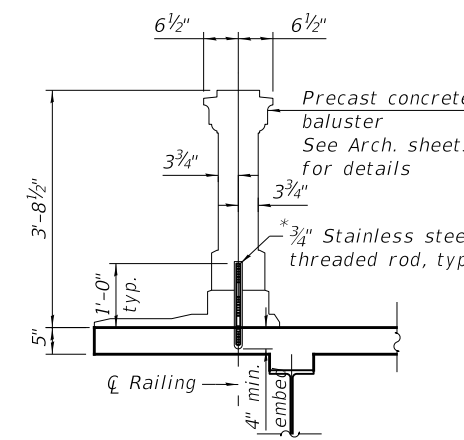
**DETAIL 3**



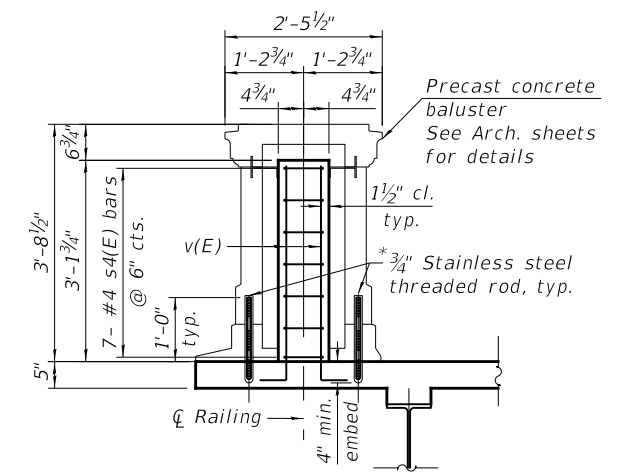
**SECTION A-A**



**SECTION B-B**



**SECTION C-C**



**SECTION D-D**

\* Included with the cost of "High Performance Concrete Superstructure".

**HBM**  
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**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

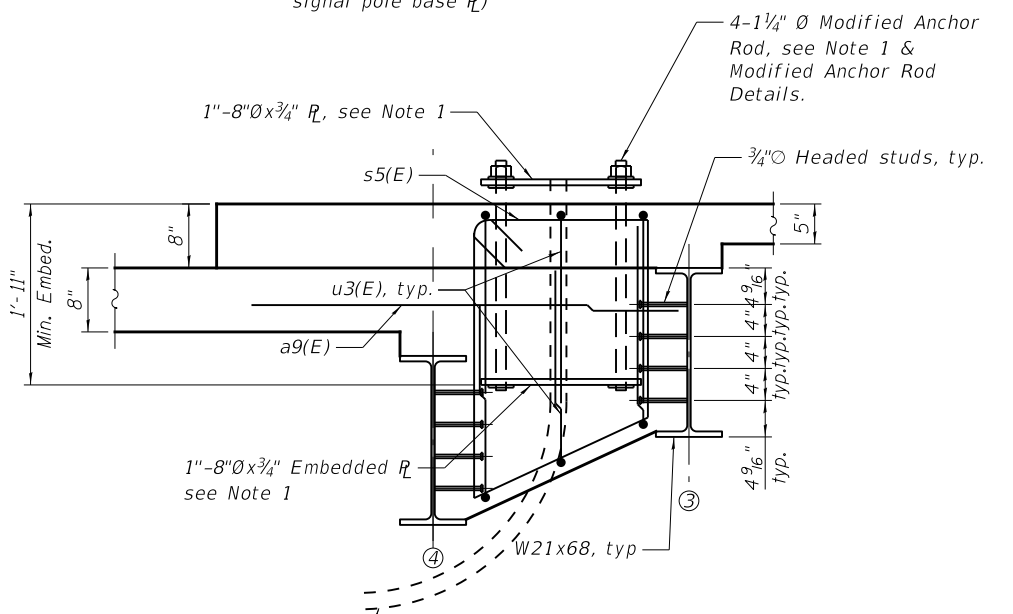
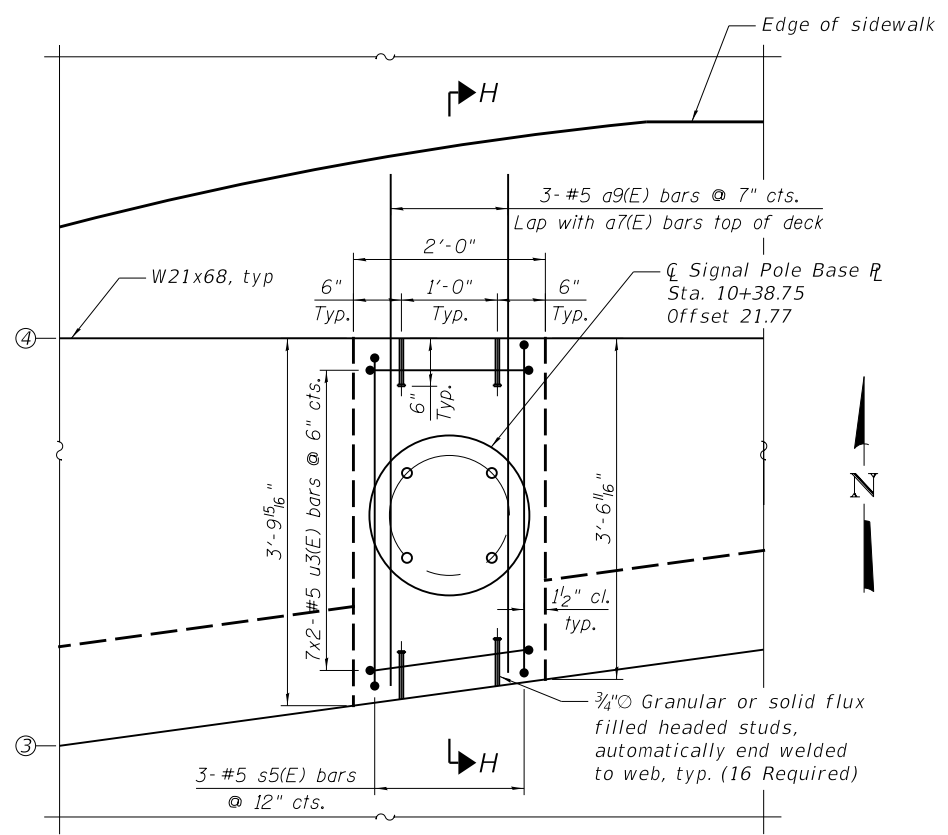
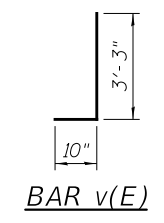
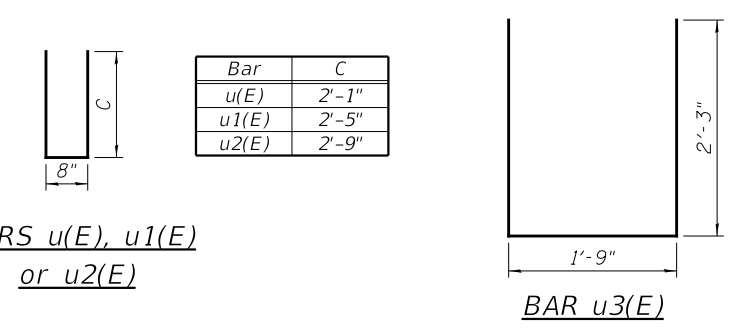
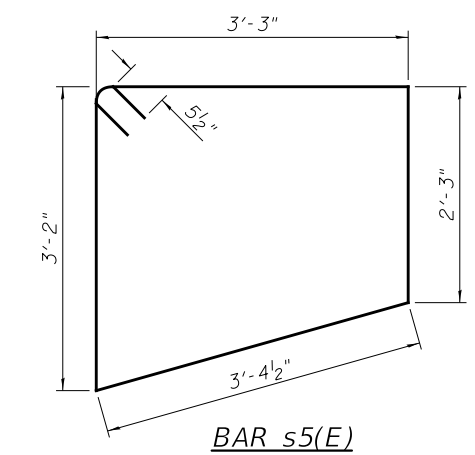
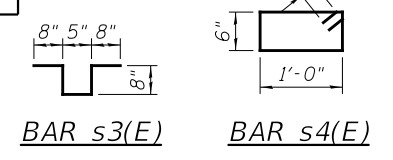
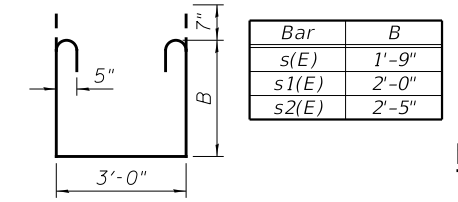
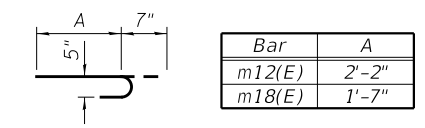
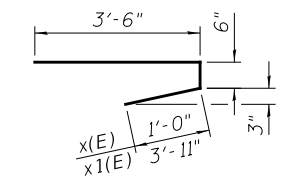
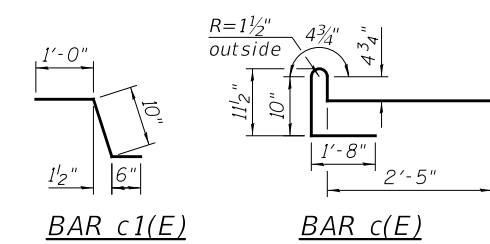
**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

**PARAPET ELEVATIONS AND DETAILS  
WEST FIXED SPANS  
(STRUCTURE NO. 016-6057)**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-17
CDOT PROJECT NO. E-1-525			60 of 210

**BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a(E)	20	#5	10'-1"	=====
a1(E)	11	#5	11'-2"	=====
a2(E)	25	#5	10'-3"	=====
a3(E)	22	#5	13'-8"	=====
a4(E)	22	#5	11'-2"	=====
a5(E)	22	#5	15'-2"	=====
a6(E)	104	#5	35'-8"	=====
a7(E)	63	#5	45'-6"	=====
a8(E)	12	#5	1'-8"	=====
a9(E)	3	#5	7'-0"	=====
b(E)	36	#5	30'-8"	=====
b1(E)	8	#5	33'-3"	=====
b2(E)	1	#5	41'-3"	=====
b3(E)	2	#5	9'-6"	=====
b4(E)	15	#5	20'-11"	=====
b5(E)	148	#5	29'-11"	=====
b6(E)	2	#5	35'-0"	=====
b7(E)	18	#5	21'-1"	=====
b8(E)	1	#5	42'-0"	=====
b9(E)	32	#5	25'-0"	=====
c(E)	122	#4	5'-10"	=====
c1(E)	44	#5	2'-4"	=====
m(E)	28	#5	3'-0"	=====
m1(E)	2	#5	4'-6"	=====
m2(E)	2	#6	8'-11"	=====
m3(E)	2	#6	9'-4"	=====
m4(E)	2	#6	11'-5"	=====
m5(E)	12	#5	3'-11"	=====
m6(E)	2	#5	3'-0"	=====
m7(E)	2	#5	5'-0"	=====
m8(E)	6	#6	42'-10"	=====
m9(E)	24	#5	3'-8"	=====
m10(E)	8	#5	4'-6"	=====
m11(E)	4	#5	5'-0"	=====
m12(E)	8	#5	2'-9"	=====
m13(E)	4	#5	1'-2"	=====
m14(E)	2	#6	10'-7"	=====
m15(E)	2	#6	13'-3"	=====
m16(E)	2	#6	11'-9"	=====
m17(E)	2	#5	3'-10"	=====
m18(E)	4	#5	2'-2"	=====
m19(E)	2	#5	2'-4"	=====
s(E)	24	#5	7'-8"	=====
s1(E)	42	#5	8'-2"	=====
s2(E)	6	#5	9'-0"	=====
s3(E)	416	#5	3'-1"	=====
s4(E)	7	#4	3'-9"	=====
s5(E)	3	#5	13'-0"	=====
u(E)	24	#5	4'-10"	=====
u1(E)	42	#5	5'-6"	=====
u2(E)	6	#5	6'-2"	=====
u3(E)	14	#5	6'-3"	=====
v(E)	6	#5	4'-1"	=====
x(E)	37	#5	5'-0"	=====
x1(E)	37	#5	7'-11"	=====
Bridge Deck Grooving	Sq. Yd.	225		
Reinforcement Bars, Epoxy Coated	Pound	20,610		
High Performance Concrete Superstructure	Cu. Yd.	100.5		
Protective Concrete Sealer	Sq. Yd.	464		



**NOTES:**  
 1. The cost of furnishing and erecting all signal poles base plates and anchor rods shall be included with High Performance Concrete Superstructures.  
 2. For Modified Anchor Rod Details, see Sheet S-13.

**MINIMUM BAR LAP**  
 #5 bar = 3'-6"



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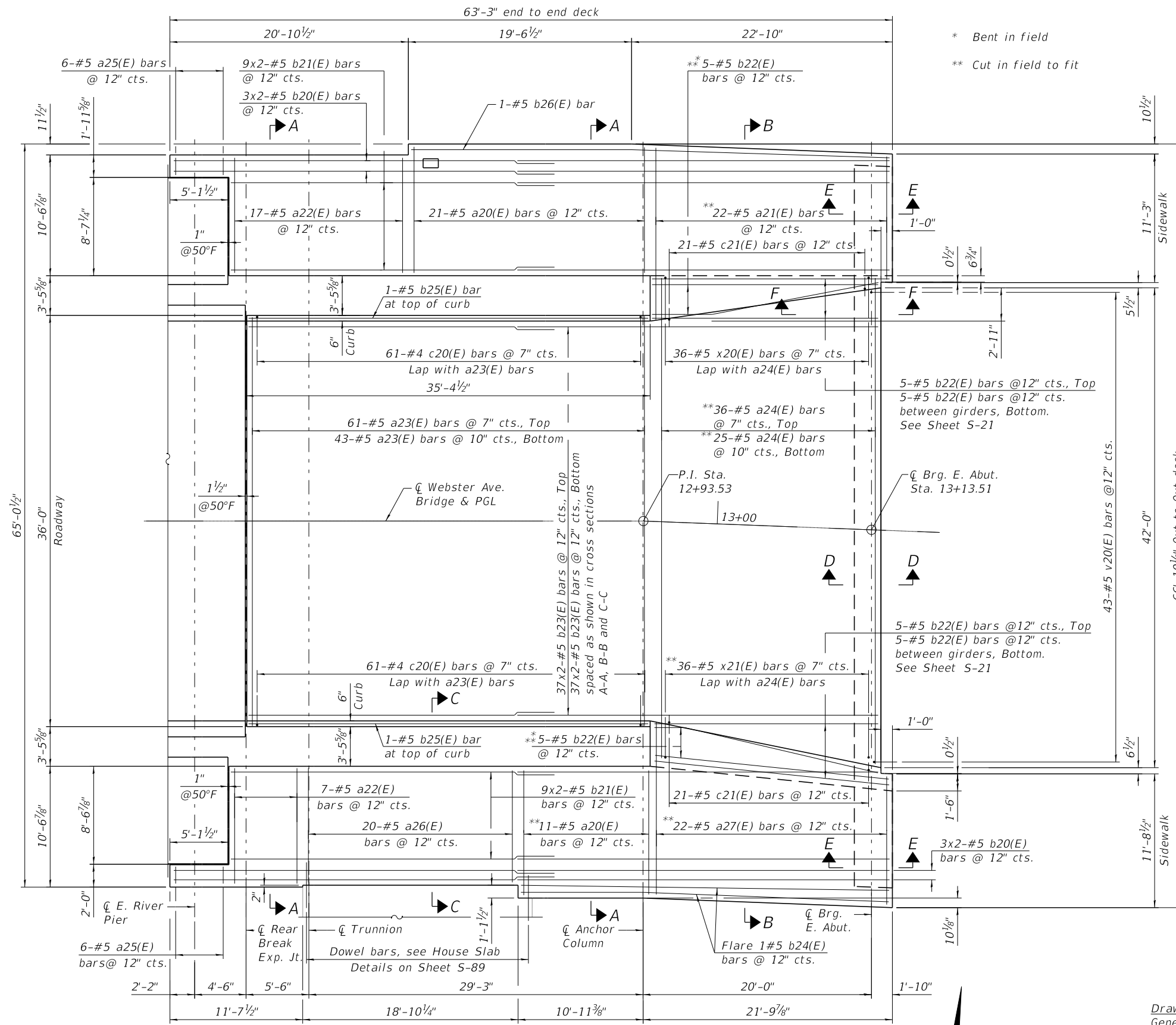
**WEBSTER AVENUE BRIDGE OVER  
 THE NORTH BRANCH CHICAGO RIVER**

**SUPERSTRUCTURE DETAILS  
 WEST FIXED SPANS  
 (STRUCTURE NO. 016-6057)**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-18
CDOT PROJECT NO. E-1-525			61 of 210

**NOTES:**

1. Reinforcement bars designated (E) shall be epoxy coated.
2. Bars indicated as 9x2-#5 etc. indicates 9 lines of bars with two lengths per line.
3. For more dimensions, see Sheet S-20.
4. For sections A-A, B-B, and C-C, see Sheet S-21.
5. For sections D-D, E-E, and F-F, see Sheet S-22.
6. For bar diagrams and Bill of Material, see Sheet S-24.
7. For preformed joint filler quantities & details between the sidewalks and concrete deck, see civil plans.



**PLAN**

**REFERENCE DRAWINGS**

Drawing: General Plan - Substructure and Superstructure  
 Structural Repairs, Redecking and Rehabilitation  
 Sheet No.: 1660570004  
 1660570131



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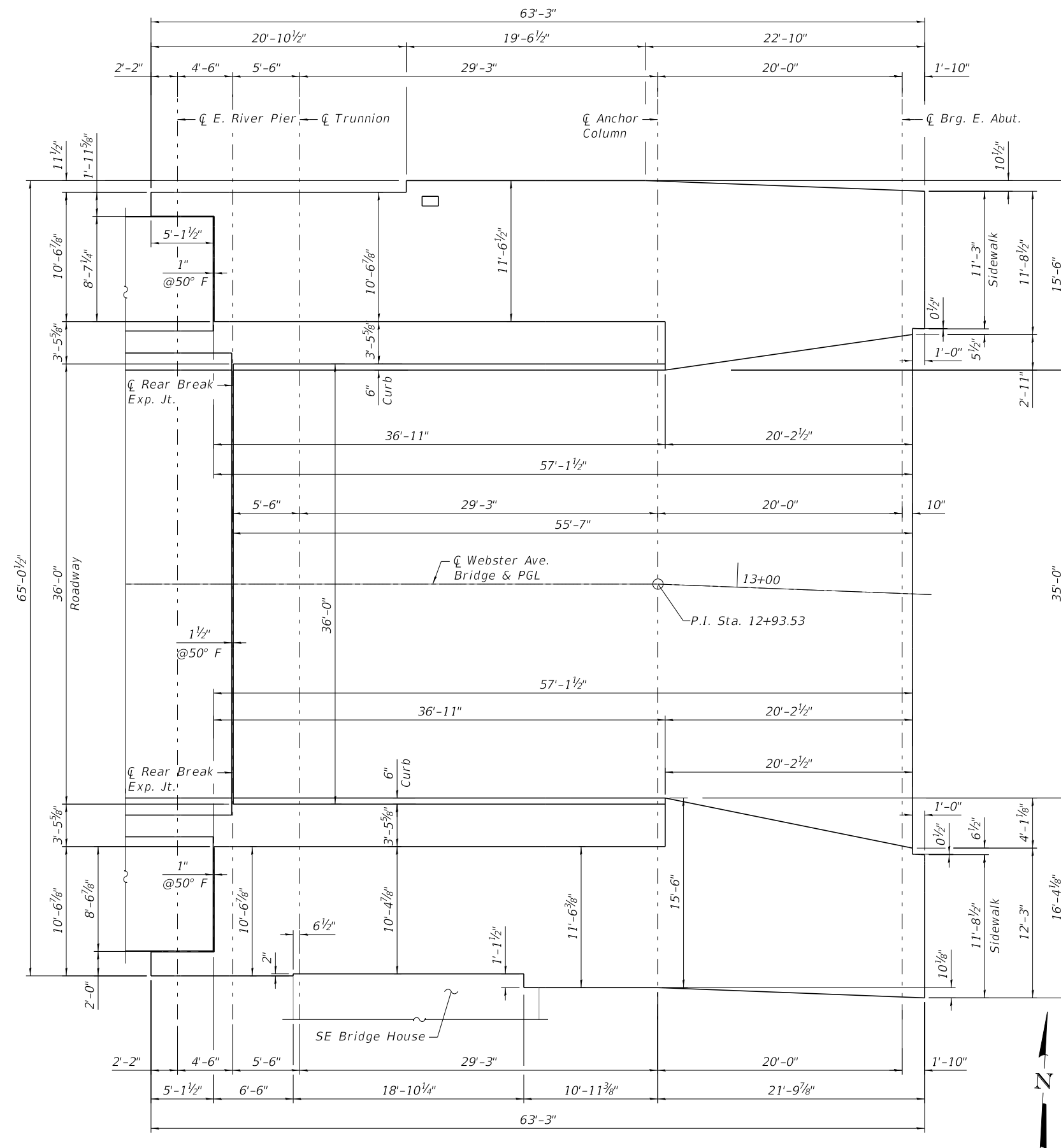
**WEBSTER AVENUE BRIDGE OVER  
 THE NORTH BRANCH CHICAGO RIVER**

**SUPERSTRUCTURE PLAN  
 EAST FIXED SPANS  
 (STRUCTURE NO. 016-6057)**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-19
CDOT PROJECT NO. E-1-525			62 of 210

**MINIMUM BAR LAP**

#5 bar = 3'-6"



PLAN



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PLOT SCALE = N.T.S.	DRAWN - SK	REVISED -
PLOT DATE = \$DATE\$	CHECKED - MI	REVISED -

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**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

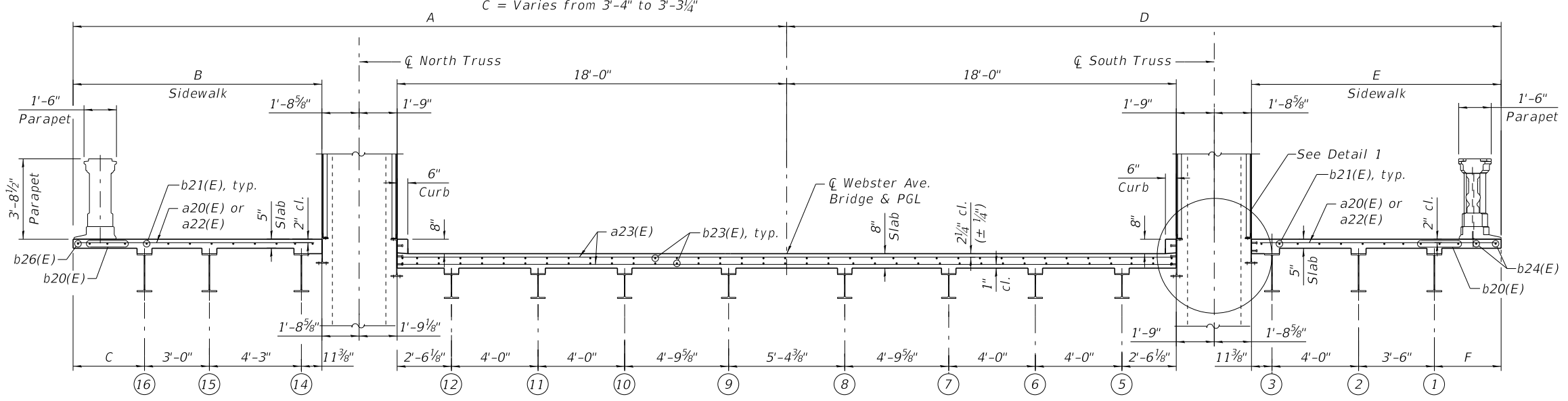
**SUPERSTRUCTURE PLAN GEOMETRICS  
EAST FIXED SPANS  
(STRUCTURE NO. 016-6057)**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-20
CDOT PROJECT NO. E-1-525			63 of 210

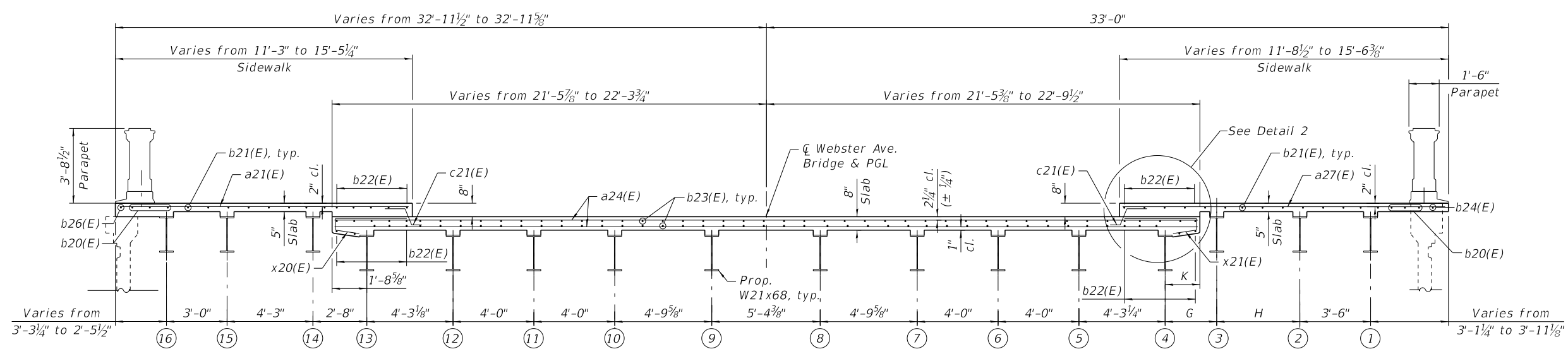
From Sta. 12+57.21 to Sta. 12+72.95 - A = 32'-0 $\frac{1}{2}$ "; B = 10'-6 $\frac{7}{8}$ "; C = 2'-4 $\frac{1}{2}$ "  
 From Sta. 12+72.95 to Sta. 12+92.50 - A = 33'-0"; B = 11'-6 $\frac{1}{2}$ "; C = 3'-4"  
 From Sta. 12+92.50 to Sta. 12+94.12 - A = Varies from 32'-11 $\frac{1}{2}$ " to 33'-0";  
 B = Varies from 11'-6 $\frac{3}{8}$ " to 11'-5 $\frac{5}{8}$ ";  
 C = Varies from 3'-4" to 3'-3 $\frac{1}{4}$ "

From Sta. 12+57.21 to Sta. 12+63.71 - D = 32'-0 $\frac{1}{2}$ "; E = 10'-6 $\frac{7}{8}$ "; F = 2'-1 $\frac{1}{2}$ "  
 From Sta. 12+63.71 to Sta. 12+82.56 - D = 31'-10 $\frac{1}{2}$ "; E = 10'-4 $\frac{7}{8}$ "; F = 1'-11 $\frac{1}{2}$ "  
 From Sta. 12+82.56 to Sta. 12+94.12 - D = 33'-0"; E = Varies from 11'-6 $\frac{3}{8}$ " to 11'-6 $\frac{5}{8}$ ";  
 F = Varies from 3'-1" to 3'-1 $\frac{1}{4}$ "

- NOTES:**
- For additional notes, see Sheet S-19.
  - For bar diagrams and Bill of Material, see Sheet S-24.
  - Stations are measured along PGL.

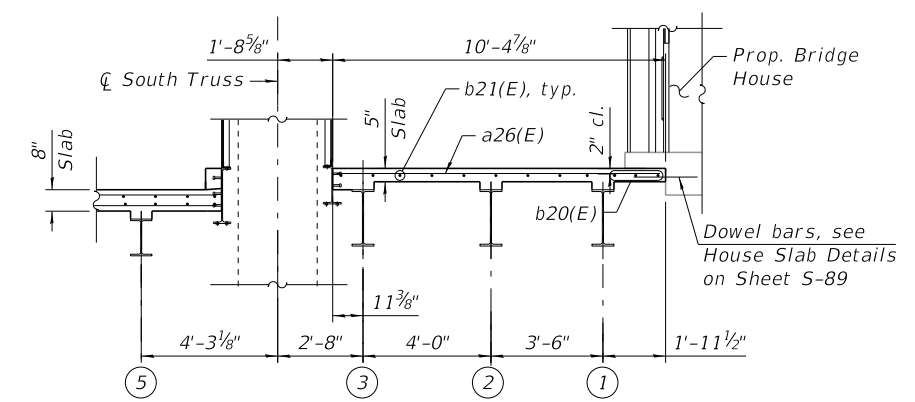


**SECTION A-A**  
 (Reinforcement in curb is not shown for clarity)

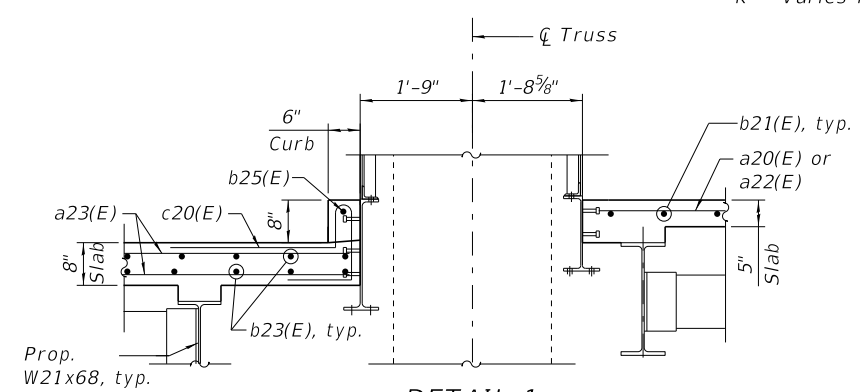


**SECTION B-B**

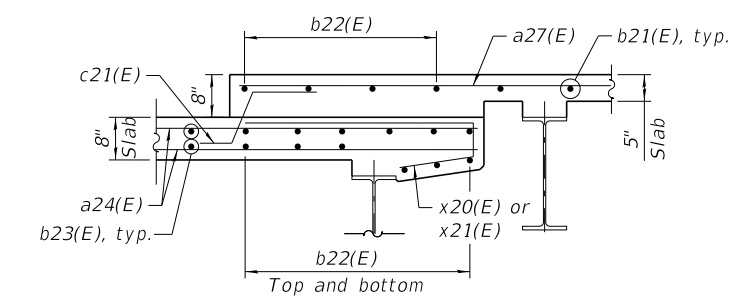
G = Varies from 2'-8" at West End to 4'-8 $\frac{1}{2}$ " at East End  
 H = Varies from 4'-0" at West End to 1'-11 $\frac{1}{2}$ " at East End  
 K = Varies from 1'-8 $\frac{3}{8}$ " at West End to 3'-10 $\frac{1}{2}$ " at East End



**SECTION C-C**



**DETAIL 1**  
 (South Truss shown. North Truss similar opposite hand.)



**DETAIL 2**  
 (South Truss shown. North Truss similar opposite hand.)



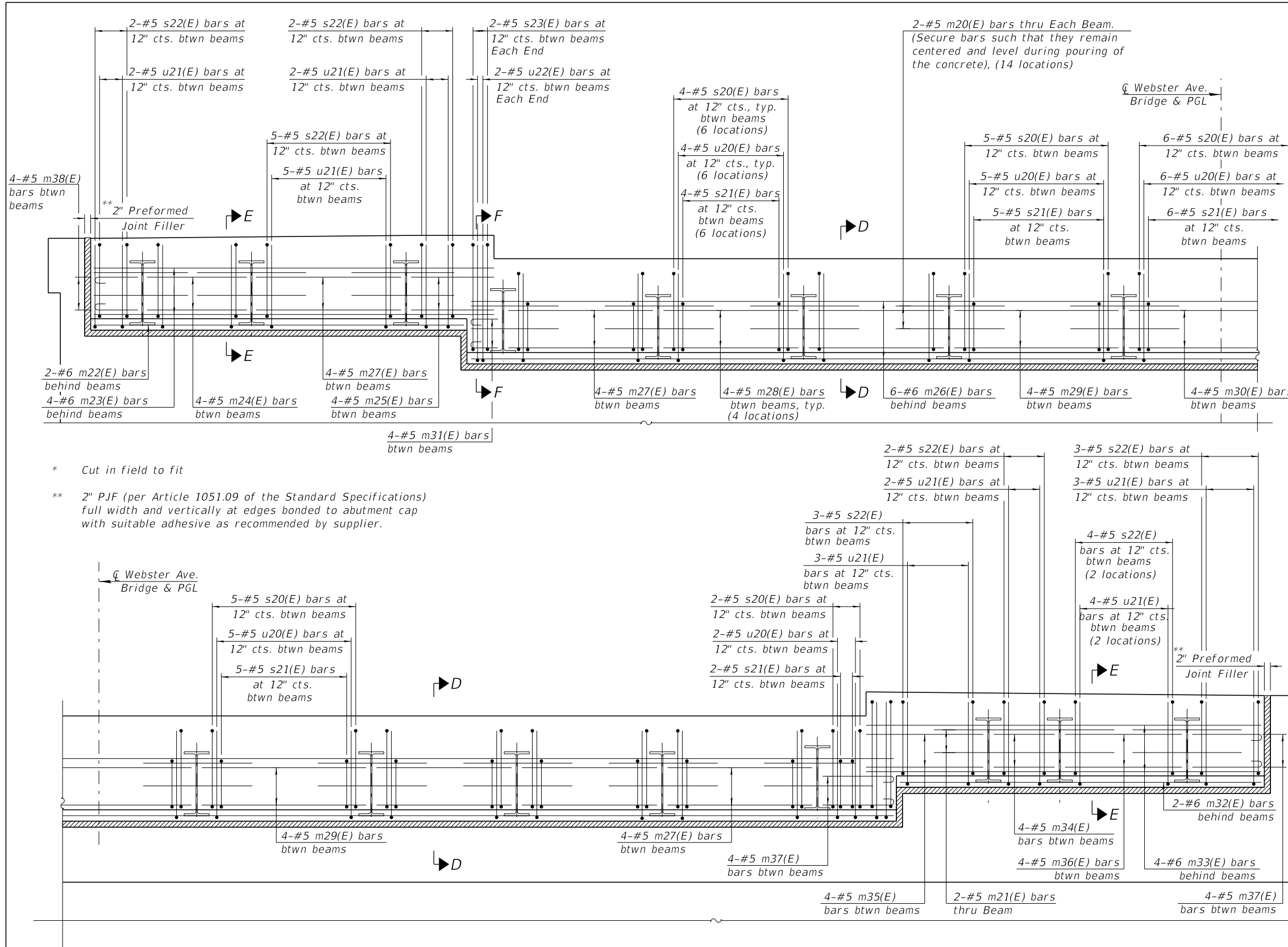
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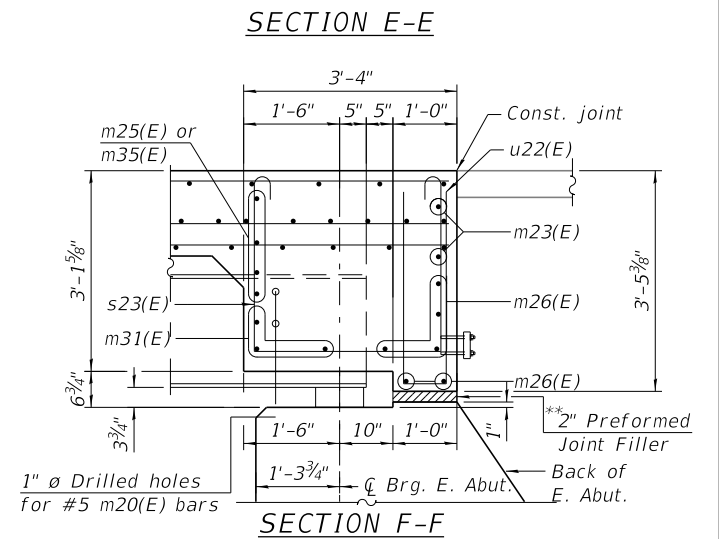
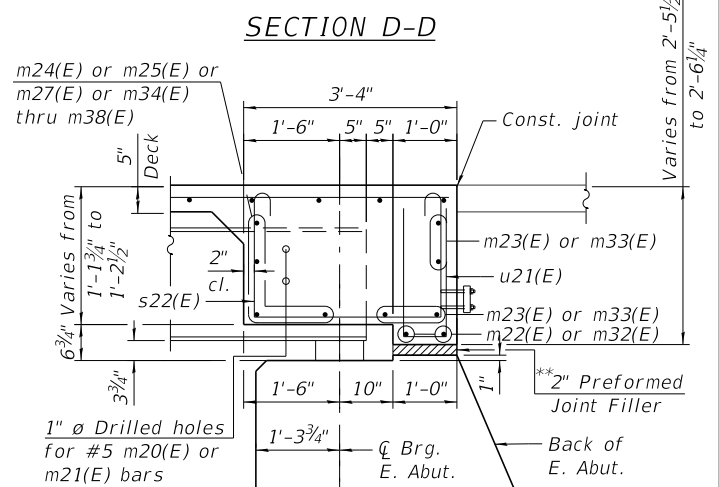
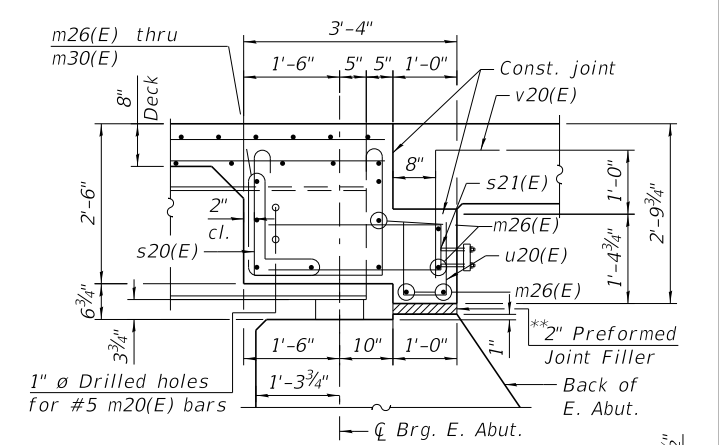
**WEBSTER AVENUE BRIDGE OVER  
 THE NORTH BRANCH CHICAGO RIVER**

**CROSS SECTIONS  
 EAST FIXED SPANS  
 (STRUCTURE NO. 016-6057)**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-21
CDOT PROJECT NO. E-1-525			64 of 210



- NOTES:**
1. Reinforcement bars in diaphragm are billed with superstructure.
  2. Concrete in diaphragm is included with High Performance Concrete Superstructure.
  3. For bar diagrams and Bill of Material, see sheet S-24.
  4. For bearing details see sheet S-35.
  5. Beams shall be braced for stability during erection and remain braced until deck is poured and cured.



**EAST ABUTMENT DIAPHRAGM ELEVATION**  
(Looking East)



USER NAME =	DESIGNED - SK	REVISED -
PLOT SCALE = N.T.S.	CHECKED - MI	REVISED -
PLOT DATE = \$DATE\$	DRAWN - SK	REVISED -
	CHECKED - MI	REVISED -

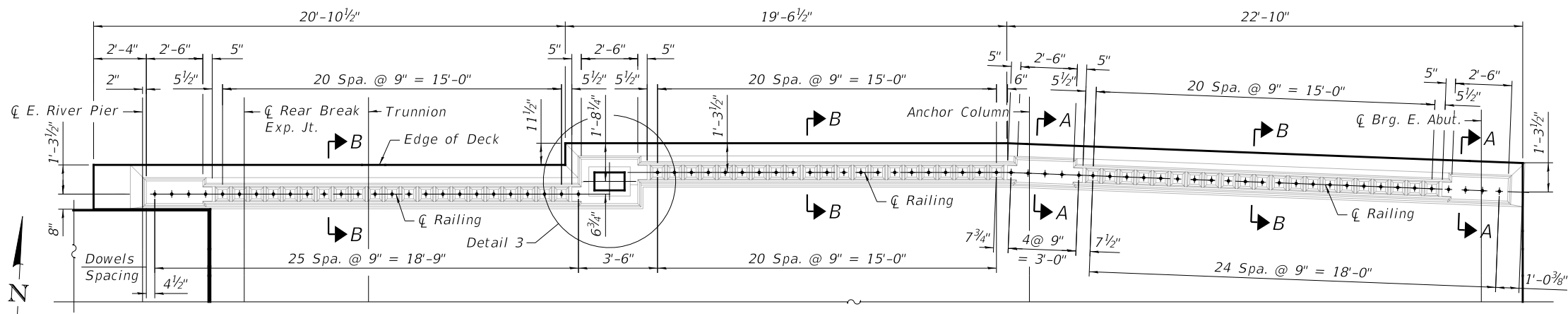
**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

**WEBSTER AVENUE BRIDGE OVER THE NORTH BRANCH CHICAGO RIVER**

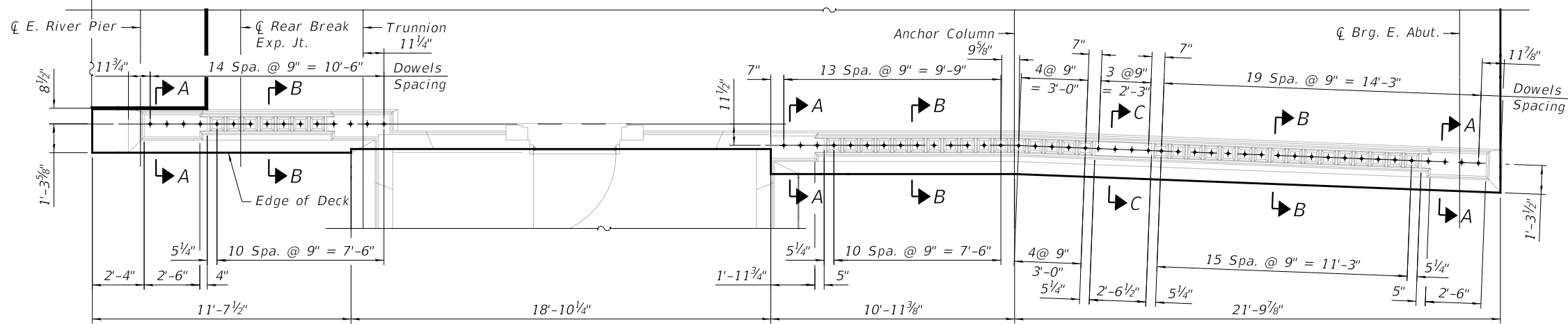
**DIAPHRAGM DETAILS EAST FIXED SPANS (STRUCTURE NO. 016-6057)**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-22
CDOT PROJECT NO. E-1-525			65 of 210



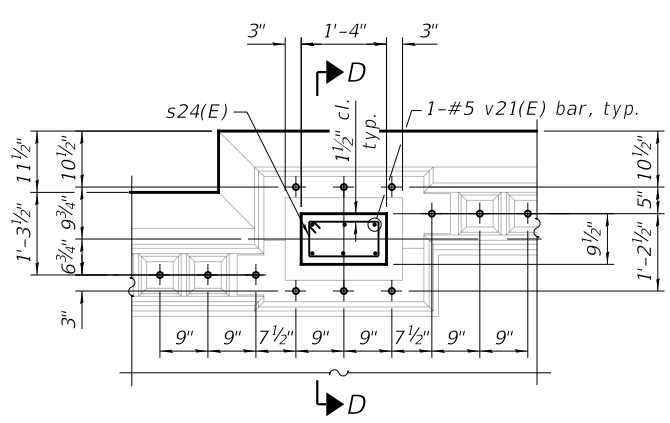


NORTH RAILING PARTIAL LAYOUT PLAN

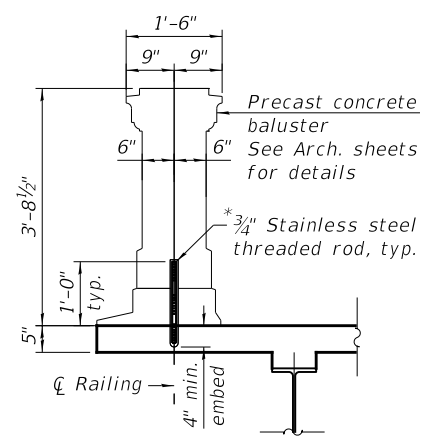


SOUTH RAILING PARTIAL LAYOUT PLAN

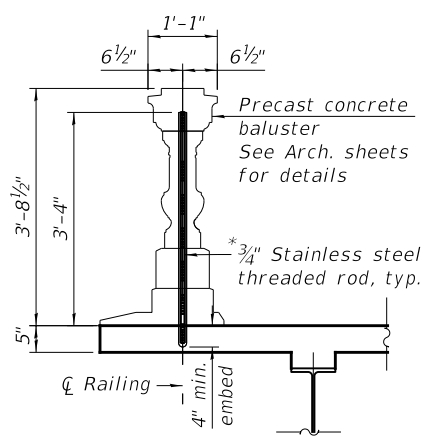
- NOTES:**
1. Reinforcement bars designated (E) shall be epoxy coated.
  2. See sheet S-21 for deck cross sections.
  3. For bar diagrams and Bill of material, see sheet S-24
  4. See architectural (A-series) sheets for precast railing details.
  5. The Contractor must use approved single straight coil loop inserts when pendant mounting threaded rods to a sidewalk. The single straight loop inserts must be cast into the concrete sidewalk.



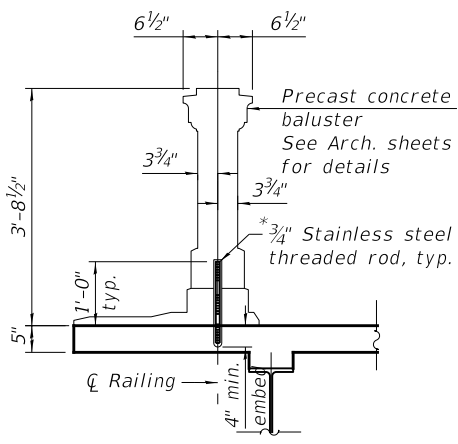
DETAIL 3



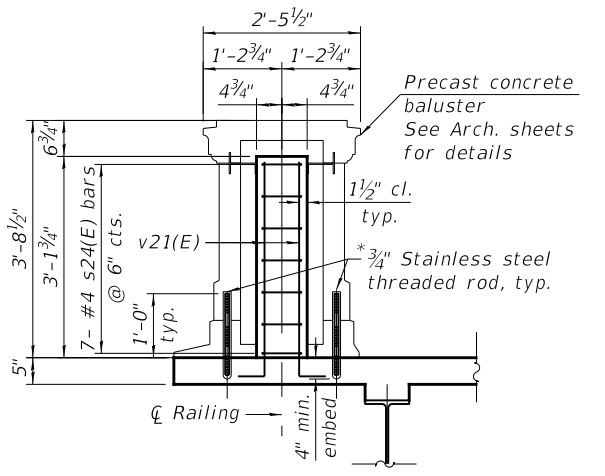
SECTION A-A



SECTION B-B



SECTION C-C



SECTION D-D

\* Included with the cost of "High Performance Concrete Superstructure".



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PLOT DATE = 10/5/2020	DRAWN - SK	REVISED -
	CHECKED - MI	REVISED -

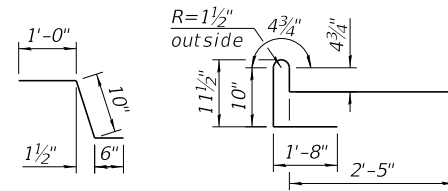
**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

**WEBSTER AVENUE BRIDGE OVER THE NORTH BRANCH CHICAGO RIVER**

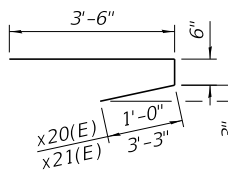
**PARAPET ELEVATIONS AND DETAILS EAST FIXED SPANS (STRUCTURE NO. 016-6057)**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-23
CDOT PROJECT NO. E-1-525			66 of 210

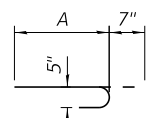
**BILL OF MATERIAL**



**BAR c21(E) BAR c20(E)**

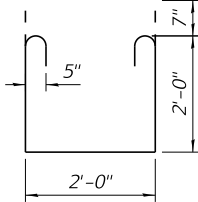


**BARS x20(E) or x21(E)**

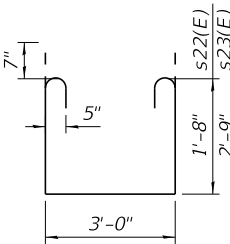


Bar	A
m31(E)	8"
m37(E)	1'-9"
m38(E)	1'-1"

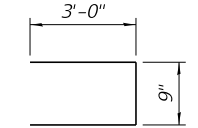
**BARS m31(E) or m37(E) or m38(E)**



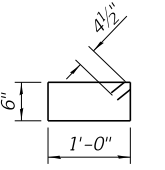
**BAR s20(E)**



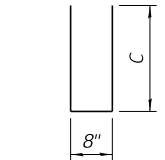
**BARS s22(E) or s23(E)**



**BAR s21(E)**

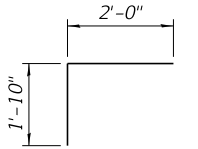


**BAR s24(E)**

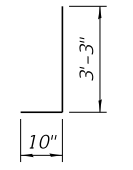


**BARS u20(E), u21(E) or u22(E)**

Bar	C
u20(E)	1'-1"
u21(E)	2'-2"
u22(E)	3'-1"



**BAR v20(E)**



**BAR v21(E)**

Bar	No.	Size	Length	Shape
a20(E)	32	#5	11'-2"	—
a21(E)	22	#5	15'-2"	—
a22(E)	24	#5	10'-3"	—
a23(E)	104	#5	35'-8"	—
a24(E)	61	#5	44'-8"	—
a25(E)	12	#5	1'-8"	—
a26(E)	20	#5	10'-1"	—
a27(E)	22	#5	15'-2"	—
b20(E)	12	#5	33'-3"	—
b21(E)	36	#5	30'-8"	—
b22(E)	30	#5	21'-0"	—
b23(E)	148	#5	29'-4"	—
b24(E)	2	#5	32'-5"	—
b25(E)	2	#5	35'-0"	—
b26(E)	1	#5	42'-1"	—
c20(E)	122	#4	5'-10"	└
c21(E)	42	#5	2'-4"	└
m20(E)	28	#5	3'-0"	—
m21(E)	2	#5	5'-0"	—
m22(E)	2	#6	10'-0"	—
m23(E)	4	#6	10'-9"	—
m24(E)	4	#5	2'-8"	—
m25(E)	4	#5	2'-2"	—
m26(E)	6	#6	42'-4"	—
m27(E)	12	#5	3'-11"	—
m28(E)	16	#5	3'-8"	—
m29(E)	8	#5	4'-6"	—
m30(E)	4	#5	5'-0"	—
m31(E)	4	#5	1'-3"	└
m32(E)	2	#6	9'-9"	—
m33(E)	4	#5	10'-7"	—
m34(E)	4	#5	1'-8"	—
m35(E)	4	#5	3'-0"	—
m36(E)	4	#5	3'-2"	—
m37(E)	8	#5	2'-4"	└
m38(E)	4	#5	1'-8"	└
s20(E)	42	#5	7'-2"	└
s21(E)	42	#5	6'-9"	└
s22(E)	25	#5	7'-6"	└
s23(E)	4	#5	9'-8"	└
s24(E)	7	#4	3'-9"	└
u20(E)	42	#5	2'-10"	└
u21(E)	25	#5	5'-0"	└
u22(E)	4	#5	6'-10"	└
v20(E)	43	#5	3'-10"	└
v21(E)	6	#5	4'-1"	└
x20(E)	36	#5	5'-0"	└
x21(E)	36	#5	7'-3"	└
Bridge Deck Grooving			Sq. Yd.	223
Reinforcement Bars, Epoxy Coated			Pound	18,500
High Performance Concrete Superstructure			Cu. Yd.	95.6
Protective Concrete Sealer			Sq. Yd.	457

**MINIMUM BAR LAP**  
#5 bar = 3'-6"



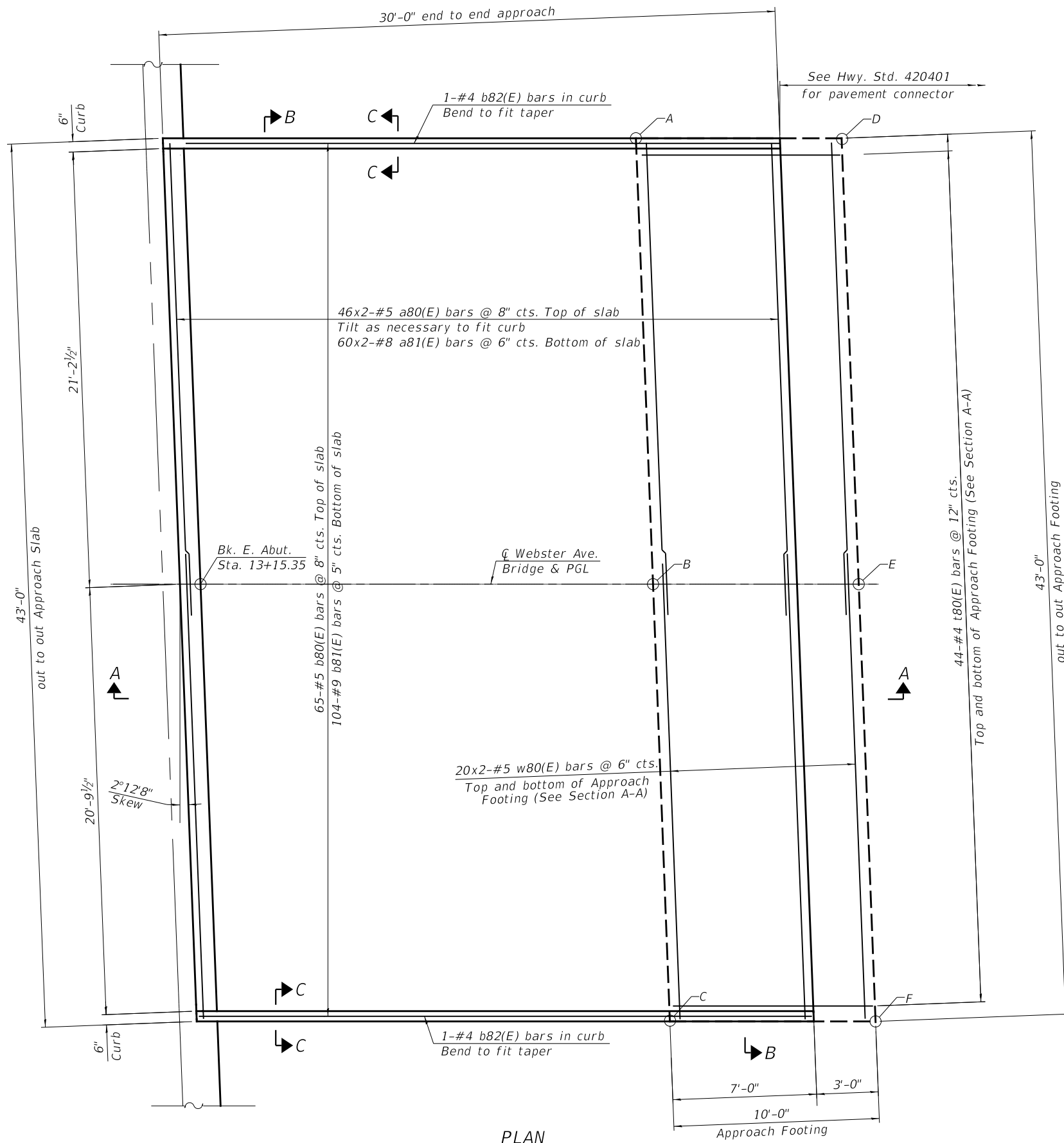
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DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

**WEBSTER AVENUE BRIDGE OVER THE NORTH BRANCH CHICAGO RIVER**

**SUPERSTRUCTURE DETAILS EAST FIXED SPANS (STRUCTURE NO. 016-6057)**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-24
CDOT PROJECT NO. E-1-525			67 of 210



**TOP AND BOTTOM ELEVATIONS  
FOR APPROACH FOOTING**

Point	Approach	
	Top	Bottom
A	18.48	17.65
B	18.78	17.95
C	18.44	17.61
D	18.07	17.23
E	18.48	17.64
F	18.03	17.19

**NOTES:**

1. For Sections A-A, B-B, and C-C, see Sheet S-26.
2. a80(E) and a81(E) bar spacings measured along  $\hat{C}$  Rdwy.
3. Bars indicated thus 46x2 -#5 indicates 46 lines of bars with 2 length per line.

**PLAN**

**REFERENCE DRAWINGS**

Drawing  
East Approach - Retaining Wall Details and Reinforcement Bars  
General Plan of Approaches  
Paving on Approaches

Sheet No.  
1660570051  
1660570052  
1660570060



**HBM**  
ENGINEERING GROUP, LLC

**wsp**  
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FAX: (312) 782-1884

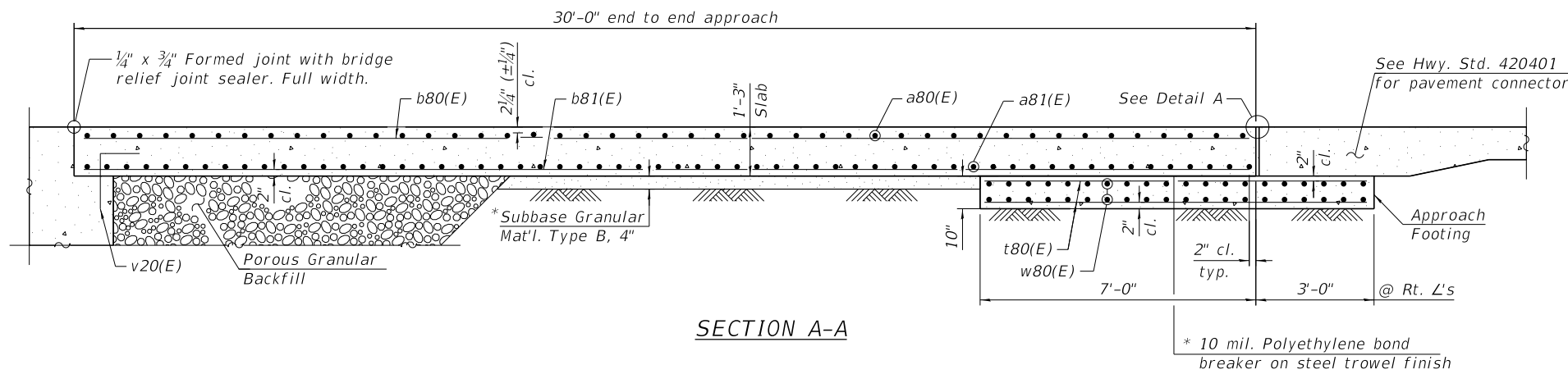
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**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

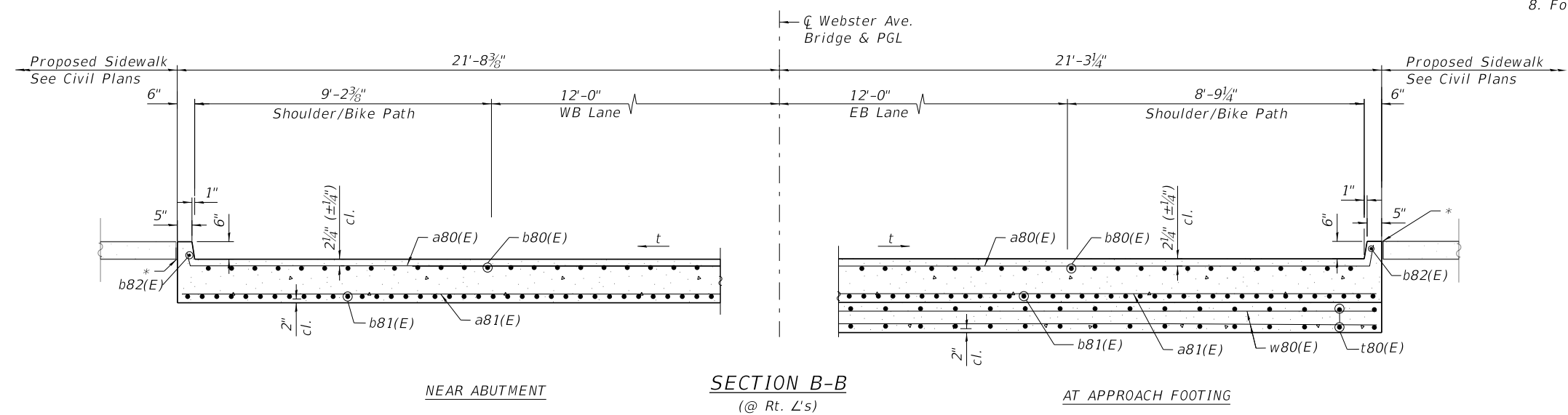
**EAST APPROACH SLAB  
(STRUCTURE NO. 016-6057)**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	<b>S-25</b>
CDOT PROJECT NO. E-1-525			68 of 210



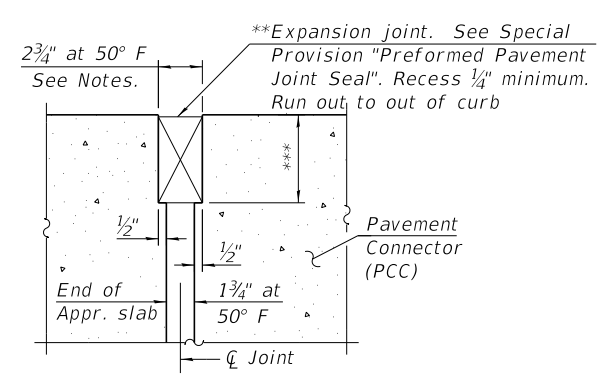
**NOTES:**

1. The joint opening shall be adjusted for temperature per Article 520.04 of the Standard Specifications. However, since this detail is for jointless structures, the length of bridge used to calculate the adjustment shall be equal to half the total bridge length plus the length of the bridge approach slab.
2. Approach slab shall be paid for as High Performance Concrete Superstructures.
3. Approach footing concrete shall be paid for as High Performance Concrete Structures.
4. Reinforcement shall be paid for as Reinforcement Bars, Epoxy Coated.
5. For v20(E) bar details, see Sheet S-24.
6. The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.
7. Cost of excavation for approach footing included with High Performance Concrete Structures.
8. For Porous Granular Backfill and drainage treatment details, see Sheet S-97.



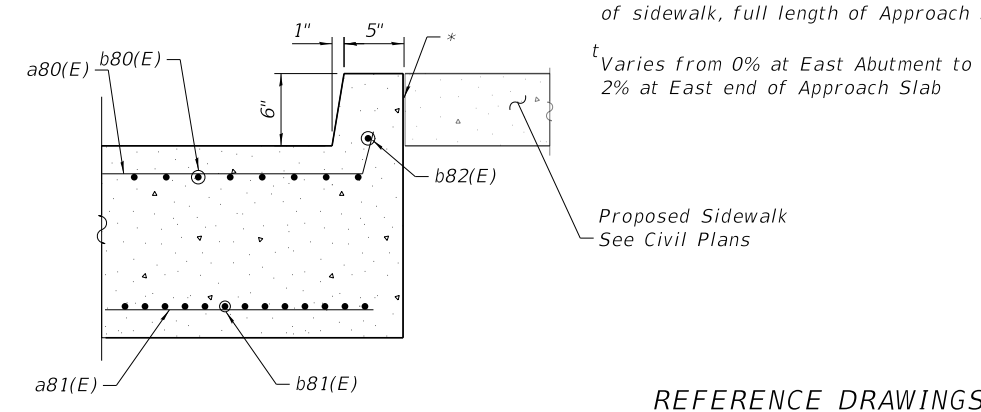
**BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a80(E)	92	#5	23'-9"	—
a81(E)	120	#8	23'-9"	—
b80(E)	65	#5	29'-8"	—
b81(E)	104	#9	29'-8"	—
b82(E)	2	#4	29'-8"	—
t80(E)	88	#4	9'-8"	—
w80(E)	80	#5	23'-1"	—
Bridge Deck Grooving		Sq. Yd.	140	
Reinforcement Bars, Epoxy Coated		Pound	24,930	
High Performance Concrete Structures		Cu. Yd.	13.3	
High Performance Concrete Superstructures		Cu. Yd.	60.2	
Protective Concrete Sealer		Sq. Yd.	149	



(Detail A shown, applies to Highway Standard 420401 only. Detail A for pavement connector (HMA) may be found on Highway Standard 420406.)

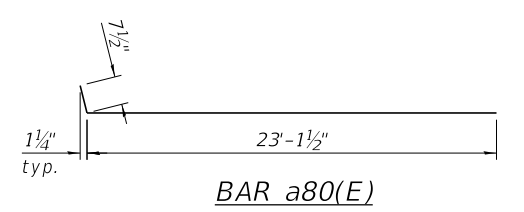
**DETAIL A**  
(@ Rt. L's)



**REFERENCE DRAWINGS**

Drawing  
East Approach - Retaining Wall Details and Reinforcement Bars  
General Plan of Approaches  
Paving on Approaches

Sheet No.  
1660570051  
1660570052  
1660570060



**MINIMUM BAR LAP**

- #4 bar = 2'-5"
- #5 bar = 3'-6"
- #8 bar = 4'-9"



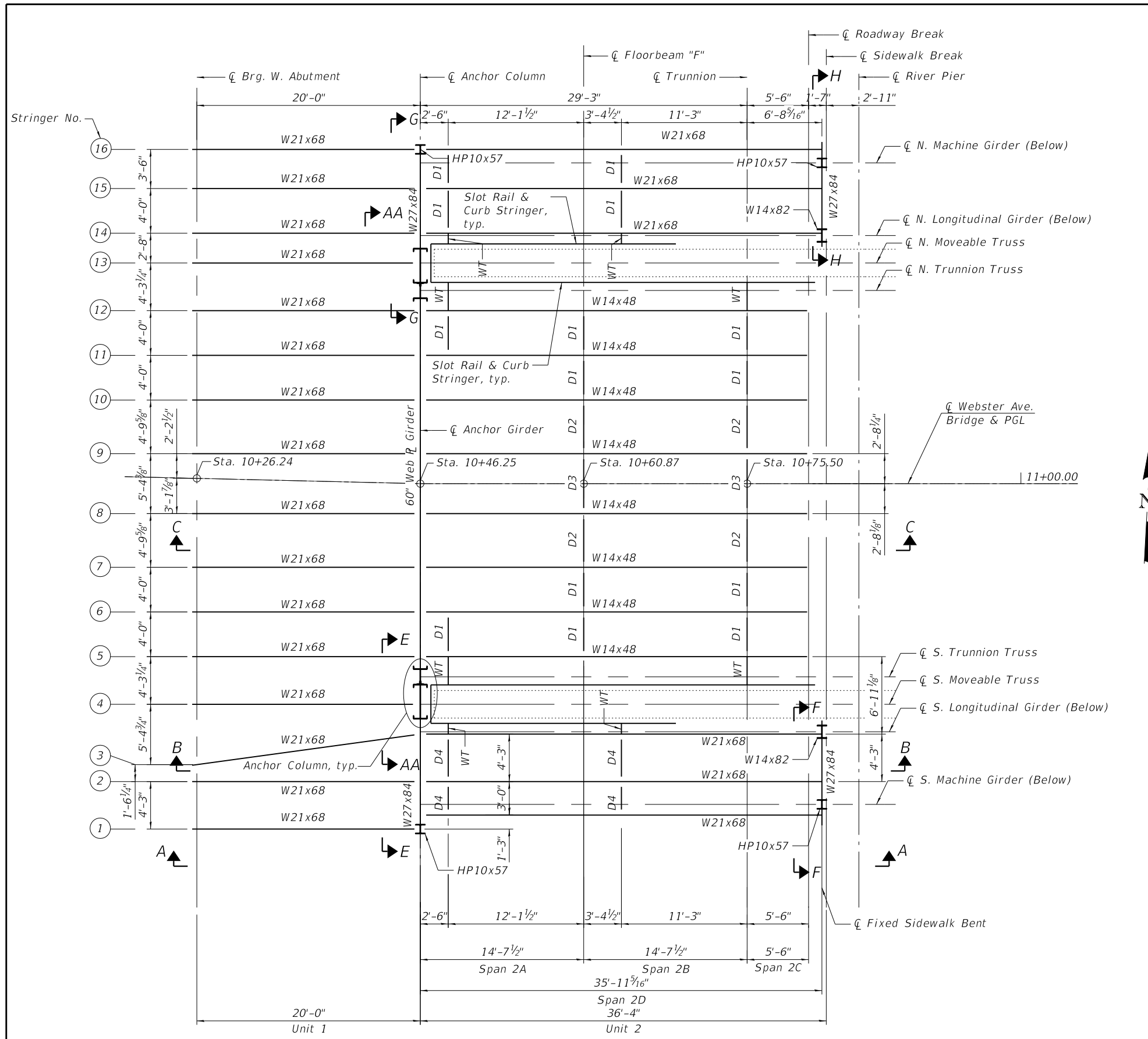
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**CITY OF CHICAGO**  
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DIVISION OF ENGINEERING

**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

**EAST APPROACH SLAB DETAILS  
(STRUCTURE NO. 016-6057)**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-26
CDOT PROJECT NO. E-1-525			69 of 210



FRAMING PLAN

**REFERENCE DRAWINGS**

Drawing	Sheet No.
Fixed Part - General Plan	1660570016
Stress Diagrams	1660570110
Structural Repairs, Redecking and Rehabilitation	1660570131
Structural Repairs - Fixed Part	1660570134
General Diagram of Fixed Part	1660570165

**NOTES:**

1. See Sheet S-03 for general structural notes.
2. For Sections A-A thru C-C see Sheets S-30.
3. For Sections E-E thru H-H see Sheet S-32.
4. For Slot Rail & Curb Stringer detailing, see Sheet S-33.
5. For Section AA-AA see Sheet S-34.
6. For Interior Diaphragm Details see Sheet S-32.



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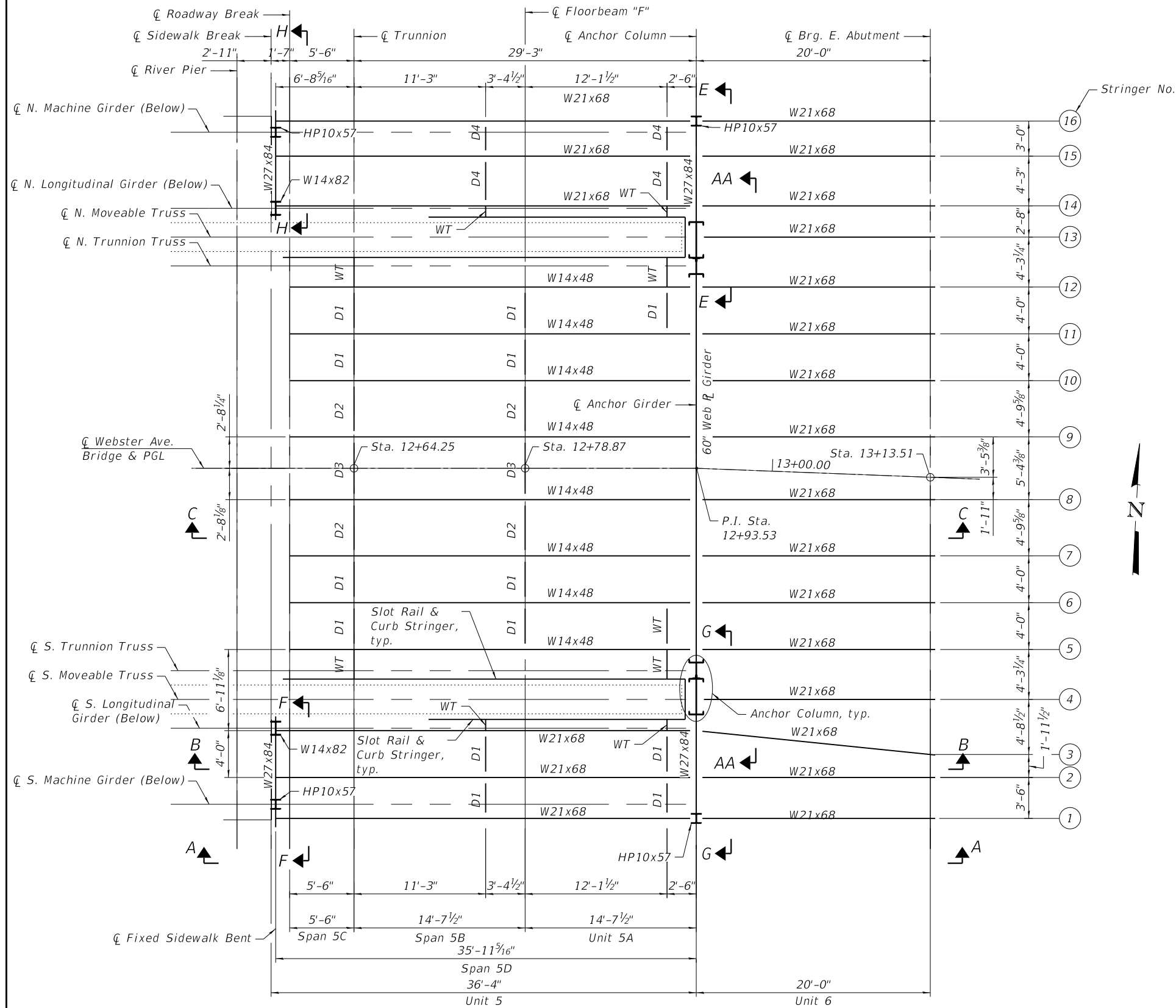
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PLOT DATE = 10/5/2020	CHECKED - WM	REVISED -

**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

**FRAMING PLAN  
WEST FIXED SPANS  
(STRUCTURE NO. 016-6057)**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-27
CDOT PROJECT NO. E-1-525			70 of 210



FRAMING PLAN

REFERENCE DRAWINGS

Drawing	Sheet No.
Fixed Part - General Plan	1660570016
Stress Diagrams	1660570110
Structural Repairs, Redecking and Rehabilitation	1660570131
Structural Repairs - Fixed Part	1660570134
General Diagram of Fixed Part	1660570165

NOTES:

1. See Sheet S-03 for general structural notes.
2. For Sections A-A thru C-C, see Sheets S-30.
3. For Section E-E thru H-H, see Sheet S-32.
4. For Slot Rail & Curb Stringer detailing, see Sheet S-33.
5. For Section AA-AA, see Sheet S-34.
6. For Interior Diaphragm Details, see Sheet S-32.



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PLOT DATE = 10/5/2020	CHECKED - WM	REVISED -

**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER

FRAMING PLAN  
EAST FIXED SPANS  
(STRUCTURE NO. 016-6057)

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-28
CDOT PROJECT NO. E-1-525			71 of 210

UNIT 1 OR 5 STRINGER MOMENT TABLE			
		0.4 Span 1 or 0.4 Span 5	
		W21x68 (Roadway)	W21x68 (Sidewalk)
Is	(in <sup>4</sup> )	1,480	1,480
Ic(n)	(in <sup>4</sup> )	7,689	5,551
Ic(3n)	(in <sup>4</sup> )	5,402	3,659
Ic(cr)	(in <sup>4</sup> )	-	-
Ss	(in <sup>3</sup> )	140	140
Sc(n)	(in <sup>3</sup> )	305	261
Sc(3n)	(in <sup>3</sup> )	270	224
Sc(cr)	(in <sup>3</sup> )	-	-
DC1	(k/')	0.573	0.522
MDC1	('k)	58	44
DC2	(k/')	0.000	0.000
MDC2	('k)	0	0
DW	(k/')	0.220	0.000
MDW	('k)	11	0
LLDF		-	-
M <sub>l</sub> + IM	('k)	146	21 *
Mu (Strength I)	('k)	345	92
Øf Mn	('k)	1,132	729
fs DC1	(ksi)	4.96	3.76
fs DC2	(ksi)	0.00	0.00
fs DW	(ksi)	0.49	0.00
fs (l+IM)	(ksi)	5.75	0.98
fs (Service II)	(ksi)	12.93	5.03
0.95Rh Fyf	(ksi)	47.50	47.50
fs (Total)(Strength I)	(ksi)	17.00	6.41
Øf Fn	(ksi)	-	-
Vf	(k)	27.46	-

UNIT 2 OR 4 STRINGER MOMENT TABLE				
		0.4 Span 2A or 0.6 Span 2B	Floorbeam "F"	0.4 Span 2D
		W14x48 (Roadway)	W14x48 (Roadway)	W21x68 (Sidewalk)
Is	(in <sup>4</sup> )	484	484	1,480
Ic(n)	(in <sup>4</sup> )	3,591	-	7,689
Ic(3n)	(in <sup>4</sup> )	2,575	-	5,402
Ic(cr)	(in <sup>4</sup> )	-	1,322	-
Ss	(in <sup>3</sup> )	70	70	140
Sc(n)	(in <sup>3</sup> )	184	-	305
Sc(3n)	(in <sup>3</sup> )	163	-	270
Sc(cr)	(in <sup>3</sup> )	-	403	-
DC1	(k/')	0.616	0.616	0.390
MDC1	('k)	8	15	59
DC2	(k/')	0.000	0.000	0.000
MDC2	('k)	0	0	0
DW	(k/')	0.254	0.254	0.000
MDW	('k)	3	6	0
LLDF		-	-	-
M <sub>l</sub> + IM	('k)	82	79	57 *
Mu (Strength I)	('k)	158	166	174
Øf Mn	('k)	702	464	583
fs DC1	(ksi)	1.37	2.56	5.05
fs DC2	(ksi)	0.00	0.00	0.00
fs DW	(ksi)	0.22	0.18	0.00
fs (l+IM)	(ksi)	5.35	2.35	2.25
fs (Service II)	(ksi)	8.55	5.80	7.97
0.95Rh Fyf	(ksi)	47.50	47.50	47.50
fs (Total)(Strength I)	(ksi)	11.41	7.59	10.25
Øf Fn	(ksi)	-	-	-
Vf	(k)	27.58	27.27	-

UNIT 1 OR 5 STRINGER REACTION TABLE			
		East or West Abut.	
		W21x68 (Roadway)	W21x68 (Sidewalk)
LLDF		-	-
OCF		-	-
RDC1	(k)	12.1	8.12
RDC2	(k)	0	0
RDW	(k)	3.3	0
R <sub>l</sub>	(k)	54.65	4.25 *
R <sub>IM</sub>	(k)	18.04	0
RTotal	(k)	88.09	12.37

UNIT 2 OR 4 STRINGER REACTION TABLE				
		Anchor Col. FB		Floorbeam "F"
		W14x48 (Roadway)	W21x68 (Sidewalk)	W14x48 (Roadway)
LLDF		-	-	-
OCF		-	-	-
RDC1	(k)	4.45	10.72	12.47
RDC2	(k)	0	0	0
RDW	(k)	1.81	0	6.03
R <sub>l</sub>	(k)	51.15	6.525 *	59.8
R <sub>IM</sub>	(k)	16.88	0	19.74
RTotal	(k)	74.29	17.245	98.04

Is, Ss: Non-composite moment of inertia and section modulus of the steel section used for computing fs(Total-Strength I, and Service II) due to non-composite dead loads (in.<sup>4</sup> and in.<sup>3</sup>).

Ic(n), Sc(n): Composite moment of inertia and section modulus of the steel and deck based upon the modular ratio, "n", used for computing fs(Total-Strength I, and Service II) in uncracked sections due to short-term composite live loads (in.<sup>4</sup> and in.<sup>3</sup>).

Ic(3n), Sc(3n): Composite moment of inertia and section modulus of the steel and deck based upon 3 times the modular ratio, "3n", used for computing fs(Total-Strength I, and Service II) in uncracked sections, due to long-term composite (superimposed) dead loads (in.<sup>4</sup> and in.<sup>3</sup>).

Ic(cr), Sc(cr): Composite moment of inertia and section modulus of the steel and longitudinal deck reinforcement, used for computing fs (Total-Strength I and Service II) in cracked sections, due to both short-term composite live loads and long-term composite (superimposed) dead loads (in.<sup>4</sup> and in.<sup>3</sup>).

DC1: Un-factored non-composite dead load (kips/ft.).  
MDC1: Un-factored moment due to non-composite dead load (kip-ft.).  
DC2: Un-factored long-term composite (superimposed excluding future wearing surface) dead load (kips/ft.).  
MDC2: Un-factored moment due to long-term composite (superimposed excluding future wearing surface) dead load (kip-ft.).  
DW: Un-factored long-term composite (superimposed future wearing surface only) dead load (kips/ft.).  
MDW: Un-factored moment due to long-term composite (superimposed future wearing surface only) dead load (kip-ft.).

M<sub>l</sub> + IM: Un-factored live load moment plus dynamic load allowance (impact) (kip-ft.).

Mu (Strength I): Factored design moment (kip-ft.).  
1.25 (MDC1 + MDC2) + 1.5 MDW + 1.75 M<sub>l</sub> + IM

Øf Mn: Compact composite positive moment capacity computed according to Article 6.10.7.1 or non-slender negative moment capacity according to Article A6.1.1 or A6.1.2 (kip-ft.).

fs DC1: Un-factored stress at edge of flange for controlling steel flange due to vertical non-composite dead loads as calculated below (ksi).  
MDC1/ Sc

fs DC2: Un-factored stress at edge of flange for controlling steel flange due to vertical composite dead loads as calculated below (ksi).  
MDC2/ Sc(3n) or MDC2/ Sc(cr) as applicable.

fs DW: Un-factored stress at edge of flange for controlling steel flange due to vertical composite future wearing surface loads as calculated below (ksi).  
MDW/ Sc(3n) or MDW/ Sc(cr) as applicable.

fs (l+IM): Un-factored stress at edge of flange for controlling steel flange due to vertical composite live load plus impact loads as calculated below (ksi).  
M<sub>l</sub> + IM / Sc(n) or M<sub>l</sub> + IM / Sc(cr) as applicable.

fs (Service II): Sum of stresses as computed below (ksi).  
fsDC1 + fsDC2 + fsDW + 1.3 fs(l + IM)

0.95RhFyf: Composite stress capacity for Service II loading according to Article 6.10.4.2 (ksi).

fs (Total)(Strength I): Sum of stresses as computed below on non-compact section (ksi).  
1.25 (fsDC1 + fsDC2) + 1.5 fsDW + 1.75 fs(l + IM)

Øf Fn: Non-Compact composite positive or negative stress capacity for Strength I loading according to Article 6.10.7 or 6.10.8 (ksi).

Vf: Maximum factored shear range in span computed according to Article 6.10.10.

Note:  
M<sub>l</sub> and R<sub>l</sub> include the effects of centrifugal force and superelevation.

\* The live load moment and reaction values for sidewalk stringers are based on uniform pedestrian live load of 100psf without impact.



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**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

**FIXED SPANS  
STRINGER MOMENT AND REACTION TABLE  
(STRUCTURE NO. 016-6057)**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-29
CDOT PROJECT NO. E-1-525			72 of 210

**NOTE:**

1. For Details A thru G, see Sheet S-31.
2. "CVN" denotes Charpy-V-Notch Impact Energy Requirements, Zone 2.

**TOP OF ROADWAY BEAM ELEVATIONS**

**W. FIXED SPANS**

(For fabrication only)

	Cl. Brg. W. Abut.	W. Anchor Col.	Floorbeam F	W. Trunnion	W. Rear Break
Beams 5-12	20.87	20.55	20.86	21.02	21.02

**TOP OF ROADWAY BEAM ELEVATIONS**

**E. FIXED SPANS**

(For fabrication only)

	E. Rear Break	E. Trunnion	Floorbeam F	E. Anchor Col.	Cl. Brg. E. Abut.
Beams 5-12	21.02	21.02	20.86	20.55	19.77

**TOP OF SIDEWALK BEAM ELEVATIONS**

**W. FIXED SPANS**

(For fabrication only)

	Cl. Brg. W. Abut.	W. Anchor Col.	W. Sidewalk FB
Beam 1	21.45	21.86	22.00
Beam 2	21.45	21.86	22.00
Beam 3	21.45	21.86	22.00
Beam 4	20.87	21.01	-
Beam 13	20.87	21.01	-
Beam 14	21.79	21.86	22.00
Beam 15	21.79	21.86	22.00
Beam 16	21.79	21.86	22.00

**TOP OF SIDEWALK BEAM**

**ELEVATIONS**

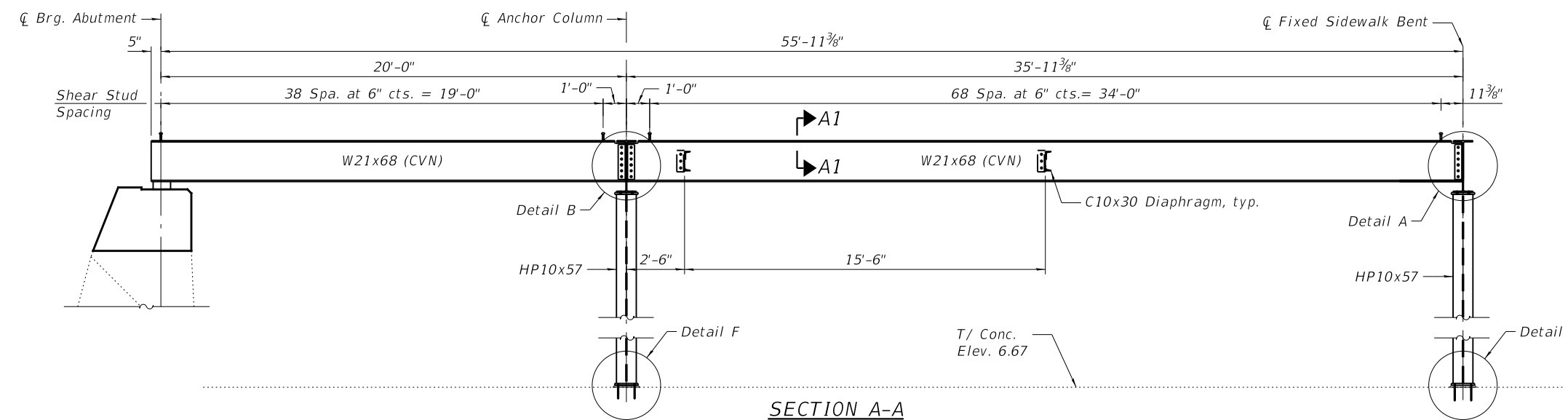
**E. FIXED SPANS**

(For fabrication only)

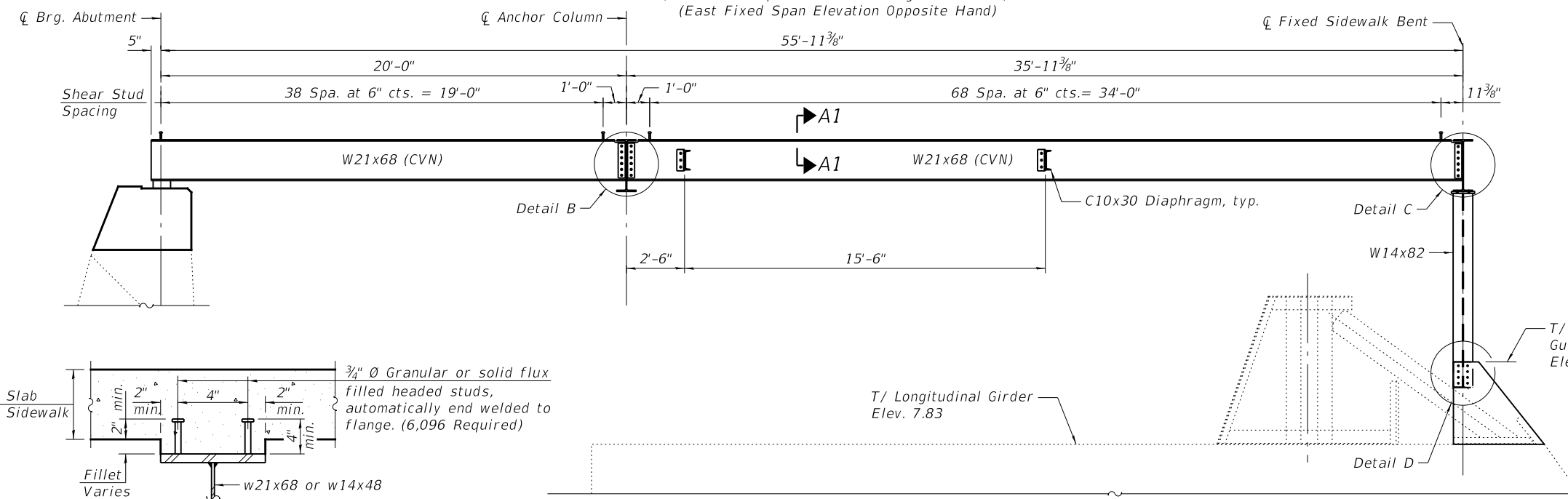
	E. Sidewalk FB	E. Anchor Col.	Cl. Brg. E. Abut.
Beam 1	22.00	21.43	20.70
Beam 2	22.00	21.43	20.70
Beam 3	22.00	21.43	20.70
Beam 4	-	20.56	19.77
Beam 13	-	20.56	19.77
Beam 14	22.00	21.43	20.70
Beam 15	22.00	21.43	20.70
Beam 16	22.00	21.43	20.70

**REFERENCE DRAWINGS**

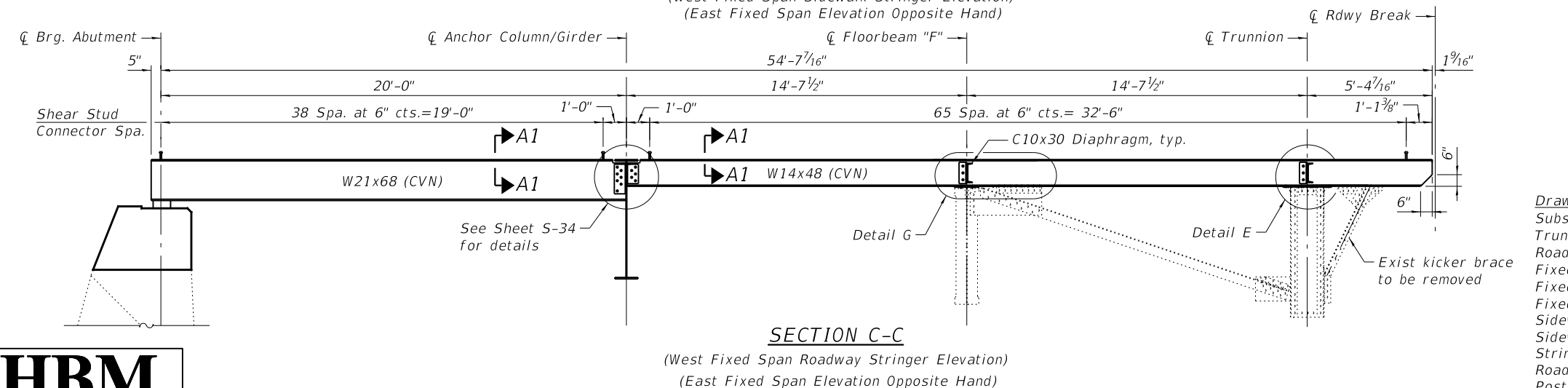
Drawing	Sheet No.
Substructure Main Piers	1660570045
Trunnion Pedestal & Strut	1660570192
Roadway Supports	1660570195
Fixed Part - Sidewalk Stringers and Supports	1660570023
Fixed Part - Sidewalk Stringers and Supports	1660570024
Fixed Part - House Framings, Sidewalk Beams and Supports	1660570025
Sidewalk Stringers - Fixed Part	1660570168
Sidewalk Stringers - Fixed Part	1660570169
Stringers - Fixed Part	1660570170
Roadway Stringers and Posts - Fixed Part	1660570172
Posts and Intermediate Framing - Fixed Part	1660570181
Posts, Bracing and Brake Supports - Fixed Part	1660570182



**SECTION A-A**  
(West Fixed Span Sidewalk Stringer Elevation)  
(East Fixed Span Elevation Opposite Hand)



**SECTION B-B**  
(West Fixed Span Sidewalk Stringer Elevation)  
(East Fixed Span Elevation Opposite Hand)



**SECTION C-C**  
(West Fixed Span Roadway Stringer Elevation)  
(East Fixed Span Elevation Opposite Hand)



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**CITY OF CHICAGO**  
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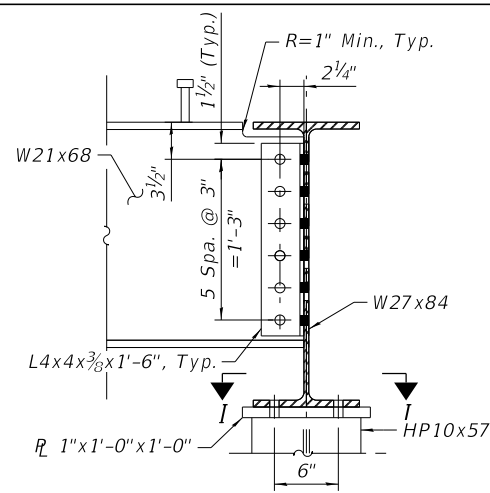
**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

**FIXED SPANS  
STEEL DETAILS I  
(STRUCTURE NO. 016-6057)**

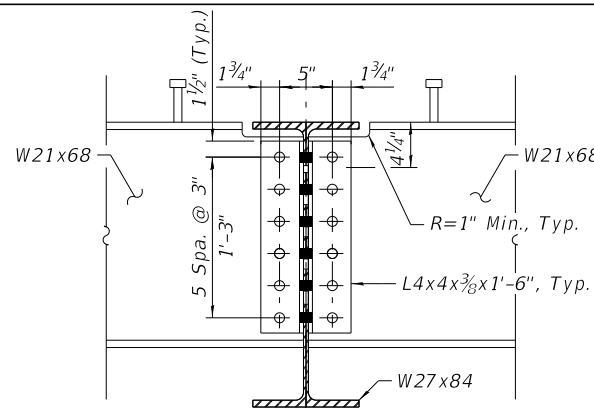
F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-30

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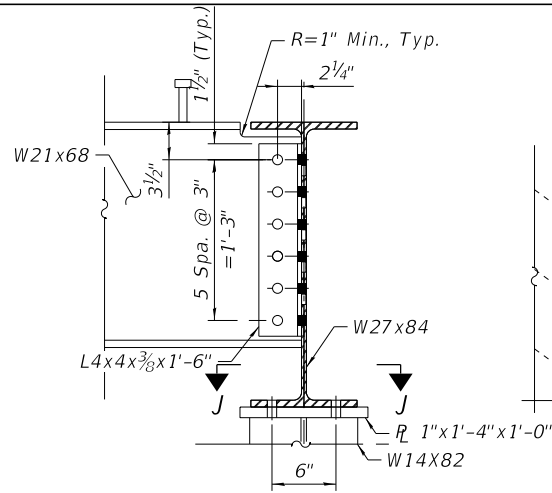




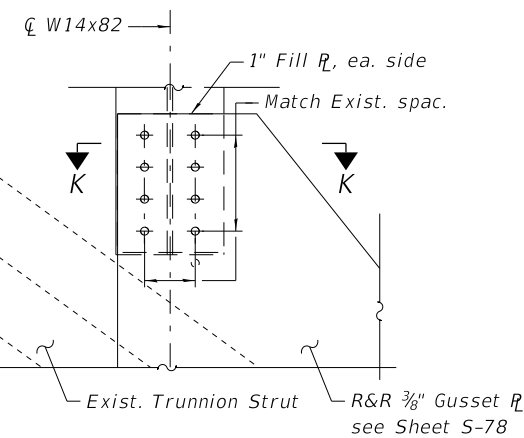
DETAIL A



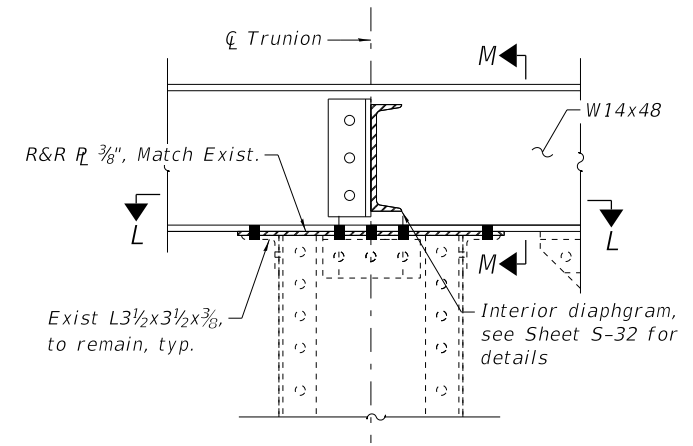
DETAIL B



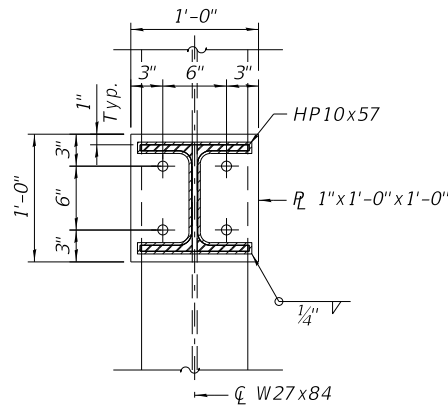
DETAIL C



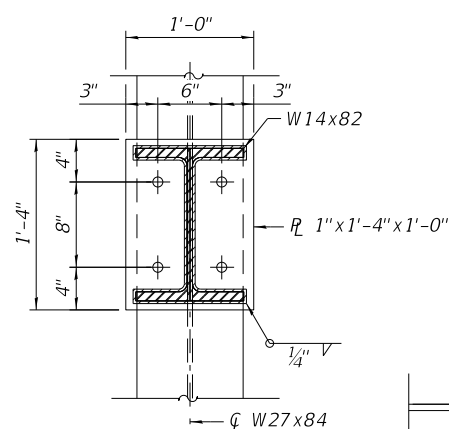
DETAIL D



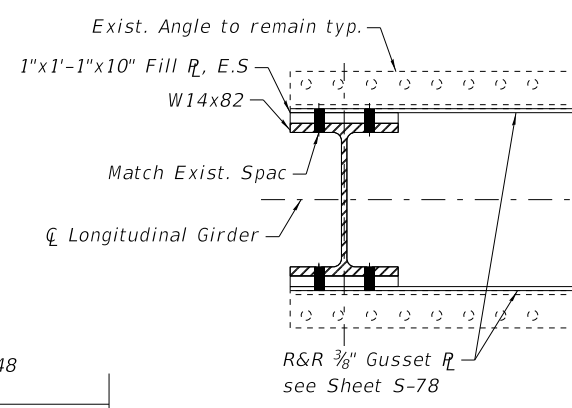
DETAIL E



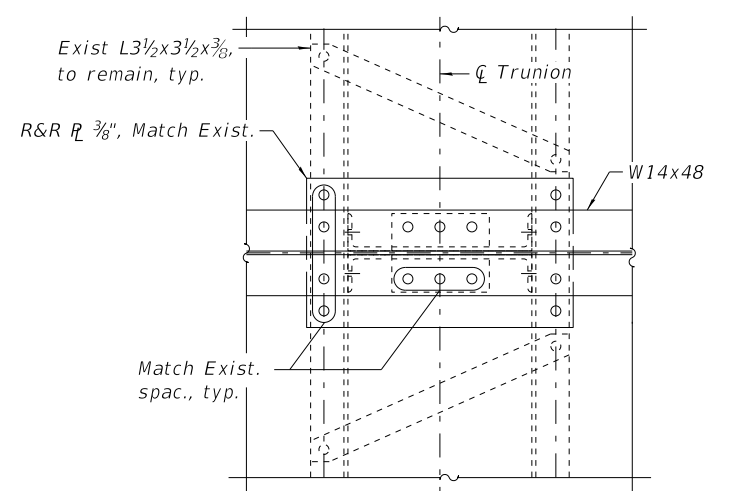
SECTION I-I



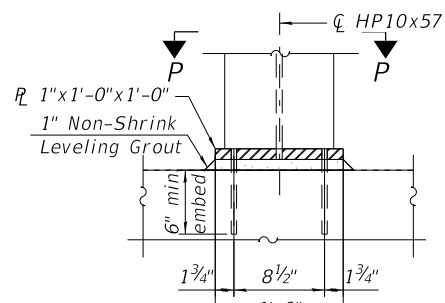
SECTION J-J



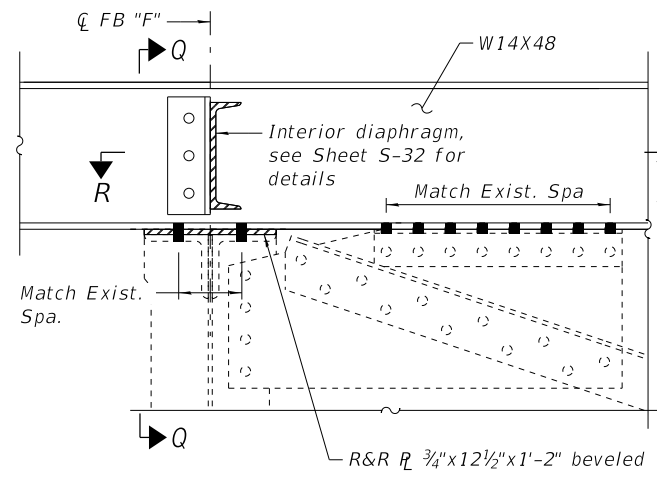
SECTION K-K



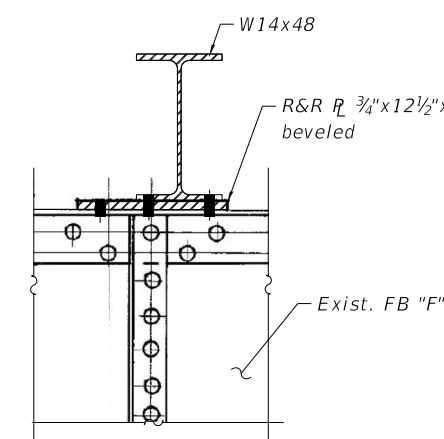
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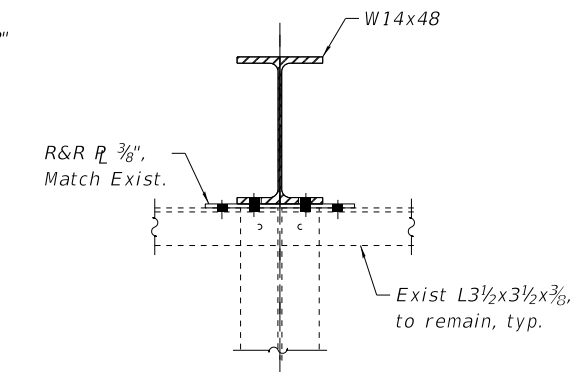
DETAIL F



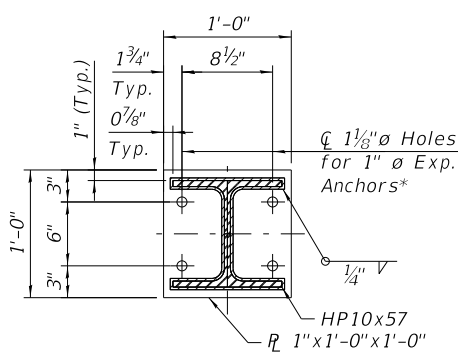
DETAIL G



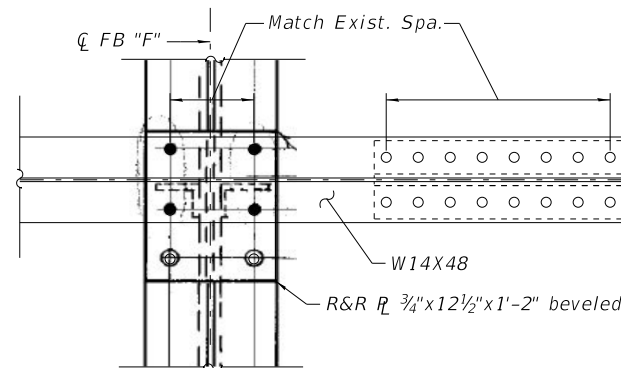
SECTION Q-Q



SECTION M-M



SECTION P-P



SECTION R-R

REFERENCE DRAWINGS

Drawing	Sheet No.
Trunnion Pedestal & Strut	1660570192
Roadway Supports	1660570195
Fixed Part - Sidewalk Stringers and Supports	1660570023
Fixed Part - Sidewalk Stringers and Supports	1660570024
Fixed Part - House Framings, Sidewalk Beams and Supports	1660570025
Sidewalk Stringers - Fixed Part	1660570168
Sidewalk Stringers - Fixed Part	1660570169
Stringers - Fixed Part	1660570170
Roadway Stringers and Posts - Fixed Part	1660570172
Posts and Intermediate Framing - Fixed Part	1660570181
Posts, Bracing and Brake Supports - Fixed Part	1660570182



\*Cost of new anchor rods shall be included in the pay item "Furnishing and Erecting Structural Steel".

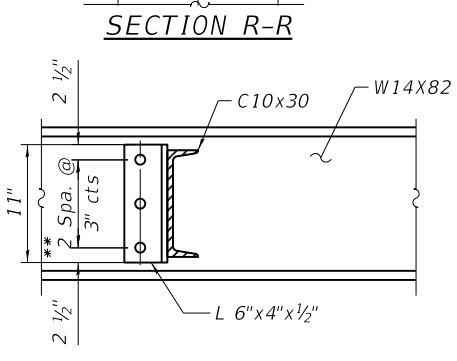
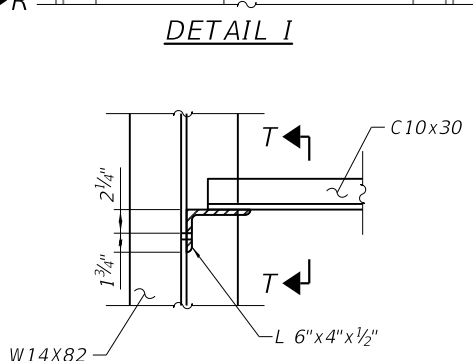
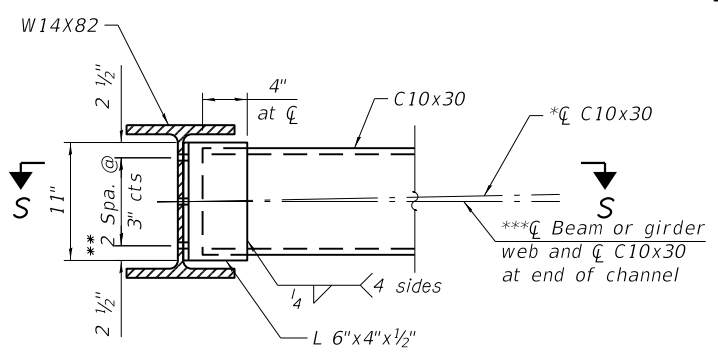
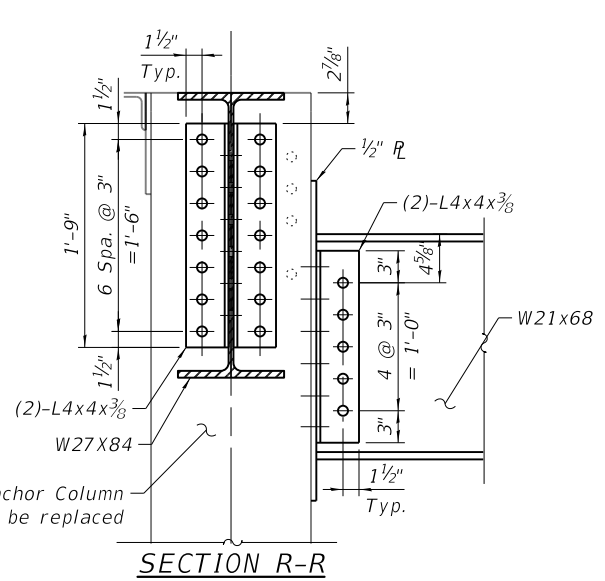
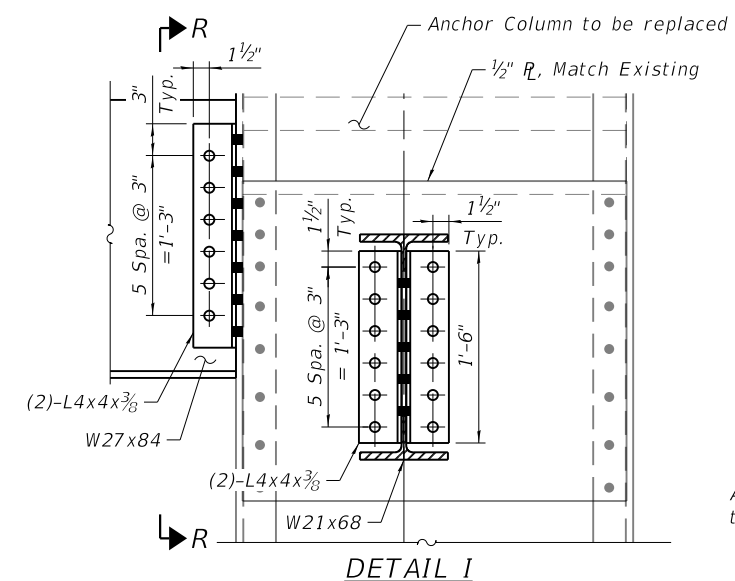
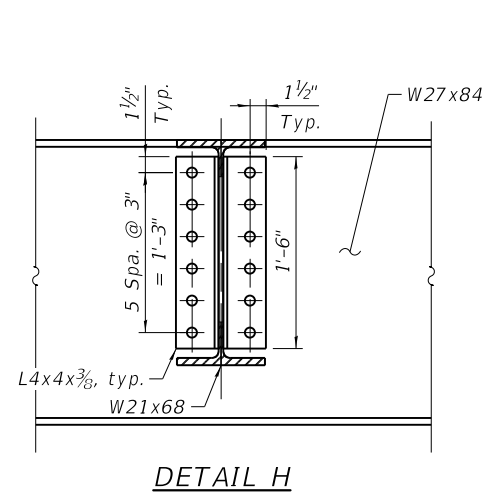
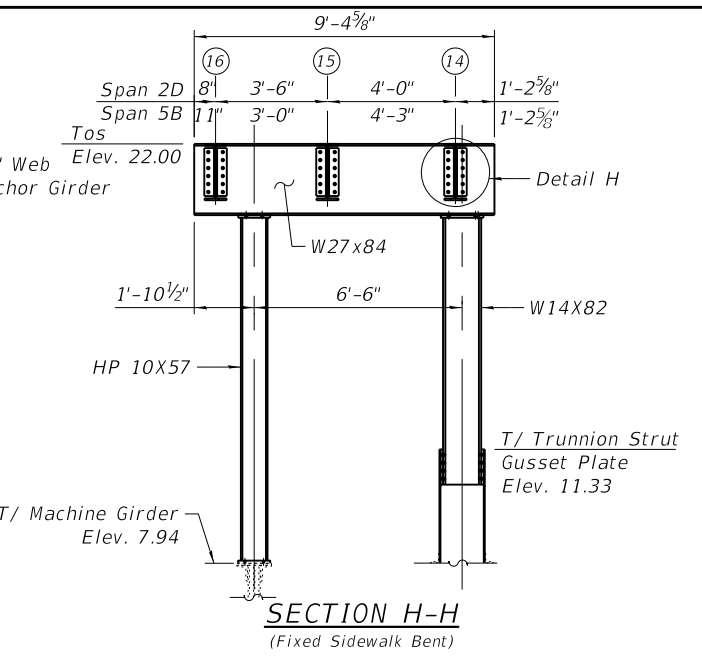
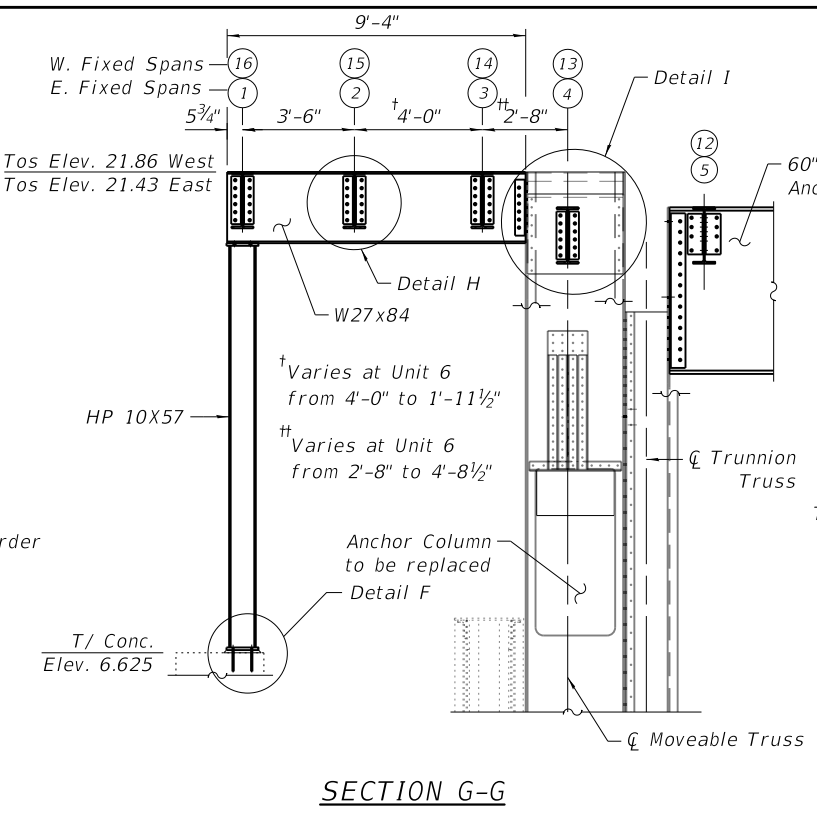
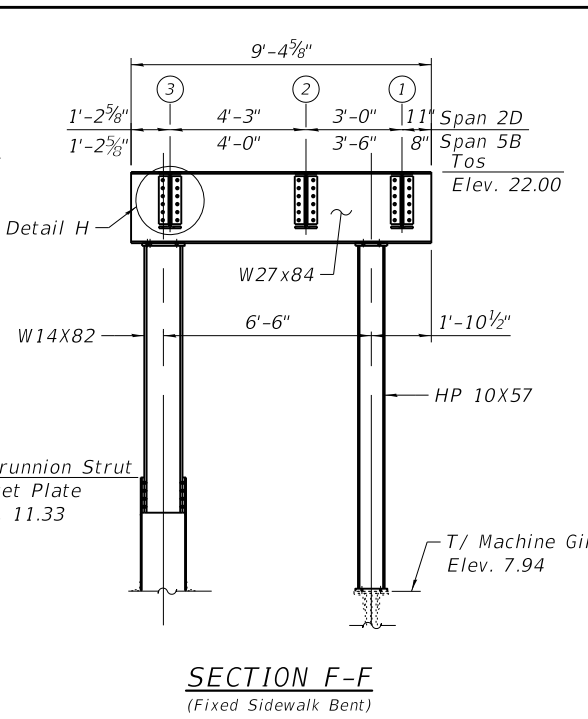
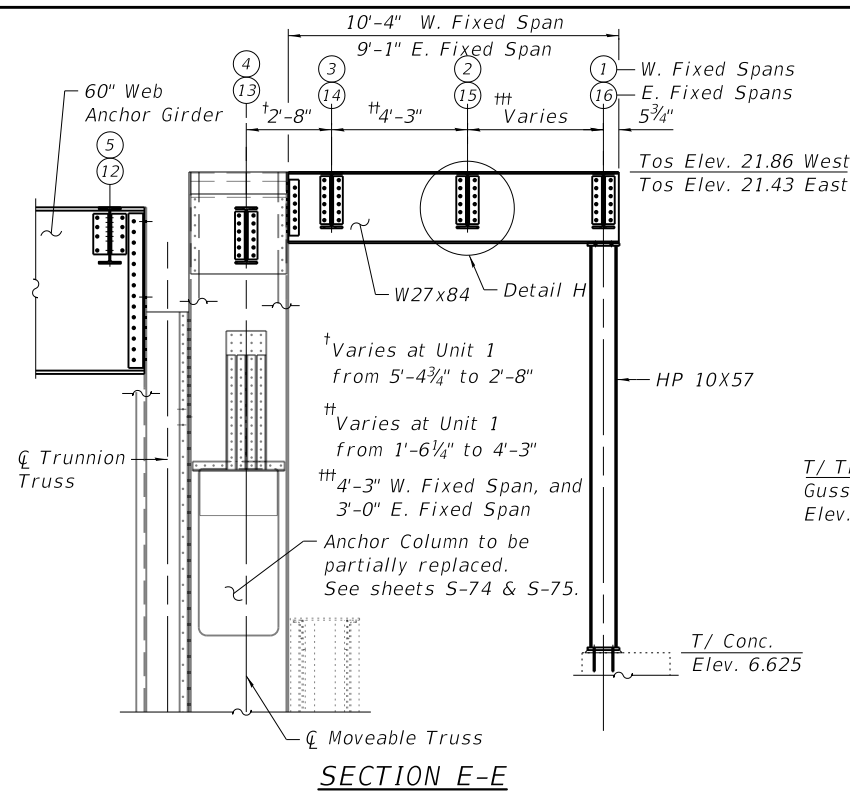
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CITY OF CHICAGO  
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WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER

FIXED SPANS  
STEEL DETAILS II  
(STRUCTURE NO. 016-6057)

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-31
CDOT PROJECT NO. E-1-525			74 of 210



**REFERENCE DRAWINGS**

Drawing	Sheet No.
Fixed Part - Sidewalk Stringers and Supports	1660570023
Fixed Part - Sidewalk Stringers and Supports	1660570024
Fixed Part - House Framings, Sidewalk Beams and Supports	1660570025
Sidewalk Stringers - Fixed Part	1660570168
Sidewalk Stringers - Fixed Part	1660570169
Stringers - Fixed Part	1660570170
Roadway Stringers and Posts - Fixed Part	1660570172
Posts and Intermediate Framing - Fixed Part	1660570181
Posts, Bracing and Brake Supports - Fixed Part	1660570182



\*\* 3/4" O HS bolts, 1 5/16" O holes.

\*\*\* Alternate channels are permitted to facilitate material acquisition. Calculated weight of structural steel is based on the lighter section. The alternate, if utilized, shall be provided at no additional cost to the Department.



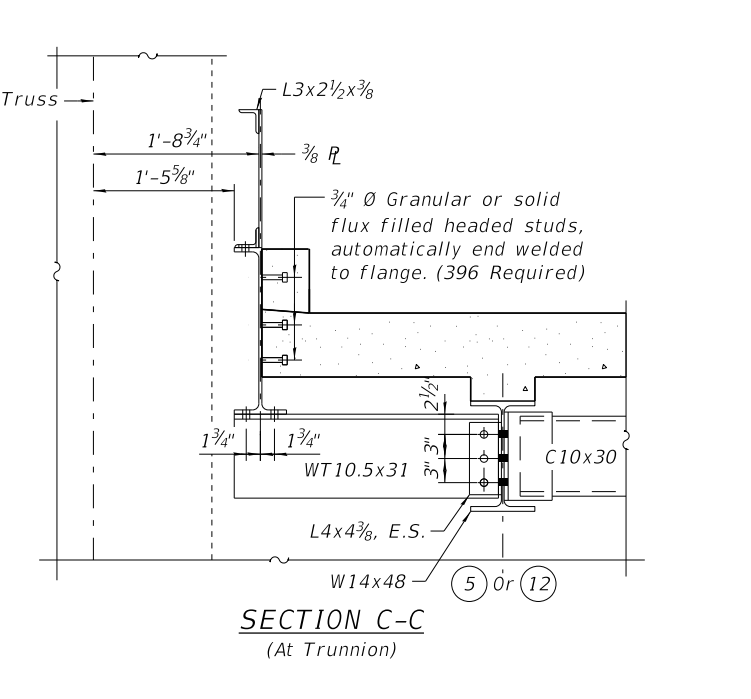
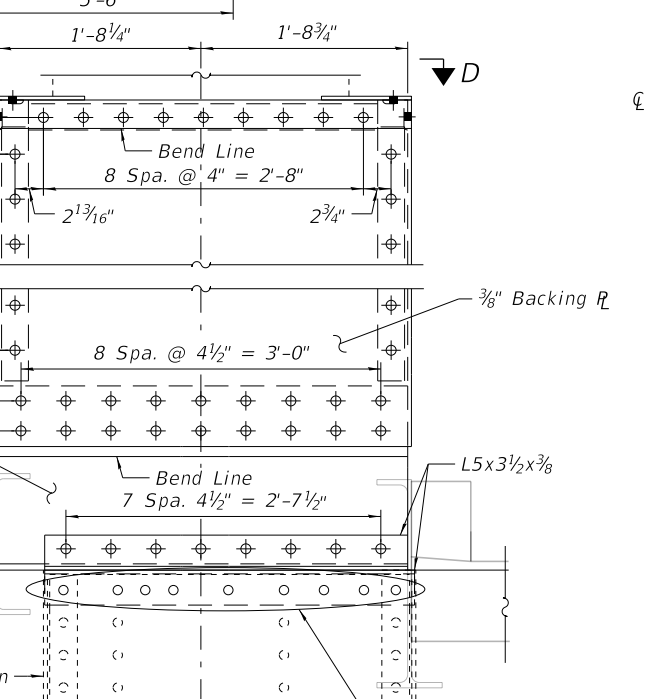
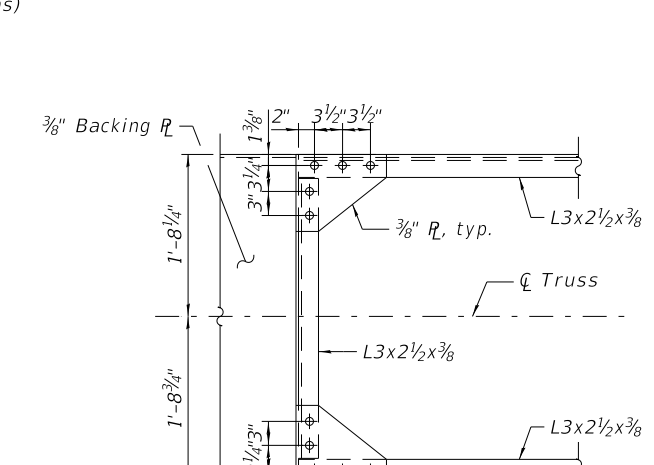
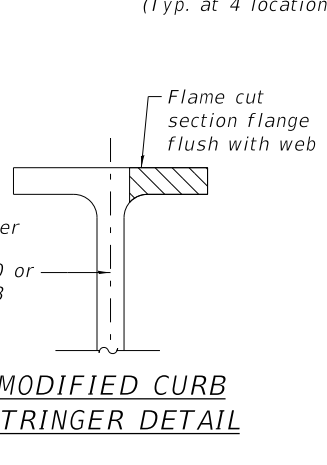
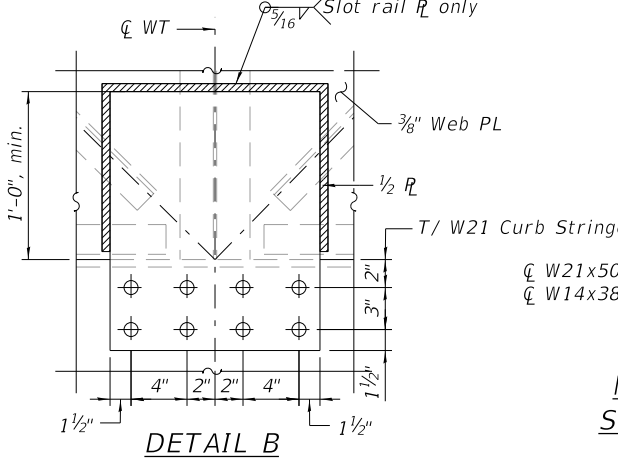
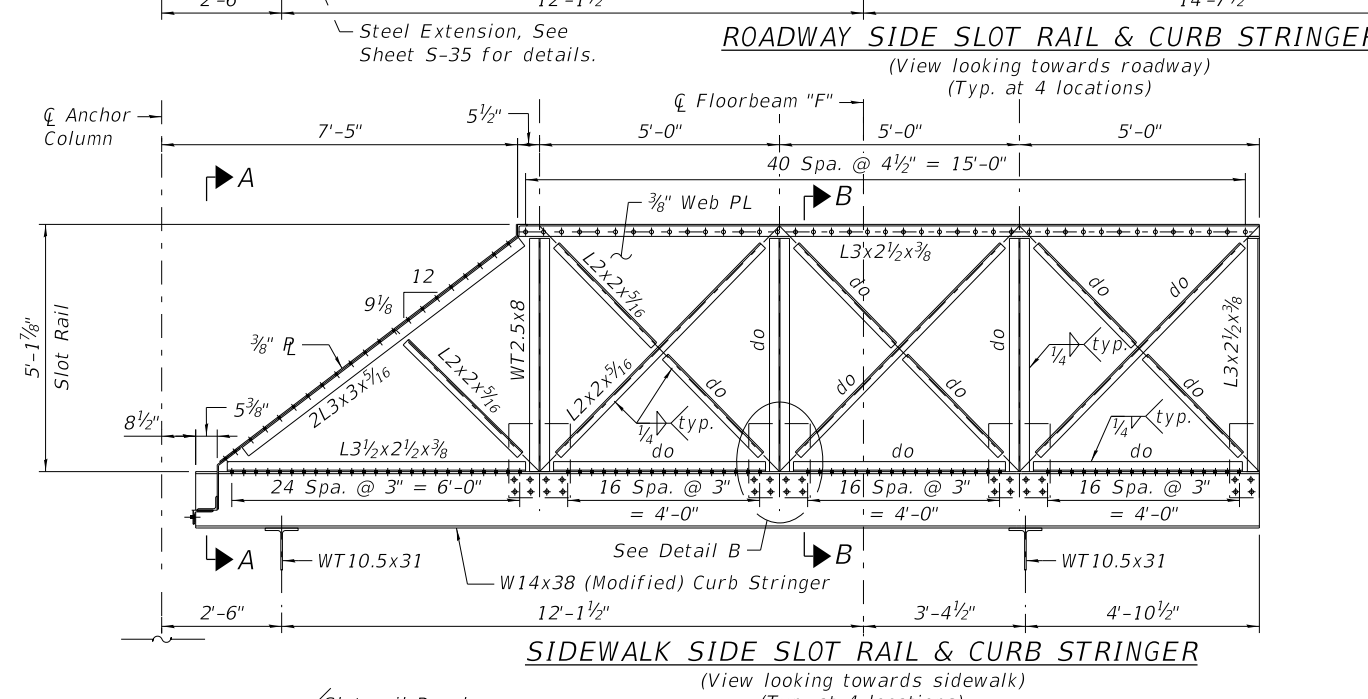
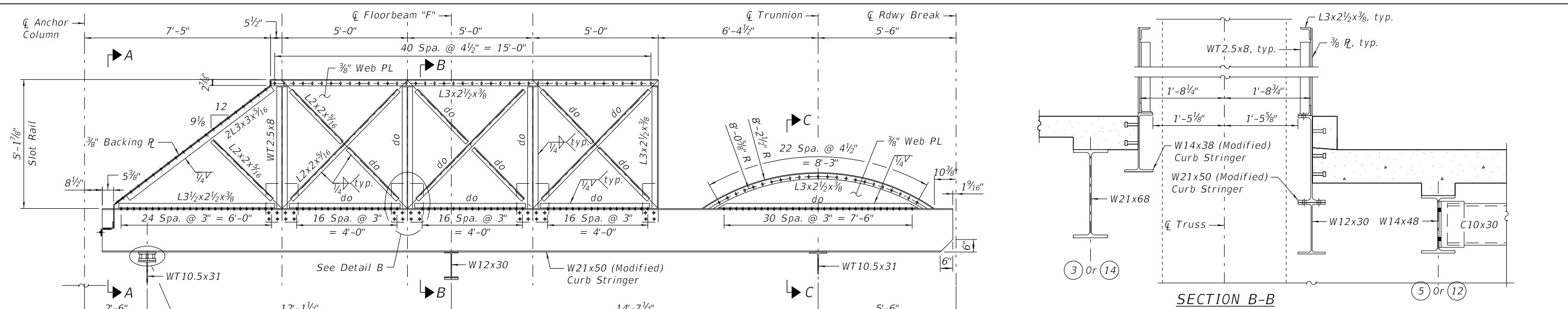
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**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

**FIXED SPANS  
STEEL DETAILS III  
(STRUCTURE NO. 016-6057)**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-32
CDOT PROJECT NO. E-1-525			75 of 210



**REFERENCE DRAWINGS**

Drawing	Sheet No.
Slot Rail and Curb Stringer	1660570179
Slot Rail and Wheel Guards	1660570180
Fixed Part - Roadway Stringers	1660570022

- NOTES:**
- For west and east fixed span framing plan, see sheets S-27 and S-28 respectively.
  - Fasteners shall be ASTM A325 Type 1, Mechanically Galvanized Bolts. Bolts connecting new steel members shall be 7/8" with 1 1/16" open holes, unless noted otherwise.
  - For General Notes see Sheet G-2, for Steel Fabrication Notes see Sheet G-3



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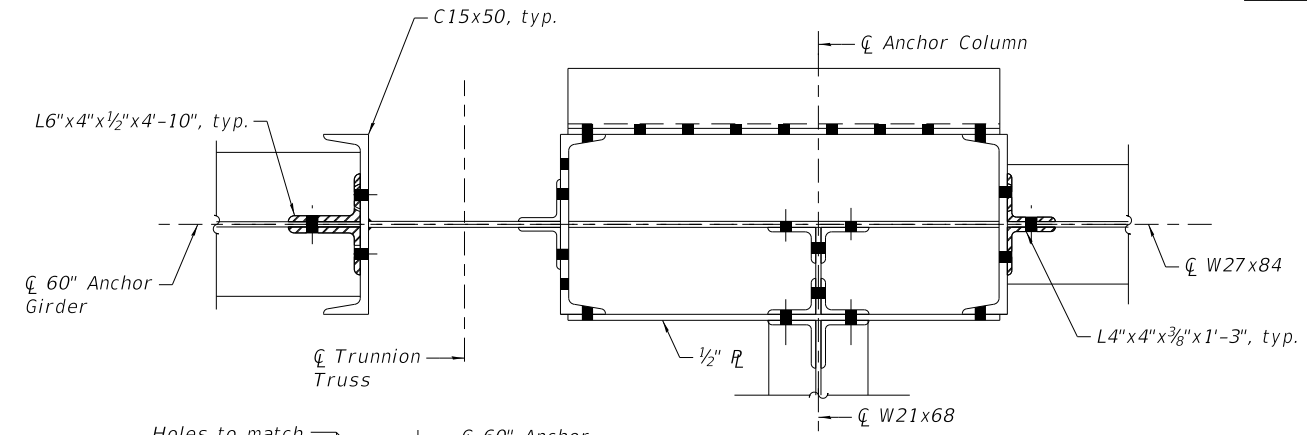
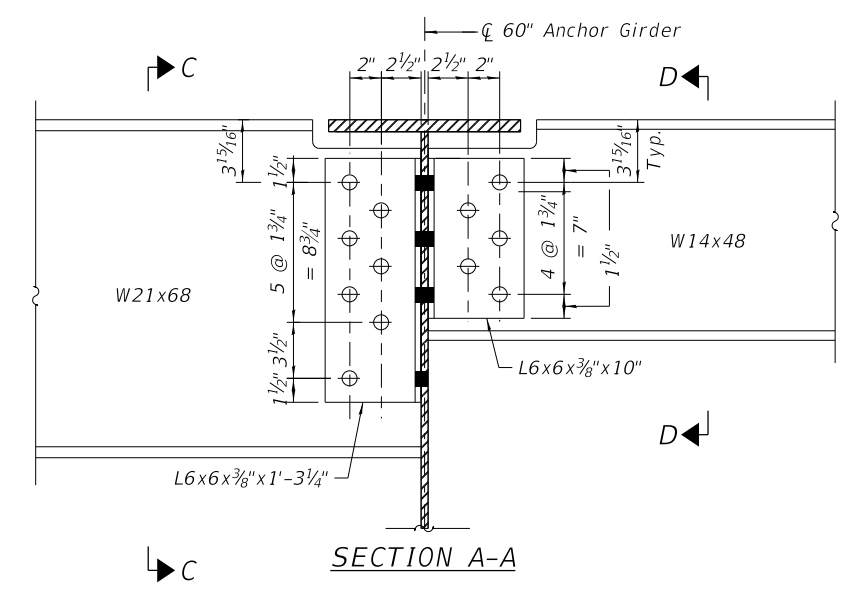
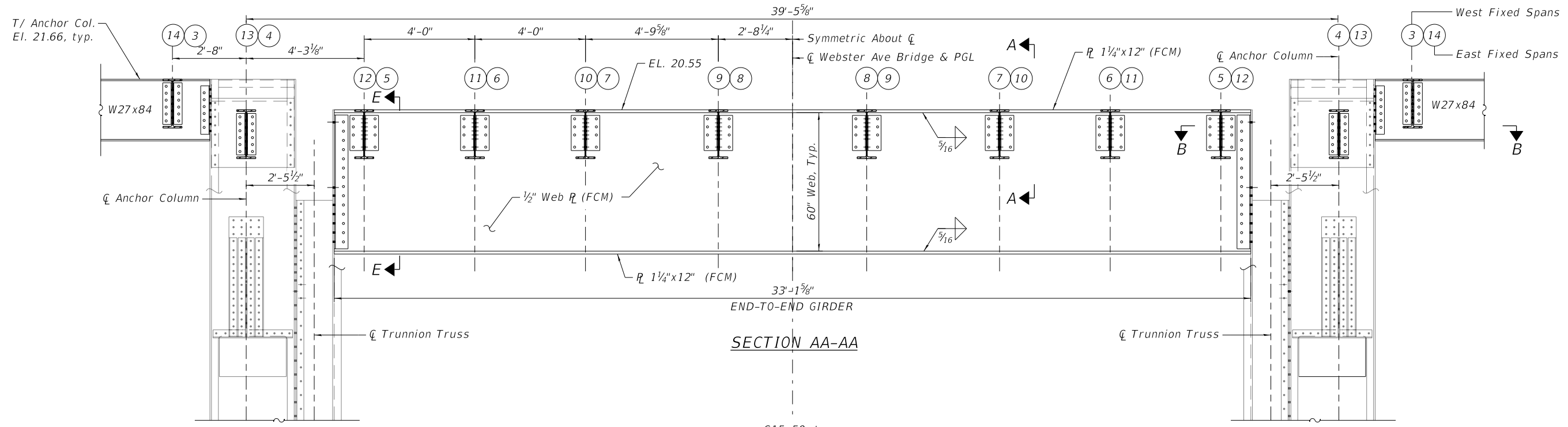
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**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

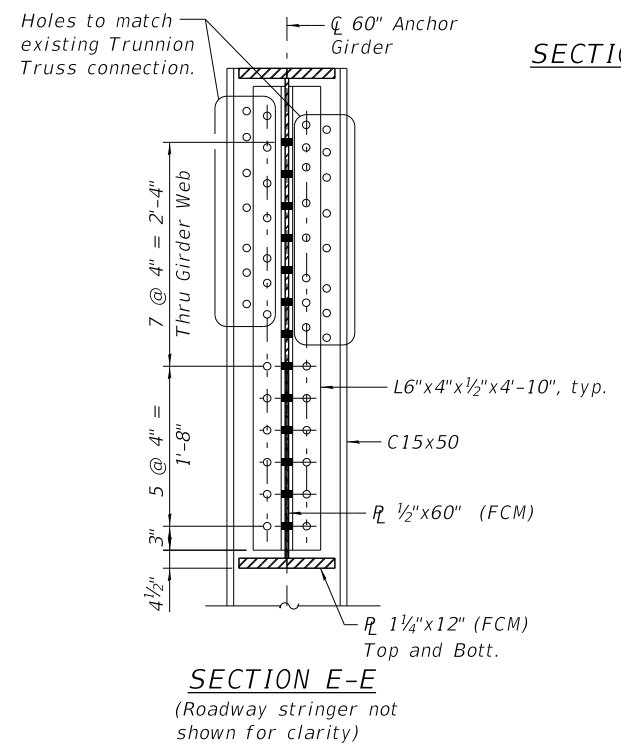
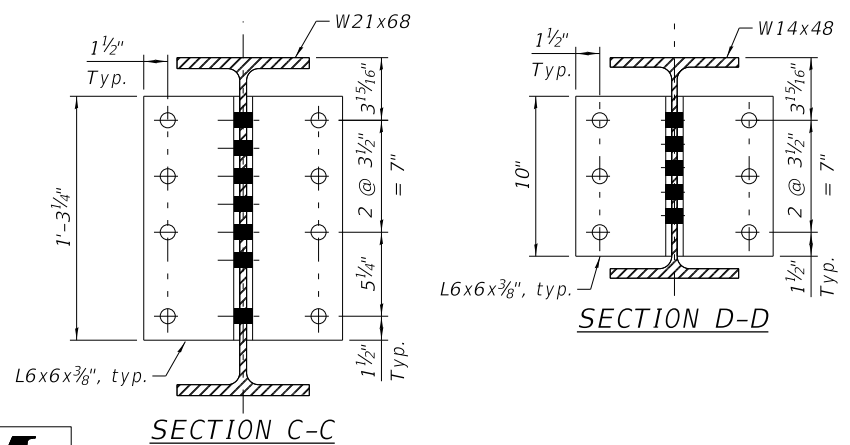
**FIXED SPANS  
SLOT RAILING DETAILS  
(STRUCTURE NO. 016-6057)**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-33

CDOT PROJECT NO. E-1-525 76 of 210



- NOTES:**
1. Fasteners shall be ASTM A325 Type 1, Mechanically Galvanized Bolts. Bolts connecting new steel members shall be 7/8" with 15/16" open holes, unless noted otherwise.
  2. The location and diameter of the holes in new connecting material must match holes in the existing structure. Bolt and rivet spacings and size must be verified in the field by the Contractor prior to ordering material for fabrication. Holes in the existing structure may be enlarged only as approved by the Commissioner and in accordance with the Special Provisions. Holes may be sub-punched or sub-drilled in the new material and field reamed to match existing holes provided the sub-hole is fully contained in the outline of the reamed hole. Final holes must be round and may not be oversized. The cost of this work shall be considered incidental to the pay item which it pertains.
  3. The Contractor is responsible for proper fitting and assembly of all parts of the proposed work. Plan dimensions and details relative to existing structure have been taken from existing plans and are subject to nominal construction variations. The Contractor shall verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering material. Such variations shall not be cause for additional compensation for a change in the scope of the work. However, the Contractor will be paid for the quantity actually furnished at the unit price of the work.



**REFERENCE DRAWINGS**  
 Drawing  
 Fixed Part - Anchor Columns, Etc.

Sheet No.  
 1660570020

3. All contact surfaces on the new and existing steel, including connection bolts, nuts and washers, are free of scale, burrs, dirt and other foreign material, oil, previously applied paint, lacquer or other coatings that would prevent solid seating of the connecting parts.
4. Load carrying components designated "FCM" shall be fabricated according to the provisions of Clause 12 of the AASHTO/AWS D1.5 Bridge Welding Code.
5. For Anchor Column Repairs and Details, see Sheets S-73 thru S-75.

**HBM**  
 ENGINEERING GROUP, LLC

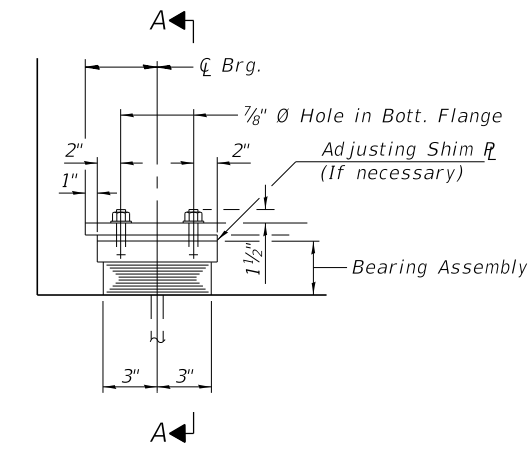
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**CITY OF CHICAGO**  
 DEPARTMENT OF TRANSPORTATION  
 DIVISION OF ENGINEERING

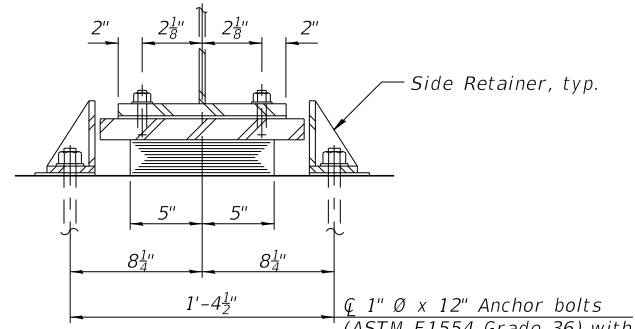
**WEBSTER AVENUE BRIDGE OVER  
 THE NORTH BRANCH CHICAGO RIVER**

**FIXED SPANS  
 ANCHOR COLUMN FLOORBEAM DETAILS  
 (STRUCTURE NO. 016-6057)**

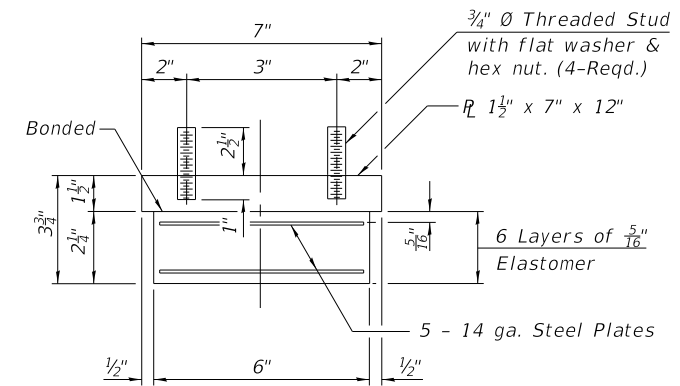
F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-34
CDOT PROJECT NO. E-1-525			77 of 210



ELEVATION AT ABUT.



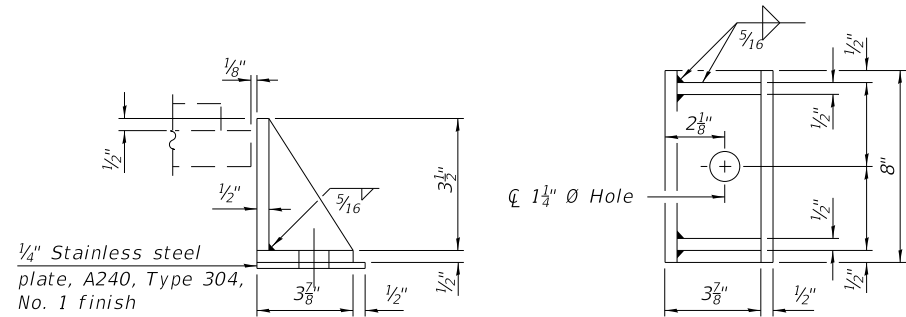
SECTION A-A



BEARING ASSEMBLY

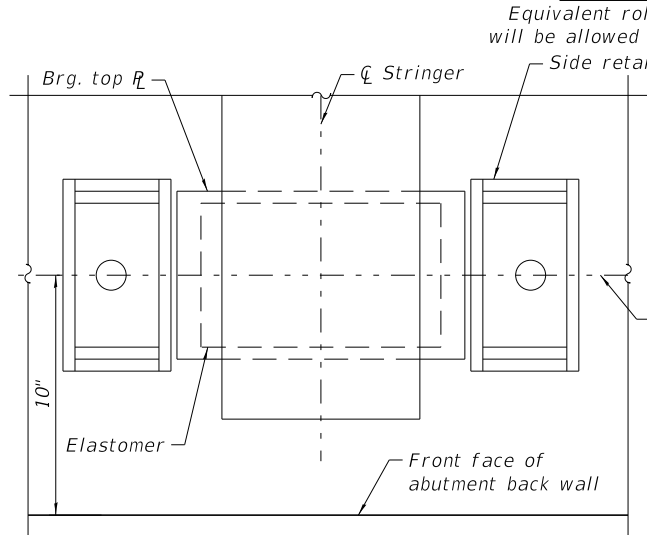
Note:  
Shim plates shall not be placed under Bearing Assembly.

TYPE I ELASTOMERIC EXP. BRG.



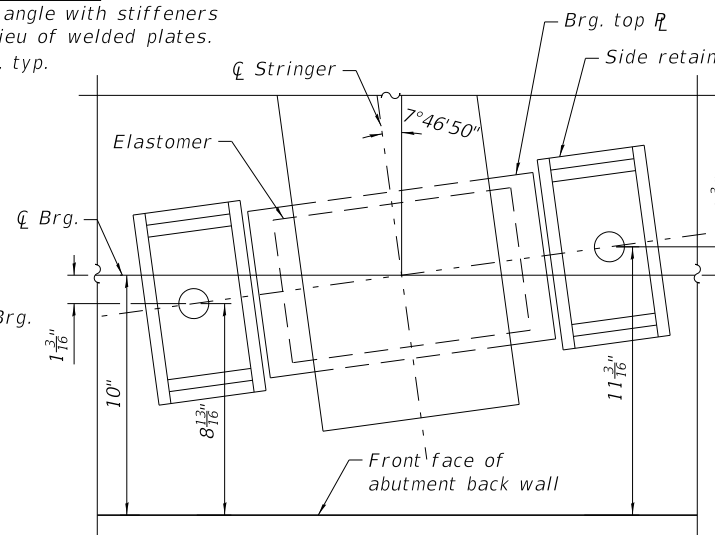
SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.



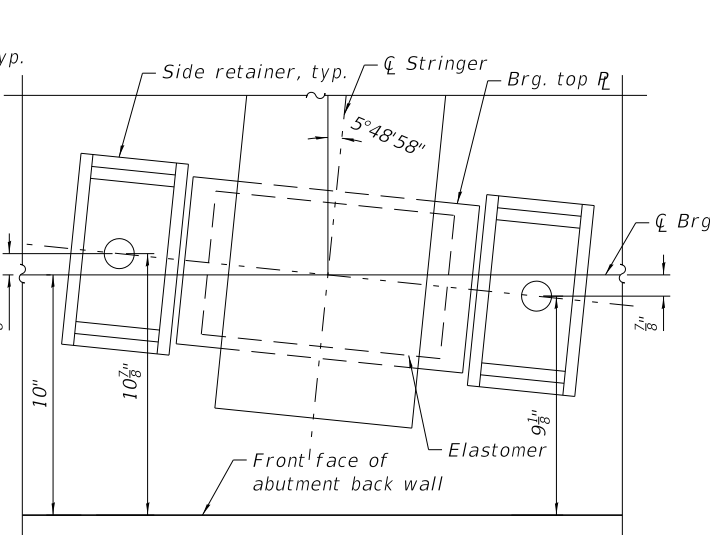
TYPICAL ANCHOR BOLT LAYOUT PLAN

(West abutment shown, east abutment opposite hand)



ANCHOR BOLT LAYOUT PLAN

(For Stringer 3 at west abutment)



ANCHOR BOLT LAYOUT PLAN

(For Stringer 3 at east abutment)

NOTES:

- Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.
- Side retainers and other steel members required for the elastomeric bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type I.
- Anchor bolts and side retainers at all supports shall be installed as each member is erected unless an equivalent temporary means of lateral restraint is used.
- For Slot Railing and Curb Stringer sections and details see Sheet S-33.
- Prior to ordering any material, the Contractor shall field verify all bearing heights and shim thickness dimensions.

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type I	Each	32
Anchor Bolts, 1"	Each	64

**HBM**  
ENGINEERING GROUP, LLC

**wsp**  
WSP USA Inc.  
30 N. LASALLE STREET  
SUITE 4200  
CHICAGO, IL 60602  
TEL: (312) 782-8150  
FAX: (312) 782-1884

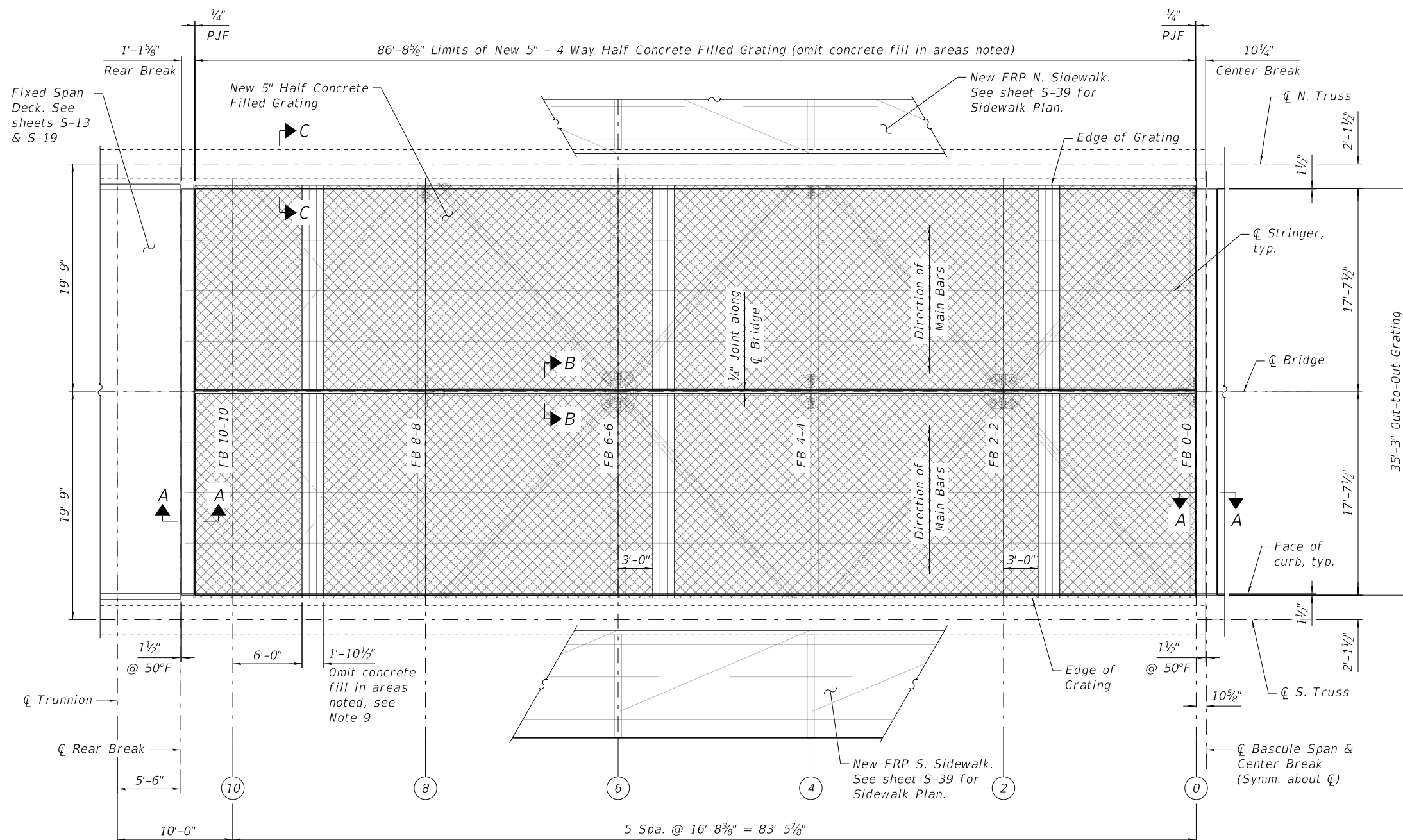
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PLOT DATE = \$DATE\$	CHECKED - MA	REVISED -

**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

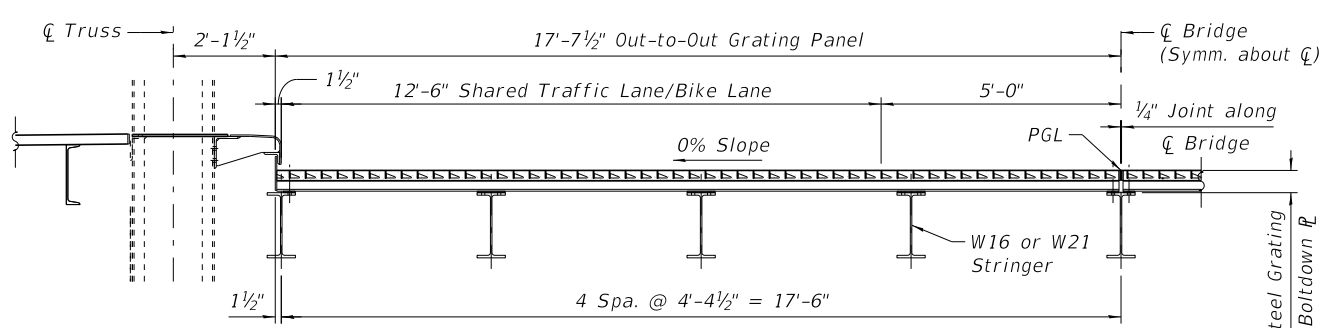
**BEARING DETAILS  
(STRUCTURE NO. 016-6057)**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-35
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**DECK PLAN - BASCULE SPAN**  
(West Leaf shown, East Leaf opposite hand)

- Notes:**
1. All structural steel shall be AASHTO M270 Grade 50, unless noted otherwise.
  2. Load Carrying components designated "NTR" shall conform to the Impact Testing Requirement, Zone 2.
  3. All material and workmanship shall conform to the IDOT Standard Specifications for Road and Bridge Construction.
  4. All welding shall be in accordance with the latest version of the AASHTO/AWS D1.1 and AASHTO/AWS D1.5.
  5. After fabrication, all material shall be hot-dip galvanized according to ASTM A123.
  6. The deck shall be manufactured from the following steel elements:
    - 5 3/16" deep Main Bar @ 7 1/2" c/c.
    - 1/4" x 2 1/2" Cross bar @ 4" c/c.
    - 1/4" x 1" Diagonal bar (2 between each main bar).
    - 1/4" x 1" Supplemental bar @ 7 1/2" c/c.
  7. The tops of all bars in areas where concrete fill is omitted shall be serrated. Serrations shall be 3/16" deep by 3/8" wide.
  8. Pavement markings shall be striped on the deck after new grating is in place.
  9. Locations and dimensions shown for omitting concrete fill and form pan may be adjusted by the steel grating fabricator as needed to accommodate main bars, cross bars, and supplemental bars. Cost associated with modifications to these dimensions to provide Open Grating at the locations shown is included with Furnishing and Erecting 5-inch Half Concrete Filled Grating.
  10. See sheet S-37 for roadway grating sections and details.



**TYPICAL HALF-SECTION - ROADWAY GRATING**

**LEGEND**

- Half Concrete Filled Grating
- Open Grating

**BILL OF MATERIAL**

ITEM	UNIT	TOTAL
Furnishing and Erecting 5-inch Grating, Half Concrete Filled	Sq. Ft.	6,114

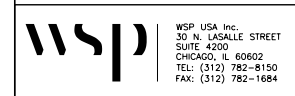
Quantity shown includes West and East Leaf.

**REFERENCE DRAWINGS**

Drawing  
Roadway Steel Decking

Sheet No.  
1660570250

0166057-E1525-S036-BASCULEDECKPLAN.DGN



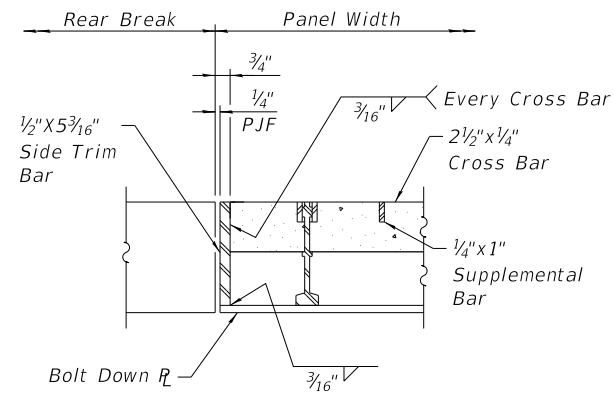
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**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

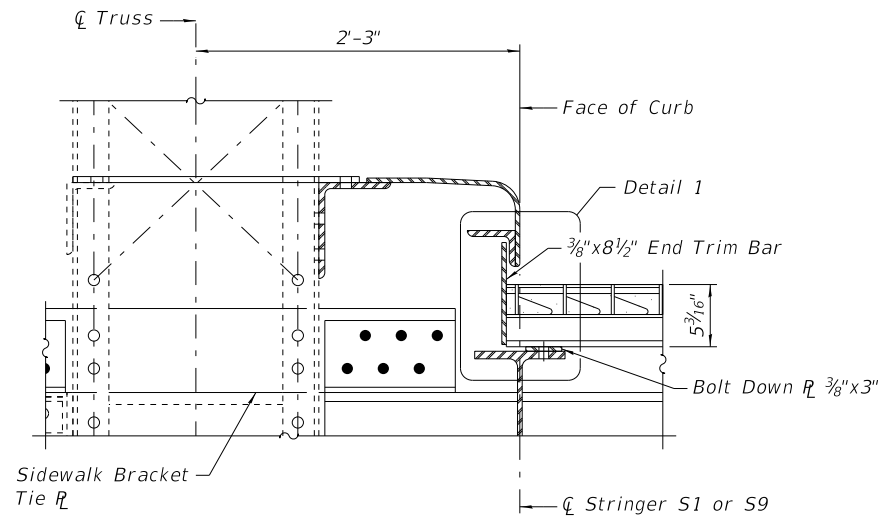
**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

**BASCULE SPAN:  
DECK PLAN  
(STRUCTURE NO. 016-6057)**

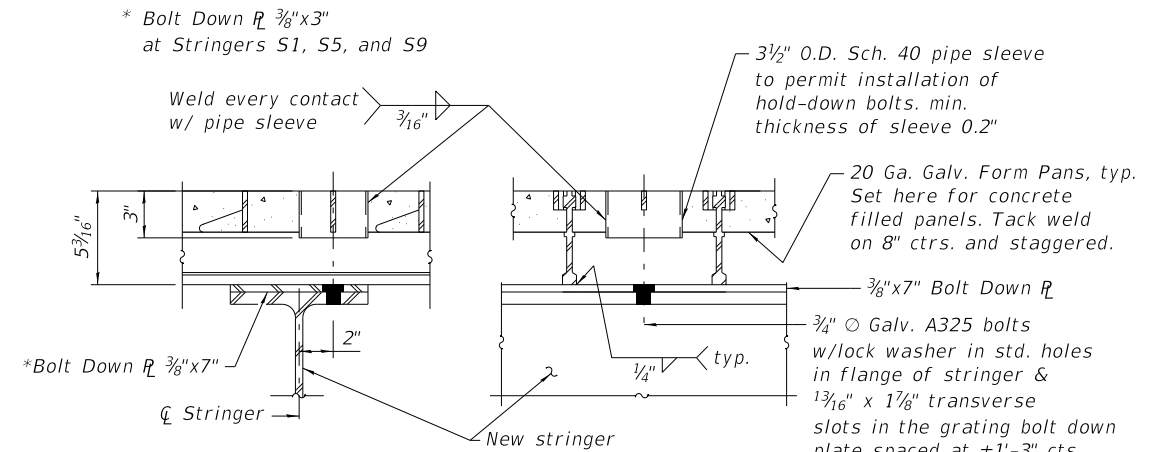
F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-36
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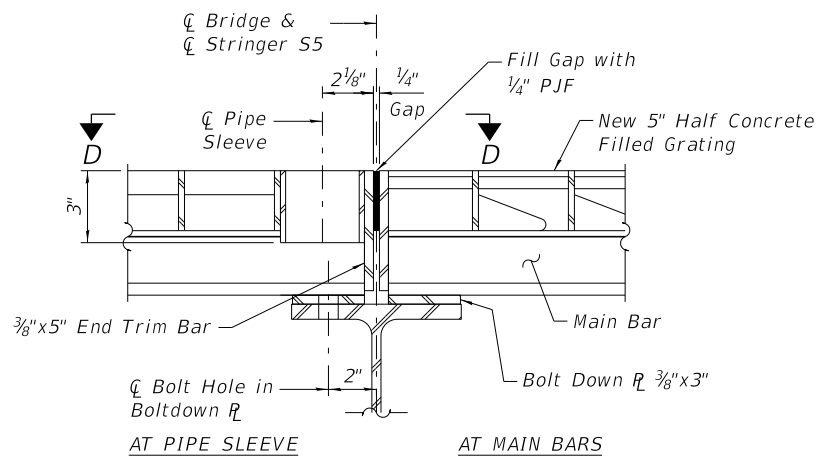
**SECTION A-A**  
**END PANEL AT REAR BREAK**  
 (Similar at Center Break)



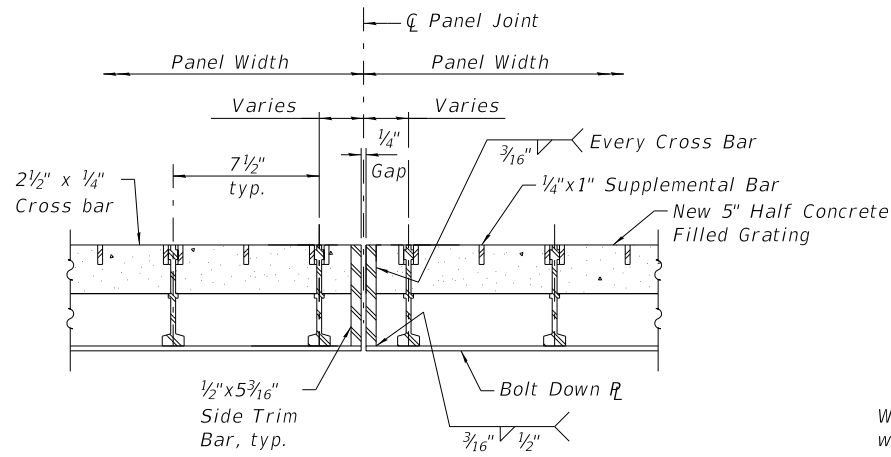
**SECTION C-C**



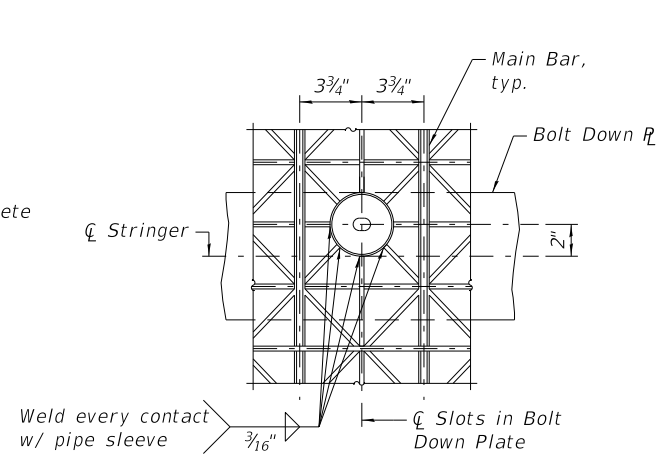
**GRATING BOLT DOWN DETAIL**  
 (Typical for all stringers unless noted otherwise)



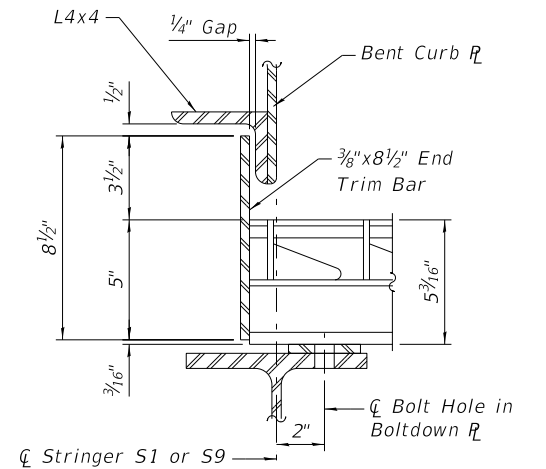
**SECTION B-B**  
 (Concrete fill not shown for clarity)



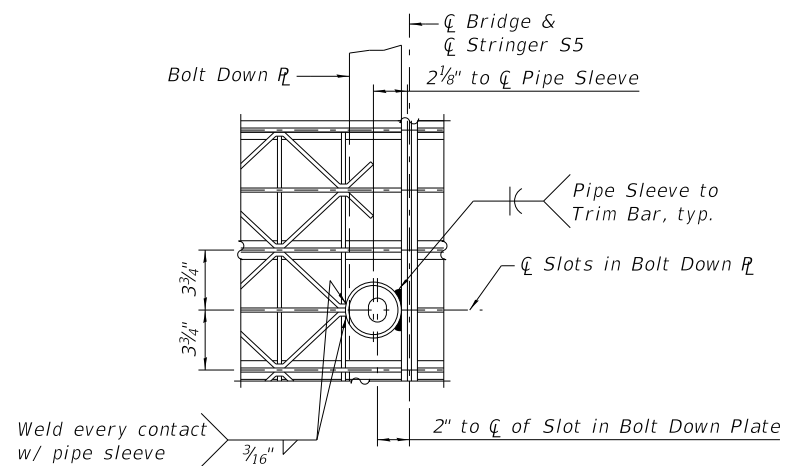
**TYPICAL INTERIOR PANEL JOINT**



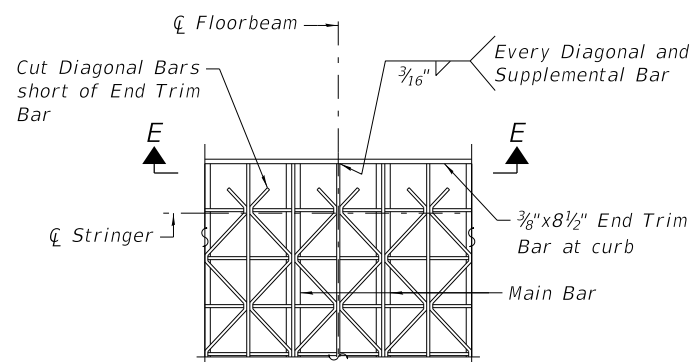
**PLAN**  
**PIPE SLEEVE & BOLT DOWN PLATE**  
 (Typical for all stringers unless noted otherwise)



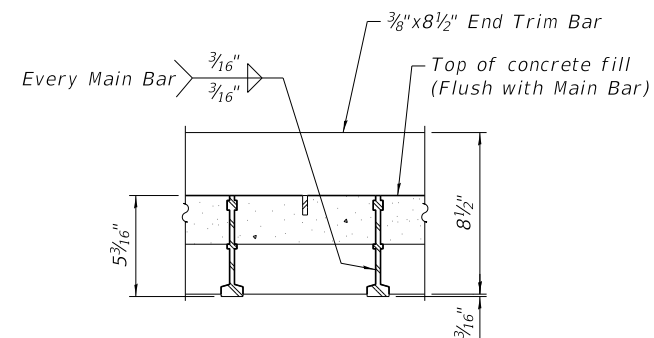
**DETAIL 1**



**VIEW D-D**  
**PIPE SLEEVE & BOLT DOWN PLATE**



**PLAN**  
**GRATING AT CURB**



**SECTION E-E**  
 (Diagonal bars not shown for clarity)

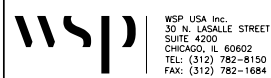
- Notes:  
 1. See sheet S-36 for additional notes and location of Section A-A, B-B, and C-C.  
 2. See sheet S-38 for curb details.

**REFERENCE DRAWINGS**

Drawing  
 Roadway Steel Decking

Sheet No.  
 1660570250

0166057-E1525-S037-DECKDETAILSBSASCULE.DGN



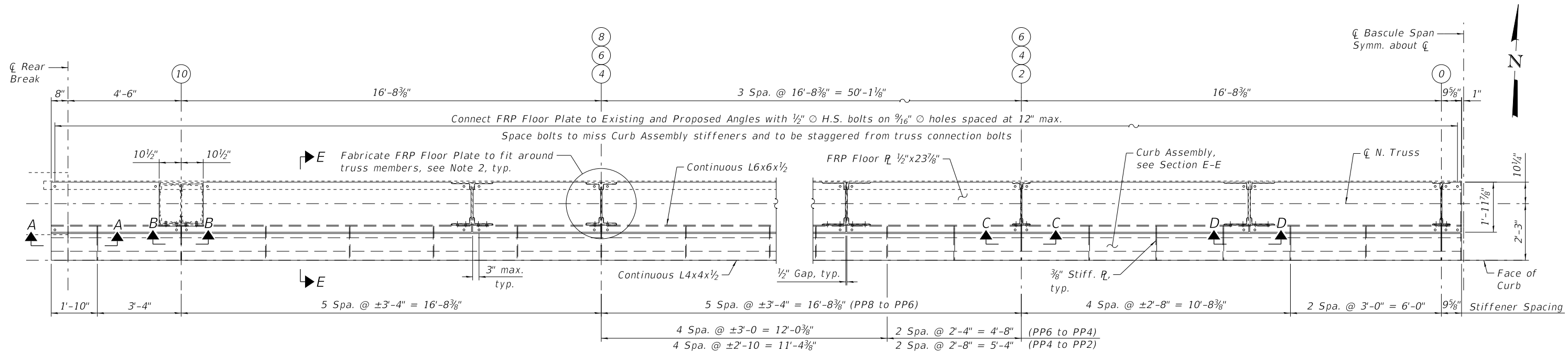
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**CITY OF CHICAGO**  
 DEPARTMENT OF TRANSPORTATION  
 DIVISION OF ENGINEERING

**WEBSTER AVENUE BRIDGE OVER  
 THE NORTH BRANCH CHICAGO RIVER**

**BASCULE SPAN:  
 DECK DETAILS  
 (STRUCTURE NO. 016-6057)**

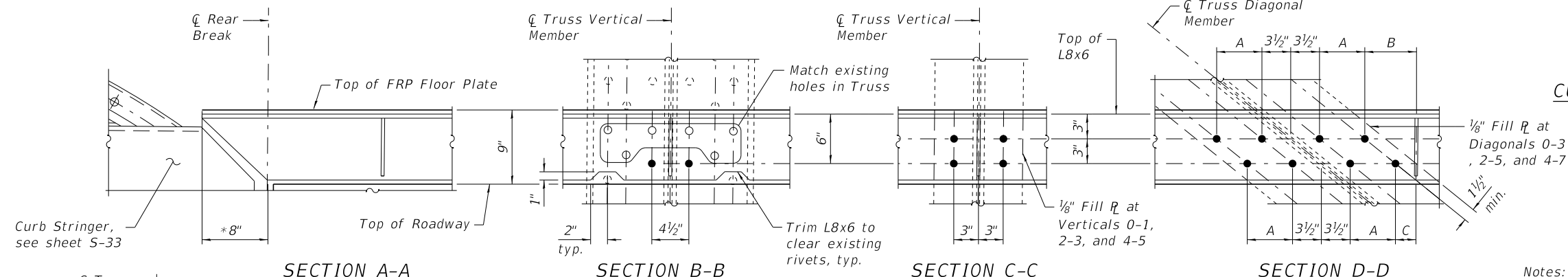
F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-37
CDOT PROJECT NO. E-1-525			80 of 210



**CURB PLAN - BASCULE SPAN**

(North Curb on W. Leaf and South Curb on E. Leaf shown, South Curb on W. Leaf and North Curb on E. Leaf opposite hand)

\* Cope Curb Assembly as shown. Field verify 8" dimension prior to fabrication to provide 1 1/2" clr. to fixed part)



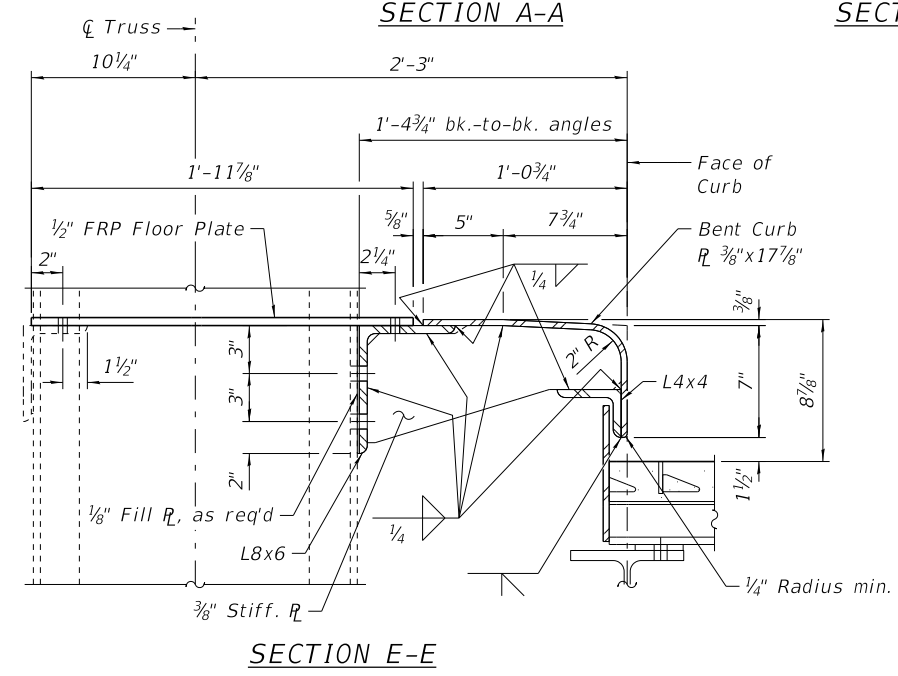
**CURB CONNECTION TO TRUSS DIAGONALS**

Diagonal	A	B	C
0-3	5 1/2"	6 1/16"	1 7/16"
2-5	5 1/2"	6 1/4"	2 1/2"
4-7	4 1/2"	5 3/8"	2 1/16"
6-9	3 1/2"	1'-0 1/4"	9 1/16"
8-11	3 1/2"	11 1/16"	8 3/8"

- Notes:
- The cost of furnishing and erecting the roadway curb is included in the cost of Furnishing and Erecting Structural Steel.
  - The FRP floor plate used for truss cover plates shall be included in the cost of Furnishing and Erecting FRP Grating but shall not be measured separately for payment. FRP floor plates shall be fabricated to clear truss vertical and diagonal members. Provide ±1/4" clearance between FRP floor plates and truss members.
  - Removal of existing rivets and replacing them with H.S. bolts at vertical truss member 10-10a is included with Furnishing and Erecting Structural Steel.

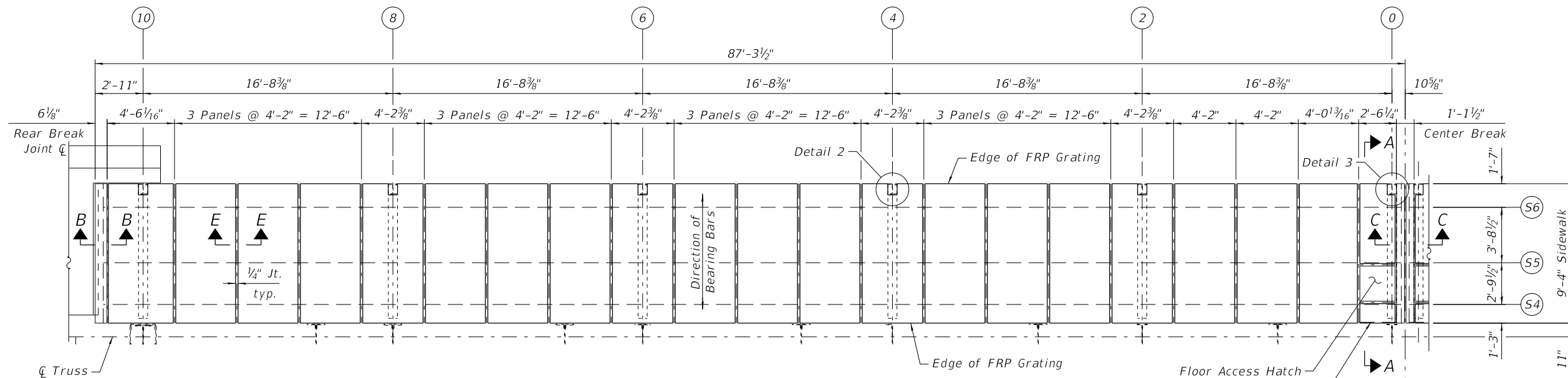
**REFERENCE DRAWINGS**

Drawing	Sheet No.
Curb Assembly Details	1660570247
Curb Assembly and Cover Plates	1660570127



0166057-E1525-S038-CURBDETAILSBASCULE.DGN





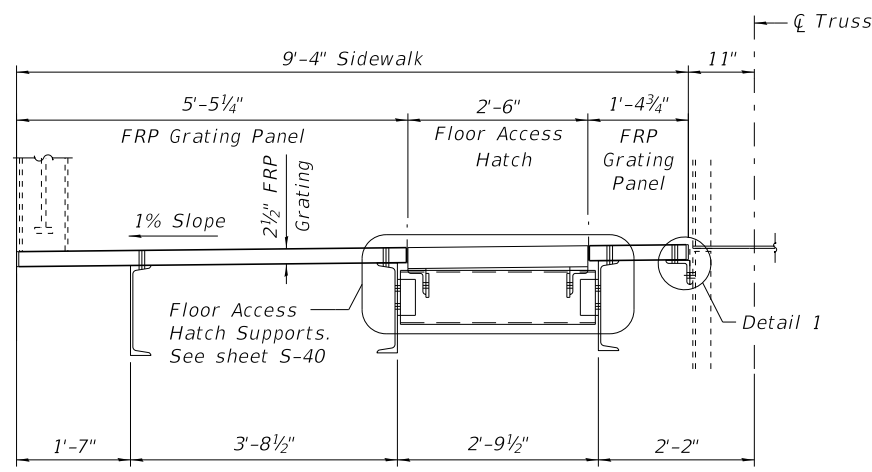
**SIDEWALK PLAN - BASCULE SPAN**  
(North Sidewalk on West Leaf shown, South Sidewalk Opposite Hand, East Leaf symmetrical about  $\bar{C}$  of Bridge)

Center Break  
1'-1 1/2"  
1'-7"  
2'-9 1/2"  
3'-8 1/2"  
9'-4" Sidewalk  
1'-3"  
11"  
 $\bar{C}$  Bascule Span (Symm. about  $\bar{C}$  unless noted otherwise)

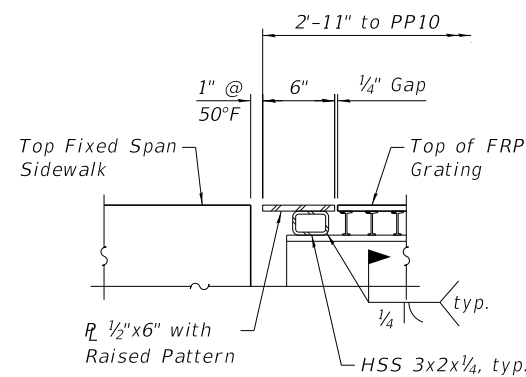
L4x4x1/2 at end panel only, see Detail 1

**Notes:**

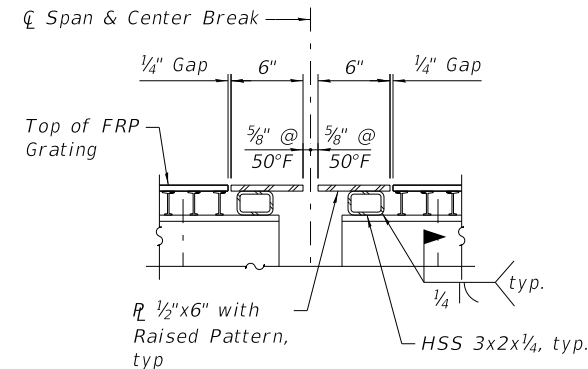
1. The Contractor shall field verify dimensions of existing sidewalk posts prior to fabrication of sidewalk grating. A gap of 1/2" ( $\pm 1/16"$ ) shall be provided around the existing sidewalk posts.
2. Holes in FRP panels shall be shop drilled. Coordinate fabrication of FRP with Sidewalk Stringer fabrication. Cost for coordinating this effort is included with Furnishing and Erecting FRP Grating.
3. Raised pattern steel plates shall conform to the requirements of ASTM A786.
4. Place panels on supporting members and adjust into final position with proper bearing and alignment at joints and supports and fasten immediately. End panel at the breaks shall be the last one to be installed. Adjust height, pitch of the end panels to meet fixed span rear breaks after live load shimming has been completed. Verify required gap at the center and rear breaks. Make corrections to panel widths as necessary to meet required clearances and gaps.
5. HSS tubes for sidewalk rear and center breaks shall be hot-dip galvanized in accordance with AASHTO M111. See Special Provisions. Cost included with Furnishing and Erecting Structural Steel.
6. Cost of furnishing and installation of the sidewalk rear and center breaks shall included in the cost of Furnishing and Erecting Structural Steel.
7. Anchor bolts, nuts and washers for FRP Grating connections to sidewalk stringers shall be Stainless Steel Type 316. Cost included with Furnishing and Erecting FRP Grating.
8. See sheet S-40 for Details 2 and 3, Section E-E, Floor Door Supports, and for additional FRP Grating and connection details.



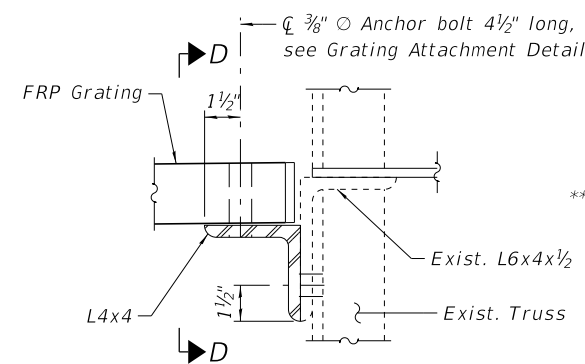
**SECTION A-A**  
**SIDEWALK GRATING AT FLOOR ACCESS HATCH**



**SECTION B-B**

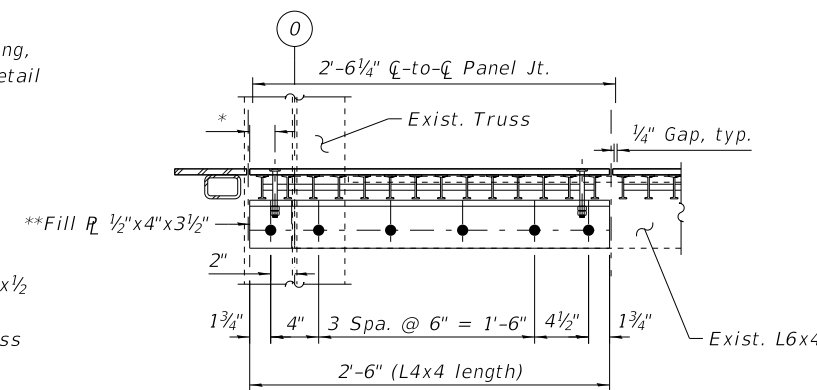


**SECTION C-C**



**DETAIL 1**

Holes in L4x4 shall be shop drilled. Use L4x4 as template to field drill holes on existing L6x4 and Truss.



**SECTION D-D**

\* Per FRP Grating Manufacturer. Coordinate anchor bolt location with structural steel fabricator. Cost included with Furnishing and Erecting FRP Grating.

\*\* Length of Fill  $\bar{R}$  to be field verified.

**MINIMUM SECTION PROPERTIES**

(Properties shown are per foot width of FRP Grating)

- I = 1.68 in<sup>4</sup>
- St = 1.96 in<sup>3</sup>
- Sb = 1.47 in<sup>3</sup>
- Avg. EI = 7,600,000 lb-in<sup>2</sup> (Span  $\geq$  24")

**BILL OF MATERIAL**

ITEM	UNIT	TOTAL
Furnishing and Erecting FRP Grating	Sq. Ft.	3,227
Floor Access Hatch	Each	4

Quantity shown includes West and East Leaf.

**REFERENCE DRAWINGS**

Drawing Sheet No.  
Sidewalk Decking 1660570251

0166057-E1525-S039-SIDEWALKPLANBASCULE.DGN



WSP USA Inc.  
30 N. LA SALLE STREET  
SUITE 4200  
CHICAGO, IL 60602  
TEL: (312) 782-8150  
FAX: (312) 782-1684

USER NAME = IJLOPEZ  
DESIGNED - IJL  
CHECKED - NBR  
REVISOR -  
REVISION -  
PLOT SCALE = N.T.S.  
DRAWN - IJL  
REVISOR -  
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REVISOR -

**CITY OF CHICAGO**  
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DIVISION OF ENGINEERING

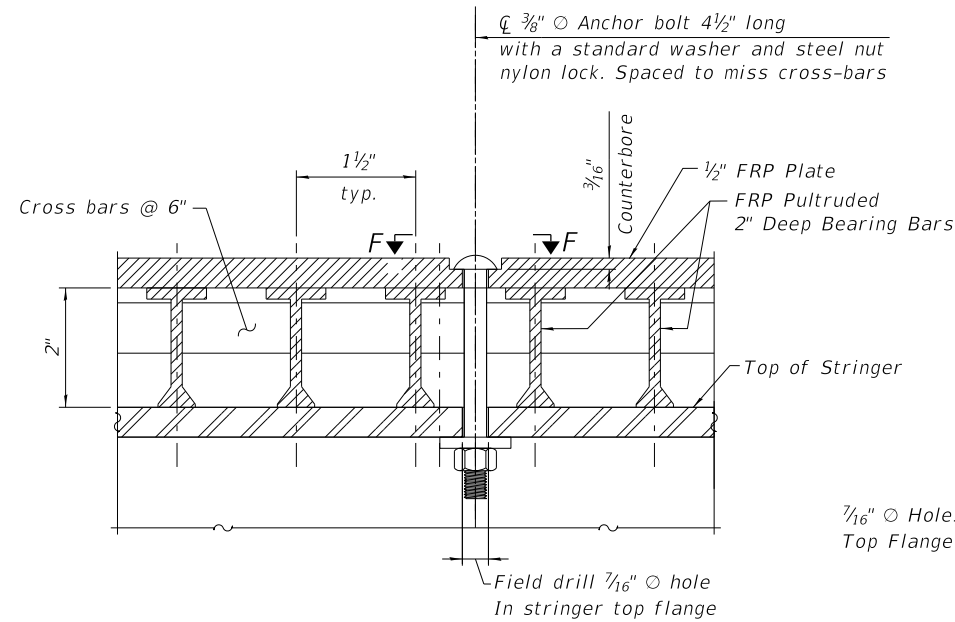
**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

**BASCULE SPAN:  
SIDEWALK PLAN  
(STRUCTURE NO. 016-6057)**

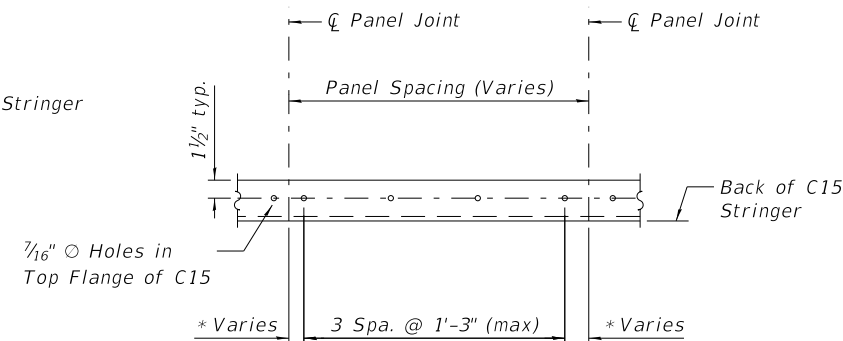
F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-39

CDOT PROJECT NO. E-1-525 82 of 210

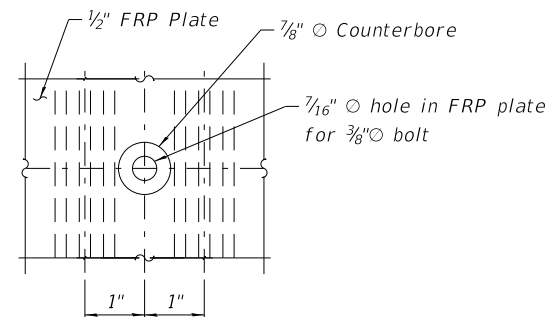
Notes:  
 1. See sheet S-39 for additional notes and locations of Section E-E and Details 2 and 3.



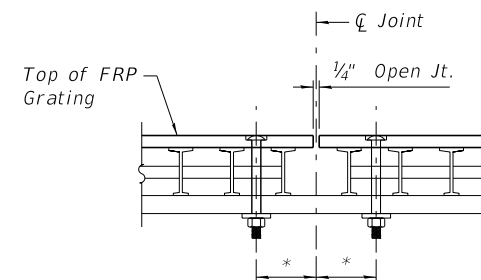
**GRATING ATTACHMENT DETAIL**



**CONNECTION LAYOUT FOR FRP PANELS**

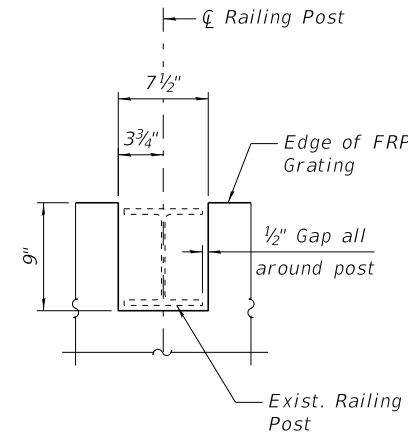


**VIEW F-F**



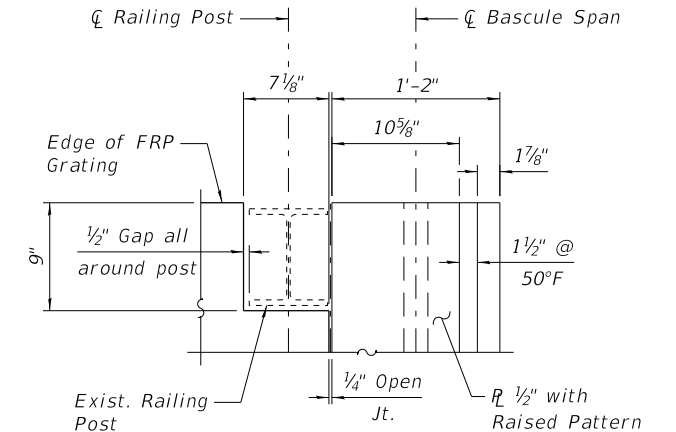
**SECTION E-E**

(Typical joint between panels)



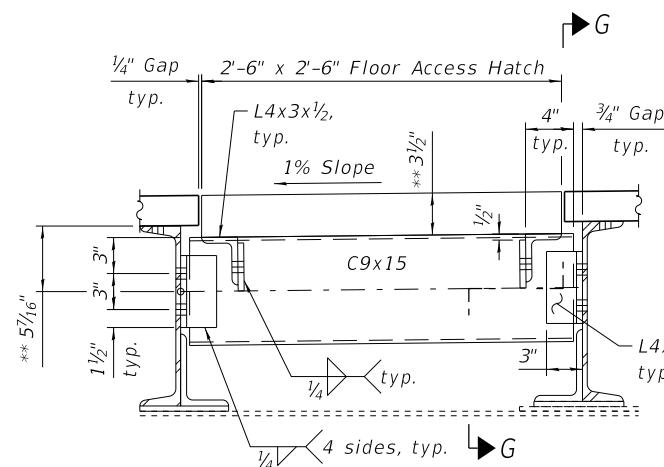
**DETAIL 2**

(Typical cutout detail around railing posts at PP2 thru PP10)



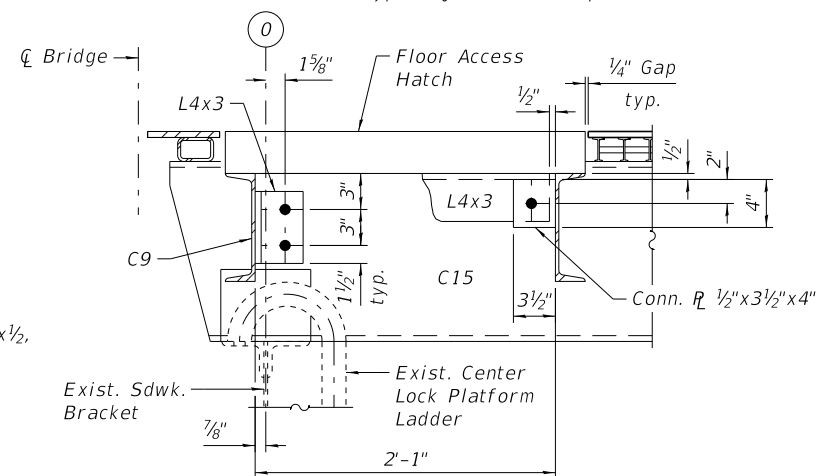
**DETAIL 3**

(Cutout detail around railing posts at PP0)



**FLOOR ACCESS HATCH SUPPORT**

(Existing Center Lock Platform Ladder not shown for clarity)



**SECTION G-G**

\* Minimum edge distance per FRP Grating Manufacturer Specifications.

\*\* Floor Access Hatch Support details based on overall depth of 3 1/2". Dimensions may vary depending on Floor Access Hatch manufacturer's design.

0166057-E1525-S040-SIDEWALKDETAILSBASCULE.DGN



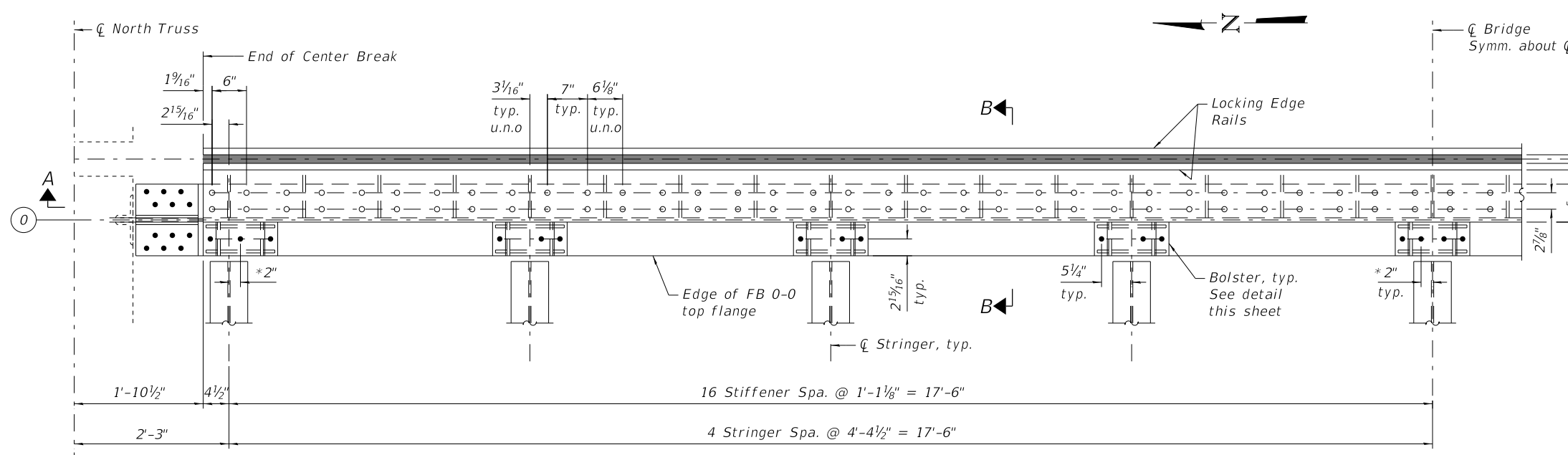
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**CITY OF CHICAGO**  
 DEPARTMENT OF TRANSPORTATION  
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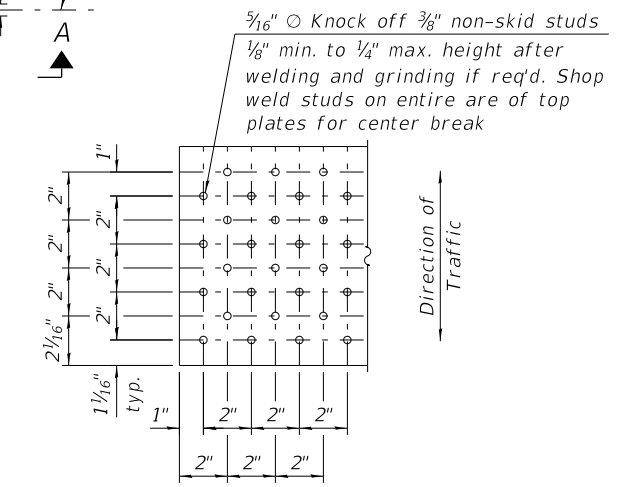
**WEBSTER AVENUE BRIDGE OVER  
 THE NORTH BRANCH CHICAGO RIVER**

**BASCULE SPAN:  
 SIDEWALK DETAILS  
 (STRUCTURE NO. 016-6057)**

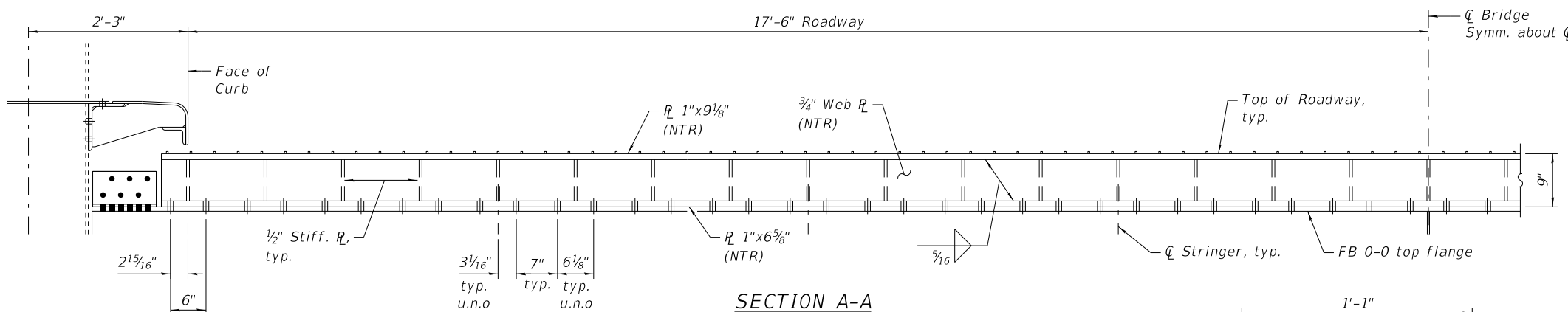
F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-40
CDOT PROJECT NO. E-1-525			83 of 210



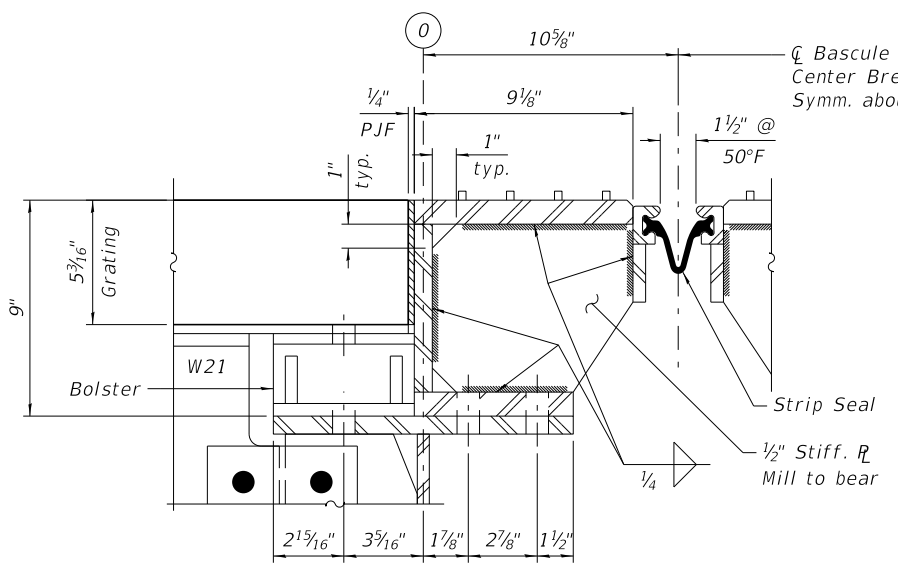
**ROADWAY CENTER BREAK PLAN**  
(West Leaf shown, East Leaf similar)



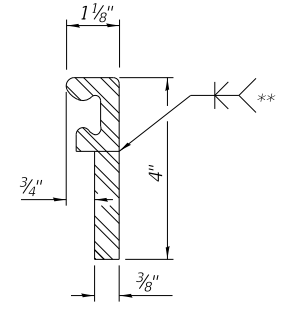
**RAISED PATTERN DETAIL**



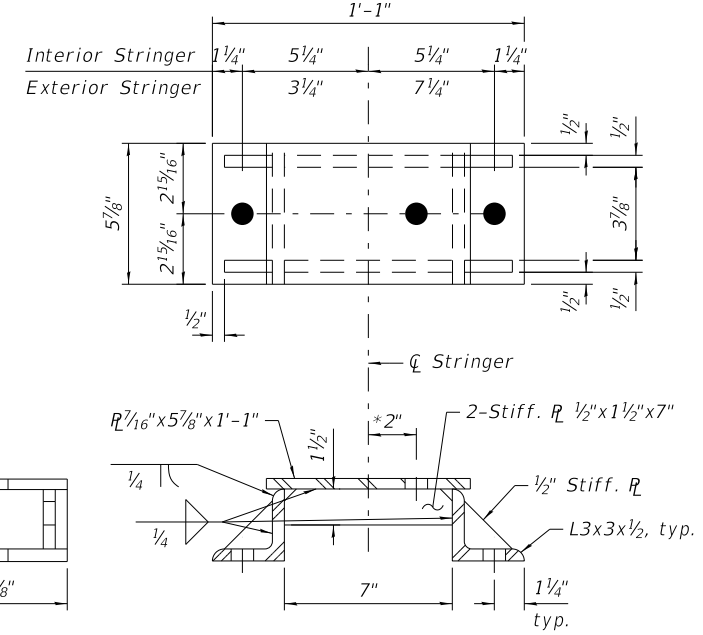
**SECTION A-A**



**SECTION B-B**



**LOCKING EDGE RAIL**



**TYPICAL BOLSTER DETAIL AT FB 0-0**  
(Bolster shown at interior stringer, similar at exterior stringers except as shown)

- Notes:
1. Load carrying components designated "NTR" shall conform to the Impact Testing Requirement, Zone 2.
  2. Cost of furnishing and installation of Center Break shall be included in the cost of Furnishing and Erecting Structural Steel.
  3. Final joint openings as it relates to the center break weldments are the responsibility of the Contractor. No additional compensation will be given if field or shop adjustments are necessary after fabrication to meet the required joint opening tolerances.
  4. The cost of welded strip seal shall be included in the cost of Preformed Joint Strip Seal.
  5. The strip seal shall be made continuous and shall have a minimum thickness of 1/4". The configuration of the strip seal shall match the configuration of the locking edge rails. Open or "webbed" strip seal gland configurations are not permitted. The gland shall be sized for a maximum rated movement of 4 inches.
  6. The locking edge rail depicted is configured for typical applications and are conceptual only. The actual configuration of the locking edge rails and matching strip seal may vary from manufacturer to manufacturer provided they fit the application and meet the minimum anchorage shown. Flanged edge rails, however, will not be allowed.
  7. The manufacturer's recommended installation methods shall be followed.
  8. The locking edge rail shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications.
  9. The Maximum space between locking edge rail segments shall be 3/16" and sealed with a suitable sealant; however, any rail joint within 10' measured perpendicular to the face of the curb or parapet shall be welded as shown in the locking edge rail splice detail on sheet S-42.
  10. Center break weldment, bolster, locking edge rails, bolts, nuts, and washers shall be galvanized according to AASHTO M111 or M232, as applicable.

**BILL OF MATERIAL**

Item	Unit	Quantity
Preformed Joint Strip Seal	Foot	36

0166057-E1525-S041-CENTERBREAKBASCALE.DGN

**wsp**  
WSP USA Inc.  
30 N. LASALLE STREET  
SUITE 4200  
CHICAGO, IL 60602  
TEL: (312) 782-8150  
FAX: (312) 782-1684

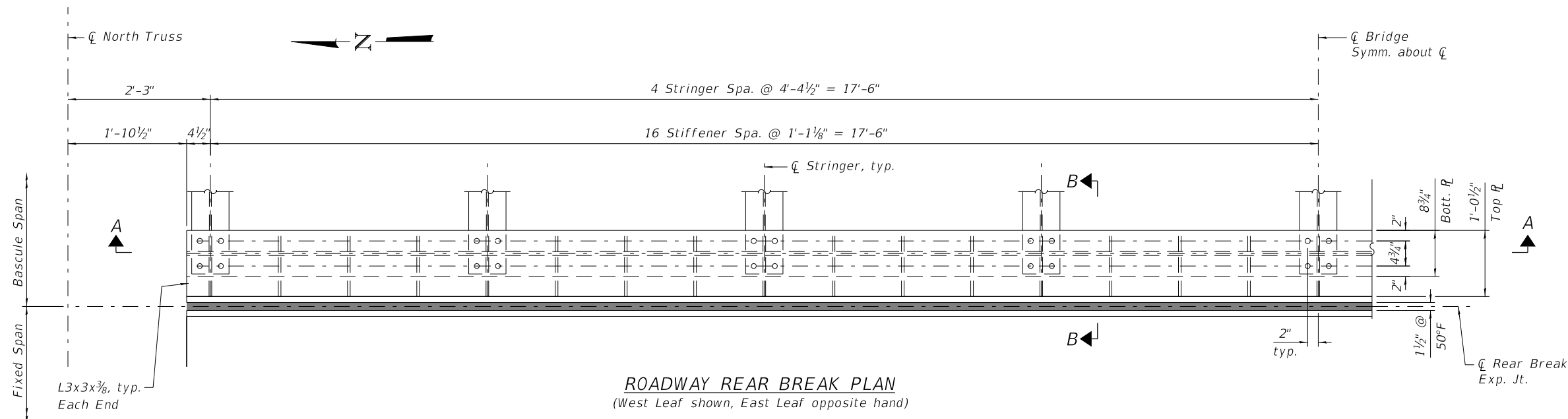
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	CHECKED - JIG	REVISED -

**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

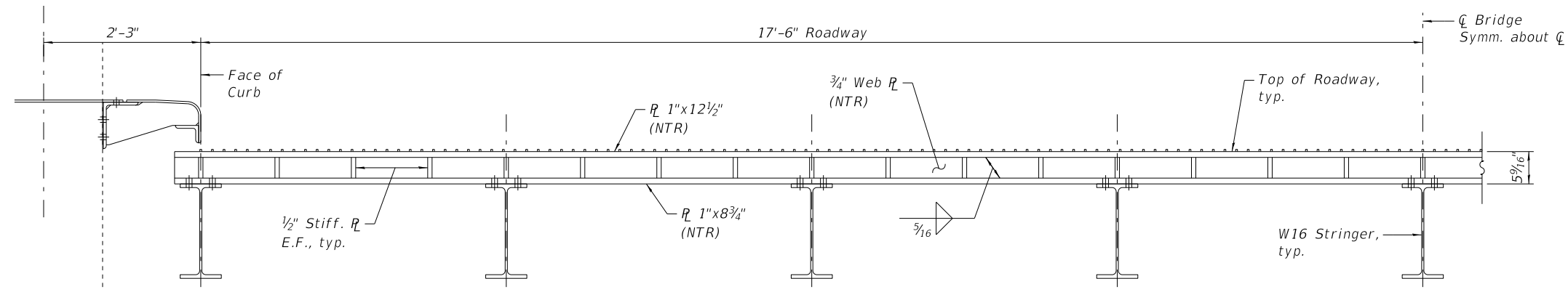
**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

**BASCULE SPAN:  
CENTER BREAK DETAILS  
(STRUCTURE NO. 016-6057)**

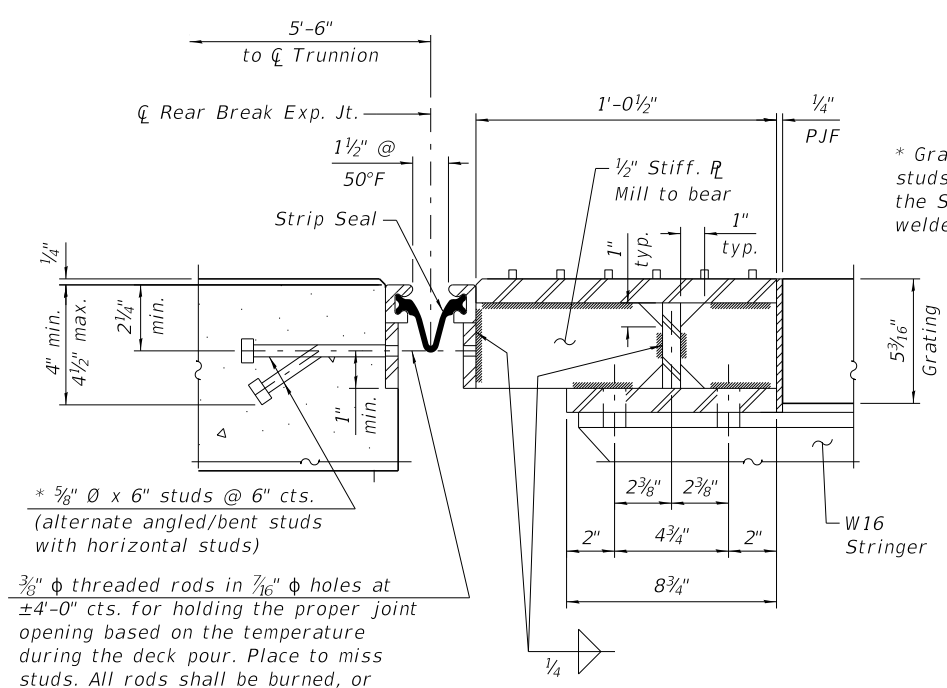
F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-41
CDOT PROJECT NO. E-1-525			84 of 210



**ROADWAY REAR BREAK PLAN**  
(West Leaf shown, East Leaf opposite hand)

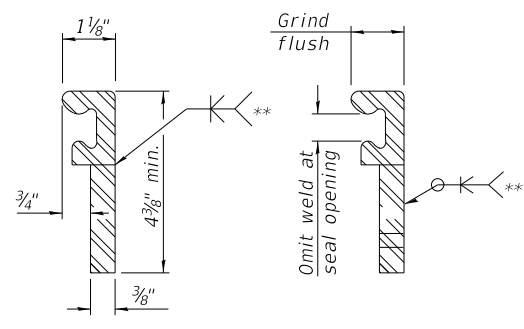


**SECTION A-A**



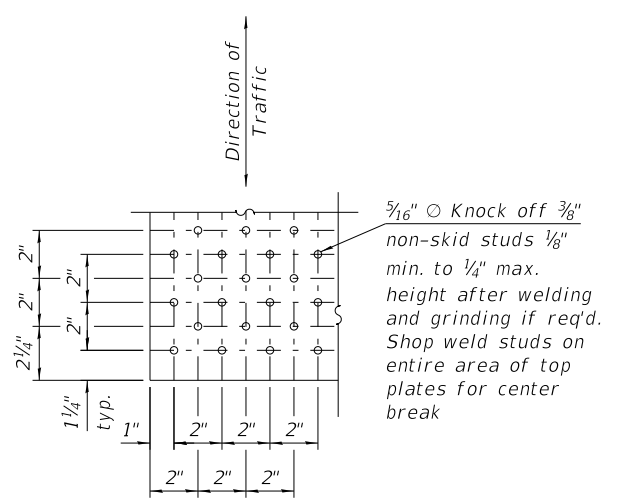
**SECTION B-B**

\* Granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs., automatically end welded.



**LOCKING EDGE RAIL AND SPLICE**

\*\* Back gouge not required if complete joint penetration is verified by mock-up.  
The inside of the locking edge rail groove shall be free of weld residue.



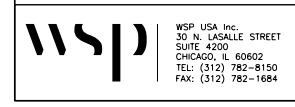
**RAISED PATTERN DETAIL**

- Notes:
1. Load carrying components designated "NTR" shall conform to the Impact Testing Requirement, Zone 2.
  2. Cost of furnishing and installation of Rear Break shall be included in the cost of Furnishing and Erecting Structural Steel.
  3. Final joint openings as it relates to the rear break weldments are the responsibility of the Contractor. No additional compensation will be given if field or shop adjustments are necessary after fabrication to meet the required joint opening tolerances.
  4. The cost of welded strip seal shall be included in the cost of Preformed Joint Strip Seal.
  5. The strip seal shall be made continuous and shall have a minimum thickness of 1/4". The configuration of the strip seal shall match the configuration of the locking edge rails. Open or "webbed" strip seal gland configurations are not permitted. The gland shall be sized for a maximum rated movement of 4 inches.
  6. The locking edge rail depicted is configured for typical applications and are conceptual only. The actual configuration of the locking edge rails and matching strip seal may vary from manufacturer to manufacturer provided they fit the application and meet the minimum anchorage shown. Flanged edge rails, however, will not be allowed.
  7. The manufacturer's recommended installation methods shall be followed.
  8. The locking edge rail shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications.
  9. The Maximum space between locking edge rail segments shall be 3/16" and sealed with a suitable sealant; however, any rail joint within 10' measured perpendicular to the face of the curb or parapet shall be welded as shown in the locking edge rail splice detail.
  10. Rear break weldment, locking edge rails, bolts, nuts, and washers shall be galvanized according to AASHTO M111 or M232, as applicable.

**BILL OF MATERIAL**

Item	Unit	Quantity
Preformed Joint Strip Seal	Foot	72

0166057-E1525-S042-REARBREAKBASCULE.DGN



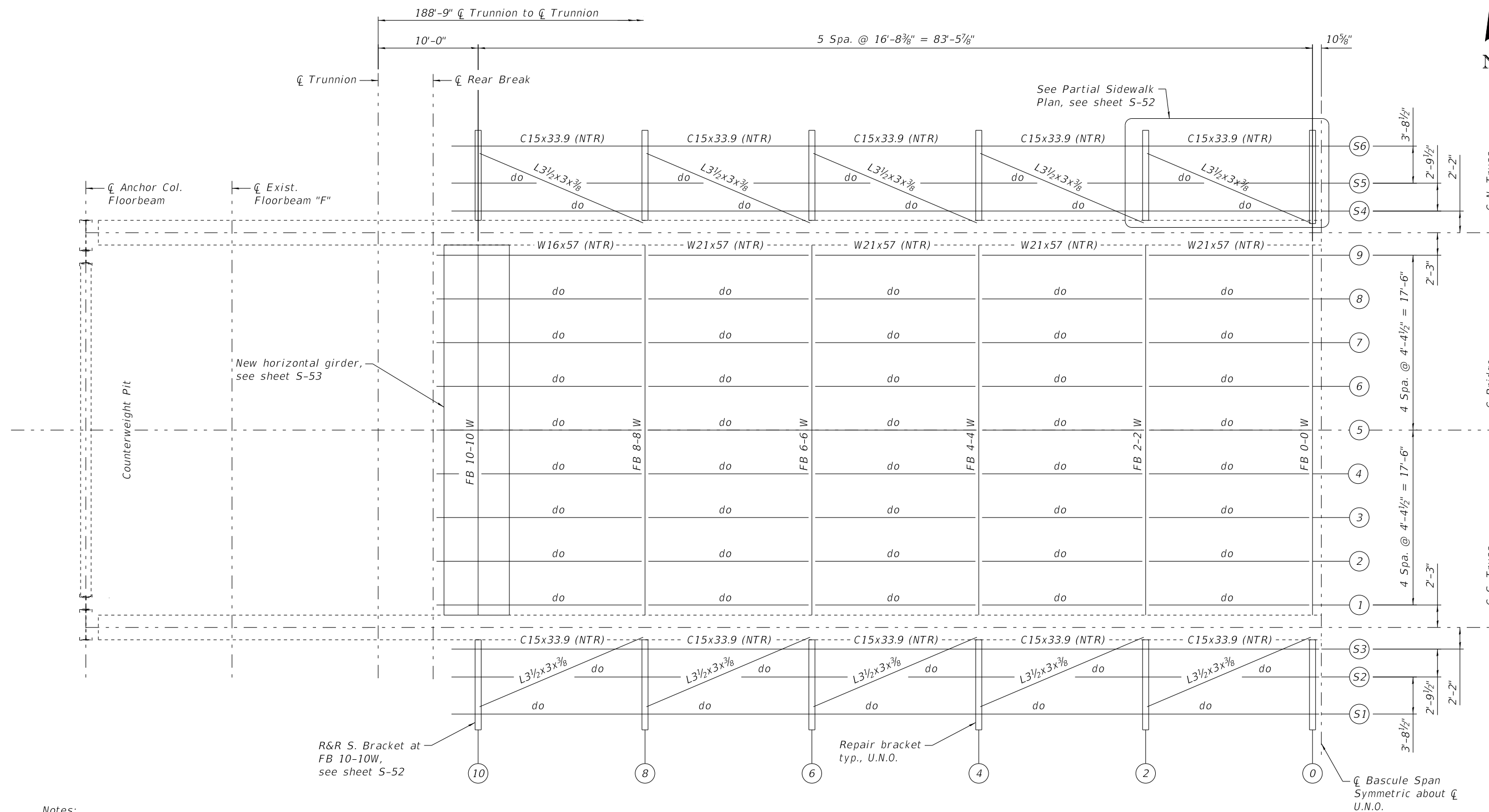
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	CHECKED - JIG	REVISIONS -

**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

**WEBSTER AVENUE BRIDGE OVER THE NORTH BRANCH CHICAGO RIVER**

**BASCULE SPAN: REAR BREAK DETAILS (STRUCTURE NO. 016-6057)**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-42
CDOT PROJECT NO. E-1-525			85 of 210



**Notes:**

1. Load carrying components designated "NTR" shall conform to the Impact Testing Requirement, Zone 2.
2. The cost of removal of the floor system of stringers, floorbeams, and sidewalk lateral bracing shall be included in the cost of Structural Steel Removal. The cost of proposed steel for the floor system shall be included in the cost of Furnishing and Erecting Structural Steel.
3. The cost of repairs to the existing sidewalk brackets, including removal and replacement, shall be included in the cost of Structural Steel Repairs. See Special Provision.

**FRAMING PLAN**  
(West Leaf shown, East Leaf opposite hand)

**REFERENCE DRAWINGS**

Drawing	Sheet No.
Movable Part- Stringers and Sub-Planking	1660570015
Erection Diagram	1660570245

0166057-E1525-S043-BASCULE FRM.DGN



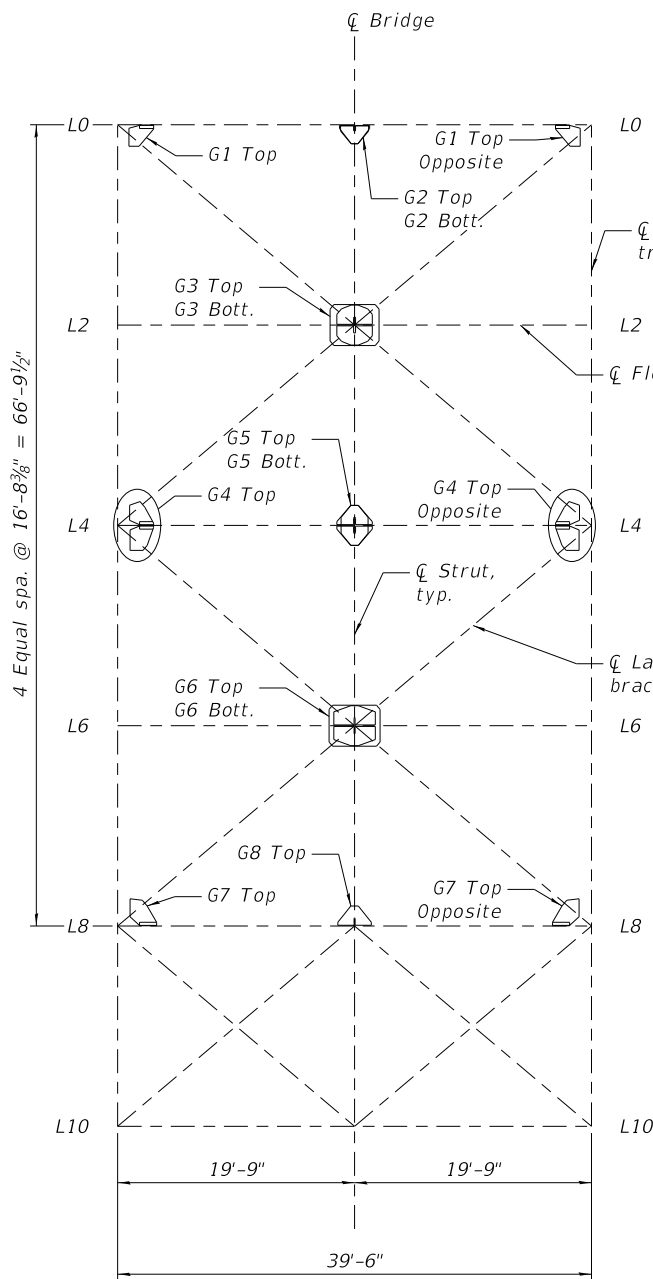
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**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

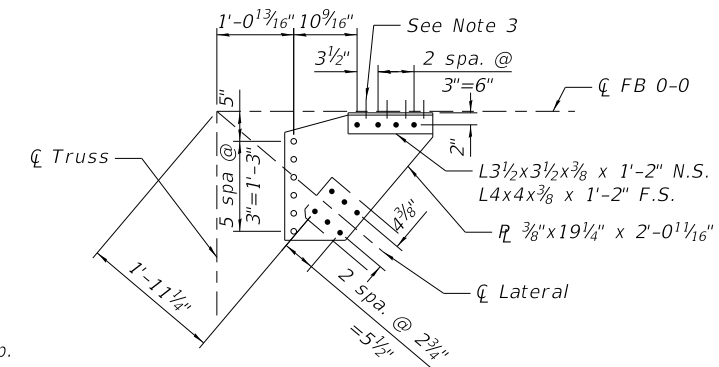
**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

**BASCULE SPAN:  
FRAMING PLAN  
(STRUCTURE NO. 016-6057)**

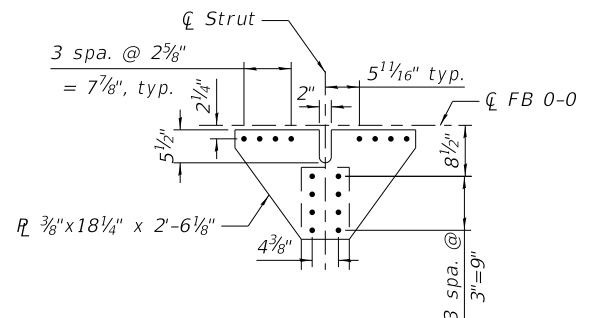
F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-43
CDOT PROJECT NO. E-1-525			86 of 210



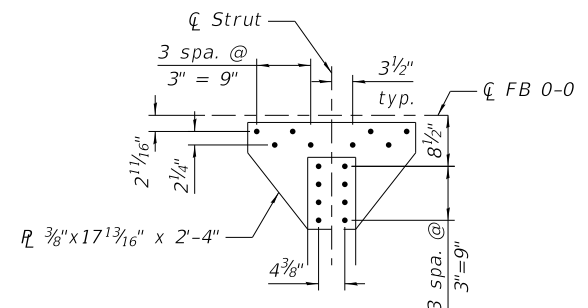
LATERAL BRACE GUSSET PLATE KEY PLAN



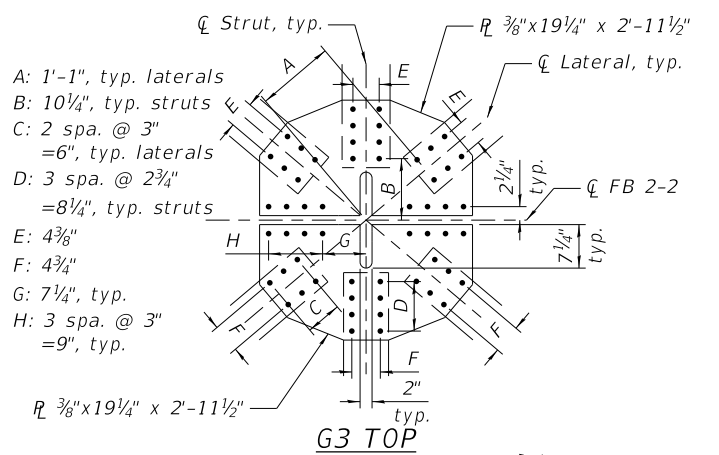
G1 TOP



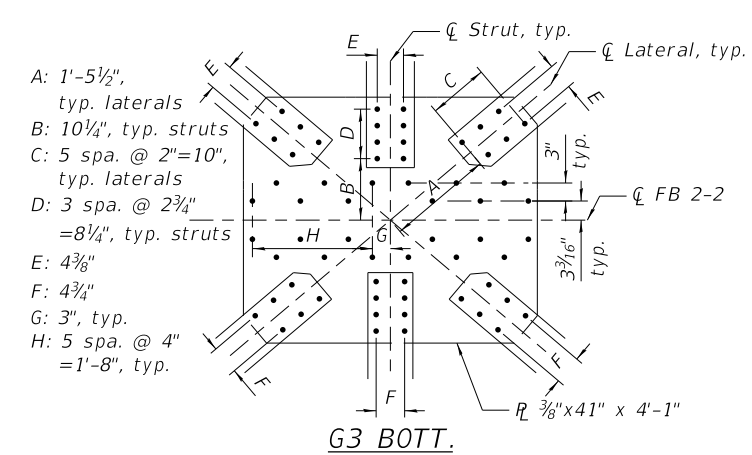
G2 TOP



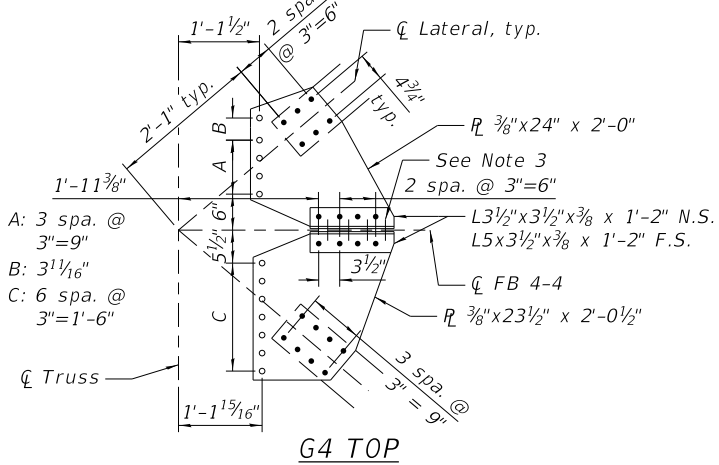
G2 BOTT.



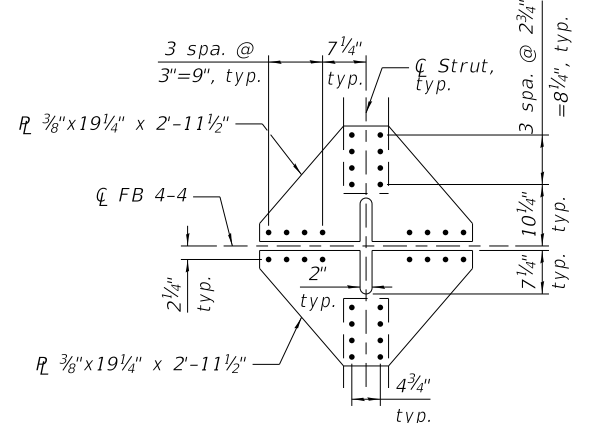
G3 TOP



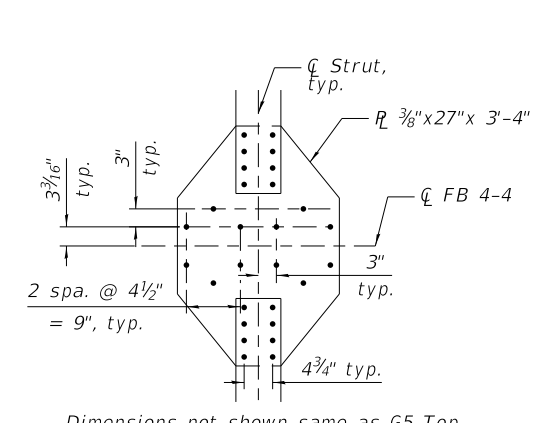
G3 BOTT.



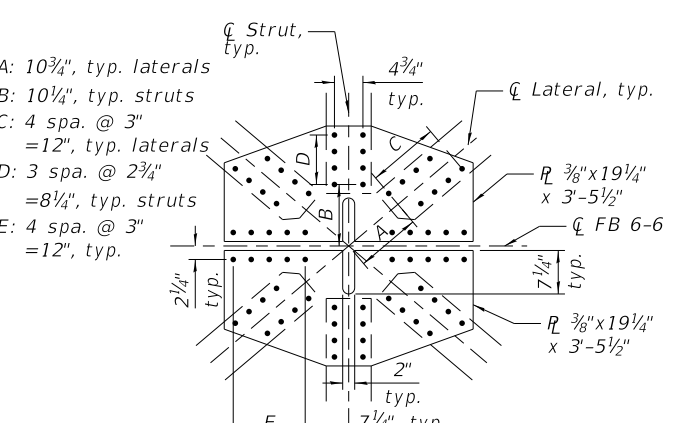
G4 TOP



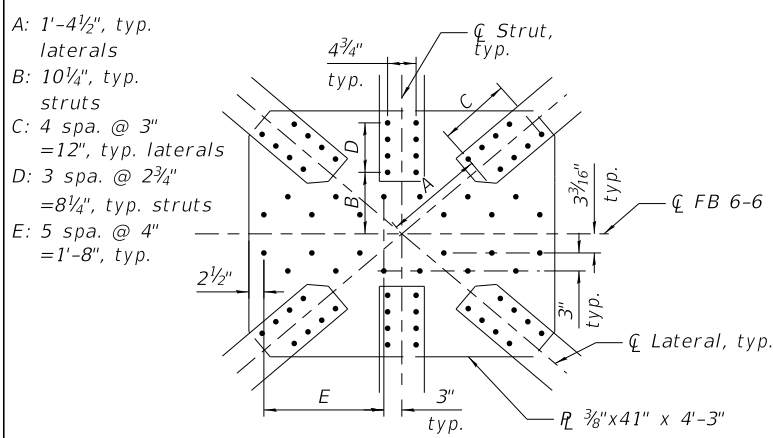
G5 TOP



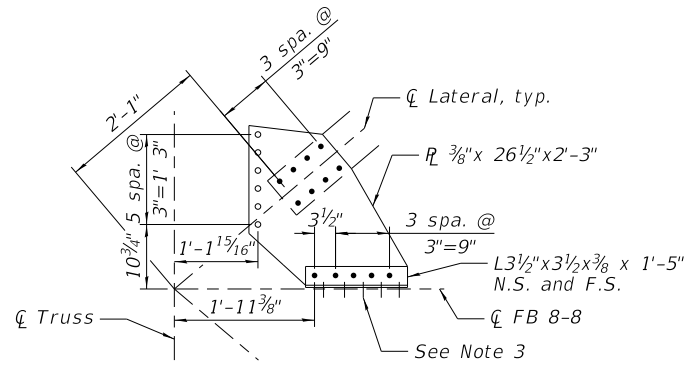
G5 BOTT.



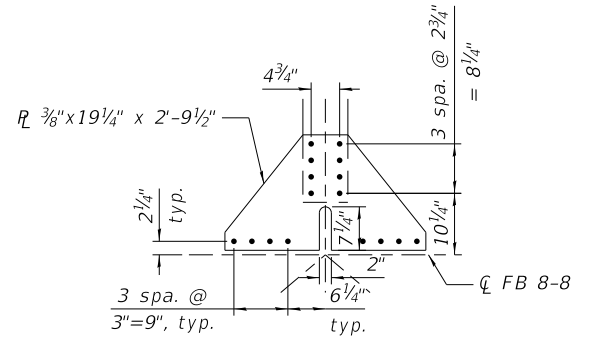
G6 TOP



G6 BOTT.



G7 TOP



G8 TOP

REFERENCE DRAWINGS

Drawing	Sheet No.
Erection Plan of Movable Part	1660570196
Laterals	1660570215
Center Lock Platform	1660570216

- Notes:
- Gusset plates to be replaced in kind, except as shown. Gusset plates are symmetrical about bridge centerline. "Opposite" indicates opposite hand.
  - Edge distances not shown are 1 1/2".
  - See sheets S-48 thru S-54 for bolt connection details to floorbeams.
  - See sheets S-46 and S-47 for lateral brace and strut details.
  - See sheets S-45 and S-47 for lateral brace, strut and gusset plate details from L8 to L10 and 10a.

0166057-E1525-S044-LATGUSSETS1



WSP USA Inc.  
30 N. LA SALLE STREET  
SUITE 4200  
CHICAGO, IL 60602  
TEL: (312) 782-8150  
FAX: (312) 782-1884

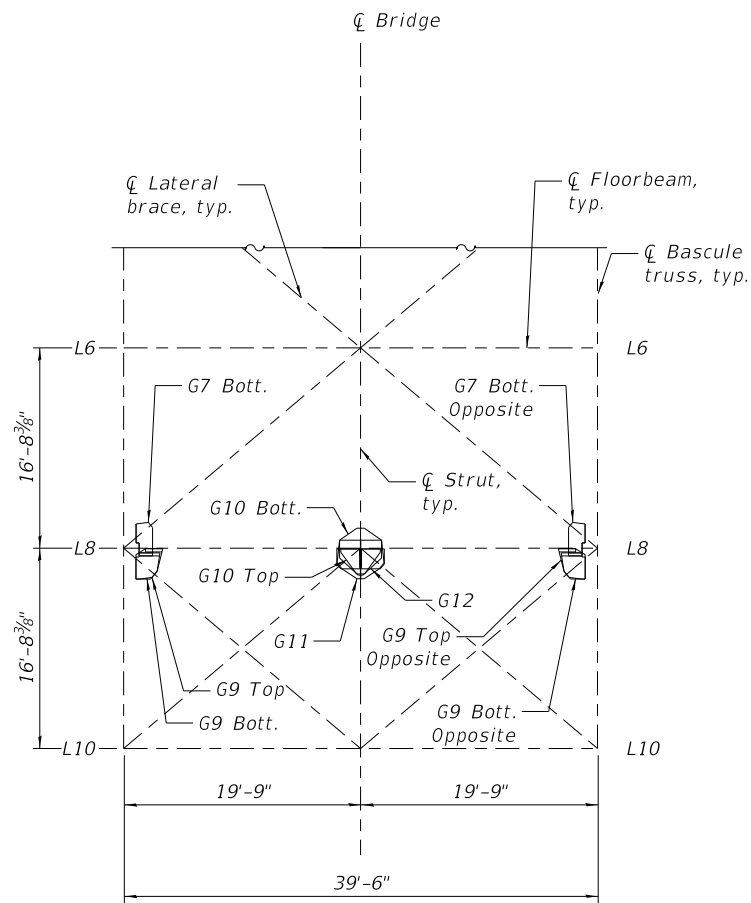
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**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

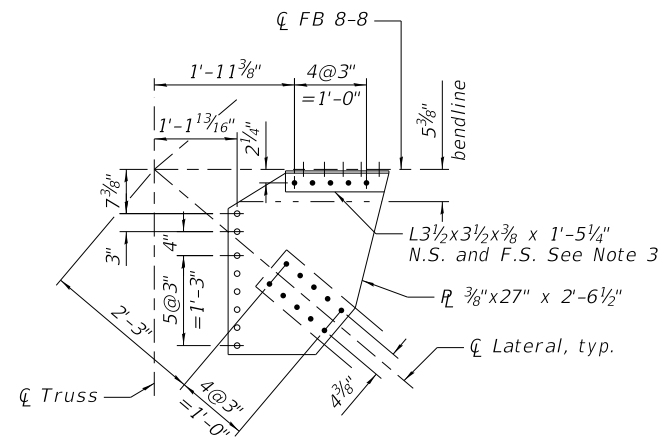
**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

**BASCULE SPAN:  
GUSSETS FOR LOWER LATERAL BRACING I  
(STRUCTURE NO. 016-6057)**

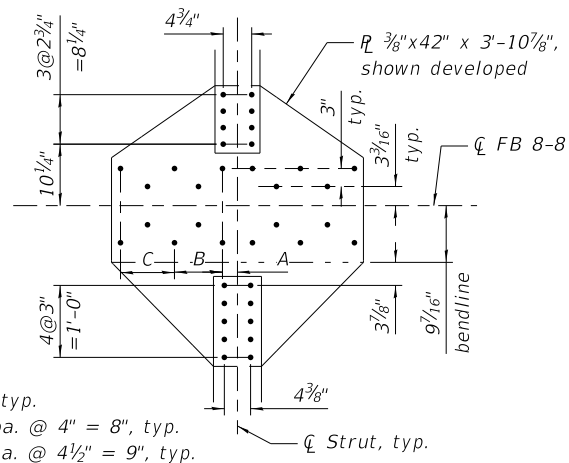
F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-44
CDOT PROJECT NO. E-1-525			87 of 210



LATERAL BRACE GUSSET PLATE KEY PLAN

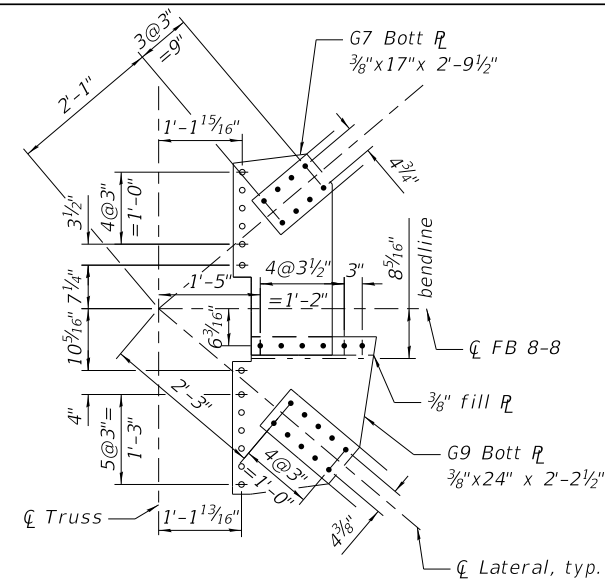


G9 TOP



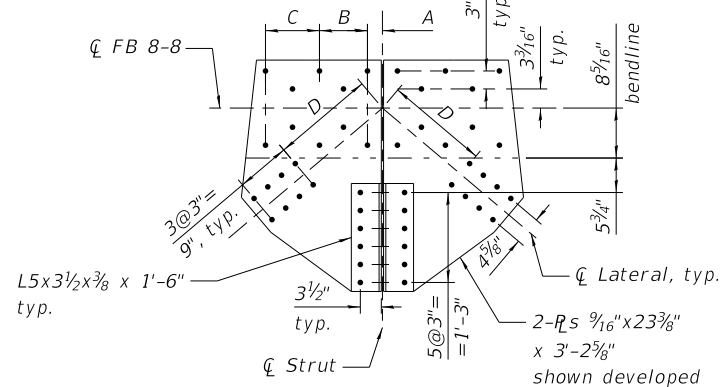
G10 BOTT.

A: 2 1/2" typ.  
 B: 2 spa. @ 4" = 8", typ.  
 C: 2 spa. @ 4 1/2" = 9", typ.



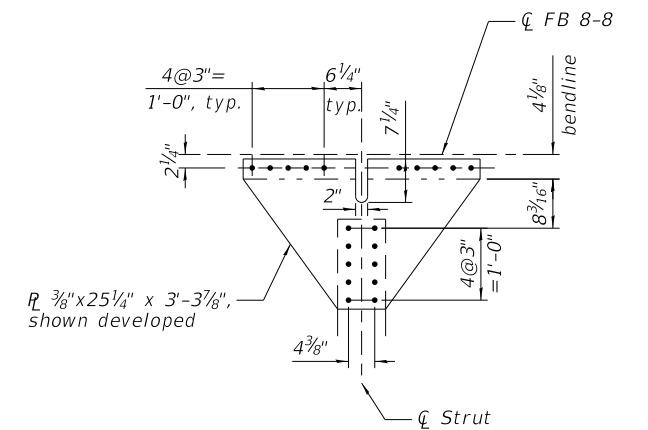
G7 BOTT. AND G9 BOT

A: 2 1/2" typ.  
 B: 2 spa. @ 4" = 8", typ.  
 C: 2 spa. @ 4 1/2" = 9", typ.  
 D: 1'-5 1/16", final position 1'-3 1/2" W.P. to bolt, typ.



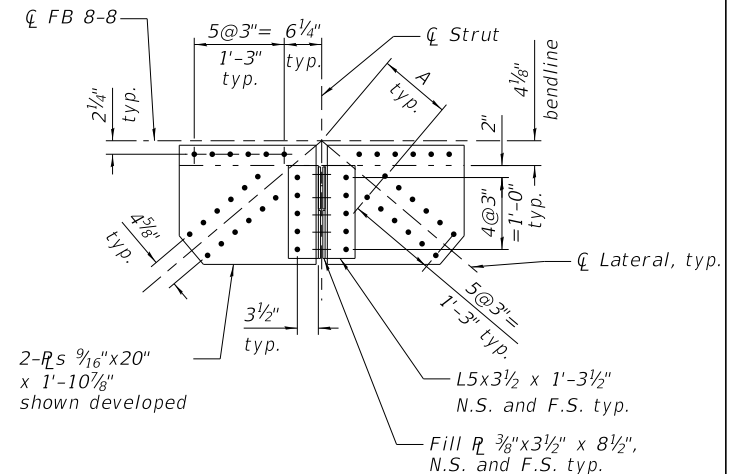
G11

(Strut and laterals not shown for clarity)



G10 TOP

A: 11 7/8", final position 1'-0" W.P. to bolt, typ.



G12

(Strut and laterals not shown for clarity)

REFERENCE DRAWINGS

Drawing	Sheet No.
Bracing for Floor Beam 10-10	1660570210
Center Lock Platform	1660570216

Notes:

- Gusset plates to be replaced in kind, except as noted. Gusset plates are symmetrical about the bridge centerline. "Opposite" indicates opposite hand.
- Edge distances not shown are 1/2" minimum.
- See sheets S-48 thru S-54 for bolt connection details to the floorbeams.
- See sheets S-46 and S-47 for lateral brace and strut details.
- See sheets S-44 and S-46 for lateral brace, strut and gusset plate details from L0 to L8.

0166057-E1525-S045-LATGUSSETS2



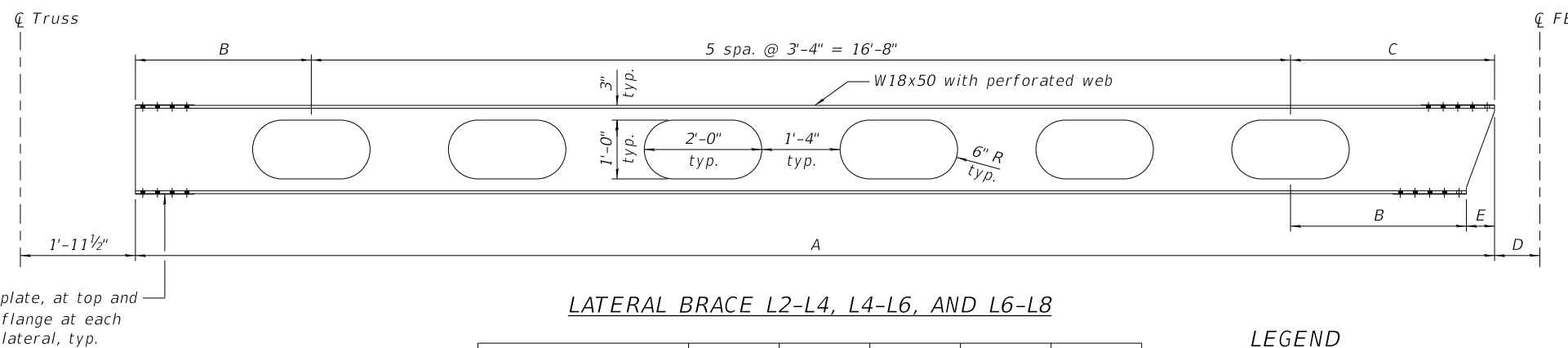
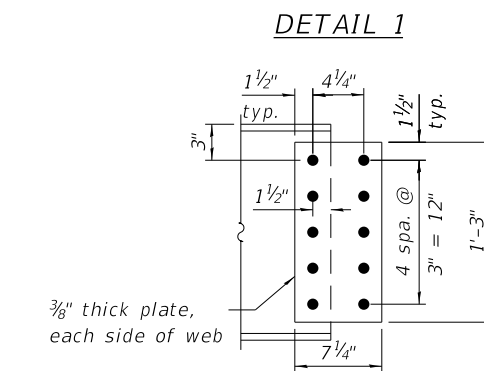
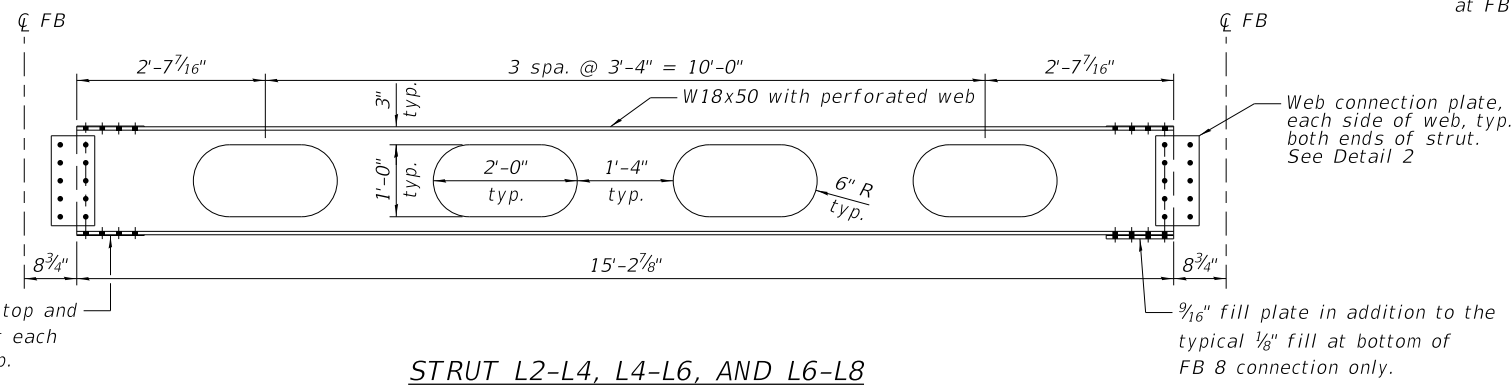
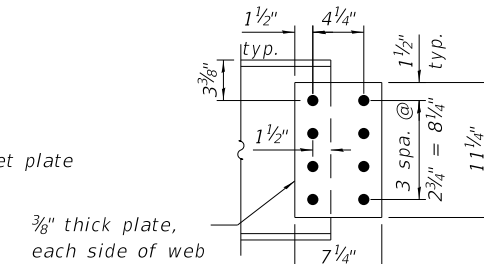
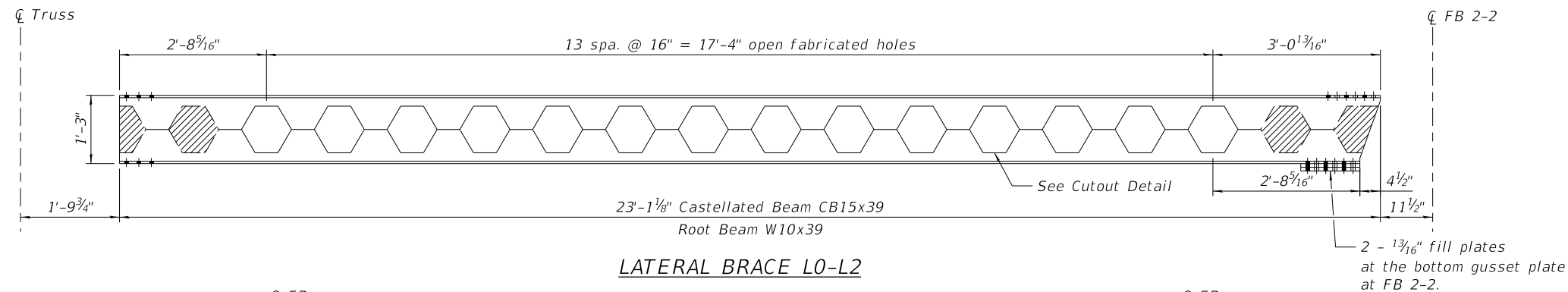
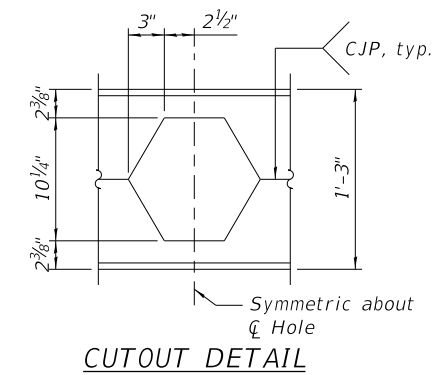
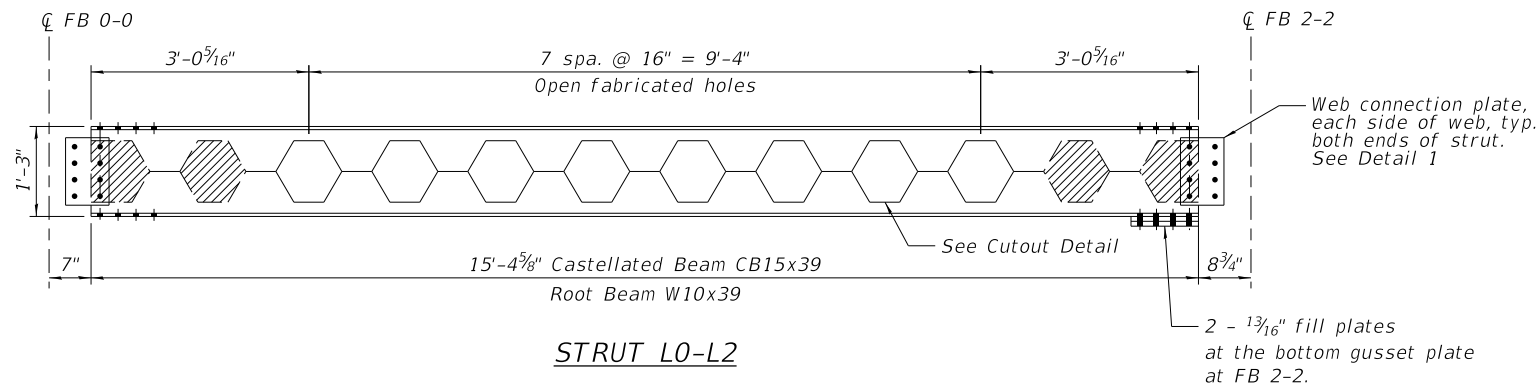
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**CITY OF CHICAGO**  
 DEPARTMENT OF TRANSPORTATION  
 DIVISION OF ENGINEERING

WEBSTER AVENUE BRIDGE OVER  
 THE NORTH BRANCH CHICAGO RIVER

BASCULE SPAN:  
 GUSSETS FOR LOWER LATERAL BRACING II  
 (STRUCTURE NO. 016-6057)

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-45
CDOT PROJECT NO. E-1-525			88 of 210



DETAIL 2

REFERENCE DRAWINGS

Drawing  
Laterals

Sheet No.  
1660570215

Notes:

- See sheet S-44 for bolt locations on the flanges of the struts and laterals, and for strut and lateral gusset plate details.
- See sheets S-48 thru S-54 for floorbeam details.
- See sheets S-55 thru S-65 for truss details.

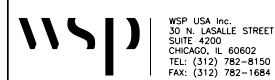
Member	A	B	C	D	E
Lateral L2-L4	22'-11 3/8"	2'-11 7/16"	3'-3 15/16"	11 1/2"	4 1/2"
Lateral L4-L6 and L6-L8	23'-1 5/8"	2'-11 15/16"	3'-5 1/16"	9 1/4"	5 3/4"

LEGEND



Filled fabricated holes. Filler steel is M270 Grade 50 steel with the same thickness as W10x39 web (3/16") and connected by complete joint penetration welds.

0166057-E1525-S046-LOWERLATERALS1



WSP USA Inc.  
30 N. LASALLE STREET  
SUITE 4200  
CHICAGO, IL 60602  
TEL: (312) 782-8150  
FAX: (312) 782-1884

USER NAME = NBROMAN  
DESIGNED - NBR  
CHECKED - PJL  
PLOT SCALE = N.T.S.  
DRAWN - NBR  
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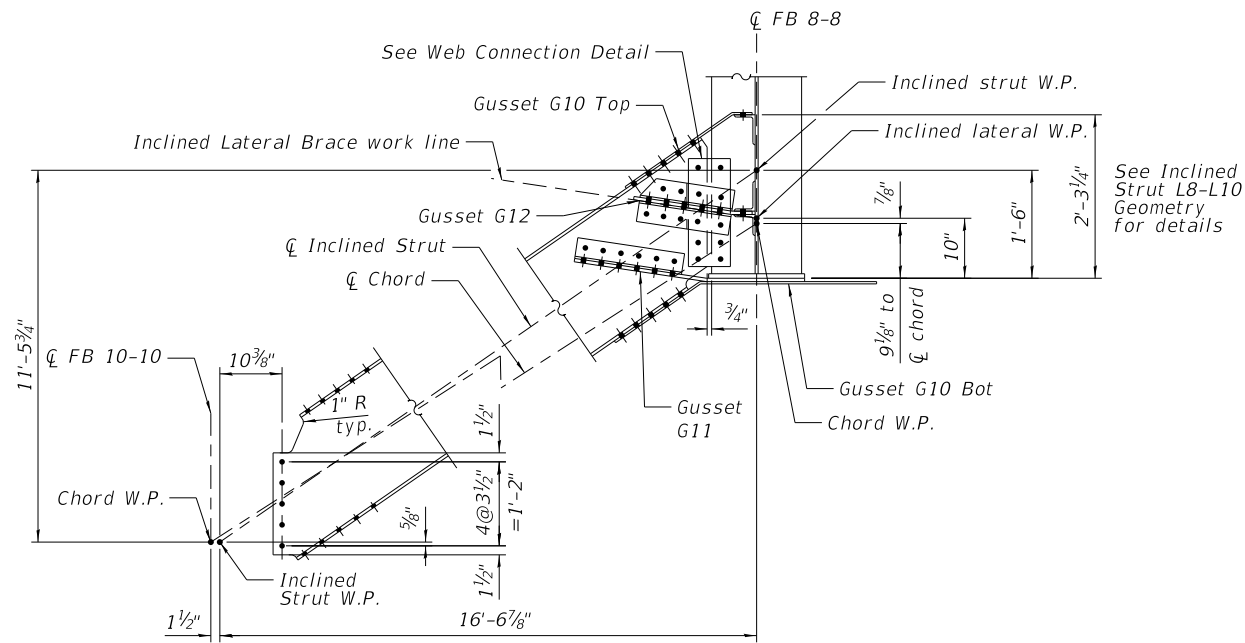
**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER

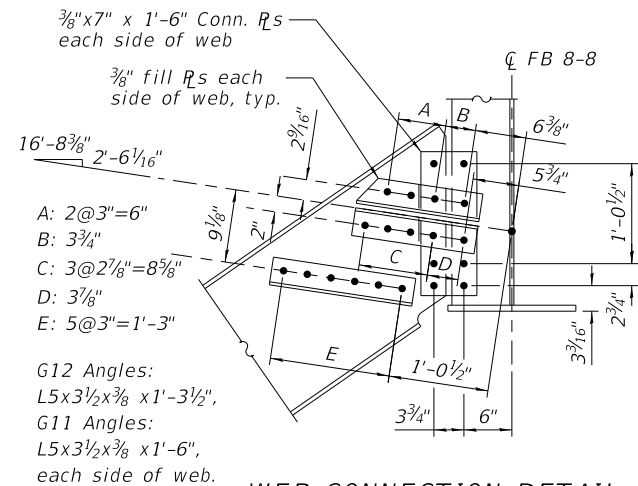
BASCULE SPAN:  
LOWER LATERAL BRACING I  
(STRUCTURE NO. 016-6057)

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-46
CDOT PROJECT NO. E-1-525			89 of 210

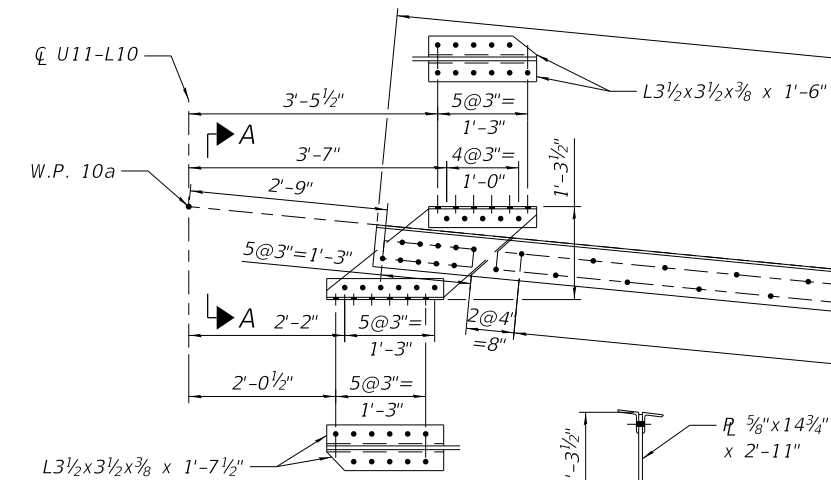




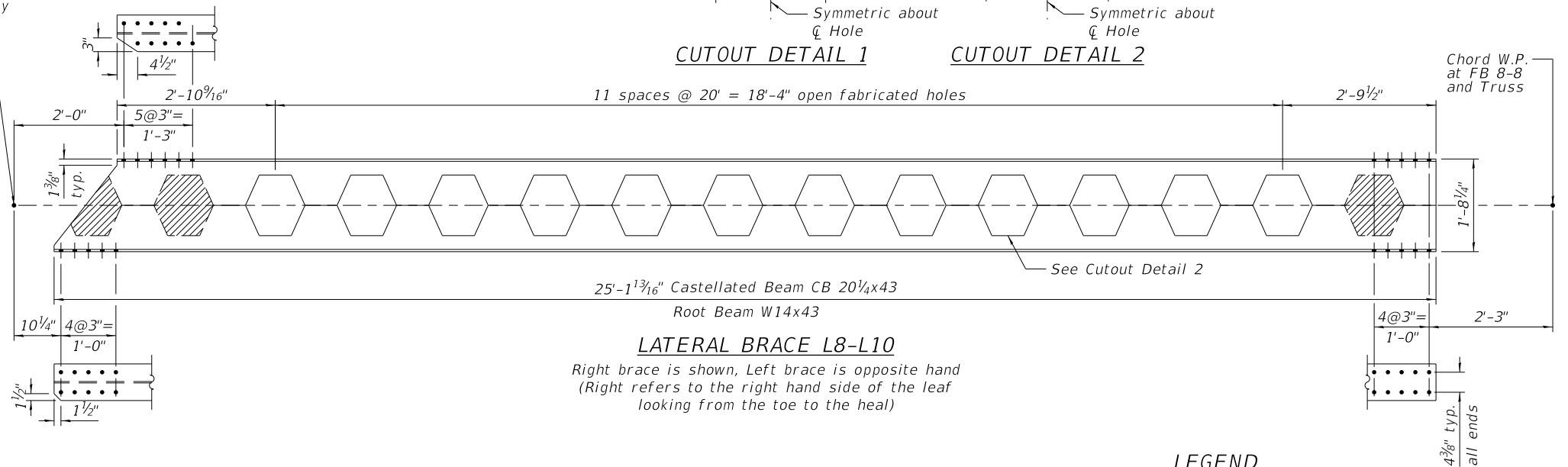
**INCLINED STRUT L8-L10 GEOMETRY**  
Filled castellated web openings not shown for clarity



**WEB CONNECTION DETAIL**



**VIEW A-A**  
(L7x4 angles not shown for clarity)



**LATERAL BRACE L8-L10**

Right brace is shown, Left brace is opposite hand  
(Right refers to the right hand side of the leaf looking from the toe to the heel)

**LEGEND**

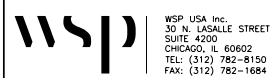
Filled fabricated holes. Filler steel is M270 Grade 50 steel with the same thickness as W14x43 (5/16") web and connected by complete joint penetration welds.

**REFERENCE DRAWINGS**

Drawing: Bracing for Floorbeam at 10-10  
Sheet No.: 1660570210

- Notes:
- See sheet S-45 for gusset plate details.
  - See sheets S-48 thru S-54 for floor beam details.
  - See sheets S-55 thru S-65 for truss details.

0166057-E1525-S047-LOWERLATERALS2



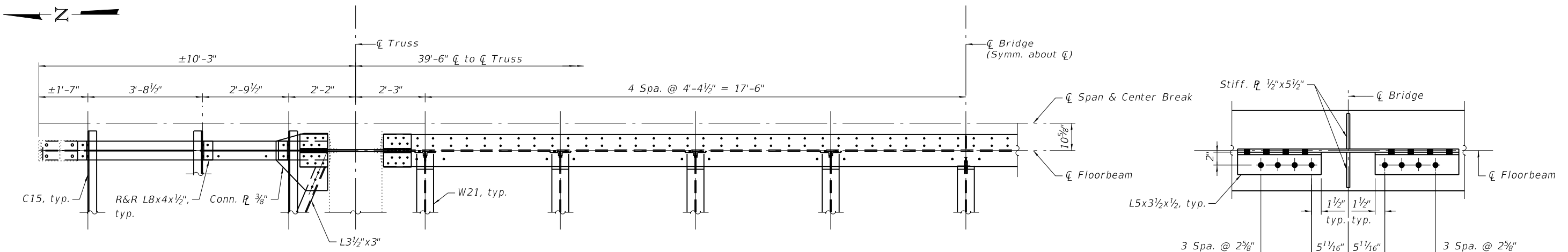
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**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

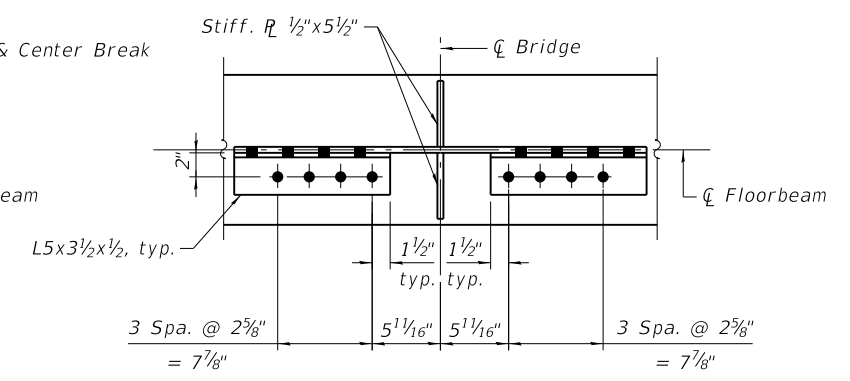
**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

**BASCULE SPAN:  
LOWER LATERAL BRACING II  
(STRUCTURE NO. 016-6057)**

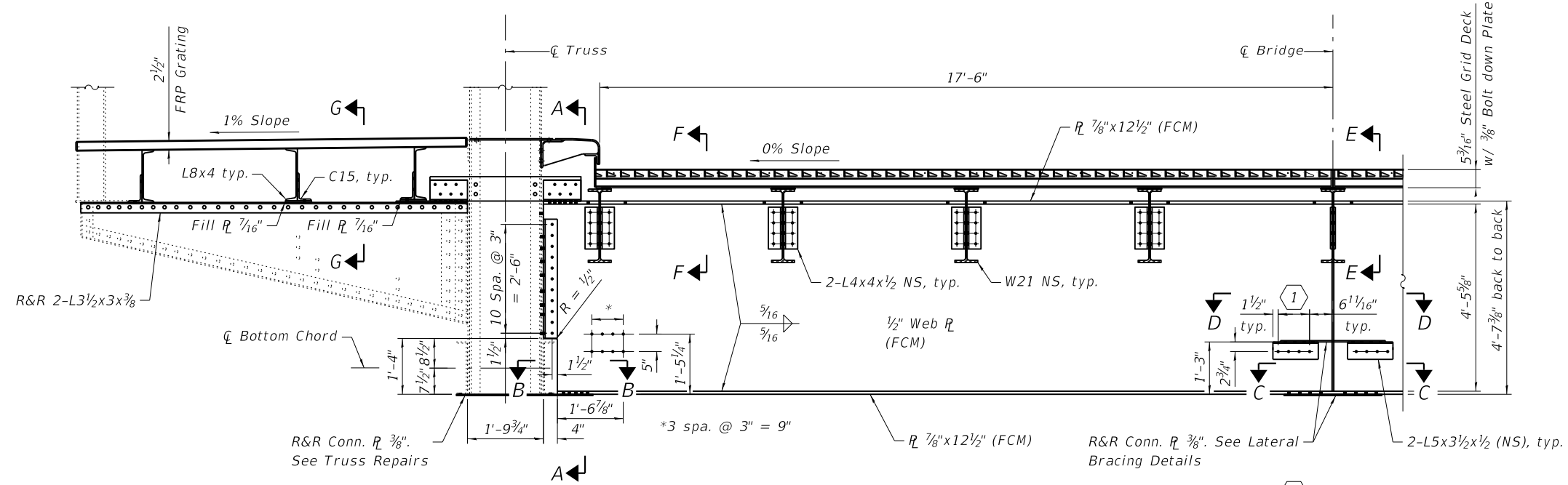
F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-47
CDOT PROJECT NO. E-1-525			90 of 210



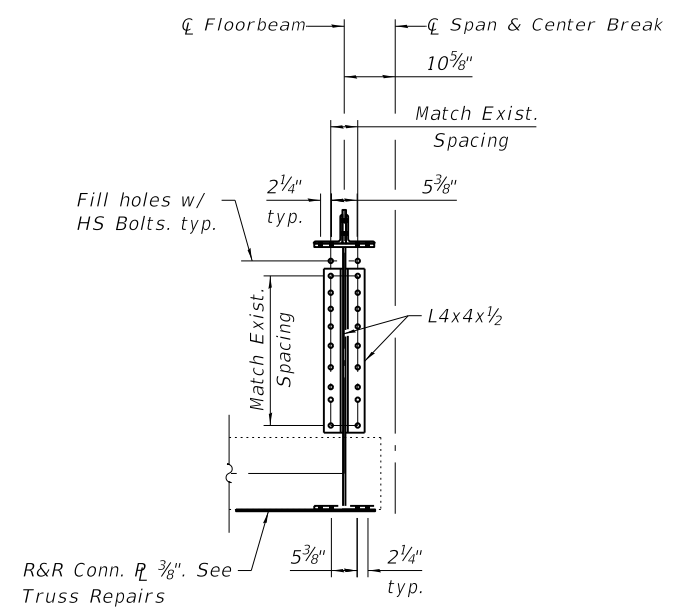
**PLAN**  
(W. Leaf shown, E. Leaf opposite hand)



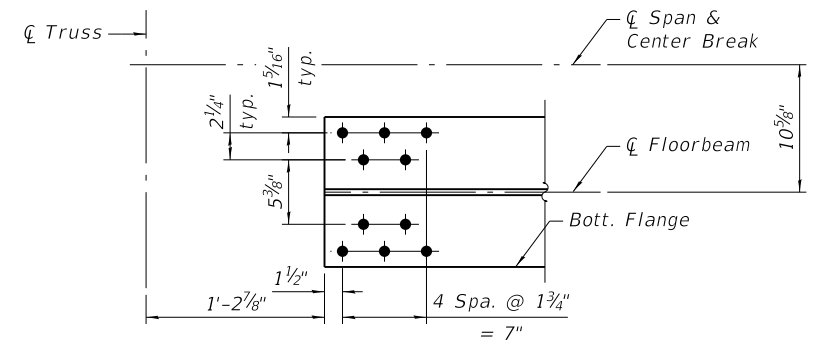
**SECTION D-D**



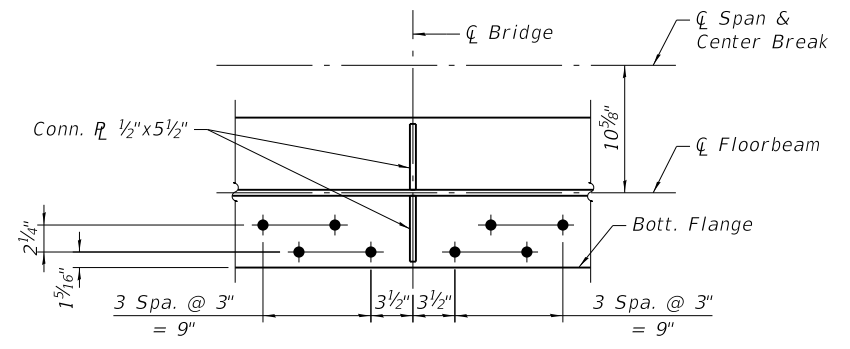
**ELEVATION**  
(W. Leaf Floorbeam looking East, E. Leaf Floorbeam similar but opposite and looking West)



**SECTION A-A**



**SECTION B-B**



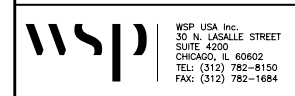
**SECTION C-C**

- Notes:
1. Load carrying components designated "NTR" shall conform to the Impact Testing Requirement, Zone 2.
  2. Load carrying components designated "FCM" shall be fabricated according to the provisions of Clause 12 of the AASHTO/AWS D1.5 Bridge Welding Code.
  3. Install HS Bolts at existing holes, cost included with Furnishing and Erecting Structural Steel.
  4. See sheet S-50 for Tie Plate Detail, Section E-E & F-F, Connection Plate and Stringer Connection.
  5. See sheet S-51 for Section G-G.
  6. See sheet S-52 for Lateral Bracing at sidewalk.

**REFERENCE DRAWINGS**

Drawing	Sheet No.
Movable Part - Floorbeams	1660570010
Erection Plan - Movable Plan	1660570196
Main Truss Members	1660570200
Main Truss Members	1660570203
Floor Beams	1660570206
Laterals	1660570215

0166057-E1525-S048-FLOORBEAM-O-BASCULE.DGN



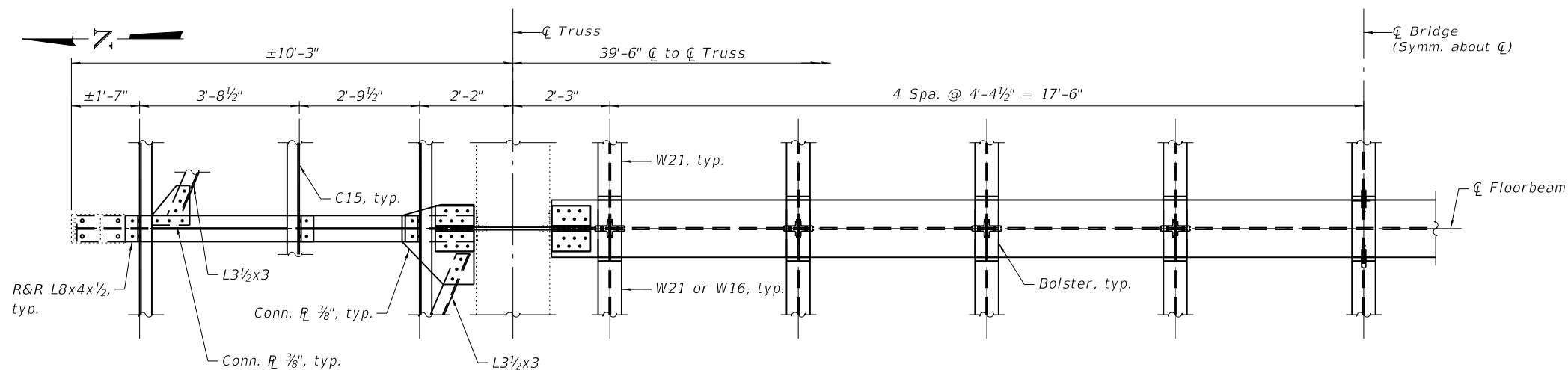
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PLOT SCALE = N.T.S.	CHECKED - PUL	REVISED -
PLOT DATE = 9/16/2020	DRAWN - NJP	REVISED -
	CHECKED - JIG	REVISED -

**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

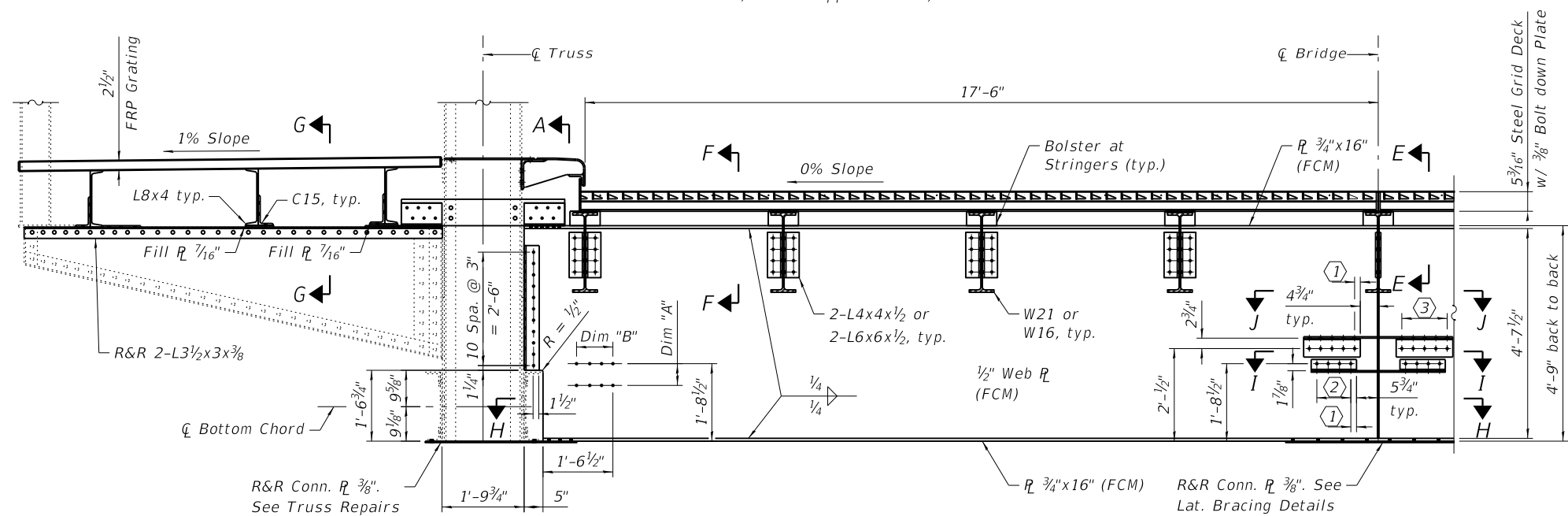
**BASCULE SPAN:  
FLOORBEAM 0-0  
(STRUCTURE NO. 016-6057)**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-48
CDOT PROJECT NO. E-1-525			91 of 210



**PLAN**

(Floorbeam 2-2 shown, Floorbeam 4-4, 6-6 & 8-8 similar, W. Leaf shown, E. Leaf opposite hand)

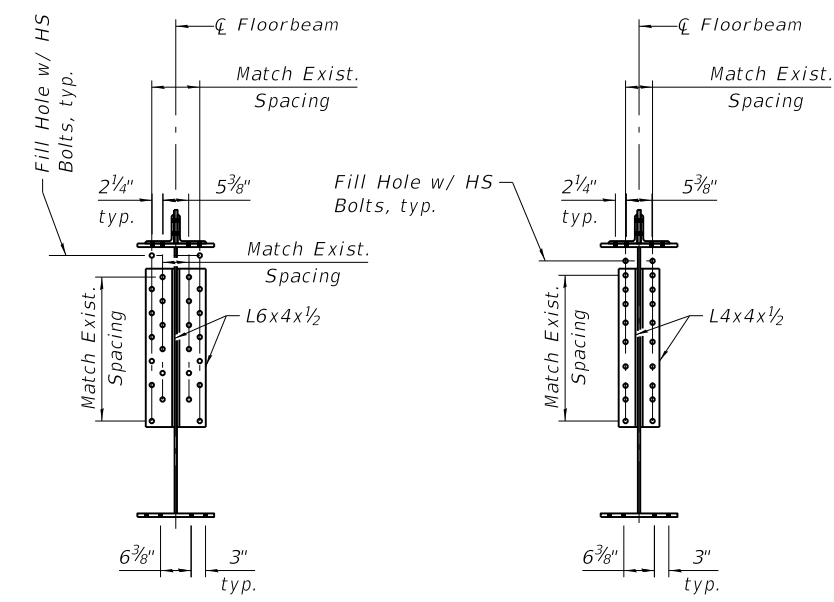


**FLOORBEAMS 2-2, 4-4, 6-6 & 8-8 ELEVATION**

(W. Leaf Floorbeam looking east, E. Leaf Floorbeam similar but opposite hand looking west)

Bracket Panel Pt.	Dimension "A"	Dimension "B"
2	5 3/4"	3 spa. @ 3" = 9"
4	5 3/4"	3 spa. @ 3" = 9"
6	5 1/4"	3 spa. @ 3" = 9"
8	4 1/8"	4 spa. @ 3" = 1'-0"

- ① 1 1/2", typ.
- ② 3 Spa. @ 3" = 9", typ.
- ③ 4 Spa. @ 3" = 1'-0", typ.



FLOORBEAM 6-6 & 8-8 SHOWN

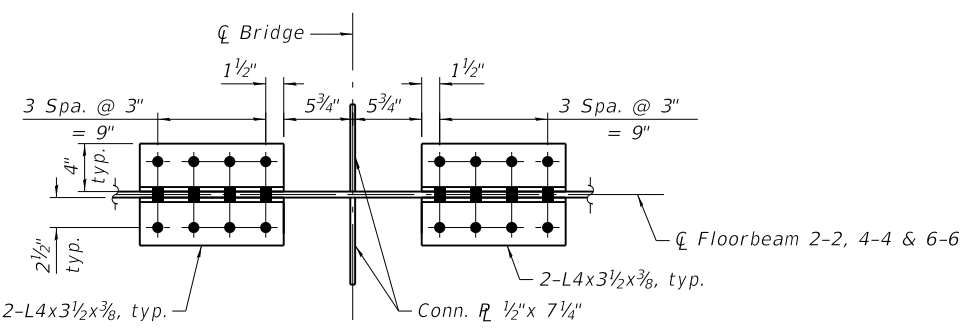
FLOORBEAM 2-2 & 4-4 SHOWN

**SECTION A-A**

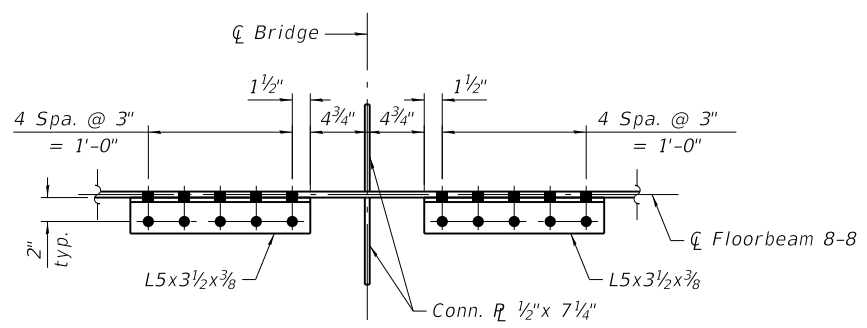
- Notes:
- Load carrying components designated "NTR" shall conform to the Impact Testing Requirement, Zone 2.
  - Load carrying components designated "FCM" shall be fabricated according to the provisions of Clause 12 of the AASHTO/AWS D1.5 Bridge Welding Code.
  - Install HS Bolts at existing holes, cost included with Furnishing and Erecting Structural Steel
  - See sheet S-50 for Section E-E & F-F, Tie Plate Detail, Stringer Conn. Detail, Connection Plate Detail and Bolster Detail.
  - See sheet S-51 for Section H-H & G-G.

**REFERENCE DRAWINGS**

Drawing	Sheet No.
Movable Part-Stringers and Sub-Planking	1660570010
Erection Plan-Movable Plan	1660570196
Main Truss Members	1660570200
Main Truss Members	1660570203
Floorbeam	1660570206
Floorbeam	1660570207
Laterals	1660570215

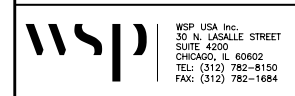


**SECTION I-I**



**SECTION J-J**

0166057-E1525-S043-BASCULE FB2-FB8.DGN



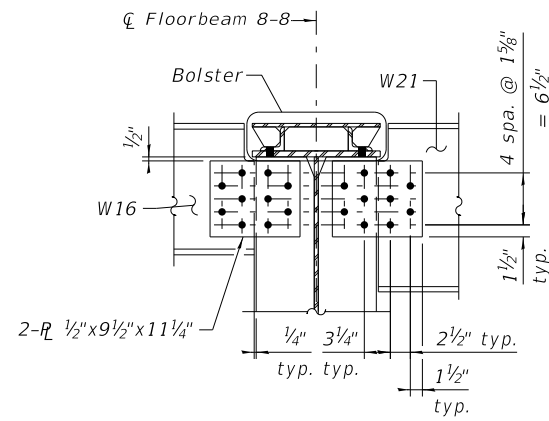
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PLOT DATE = 9/16/2020	DRAWN - NJP	REVISED -
	CHECKED - JIG	REVISED -

**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

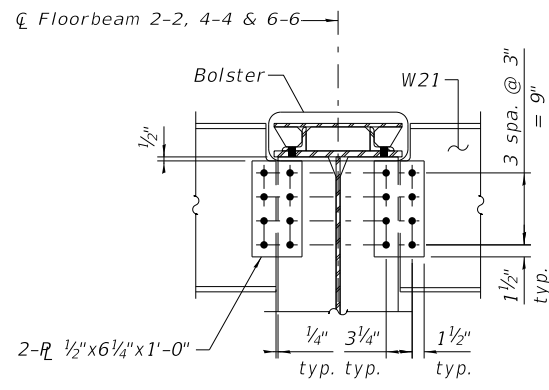
**WEBSTER AVENUE BRIDGE OVER THE NORTH BRANCH CHICAGO RIVER**

**BASCULE SPAN: FLOORBEAM 2-2, 4-4, 6-6 & 8-8 (STRUCTURE NO. 016-6057)**

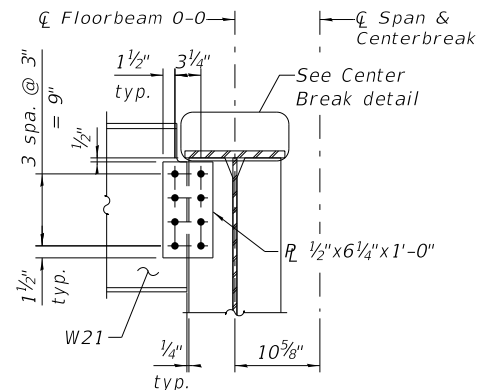
F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-49
CDOT PROJECT NO. E-1-525			92 of 210



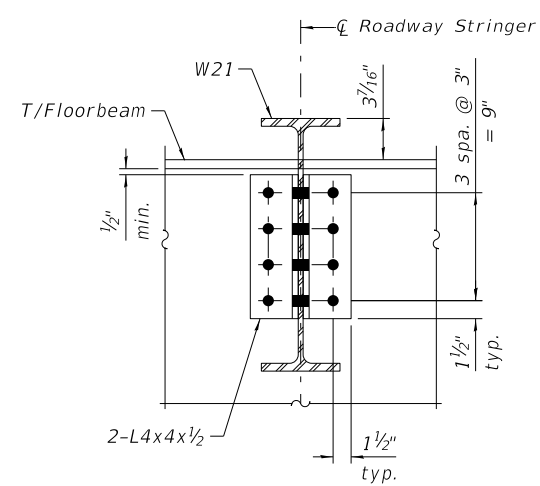
**SECTION E-E**  
(Floorbeam 8-8, 2 locations)



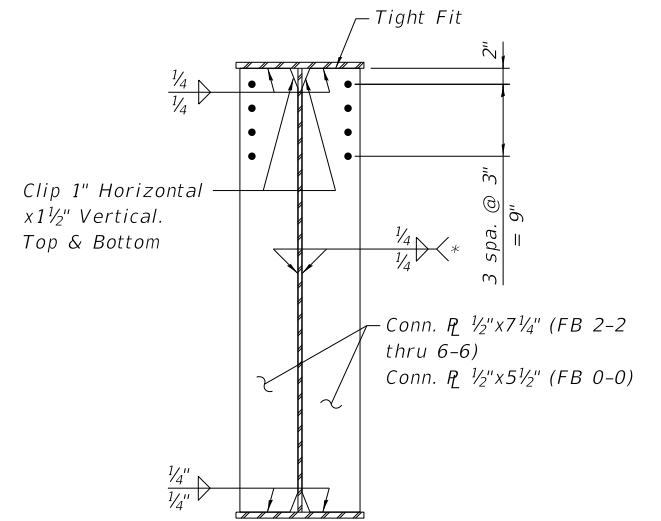
**SECTION E-E**  
(Floorbeam 2-2, 4-4 & 6-6, 6 locations)



**SECTION E-E**  
(Floorbeam 0-0, 2 locations)

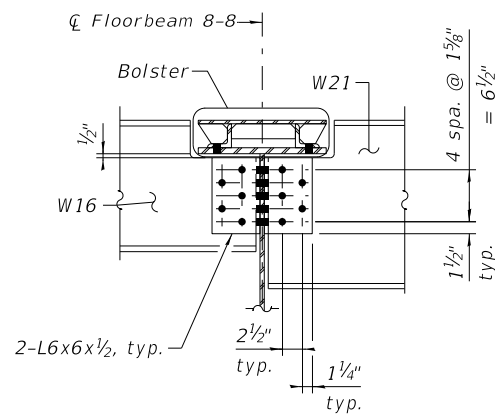


**TYPICAL W21 STRINGER CONN.**

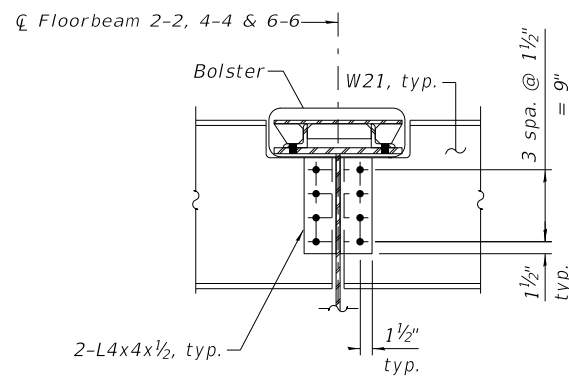


**TYPICAL CONNECTION PLATE**

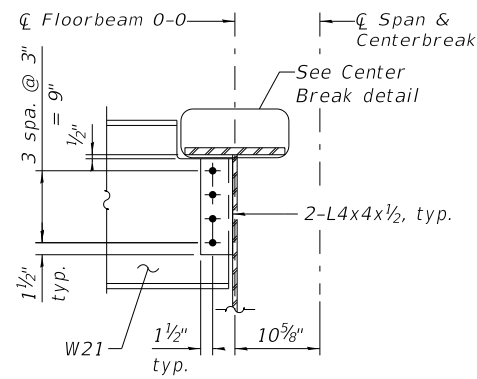
\* Terminate 1/4" ( $\pm 1/8$ ) from the end of plate intersects



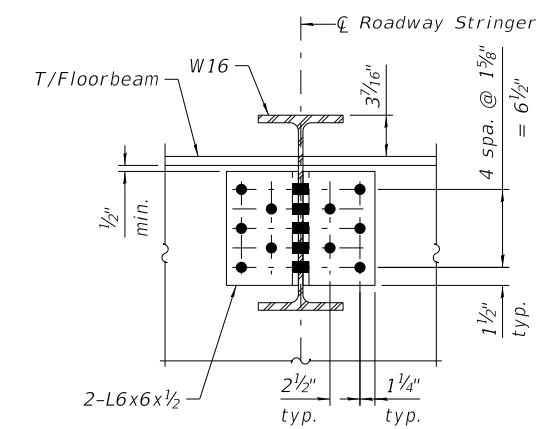
**SECTION F-F**  
(Floorbeam 8-8, 16 locations)



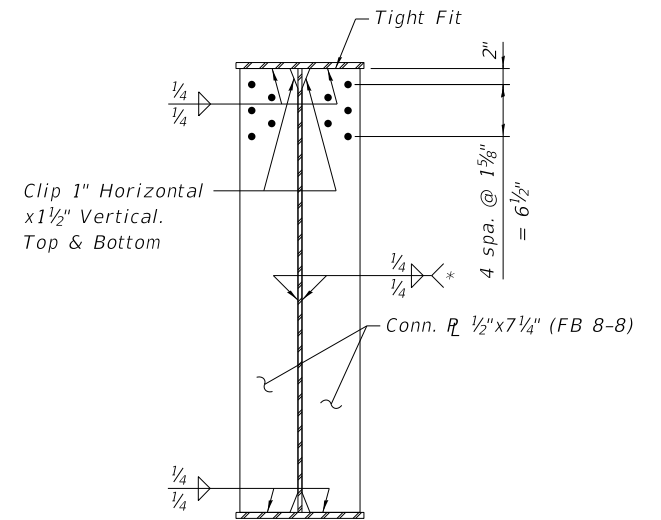
**SECTION F-F**  
(Floorbeam 2-2, 4-4 & 6-6, 48 locations)



**SECTION F-F**  
(Floorbeam 0-0, 16 locations)

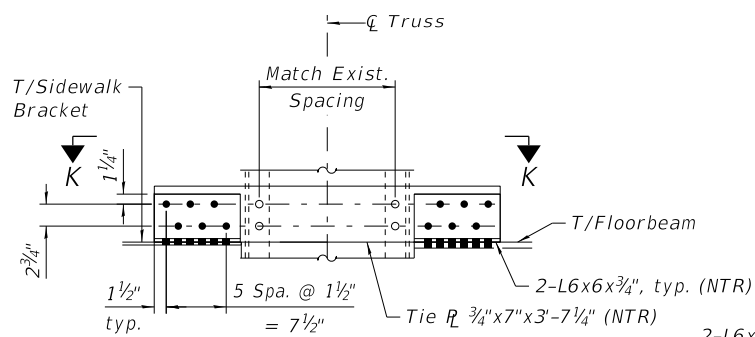


**TYPICAL W16 STRINGER CONN.**

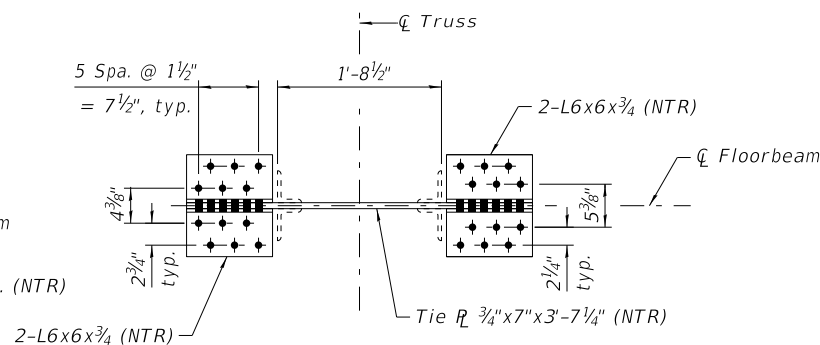


**CONNECTION PLATE - FB 8-8**

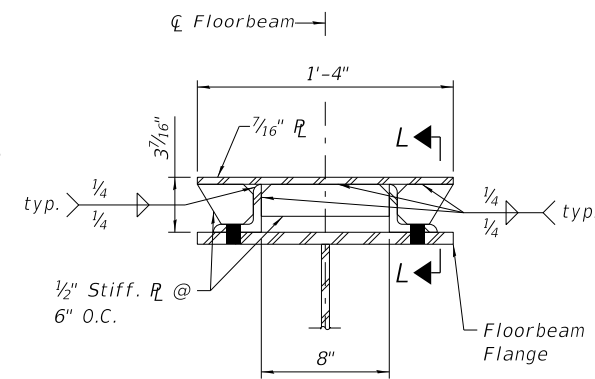
\* Terminate 1/4" ( $\pm 1/8$ ) from the end of plate intersects



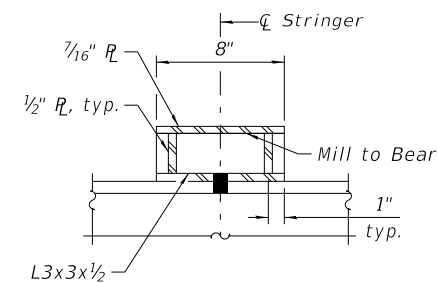
**TIE PLATE DETAIL**  
(20 locations)



**SECTION K-K**



**TYPICAL BOLSTER DETAIL**



**SECTION L-L**

Notes:  
1. Load carrying components designated "NTR" shall conform to the Impact Testing Requirement, Zone 2.

0166057-E1525-S050-FLOORBEAMDETAILIBASCULE.DGN



USER NAME = PATELN  
DESIGNED - NJP  
CHECKED - PUL  
PLOT SCALE = N.T.S.  
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CHECKED - JIG

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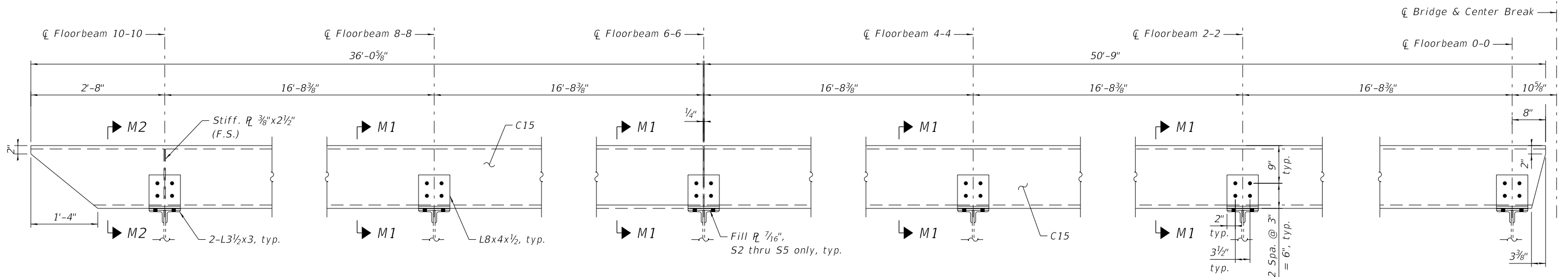
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REVISED -

**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

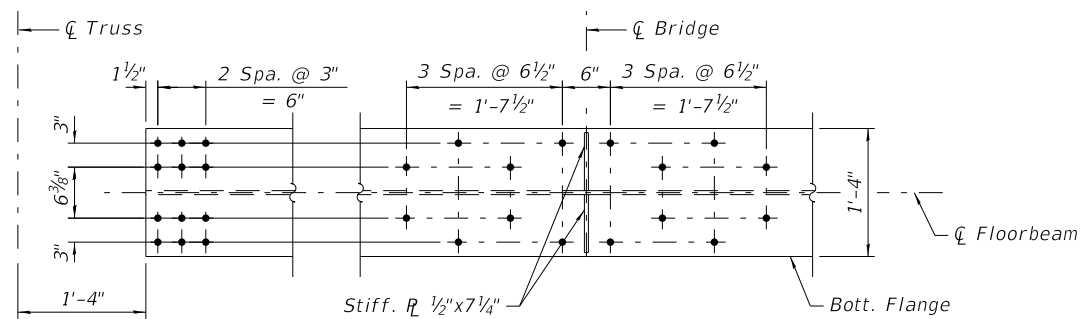
**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

**BASCULE SPAN:  
FLOORBEAM DETAILS I  
(STRUCTURE NO. 016-6057)**

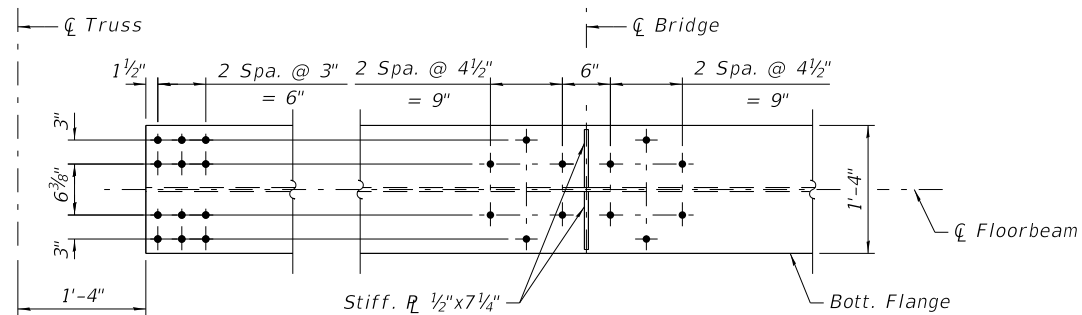
F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-50
CDOT PROJECT NO. E-1-525			93 of 210



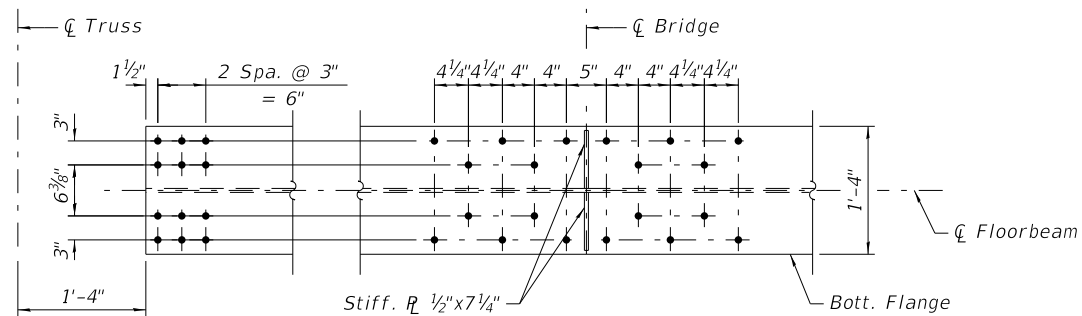
**SECTION G-G**  
 (West Leaf shown, East Leaf opposite hand)  
 (12 Locations)



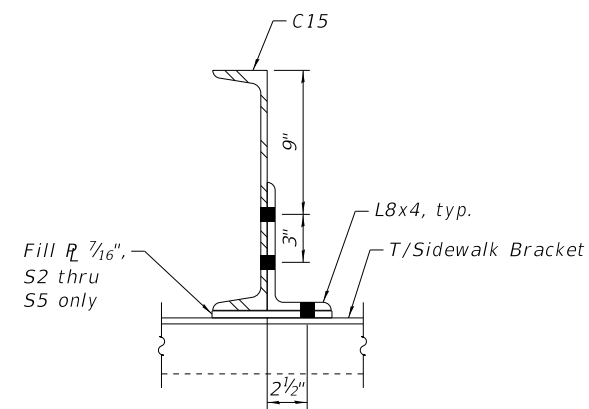
**SECTION H-H**  
 Floorbeam 2-2 & 6-6



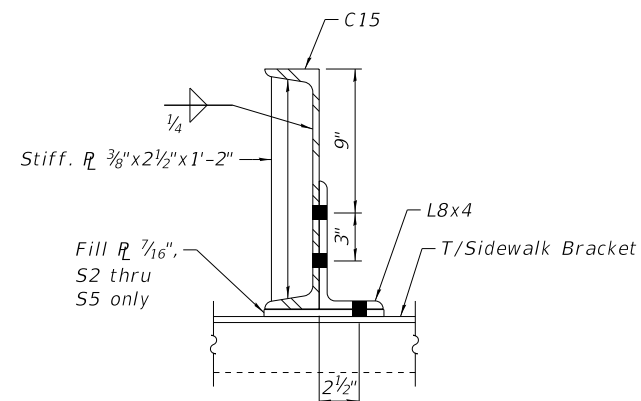
**SECTION H-H**  
 Floorbeam 4-4



**SECTION H-H**  
 Floorbeam 8-8



**SECTION M1-M1**



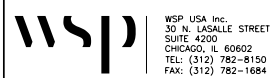
**SECTION M2-M2**

Note:  
 1. For locations of Section G-G and Section H-H, see sheets S-48 and S-49.

**REFERENCE DRAWINGS**

Drawing	Sheet No.
Floorbeams	1660570206
Floorbeams	1660570207
Walkway Stringers and Cover Plate Details	1660570248

0166057-E1525-S051-FLOORBEAMDETAILIBASCULE.DGN



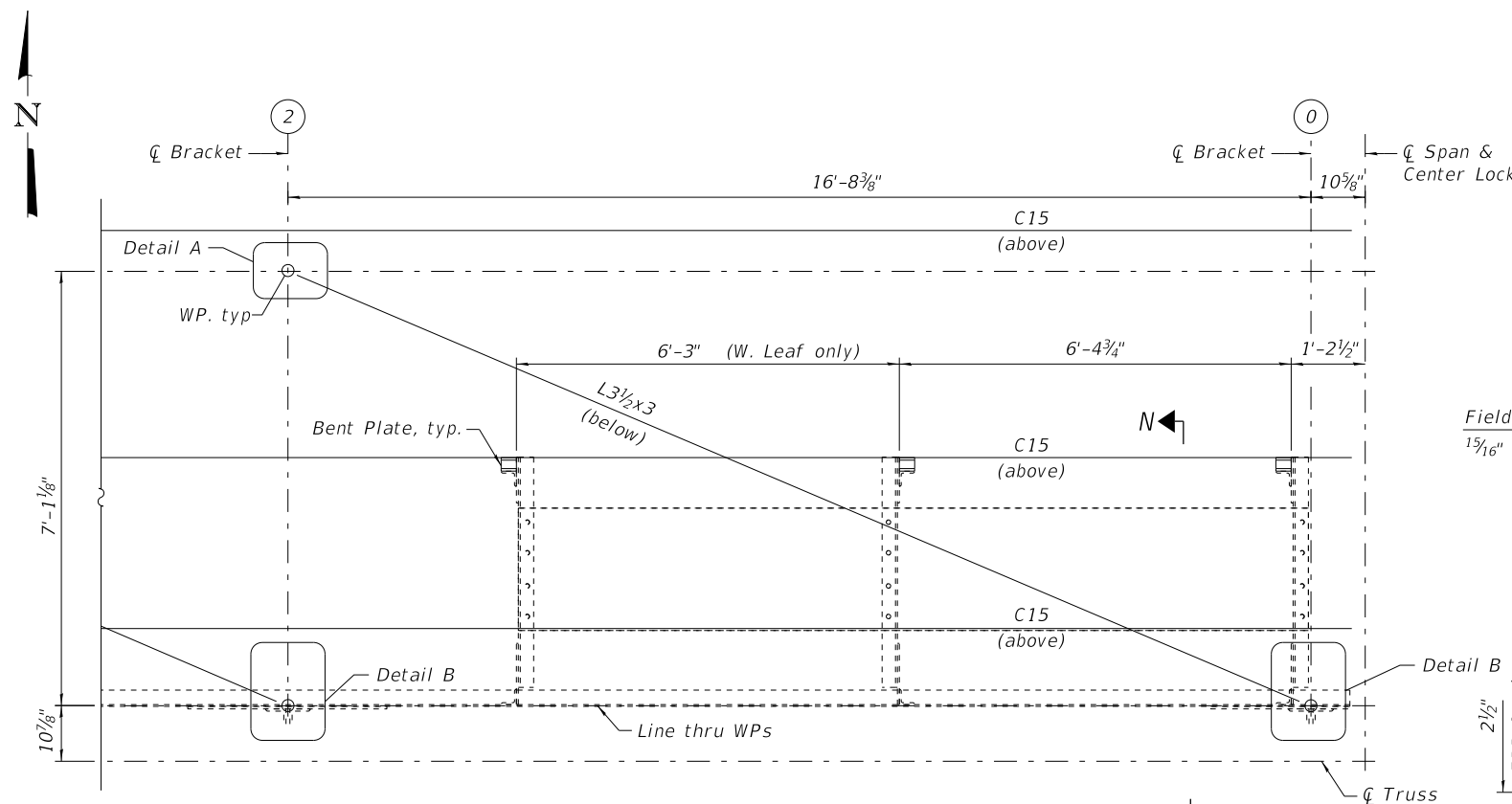
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**CITY OF CHICAGO**  
 DEPARTMENT OF TRANSPORTATION  
 DIVISION OF ENGINEERING

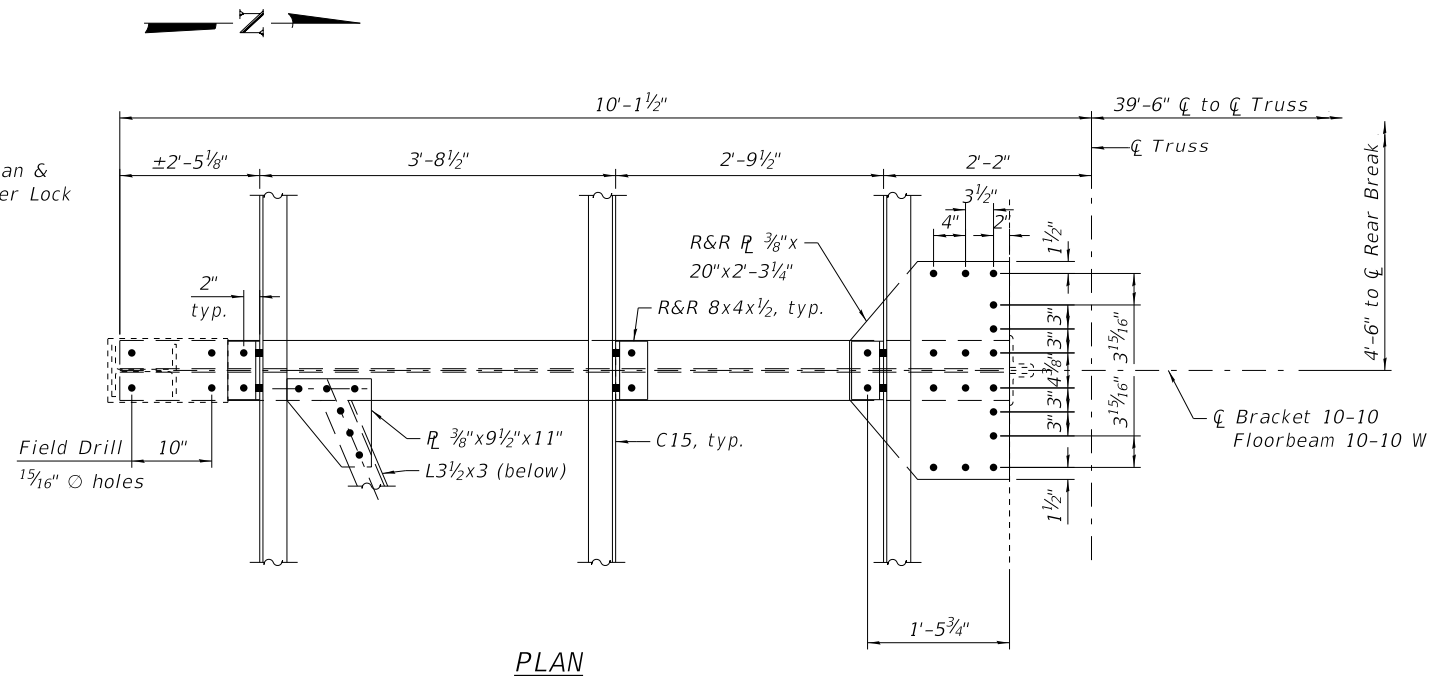
**WEBSTER AVENUE BRIDGE OVER  
 THE NORTH BRANCH CHICAGO RIVER**

**BASCULE SPAN:  
 FLOORBEAM DETAILS II  
 (STRUCTURE NO. 016-6057)**

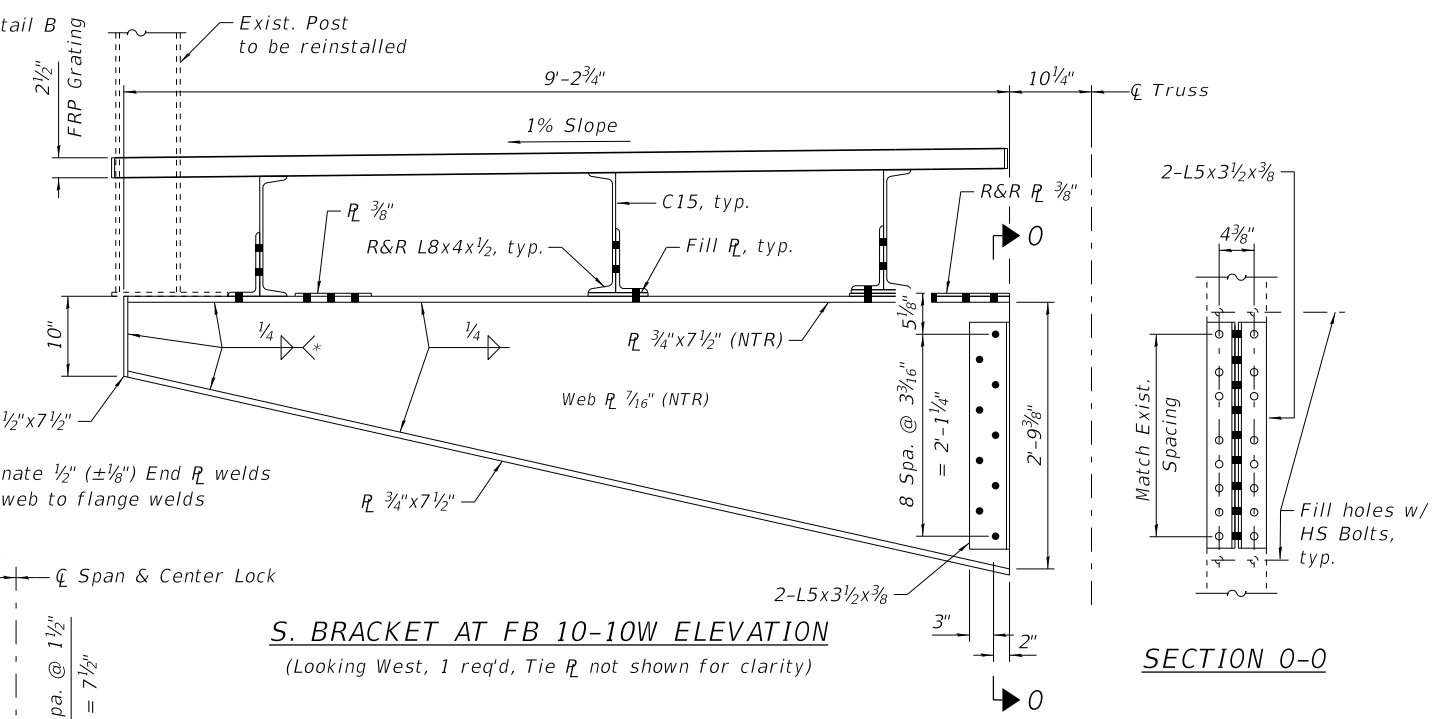
F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-51
CDOT PROJECT NO. E-1-525			94 of 210



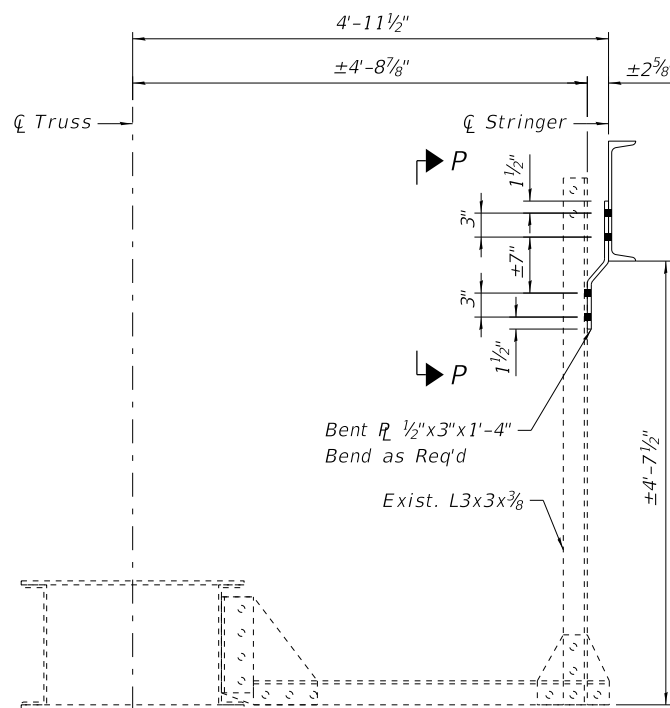
**PLAN - LATERAL BRACING & MACHINERY PLATFORM**  
(West Leaf at N. Truss shown, other locations similar)



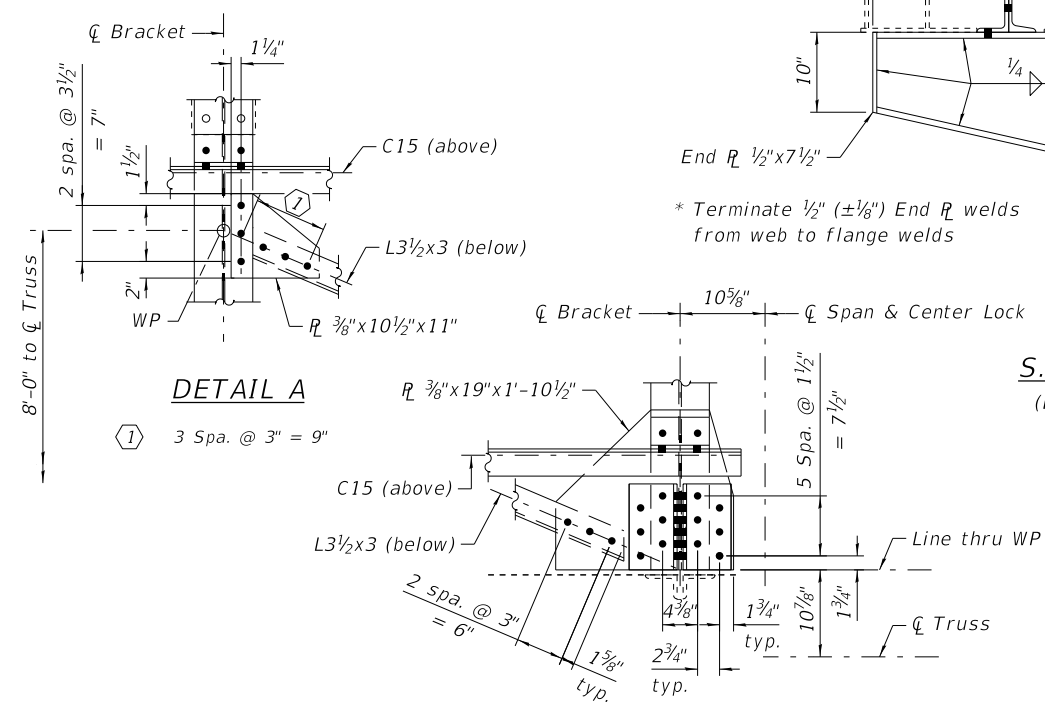
**PLAN**



**S. BRACKET AT FB 10-10W ELEVATION**  
(Looking West, 1 req'd, Tie R not shown for clarity)

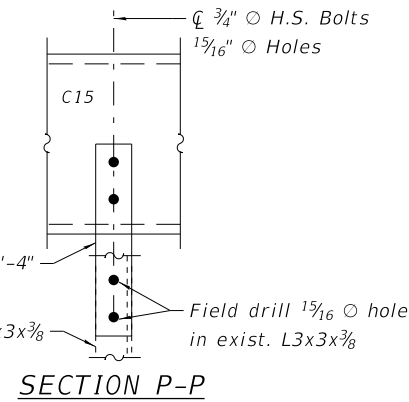


**SECTION N-N**



**DETAIL A**

**DETAIL B**



**SECTION P-P**

**SECTION 0-0**

- Notes:**
1. Load Carrying components designated "NTR" shall conform to the Impact Testing Requirement. Zone 2.
  2. Install HS Bolts at existing holes, cost included with Furnishing and Erecting Structural Steel.
  3. All bolted bracing connections shall be ASTM A325 Type 1. 3/4" Ø bolts in 1 1/2" Ø holes.
  4. Two hardened washers required for each set of oversized holes.

**REFERENCE DRAWINGS**

Drawing  
Stringers and Sidewalks Brackets  
Center Lock Platform

Sheet No.  
1660570209  
1660570216

0166057-E1525-S052-FLOORBEAMDETAILIBASCULE.DGN



USER NAME =	PATELN	DESIGNED -	NJP	REVISED -	
PLOT SCALE =	N.T.S.	CHECKED -	PJL	REVISED -	
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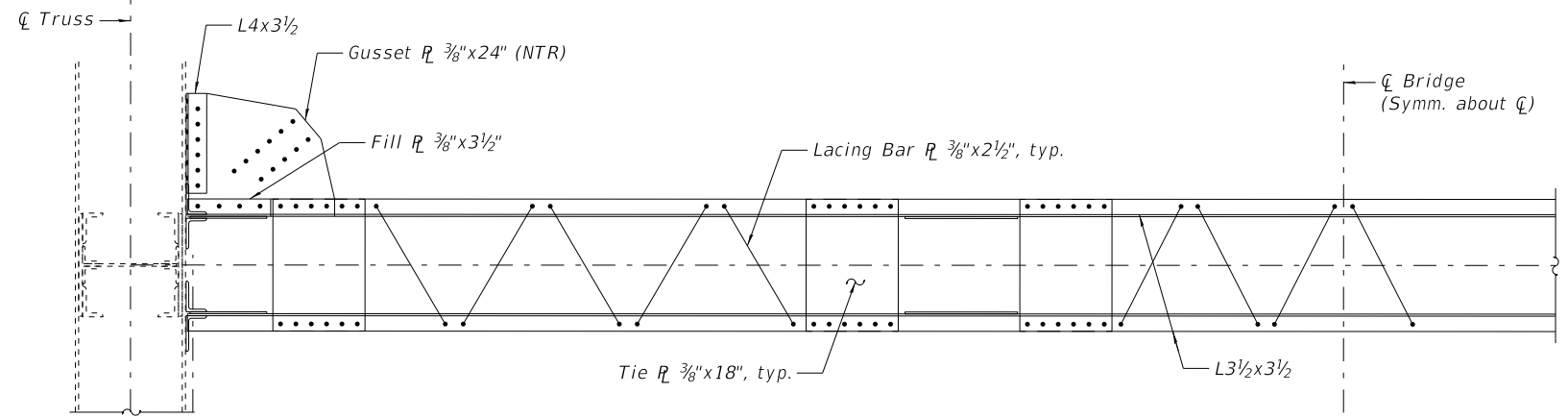
**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

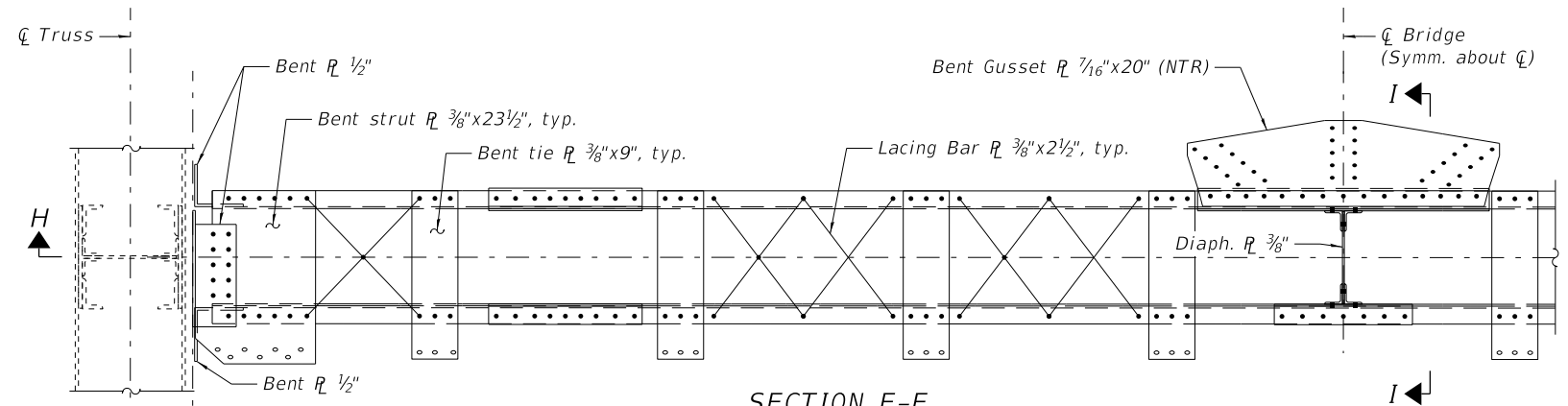
**BASCULE SPAN:  
FLOORBEAM DETAILS III  
(STRUCTURE NO. 016-6057)**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-52
CDOT PROJECT NO. E-1-525			95 of 210

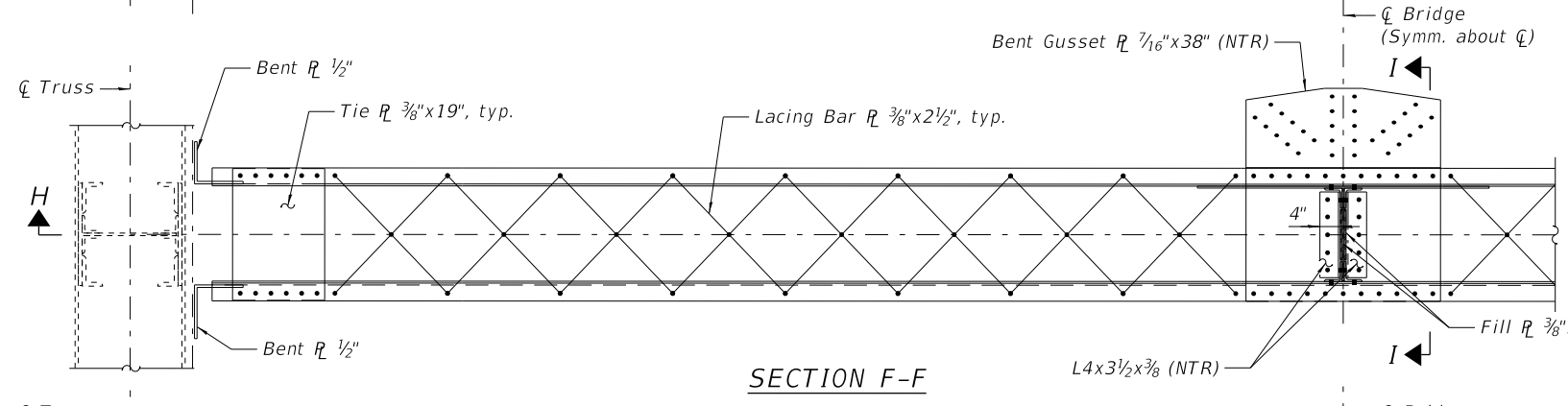




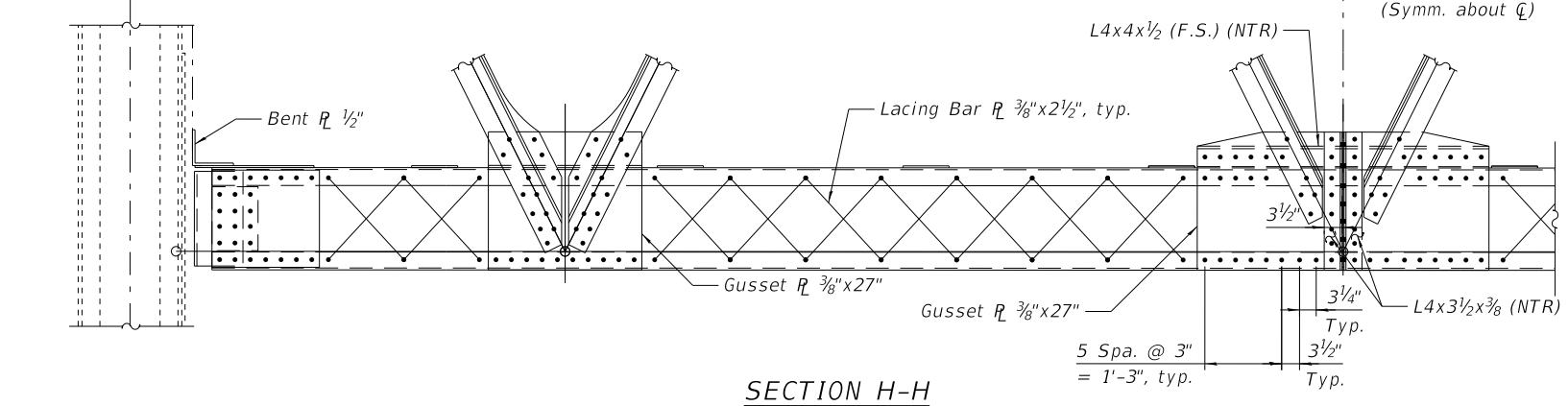
SECTION D-D



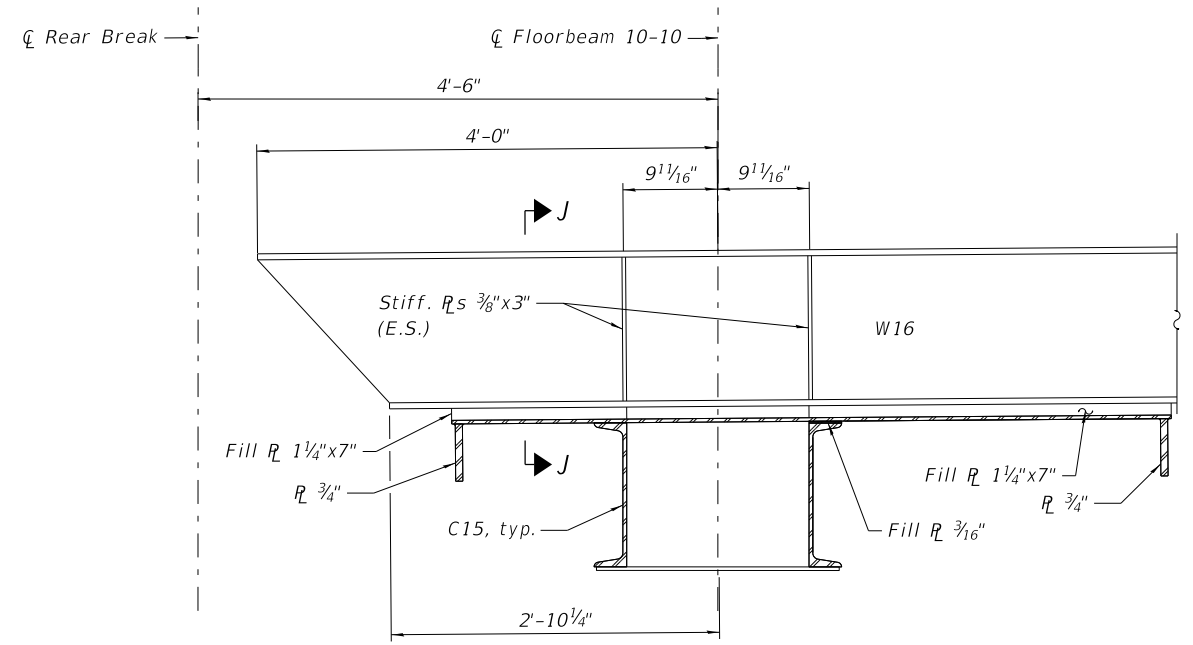
SECTION E-E



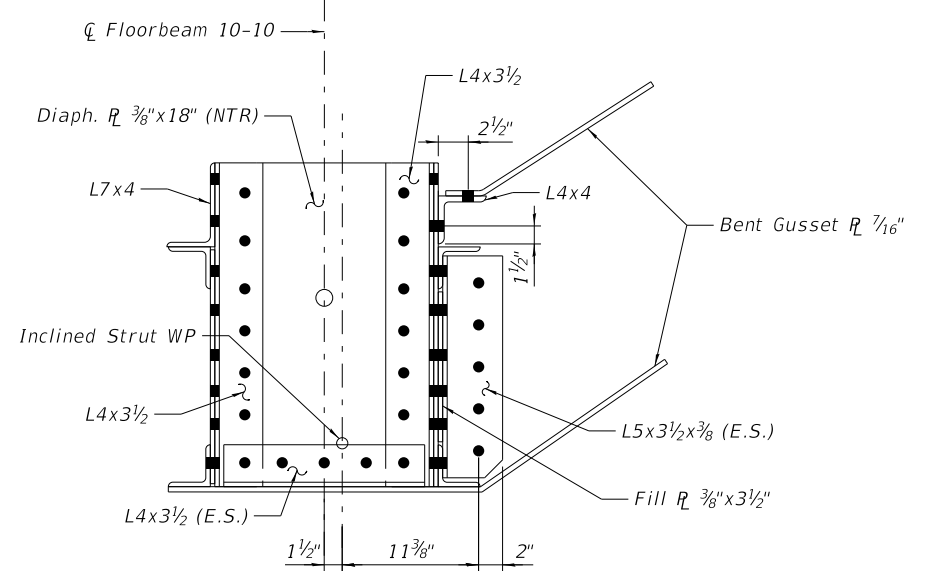
SECTION F-F



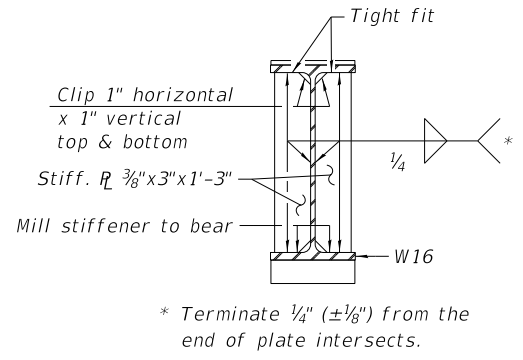
SECTION H-H



SECTION G-G



SECTION I-I



SECTION J-J

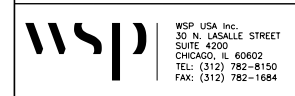
Note:  
1. See sheet S-53 for location of Section D-D thru G-G.

**REFERENCE DRAWINGS**

Drawing  
Posts & Diagonals  
Horizontal Girder & Bracing  
Stringers & Sidewalk Brackets  
Bracing for FB 10-10

Sheet No.  
1660570205  
1660570208  
1660570209  
1660570210

0166057-E11525-S054-FLOORBEAM10-10DETBASECULE.DGN



USER NAME =	IBRAHIM	DESIGNED -	MI	REVISED -	
CHECKED -	PJL	REVISIONS			
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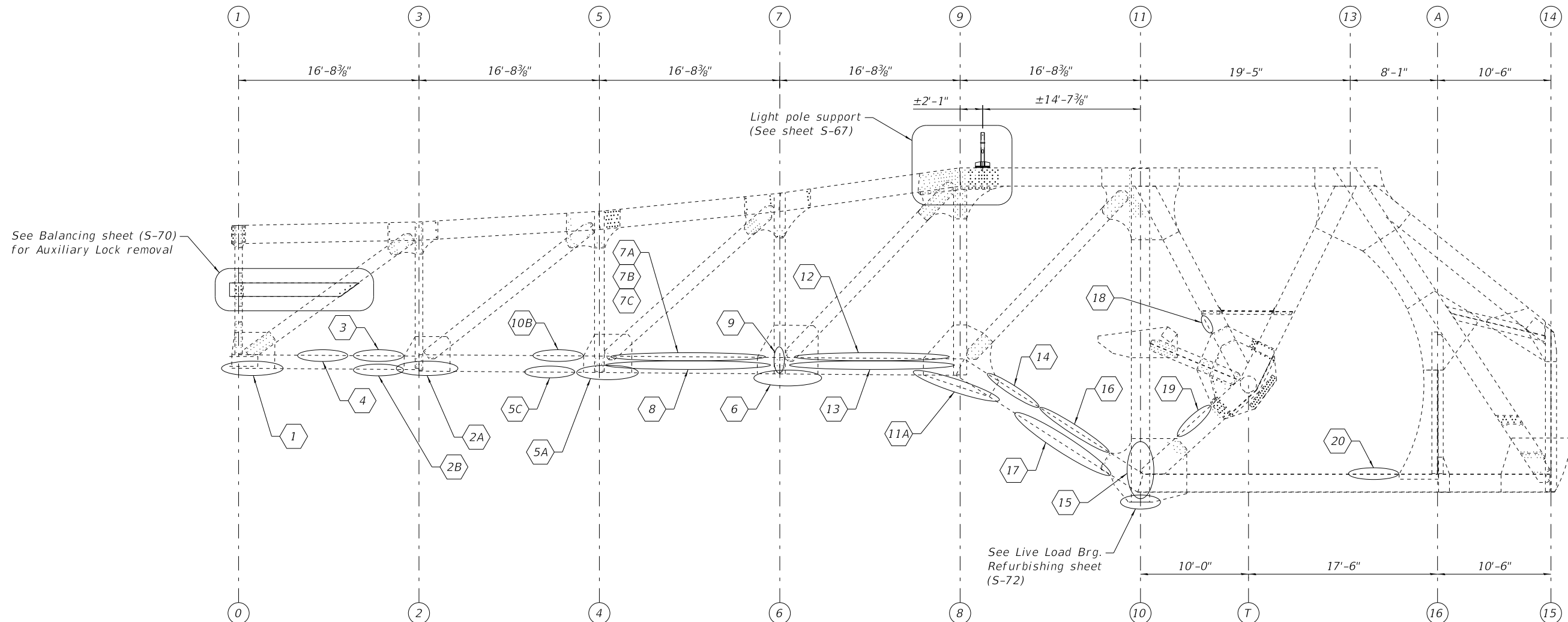
**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

**BASCULE SPAN:  
FLOORBEAM 10-10 DETAILS  
(STRUCTURE NO. 016-6057)**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-54
CDOT PROJECT NO. E-1-525			97 of 210





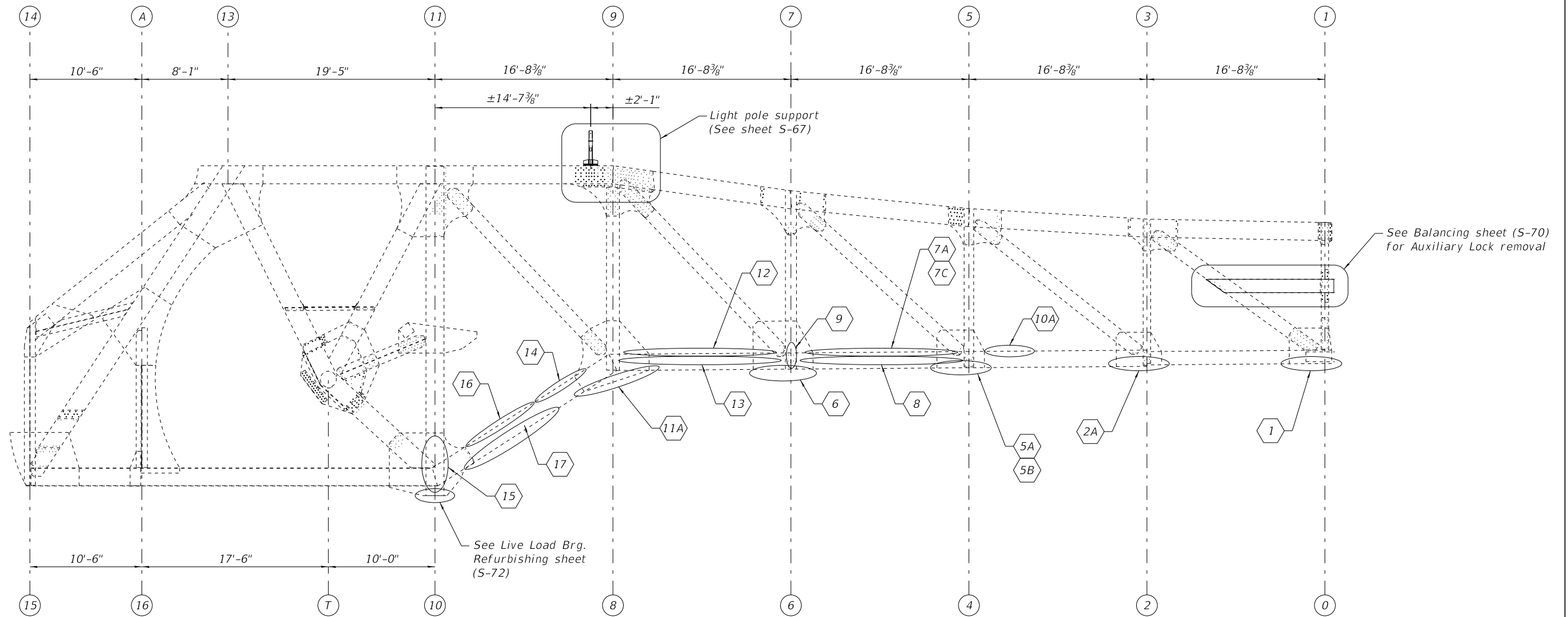
**SOUTHWEST TRUSS ELEVATION**  
(Looking south)

- |  |  |   |  |
|--|--|---|--|
| 1 R&R Bott. Conn. $\bar{r}$<br>(See sheet S-59)                | 5C R&R Bott. Lacing Bars<br>(See sheet S-60)   | 11A R&R Bott. Conn. $\bar{r}$ , Wedge $\bar{r}$ s &<br>Adjacent Lacing Bars<br>(See sheet S-62) | 15 Strengthening Post 10-11 at Live Load<br>Brg.<br>(See sheet S-64) |
| 2A R&R Bott. Conn. $\bar{r}$ & Lacing Bars<br>(See sheet S-59) | 6 R&R Bott. Conn. $\bar{r}$ & Lacing Bars<br>(See sheet S-60)  | 12 R&R Top Batten $\bar{r}$ s & Top Lacing Bars<br>(See sheet S-62)                             | 16 R&R Top Batten $\bar{r}$ & Top Lacing Bars<br>(See sheet S-65)    |
| 2B R&R Bott. Lacing Bars<br>(See sheet S-59)                   | 7A R&R Top Batten $\bar{r}$<br>R&R Bott. Lacing Bars<br>7B R&R Top Batten $\bar{r}$<br>7C (See sheet S-60) | 13 R&R Diaphragm Top Angles & $\bar{r}$<br>(See sheet S-63)                                     | 17 R&R Bott. Batten $\bar{r}$<br>(See sheet S-65)                    |
| 3 R&R Top Batten $\bar{r}$<br>(See sheet S-59)                 | 8 R&R Diaphragm Top Angles & $\bar{r}$<br>(See sheet S-61)   | 14 R&R Top Batten $\bar{r}$<br>(See sheet S-63)   | 18 R&R Bott. Batten $\bar{r}$<br>(See sheet S-66)                    |
| 4 R&R Top Batten $\bar{r}$<br>(See sheet S-59)                 | 9 Strengthen Diaphragm $\bar{r}$<br>(See sheet S-61)   |   | 19 R&R Top Batten $\bar{r}$ s<br>(See sheet S-66)                    |
| 5A R&R Bott. Conn. $\bar{r}$<br>(See sheet S-60)               | 10B R&R Top Batten $\bar{r}$<br>(See sheet S-61)   |   | 20 R&R Top Batten $\bar{r}$<br>(See sheet S-67)                      |

- Notes:
- Locations to be strengthened shall be verified in the field.
  - Cost of furnishing and erecting truss repair steel elements shall be included in "Structural Steel Repair".
  - Cost of removing and replacing rivets in association with furnishing and erecting truss repair steel elements shall be included in "Structural Steel Repair".
  - See sheets S-59 thru S-67 for Truss Repair Details.

**REFERENCE DRAWINGS**  
 Drawing: General Plan & Elevation, Erection Plan of Movable Part  
 Sheet No.: 1660570123, 1660570196

0166057-E1525-S055-SWTRUSSREPAIRS.DGN



**SOUTHEAST TRUSS ELEVATION**  
(Looking south)

- |   |   |   |  |
|---|---|---|--|
| 1 R&R Bott. Conn. $\bar{r}$<br>(See sheet S-59)                           | 6 R&R Bott. Conn. $\bar{r}$ & Lacing Bars<br>(See sheet S-60)                 | 11A R&R Bott. Conn. $\bar{r}$ , Wedge $\bar{r}$ s &<br>Adjacent Lacing Bars<br>(See sheet S-62) | 15 Strengthening Post 10-11 at Live Load<br>Brg.<br>(See sheet S-64) |
| 2A R&R Bott. Conn. $\bar{r}$ & Lacing Bars<br>(See sheet S-59)            | 7A R&R Top Batten $\bar{r}$ &<br>R&R Top Batten $\bar{r}$<br>(See sheet S-60) | 12 R&R Top Batten $\bar{r}$ s & Top Lacing Bars<br>(See sheet S-62)                             | 16 R&R Top Batten $\bar{r}$ & Top Lacing Bars<br>(See sheet S-65)    |
| 5A R&R Bott. Conn. $\bar{r}$<br>R&R Bott. Lacing Bars<br>(See sheet S-60) | 7C R&R Top Batten $\bar{r}$<br>(See sheet S-60)                               | 13 R&R Diaphragm Top Angles & $\bar{r}$<br>(See sheet S-63)                                     | 17 R&R Bott. Batten $\bar{r}$<br>(See sheet S-65)                    |
|   | 8 R&R Diaphragm Top Angles & $\bar{r}$<br>(See sheet S-61)                    | 14 R&R Top Batten $\bar{r}$<br>(See sheet S-63)   |  |
|   | 9 Strengthen Diaphragm $\bar{r}$<br>(See sheet S-61)                          |   |  |
|   | 10A R&R Top Batten $\bar{r}$<br>(See sheet S-61)                              |   |  |

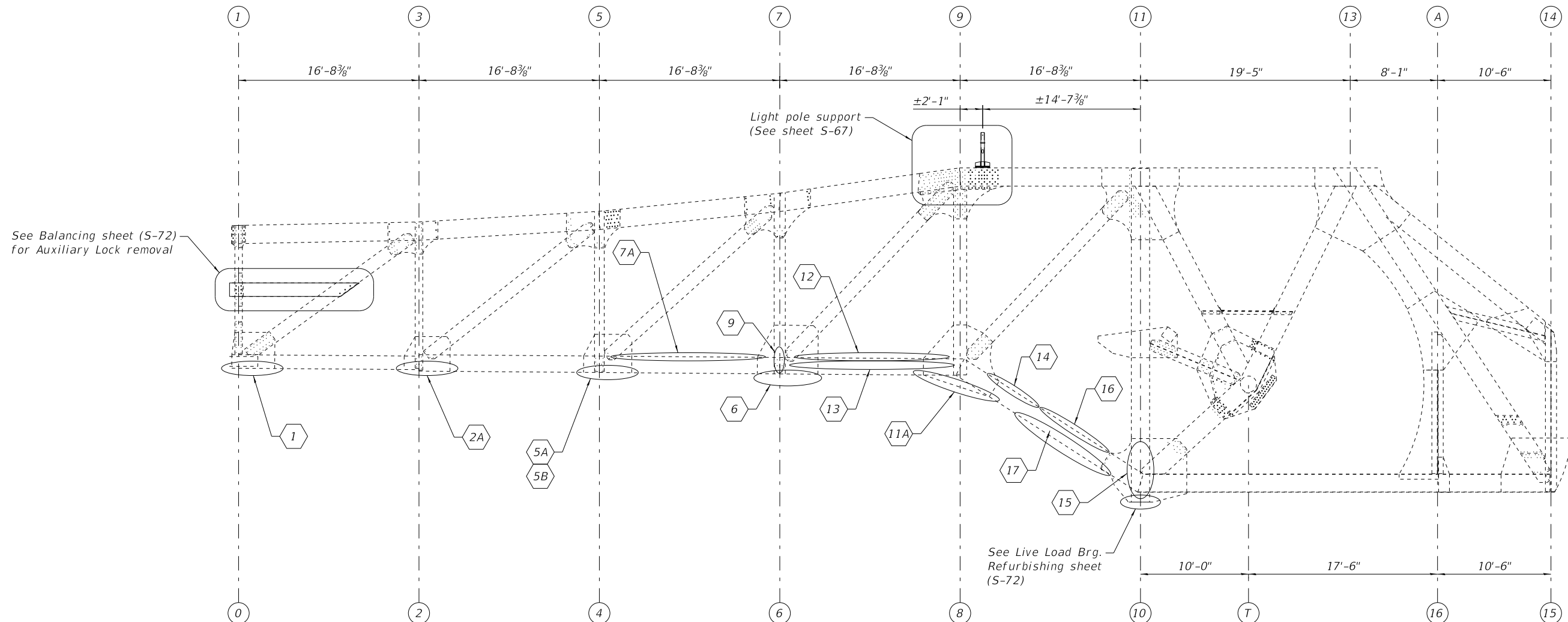
- Notes:
- Locations to be strengthened shall be verified in the field.
  - Cost of furnishing and erecting truss repair steel elements shall be included in "Structural Steel Repair".
  - Cost of removing and replacing rivets in association with furnishing and erecting truss repair steel elements shall be included in "Structural Steel Repair".
  - See sheets S-59 thru S-67 for Truss Repair Details.

**REFERENCE DRAWINGS**

Drawing General Plan & Elevation Erection Plan of Movable Part	Sheet No. 1660570123 1660570196
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0166057-E1525-S056-SETRUSREPAIRS.DGN

	WSP USA Inc. 30 N. LASALLE STREET SUITE 4200 CHICAGO, IL 60602 TEL: (312) 782-8150 FAX: (312) 782-1684	USER NAME = PJLAUX DESIGNED - LD/PJL CHECKED - NBR PLOT SCALE = N.T.S. DRAWN - LD/PJL PLOT DATE = \$DATE\$	DESIGNED - LD/PJL CHECKED - NBR DRAWN - LD/PJL CHECKED - JIG	REVISED - REVISED - REVISED - REVISED -	<b>CITY OF CHICAGO</b> DEPARTMENT OF TRANSPORTATION DIVISION OF ENGINEERING	<b>WEBSTER AVENUE BRIDGE OVER          THE NORTH BRANCH CHICAGO RIVER</b>	<b>BASCULE SPAN:          SE TRUSS REPAIRS          (STRUCTURE NO. 016-6057)</b>	F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
	1388	11-E1525-00-BR	COOK	S-56							
	CDOT PROJECT NO. E-1-525			99 of 210							



**NORTHEAST TRUSS ELEVATION**  
(Looking north)

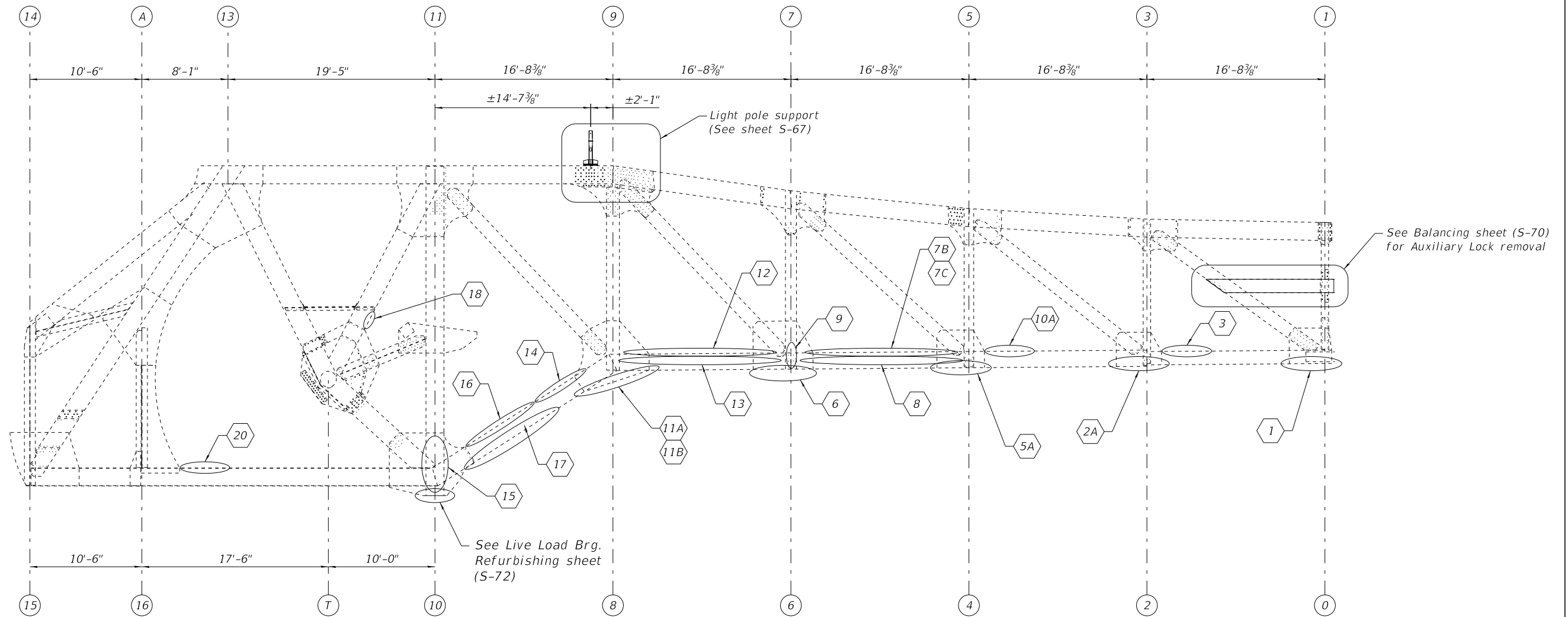
- |   |   |   |  |
|---|---|---|--|
| 1 R&R Bott. Conn. $\bar{r}$<br>(See sheet S-59)   | 6 R&R Bott. Conn. $\bar{r}$ & Lacing Bars<br>(See sheet S-60) | 11A R&R Bott. Conn. $\bar{r}$ , Wedge $\bar{r}$ s &<br>Adjacent Lacing Bars<br>(See sheet S-62) | 15 Strengthening Post 10-11 at Live Load<br>Brg.<br>(See sheet S-64) |
| 2A R&R Bott. Conn. $\bar{r}$ & Lacing Bars<br>(See sheet S-59)                          | 7A R&R Top Batten $\bar{r}$<br>(See sheet S-60)               | 12 R&R Top Batten $\bar{r}$ s & Top Lacing Bars<br>(See sheet S-62)                             | 16 R&R Top Batten $\bar{r}$ & Top Lacing Bars<br>(See sheet S-65)    |
| 5A R&R Bott. Conn. $\bar{r}$ & Lacing Bars<br>R&R Bott. Lacing Bars<br>(See sheet S-60) | 9 Strengthen Diaphragm $\bar{r}$<br>(See sheet S-61)          | 13 R&R Diaphragm Top Angles & $\bar{r}$<br>(See sheet S-63)                                     | 17 R&R Bott. Batten $\bar{r}$<br>(See sheet S-65)                    |
|   |   | 14 R&R Top Batten $\bar{r}$<br>(See sheet S-63)   |  |

- Notes:
- Locations to be strengthened shall be verified in the field.
  - Cost of furnishing and erecting truss repair steel elements shall be included in "Structural Steel Repair".
  - Cost of removing and replacing rivets in association with furnishing and erecting truss repair steel elements shall be included in "Structural Steel Repair".
  - See sheets S-59 thru S-67 for Truss Repair Details.

**REFERENCE DRAWINGS**

Drawing General Plan & Elevation Erection Plan of Movable Part	Sheet No. 1660570123 1660570196
--	---------------------------------------

0166057-E1525-S057-NETRUSREPAIRS.DGN



**NORTHWEST TRUSS ELEVATION**  
(Looking north)

- |  |  |   |  |
|--|--|---|--|
| 1 R&R Bott. Conn. $\bar{r}$<br>(See sheet S-59)                | 6 R&R Bott. Conn. $\bar{r}$ & Lacing Bars<br>(See sheet S-60)            | 11A R&R Bott. Conn. $\bar{r}$ , Wedge $\bar{r}$ s &<br>Adjacent Lacing Bars<br>(See sheet S-62) | 15 Strengthening Post 10-11 at Live Load<br>Brg.<br>(See sheet S-64) |
| 2A R&R Bott. Conn. $\bar{r}$ & Lacing Bars<br>(See sheet S-59) | 7B R&R Bott. Lacing Bars<br>R&R Top Batten $\bar{r}$<br>(See sheet S-60) | 11B R&R Angle<br>(See sheet S-62)   | 16 R&R Top Batten $\bar{r}$ & Top Lacing Bars<br>(See sheet S-65)    |
| 3 R&R Top Batten $\bar{r}$<br>(See sheet S-59)                 | 7C R&R Top Batten $\bar{r}$<br>(See sheet S-60)                          | 12 R&R Top Batten $\bar{r}$ s & Top Lacing Bars<br>(See sheet S-62)                             | 17 R&R Bott. Batten $\bar{r}$<br>(See sheet S-65)                    |
| 5A R&R Bott. Conn. $\bar{r}$ & Lacing Bars<br>(See sheet S-60) | 8 R&R Diaphragm Top Angles & $\bar{r}$<br>(See sheet S-61)               | 13 R&R Diaphragm Top Angles & $\bar{r}$<br>(See sheet S-63)                                     | 18 R&R Top Batten $\bar{r}$<br>(See sheet S-66)                      |
|  | 9 Strengthen Diaphragm $\bar{r}$<br>(See sheet S-61)                     | 14 R&R Top Batten $\bar{r}$<br>(See sheet S-63)   | 20 R&R Bott. Batten $\bar{r}$<br>(See sheet S-67)                    |
|  | 10A R&R Top Batten $\bar{r}$<br>(See sheet S-61)                         |   |  |

**Notes:**

- Locations to be strengthened shall be verified in the field.
- Cost of furnishing and erecting truss repair steel elements shall be included in "Structural Steel Repair".
- Cost of removing and replacing rivets in association with furnishing and erecting truss repair steel elements shall be included in "Structural Steel Repair".
- See sheets S-59 thru S-67 for Truss Repair Details.

**REFERENCE DRAWINGS**

Drawing  
General Plan & Elevation  
Erection Plan of Movable Part

Sheet No.  
1660570123  
1660570196

0166057-E1525-S056-NWTRUSSREPAIRS.DGN



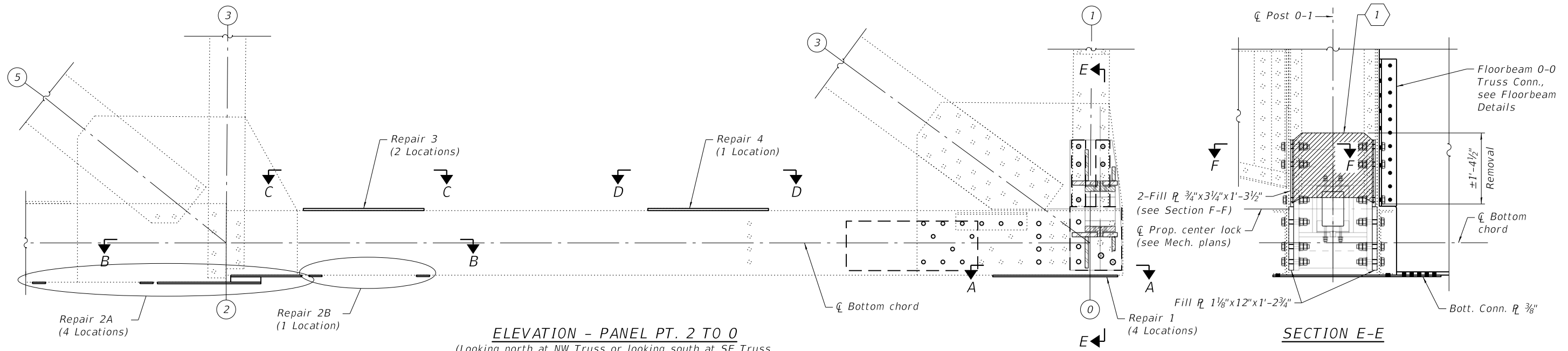
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	CHECKED - NBR	REVISED -
PLOT SCALE = N.T.S.	DRAWN - LD/PJL	REVISED -
PLOT DATE = \$DATE\$	CHECKED - JIG	REVISED -

**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

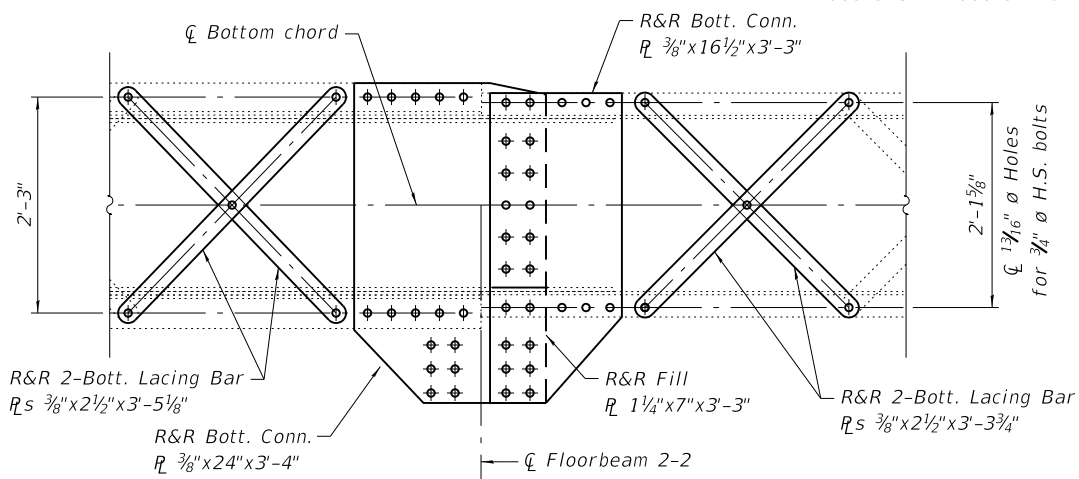
**BASCULE SPAN:  
NW TRUSS REPAIRS  
(STRUCTURE NO. 016-6057)**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-58
CDOT PROJECT NO. E-1-525			101 of 210



**ELEVATION - PANEL PT. 2 TO 0**

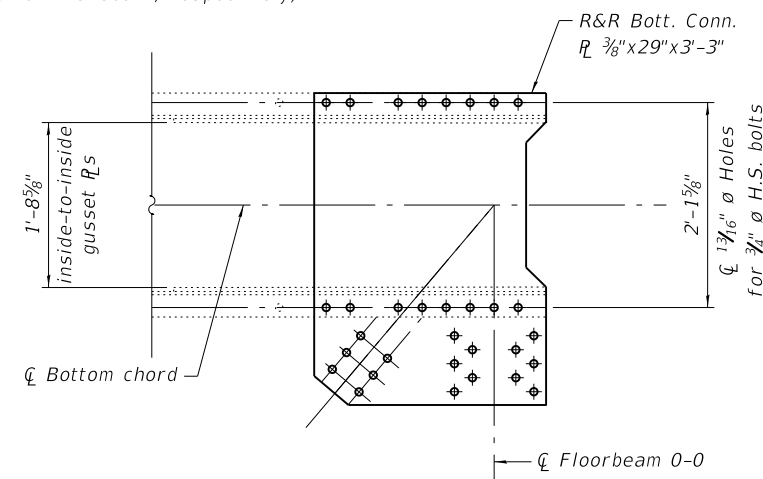
(Looking north at NW Truss or looking south at SE Truss, NE Truss & SW Truss similar but opposite hand looking north & south, respectively)



**SECTION B-B**

**REPAIR 2A & 2B**

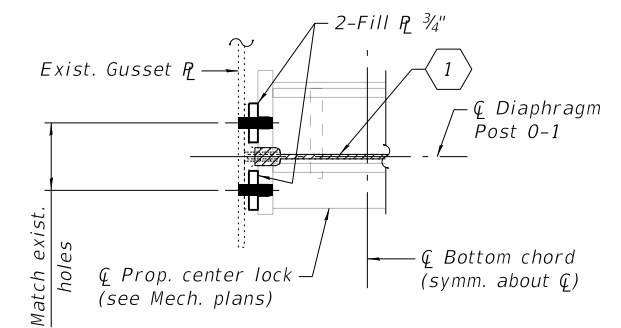
(NW/SE Truss shown, SW/NE Truss similar but opposite hand)



**SECTION A-A**

**REPAIR 1**

(NW/SE Truss shown, SW/NE Truss similar but opposite hand)



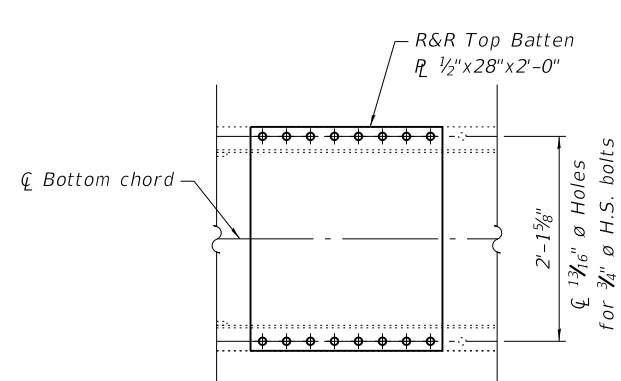
**SECTION E-E**



**SECTION F-F**

1 Cut/remove exist. diaphragm R & attached angle leg as req'd to accommodate prop. center lock guide/receiver. Cost included in the cost of Structural Steel Repairs.

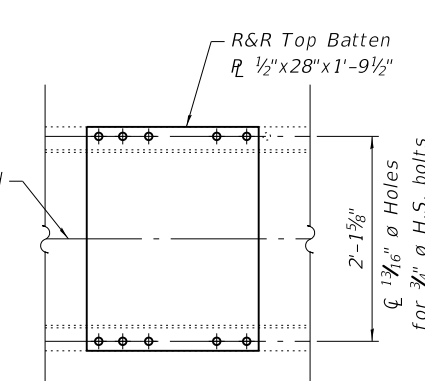
- Notes:
- Locations to be strengthened shall be verified in the field.
  - Cost of furnishing and erecting truss repair steel elements shall be included in Structural Steel Repairs.
  - Cost of removing and replacing rivets in association with furnishing and erecting truss repair steel elements shall be included in Structural Steel Repairs.
  - See sheets S-55 thru S-58 for locations of Truss Repairs.



**VIEW C-C**

**REPAIR 3**

(NW Truss shown, SW Truss similar but opposite hand)



**VIEW D-D**

**REPAIR 4**

(For SW Truss opposite hand)

**BILL OF MATERIAL**

Item	Unit	Quantity
Structural Steel Repairs	Pound	1,680

**REFERENCE DRAWINGS**

Drawing Main Truss Members 0-4 Sheet No. 1660570203

0166057-E1525-S059-TRUSSPTOP2REPAIRS.DGN



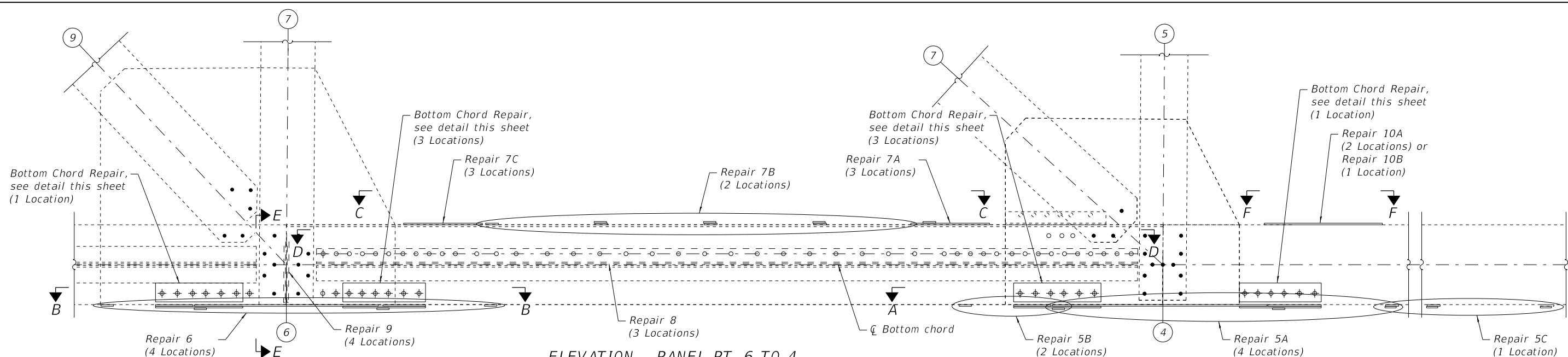
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PLOT DATE = 10/5/2020	DRAWN - LD/PJL	REVISED -
	CHECKED - JIG	REVISED -

**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

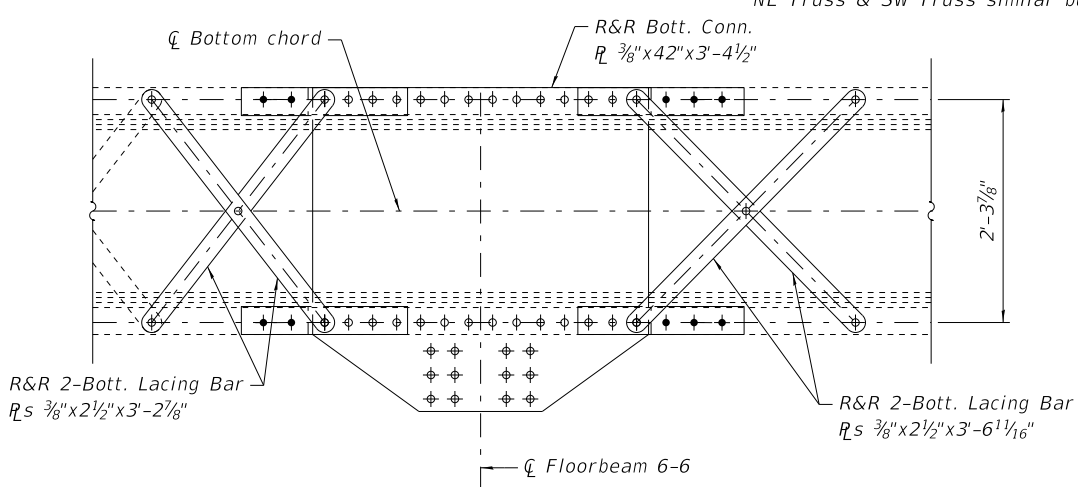
**BASCULE SPAN:  
TRUSS PP0 TO PP2 REPAIRS  
(STRUCTURE NO. 016-6057)**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-59
CDOT PROJECT NO. E-1-525			102 of 210



**ELEVATION - PANEL PT. 6 TO 4**

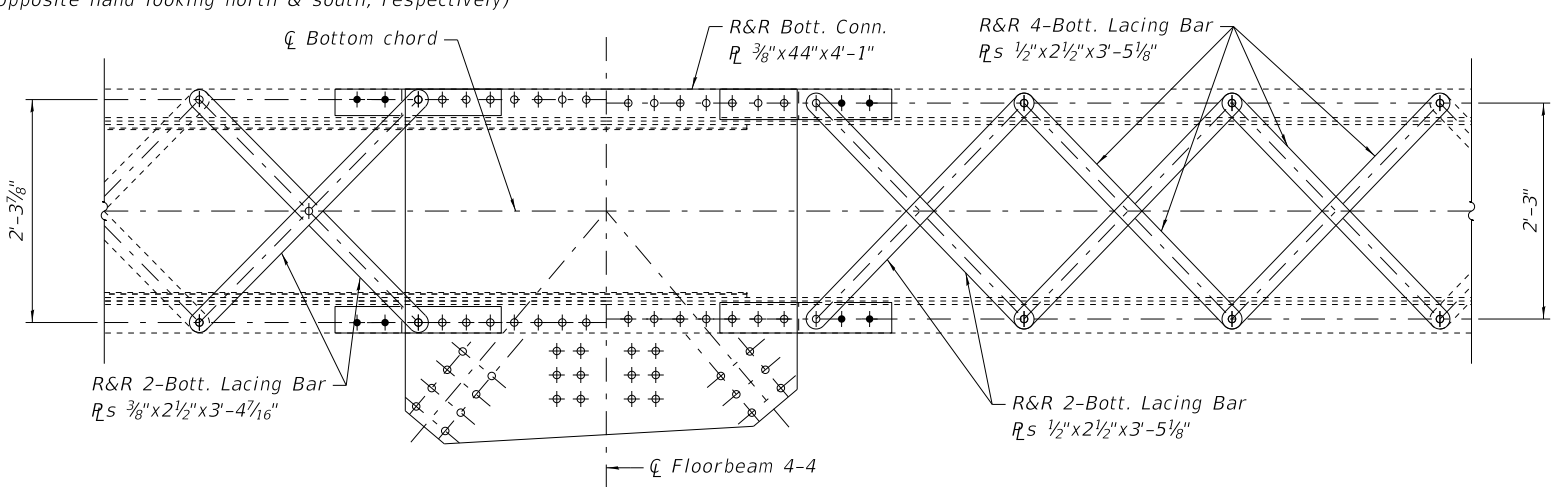
(Looking north at NW Truss or looking south at SE Truss,  
NE Truss & SW Truss similar but opposite hand looking north & south, respectively)



**SECTION B-B**

**REPAIR 6**

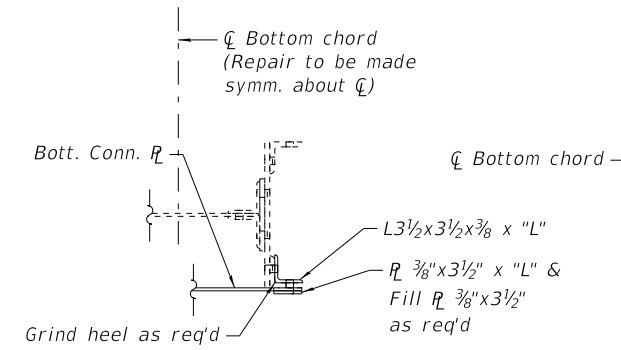
(NW/SE Truss shown, SW/NE Truss similar but opposite hand)



**SECTION A-A**

**REPAIR 5A, 5B & 5C**

(NW/SE Truss shown, SW/NE Truss similar but opposite hand)

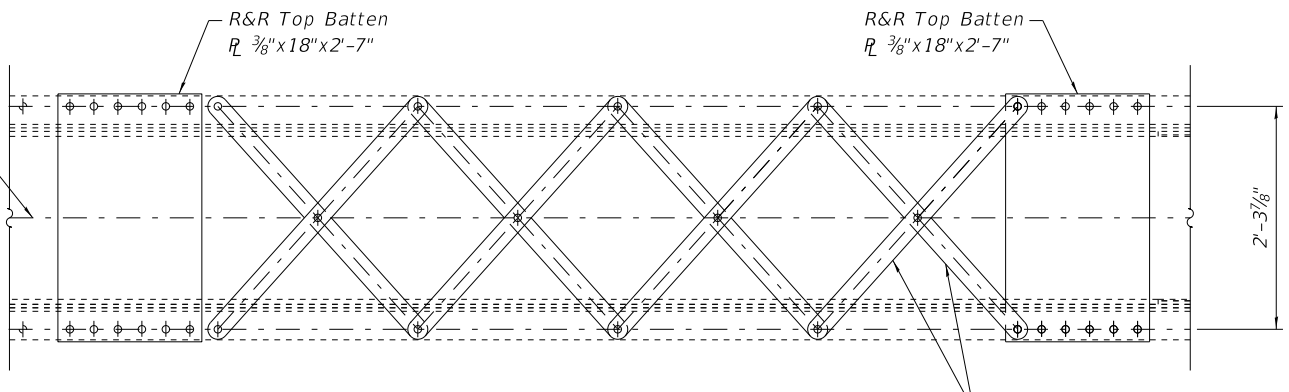


**BOTTOM CHORD**

**BOTT. ANGLE REPAIR**

- L2-L4 (near PP4) - NE Truss
- L4-L6 (near PP4) - NE/SE/NW Truss
- L4-L6 (near PP6) - NE/SE/NW Truss
- L6-L8 (near PP6) - NE Truss

"L" = Length of repair angles and R's to be field verified w/ min. 3 bolts beyond limit of defect(s)



**VIEW C-C**

**REPAIR 7A, 7B & 7C**

(NW/SE Truss shown, SW/NE Truss similar but opposite hand)

**Notes:**

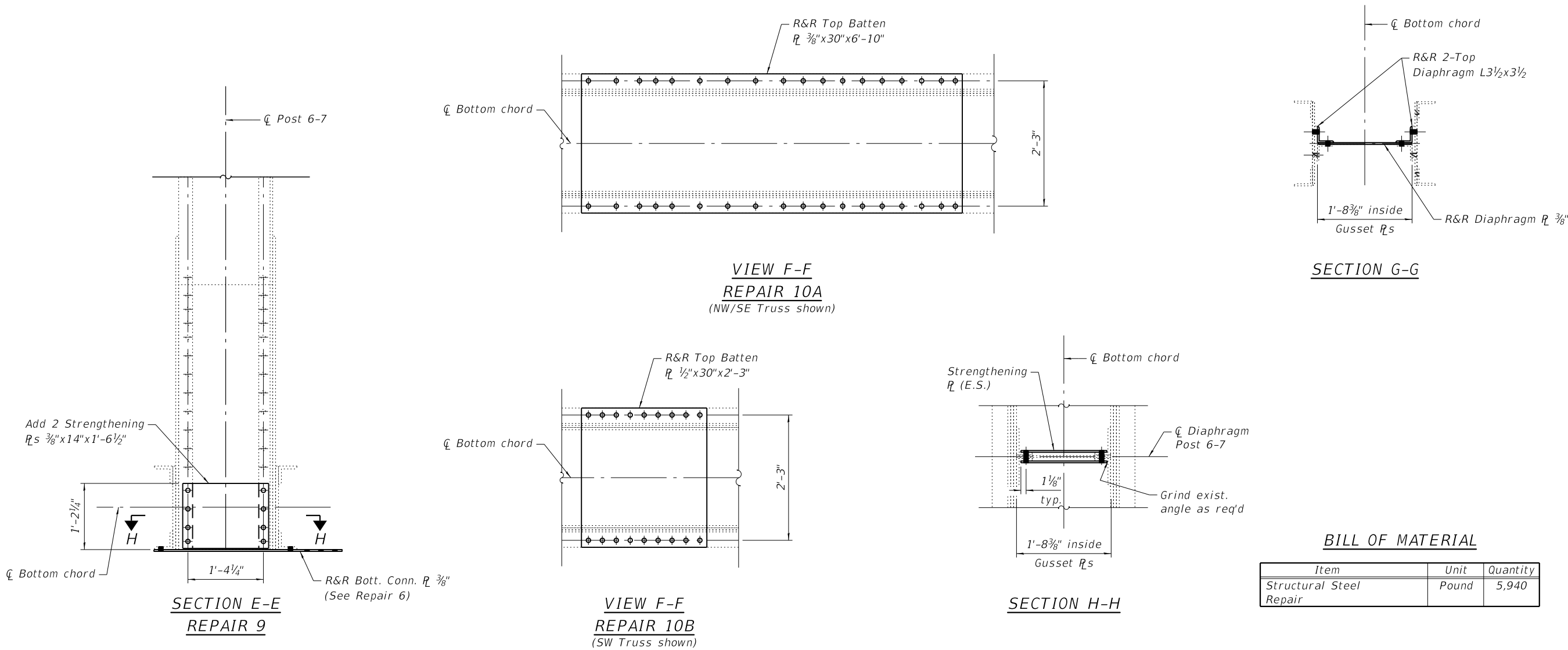
1. Locations to be strengthened shall be verified in the field.
2. Cost of furnishing and erecting truss repair steel elements shall be included in "Structural Steel Repair".
3. Cost of removing and replacing rivets in association with furnishing and erecting truss repair steel elements shall be included in "Structural Steel Repair".
4. See sheets S-55 thru S-58 for locations of Truss Repairs.
5. See sheet S-61 for Section D-D & E-E and View F-F.

**REFERENCE DRAWINGS**

Drawing	Sheet No.
Main Truss Members 4-8	1660570200
Main Truss Members 0-4	1660570203
Main Truss Members	1660570204
Posts & Diagonals	1660570205

0166057-E1525-S060-TRUSSPP4TOPREPAIRS.IDGN

<b>wsp</b>	WSP USA Inc. 30 N. LA SALLE STREET SUITE 4200 CHICAGO, IL 60602 TEL: (312) 782-8150 FAX: (312) 782-1884	USER NAME = PJLAUX	DESIGNED - LD/PJL	REVISED -	<b>CITY OF CHICAGO</b> DEPARTMENT OF TRANSPORTATION DIVISION OF ENGINEERING	<b>WEBSTER AVENUE BRIDGE OVER THE NORTH BRANCH CHICAGO RIVER</b>	<b>BASCULE SPAN: TRUSS PP4 TO PP6 REPAIRS I (STRUCTURE NO. 016-6057)</b>	F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
	PLOT SCALE = N.T.S.	DRAWN - LD/PJL	REVISED -	1388				11-E1525-00-BR	COOK	S-60	
PLOT DATE = \$DATE\$	CHECKED - JIG	REVISED -	CDOT PROJECT NO. E-1-525			103 of 210					



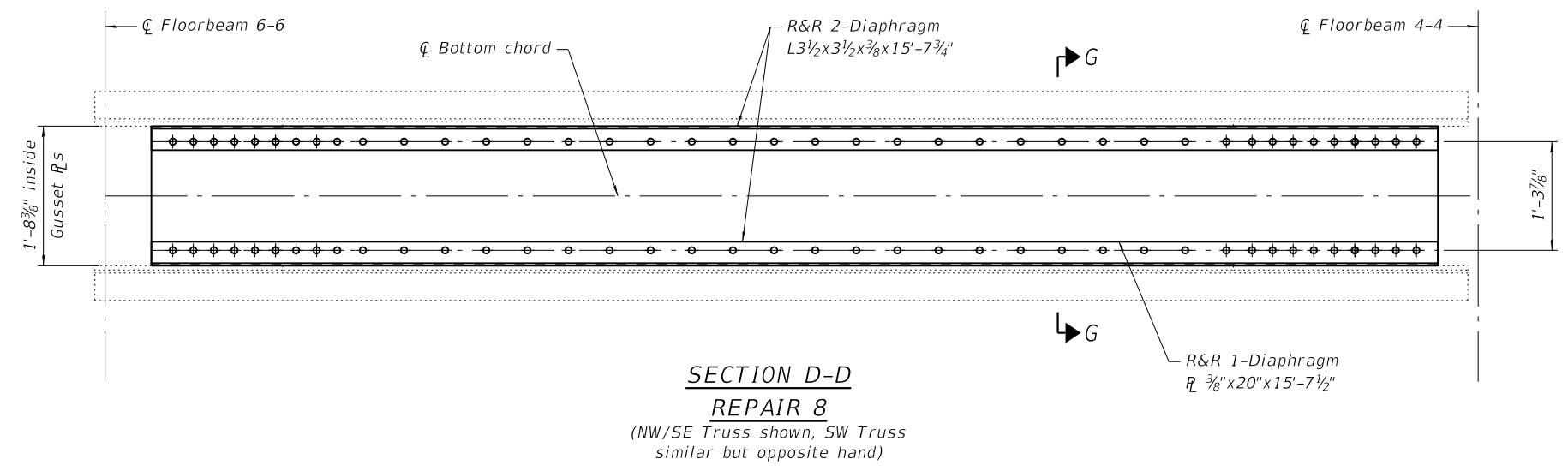
**BILL OF MATERIAL**

Item	Unit	Quantity
Structural Steel Repair	Pound	5,940

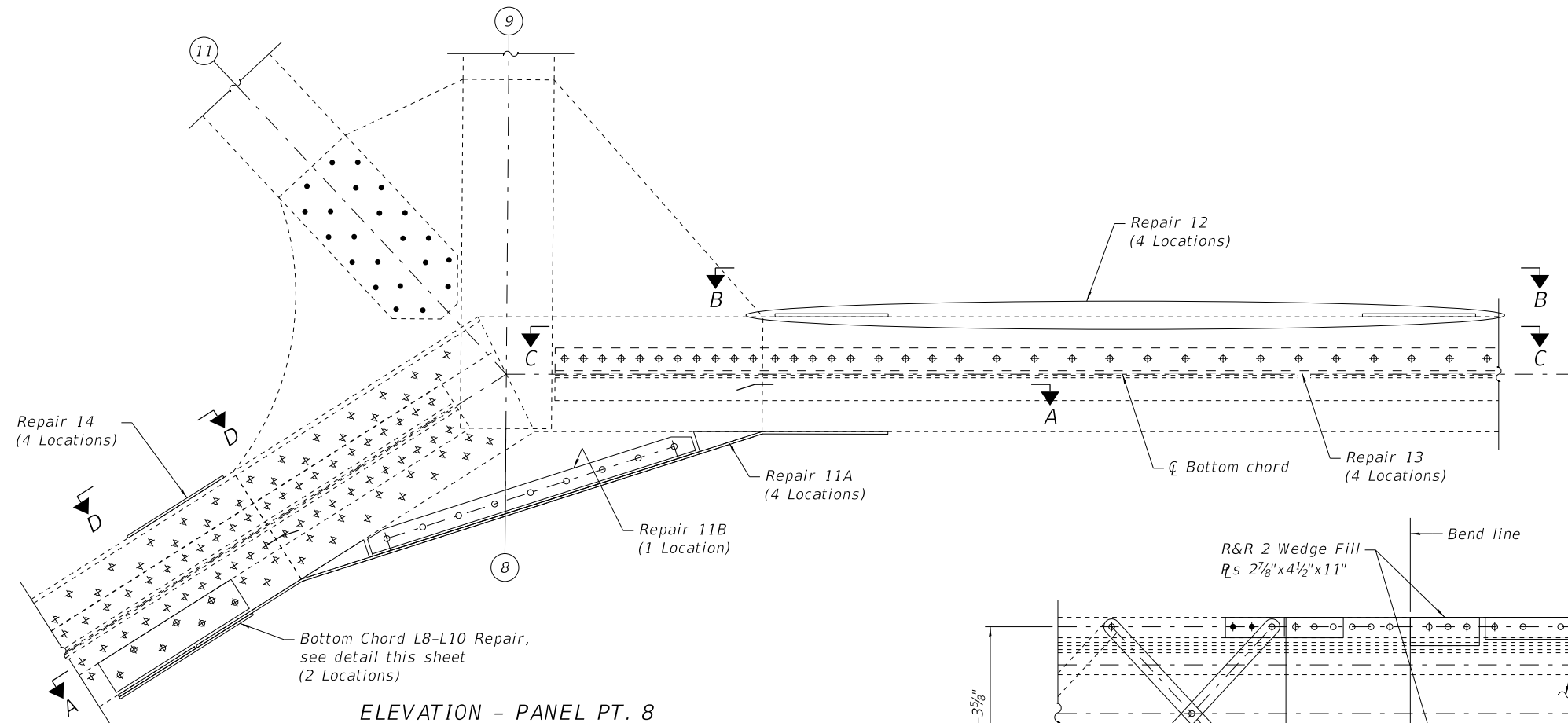
- Notes:
- Locations to be strengthened shall be verified in the field.
  - Cost of furnishing and erecting truss repair steel elements shall be included in "Structural Steel Repair".
  - Cost of removing and replacing rivets in association with furnishing and erecting truss repair steel elements shall be included in "Structural Steel Repair".
  - See sheet S-60 for locations of Section D-D & E-E and View F-F.

**REFERENCE DRAWINGS**

Drawing	Sheet No.
Main Truss Members 4-8	1660570200
Main Truss Members 0-4	1660570203
Main Truss Members	1660570204
Posts & Diagonals	1660570205

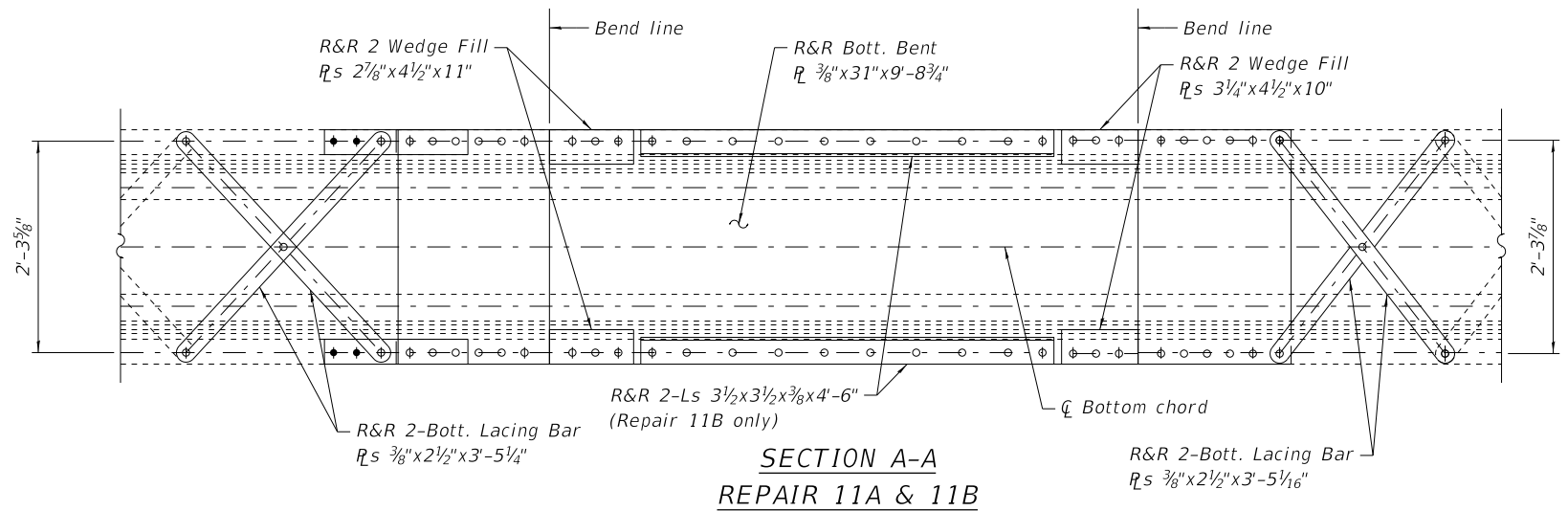


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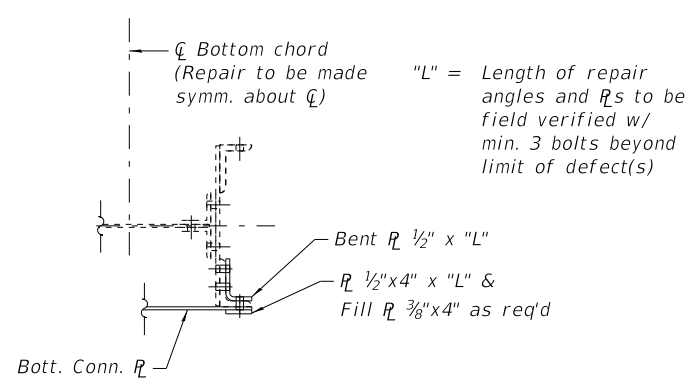


**ELEVATION - PANEL PT. 8**

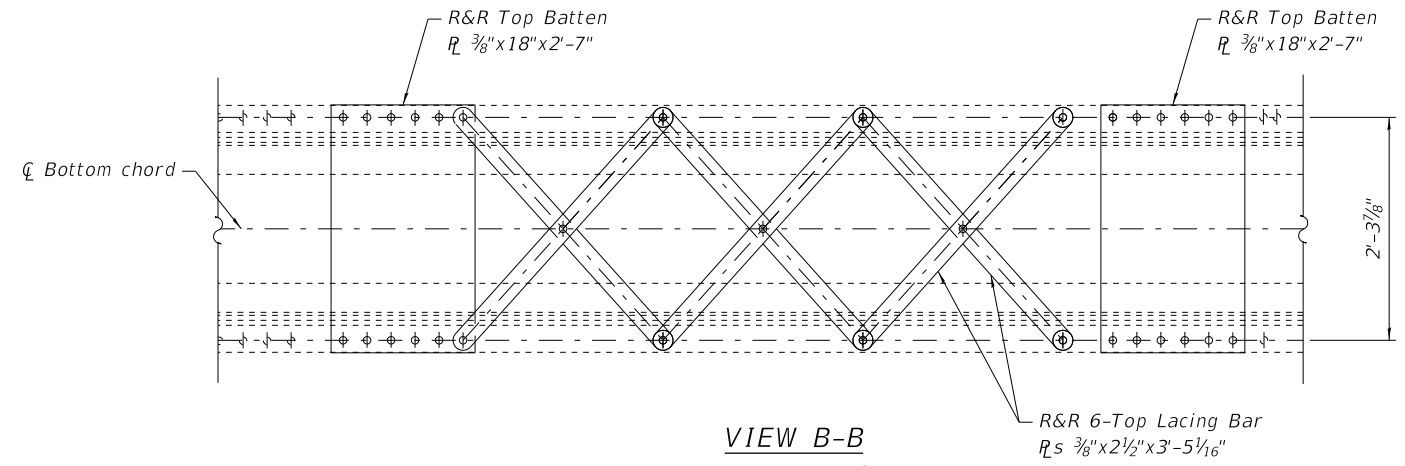
(Looking north at NW Truss or looking south at SE Truss, NE Truss & SW Truss similar but opposite hand looking north & south, respectively)



**SECTION A-A  
REPAIR 11A & 11B**



**BOTTOM CHORD L8-L10  
BOTT. ANGLE REPAIR  
(NW/SW Truss)**



**VIEW B-B  
REPAIR 12  
(NW/SE Truss shown, SW/NE Truss similar but opposite hand)**

- Notes:
1. Locations to be strengthened shall be verified in the field.
  2. Cost of furnishing and erecting truss repair steel elements shall be included in "Structural Steel Repair".
  3. Cost of removing and replacing rivets in association with furnishing and erecting truss repair steel elements shall be included in "Structural Steel Repair".
  4. See sheets S-55 thru S-58 for locations of Truss Repairs.
  5. See sheet S-63 for Section C-C & View D-D.

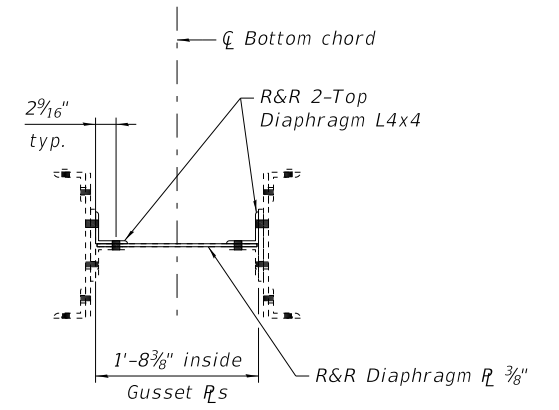
**REFERENCE DRAWINGS**

Drawing	Sheet No.
Main Truss Members	1660570200
Main Truss Members	1660570202
Posts & Diagonals	1660570205

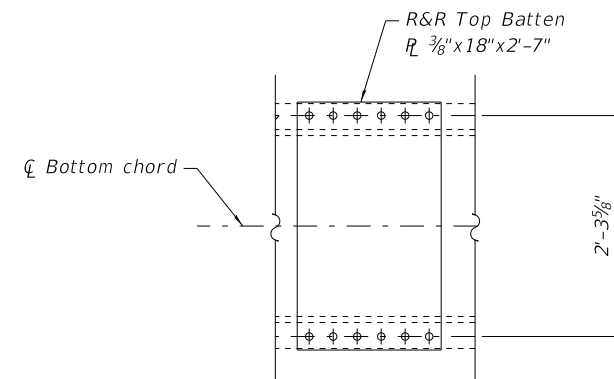
0166057-E1525-S062-TRUSSPP8REPAIRS1.DGN

<p>WSP USA Inc. 30 N. LASALLE STREET SUITE 4000 CHICAGO, IL 60602 TEL: (312) 782-8150 FAX: (312) 782-1884</p>	USER NAME = P.JLAUX	DESIGNED - LD/PJL	REVISED -	<p><b>CITY OF CHICAGO</b> DEPARTMENT OF TRANSPORTATION DIVISION OF ENGINEERING</p>	<p><b>WEBSTER AVENUE BRIDGE OVER THE NORTH BRANCH CHICAGO RIVER</b></p>	<p><b>BASCULE SPAN: TRUSS PP8 REPAIRS I (STRUCTURE NO. 016-6057)</b></p>	F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
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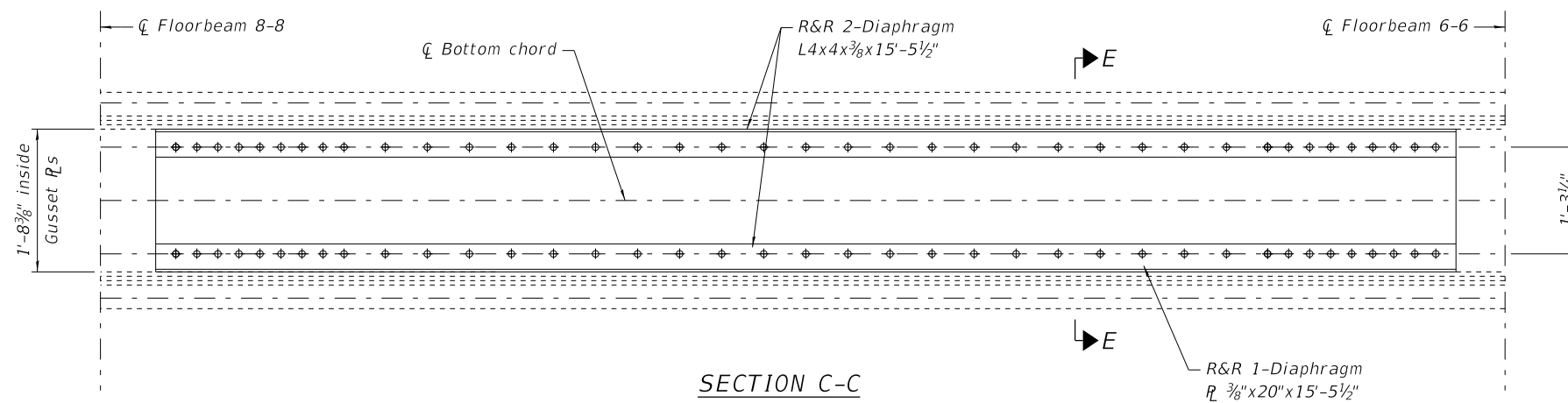
SECTION E-E



VIEW D-D  
REPAIR 14  
(NW Truss shown, SW/NE Truss  
similar but opposite hand)

BILL OF MATERIAL

Item	Unit	Quantity
Structural Steel Repair	Pound	5,560



SECTION C-C  
REPAIR 13  
(NW/SE Truss shown, SW/NE Truss  
similar but opposite hand)

Notes:

- Locations to be strengthened shall be verified in the field.
- Cost of furnishing and erecting truss repair steel elements shall be included in "Structural Steel Repair".
- Cost of removing and replacing rivets in association with furnishing and erecting truss repair steel elements shall be included in "Structural Steel Repair".
- See sheet S-62 for locations of Section C-C & View D-D.

REFERENCE DRAWINGS

Drawing  
Main Truss Members  
Main Truss Members

Sheet No.  
1660570200  
1660570202

0166057-E1525-S063-TRUSSPP8REPAIRSII.DGN



WSP USA Inc.  
30 N. LASALLE STREET  
SUITE 4200  
CHICAGO, IL 60602  
TEL: (312) 782-8150  
FAX: (312) 782-1684

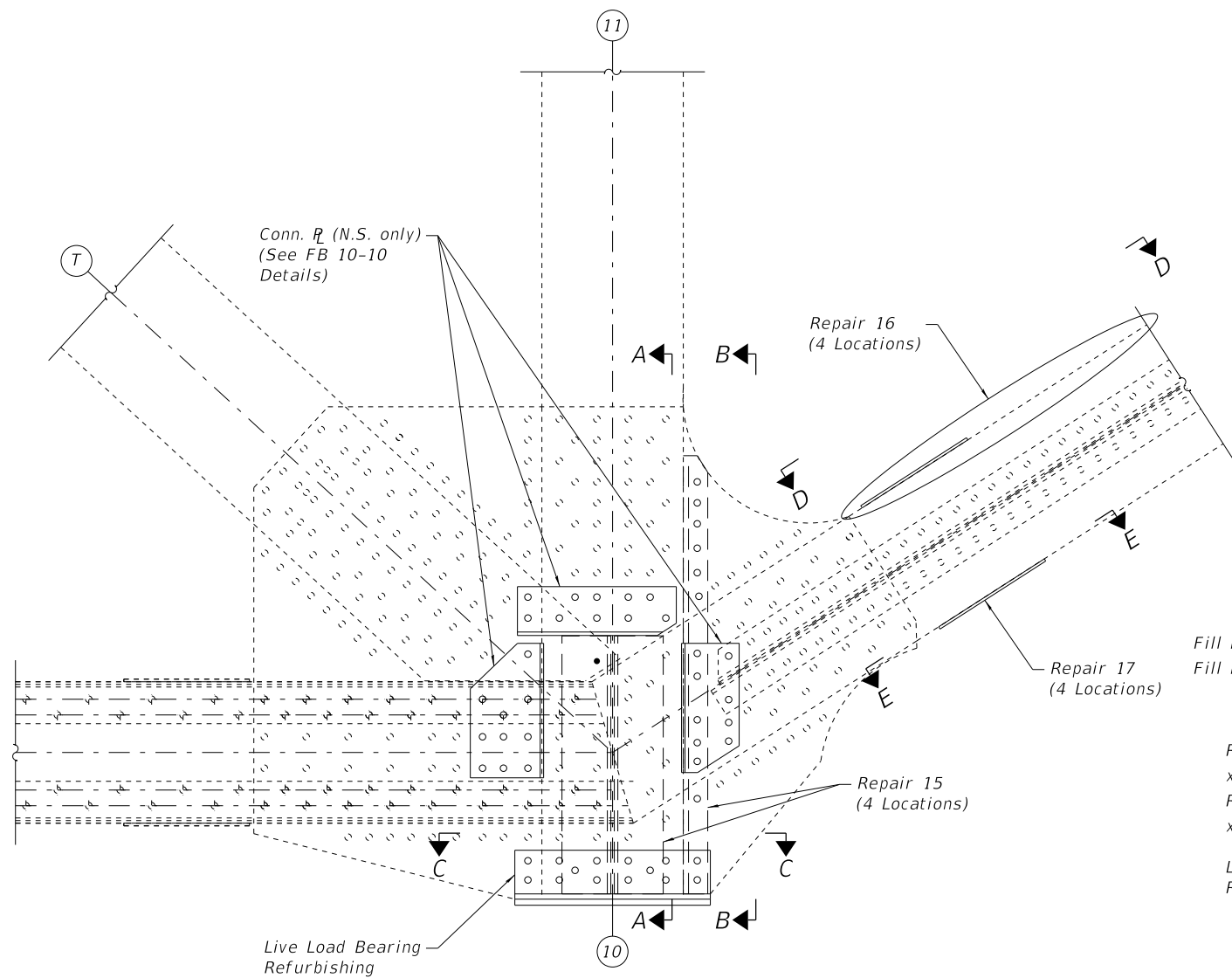
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		CHECKED -	JIG	REVISED -	

**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER

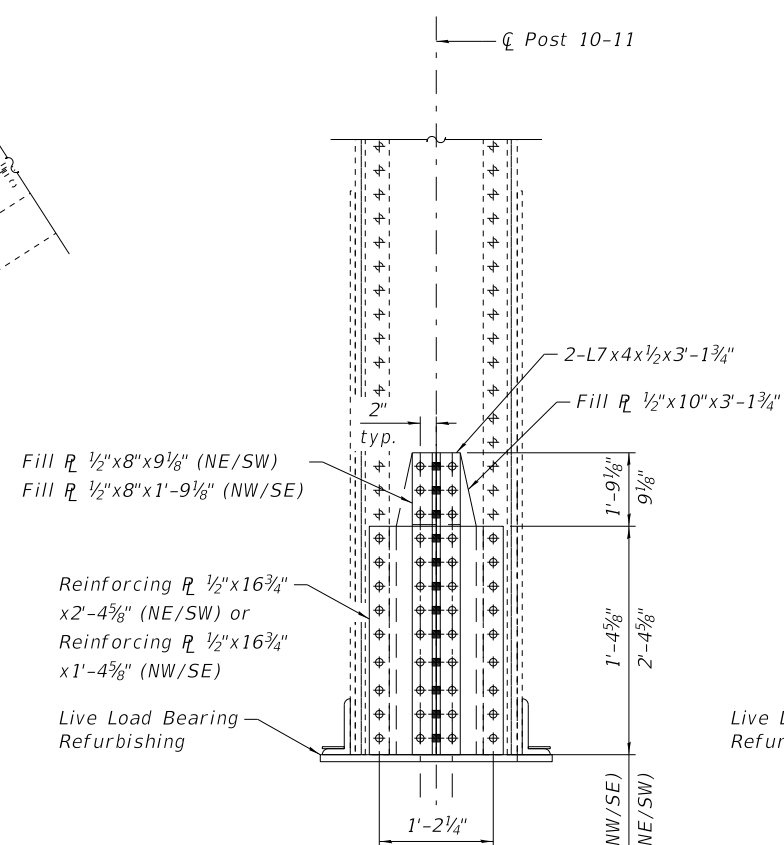
BASCULE SPAN:  
TRUSS PP8 REPAIRS II  
(STRUCTURE NO. 016-6057)

F.A.U. RTÉ.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-63
CDOT PROJECT NO. E-1-525			106 of 210

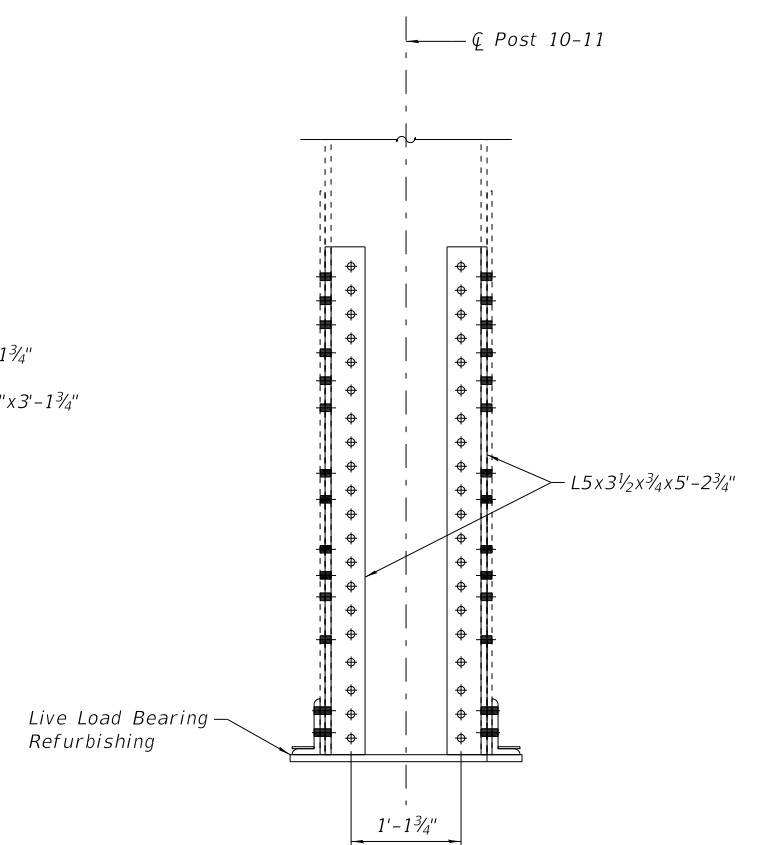


**ELEVATION - PANEL PT. 10**

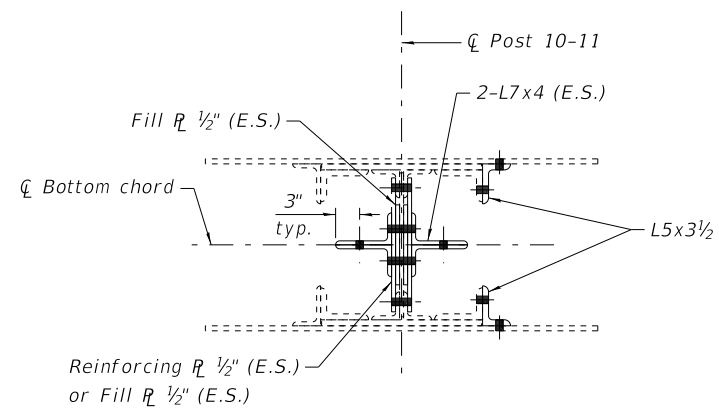
(Looking north at NW Truss or looking south at SE Truss,  
NE Truss & SW Truss similar but opposite hand looking north & south, respectively)



**SECTION A-A  
REPAIR 15**



**SECTION B-B  
REPAIR 15**



**SECTION C-C**

**Notes:**

1. Locations to be strengthened shall be verified in the field.
2. Cost of furnishing and erecting truss repair steel elements shall be included in "Structural Steel Repair".
3. Cost of removing and replacing rivets in association with furnishing and erecting truss repair steel elements shall be included in "Structural Steel Repair".
4. See sheets S-55 thru S-58 for locations of Truss Repairs.
5. See sheet S-65 for View D-D and Section E-E.

**REFERENCE DRAWINGS**

Drawing  
Main Truss Members  
Posts & Diagonals

Sheet No.  
1660570202  
1660570205

0166057-E1525-S064-TRUSSPP10REPAIRSIDGN



WSP USA Inc.  
30 N. LASALLE STREET  
SUITE 4200  
CHICAGO, IL 60602  
TEL: (312) 782-8150  
FAX: (312) 782-1684

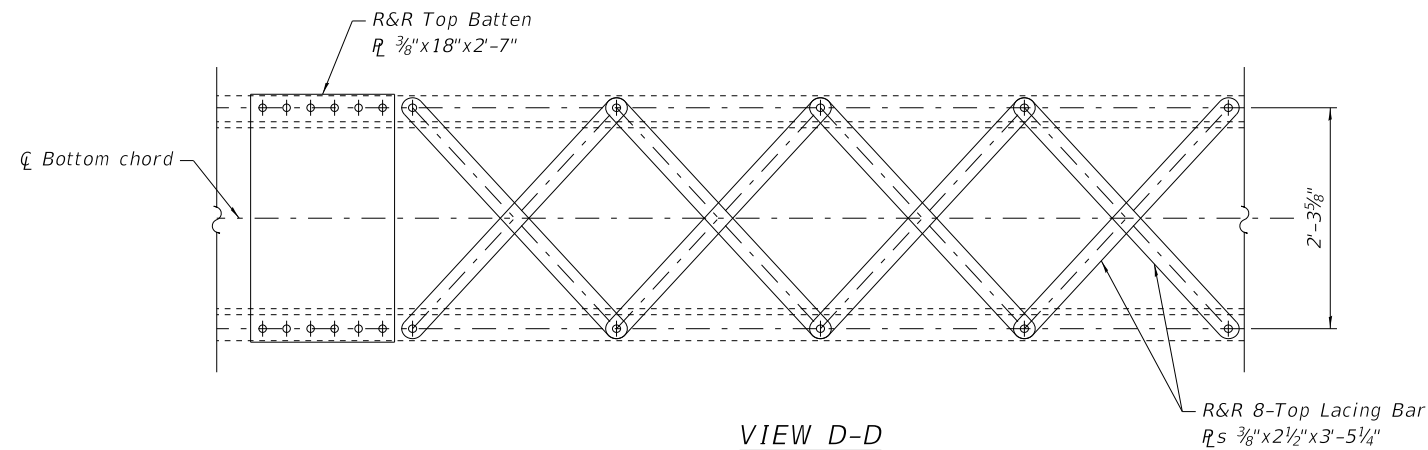
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**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

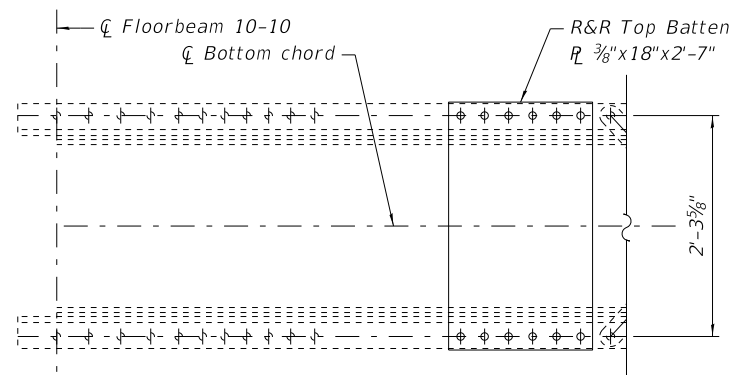
**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

**BASCULE SPAN:  
TRUSS PP10 REPAIRS I  
(STRUCTURE NO. 016-6057)**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-64
CDOT PROJECT NO. E-1-525			107 of 210



**VIEW D-D**  
**REPAIR 16**  
 (NW/SE Truss shown, SW/NE Truss  
 similar but opposite hand)



**SECTION E-E**  
**REPAIR 17**  
 (NW/SE Truss shown, SW/NE Truss  
 similar but opposite hand)

**BILL OF MATERIAL**

Item	Unit	Quantity
Structural Steel Repair	Pound	4,240

Notes:

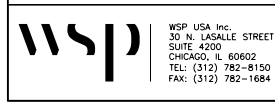
- Locations to be strengthened shall be verified in the field.
- Cost of furnishing and erecting truss repair steel elements shall be included in "Structural Steel Repair".
- Cost of removing and replacing rivets in association with furnishing and erecting truss repair steel elements shall be included in "Structural Steel Repair".
- See sheet S-64 for locations of View D-D & Section E-E.

**REFERENCE DRAWINGS**

Drawing  
 Main Truss Members

Sheet No.  
 1660570202

0166057-E1525-S065-TRUSSPP10REPAIRSII.DGN



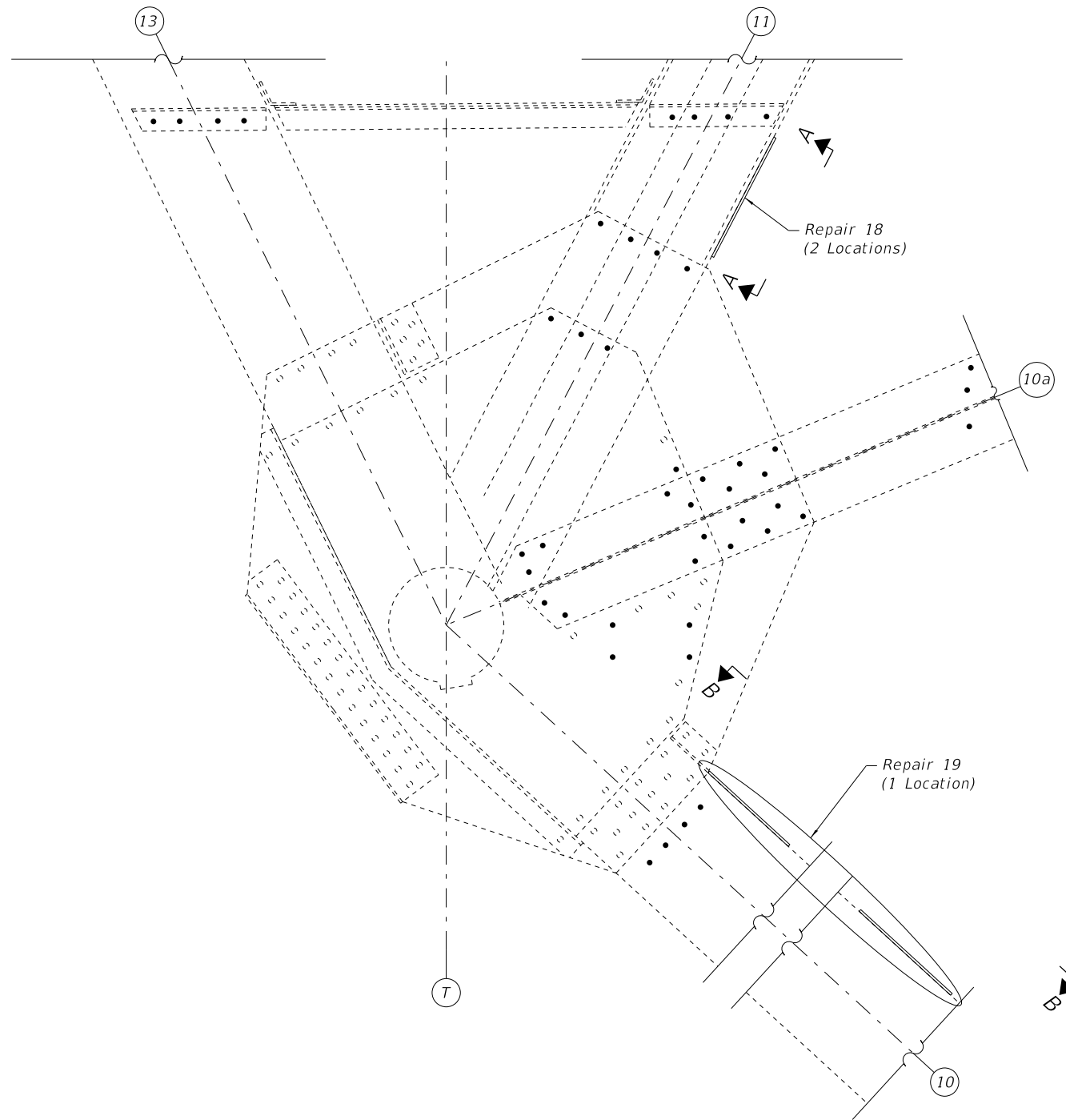
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	CHECKED - NBR	REVISED -
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PLOT DATE = \$DATE\$	CHECKED - JIG	REVISED -

**CITY OF CHICAGO**  
 DEPARTMENT OF TRANSPORTATION  
 DIVISION OF ENGINEERING

**WEBSTER AVENUE BRIDGE OVER  
 THE NORTH BRANCH CHICAGO RIVER**

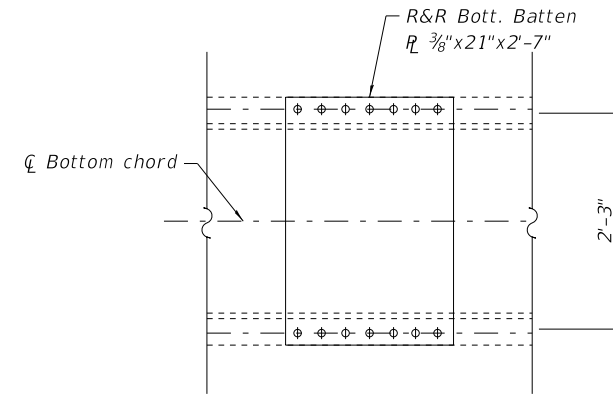
**BASCULE SPAN:  
 TRUSS PP10 REPAIRS II  
 (STRUCTURE NO. 016-6057)**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-65
CDOT PROJECT NO. E-1-525			108 of 210

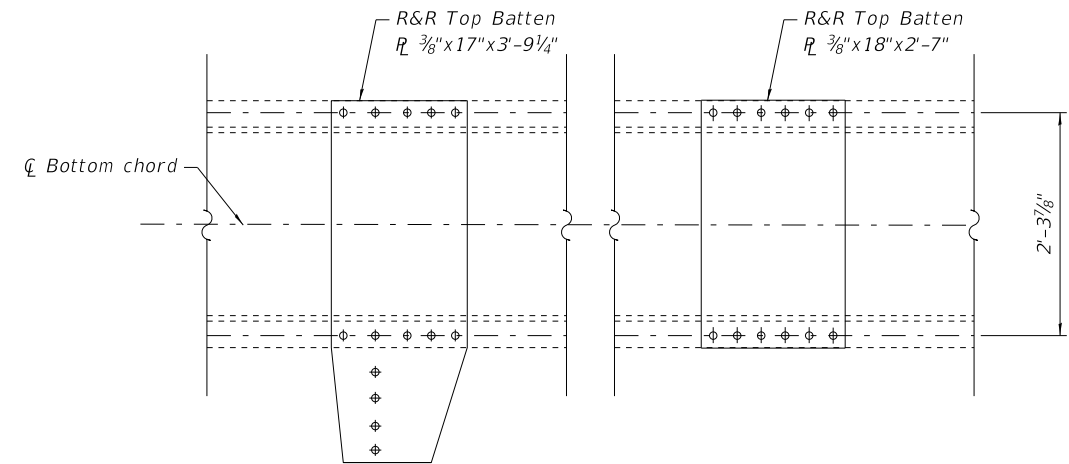


**ELEVATION - PANEL PT. T**

(Looking north at NW Truss or looking south at SE Truss,  
NE Truss & SW Truss similar but opposite hand looking north & south, respectively)



**VIEW A-A**  
**REPAIR 18**  
(NW Truss shown, SW Truss similar)



**VIEW B-B**  
**REPAIR 19**  
(SW Truss shown)

- Notes:
1. Locations to be strengthened shall be verified in the field.
  2. Cost of furnishing and erecting truss repair steel elements shall be included in "Structural Steel Repair".
  3. Cost of removing and replacing rivets in association with furnishing and erecting truss repair steel elements shall be included in "Structural Steel Repair".
  5. See sheets S-55 thru S-58 for locations of Truss Repairs.

**BILL OF MATERIAL**

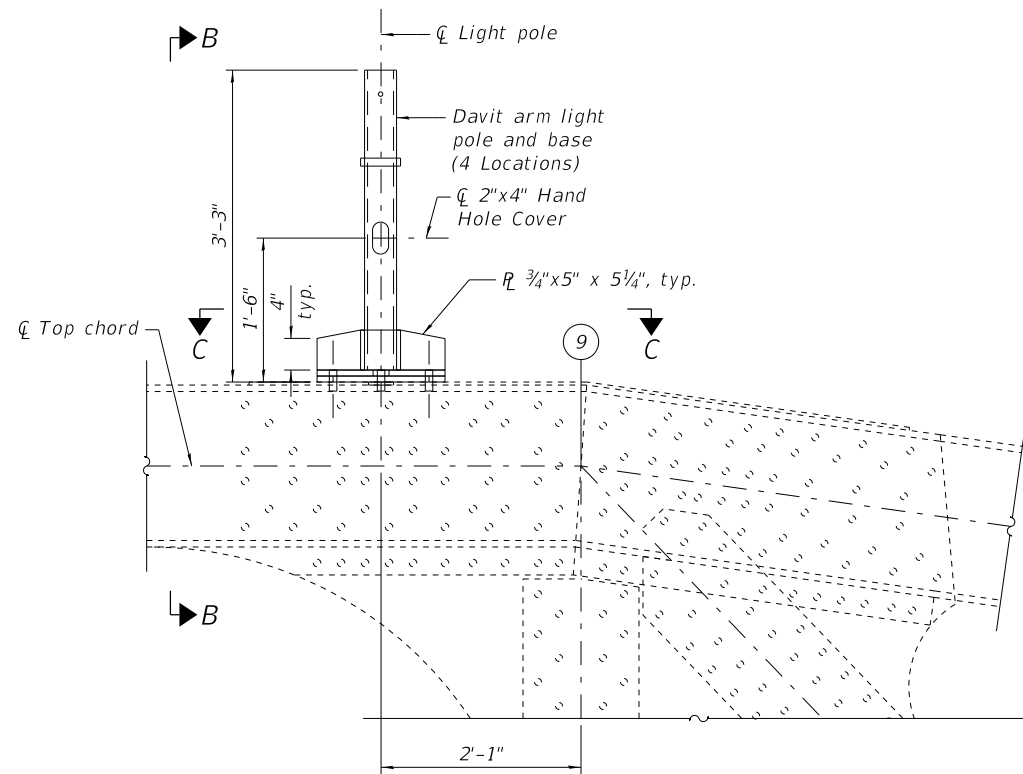
Item	Unit	Quantity
Structural Steel Repair	Pound	360

**REFERENCE DRAWINGS**

Drawing  
Main Truss Members

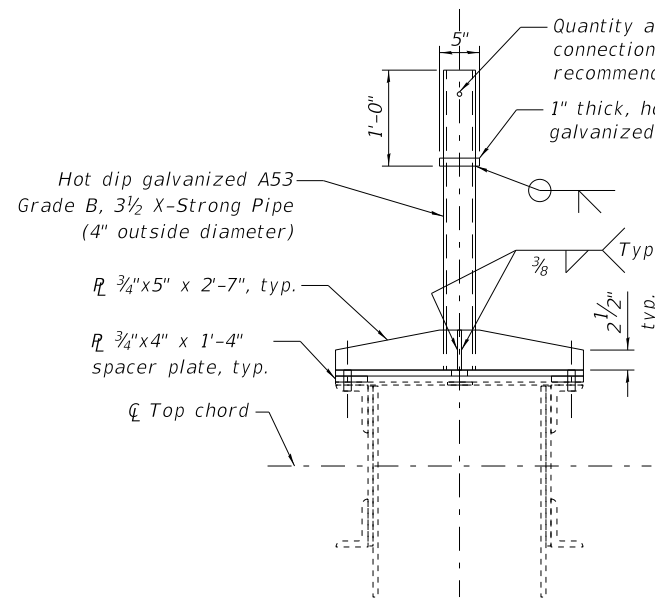
Sheet No.  
1660570199

0166057-E1525-S066-TRUSSPPTREPAIRS.DGN

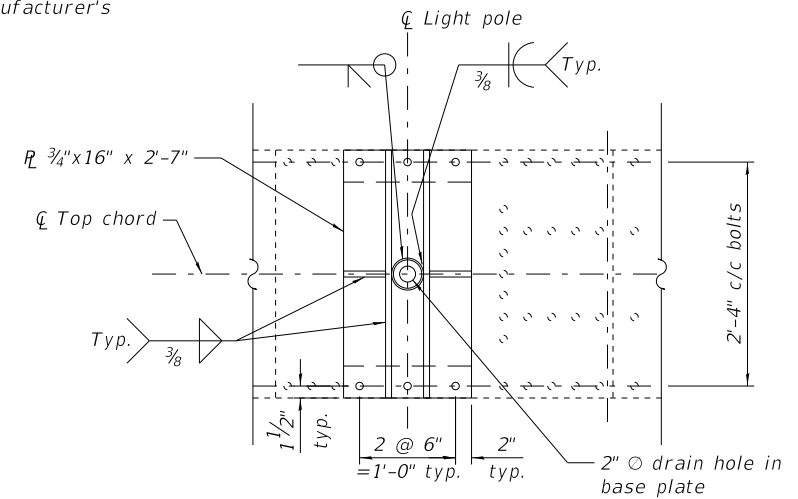


**ELEVATION - PANEL PT. 9**

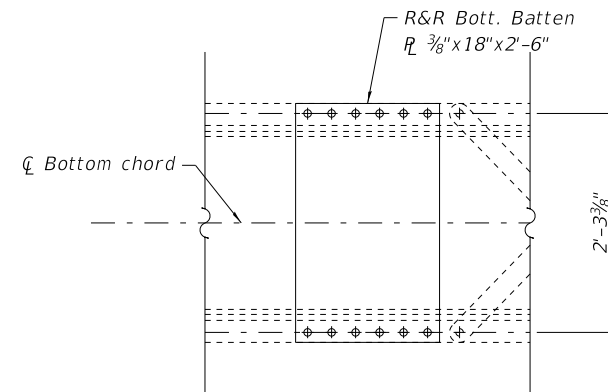
(Looking north at NW Truss or looking south at SE Truss, NE Truss & SW Truss similar but opposite hand looking north & south, respectively)



**SECTION B-B**



**VIEW C-C**

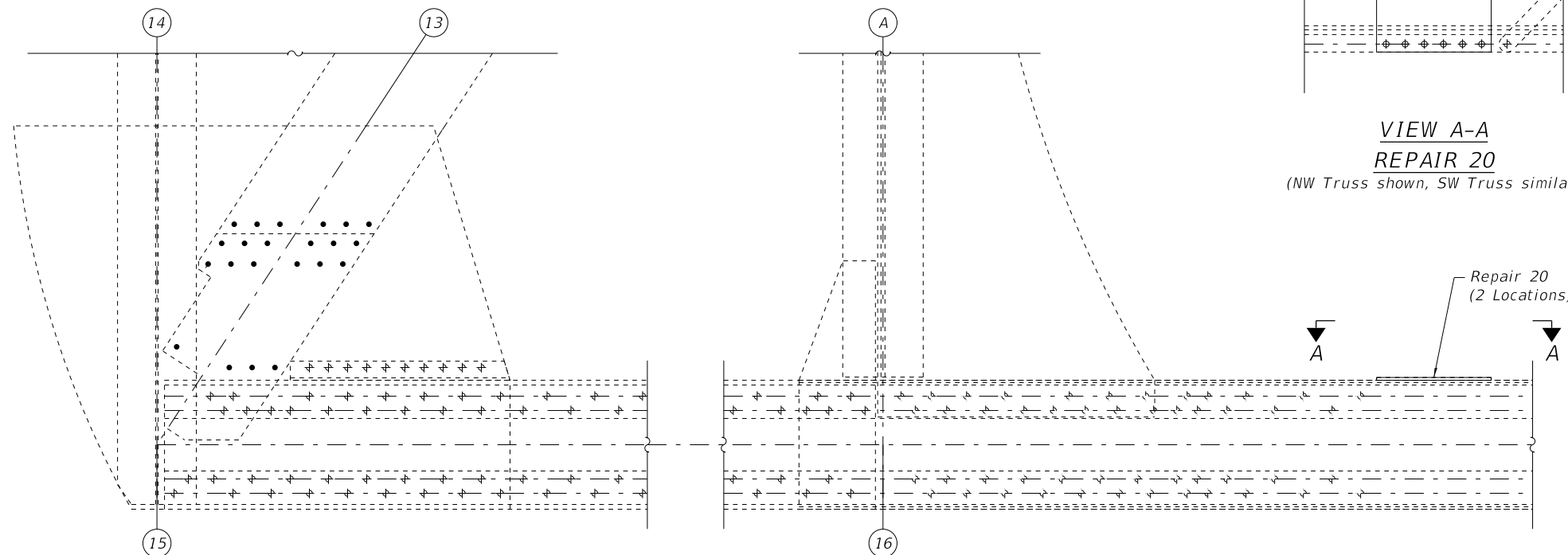


**VIEW A-A  
REPAIR 20**

(NW Truss shown, SW Truss similar)

**BILL OF MATERIAL**

Item	Unit	Quantity
Structural Steel Repair	Pound	140
Mast Arm Steel, 4'	Each	4



**ELEVATION - PANEL PT. 15 TO 16**

(Looking north at NW Truss or looking south at SE Truss, NE Truss & SW Truss similar but opposite hand looking north & south, respectively)

**Notes:**

- Locations to be strengthened shall be verified in the field.
- Cost of furnishing and erecting truss repair steel elements shall be included in "Structural Steel Repair".
- Cost of removing and replacing rivets in association with furnishing and erecting truss repair steel elements shall be included in "Structural Steel Repair".
- See sheets S-55 thru S-58 for locations of Truss Repairs.
- The Davit arm light pole and base, including the collar, stiffener plates, spacer plates shall be fabricated and hot dip galvanized. No portion of the aluminum shall have direct contact with uncoated steel. The davit arm connection holes shall be drilled prior to galvanizing. All steel, unless noted otherwise is M270 Grade 50 steel. All work and materials necessary to fabricate and erect the light pole and base shall be included in item Mast Arm Steel, 4'.

**REFERENCE DRAWINGS**

Drawing  
Main Truss Members 14-15  
Main Truss Members 9-13

Sheet No.  
1660570198  
1660570201

0166057-E1525-S067-TRUSSPP9ANDPP15TOPP16REPAIRS.DGN



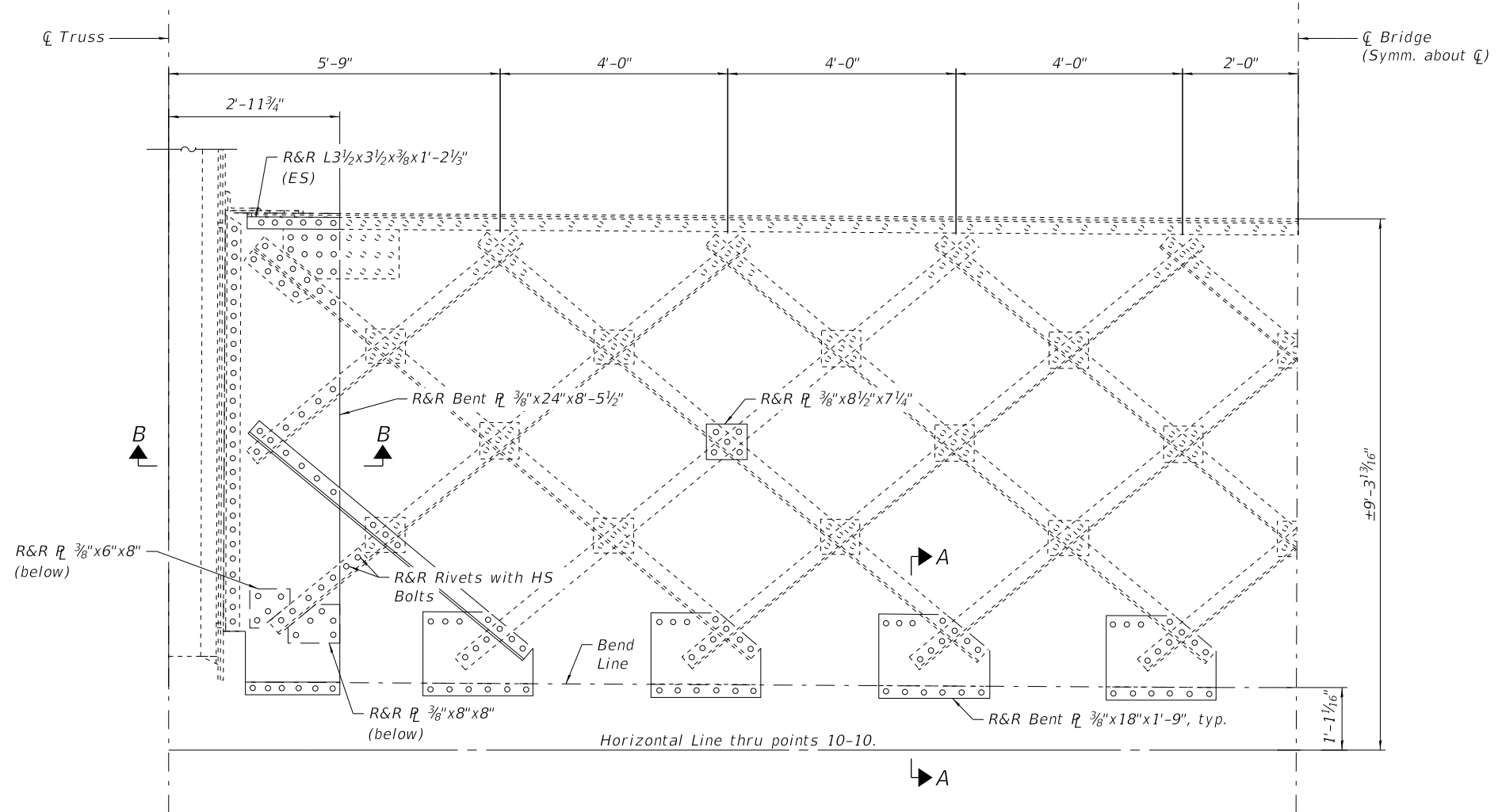
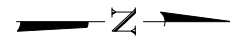
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**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

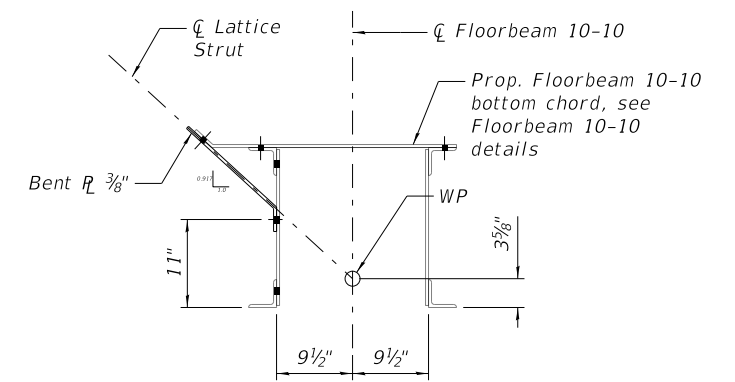
**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

**BASCULE SPAN:  
TRUSS PP9 & PP15 TO PP16 REPAIRS  
(STRUCTURE NO. 016-6057)**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-67
CDOT PROJECT NO. E-1-525			110 of 210



**INCLINED PLAN - LATTICE STRUT**  
(West Leaf shown, East Leaf similar)



**SECTION A-A**

**BILL OF MATERIAL**

Item	Unit	Quantity
Structural Steel Repairs	Pound	2,820
Removal of Deteriorated Connectors and Replacement with High Strength Bolts	Each	8

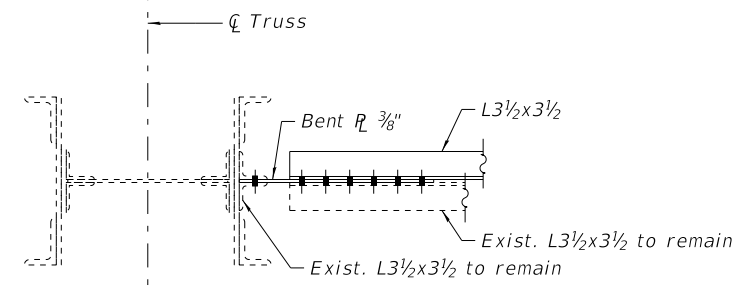
Quantity shown includes West and East Leaf.

**REFERENCE DRAWINGS**

Drawing	Sheet No.
Latticed Strut and Horizontal Girder	1660570013
Horizontal Girder and Bracing	1660570208
Bracing for Floorbeam at 10-10	1660570210

**Notes:**

- Locations to be repaired shall be verified in the field.
- Cost of furnishing and erecting lattice strut steel repairs and removing and replacing rivets associated with these elements shall be included in the cost of Structural Steel Repairs.
- Cost of removing and replacing rivets that are not associated with Structural Steel Repairs shall be included in Removal of Deteriorated Connectors and Replacement with High Strength Bolts.



**SECTION B-B**

0166057-E1525-S068-LATSTRUTBASCULE.DGN

**wsp**  
WSP USA Inc.  
30 N. LASALLE STREET  
SUITE 4200  
CHICAGO, IL 60602  
TEL: (312) 782-8150  
FAX: (312) 782-1684

USER NAME = RALMASRI	DESIGNED - RAM	REVISED -
PLOT SCALE = N.T.S.	CHECKED - IJL	REVISED -
PLOT DATE = \$DATE\$	DRAWN - RAM	REVISED -
	CHECKED - JIG	REVISED -

**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

**BASCULE SPAN:  
LATTICE STRUT REPAIR DETAILS  
(STRUCTURE NO. 016-6057)**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-68
CDOT PROJECT NO. E-1-525			111 of 210

INTERIOR STRINGER MOMENT TABLE			
		0.5 FB-to-FB Spacing	
		W16x57	W21x57
Is	(in <sup>4</sup> )	758	1170
Ic(n)	(in <sup>4</sup> )	-	-
Ic(3n)	(in <sup>4</sup> )	-	-
Ic(cr)	(in <sup>4</sup> )	-	-
Ss	(in <sup>3</sup> )	92.2	111
Sc(n)	(in <sup>3</sup> )	-	-
Sc(3n)	(in <sup>3</sup> )	-	-
Sc(cr)	(in <sup>3</sup> )	-	-
DC1	(k/')	0.30	0.30
MDC1	('k)	8.9	10.3
DC2	(k/')	-	-
MDC2	('k)	-	-
DW	(k/')	-	-
MDW	('k)	-	-
LLDF		0.44	0.44
M <sub>l</sub> + IM	('k)	132.9	78.4
Mu (Strength I)	('k)	243.7	150.1
Øf Mn	('k)	-	-
fs DC1	(ksi)	1.2	1.1
fs DC2	(ksi)	-	-
fs DW	(ksi)	-	-
fs (L+IM)	(ksi)	17.3	8.5
fs (Service II)	(ksi)	23.6	12.1
0.80Rh Fyf	(ksi)	40.0	40.0
fs (Total)(Strength I)	(ksi)	31.7	16.2
Øf Fn	(ksi)	47.4	50.0
Vf	(k)	98.6	80.2

FLOORBEAM MOMENT TABLE			
		0.5 C-to-C Trusses	
		Floorbeam 0-0	Floorbeam 2-2 (typ.)
Is	(in <sup>4</sup> )	22,670	26,109
Ic(n)	(in <sup>4</sup> )	-	-
Ic(3n)	(in <sup>4</sup> )	-	-
Ic(cr)	(in <sup>4</sup> )	-	-
Ss	(in <sup>3</sup> )	819	916
Sc(n)	(in <sup>3</sup> )	-	-
Sc(3n)	(in <sup>3</sup> )	-	-
Sc(cr)	(in <sup>3</sup> )	-	-
DC1	(k/')	1.06	0.88
MDC1	('k)	208	200
DC2	(k/')	-	-
MDC2	('k)	-	-
DW	(k/')	-	-
MDW	('k)	-	-
LLDF		-	-
M <sub>l</sub> + IM	('k)	1224	1024
Mu (Strength I)	('k)	2522	2041
Øf Mn	('k)	-	-
fs DC1	(ksi)	3.1	2.6
fs DC2	(ksi)	-	-
fs DW	(ksi)	-	-
fs (L+IM)	(ksi)	17.9	13.4
fs (Service II)	(ksi)	27.7	20.1
0.80Rh Fyf	(ksi)	40.0	40.0
fs (Total)(Strength I)	(ksi)	37.0	26.7
Øf Fn	(ksi)	50.0	46.7
Vf	(k)	43.8	36.7

STRINGER REACTION TABLE				
		W16x57		W21x57
		FB 10-10	FB 8-8	FB 6-6 (typ.)
R <sub>l</sub>	(k)	4.0	2.3	2.5
R <sub>t</sub>	(k)	37.3	29.2	29.2
R <sub>i</sub>	(k)	22.8	8.7	8.7
R <sub>Total</sub>	(k)	64.1	40.2	40.4

FLOORBEAM REACTION TABLE			
		FB 0-0	FB 2-2 (typ.)
R <sub>l</sub>	(k)	21.0	18.8
R <sub>t</sub>	(k)	70.4	73.2
R <sub>i</sub>	(k)	41.2	19.0
R <sub>Total</sub>	(k)	132.6	111.5

Is, Ss: Non-composite moment of inertia and section modulus of the steel section used for computing fs(Total-Strength I, and Service II) due to non-composite dead loads (in.<sup>4</sup> and in.<sup>3</sup>).

Ic(n), Sc(n): Composite moment of inertia and section modulus of the steel and deck based upon the modular ratio, "n", used for computing fs(Total-Strength I, and Service II) in uncracked sections due to short-term composite live loads (in.<sup>4</sup> and in.<sup>3</sup>).

Ic(3n), Sc(3n): Composite moment of inertia and section modulus of the steel and deck based upon 3 times the modular ratio, "3n", used for computing fs(Total-Strength I, and Service II) in uncracked sections, due to long-term composite (superimposed) dead loads (in.<sup>4</sup> and in.<sup>3</sup>).

Ic(cr), Sc(cr): Composite moment of inertia and section modulus of the steel and longitudinal deck reinforcement, used for computing fs (Total-Strength I and Service II) in cracked sections, due to both short-term composite live loads and long-term composite (superimposed) dead loads (in.<sup>4</sup> and in.<sup>3</sup>).

DC1: Un-factored non-composite dead load (kips/ft.).

MDC1: Un-factored moment due to non-composite dead load (kip-ft.).

DC2: Un-factored long-term composite (superimposed excluding future wearing surface) dead load (kips/ft.).

MDC2: Un-factored moment due to long-term composite (superimposed excluding future wearing surface) dead load (kip-ft.).

DW: Un-factored long-term composite (superimposed future wearing surface only) dead load (kips/ft.).

MDW: Un-factored moment due to long-term composite (superimposed future wearing surface only) dead load (kip-ft.).

M<sub>l</sub> + IM: Un-factored live load moment plus dynamic load allowance (impact) (kip-ft.).

Mu (Strength I): Factored design moment (kip-ft.).  
1.25 (MDC1 + MDC2) + 1.5 MDW + 1.75 M<sub>l</sub> + IM

Øf Mn: Compact composite positive moment capacity computed according to Article 6.10.7.1 or non-slender negative moment capacity according to Article A6.1.1 or A6.1.2 (kip-ft.).

fs DC1: Un-factored stress at edge of flange for controlling steel flange due to vertical non-composite dead loads as calculated below (ksi).  
MDC1/ Snc

fs DC2: Un-factored stress at edge of flange for controlling steel flange due to vertical composite dead loads as calculated below (ksi).  
MDC2/ Sc(3n) or MDC2/ Sc(cr) as applicable.

fs DW: Un-factored stress at edge of flange for controlling steel flange due to vertical composite future wearing surface loads as calculated below (ksi).  
MDW/ Sc(3n) or MDW/ Sc(cr) as applicable.

fs (L+IM): Un-factored stress at edge of flange for controlling steel flange due to vertical composite live load plus impact loads as calculated below (ksi).  
M<sub>l</sub> + IM / Sc(n) or M<sub>l</sub> + IM / Sc(cr) as applicable.

fs (Service II): Sum of stresses as computed below (ksi).  
fsDC1 + fsDC2 + fsDW + 1.3 fs(L + IM)

0.80RhFyf: Non-Composite stress capacity for Service II loading according to Article 6.10.4.2 (ksi).

fs (Total)(Strength I): Sum of stresses as computed below on non-compact section (ksi).  
1.25 (fsDC1 + fsDC2) + 1.5 fsDW + 1.75 fs(L + IM)

Øf Fn: Non-Compact composite positive or negative stress capacity for Strength I loading according to Article 6.10.7 or 6.10.8 (ksi).

Vf: Maximum factored shear range in span computed according to Article 6.10.10.

0166057-E1525-S069BASCULESPANMOM&RXN.DGN

**LEAF REMOVAL ITEMS**

Item	Weight (Lbs)	X (ft)	Y (ft)	Mx (Lb-ft)	My (Lb-ft)
Jack Beams	-10,930	50.25	5.92	-549,230	-64,710
* 5" Rdwy Open Grid	-59,290	50.48	6.31	-2,992,960	-374,120
Center Break	-4,500	93.71	6.53	-421,700	-29,390
Concrete Fill in Rear Break	-5,080	7.00	5.82	-35,560	-29,570
Curb Plate w/checked PL	-12,940	50.04	7.04	-647,520	-91,120
* 2 1/4" Sidewalk Grid including Conc.	-55,780	50.70	7.09	-2,828,050	-395,480
Floorbeam 0-0	-13,030	93.49	3.98	-1,218,170	-51,860
Floorbeam 2-2	-16,000	76.79	3.85	-1,228,640	-61,600
Floorbeam 4-4	-15,670	60.09	3.72	-941,610	-58,290
Floorbeam 6-6	-16,130	43.40	3.59	-700,040	-57,910
Floorbeam 8-8	-16,610	26.70	3.46	-443,490	-57,470
Floorbeam 10-10 & Horiz. Girder	-22,510	9.88	-3.57	-222,510	80,440
Roadway Stringers	-65,390	49.91	5.17	-3,263,610	-338,070
S. Sdwk Brackets at FB 10-10 (W. Leaf only)	-710	10.00	4.06	-7,100	-2,880
Sidewalk Laterals	-60	51.75	5.71	-3,110	-340
Auxiliary Locks	-1,000	87.63	8.74	-87,630	-8,740
Center Lock (W. Leaf)	-4,190	88.35	2.63	-370,200	-11,030
Center Lock (E. Leaf)	-1,220	93.49	2.09	-114,060	-2,550
Center Lock Platform (W. Leaf)	-470	87.00	2.00	-40,890	-940
Center Lock Platform (E. Leaf)	-240	84.12	2.00	-20,190	-480
Total W. Leaf	-320,290			-16,002,020	-1,544,140
Total E. Leaf	-316,380			-15,718,080	-1,550,200

**LEAF ADDITION ITEMS**

Item	Weight (Lbs)	X (ft)	Y (ft)	Mx (Lb-ft)	My (Lb-ft)
FRP Grating	16,030	50.56	7.10	810,480	113,810
Sdwk Center Break	494	93.50	6.65	46,220	3,290
Sdwk Rear Break	374	6.33	5.62	2,370	2,100
Rdwy. Open Grid Deck	4,230	48.08	6.29	203,390	26,610
Rdwy. Conc. Filled Deck	160,390	50.12	6.39	8,038,710	1,024,890
Rdwy. Center Break	3,080	93.50	6.65	287,980	20,480
Rdwy. Rear Break	3,160	6.33	5.62	20,000	17,760
Curb Plate w/Checked PL	16,860	49.56	6.95	835,580	117,180
Floorbeam 0-0	6,800	93.50	3.89	635,800	26,450
Floorbeam 2-2	7,550	76.80	3.66	579,840	27,630
Floorbeam 4-4	7,560	60.10	3.50	454,360	26,460
Floorbeam 6-6	7,590	43.40	3.33	329,410	25,270
Floorbeam 8-8	7,590	26.70	3.17	202,650	24,060
Floorbeam 10-10 & Horiz. Girder	20,120	10.00	3.13	201,200	62,980
Roadway Stringers	46,710	50.05	5.23	2,337,840	244,290
S. Sdwk Brackets at FB 10-10 (W. Leaf only)	710	10.00	4.06	7,100	2,880
Sidewalk Laterals	1,604	51.75	5.71	83,010	9,160
Roadway Laterals	18,728	60.00	1.97	1,123,660	36,860
Center Lock (W. Leaf)	3,390	91.63	2.76	310,610	9,340
Center Lock (E. Leaf)	770	93.49	2.76	71,990	2,120
Center Lock Platform (W. Leaf)	590	87.00	2.00	51,330	1,180
Center Lock Platform (E. Leaf)	300	84.12	2.00	25,240	600
Light Pole	1,000	7.98	23.21	7,980	23,210
Total W. Leaf	334,560			16,569,520	1,845,890
Total E. Leaf	330,940			16,297,710	1,835,210

**SUMMARY**

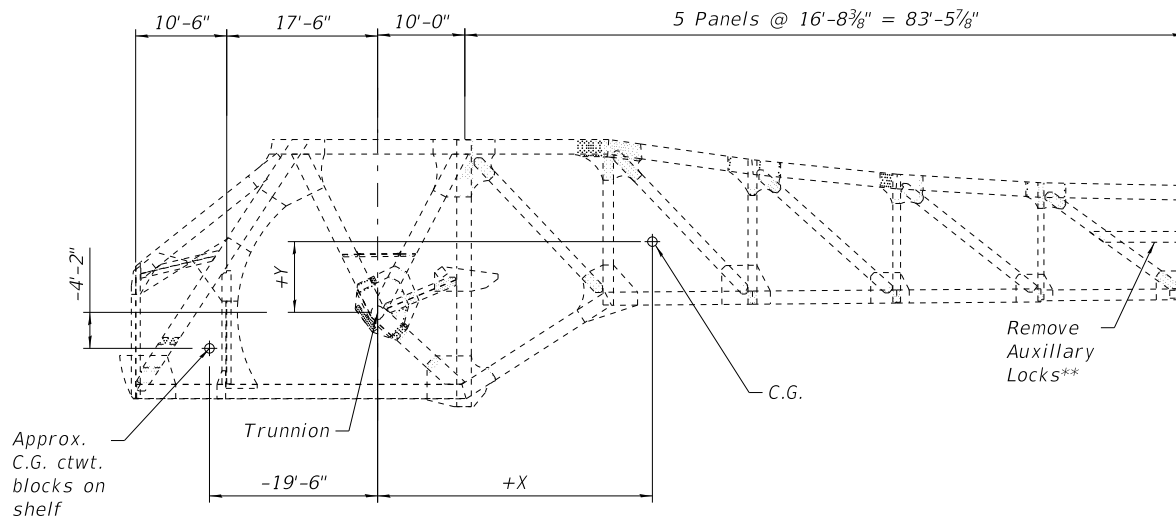
Item	Weight (Lbs)	X (ft)	Y (ft)	Mx (Lb-ft)	My (Lb-ft)
Table 1: Total W. Leaf Removal	-320,290	49.96	4.82	-16,002,020	-1,544,140
Table 2: Total W. Leaf Addition	334,560	49.53	5.52	16,569,520	1,845,890
Net Change	14,270			567,500	301,750
Table 1: Total E. Leaf Removal	-316,380	49.68	4.90	-15,718,080	-1,550,200
Table 2: Total E. Leaf Addition	330,940	49.25	5.55	16,297,710	1,835,210
Net Change	14,560			579,630	285,010
East Ctw. Adjustment (30 Blocks Btwn. A1 & B1)	13,350	-19.50	-4.17	-260,330	-55,630
West Ctw. Adjustment (30 Blocks Btwn. A2 & B2)	13,350	-19.50	-4.17	-260,330	-55,630
NET TOTAL W. LEAF	27,620			307,170	246,120
NET TOTAL E. LEAF	27,910			319,300	229,380

**Notes:**

- It is assumed the bridge is balanced.
- Weight denotes the weight of member element replacement and not necessarily the total weight of member and reflect final balancing at the completion of the proposed rehabilitation. Items to be replaced in-kind are not included in the balance conditions.
- The distances X and Y are measured from the center of trunnion. see Truss Elevation.
- The contractor shall submit to the Commissioner for approval bridge balancing calculations as detailed in the Special Provisions. The Cost shall be included in Balancing of Bridge and Alteration of Counterweights.
- Balancing of the movable leaves will be paid for as Balancing of Bridge and Alteration of Counterweights. Fabrication and installation of new counterweight blocks (if req'd) and shimming and adjusting the anchor columns and live load bearings as required to properly balance the bridge is included in the Cost of Balancing of Bridge and Alteration of Counterweights. The Contractor shall make all adjustments and relocations necessary to attain the partially or fully balanced condition to the satisfaction of the Commissioner.
- All dimensions and elevations shown are based on existing drawings. Space available in counterweight pockets and steel racks based on existing drawings. The Contractor shall verify.

\* The following unit weights are used in the balancing calculation:  
 Existing Sidewalk Grid Deck = 33.4 psf  
 Existing Roadway Open Grid Deck = 19.0 psf  
 Proposed Sidewalk Grid Deck = 10.0 psf  
 Proposed Roadway Open Grid Deck = 23.2 psf (includes allowance for coatings, bolt-down plate and accessories)  
 Proposed Roadway Conc. Filled Deck = 53.1 psf

\*\* Cost of removal of Auxilliary Locks included in Balancing of Bridge and Alteration of Counterweights. Auxiliary Locks shall become property of the City.



**TRUSS ELEVATION**

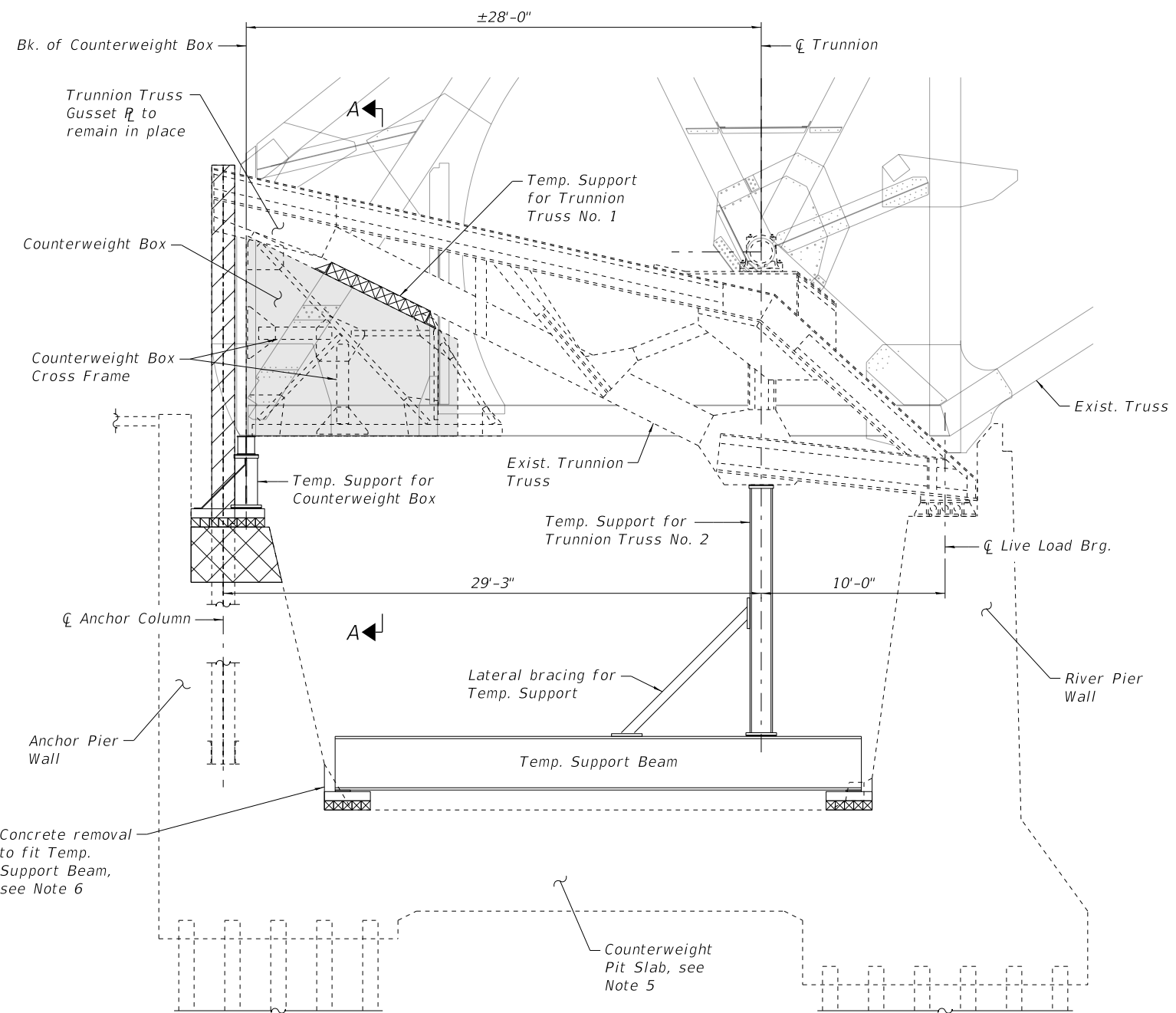
**REFERENCE DRAWINGS**

Drawing  
 Counterweight Calculations  
 Counterweight Balance

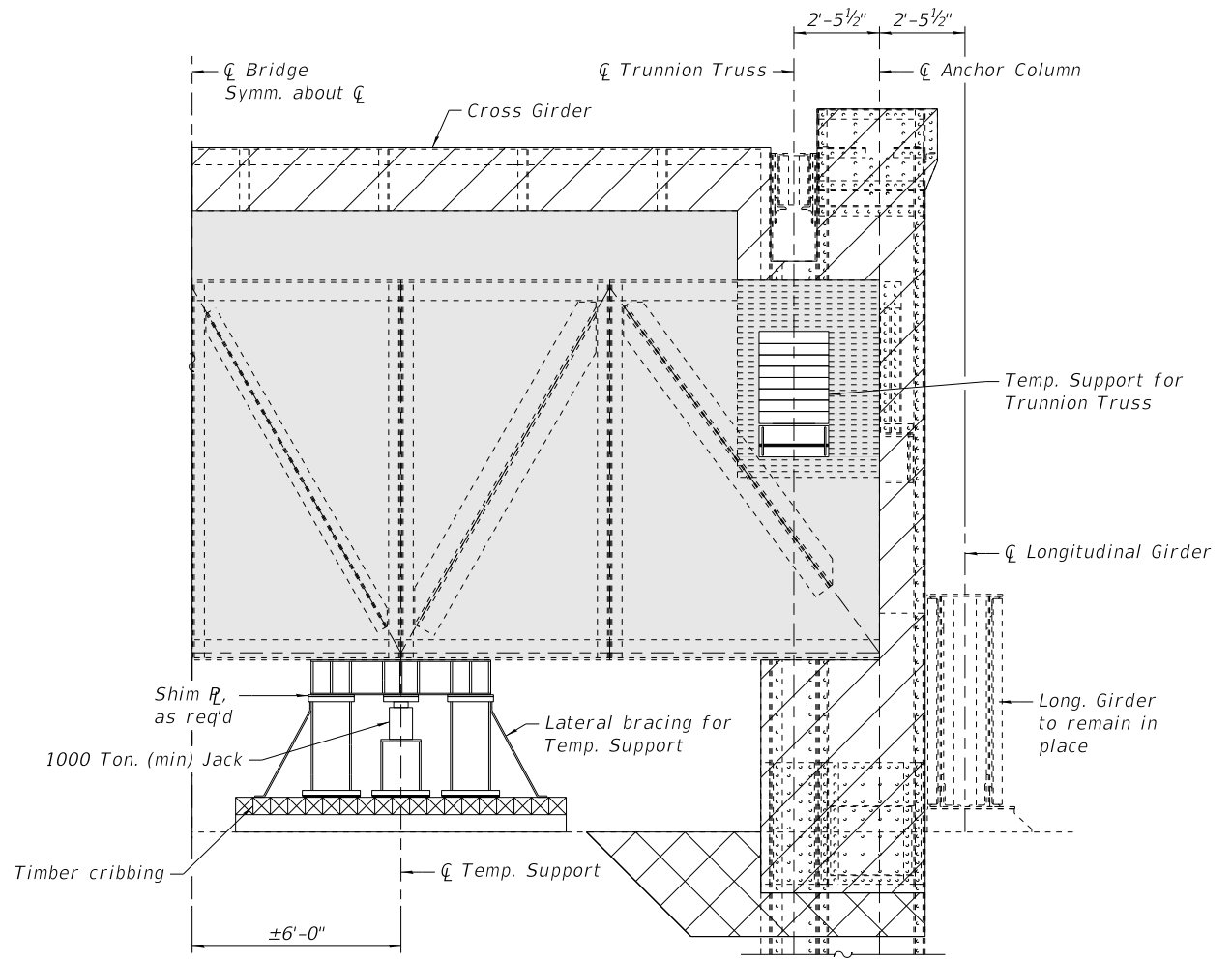
Sheet No.  
 1660570109  
 1660570128

0166057-E1525-S077-BALANCECALC.DGN







**SECTION THRU COUNTERWEIGHT PIT AT TRUNNION TRUSS**  
 (Looking North, West Leaf North Truss, other locations similar.  
 Longitudinal Girder not shown for clarity)



**SECTION A-A**  
 (Looking West, West Leaf North Truss, other locations similar)

**LEGEND**

 Structural Steel Removal

 Concrete Removal

- Notes:**
1. Prior to start of all removal operations in the bascule span, the Contractor shall install a temporary support for the counterweight boxes on each leaf as shown on this sheet.
  2. The temporary support details shown on this sheet are to be taken as a suggested means of supporting the counterweight boxes and trunnion trusses. The geometry, number, and location of temporary support points shall be determined by the Contractor.
  3. All structural steel for temporary supports shall be AASHTO M270 Grade 50.
  4. Cost of furnishing and erecting temporary supports, equipment, concrete removal, and workmanship necessary to temporary support the counterweights and the trunnion trusses shall be included in the cost of Temporary Support. See Special Provisions.
  5. Placing temporary supports directly on the counterweight pit slab is not recommended, except as shown herein. If Contractor elects to place supports directly on the slab, calculations and details prepared, signed, and sealed by an Illinois Licensed Structural Engineer must be submitted and approved supporting the feasibility of the proposed temporary support.
  6. Extreme care shall be taken during concrete removal operations as not to damage the existing reinforcement. Any reinforcement bars that are damaged during concrete removal operations shall be repaired or replaced using an approved bar splicer or anchorage system. Cost included with Temporary Support.

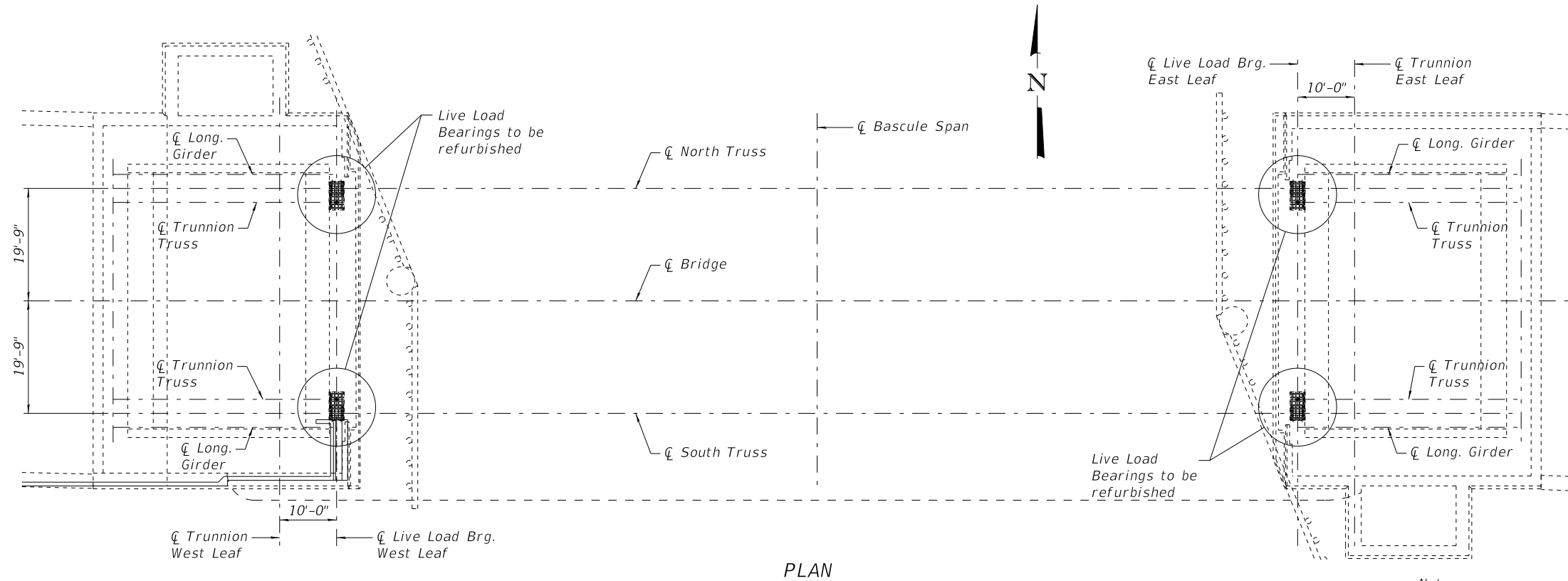
**REFERENCE DRAWINGS**

Drawing	Sheet No.
Sub and Superstructure, Fixed part, Anchor Columns etc.	1660570020
Substructure Main Piers	1660570045
Main Truss Members	1660570197
Main Truss Members	1660570198
Repairs to Anchor Columns	1660570120
CWT Box Plates & Cross Frames	1660570211

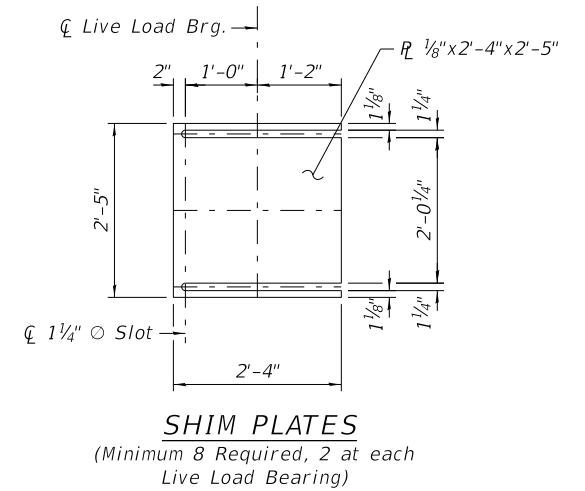
**SUGGESTED WORK PLAN**

- Remove fixed span concrete deck and superstructure steel framing. Anchor column and cross girder between columns are to remain in place at this stage. Temporary support of sidewalk may be required to maintain pedestrian access. See sheet S-6, for fixed span removal details.
- Install temporary support for Counterweight Box. The temporary support shall provide means for adjusting height as work progresses.
- Remove Bascule Span deck and steel framing. Maintain pedestrian access at all times. See sheet S-7 for bascule span removal details. Remove center lock. Maintain auxiliary center lock in place until new center lock is installed. New center lock shall be delivered to 31st and Sacramento and installed by IHC.
- Refurbish Live Load Bearing as detailed on sheet S-72. Adjustments may be required on counterweight box temporary support to obtain a workable gap in live load bearing to perform work as detailed on sheet S-72.
- Remove trunnion bearing caps prior to any jacking to avoid damaging studs.
- Jack counterweight box to relieve load at Trunnion and full contact is achieved at the Live Load Bearing. Install strain gauge at Trunnion Shafts prior to jacking counterweight box and monitor throughout the operation such that strain limits are not exceeded. Install shims at Temporary Support to transfer load to temporary support frame. Verify full contact at Live Load Bearing remains. See Special Provision for Temporary Support and Mechanical Specifications.
- Install and secure in place temporary supports for trunnion trusses. Trunnion truss may need to be stiffened locally at location of temporary supports.
- Remove and replace Anchor Columns and Cross Girders. Extreme care shall be taken to not damage the Trunnion Truss gusset plate connection to anchor column. Gusset plate is to remain in place. See sheets S-73 thru S-75 for Anchor Column replacement details.
- Repair Trunnion Truss and Trunnion Truss Bracing. See sheets S-76 thru S-77 for repair details.
- Repair Longitudinal Girder. See sheet S-78 and S-79 for repair details.
- Remove Trunnion Truss Temp. Supports.
- Reattach trunning bearing caps.

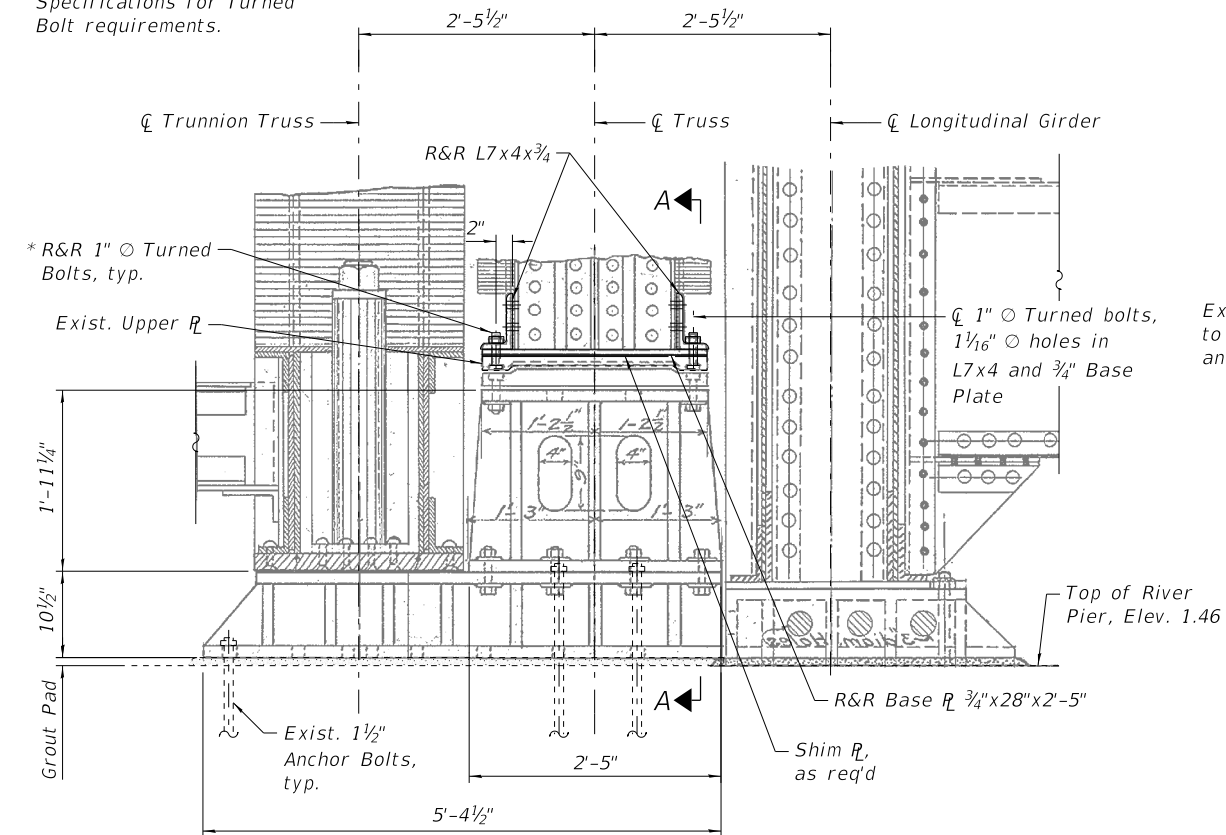
0166057-E1525-S076-TEMP SUPPORT.DGN



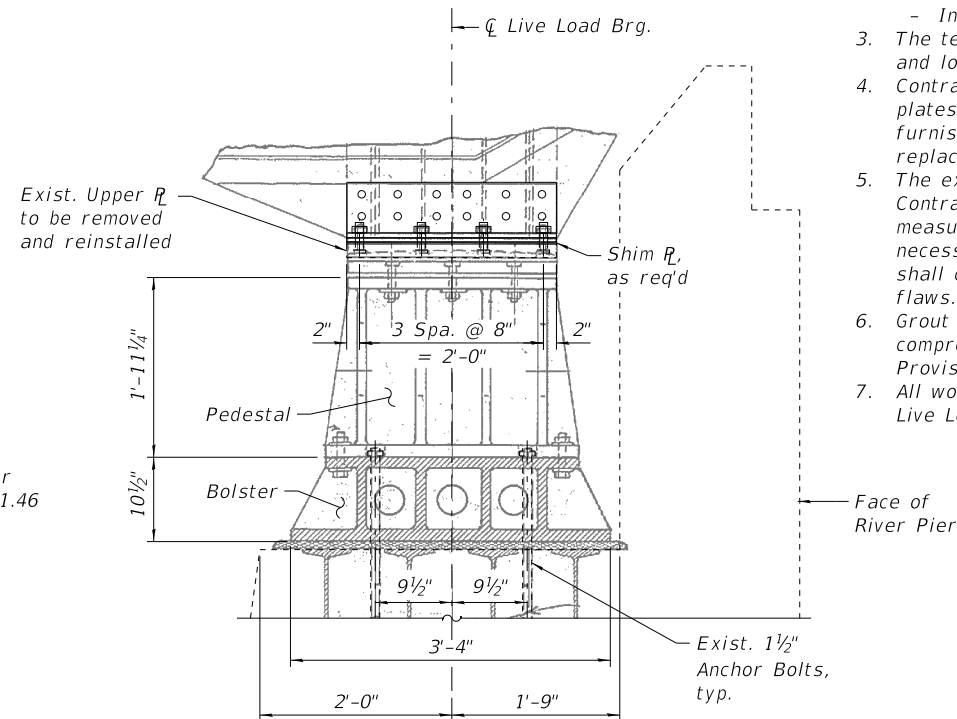
PLAN



\* See Detailed Mechanical Specifications for Turned Bolt requirements.



**ELEVATION - LIVE LOAD BEARING**  
(Southwest Live Load Bearing shown, looking east, others similar)



SECTION A-A

**Notes:**

- All dimensions are taken from existing plans and it is the responsibility of the Contractor to field verify all dimensions. Details shown herein depict the overall details of the Live Load Bearings and the surrounding members.
- Refurbishing of all four live load bearings includes:
  - Removing, refurbishing and reinstalling upper plate
  - Cleaning and painting plate, bolster, and pedestal in place
  - Cleaning and painting anchor bolts in place
  - Repairing grout pads
  - R&R L7x4 angles, 3/4" base plate, and 1" dia. turned bolts.
  - Installing shim plates for balancing
- The term 'Live Load Bearings' includes the pedestal, bolster, and cast steel upper and lower plates as called out in the existing plans.
- Contractor shall field verify existing gap and adjust accordingly using shim plates to achieve full bearing. Adjustments may include, but are not limited to, furnishing and erecting shim plates, loosening/tightening turned bolts, or replacing bolts.
- The existing condition of the anchor bolts is unknown. After cleaning, the Contractor shall record the condition of the anchor bolts with photographs and measurements and provide to the Engineer for determination whether repairs are necessary or not. In addition to photographs and measurements, the Contractor shall conduct Non-destructive Testing (NDT) to identify the presence of internal flaws.
- Grout pads shall be repaired as determined by the Engineer. A minimum compressive strength of 5,000 psi shall be used for the grout. See Special Provisions.
- All work described in this sheet shall be included in the cost of "Refurbishing of Live Load Bearings", see Special Provisions.

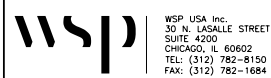
**BILL OF MATERIAL**

Item	Unit	Quantity
Refurbishing of Live Load Bearings	Each	4

**REFERENCE DRAWINGS**

Drawing	Sheet No.
Steel Castings	1660570185
Iron Castings	1660570186
Bolts & Washers	1660570187
Trunnion Trusses	1660570153
Main Piers	1660570045
Posts & Diagonals	1660570205

0166057-E1525-S069-LLBEARINGREFURBISHING.DGN



WSP USA Inc.  
30 N. LA SALLE STREET  
SUITE 4000  
CHICAGO, IL 60602  
TEL: (312) 782-8150  
FAX: (312) 782-1884

USER NAME = P.JLAUX	DESIGNED - RA/IJL	REVISED -
PLOT SCALE = N.T.S.	CHECKED - P.JL	REVISED -
PLOT DATE = \$DATE\$	DRAWN - RA/IJL	REVISED -
	CHECKED - JIG	REVISED -

**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

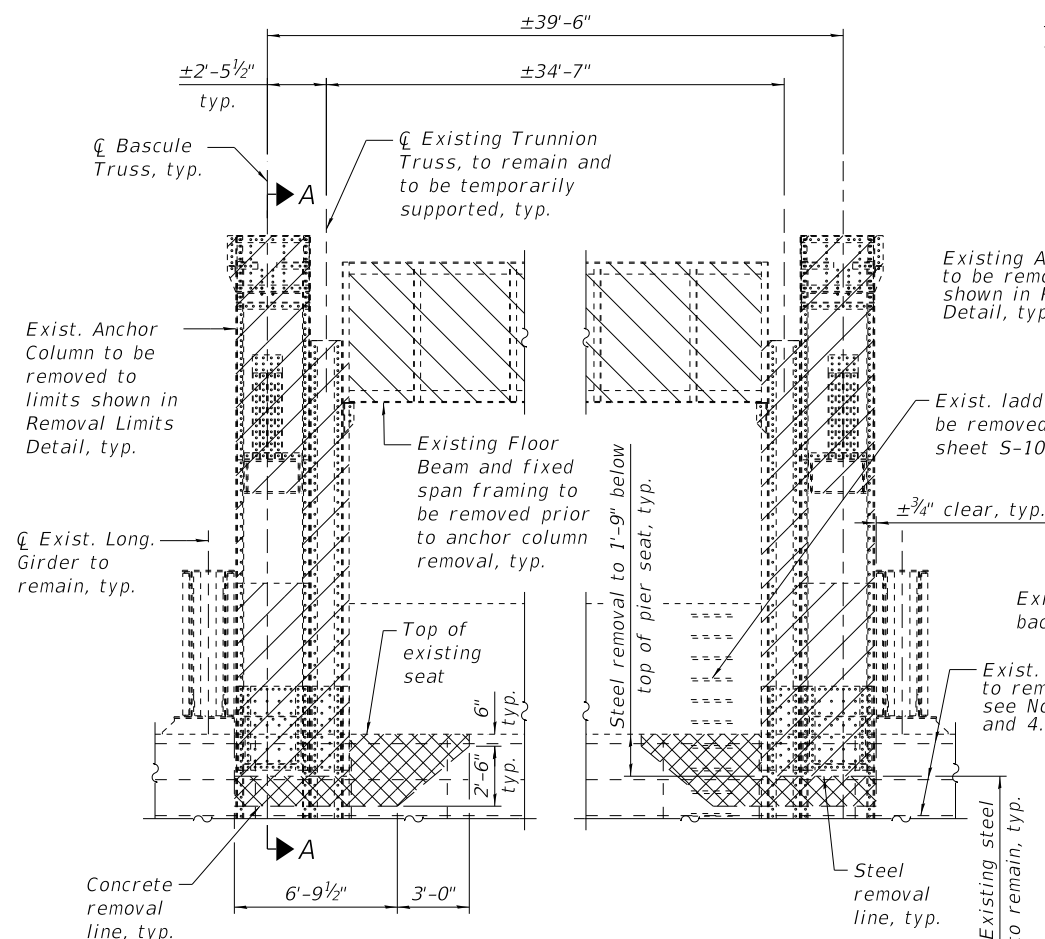
**LIVE LOAD BEARING REFURBISHING**  
(STRUCTURE NO. 016-6057)

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-72
CDOT PROJECT NO. E-1-525			115 of 210

**REFERENCE DRAWINGS**

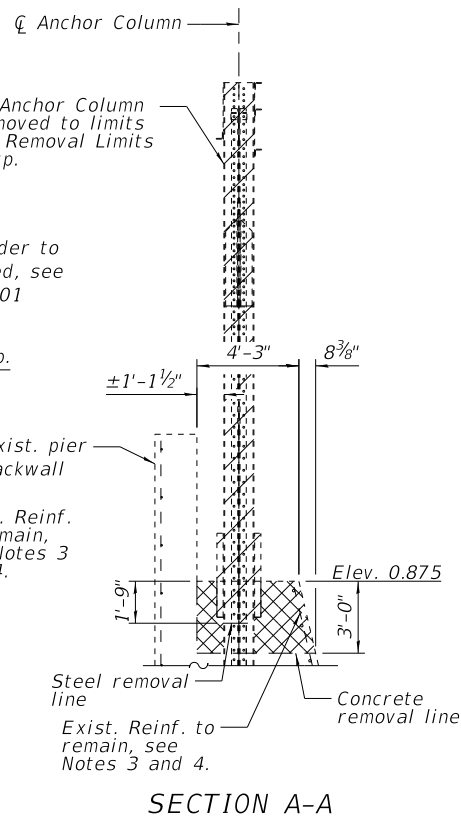
Drawing  
Anchor Columns  
Repairs to Anchor Column

Sheet No.  
1660570163  
1660570120



**EXISTING ANCHOR COLUMN REMOVAL**

(For both West and East Piers. Bascule trusses, trunnion trusses, and their temporary supports not shown for clarity)



**SECTION A-A**

**BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
h200(E)	16	#5	9'-6"	—
h201(E)	4	#5	8'-2"	—
h202(E)	4	#5	6'-6"	—
h203(E)	36	#5	4'-0"	—
n200(E)	28	#5	3'-9"	—
n201(E)	28	#5	3'-8"	—
n202(E)	116	#4	1'-9"	—
Concrete Removal		Cu Yd	17.5	
Structural Steel Removal		Pound	33,600	
Reinforcement Bars Epoxy Coated		Pound	790	
High Performance Concrete Structures		Cu Yd	17.9	
Protective Concrete Sealer		Sq Yd	30	

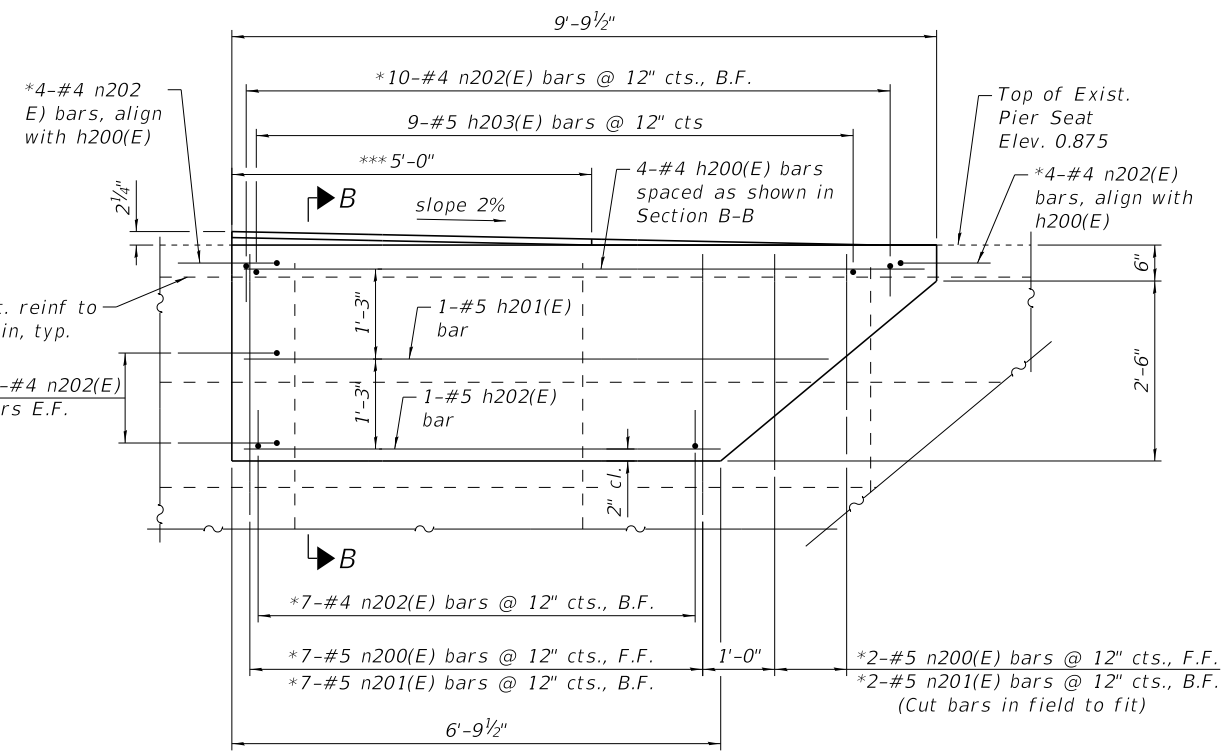
Quantities shown include all four locations.

**BAR n200(E)**

**LEGEND**

- Structural Steel Removal
- Concrete Removal
- Removal of Existing Superstructures

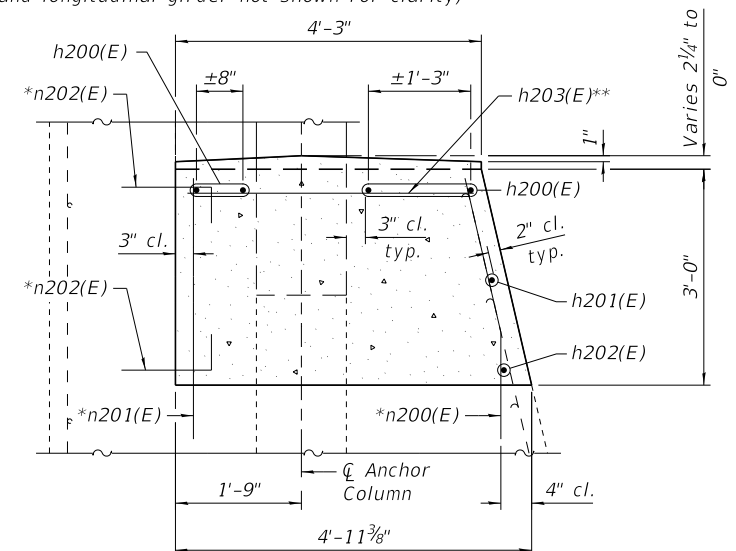
**BAR n202(E)**



**PIER SEAT RECONSTRUCTION AT ANCHOR COLUMN**

(Looking towards approaches, symmetrical about bridge centerline, typical both piers. Anchor column and longitudinal girder not shown for clarity)

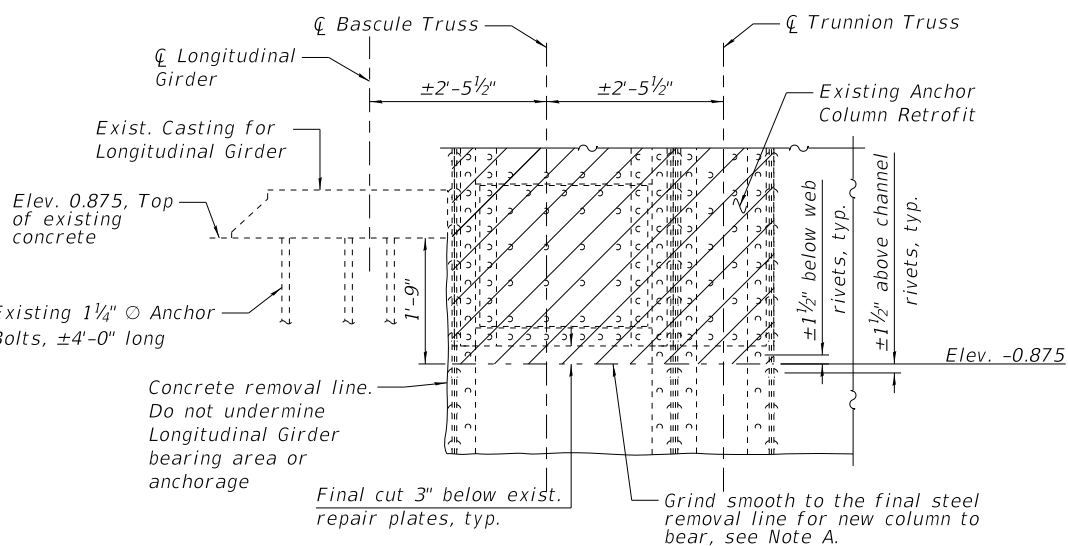
- \* Drill and grout bars according to Article 584 of the Standard Specifications, with a minimum embedment of 9". Cost included with Reinforcement Bars, Epoxy Coated.
- \*\* Cut in field to fit at Anchor Column providing a minimum clear distance of 3".
- \*\*\* Slope front and back faces parallel to crown slope along  $\bar{C}$  Anchor Column within 5'-0" shown to maintain a 1" drop away from Anchor Column.



**SECTION B-B**

**Notes:**

1. All sizes and dimensions shown are taken from the original shop drawings and from the 1945 repair drawings to the anchor columns. All dimensions are to be field verified prior to ordering material and commencing work.
2. See sheets S-74 and S-75 for new anchor column and splice details.
3. Any existing reinforcement bars that are damaged during concrete removal operations shall be repaired or replaced using an approved bar splicer or anchorage system. Cost considered incidental to Concrete Removal.
4. Existing reinforcement shall be cleaned and incorporated into the new construction. Cost included with Concrete Removal.
5. Grind any nicks, gouges, and shallow surface cracks after cutting anchor column. Inspect ground surfaces along steel removal line for cracks using magnetic particle testing. Any cracks found shall be brought up to the Engineer prior to installation of proposed anchor column. Cost included with Structural Steel Repair.
6. The Contractor shall exercise extreme care during removal operations to prevent damage to existing longitudinal girder, trunnion truss, portions of anchor column to remain in place, and concrete pier. Any damage to any of the existing members to remain in place shall be repaired at the Contractor's expense.



**REMOVAL LIMITS DETAIL**

(Southwest and Northeast Anchor Columns shown, Northwest and Southeast Columns opposite hand) (Longitudinal Girder not shown for clarity)

Note A: Cut anchor column above final removal line, and remove column. After column removal, perform final cut and grind steel to remain to the final cut line.

0166057-E1525-S070-ANCHORCOL.DGN



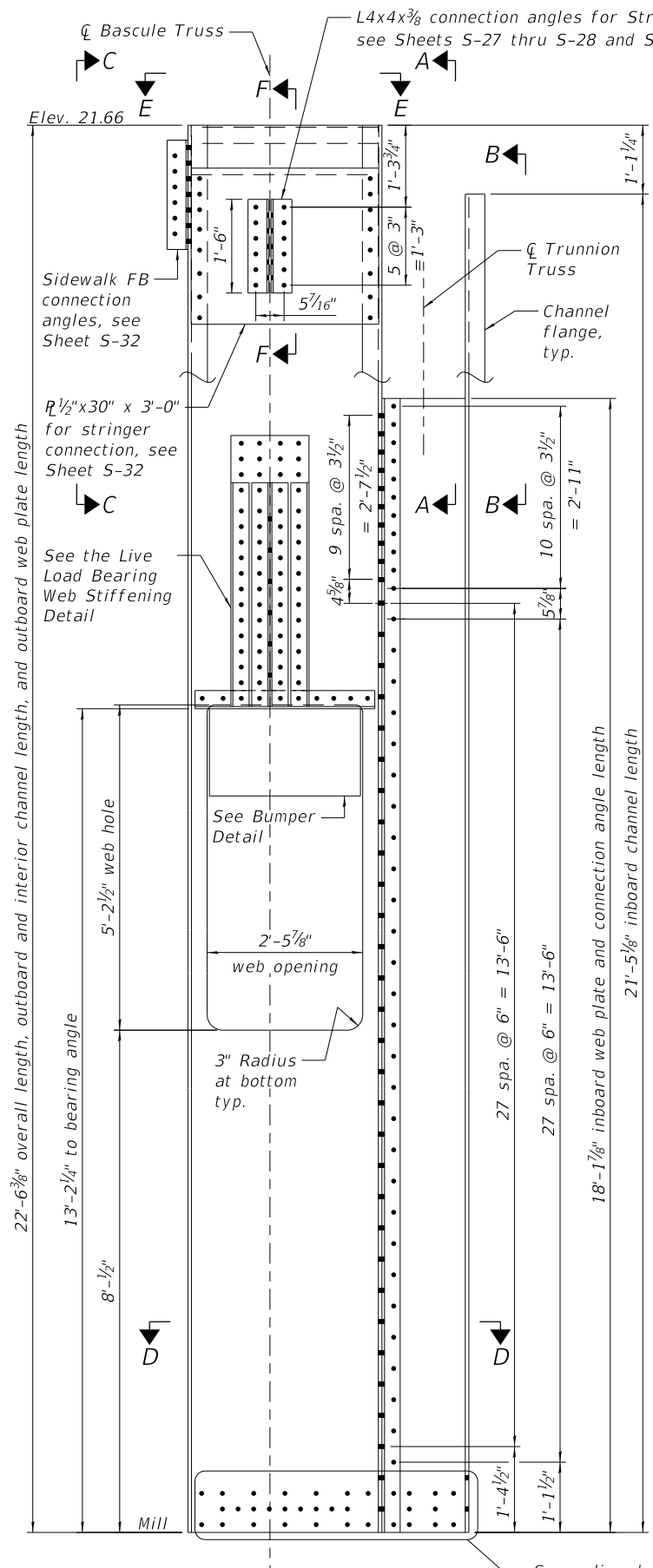
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**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

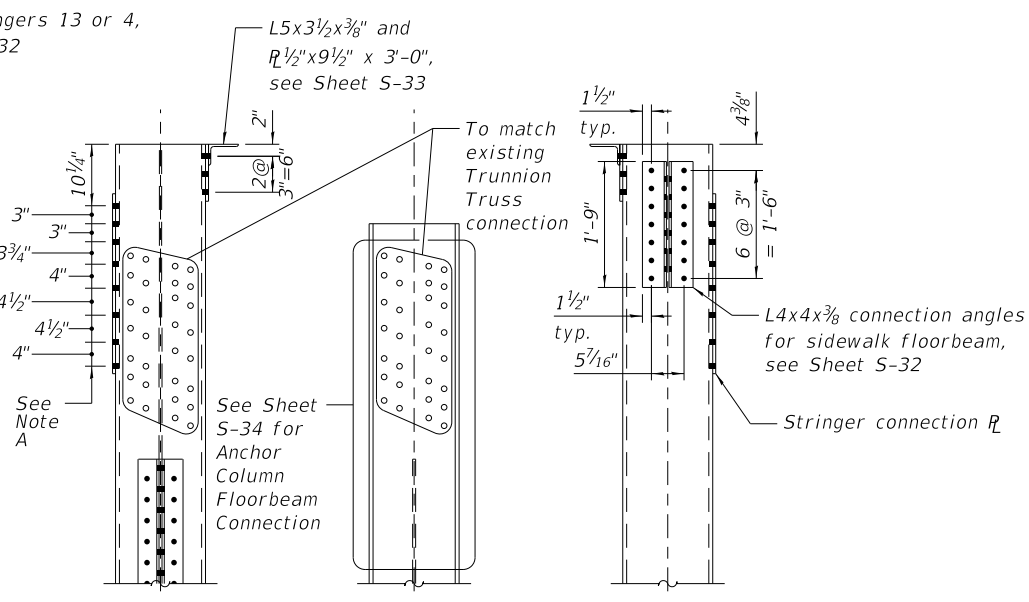
**WEBSTER AVENUE BRIDGE OVER THE NORTH BRANCH CHICAGO RIVER**

**ANCHOR COLUMN REPLACEMENT DETAILS I**  
(STRUCTURE NO. 016-6057)

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-73
CDOT PROJECT NO. E-1-525			116 of 210

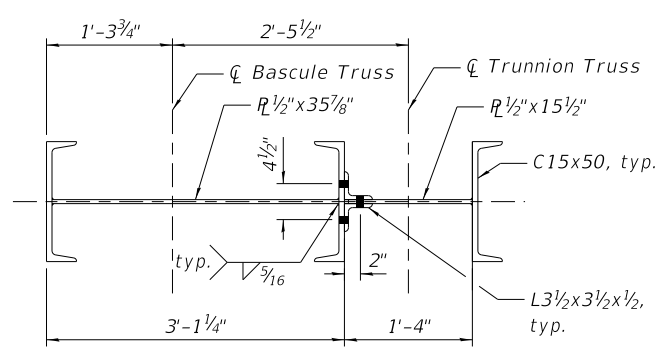


**ANCHOR COLUMN ELEVATION**  
 (Northwest and Southeast Anchor Columns shown, Southwest and Northeast Columns opposite hand)

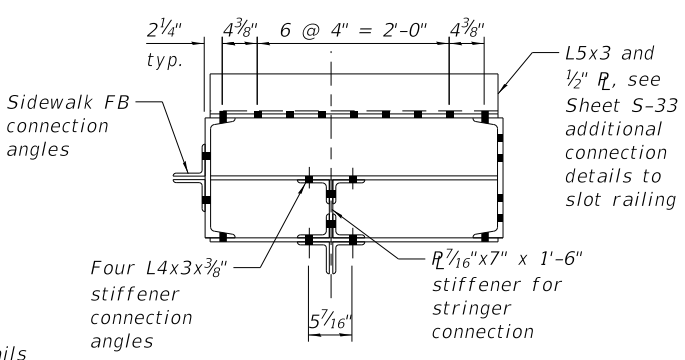


**SECTION A-A**  
 (Stringer connection angles not shown for clarity)

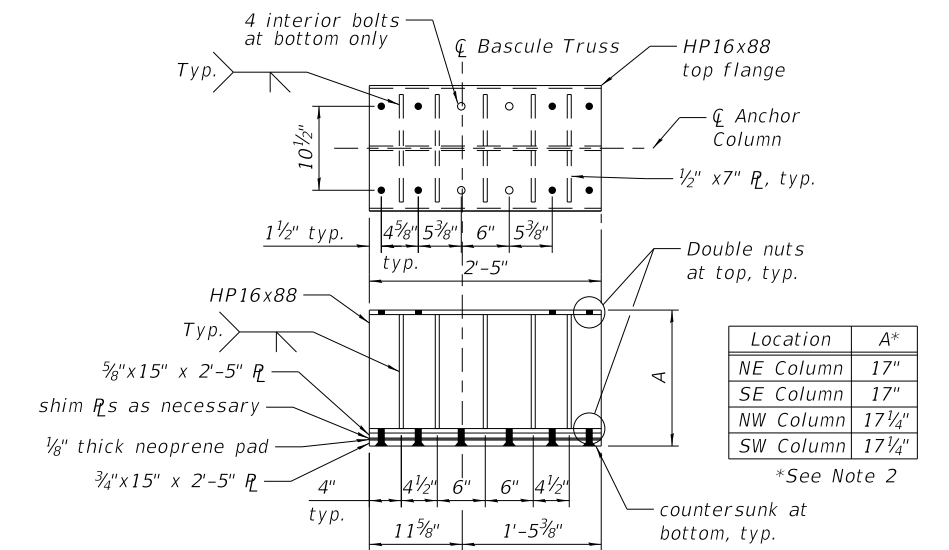
Note A: Final location of the 1/2\" stringer connection plate and/or its bolt locations may shift in order to facilitate tightening the bolts around the connection bolts of the existing trunnion truss.



**SECTION D-D**



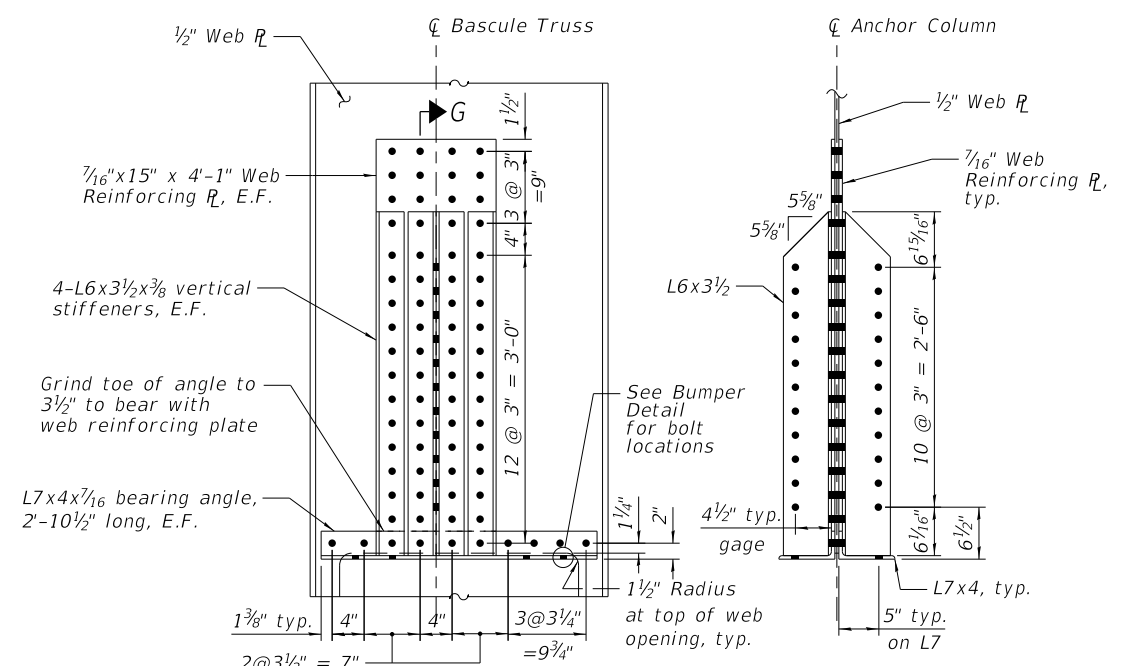
**VIEW E-E**



**BUMPER DETAILS**

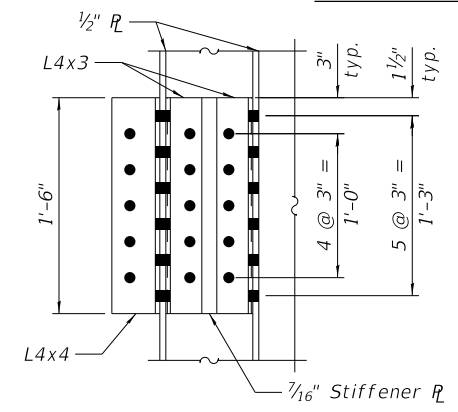
Location	A*
NE Column	17"
SE Column	17"
NW Column	17 1/4"
SW Column	17 1/4"

\*See Note 2



**LIVE LOAD BEARING WEB STIFFENING DETAIL**

**SECTION G-G**



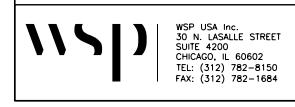
**SECTION F-F**

**REFERENCE DRAWINGS**

Drawing	Sheet No.
Anchor Columns	1660570163
Steel Bumpers	1660570119

- Notes:
1. Out to out sizes of column shown are taken from the original shop drawings. All dimensions are to be field verified and coordinated with the fixed framing details prior to ordering material and commencing work. Removed existing anchor columns may be used as a template for the trunnion truss connection to the new anchor columns if possible.
  2. The overall height (Dimension A) of the live load bumpers is taken from the 1945 rehabilitation drawings. These dimensions shall be field verified and modified as necessary at each rear live load shoe to ensure no gaps or conflicts.
  3. Cost of new anchor columns and bumpers, and incidental items such as neoprene pads are included in Furnishing and Erecting Structural Steel.

0166057-E1525-S071-ANCHORCOL.DGN



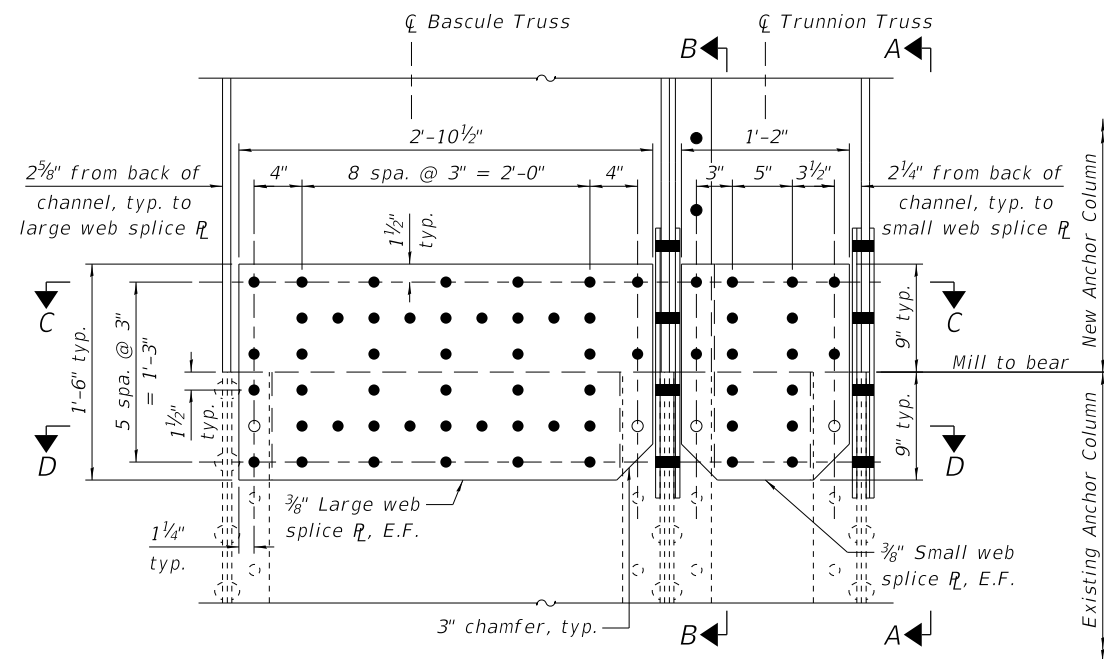
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**CITY OF CHICAGO**  
 DEPARTMENT OF TRANSPORTATION  
 DIVISION OF ENGINEERING

**WEBSTER AVENUE BRIDGE OVER THE NORTH BRANCH CHICAGO RIVER**

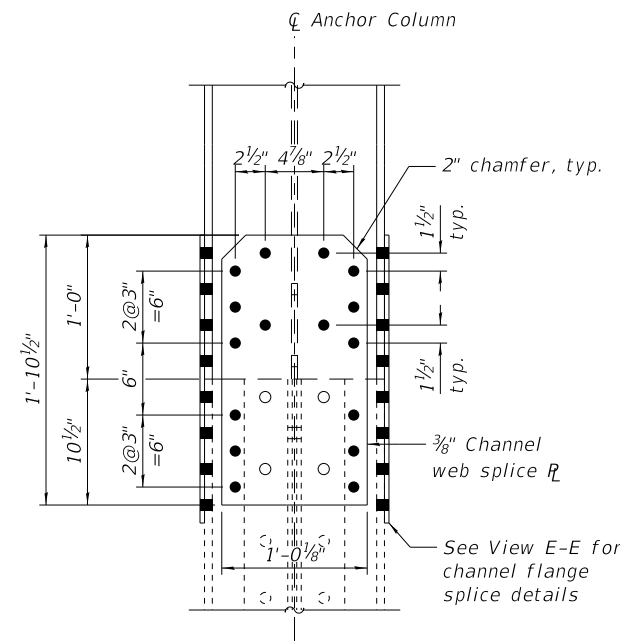
**ANCHOR COLUMN REPLACEMENT DETAILS II (STRUCTURE NO. 016-6057)**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-74
CDOT PROJECT NO. E-1-525			117 of 210

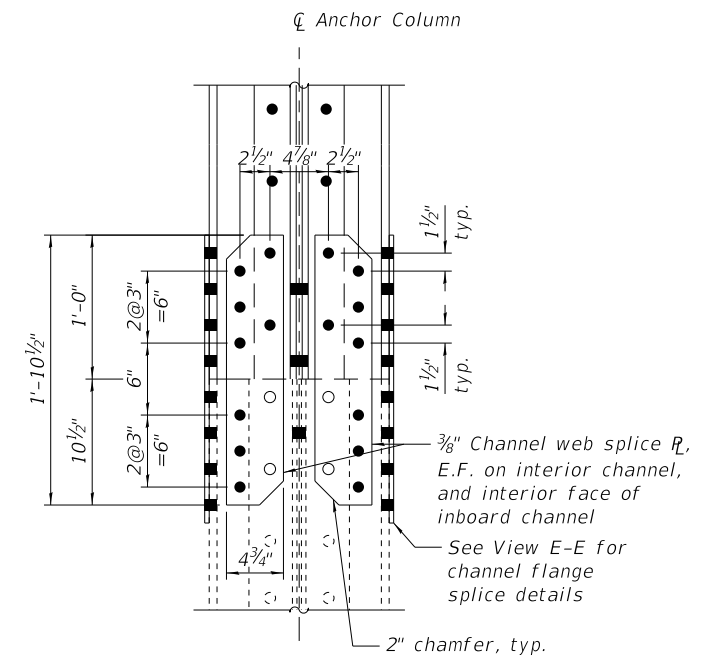


**ANCHOR COLUMN SPLICE ELEVATION**

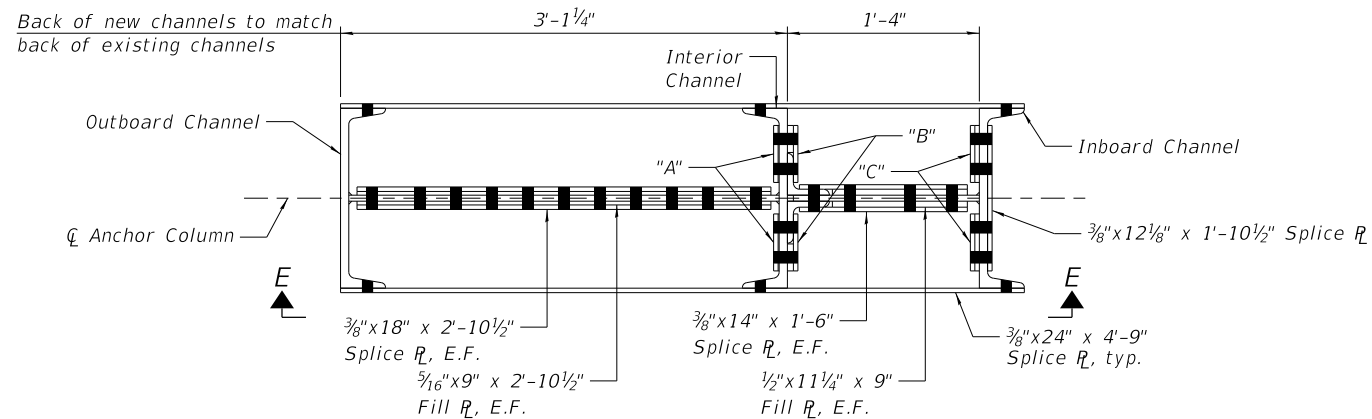
(Northwest and Southeast Anchor Columns shown, Southwest and Northeast Columns opposite hand)  
 (Channel flanges not shown for clarity. For fill plates, see Sections C-C and D-D)



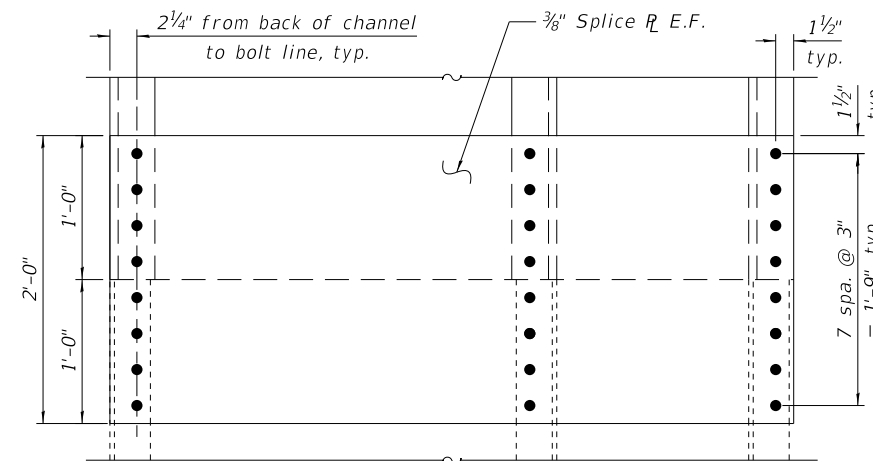
**SECTION A-A**



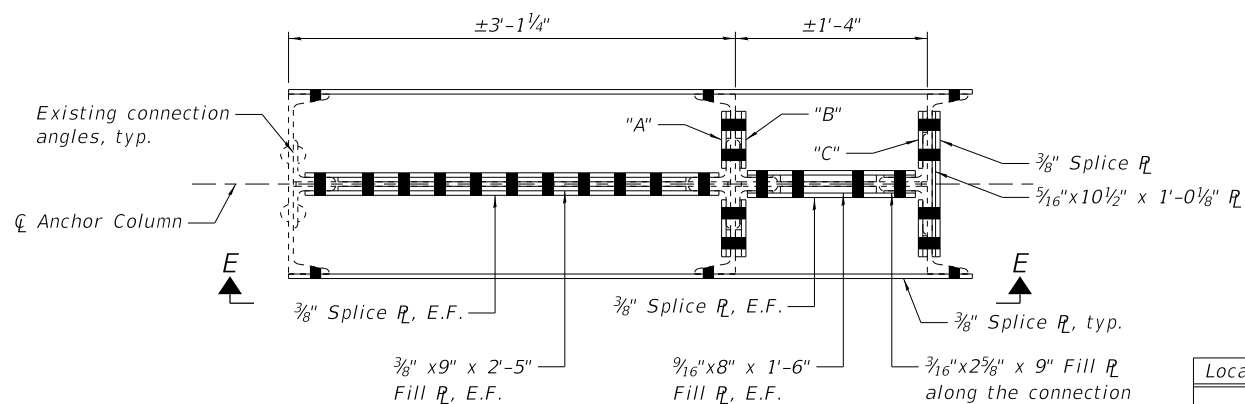
**SECTION B-B**



**SECTION C-C**



**VIEW E-E**



**SECTION D-D**

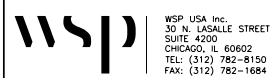
Location*	Splice R	New Section Fill R	Existing Section Fill R
A		1/16" x 4 3/4" x 1'-0"	3/8" x 2 1/4" x 10 1/2"
B	3/8" x 4 3/4" x 1'-10 1/2"	1/2" x 2 1/4" x 1'-0" and 1/8" x 2" x 10 1/2"	1/2" x 2 1/4" x 10 1/2" and 1/8" x 2" x 10 1/2"
C		3/8" x 4 3/4" x 1'-0"	3/8" x 1 3/4" x 10 1/2"

\* The plates at the A, B, and C locations are symmetrical about the C of Anchor Column

**Notes:**

- All dimensions are to be field verified and coordinated with the fixed framing details prior to ordering material and commencing work.
- Bolting clearances are tight, and a careful tightening sequence should be followed in addition to careful bolt orientation to avoid conflicts when placing bolts adjacent to bolts already placed.
- Cost of new splice plates, fill plates, and incidental items such as locating and drilling holes in existing steel are included in Furnishing and Erecting Structural Steel.

0166057-E1525-S071-ANCHORCOL3.DGN



WSP USA Inc.  
 30 N. LA SALLE STREET  
 SUITE 4200  
 CHICAGO, IL 60602  
 TEL: (312) 782-8150  
 FAX: (312) 782-1684

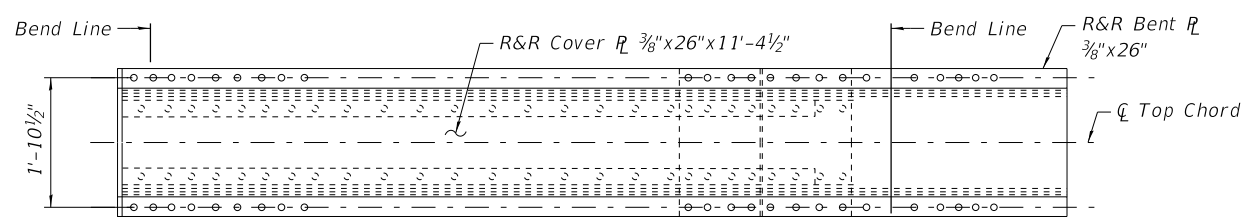
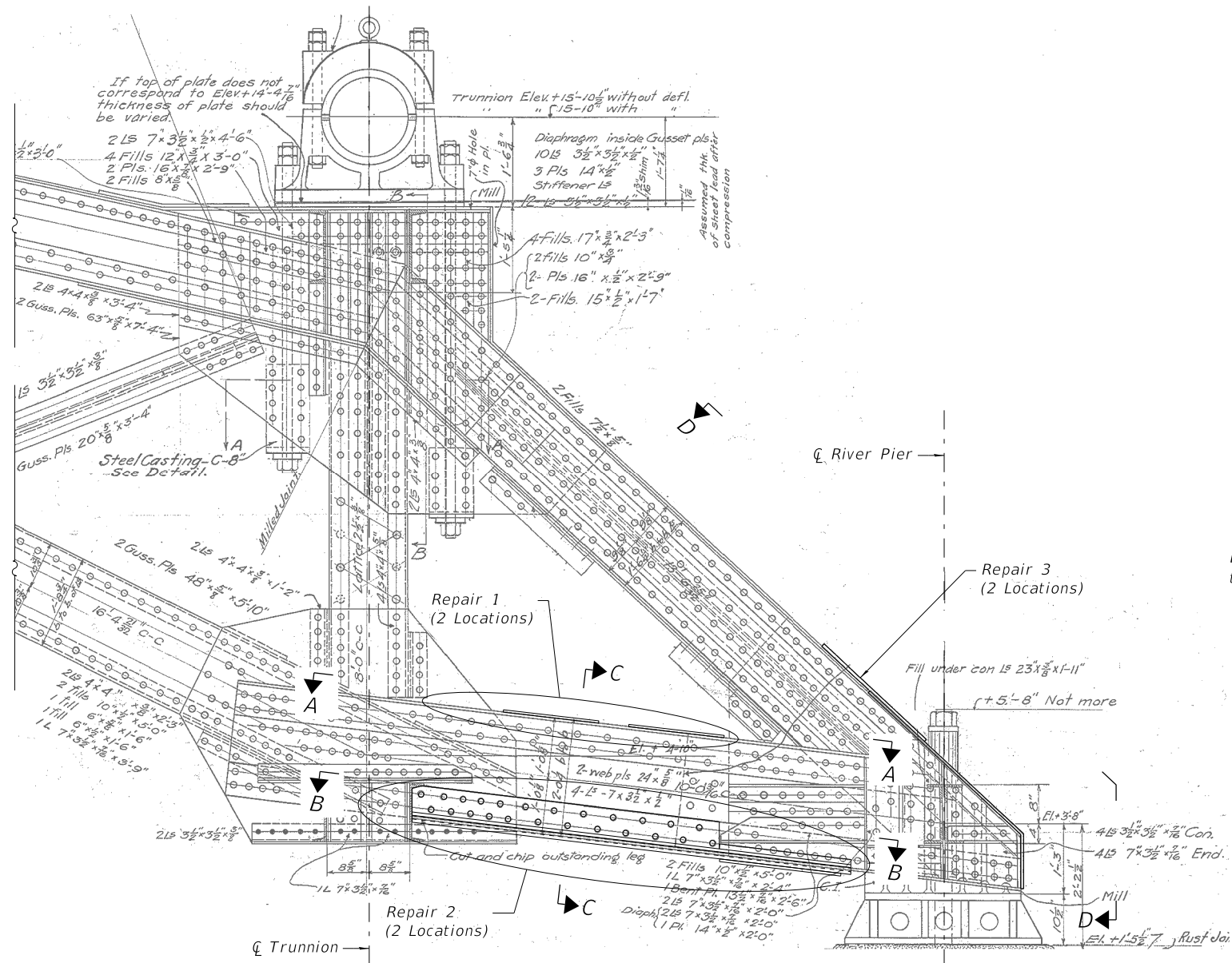
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**CITY OF CHICAGO**  
 DEPARTMENT OF TRANSPORTATION  
 DIVISION OF ENGINEERING

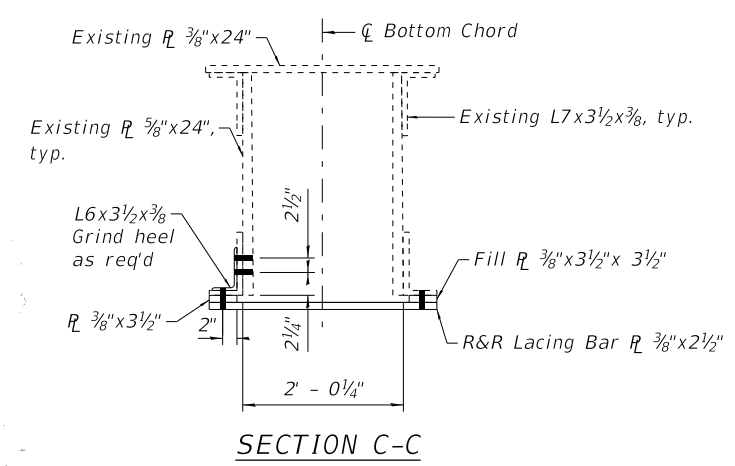
**WEBSTER AVENUE BRIDGE OVER  
 THE NORTH BRANCH CHICAGO RIVER**

**ANCHOR COLUMN REPLACEMENT DETAILS III**  
 (STRUCTURE NO. 016-6057)

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-75
CDOT PROJECT NO. E-1-525			118 of 210



**VIEW D-D**  
**REPAIR 3**  
(Southwest & Northwest Trunnion Truss)



**SECTION C-C**

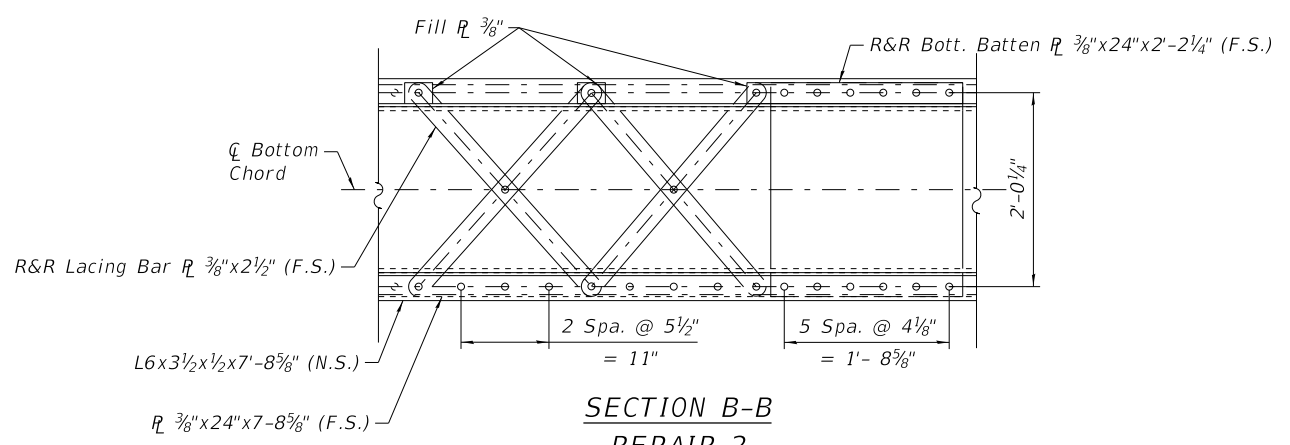
**BILL OF MATERIAL**

Item	Unit	Quantity
Structural Steel Repairs	Pound	2,540

- Notes:
- Locations to be strengthened shall be verified in the field.
  - Cost of furnishing and erecting trunnion truss repair steel elements shall be included in Structural Steel Repairs.
  - Cost of removing and replacing rivets in association with furnishing and erecting trunnion truss repair steel elements shall be included in Structural Steel Repairs.

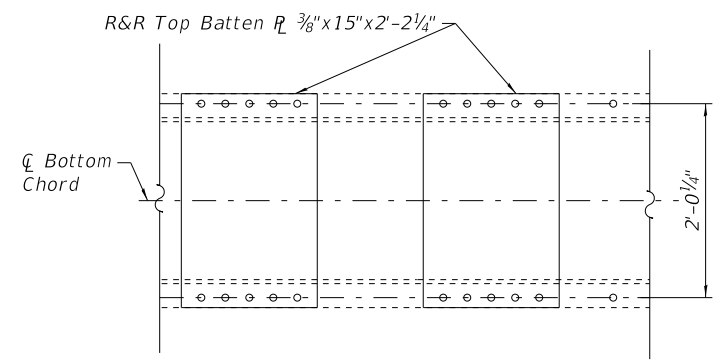
**ELEVATION - TRUNNION TRUSS**

(Looking north at NW Truss or looking south at SE Truss, NE Truss & SW Truss similar but opposite hand looking north & south, respectively)



**SECTION B-B**

**REPAIR 2**  
(NW Truss shown, SW Truss similar but opposite hand)



**SECTION A-A**

**REPAIR 1**  
(NW Truss shown, SW Truss similar but opposite hand)

**REFERENCE DRAWINGS**

Drawing  
Fixed Part- Trunnion Truss  
Trunnion Truss

Sheet No.  
1660570017  
1660570190

0166057-E1525-S072-TRUNTRUSS.DGN



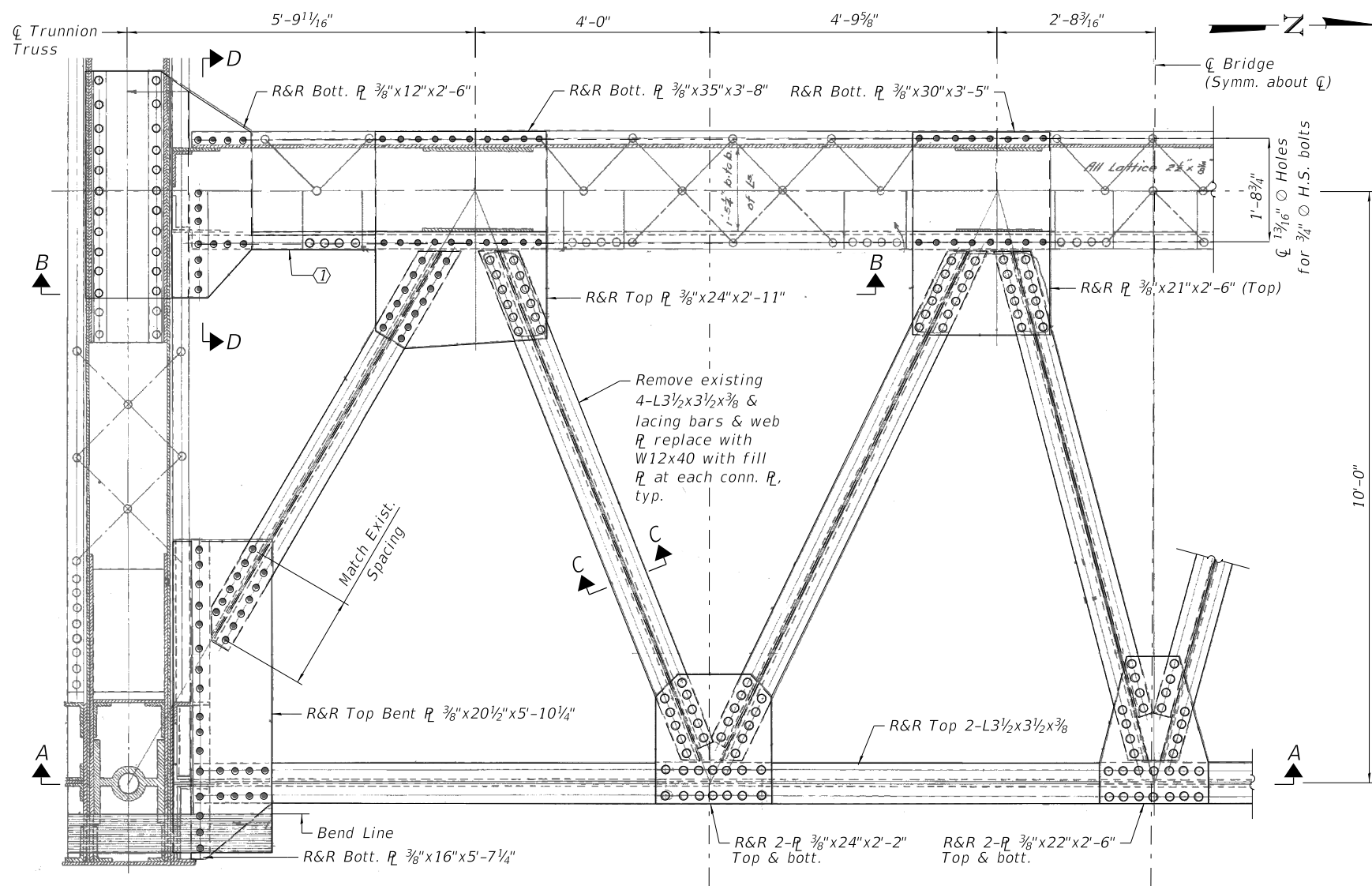
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PLOT DATE = \$DATE\$	DRAWN - RAM	REVISED -
	CHECKED - JIG	REVISED -

**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

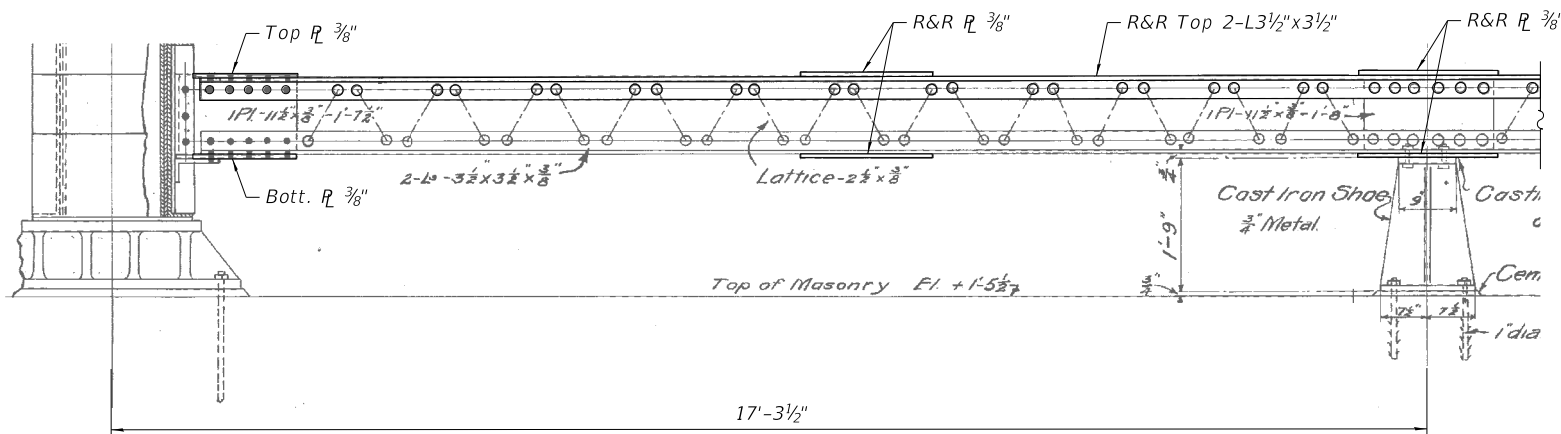
**WEBSTER AVENUE BRIDGE OVER THE NORTH BRANCH CHICAGO RIVER**

**TRUNNION TRUSS REPAIR DETAILS**  
(STRUCTURE NO. 016-6057)

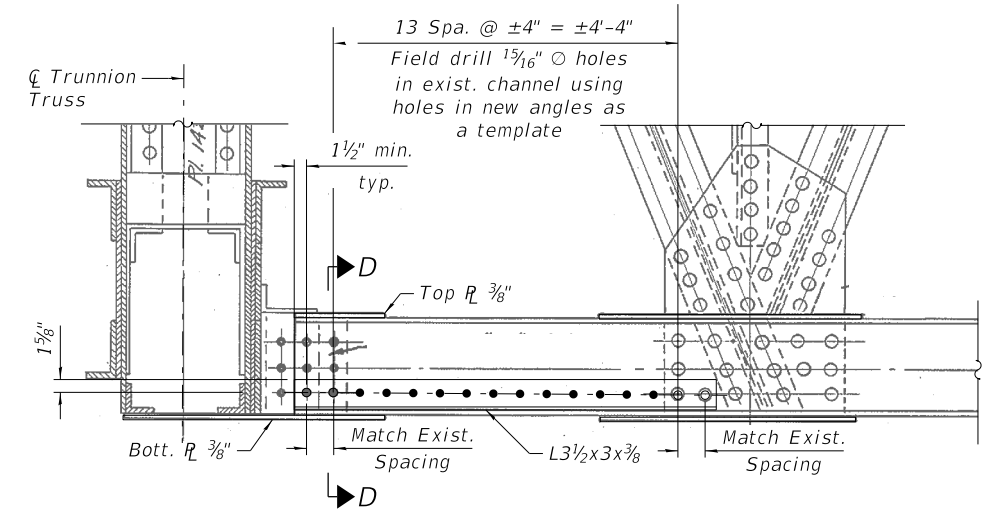
F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-76
CDOT PROJECT NO. E-1-525			119 of 210



PLAN OF HORIZONTAL BRACING BETWEEN TRUNNION TRUSSES  
(West Leaf shown, East Leaf similar)

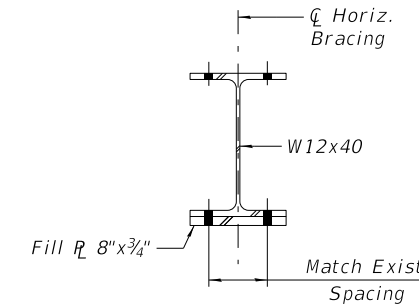


SECTION A-A

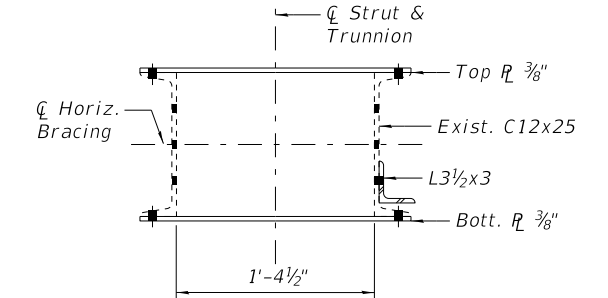


SECTION B-B  
(1 Required)

① Add L3 1/2 x 3 x 3/8 to existing C12 flange, west leaf only at SW trunnion Truss.



SECTION C-C



SECTION D-D

BILL OF MATERIAL

Item	Unit	Quantity
Structural Steel Repairs	Pound	36,830

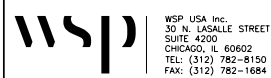
REFERENCE DRAWINGS

Drawing	Sheet No.
Structural Work in Rehabilitation of Horizontal Truss West Side	1660570133
Structural Work in Rehabilitation of Horizontal Truss West Side	1660570132
Bracing for Trunnion Truss	1660570193
Trunnion Truss 1660570190	1660570194
Bracing for Trunnion Truss	1660570194
Fixed Part-Trussed Bracing Between Trunnion Trusses	1660570194

Notes:

- Cost of furnishing and erecting Trunnion Truss Lateral Bracing Steel Elements and replacing rivets associated with these elements shall be included in the cost of Structural Steel Repairs.
- Cost of removing and replacing rivets that are not associated with furnishing and erecting steel elements shall be included in Removal of Deteriorated Connectors and Replacement with High Strength Bolts.

0166057-E1525-S074-TRUNBRACING.DGN



WSP USA Inc.  
30 N. LA SALLE STREET  
SUITE 4200  
CHICAGO, IL 60602  
TEL: (312) 782-8150  
FAX: (312) 782-1684

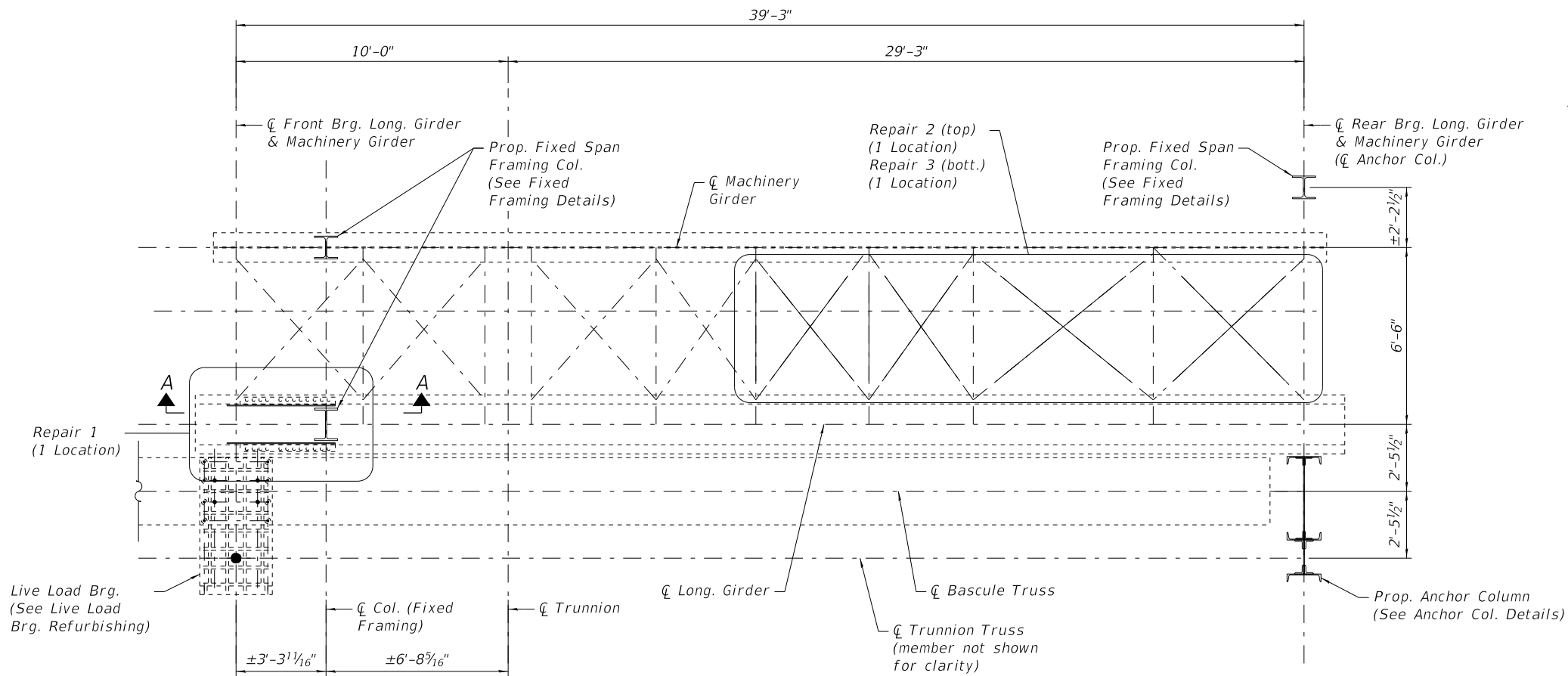
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CITY OF CHICAGO  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

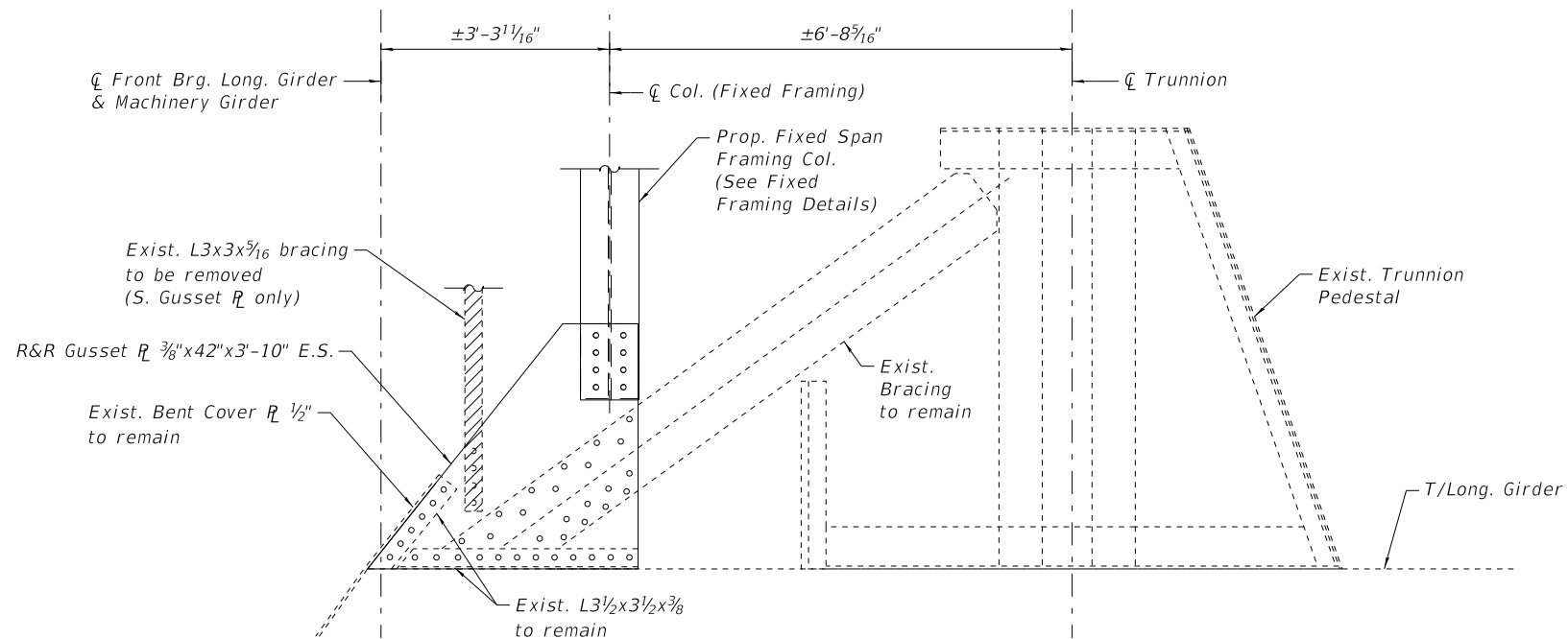
WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER

TRUNNION TRUSS BRACING REPAIR DETAILS  
(STRUCTURE NO. 016-6057)

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-77
CDOT PROJECT NO. E-1-525			120 of 210



**PLAN**  
 (NE Long. Girder & NE Machinery Girder shown,  
 other locations similar)



**SECTION A-A**  
**REPAIR 1**  
 (NE Long. Girder shown, looking north)

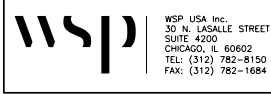
**Notes:**

1. Locations to be strengthened shall be verified in the field.
2. Cost of furnishing and erecting long. girder and machinery girder repair steel elements shall be included in Structural Steel Repairs.
3. Cost of removing and replacing rivets in association with furnishing and erecting long. girder and machinery girder repair steel elements shall be included in Structural Steel Repairs.
4. See sheet S-79 for Repair 2 & 3 Details.

**REFERENCE DRAWINGS**

Drawing	Sheet No.
Fixed Part - Anchor Columns, Etc.	1660570020
Machinery Girders	1660570188
Machinery Girders	1660570188
Bracing for Machinery Girders	1660570191
Trunnion Pedestal and Strut	1660570192

0166057-E1525-S075-LONGGIRDER.DGN



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PLOT DATE = \$DATE\$	DRAWN - PJL	REVISED -
	CHECKED - JIG	REVISED -

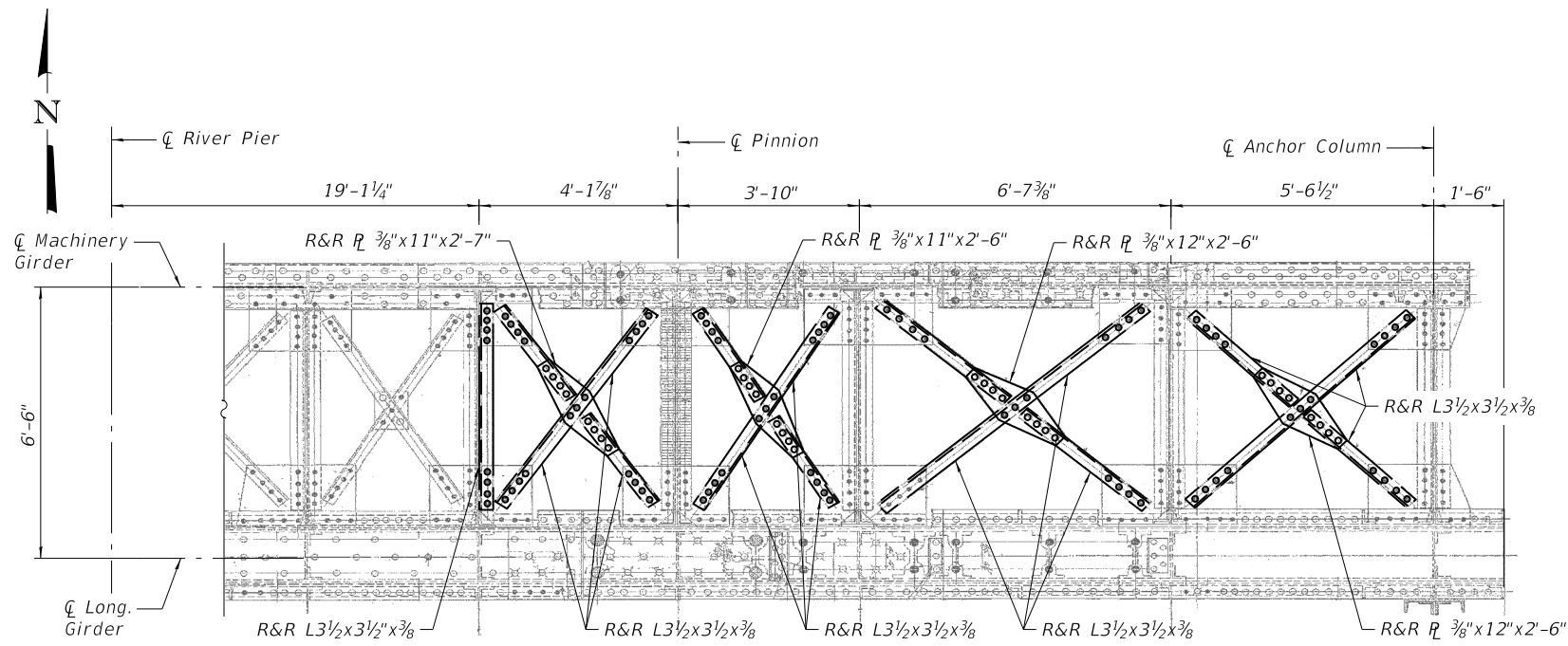
**CITY OF CHICAGO**  
 DEPARTMENT OF TRANSPORTATION  
 DIVISION OF ENGINEERING

**WEBSTER AVENUE BRIDGE OVER  
 THE NORTH BRANCH CHICAGO RIVER**

**LONGITUDINAL GIRDER & MACHINERY  
 GIRDER REPAIRS I  
 (STRUCTURE NO. 016-6057)**

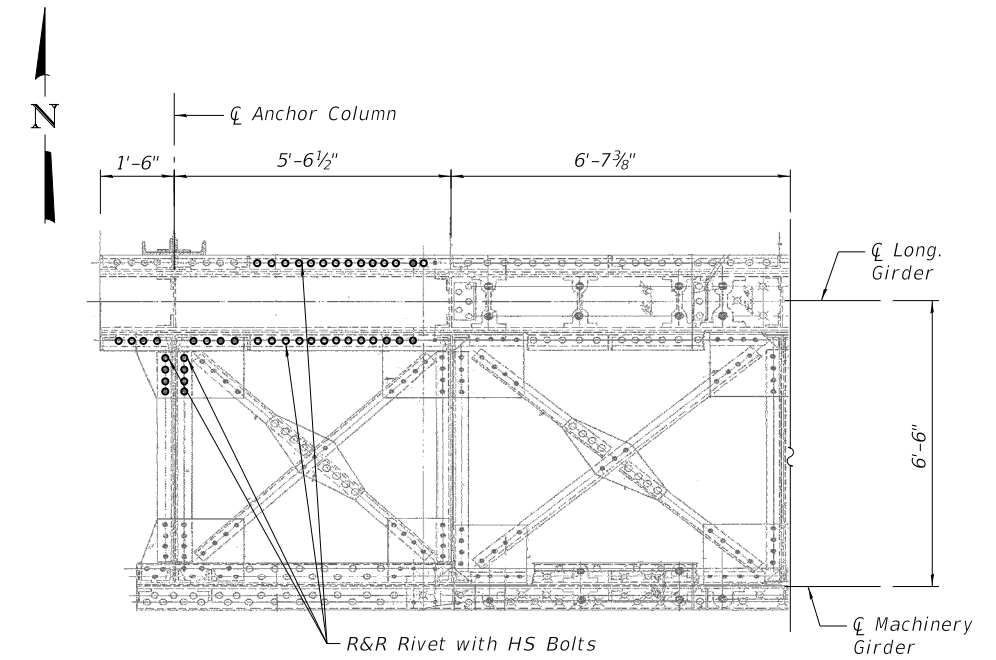
F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-78
CDOT PROJECT NO. E-1-525			121 of 210





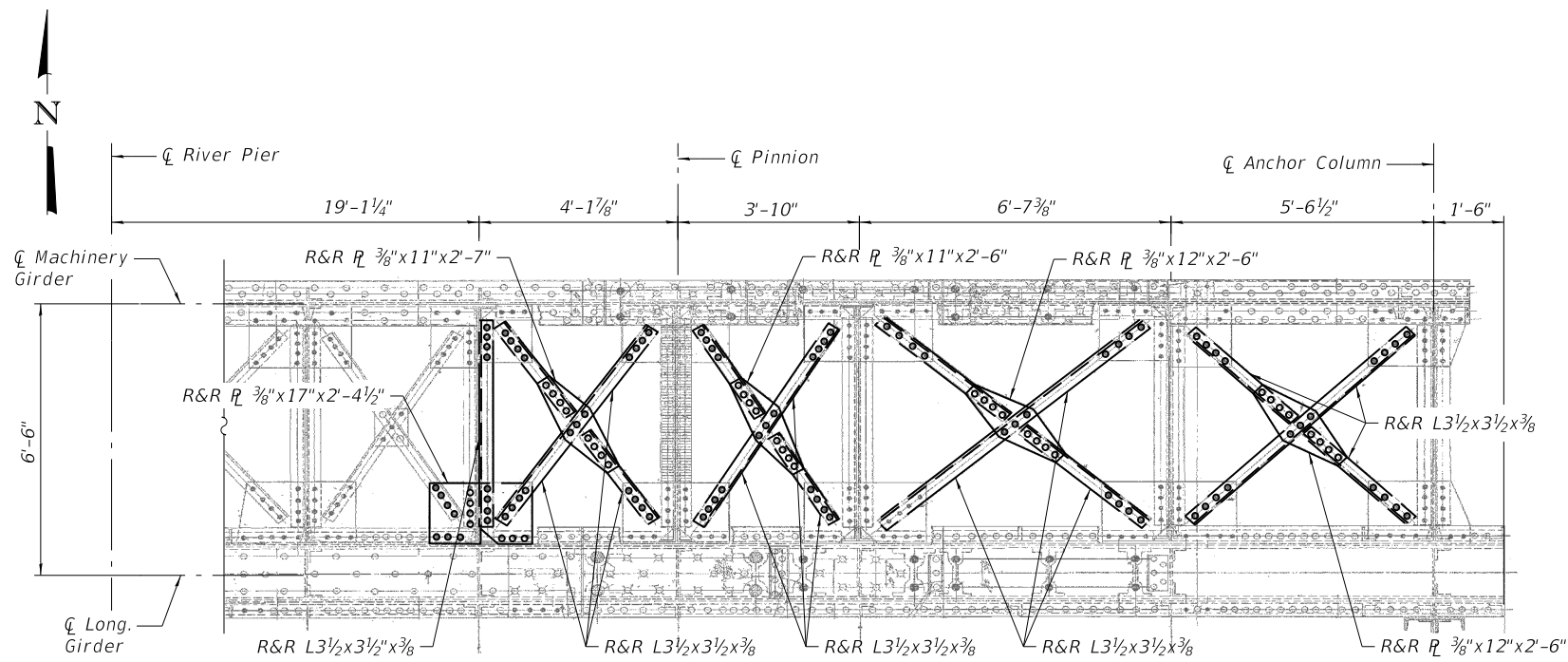
**PARTIAL PLAN  
REPAIR 2**

(NE Long. Girder & Machinery Girder, Top Bracing shown)



**PARTIAL PLAN  
REPAIR 4**

(SE Long. Girder & Machinery Girder, Top Bracing shown)



**PARTIAL PLAN  
REPAIR 3**

(NE Long. Girder & Machinery Girder, Bott. Bracing shown)

**BILL OF MATERIAL**

Item	Unit	Quantity
Structural Steel Repairs	Pound	1,510
Removal of Deteriorated Connectors and Replacement with High Strength Bolts	Each	43

**REFERENCE DRAWINGS**

Drawing	Sheet No.
Fixed Part-Longitudinal and Machinery Girder	1660570019
Trunnion Pedestal and Strut	1660570192

**Notes:**

- Locations to be strengthened shall be verified in the field.
- Cost of furnishing and erecting long. girder and machinery girder repair steel elements shall be included in Structural Steel Repairs.
- Cost of removing and replacing rivets in association with furnishing and erecting long. girder and machinery girder repair steel elements shall be included in Structural Steel Repairs.

0166057-E1525-S076-LONGGIRDER.IIDGN



WSP USA Inc.  
30 N. LA SALLE STREET  
SUITE 4000  
CHICAGO, IL 60602  
TEL: (312) 782-8150  
FAX: (312) 782-1684

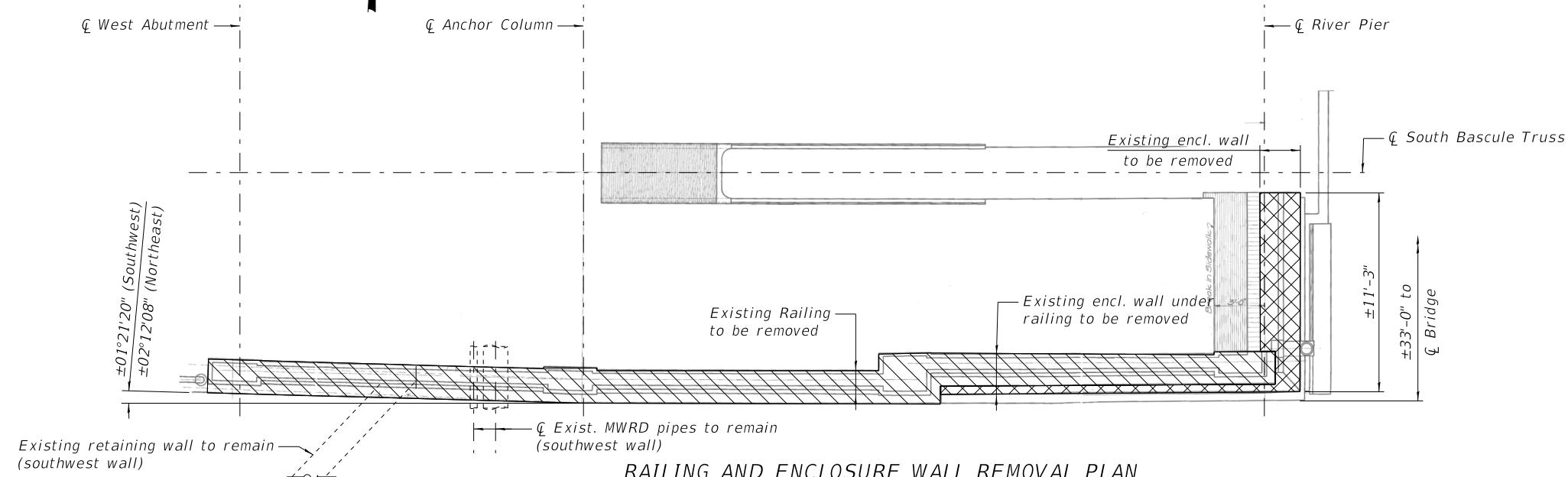
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DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

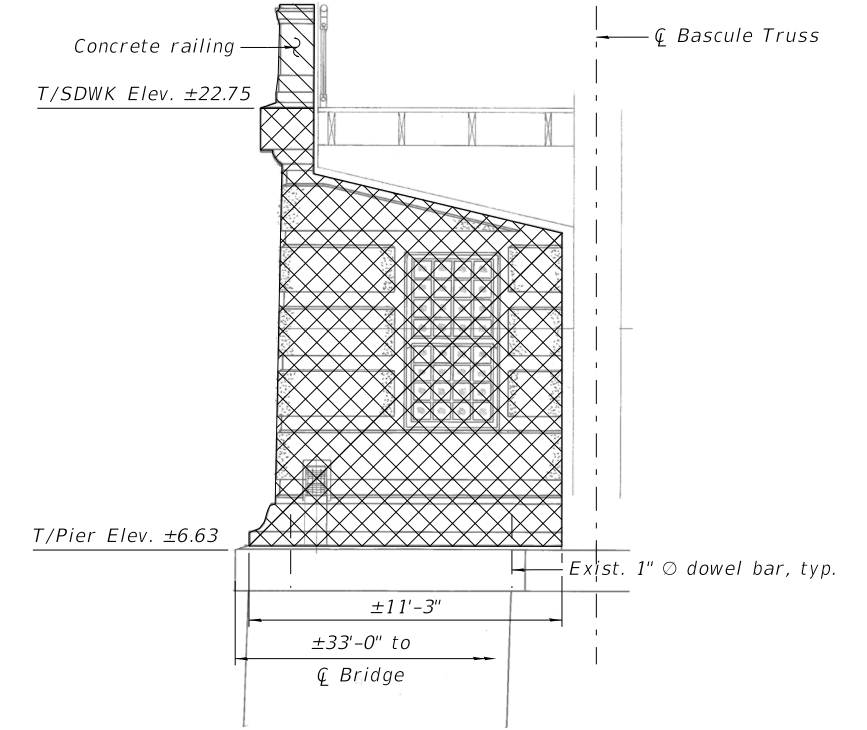
**LONGITUDINAL GIRDER & MACHINERY  
GIRDER REPAIRS II  
(STRUCTURE NO. 016-6057)**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-79
CDOT PROJECT NO. E-1-525			122 of 210



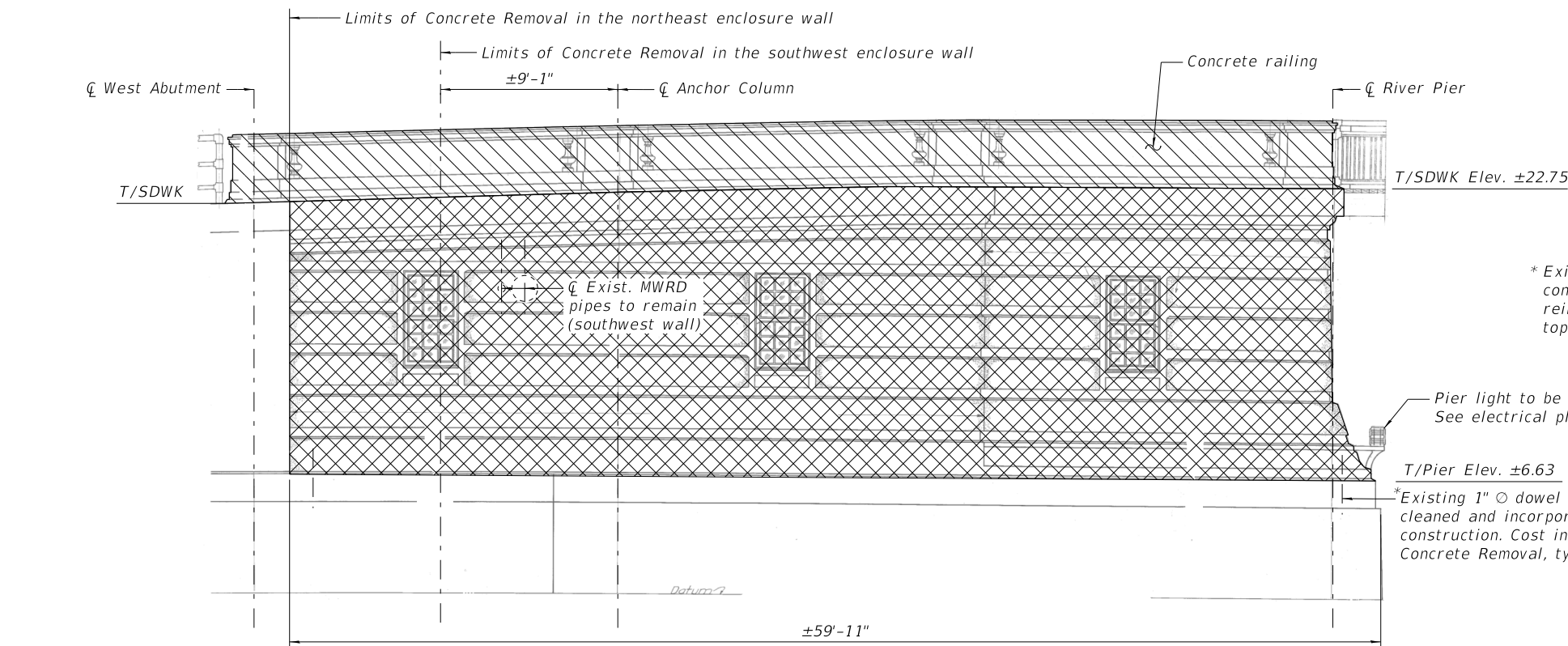
**RAILING AND ENCLOSURE WALL REMOVAL PLAN**

(Southwest enclosure wall is shown. Northeast enclosure wall is similar but opposite hand, except as noted)



**REMOVAL ELEVATION - FRONT VIEW**

(Looking west)  
(Southwest enclosure wall is shown. Northeast enclosure wall is similar but opposite hand, except as noted)



**REMOVAL ELEVATION - SIDE VIEW**

(Looking north)  
(Southwest enclosure wall is shown. Northeast enclosure wall is similar but opposite hand, except as noted)

**LEGEND**

- Concrete Removal
- Concrete Railing Removal

**Notes:**

1. Removal of existing concrete enclosure walls, bridge house slab, and concrete stairwells are included in the cost of Concrete Removal. Steel reinforcing and embedded miscellaneous steel members within the concrete enclosure walls are included in this item.
2. Removal of existing concrete railing is included in the cost of Remove Existing Concrete Railings. See architectural special provisions.
3. The Contractor shall verify exact limits of the existing walls and railings.
4. It shall be the Contractor's responsibility to temporary support existing MWRD pipes interfering with the work. Cost included with Concrete Removal.
5. The Contractor shall exercise extreme care during removal operations as not to damage components to remain in place. Any damage to portions that are to remain in place shall be repaired at the Contractor's expense and to the satisfaction of the Commissioner.
6. See sheets S-6 and S-7 for fixed and bascule span removal details.

\* Existing 1" Ø dowel bars which conflict with proposed wall layout or reinforcement shall be cut 1" below top of existing concrete to remain.

Pier light to be removed. See electrical plans.

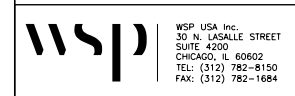
\* Existing 1" Ø dowel bars shall be cleaned and incorporated into new construction. Cost included with Concrete Removal, typ.

**REFERENCE DRAWINGS**

- Drawing Operator's House & Enclosure Walls
- Substructure Main Piers

- Sheet No. 1660570036
- 1660570037
- 1660570038
- 1660570045

0166057-E1525-S080-ENCL.WALL\_REM.DGN



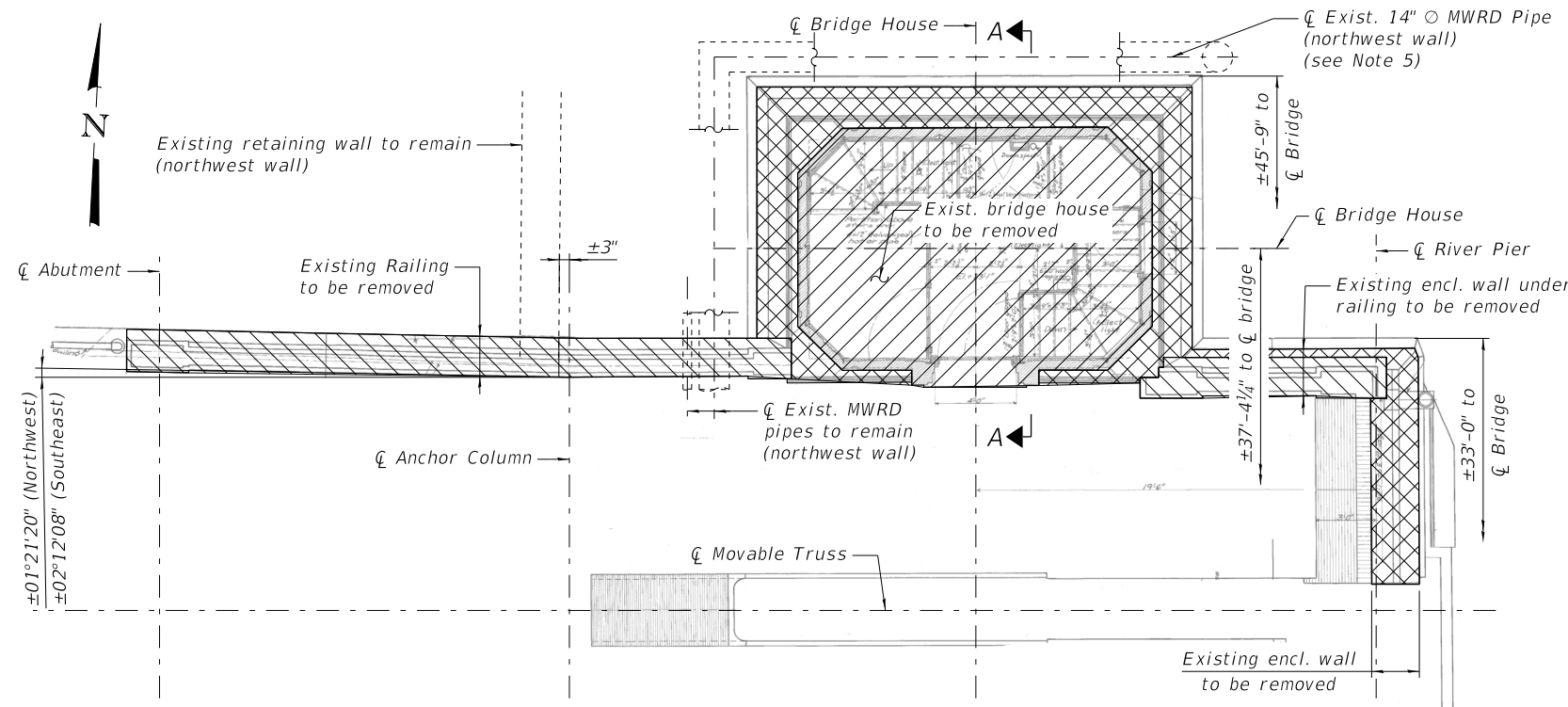
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DIVISION OF ENGINEERING

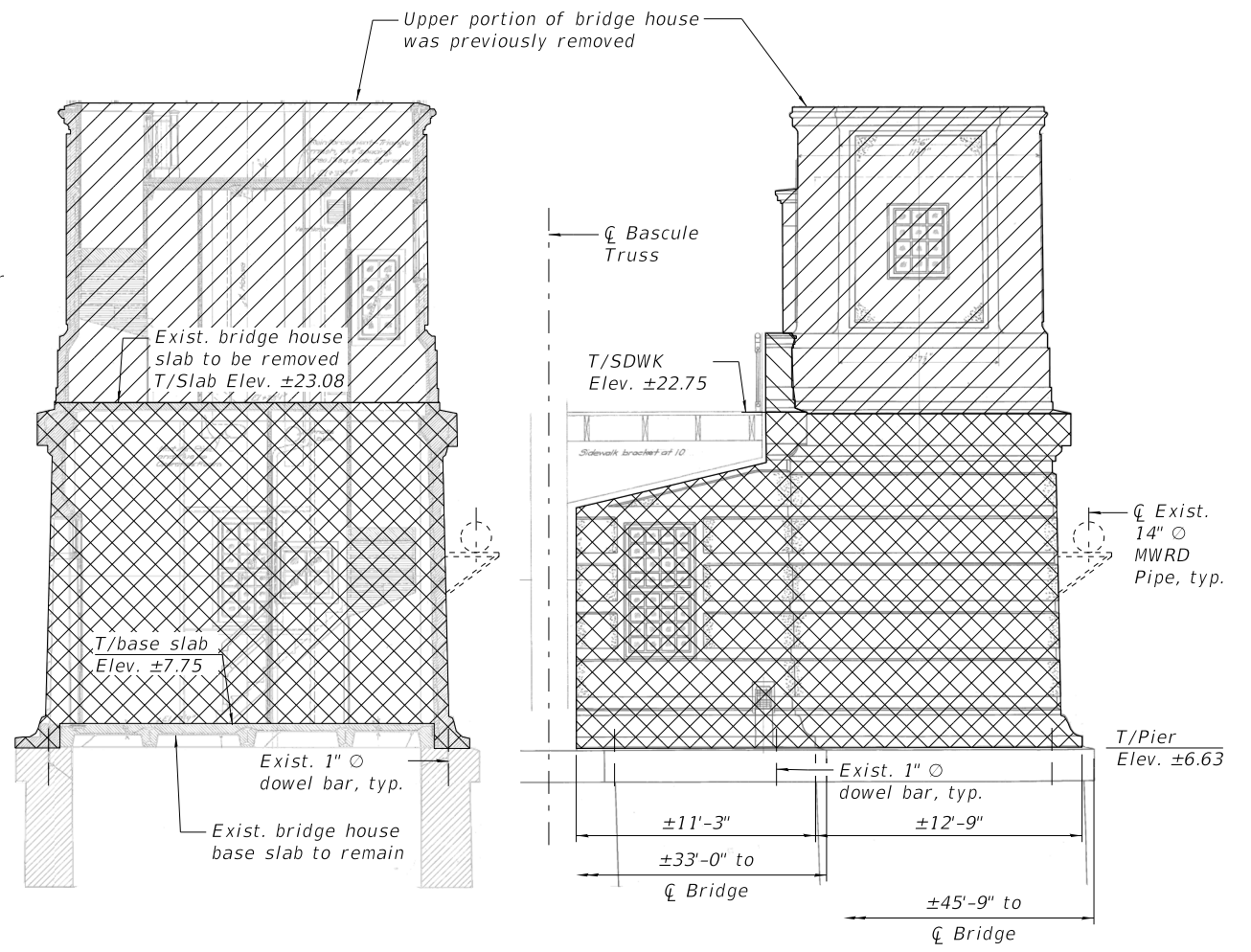
**WEBSTER AVENUE BRIDGE OVER THE NORTH BRANCH CHICAGO RIVER**

**ENCLOSURE WALLS: REMOVAL DETAILS I (STRUCTURE NO. 016-6057)**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-80
CDOT PROJECT NO. E-1-525			123 of 210



**RAILING AND ENCLOSURE WALL REMOVAL PLAN**  
 (Northwest enclosure wall is shown. Southeast enclosure wall is similar but opposite hand, except as noted)



**SECTION A-A**

**REMOVAL ELEVATION - FRONT VIEW**

(Looking west)  
 (Northwest enclosure wall is shown. Southeast enclosure wall is similar but opposite hand, except as noted)

- ① Limits of Concrete Removal in the northwest enclosure wall
- ② Pier light to be removed. See electrical plans.

\* Existing 1"  $\varnothing$  dowel bars which conflict with proposed wall layout or reinforcement shall be cut 1" below top of existing concrete to remain.

**LEGEND**

- Concrete Removal
- Bridge House Removal
- Concrete Railing Removal

**BILL OF MATERIAL**

Item	Unit	Quantity
Concrete Removal	Cu. Yd.	184.1

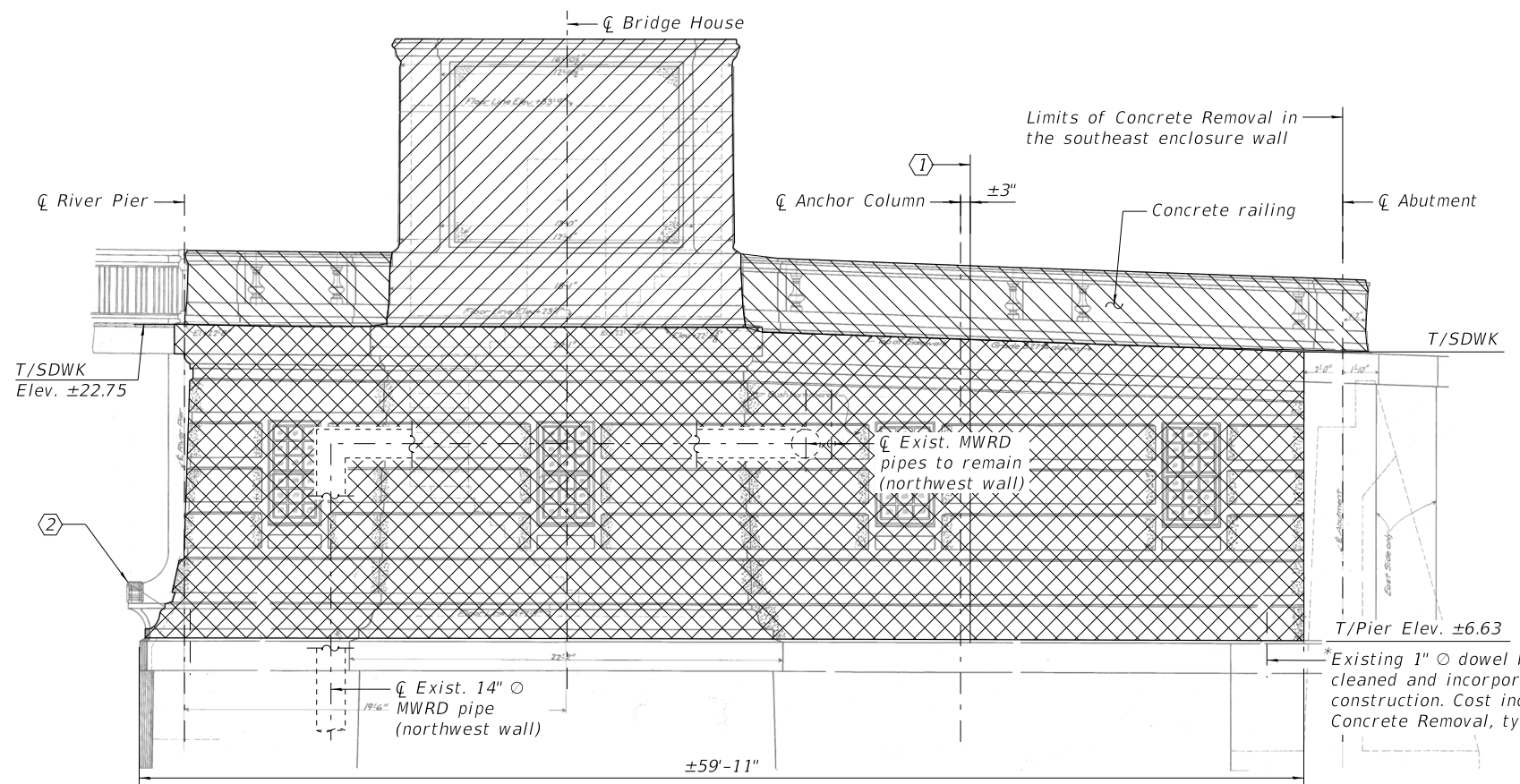
**Notes:**

1. Removal of existing concrete enclosure walls, bridge house slab, and concrete stairwells are included in the cost of Concrete Removal. Steel reinforcing and embedded miscellaneous steel members within the concrete enclosure walls are included in this item.
2. Removal of existing concrete railing is included in the cost of Remove Existing Concrete Railings. See architectural special provisions.
3. Removal of existing bridge houses including but not limited to the exterior walls, framing, roofing, partitions, plumbing, and electrical within the limits shown is included in Remove Existing Bridge Houses. See architectural special provisions.
4. The Contractor shall verify exact limits of the existing walls and railings.
5. It shall be the Contractor's responsibility to temporary support existing MWRD pipes interfering with the work. Cost included with Concrete Removal.
6. The Contractor shall exercise extreme care during removal operations as not to damage components to remain in place. Any damage to portions that are to remain in place shall be repaired at the Contractor's expense and to the satisfaction of the Commissioner.
7. See sheets S-6 and S-7 for fixed and bascule span removal details.

**REFERENCE DRAWINGS**

Drawing: Operator's House & Enclosure Walls  
 Substructure Main Piers

Sheet No.:  
 1660570036  
 1660570037  
 1660570038  
 1660570045



**REMOVAL ELEVATION - SIDE VIEW**  
 (Looking south)  
 (Northwest enclosure wall is shown. Southeast enclosure wall is similar but opposite hand, except as noted)

0166057-E1525-S081-ENCL.WALL\_REMI.DGN

**wsp**  
 WSP USA Inc.  
 30 N. LASALLE STREET  
 SUITE 4200  
 CHICAGO, IL 60602  
 TEL: (312) 782-8150  
 FAX: (312) 782-1684

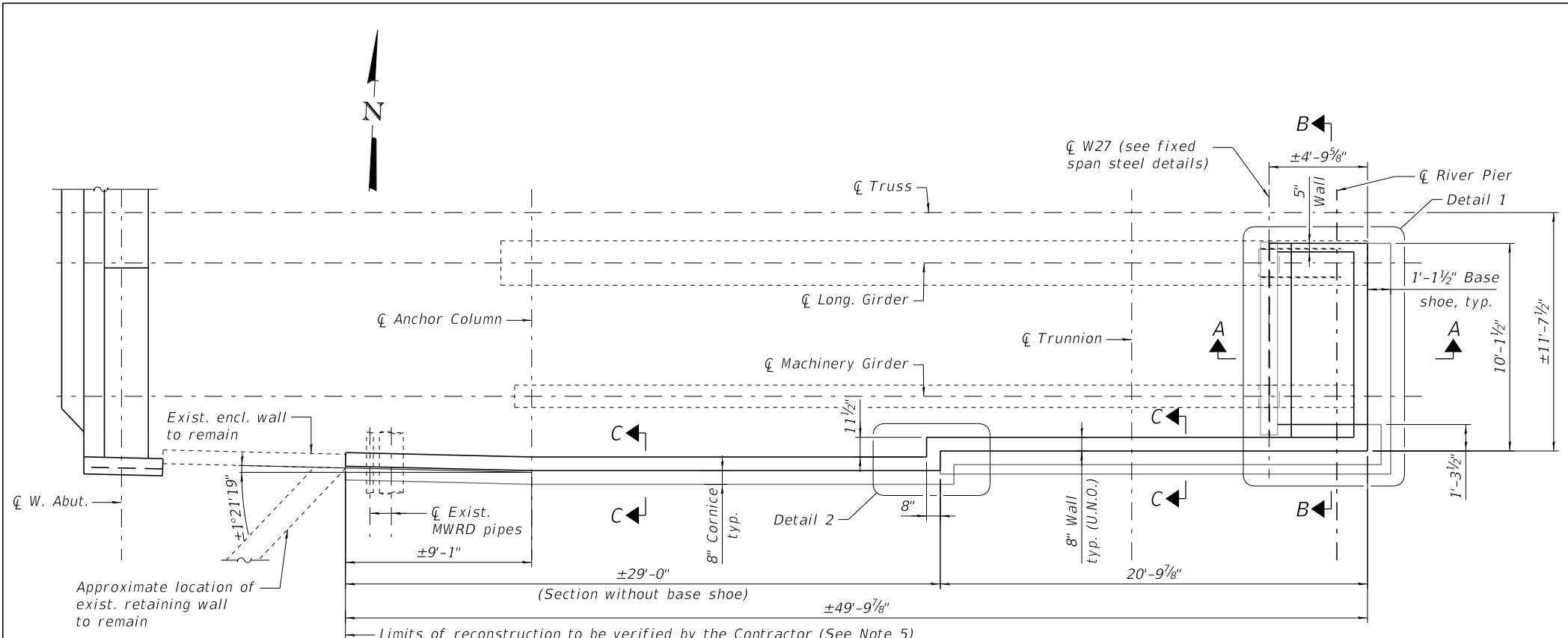
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**CITY OF CHICAGO**  
 DEPARTMENT OF TRANSPORTATION  
 DIVISION OF ENGINEERING

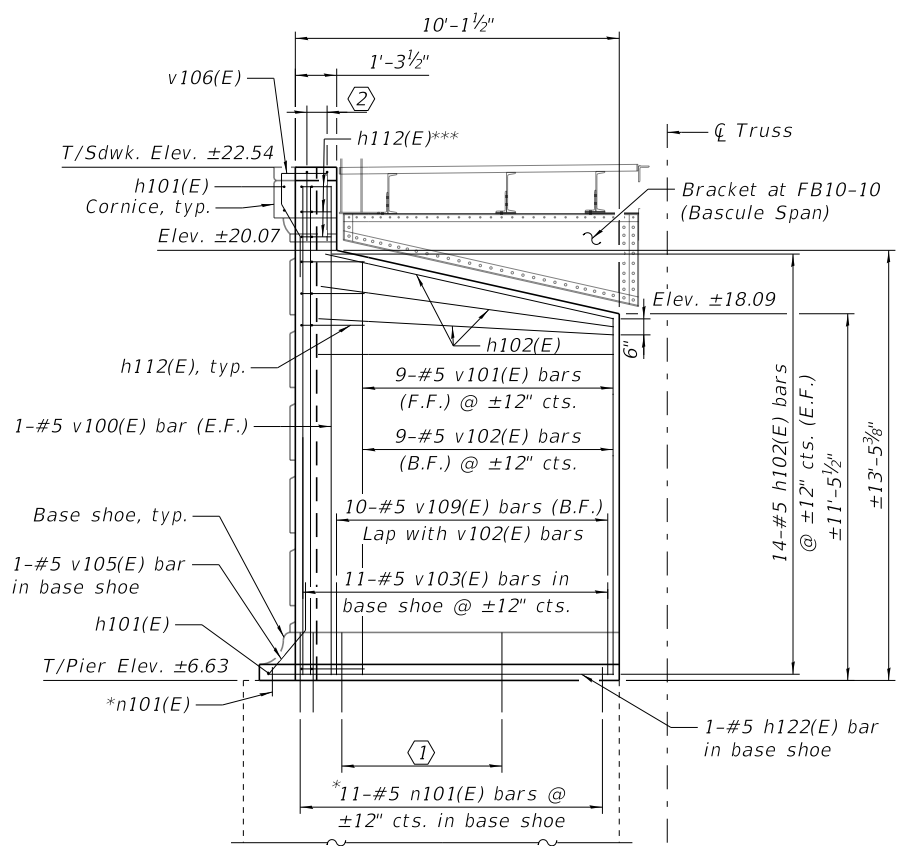
**WEBSTER AVENUE BRIDGE OVER  
 THE NORTH BRANCH CHICAGO RIVER**

**ENCLOSURE WALLS:  
 REMOVAL DETAILS II  
 (STRUCTURE NO. 016-6057)**

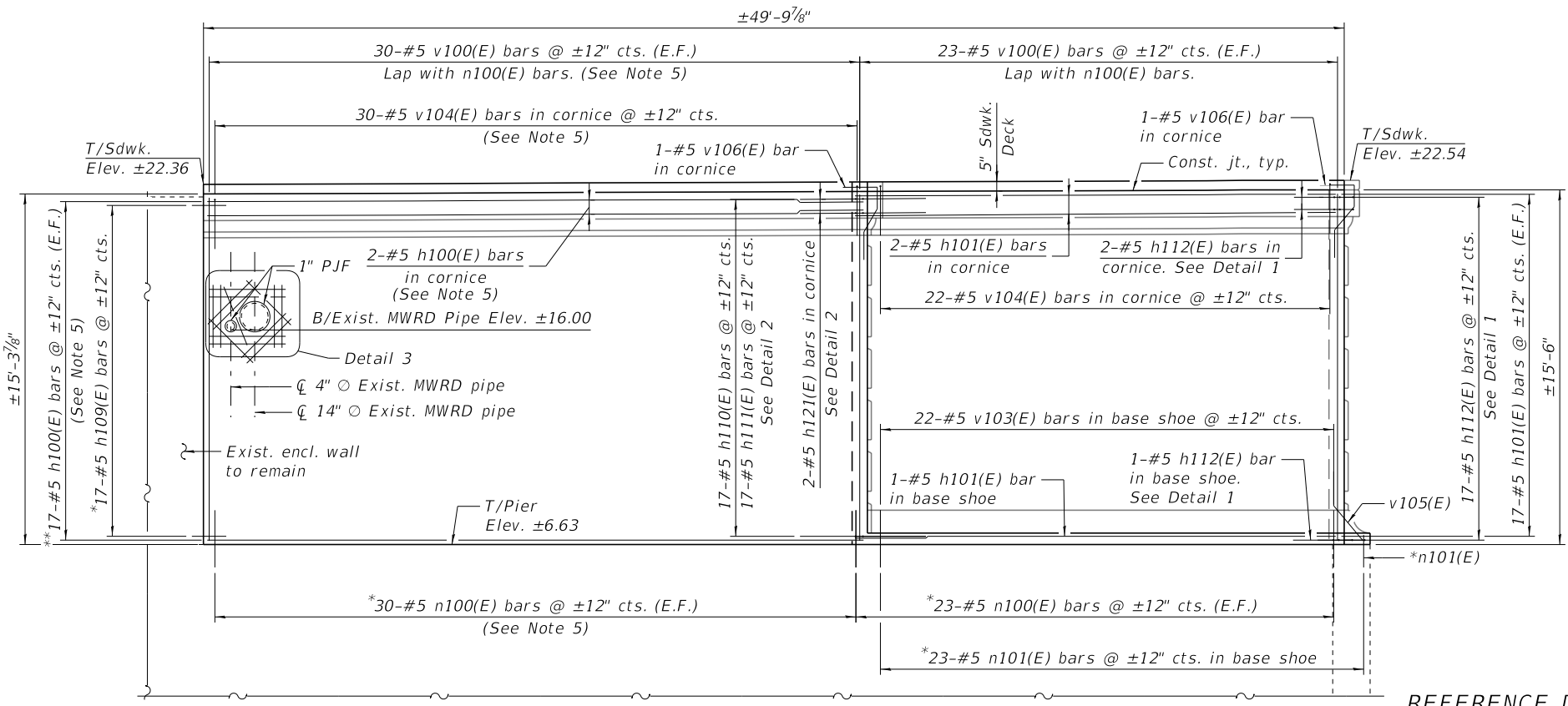
F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-81
CDOT PROJECT NO. E-1-525			124 of 210



**SOUTHWEST ENCLOSURE WALL PLAN**



**ELEVATION - FRONT VIEW**  
(Looking west)



**ELEVATION - SIDE VIEW**  
(Looking north)

- ① \*5-#5 n100(E) bars @ ±12" cts.
- ② 2-#5 v104(E) bars in cornice.

\* Drill and grout bars according to Article 584 of the Std. Specs., with a minimum embedment of 12" for n100(E) bars and 6" for h109(E) and n101(E) bars. Cost included in the cost of Reinforcement Bars, Epoxy Coated.

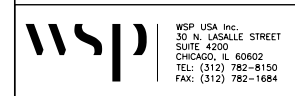
\*\* Bend bar to fit.  
\*\*\* Cut bar to fit.

- Notes:
1. See sheet S-86 for reinforcement and details in Sections A-A to C-C and Details 1 & 2.
  2. See sheet S-88 for Bill of Materials, bar bend diagrams, reinforcement details around MWRD pipes (Detail 3), and bar cutting diagram for bars v101(E) and v102(E).
  3. The Contractor shall verify the locations of the MWRD pipes.
  4. Cut vertical and horizontal reinforcements to miss MWRD pipes.
  5. The Contractor shall verify the location of the exist. retaining wall and verify the limits of reconstruction prior construction or ordering materials. The quantities of High Performance Concrete Structures, bars n100(E), v100(E), and v104(E), and the length of h100(E) bar shall be verified/adjusted accordingly.

**REFERENCE DRAWINGS**

Drawing	Sheet No.
Operator's House & Enclosure Walls	1660570036
	1660570037
	1660570038
Substructure Main Piers	1660570045

0166057-E1525-S082-SW-ENCLOSUREWALL.DGN



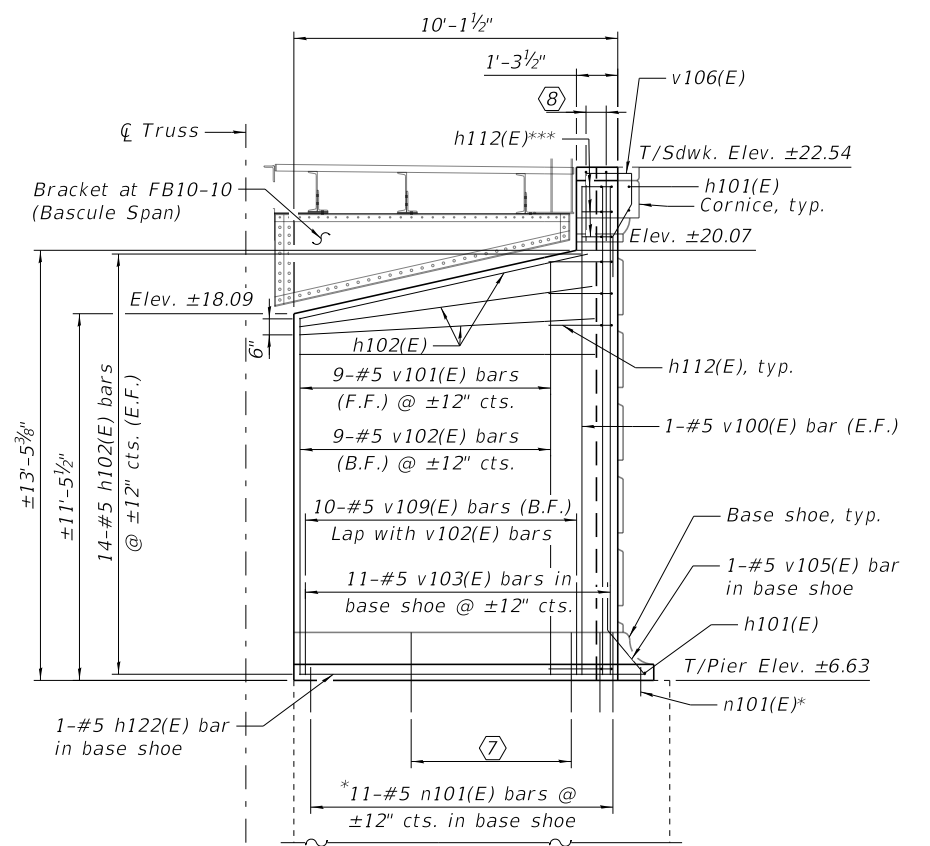
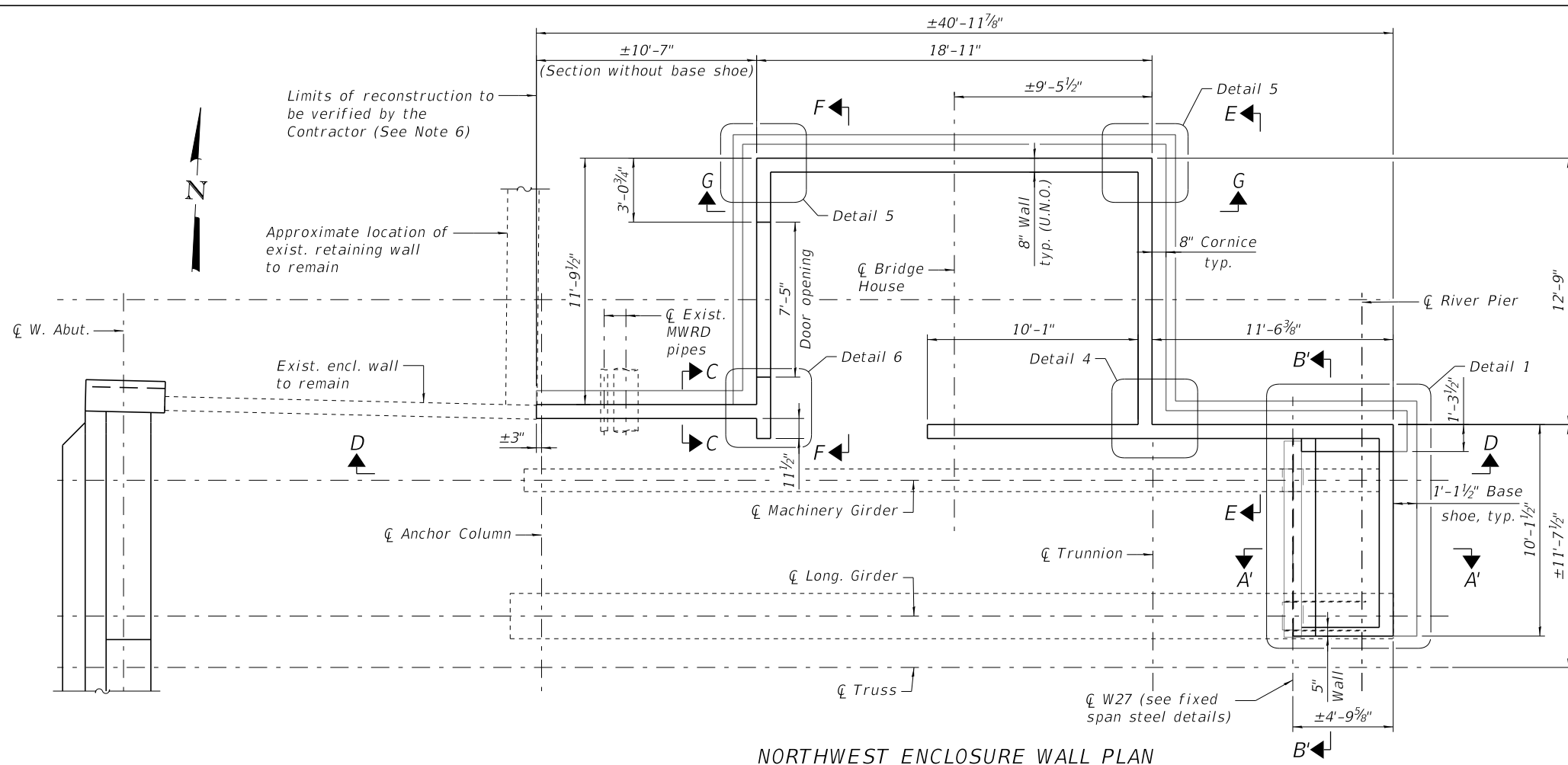
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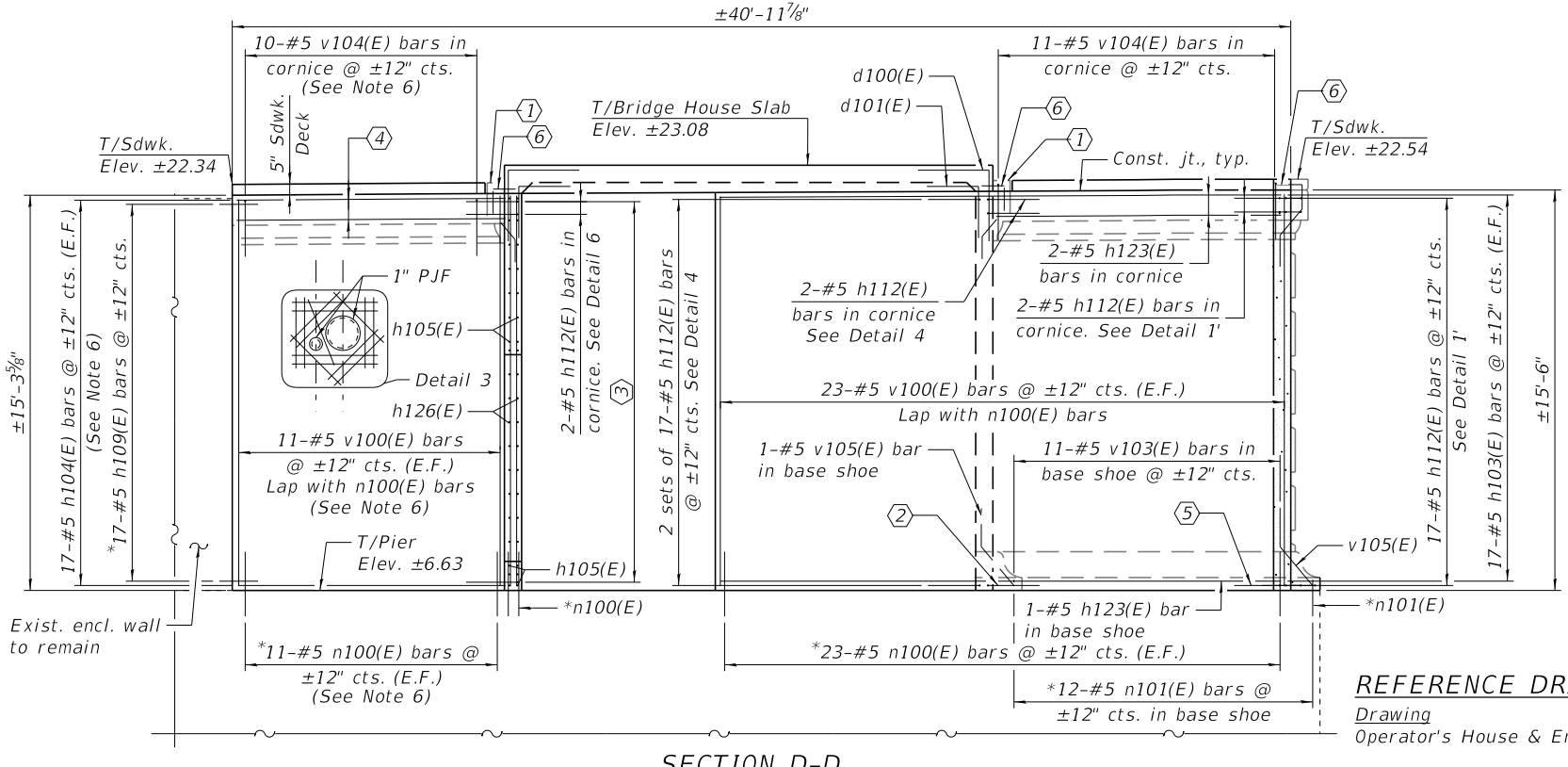
**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

**ENCLOSURE WALLS:  
PLAN & ELEVATION - SW  
(STRUCTURE NO. 016-6057)**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-82
CDOT PROJECT NO. E-1-525			125 of 210



- ① Top of cornice elevation to match top of Sdwk. elevation.
- ② 1-#5 h112(E) bar in base shoe. See Detail 4.
- ③ 17-#5 h112(E) bars @ ±12" cts. 17-#5 h113(E) bars @ ±12" cts. See Detail 6.
- ④ 2-#5 h104(E) bars in cornice. (See Note 6)
- ⑤ 1-#5 h112(E) bar in base shoe. See Detail 1'.
- ⑥ 1-#5 v106(E) bar in cornice.
- ⑦ \*5-#5 n100(E) bars @ ±12" cts.
- ⑧ 2-#5 v104(E) bars in cornice.



- \* Drill and grout bars according to Article 584 of the Std. Specs., with a minimum embedment of 12" for n100(E) bars and 6" for h109(E) and n101(E) bars. Cost included in the cost of Reinforcement Bars, Epoxy Coated.
- \*\* Bend bar to fit.
- \*\*\* Cut bar to fit.

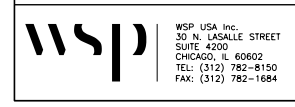
- Notes:
- See sheet S-86 for reinforcement and details in Sections A'-A', B'-B', & C-C and Details 1 & 2.
  - See sheet S-87 for reinforcement and details in Sections E-E to G-G and Details 4 & 5.
  - See sheet S-88 for reinforcement and details in Detail 6, Bill of Materials, bar bend diagrams, reinforcement details around MWRD pipes (Detail 3), and bar cutting diagram for bars v101(E) and v102(E).
  - The Contractor shall verify the locations of the MWRD pipes.
  - Cut vertical and horizontal reinforcements to miss MWRD pipes.
  - The Contractor shall verify the location of the exist. retaining wall and verify the limits of reconstruction prior construction or ordering materials. The quantities of High Performance Concrete Structures, bars n100(E), v100(E), and v104(E), and the length of h104(E) bar shall be verified/adjusted accordingly.

**REFERENCE DRAWINGS**

Drawing Operator's House & Enclosure Walls  
Substructure Main Piers

Sheet No.  
1660570036  
1660570037  
1660570038  
1660570045

0166057-E1525-S083-NW-ENCLOSUREWALL.DGN



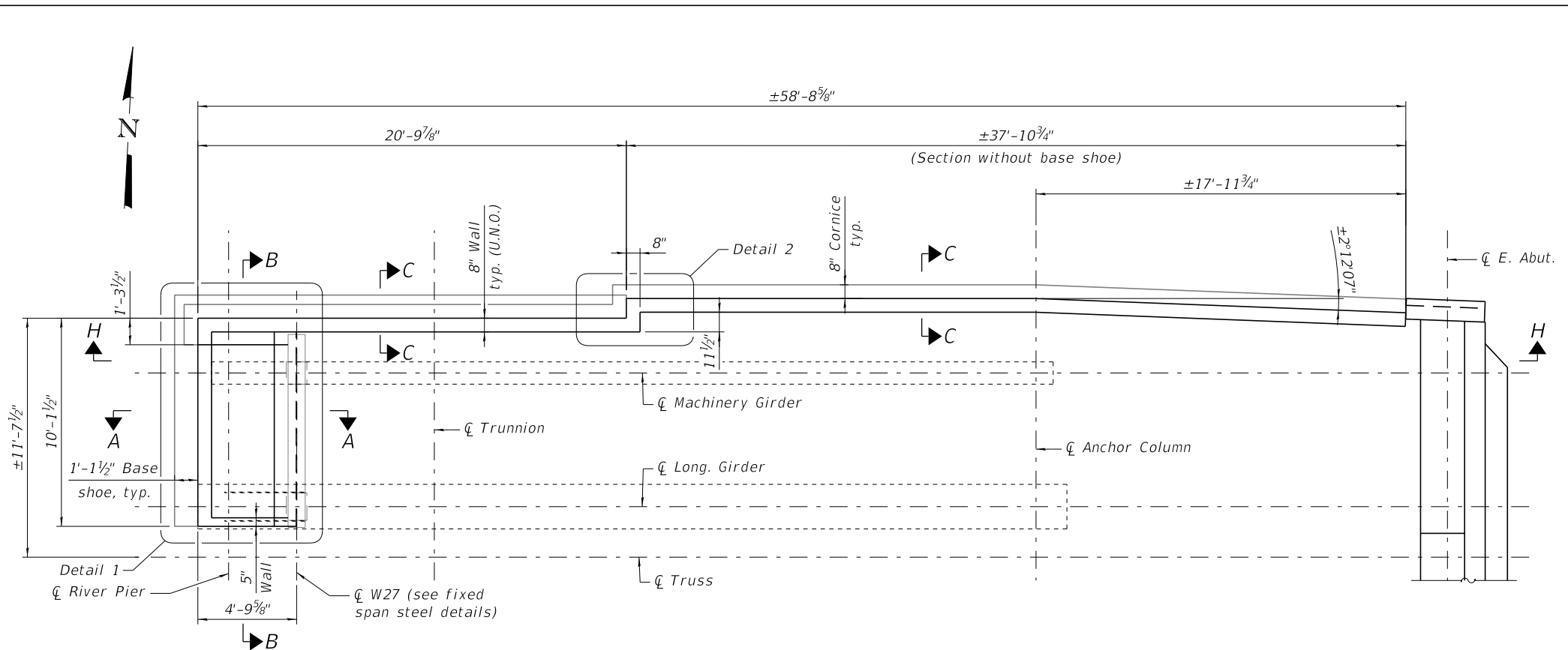
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**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

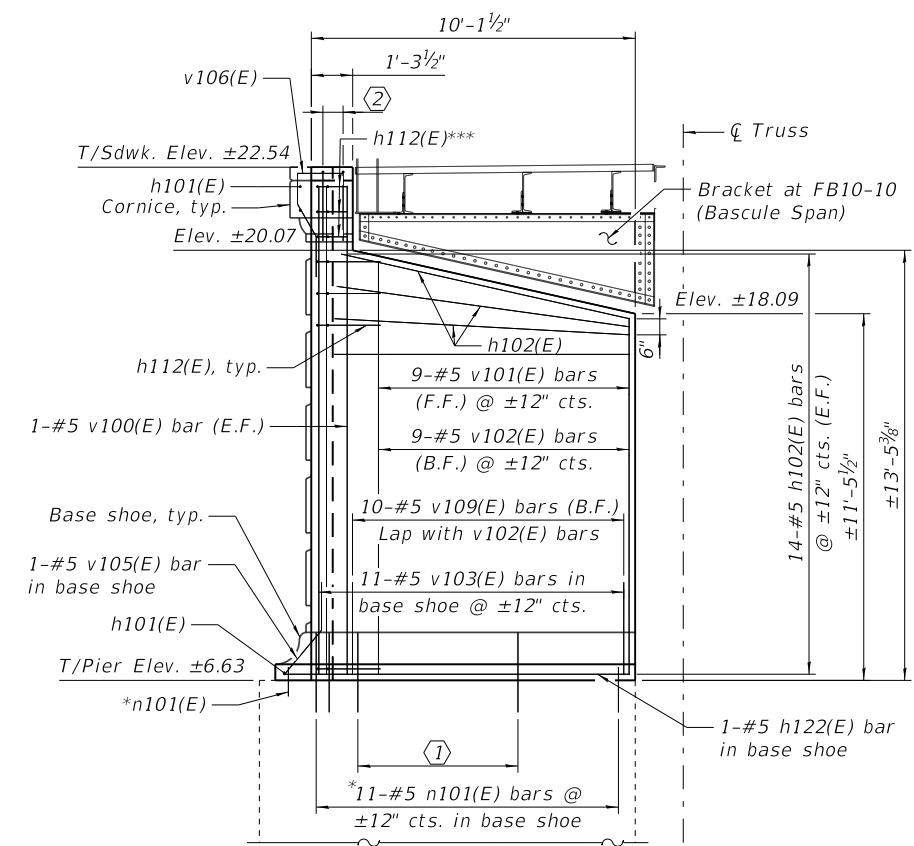
**WEBSTER AVENUE BRIDGE OVER THE NORTH BRANCH CHICAGO RIVER**

**ENCLOSURE WALLS: PLAN & ELEVATION - NW (STRUCTURE NO. 016-6057)**

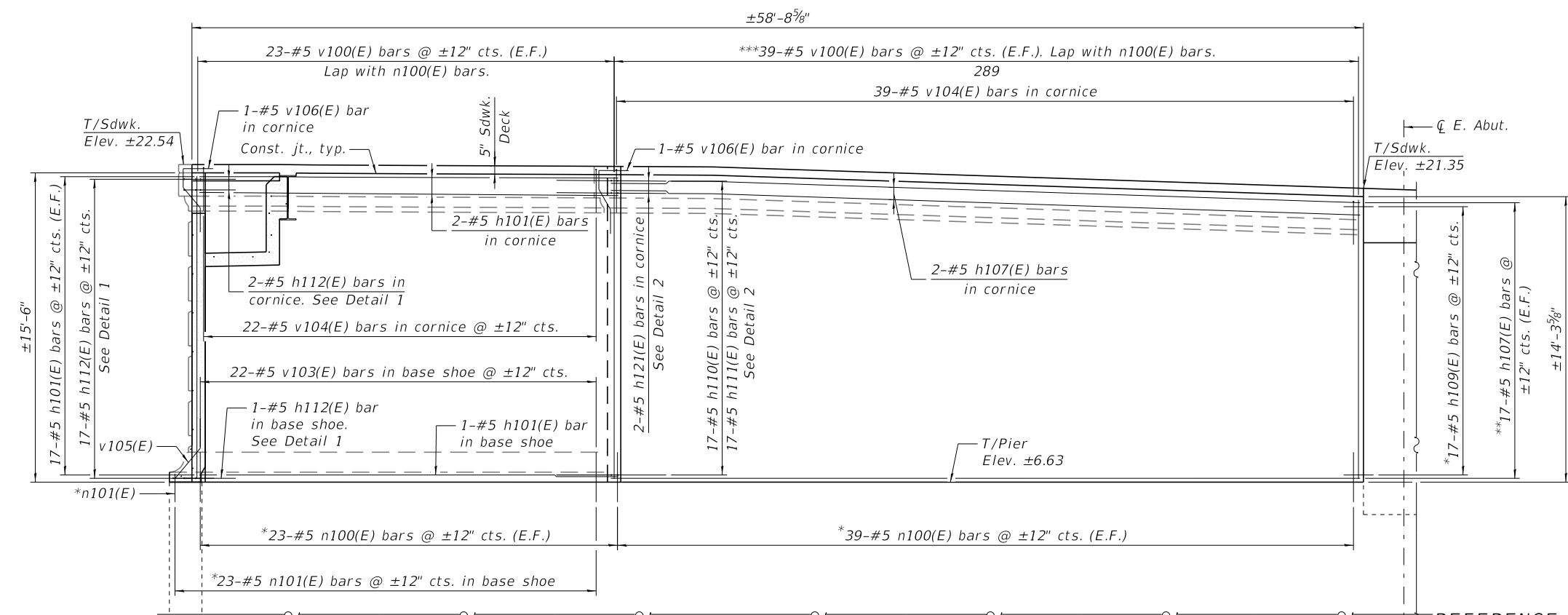
F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-83
CDOT PROJECT NO. E-1-525			126 of 210



NORTHEAST ENCLOSURE WALL PLAN



ELEVATION - FRONT VIEW  
(Looking east)



SECTION H-H

- ① \*5-#5 n100(E) bars @ ±12\"/>

\* Drill and grout bars according to Article 584 of the Std. Specs., with a minimum embedment of 12\"/>

- \*\* Bend bar to fit.
- \*\*\* Cut bar to fit.

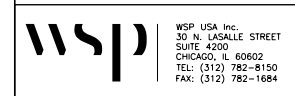
- Notes:
- See sheet S-86 for reinforcement and details in Sections A-A to C-C and Details 1 & 2.
  - See sheet S-88 for Bill of Materials, bar bend diagrams, reinforcement details around MWRD pipes (Detail 3), and bar cutting diagram for bars v101(E) and v102(E).

REFERENCE DRAWINGS

Drawing  
Operator's House & Enclosure Walls  
Substructure Main Piers

Sheet No.  
1660570036  
1660570037  
1660570038  
1660570045

0166057-E1525-S084-NEENCLOSUREWALL.DGN



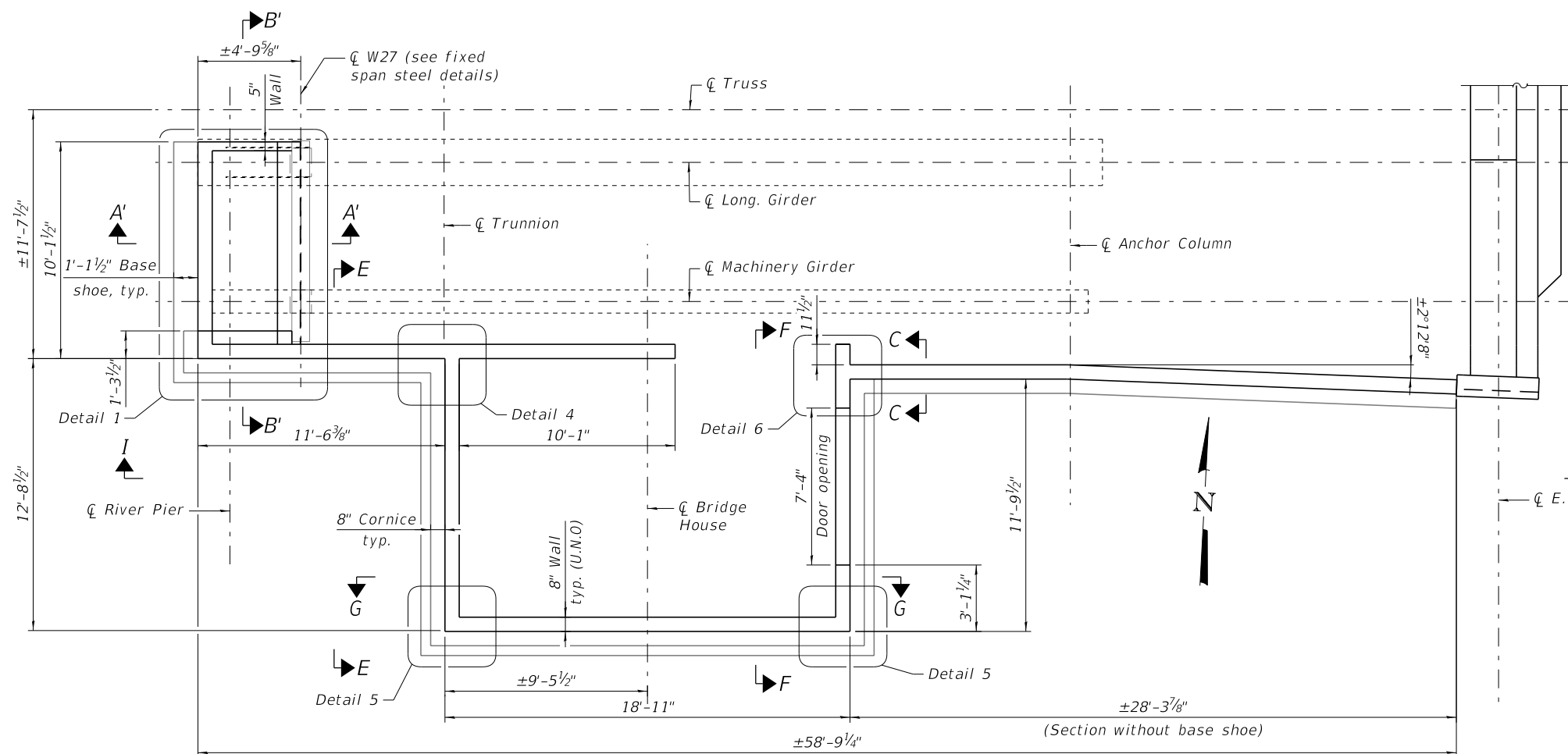
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PLOT DATE = \$DATE\$	DRAWN - MI	REVISED -
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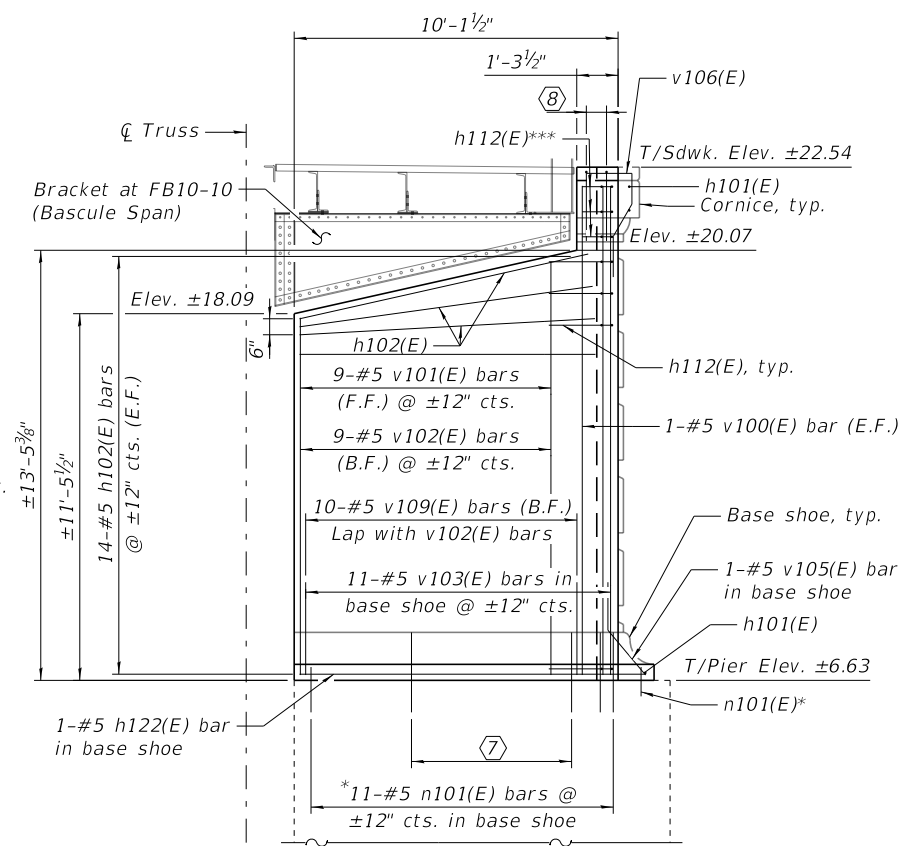
**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

**ENCLOSURE WALLS:  
PLAN & ELEVATION - NE  
(STRUCTURE NO. 016-6057)**

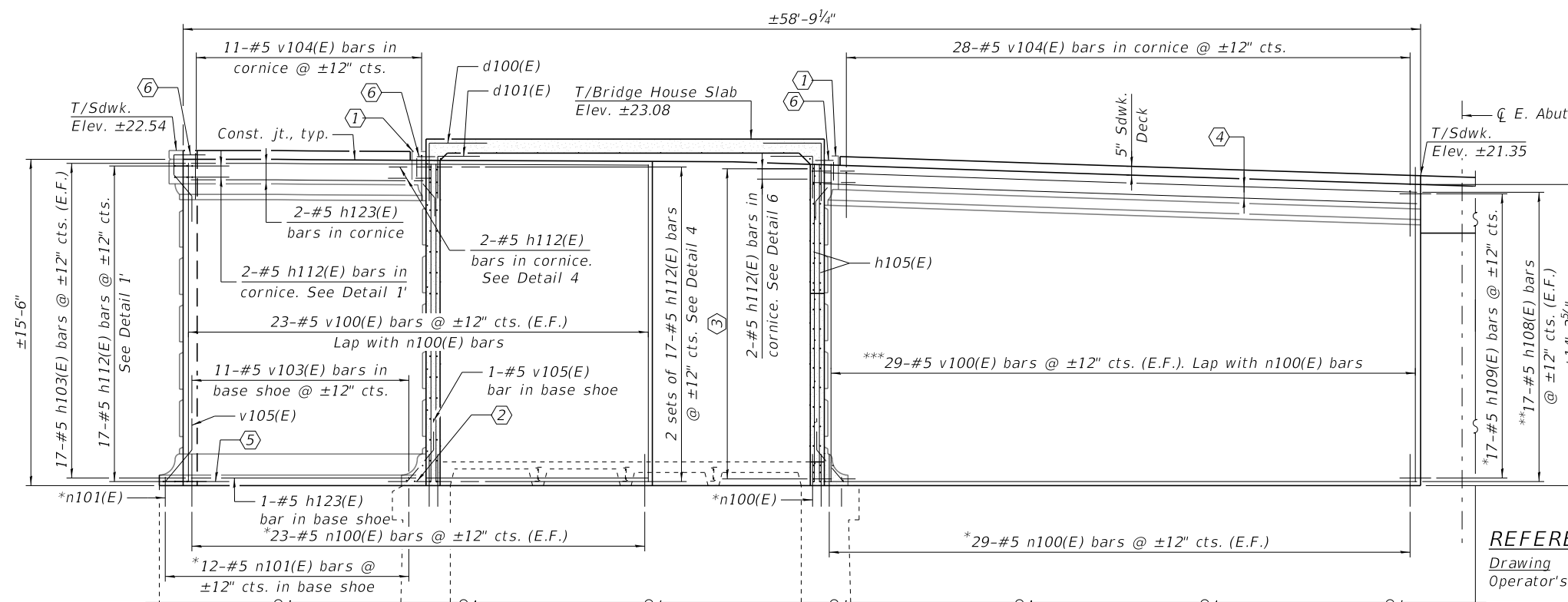
F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-84
CDOT PROJECT NO. E-1-525			127 of 210



SOUTHEAST ENCLOSURE WALL PLAN



ELEVATION - FRONT VIEW  
(Looking east)



SECTION I-I

- ① Top of cornice elevation to match top of Sdwk. elevation.
- ② 1-#5 h112(E) bar in base shoe. See Detail 4.
- ③ 17-#5 h112(E) bars @ ±12" cts. 17-#5 h113(E) bars @ ±12" cts. See Detail 6.
- ④ 2-#5 h108(E) bars in cornice.
- ⑤ 1-#5 h112(E) bar in base shoe. See Detail 1'.
- ⑥ 1-#5 v106(E) bar in cornice.
- ⑦ \*5-#5 n100(E) bars @ ±12" cts.
- ⑧ 2-#5 v104(E) bars in cornice.

\* Drill and grout bars according to Article 584 of the Std. Specs., with a minimum embedment of 12" for n100(E) bars and 6" for h109(E) and n101(E) bars. Cost included in the cost of Reinforcement Bars, Epoxy Coated.

\*\* Bend bar to fit.  
\*\*\* Cut bar to fit.

- Notes:
- See sheet S-86 for reinforcement and details in Sections A-A', B'-B', & C-C and Details 1 & 2.
  - See sheet S-87 for reinforcement and details in Sections E-E to G-G and Details 4 & 5.
  - See sheet S-88 for reinforcement and details in Detail 6, Bill of Materials, bar bend diagrams, and bar cutting diagram for bars v101(E) and v102(E).

REFERENCE DRAWINGS

Drawing  
Operator's House & Enclosure Walls

Sheet No.  
1660570036  
1660570037  
1660570038  
1660570045

Substructure Main Piers

0166057-E1525-S085-SE-ENCLOSUREWALL.DGN



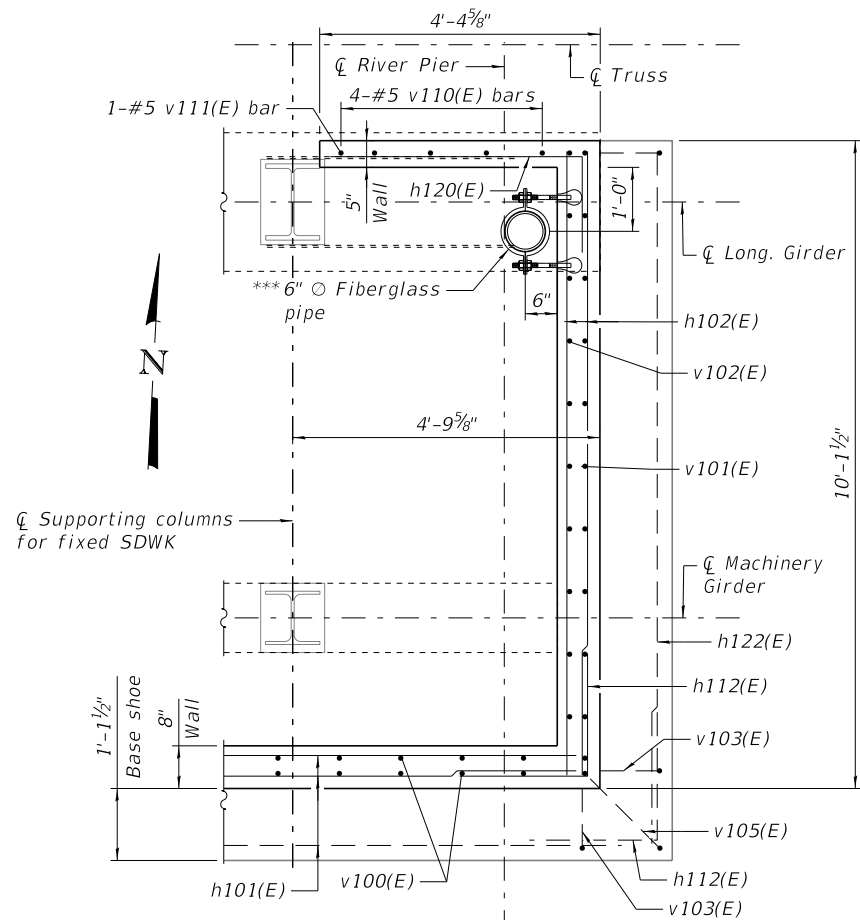
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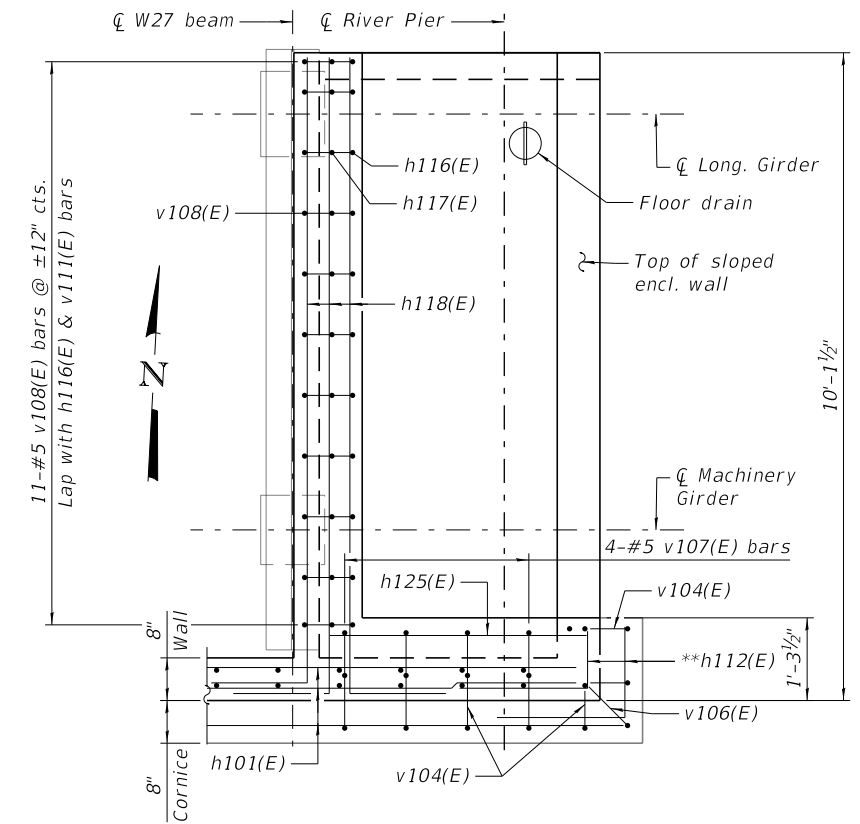
**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

**ENCLOSURE WALLS:  
PLAN & ELEVATION - SE  
(STRUCTURE NO. 016-6057)**

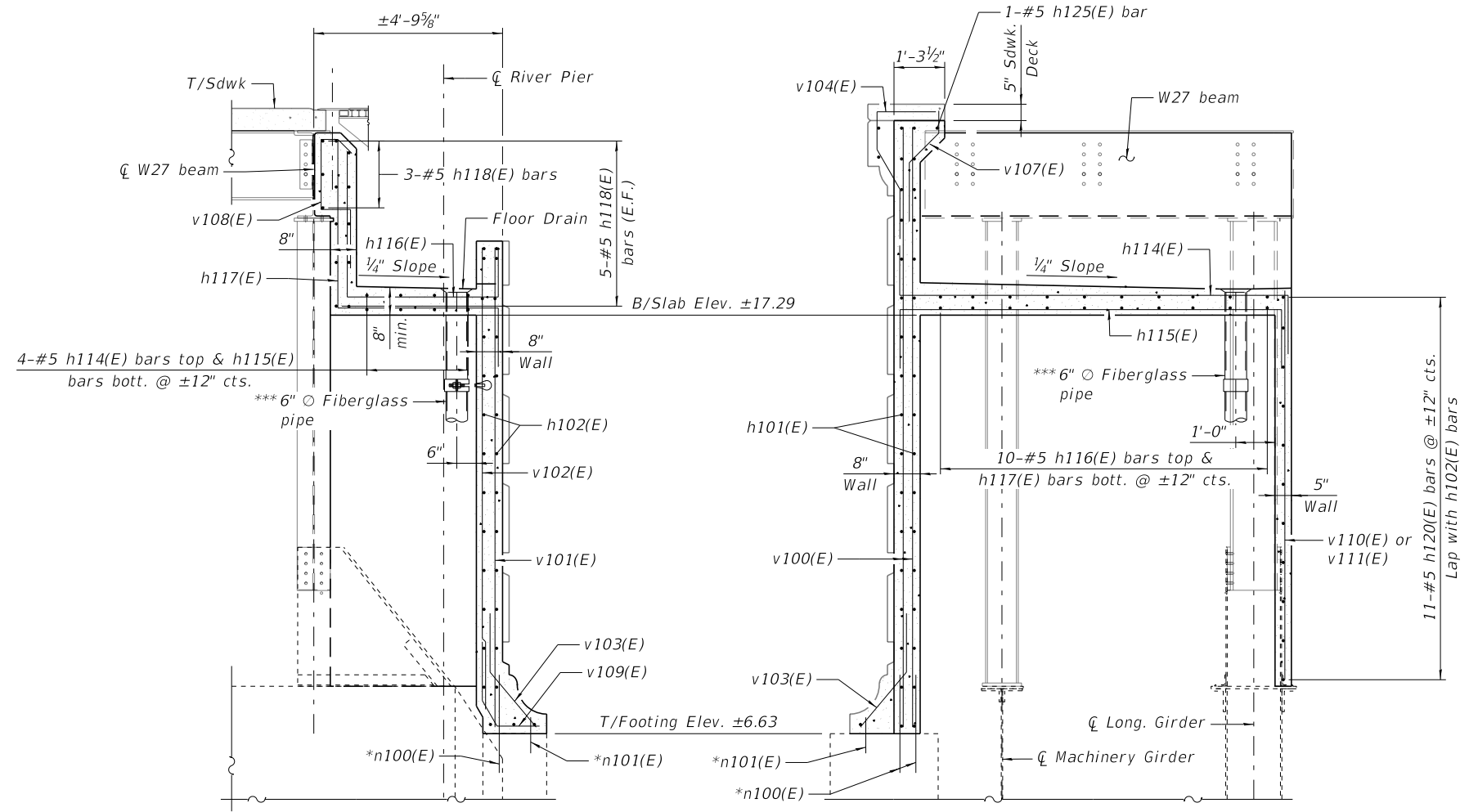
F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-85
CDOT PROJECT NO. E-1-525			128 of 210



**DETAIL 1 - BOTTOM - SW ENCLOSURE WALL**  
(Detail in NW, NE, & SE Enclosure Walls similar but opposite hand)

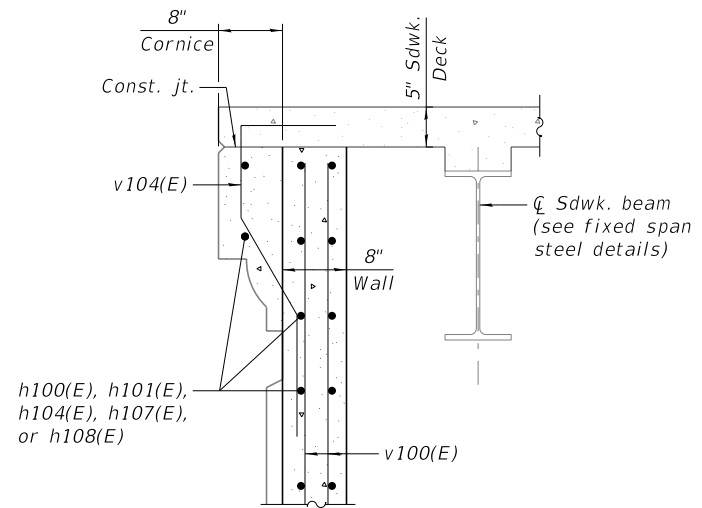


**DETAIL 1 - TOP - SW ENCLOSURE WALL**  
(Detail in NW, NE, & SE Enclosure Walls similar but opposite hand)

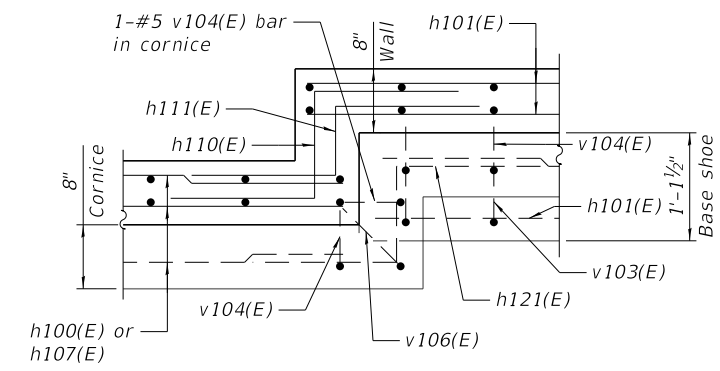


**SECTION A-A**  
(Section A'-A' similar but opposite hand)

**SECTION B-B**  
(Section B'-B' similar but opposite hand)



**SECTION C-C**



**DETAIL 2 - SW ENCLOSURE WALL**  
(Detail in NE Enclosure Wall similar but opposite hand)

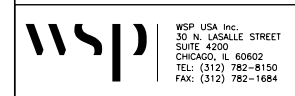
\* Drill and grout bars according to Article 584 of the Std. Specs., with a minimum embedment of 12" for n100(E) bars and 6" for h109(E) and n101(E) bars. Cost included in the cost of Reinforcement Bars, Epoxy Coated.

\*\* Cut bar to fit.

\*\*\* Fiberglass pipe shall conform to ASTM D2996, with short-time rupture strength hoop tensile stress of 30,000 psi min.  
The exterior surfaces of the floor drains shall be coated or pigmented by the manufacturer with a color that matches the concrete.  
The clamping device and inserts shall be galvanized according to AASHTO M-232. Cost of fiberglass pipe, clamping device and galvanizing included with Drainage System.

- Notes:
1. See sheets S-82 & S-84 for locations of Sections A-A & B-B and Detail 2.
  2. See sheets S-83 & S-85 for locations of Sections A'-A' & B'-B'.
  3. See sheets S-82 thru S-85 for locations of Section C-C and Detail 1.
  4. See Architectural plans for cornice and base shoe dimensions.
  5. See sheet S-88 for Bill of Materials, bar bend diagrams, and fiberglass pipe details and support.

0166057-E1525-S086-ENCLOSUREWALLDET1.DGN



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CHICAGO, IL 60602  
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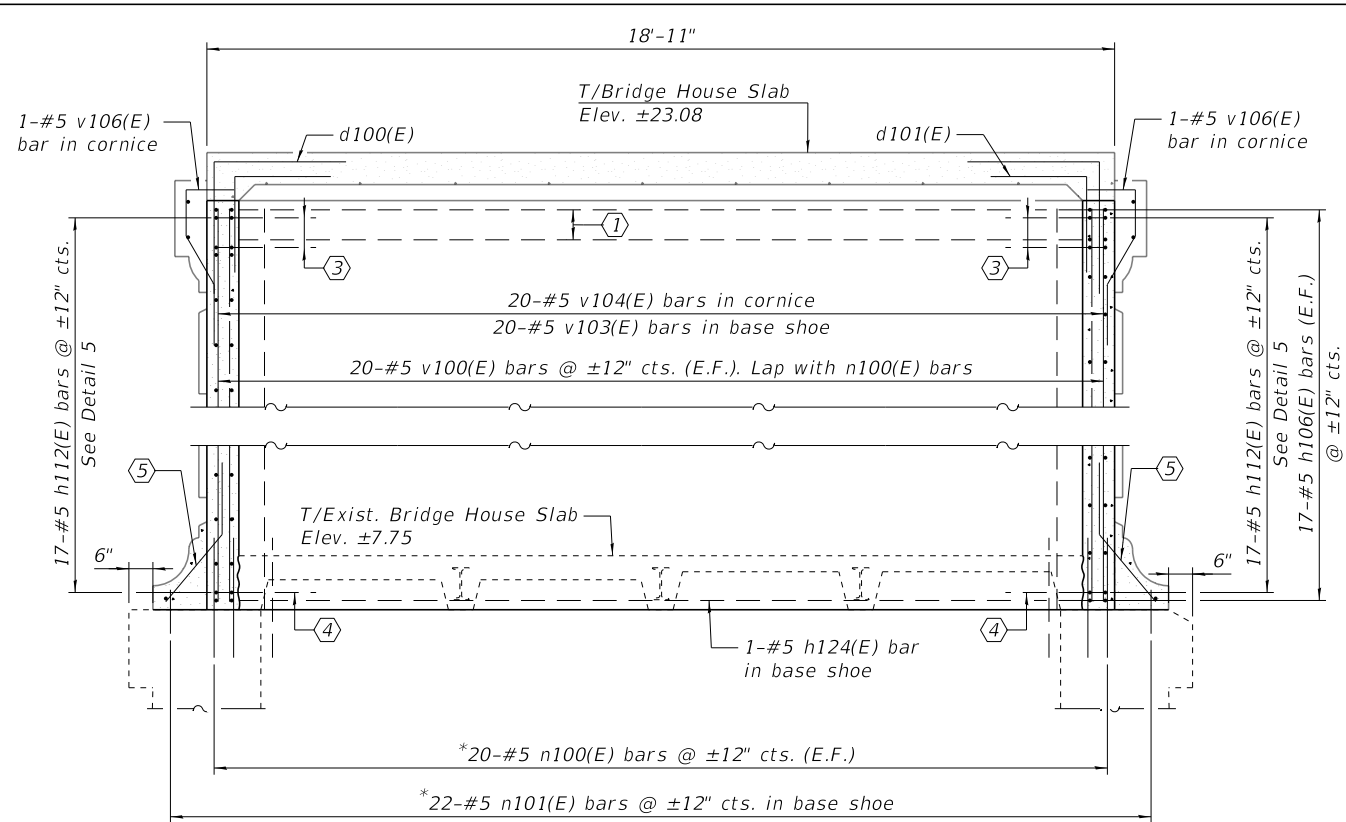
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DEPARTMENT OF TRANSPORTATION  
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**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

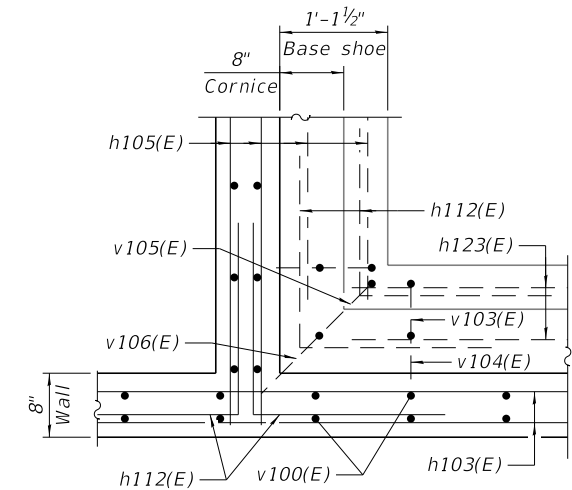
**ENCLOSURE WALLS:  
DETAILS I  
(STRUCTURE NO. 016-6057)**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-86
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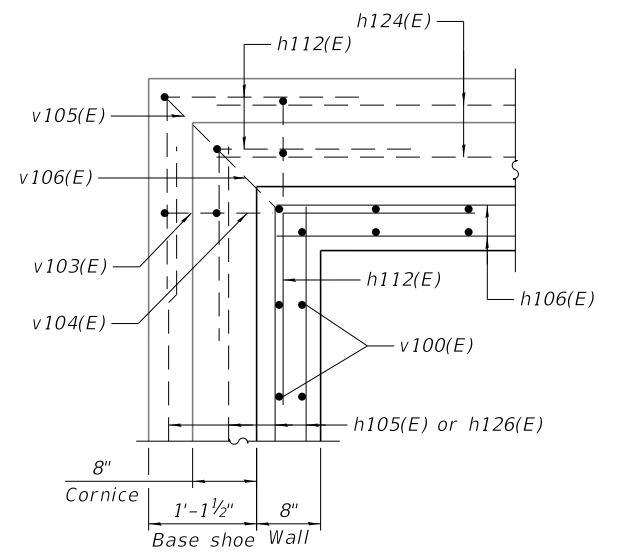




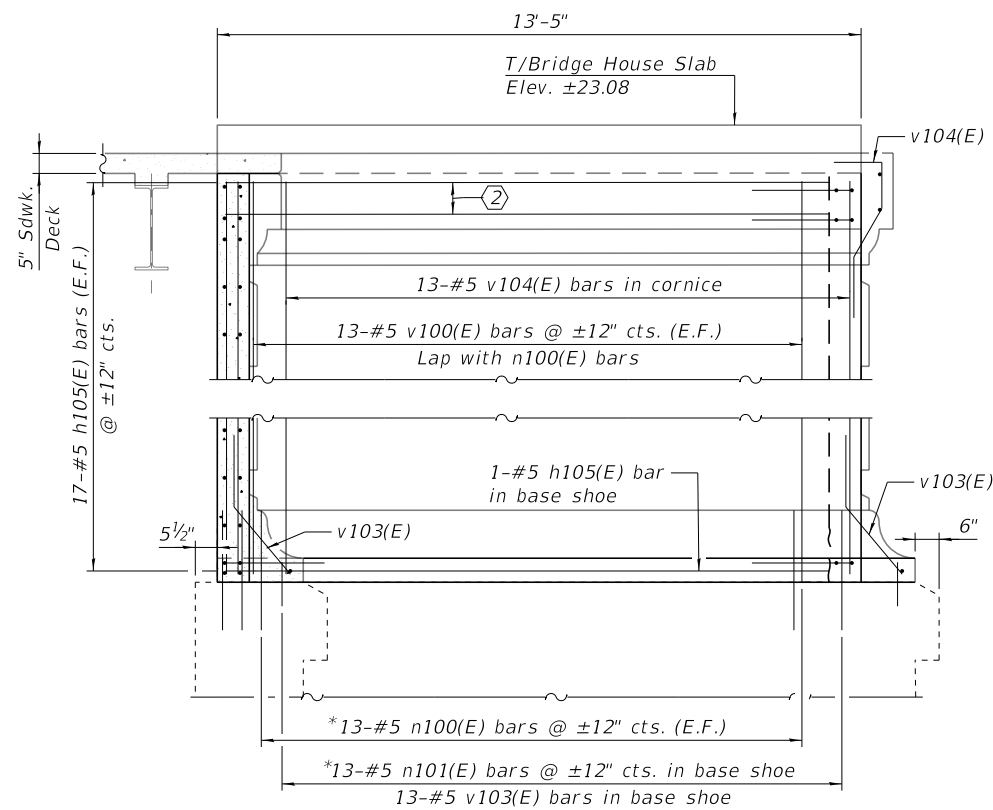
SECTION G-G



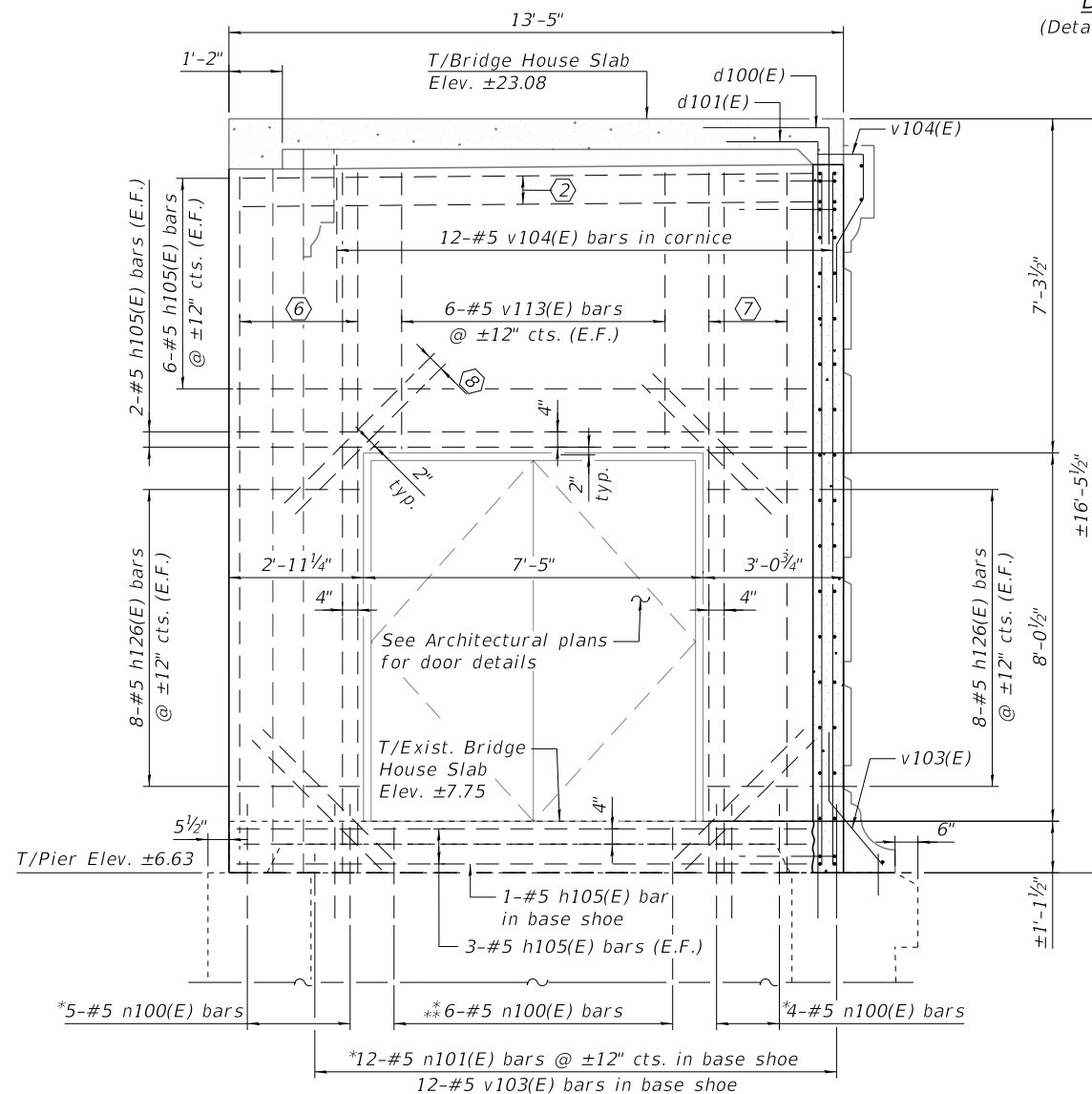
DETAIL 4 - NW ENCLOSURE WALL  
(Detail in SE Enclosure Wall similar but opposite hand)



DETAIL 5 - NW ENCLOSURE WALL  
(Detail in SE Enclosure Wall similar but opposite hand)



SECTION E-E



SECTION F-F

- ① 2-#5 h124(E) bars in cornice.
- ② 2-#5 h105(E) bars in cornice.
- ③ 2-#5 h112(E) bars in cornice.
- ④ 1-#5 h112(E) bar in base shoe
- ⑤ 1-#5 v105(E) bar in base shoe.
- ⑥ 5-#5 v100(E) bars (E.F.). Lap with n100(E) bars
- ⑦ 4-#5 v100(E) bars (E.F.). Lap with n100(E) bars
- ⑧ 2-#5 h125(E) bars @ 4\"/>

\* Drill and grout bars according to Article 584 of the Std. Specs., with a minimum embedment of 12\"/>

\*\* Cut bar to fit.

Notes:  
1. See sheets S-83 and S-85 for locations of Sections E-E to G-G and Details 4 & 5.  
2. See sheet S-88 for Bill of Materials and bar bend diagrams

0166057-E1525-S086-ENCLOSUREWALLDET2.DGN



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**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

**ENCLOSURE WALLS:  
DETAILS II  
(STRUCTURE NO. 016-6057)**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-87
CDOT PROJECT NO. E-1-525			130 of 210

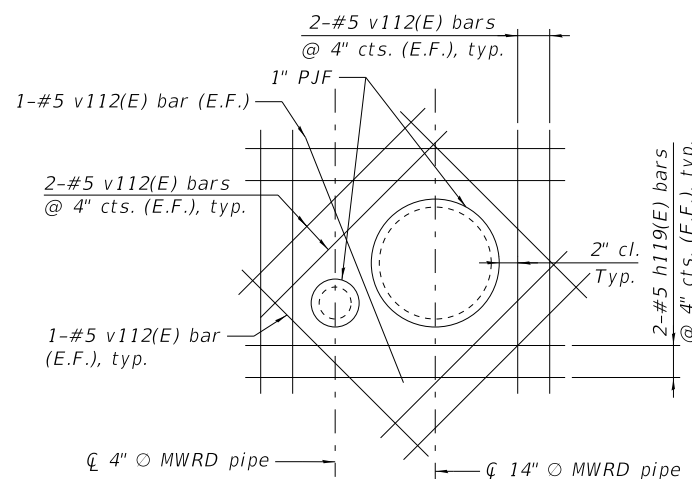
**BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
h100(E)	36	#5	28'-8"	
h101(E)	74	#5	21'-0"	
h102(E)	112	#5	9'-9"	
h103(E)	68	#5	19'-5"	
h104(E)	36	#5	10'-5"	
h105(E)	124	#5	13'-1"	
h106(E)	68	#5	18'-6"	
h107(E)	36	#5	37'-8"	
h108(E)	36	#5	28'-2"	
h109(E)	68	#5	2'-0"	
h110(E)	34	#5	5'-4"	
h111(E)	34	#5	4'-8"	
h112(E)	272	#5	4'-0"	
h113(E)	34	#5	2'-11"	
h114(E)	16	#5	12'-8"	
h115(E)	16	#5	12'-8"	
h116(E)	40	#5	8'-10"	
h117(E)	40	#5	9'-6"	
h118(E)	52	#5	11'-3"	
h119(E)	16	#5	3'-4"	
h120(E)	44	#5	5'-6"	
h121(E)	4	#5	5'-0"	
h122(E)	4	#5	10'-11"	
h123(E)	6	#5	11'-3"	
h124(E)	6	#5	19'-9"	
h125(E)	20	#5	4'-0"	
h126(E)	64	#5	2'-8"	
n100(E)	606	#5	2'-6"	
n101(E)	208	#5	0'-11"	
v100(E)	570	#5	15'-1"	
v101(E)	18	#5	24'-1"	
v102(E)	18	#5	23'-1"	
v103(E)	200	#5	3'-1"	
v104(E)	273	#5	4'-10"	
v105(E)	10	#5	3'-6"	
v106(E)	14	#5	5'-1"	
v107(E)	16	#5	3'-0"	
v108(E)	44	#4	4'-11"	
v109(E)	40	#5	3'-4"	
v110(E)	16	#5	9'-11"	
v111(E)	4	#5	13'-7"	
v112(E)	40	#5	2'-9"	
v113(E)	24	#5	6'-0"	
Reinforcement Bars, Epoxy Coated		Pound	29,890	
High Performance Concrete Structures		Cu. Yd.	164.7	
Form Liner Textured Surface		Sq. Ft.	2,732	

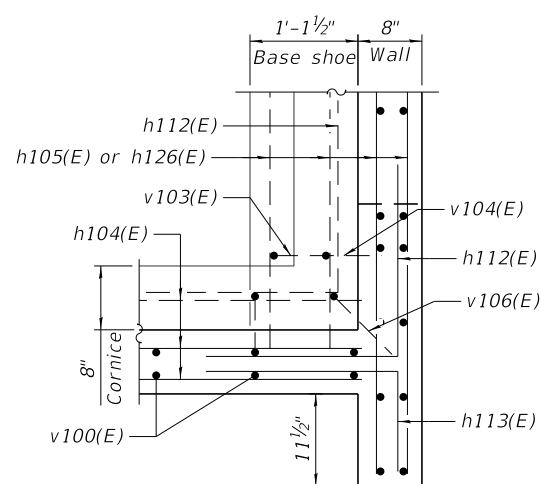
**MINIMUM BAR LAP**  
#5 bar = 2'-0"

\*Fiberglass pipe shall conform to ASTM D2996, with short-time rupture strength hoop tensile stress of 30,000 psi min.  
The exterior surfaces of the floor drains shall be coated or pigmented by the manufacturer with a color that matches the concrete.  
The clamping device and inserts shall be galvanized according to AASHTO M-232. Cost of fiberglass pipe, clamping device and galvanizing included with Drainage System.

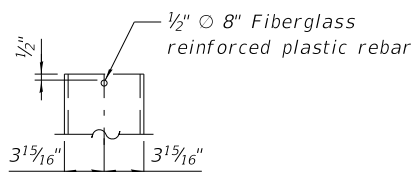
- Notes:  
1. See sheets S-82 and S-83 for location of Detail 3.  
2. See sheets S-83 and S-85 for location of Detail 6.



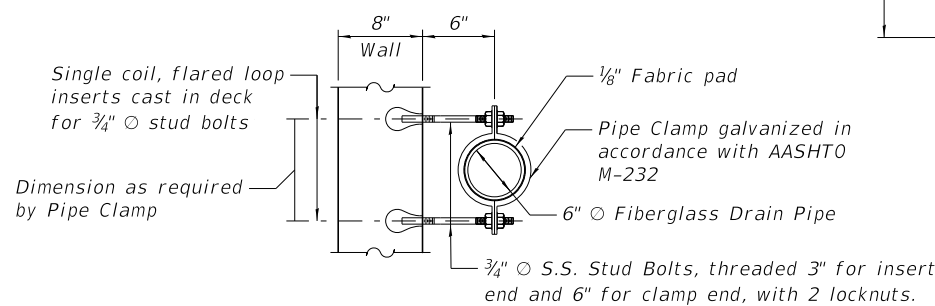
**DETAIL 3**  
(Contractor to locate MWRD pipes)



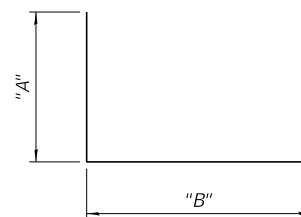
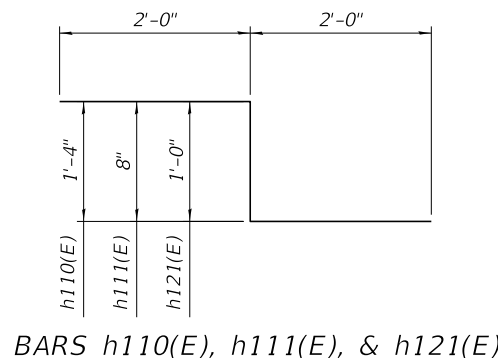
**DETAIL 6 - NW ENCLOSURE WALL**  
(Detail in SE Enclosure Wall similar but opposite hand)



**FIBERGLASS PIPE\***

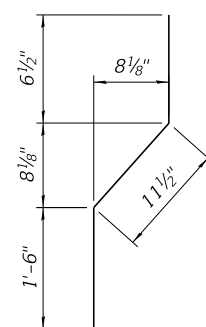


**PIPE SUPPORT DETAIL\***

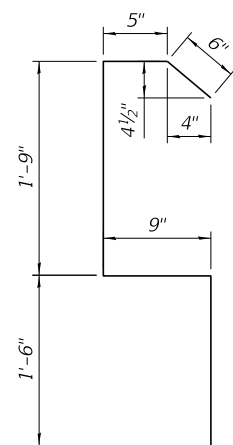


**BARS h112(E), h113(E), h118(E), & h120(E)**

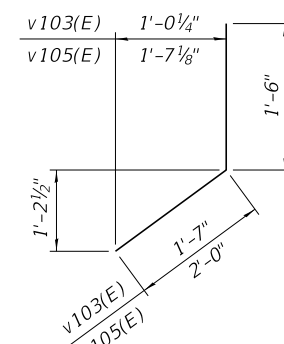
Bar	"A"	"B"
h112(E)	2'-0"	2'-0"
h113(E)	11"	2'-0"
h118(E)	1'-6"	9'-9"
h120(E)	1'-6"	4'-0"



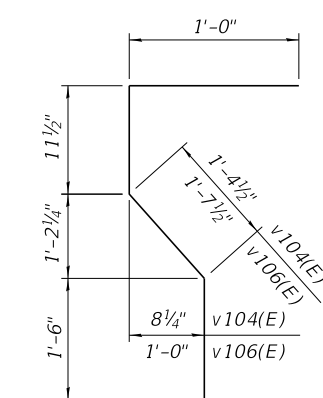
**BAR v107(E)**



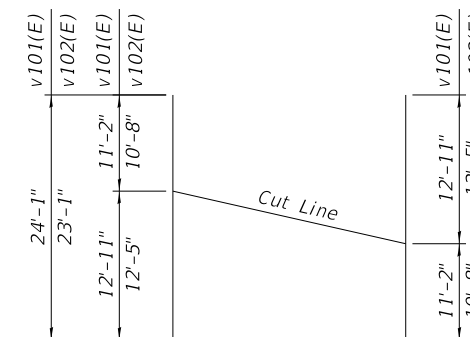
**BAR v108(E)**



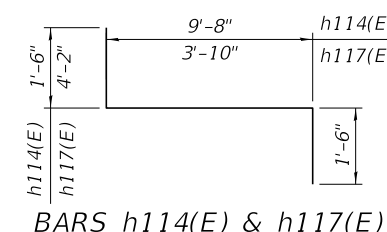
**BARS v103(E) & v105(E)**



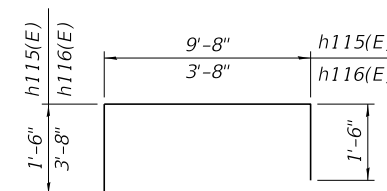
**BARS v104(E) & v106(E)**



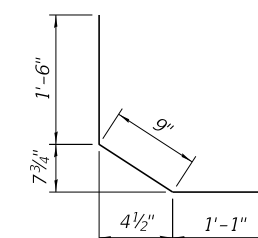
**FIELD CUTTING DIAGRAM**  
(Order v101(E) & v102(E) full length, cut as shown and use the remainder of bars in opposite face)



**BARS h114(E) & h117(E)**



**BARS h115(E) & h116(E)**



**BAR v109(E)**

0166057-E1525-S088-ENCLOSUREWALLDET3.DGN



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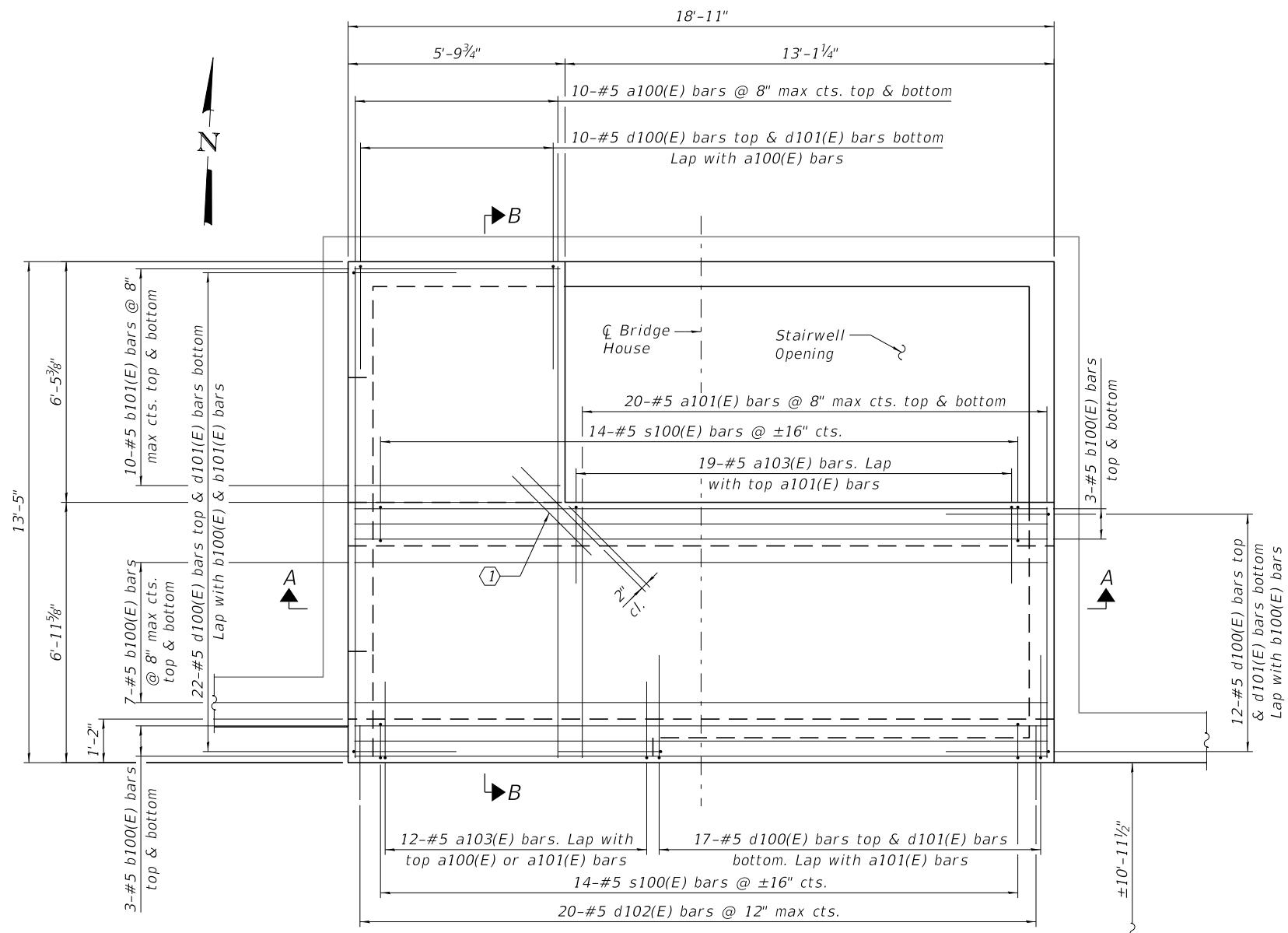
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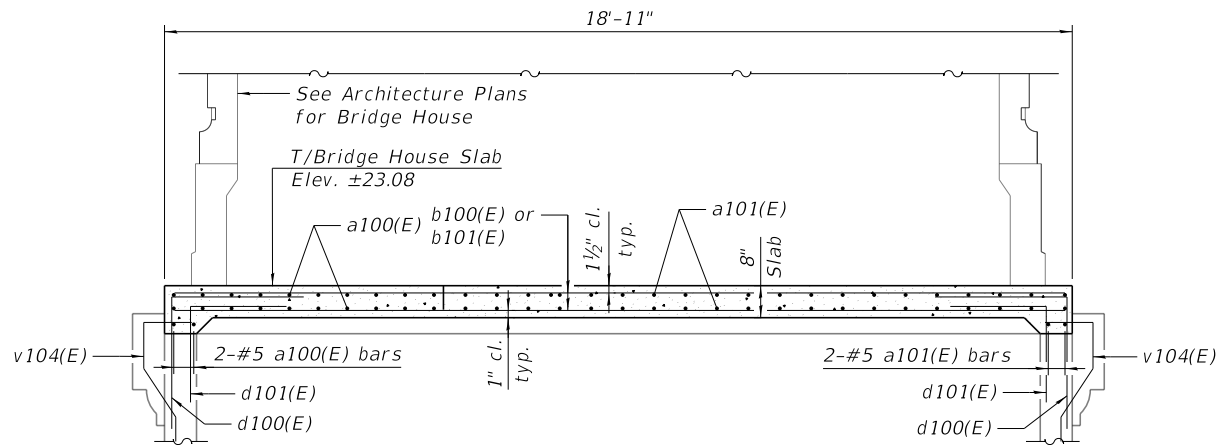
**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

**ENCLOSURE WALLS:  
DETAILS III  
(STRUCTURE NO. 016-6057)**

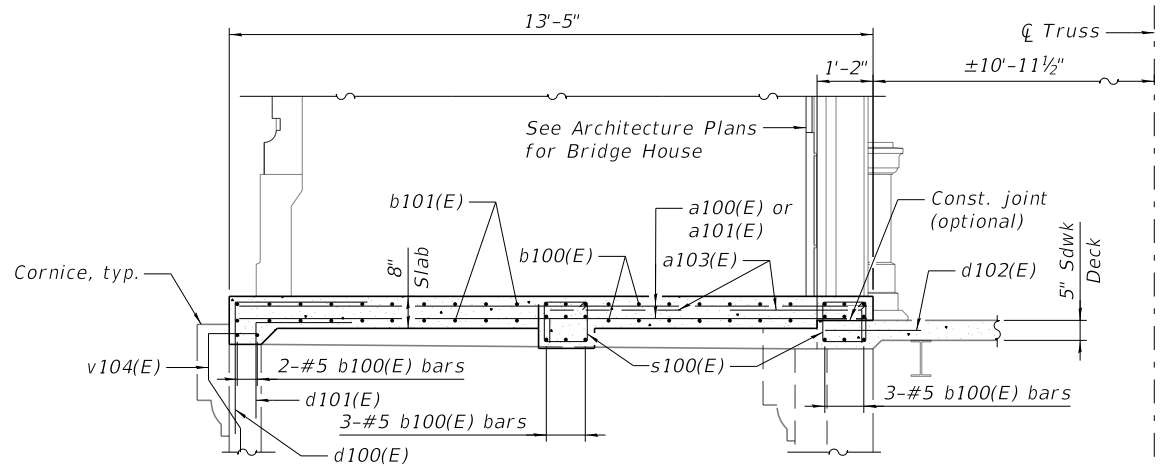
F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-88
CDOT PROJECT NO. E-1-525			131 of 210



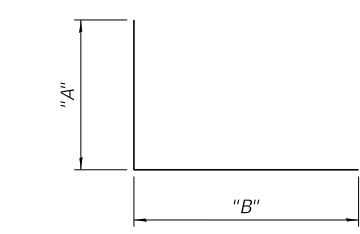
**BRIDGE HOUSE SLAB - PLAN**  
(NW Bridge House is shown. SE Bridge House similar but opposite hand)



**SECTION A-A**  
(Walls reinforcement are not shown for clarity)

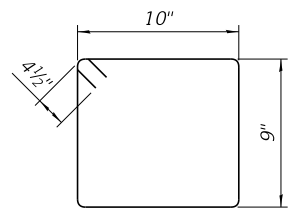


**SECTION B-B**  
(Walls reinforcement are not shown for clarity)



**BARS a103(E), d100(E), & d101(E)**

Bar	"A"	"B"
a103(E)	10"	2'-0"
d100(E)	2'-9"	2'-9"
d101(E)	2'-0"	2'-0"



**BAR s100(E)**

**BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a100(E)	44	#5	13'-2"	—
a101(E)	84	#5	6'-8"	—
a102(E)	8	#5	3'-0"	—
a103(E)	62	#5	2'-10"	┘
b100(E)	64	#5	18'-7"	—
b101(E)	44	#5	5'-6"	—
d100(E)	122	#5	5'-6"	┘
d101(E)	122	#5	4'-0"	—
d102(E)	40	#5	2'-0"	—
s100(E)	56	#4	3'-11"	┘
Reinforcement Bars, Epoxy Coated			Pound	4,340
High Performance Concrete Structures			Cu. Yd.	10.6

Quantity shown includes NW and SE houses.

① 2-#5 a102(E) bars @ 4" cts. top & bottom.

Notes:  
1. See sheets S-91 to S-93 for Bridge House connection details.

0166057-E1525-S089-HOUSESLABDET.DGN

**wsp**  
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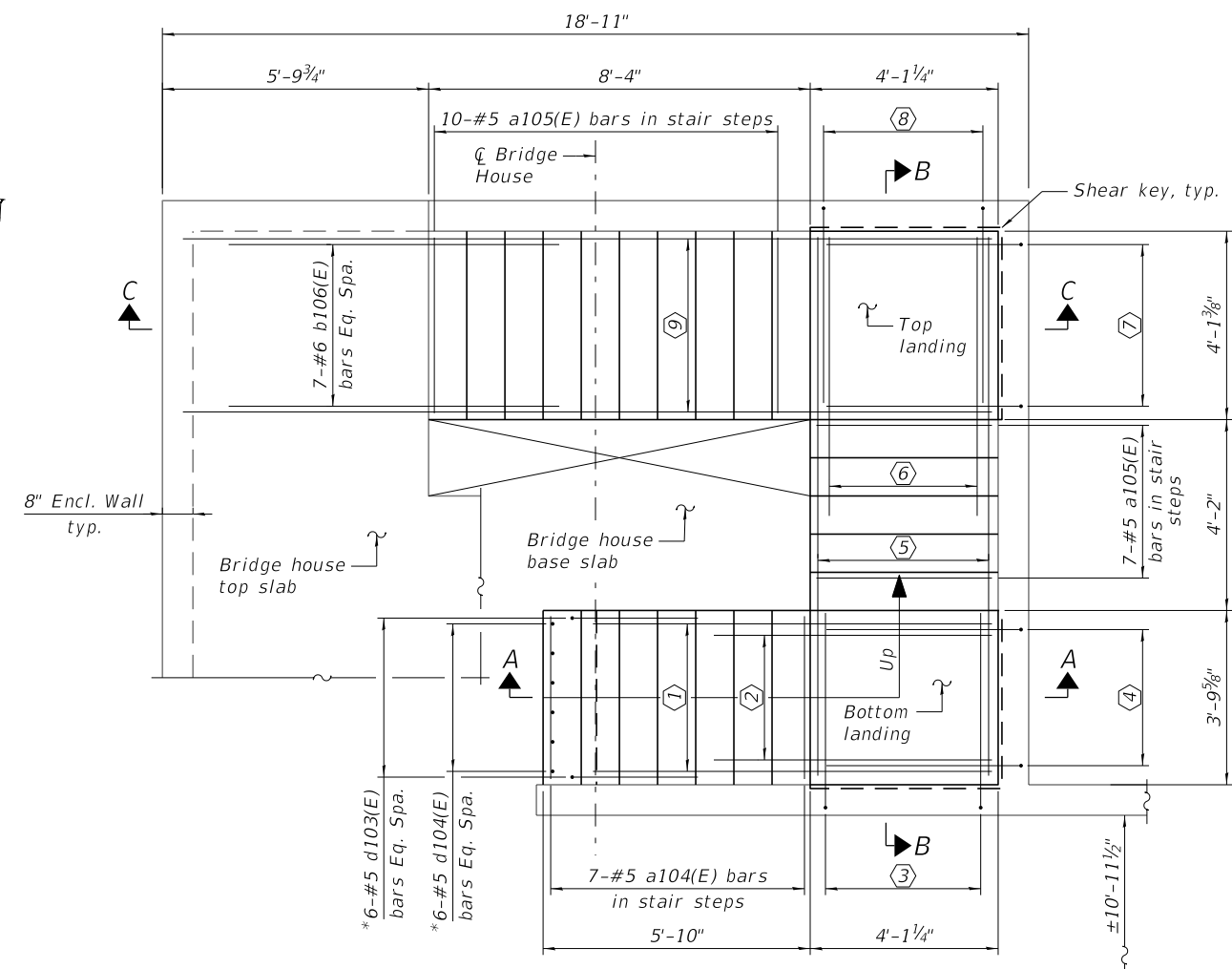
**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

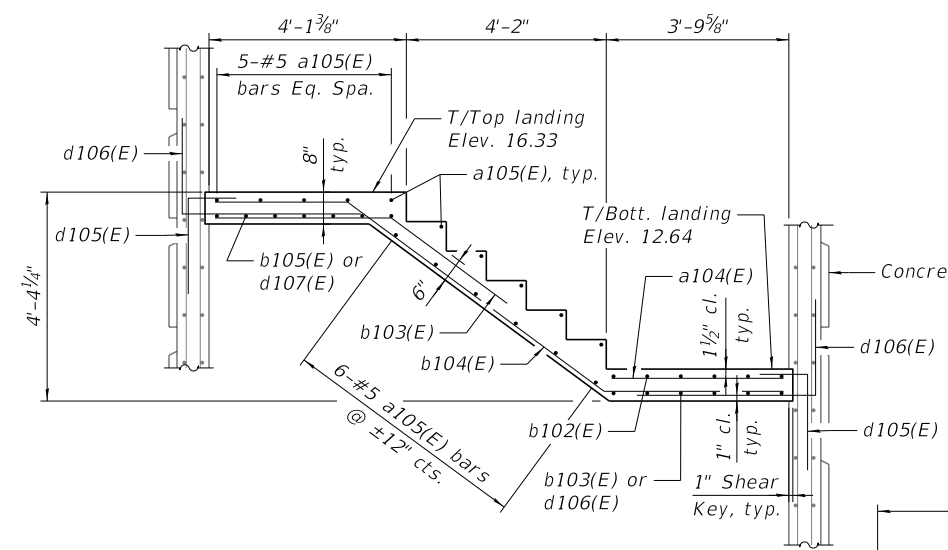
**ENCLOSURE WALLS:  
HOUSE SLAB DETAILS  
(STRUCTURE NO. 016-6057)**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-89
CDOT PROJECT NO. E-1-525			132 of 210

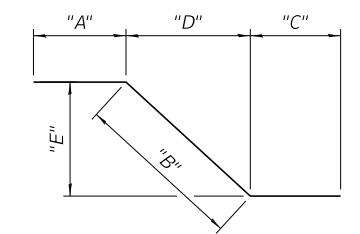
\* Drill and grout bars according to Article 584 of the Std. Specs., with a minimum embedment of 4". Cost included in the cost of Reinforcement Bars, Epoxy Coated.



**BRIDGE HOUSE SLAB - PLAN**  
(NW Bridge House is shown. SE Bridge House similar but opposite hand)

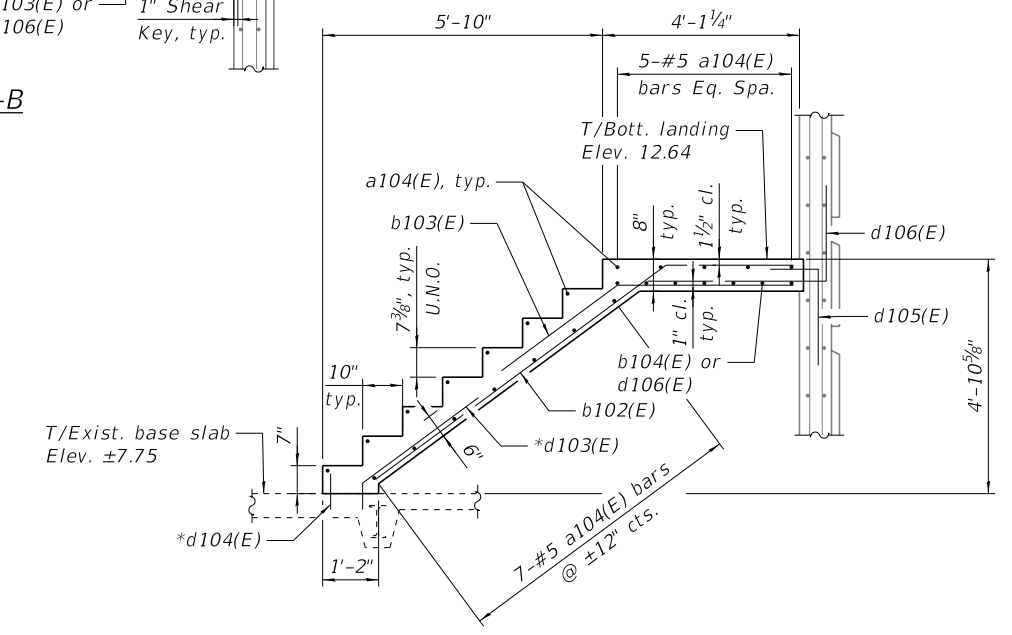


**SECTION B-B**

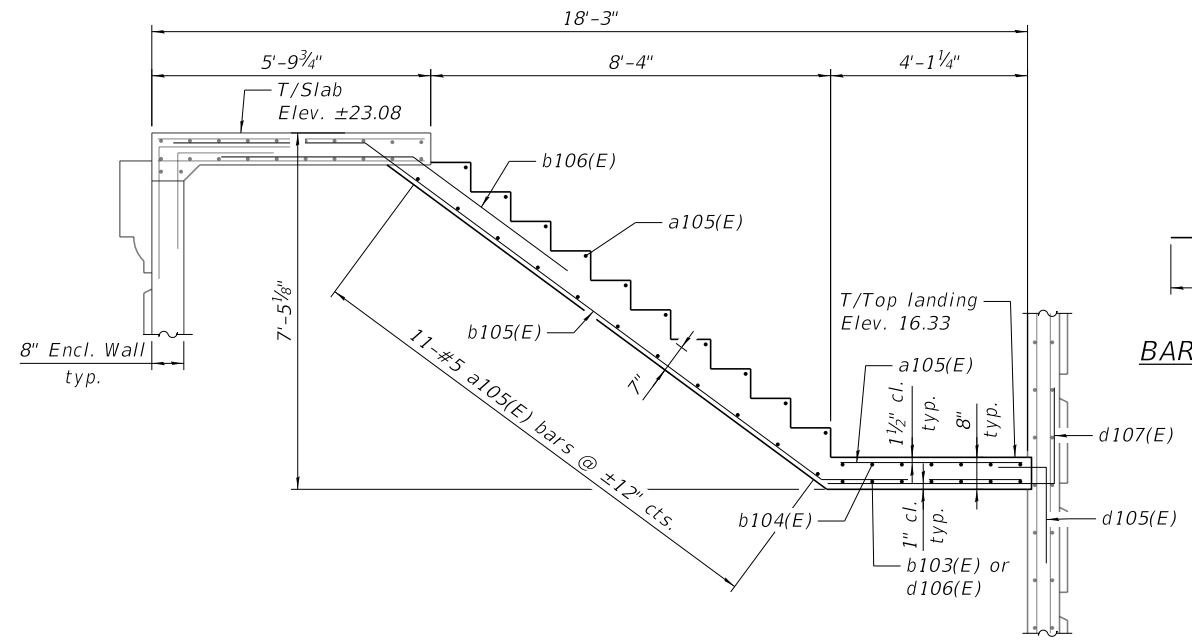


**BARS b102(E) thru b106(E)**

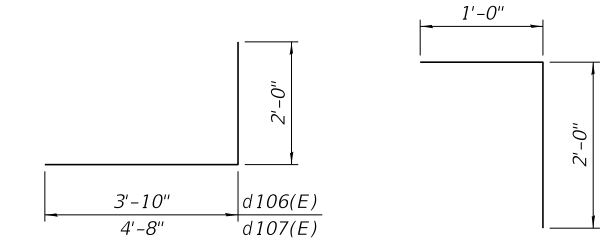
Bar	"A"	"B"	"C"	"D"	"E"
b102(E)	2'-9"	7'-6"	na	6'-0 <sup>3</sup> / <sub>8</sub> "	4'-5 <sup>3</sup> / <sub>8</sub> "
b103(E)	3'-9"	3'-0"	na	2'-5"	1'-9 <sup>3</sup> / <sub>8</sub> "
b104(E)	2'-8"	6'-10"	3'-9"	5'-6"	4'-0 <sup>3</sup> / <sub>8</sub> "
b105(E)	4'-0"	12'-0"	4'-2"	9'-7 <sup>1</sup> / <sub>8</sub> "	7'-1 <sup>1</sup> / <sub>2</sub> "
b106(E)	4'-0"	4'-0"	na	3'-2 <sup>3</sup> / <sub>8</sub> "	2'-4 <sup>1</sup> / <sub>2</sub> "



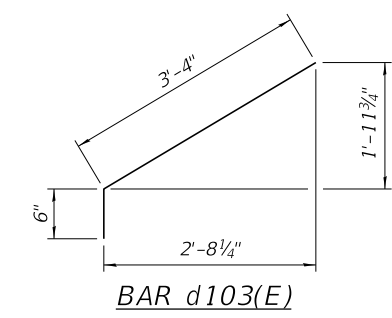
**SECTION A-A**



**SECTION C-C**



**BARS d106(E) & d107(E) BAR d105(E)**



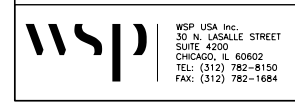
**BAR d103(E)**

- ① 6-#5 b102(E) bars Eq. Spa.
- ② 6-#5 b103(E) bars Eq. Spa. Lap with d106(E) bars.
- ③ 4-#5 d105(E) bars top and 7-#5 d106(E) bars bottom Eq. Spa.
- ④ 4-#5 d105(E) bars top and 6-#5 d106(E) bars bottom Eq. Spa.
- ⑤ 7-#5 b104(E) bars Eq. Spa. Lap with d106(E) bars at bottom landing.
- ⑥ 7-#5 b103(E) bars Eq. Spa. Lap with d106(E) bars.
- ⑦ 4-#5 d105(E) bars top and 7-#6 d107(E) bars bottom Eq. Spa.
- ⑧ 4-#5 d105(E) bars top and 7-#5 d106(E) bars bottom Eq. Spa.
- ⑨ 7-#6 b105(E) bars Eq. Spa. Lap with d107(E) bars at top landing.

**BILL OF MATERIAL**

Bar	No.	Size	Length	Shape	
a104(E)	38	#5	3'-6"	—	
a105(E)	74	#5	3'-10"	—	
b102(E)	12	#5	10'-3"	—	
b103(E)	26	#5	6'-9"	—	
b104(E)	14	#5	13'-3"	—	
b105(E)	14	#6	20'-2"	—	
b106(E)	14	#6	8'-0"	—	
d103(E)	12	#5	3'-10"	—	
d104(E)	12	#5	0'-9"	—	
d105(E)	32	#5	3'-0"	—	
d106(E)	40	#5	5'-10"	—	
d107(E)	14	#6	6'-8"	—	
Reinforcement Bars, Epoxy Coated				Pound	2,080
High Performance Concrete Structures				Cu. Yd.	8.8

0166057-E1525-S090-STAIRWELLD.TGN



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**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

**WEBSTER AVENUE BRIDGE OVER THE NORTH BRANCH CHICAGO RIVER**

**ENCLOSURE WALLS: HOUSE STAIRWELL DETAILS (STRUCTURE NO. 016-6057)**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-90
CDOT PROJECT NO. E-1-525			133 of 210

**GENERAL NOTES - BRIDGE HOUSE**

**STRUCTURAL STEEL (MWFRS)**

1. Cost of bridge house structural steel included in the cost of Furnishing and Erecting Structural Steel.
2. The structural design for the bridge house structural steel, Main Wind Force Resisting System (MWFRS) is based on the 2017 AASHTO LRFD Bridge Design Specification, 8th Edition and the following wind loading:  
Basic wind speed, strength 115 mph (100-year MRI)  
Basic wind speed, service 70 mph (25-year MRI)  
Wind exposure category B
3. The intermediate bracing is based on wind loads above and dead load of 50 psf, superimposed dead load of 10 psf, and live load of 10 psf.

**COLD FORMED STEEL (CFS) FRAMING**

1. Cost of cold formed steel framing shall not be measured for payment but considered part of Precast Concrete Wall item.
2. The CFS framing shown is for information purposes only. The CFS framing is to support vertical loads from the upper portion of bridge house which shall include dead load, roof live load, and superimposed dead load.
3. The Contractor shall follow Architectural Detailed Specification Section 054000 - Cold-Formed Metal Framing and the structural performance and standards set forth within the specification.

**PRECAST CONCRETE WALLS**

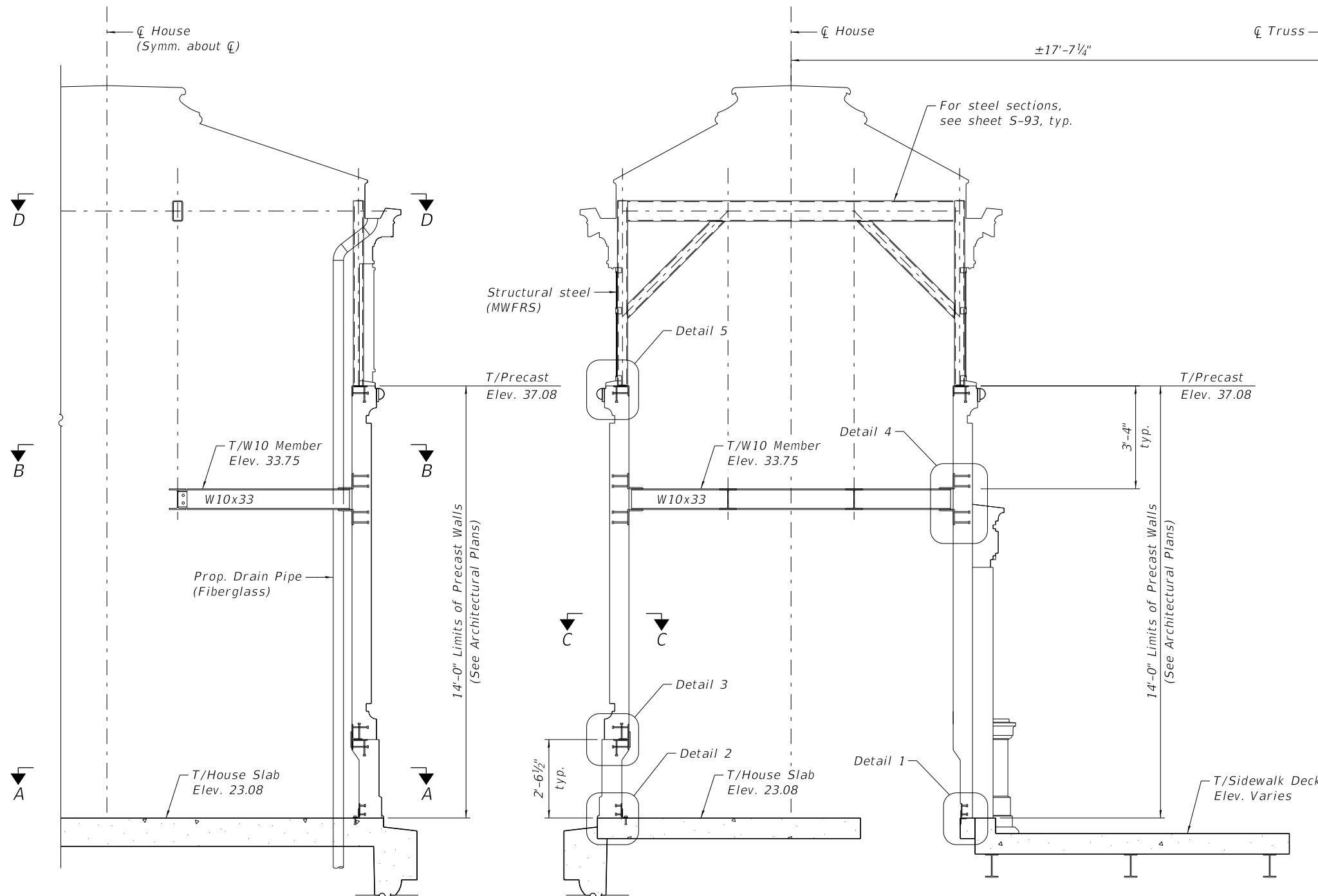
1. Cost of precast concrete walls included in the cost of Precast Concrete Wall. See architectural special provisions.
2. Precast concrete walls shall be designed for a minimum of the connection forces shown in the plans and the loads specified by the manufacturer. Precast manufacturer shall work with cold formed steel framing (CFS) delegated designer and account for additional vertical forces from CFS framing.

**Notes:**

1. Drainage system shall connect through existing lower slab. See sheet S-89 for details. See special provisions.
2. See sheet S-88 for pipe support detail.
3. See sheet S-92 for Section A-A, B-B & C-C and Detail 1 thru 5.
4. See sheet S-93 for Section D-D.

**BILL OF MATERIAL**

Item	Unit	Quantity
Drainage System	L. Sum	1



**HALF LONGITUDINAL SECTION  
THRU BRIDGE HOUSE**

**TYPICAL TRANSVERSE SECTION  
THRU BRIDGE HOUSE**

(NW House looking east, SE House looking west)

0166057-E1525-S088-BRIDGEHOUSESTRUCTDET1.DGN



WSP USA Inc.  
30 N. LA SALLE STREET  
SUITE 4200  
CHICAGO, IL 60602  
TEL: (312) 782-8150  
FAX: (312) 782-1884

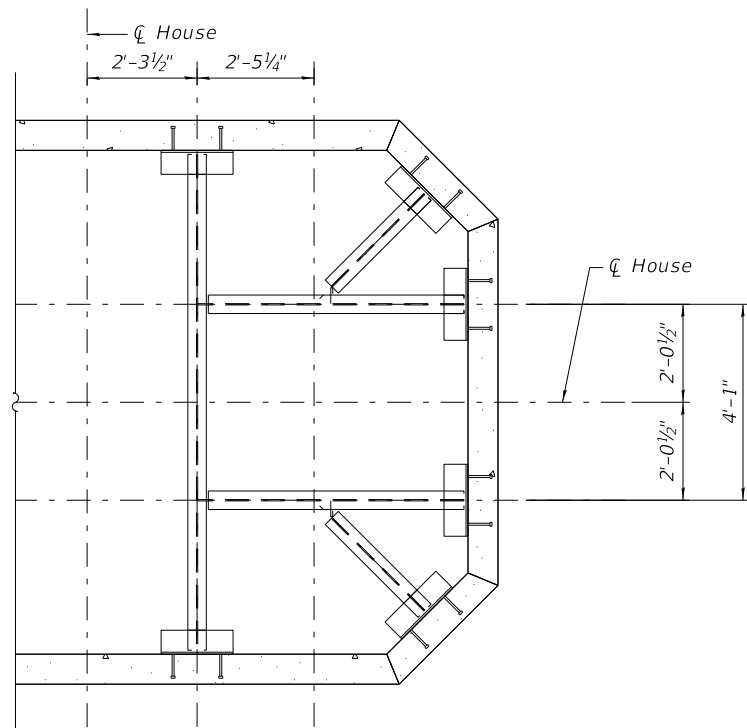
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	CHECKED - JIG	REVISIONS -

**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

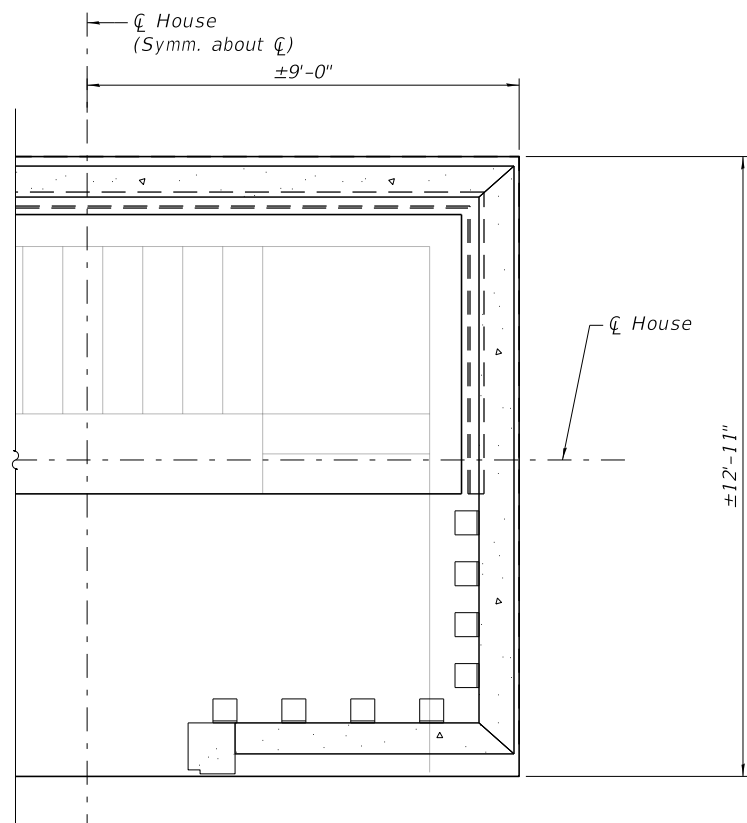
**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

**BRIDGE HOUSE:  
STRUCTURAL DETAILS I  
(STRUCTURE NO. 016-6057)**

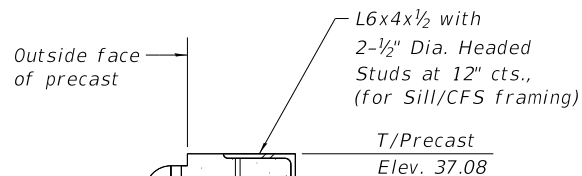
F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-91
CDOT PROJECT NO. E-1-525			134 of 210



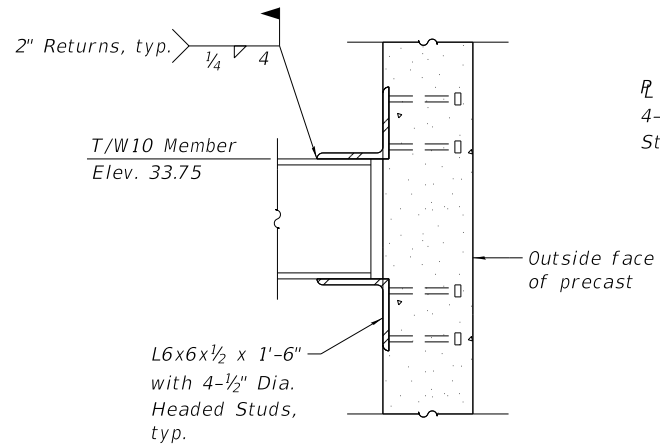
SECTION B-B



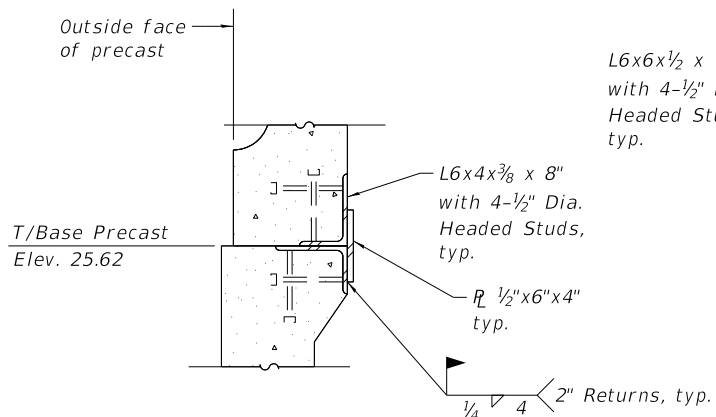
SECTION A-A



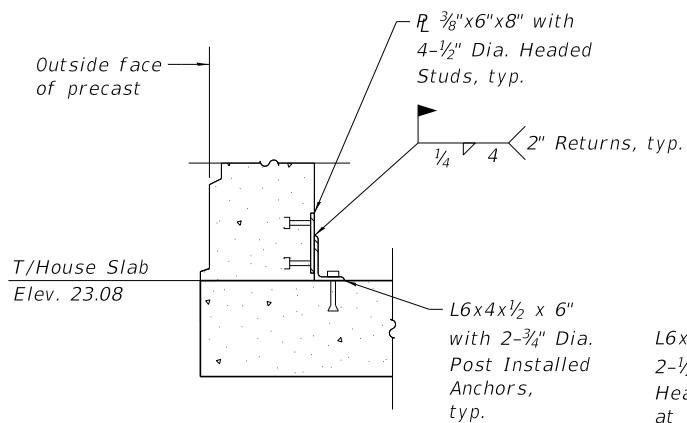
DETAIL 5



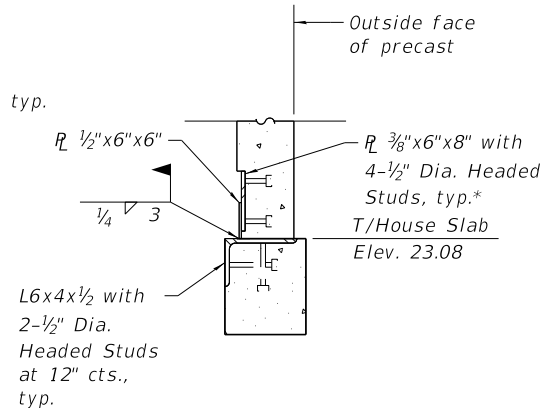
DETAIL 4



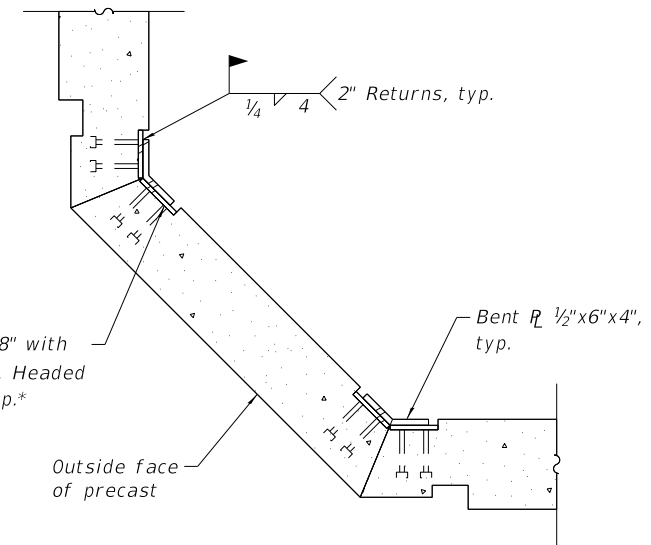
DETAIL 3



DETAIL 2



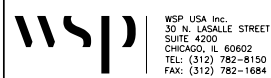
DETAIL 1



SECTION C-C  
(TYP. SIDE PANEL-TO-PANEL CONNECTION)

\* Recess per Manufacturer

0166057-E1525-S089-BRIDGEHOUSESTRUCTUREDETAIL.DGN



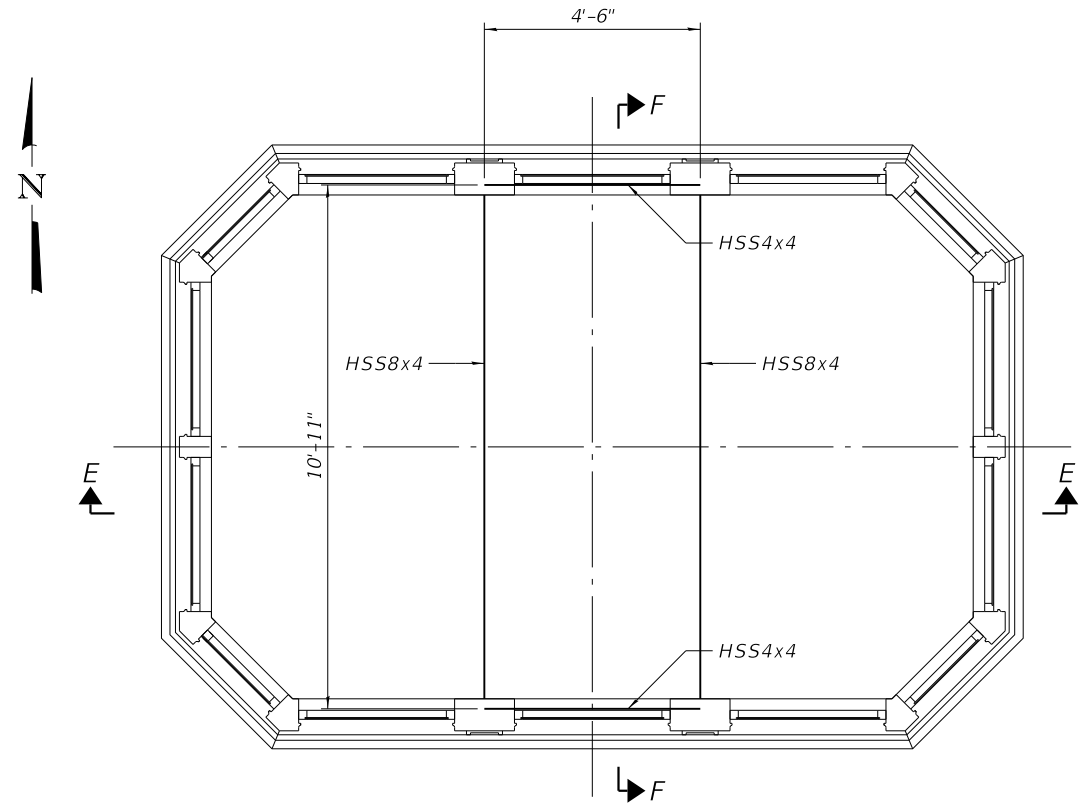
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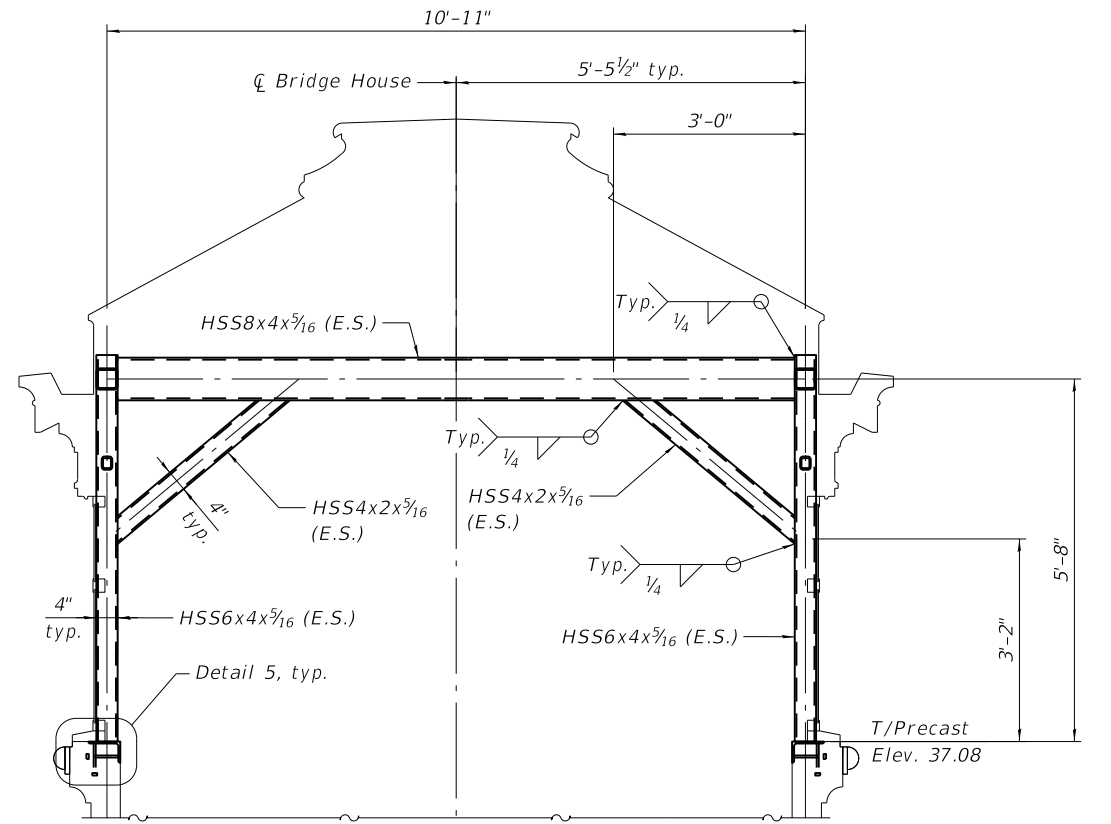
**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

**BRIDGE HOUSE:  
STRUCTURAL DETAIL II  
(STRUCTURE NO. 016-6057)**

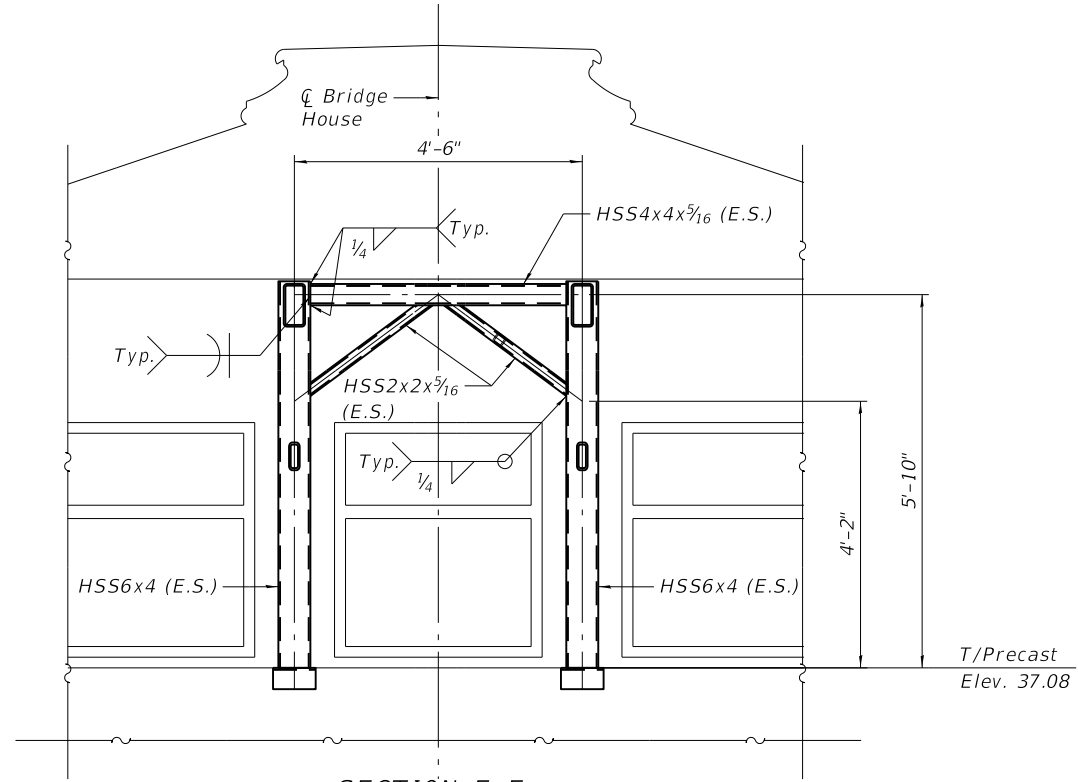
F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-92
CDOT PROJECT NO. E-1-525			135 of 210



SECTION D-D  
(FRAMING PLAN)



SECTION F-F



SECTION E-E

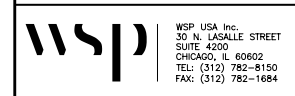
HOUSE CFS FRAMING TABLE

CFS Member	No. - Size Type (Configuration)	Min. Thickness	Spacing	I.D. (Min. Size)
Base Track	1 - 4x2 Track	0.0451"	-	400T200-43
Jamb	2 - 4x1.625 Studs with 1 - 4x1.25 Track (Box)	0.0451"	-	400S162-43 400T125-43
Head Track	2 - 4x1.25 Tracks with 2 - 4x1.625 Studs (Box)	0.0451"	-	400T125-43 400S162-43
Header	1 - 4x2 Track	0.0451"	-	400T200-43
Roof Rafter	1 - 8x2 Studs	0.0451"	at 16"	800S200-43
Roof Joist	1 - 4x1.625 Studs	0.0451"	at 16"	400S162-43
Ridge Joist	1 - 8x2 Studs	0.0451"	-	800S200-43

Note: See Architectural plans for locations and details, and see Special Provisions.

- Notes:
1. Load carrying components designated "NTR" shall conform to the Impact Testing Requirement, Zone 2.
  2. See sheet S-91 for location of Section D-D.
  3. See sheet S-92 for Detail 5.

0166057-E1525-S090-BRIDGEHOUSESTRUCTUREDETAIL.DGN



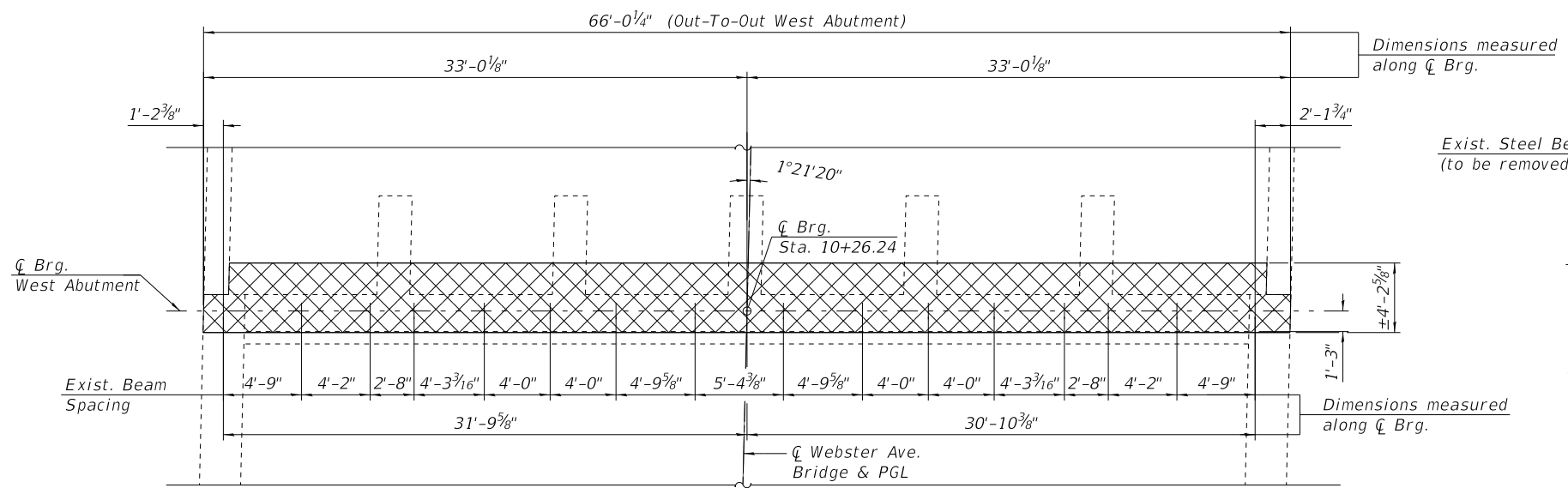
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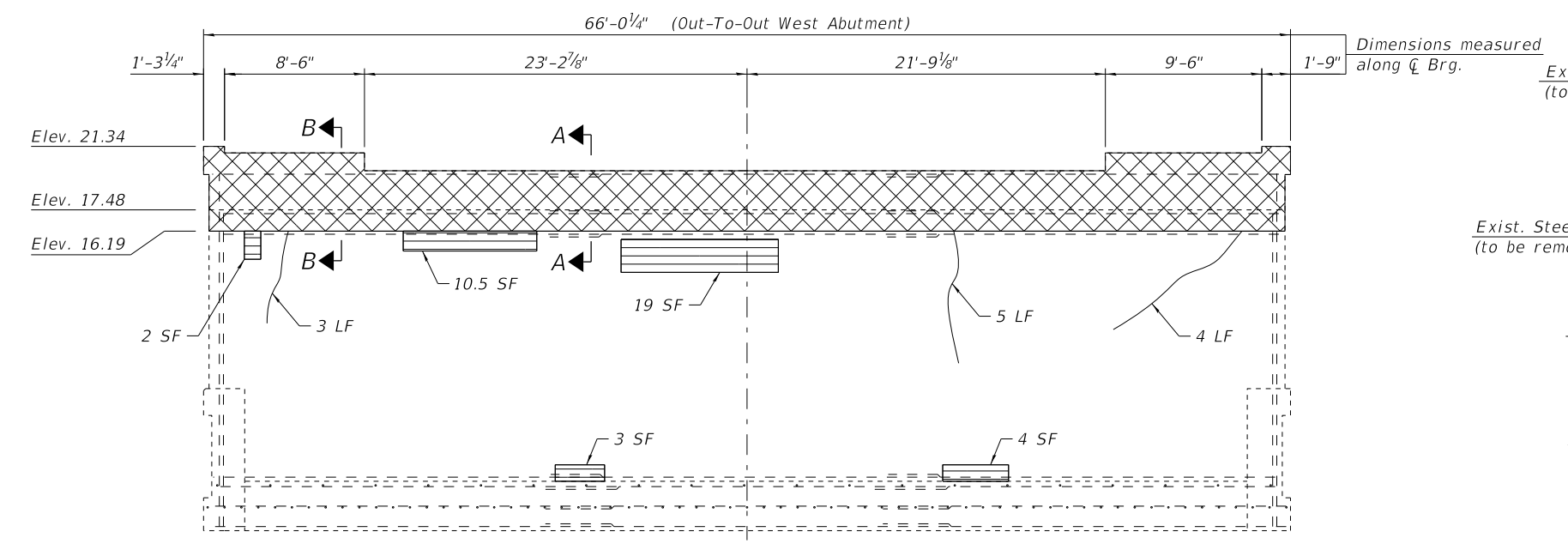
**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

**BRIDGE HOUSE:  
STRUCTURAL DETAILS III  
(STRUCTURE NO. 016-6057)**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-93
CDOT PROJECT NO. E-1-525			136 of 210



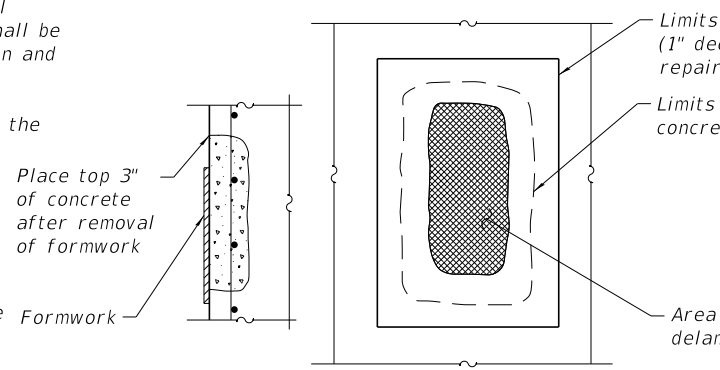
**PLAN**



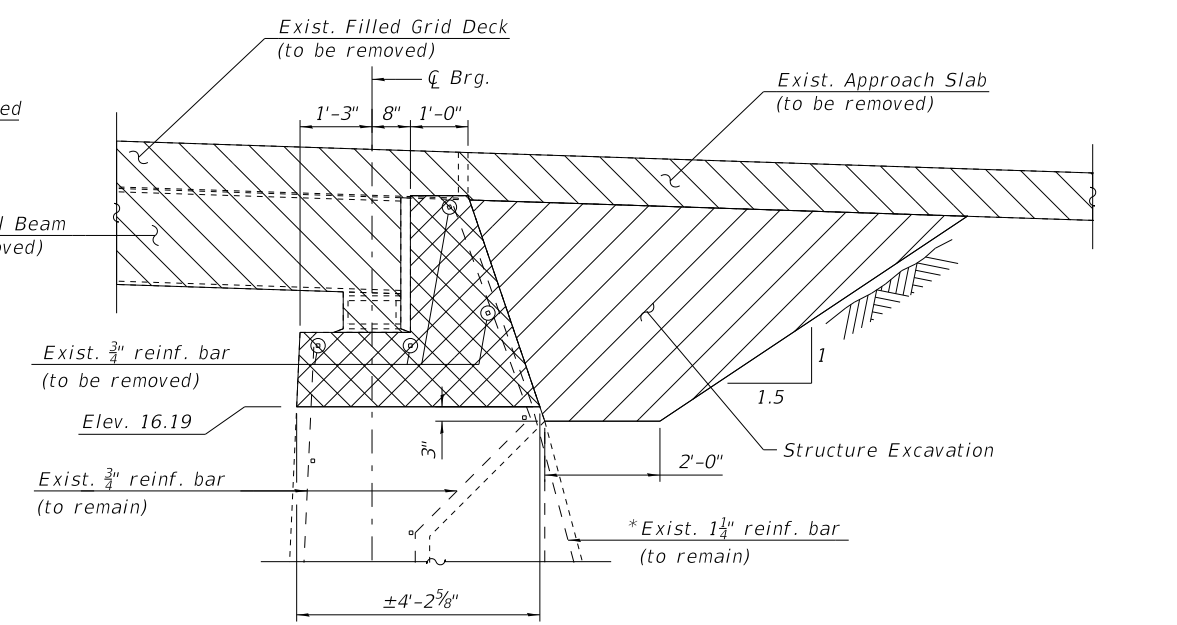
**ELEVATION**

**NOTES:**

1. The elevations and limits of the existing abutment presented on this sheet have been taken from historical design drawings and may not represent "as-built" conditions. All existing structure elevations and limits shall be field-verified by the Contractor, and coordinated with the Engineer, prior to ordering materials, fabrication and construction of proposed abutment modification.
2. Quantities and limits shown are estimated for bidding purposes only. The actual areas to be repaired, and the type(s) of repairs to be used, will be determined by the Engineer in the field at the time of construction.
3. It shall be the Contractor's responsibility to temporarily support, relocate and re-install existing utilities interfering with the work.
4. For Bill of Material, see Sheet S-95.
5. For removal of existing filled grid deck, structural steel removal and approach slab/sidewalk removal, see Removal Sheets.

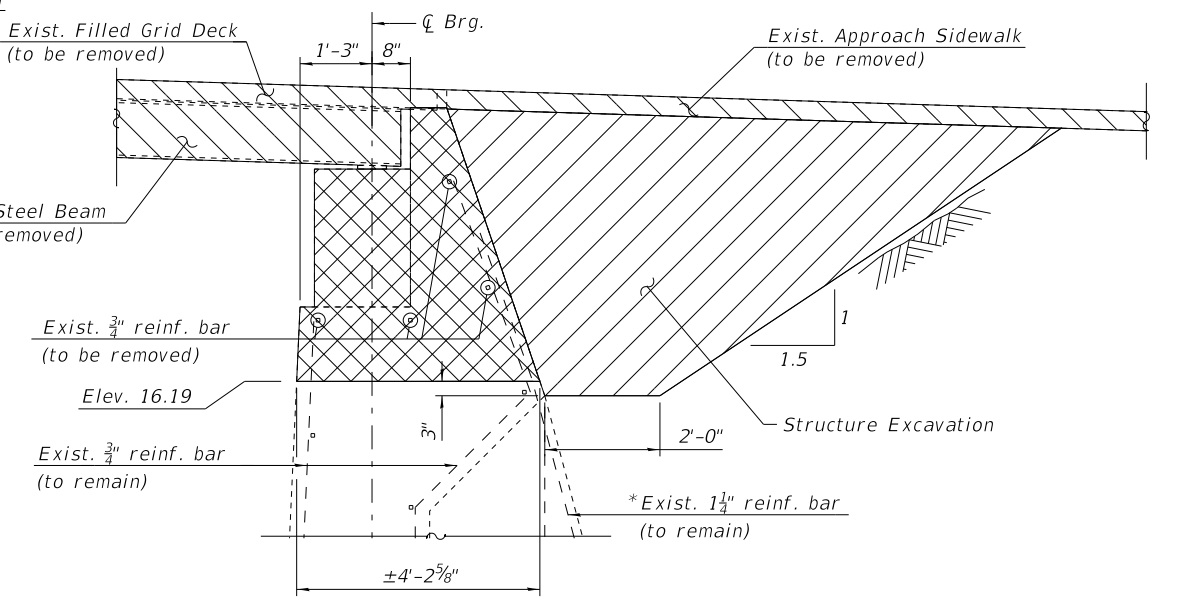


**STRUCTURAL REPAIR OF CONCRETE**



**SECTION A-A**

\*Existing Reinforcement to be incorporated into new construction. Bend and cut as required.



**SECTION B-B**

**LEGEND:**

- Structural Repair of Concrete (Depth Equal to or Less than 5 inches)
- Fixed Span Superstructure Removal and Approach Slab Removal
- Structure Excavation
- Concrete Removal
- Epoxy Crack Injection
- SF Square Foot
- LF Linear Foot

**REFERENCE DRAWINGS**

Drawing  
General Layout of Substructure

Sheet No.  
1660570044



WSP USA Inc.  
30 N. LASALLE STREET  
SUITE 4000  
CHICAGO, IL 60602  
TEL: (312) 782-8150  
FAX: (312) 782-1884

USER NAME =	DESIGNED - KJD	REVISED -
	CHECKED - JJS	REVISED -
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**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

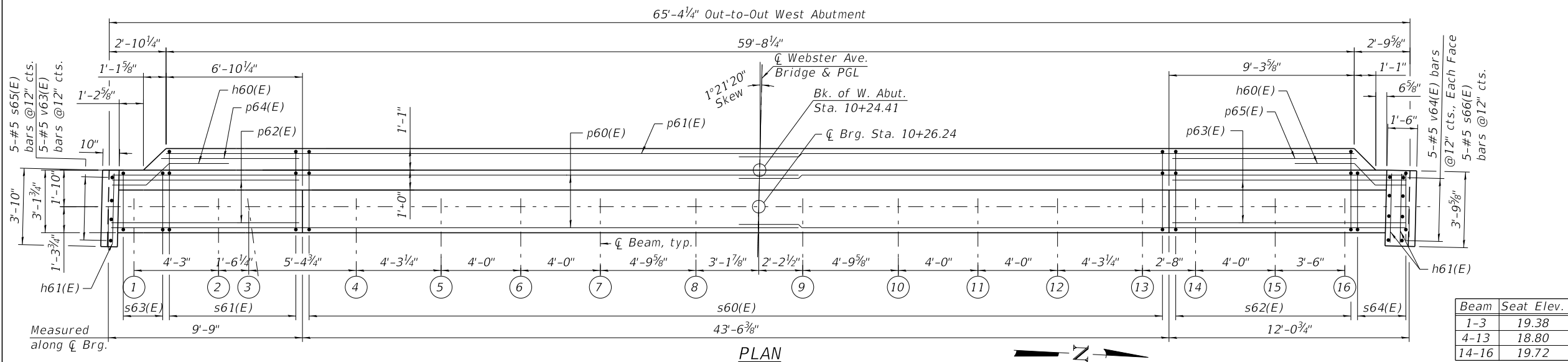
**WEST ABUTMENT DETAILS I  
(STRUCTURE NO. 016-6057)**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
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CDOT PROJECT NO. E-1-525			137 of 210

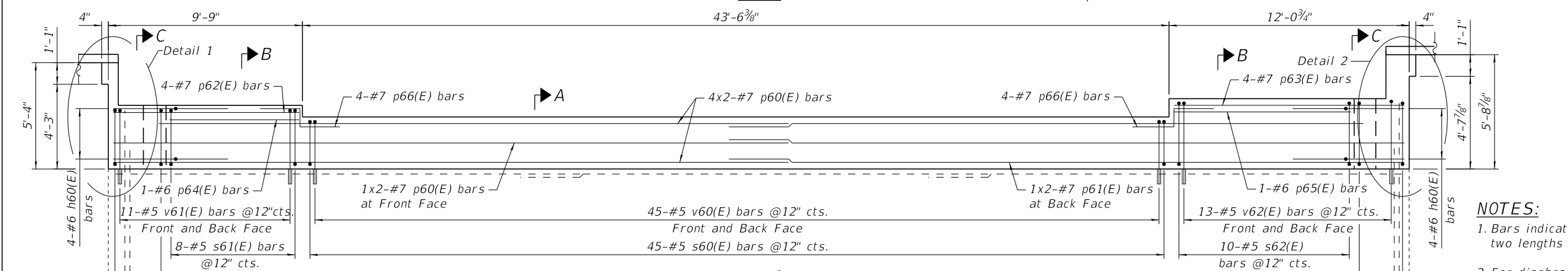


**BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
h60(E)	8	#6	7'-0"	
h61(E)	27	#5	3'-6"	
p60(E)	18	#7	34'-9"	
p61(E)	4	#7	32'-1"	
p62(E)	4	#7	9'-5"	
p63(E)	4	#7	11'-9"	
p64(E)	1	#6	6'-9"	
p65(E)	1	#6	9'-2"	
p66(E)	8	#7	6'-11"	
s60(E)	45	#5	12'-5"	
s61(E)	8	#5	13'-6"	
s62(E)	10	#5	14'-2"	
s63(E)	4	#5	12'-3"	
s64(E)	4	#5	12'-11"	
s65(E)	5	#5	3'-5"	
s66(E)	5	#5	4'-9"	
v60(E)	90	#5	6'-0"	
v61(E)	22	#5	6'-7"	
v62(E)	26	#5	6'-11"	
v63(E)	5	#5	5'-11"	
v64(E)	10	#5	6'-4"	
Porous Granular Backfill	Cu Yd		68	
Concrete Removal	Cu Yd		25.9	
Structure Excavation	Cu Yd		58	
Reinforcement Bars, Epoxy Coated	Pound		4,030	
Epoxy Crack Injection	Foot		12	
High Performance Concrete Structures	Cu Yd		26.3	
Structural Repair of Concrete (Depth Equal To Or Less Than 5 Inches)	Sq Ft		39	

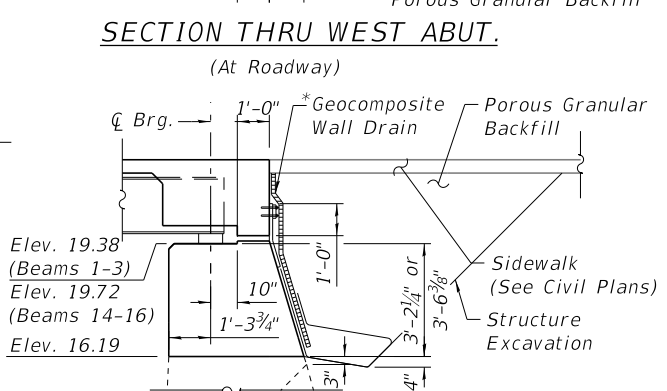
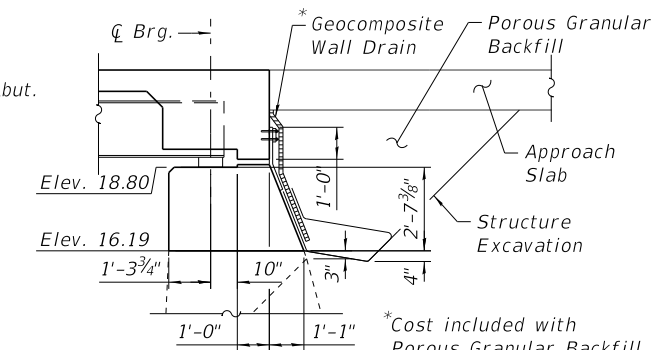
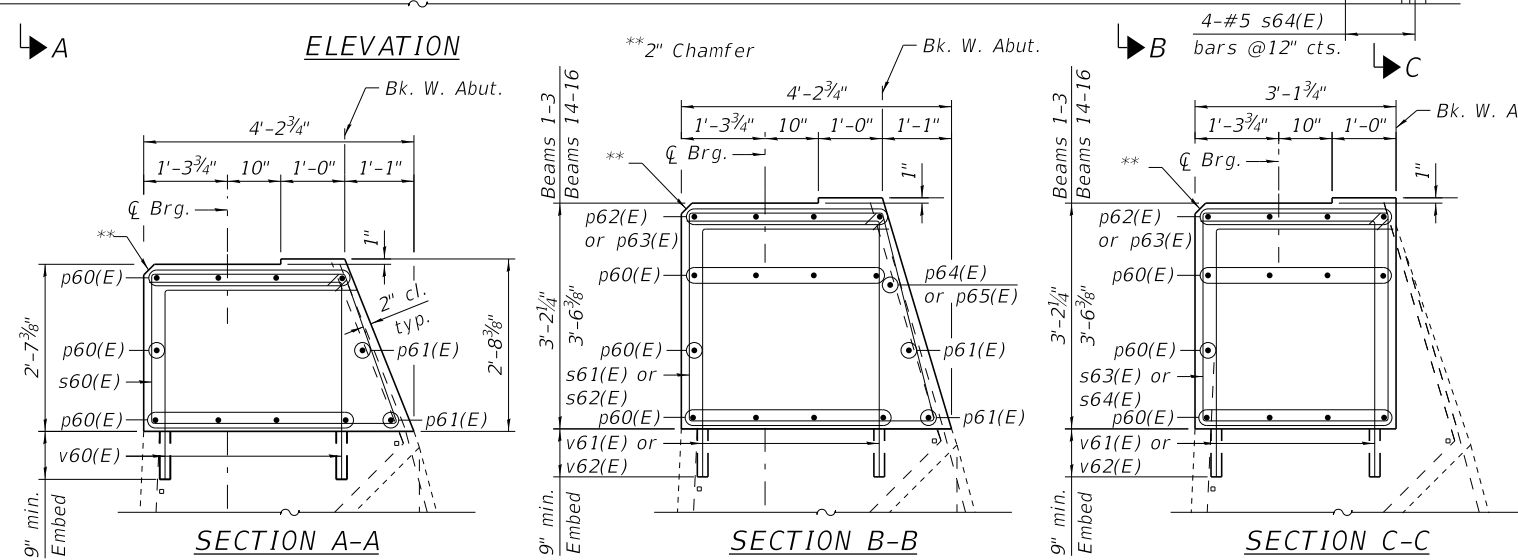
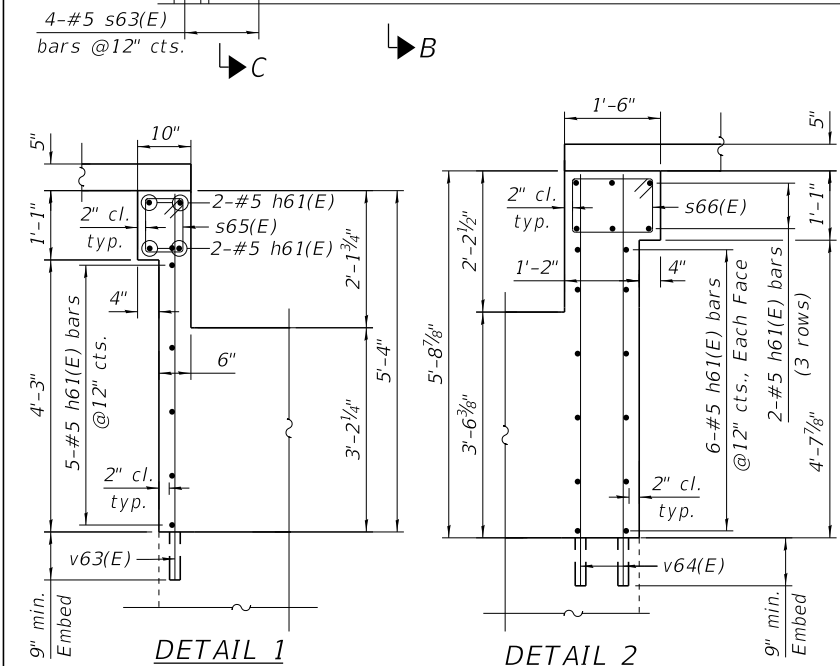


Beam	Seat Elev.
1-3	19.38
4-13	18.80
14-16	19.72



**NOTES:**

1. Bars indicated as 4x2-#7 etc. indicates 4 lines of bars with two lengths per line.
2. For diaphragm details, see Sheet S-16.



Bar	A	B
s60(E)	2'-3"	2'-6"
s61(E)	2'-10"	3'-0"
s62(E)	3'-2"	3'-4"

Bar	C	D
s63(E)	2'-10"	2'-10"
s64(E)	3'-2"	2'-10"
s65(E)	9"	6"
s66(E)	9"	1'-2"

Bar	E
v60(E)	3'-2"
v61(E)	3'-9"
v62(E)	4'-1"

**MINIMUM BAR LAP**  
 #5 bar = 3'-2"  
 #6 bar = 3'-10"  
 #7 bar = 4'-5"



**BAR p66(E)**  
**BAR h60(E)**

**BARS s60(E) thru s62(E)**

**BARS s63(E) thru s66(E)**

**BARS v60(E) thru v62(E)**



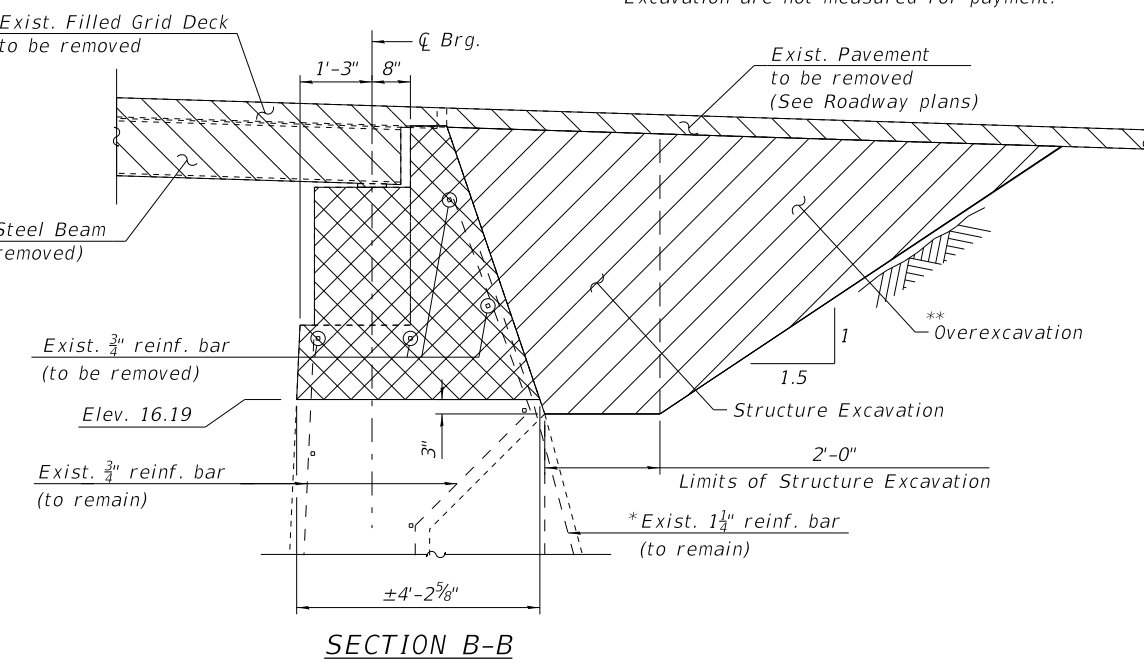
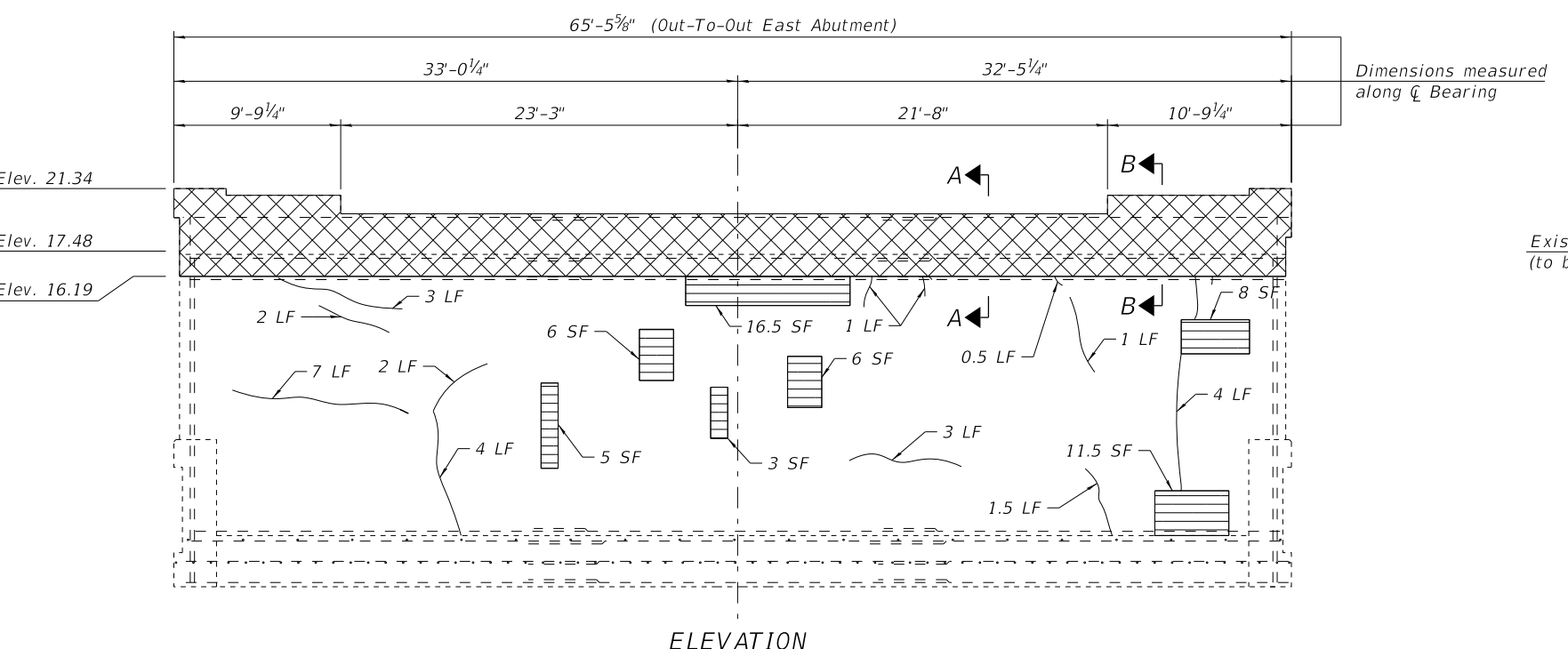
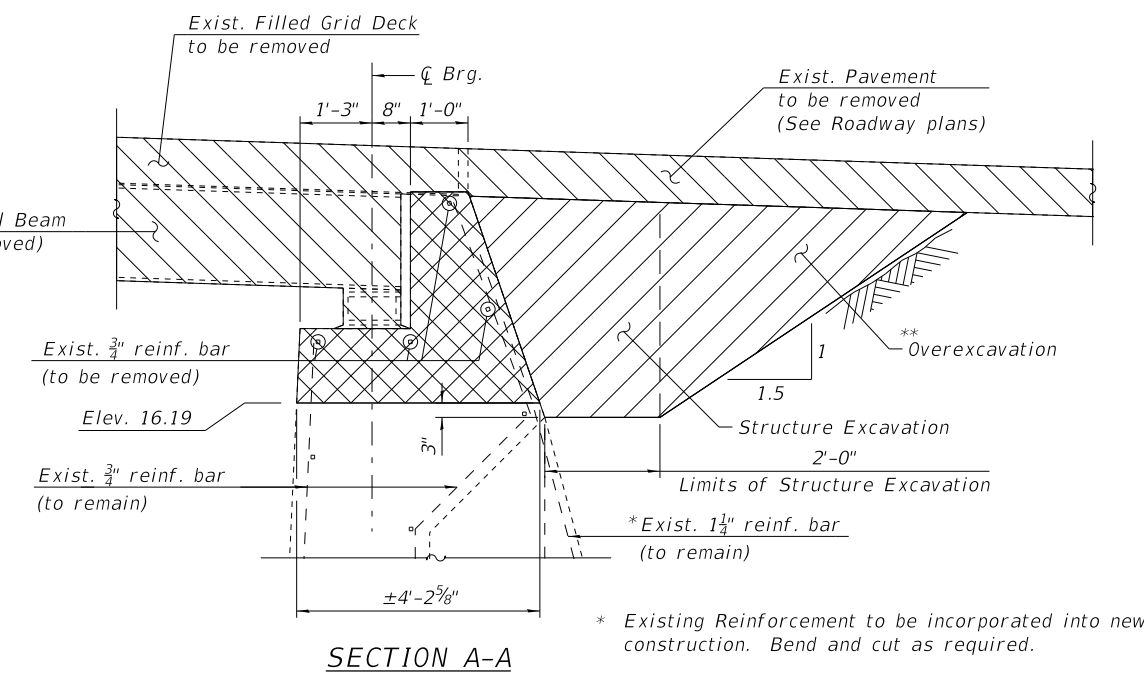
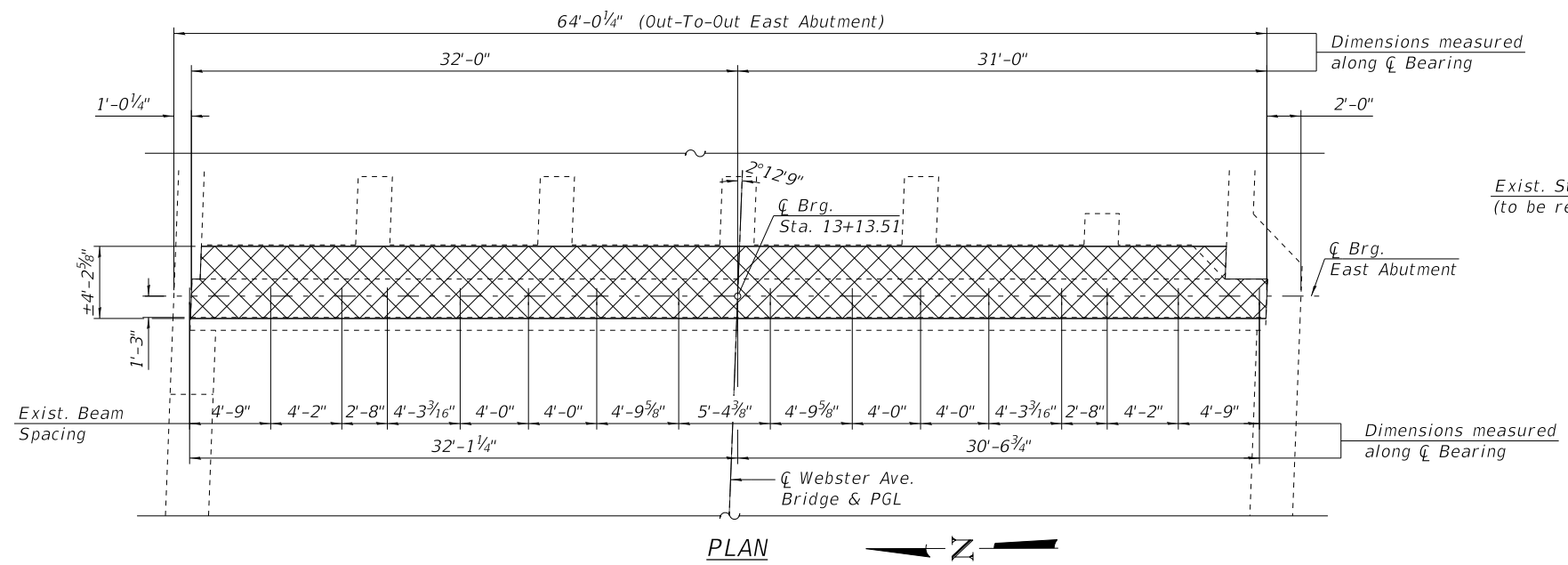
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	CHECKED - JUS	REVISED -

**CITY OF CHICAGO**  
 DEPARTMENT OF TRANSPORTATION  
 DIVISION OF ENGINEERING

**WEBSTER AVENUE BRIDGE OVER THE NORTH BRANCH CHICAGO RIVER**

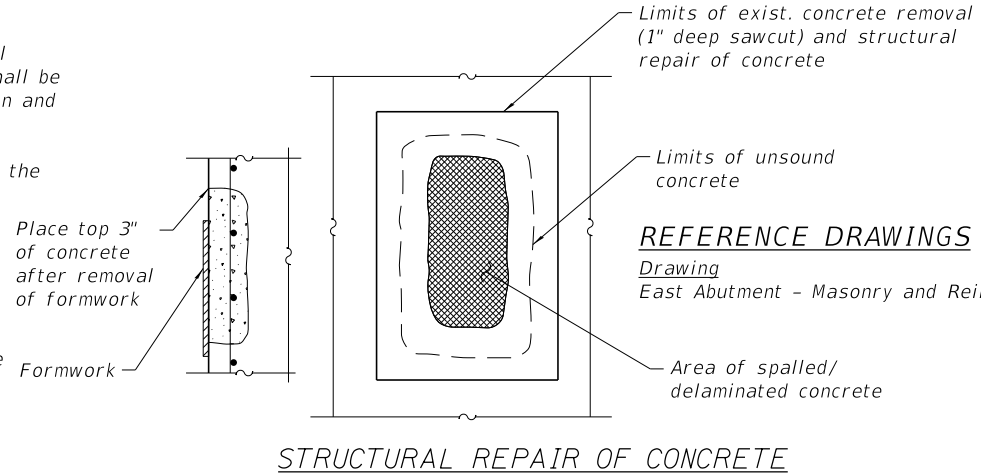
**WEST ABUTMENT DETAILS II**  
 (STRUCTURE NO. 016-6057)

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-95
CDOT PROJECT NO. E-1-525			138 of 210



**NOTES:**

1. The elevations and limits of the existing abutment presented on this sheet have been taken from historical design drawings and may not represent "as-built" conditions. All existing structure elevations and limits shall be field-verified by the Contractor, and coordinated with the Engineer, prior to ordering materials, fabrication and construction of proposed abutment modification.
2. Quantities and limits shown are estimated for bidding purposes only. The actual areas to be repaired, and the type(s) of repairs to be used, will be determined by the Engineer in the field at the time of construction.
3. It shall be the Contractor's responsibility to temporarily support, relocate and re-install existing utilities interfering with the work.
4. For Bill of Material, see Sheet S-97.
5. For removal of existing filled grid deck, structural steel removal and approach slab/sidewalk removal, see Removal Sheets.



**LEGEND:**

	Structural Repair of Concrete (Depth Equal to or Less than 5 inches)
	Fixed Span Superstructure Removal and Approach Slab Removal
	Structure Excavation
	Concrete Removal
	Epoxy Crack Injection
SF	Square Foot
LF	Linear Foot



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30 N. LASALLE STREET  
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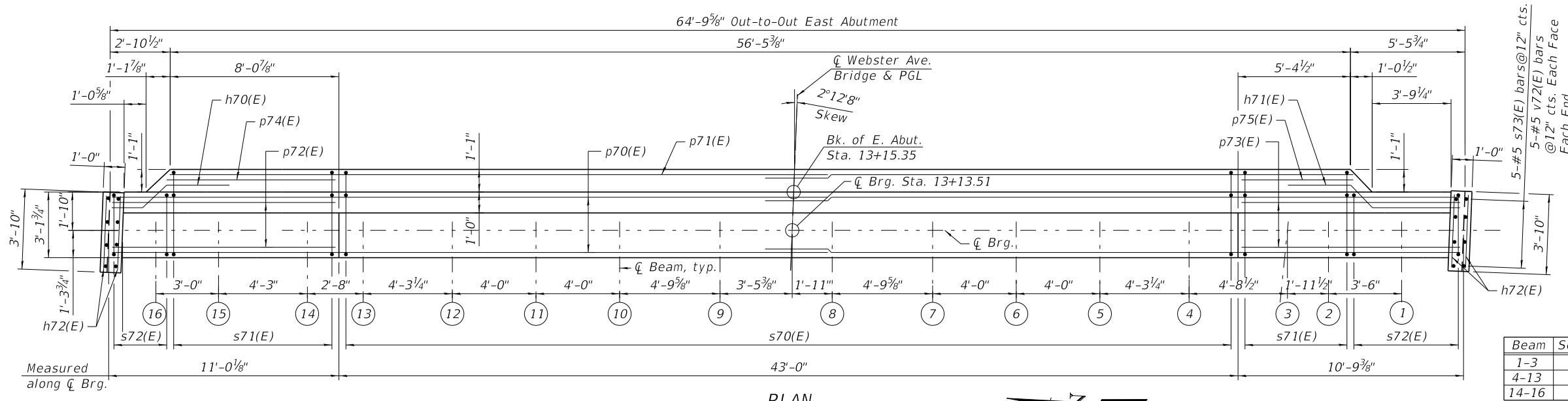
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**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

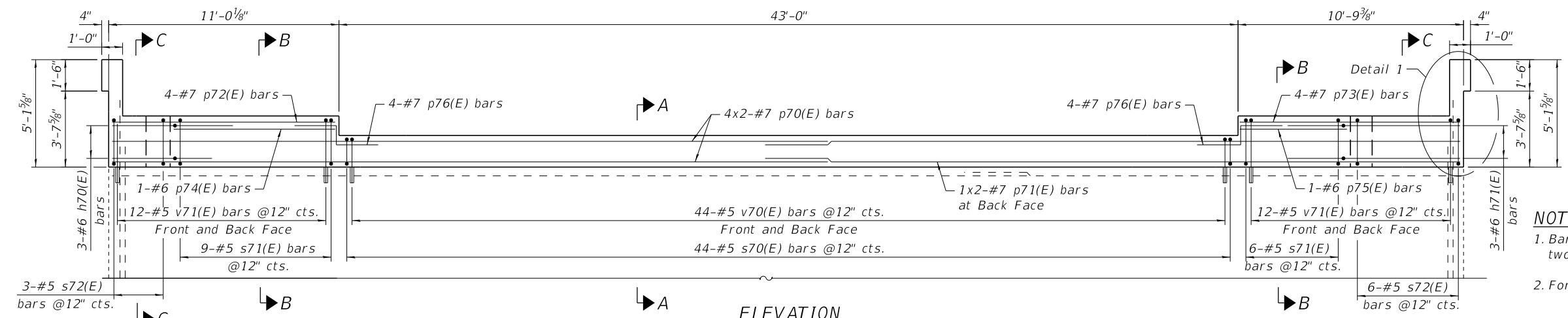
**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

**EAST ABUTMENT DETAILS I  
(STRUCTURE NO. 016-6057)**

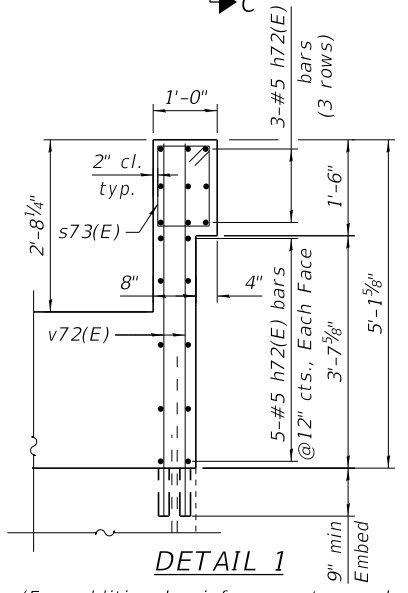
F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-96
CDOT PROJECT NO. E-1-525			139 of 210



PLAN

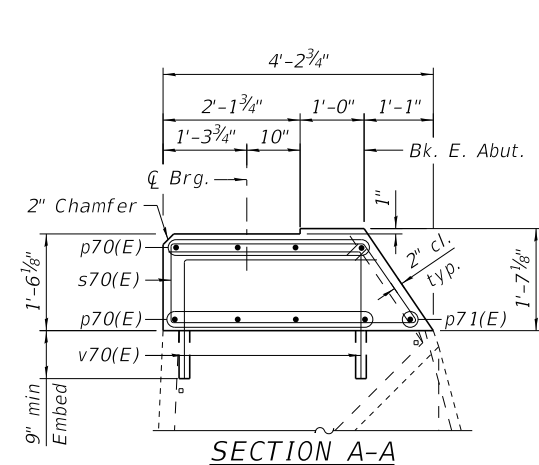


ELEVATION

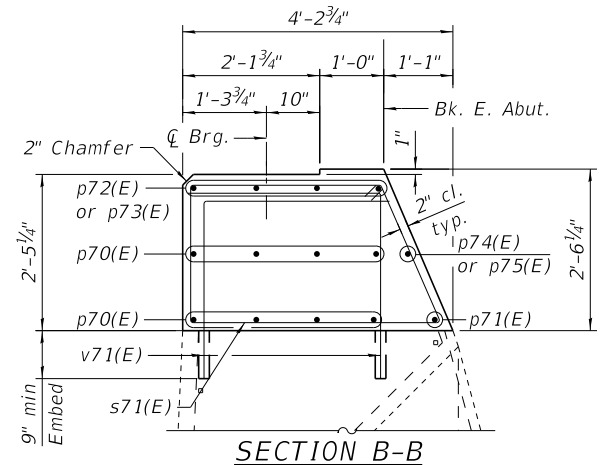


DETAIL 1

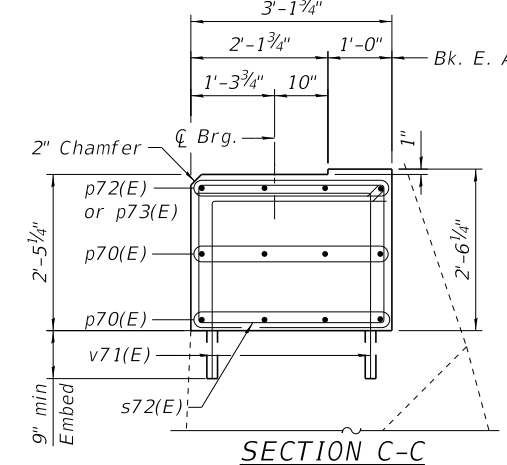
(For additional reinforcement see plan and elevation)



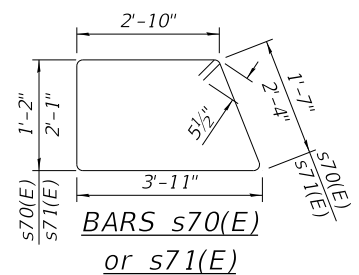
SECTION A-A



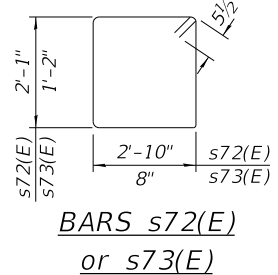
SECTION B-B



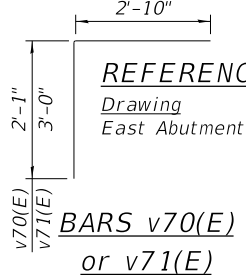
SECTION C-C



BARS s70(E)  
or s71(E)



BARS s72(E)  
or s73(E)



BARS v70(E)  
or v71(E)

REFERENCE DRAWINGS

Drawing East Abutment - Masonry and Reinforcement Bars Sheet No. 1660570049

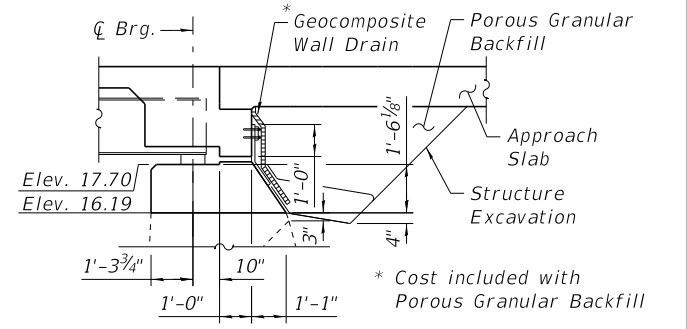
MINIMUM BAR LAP  
#5 bar = 3'-2"  
#6 bar = 3'-10"  
#7 bar = 4'-5"

NOTES:

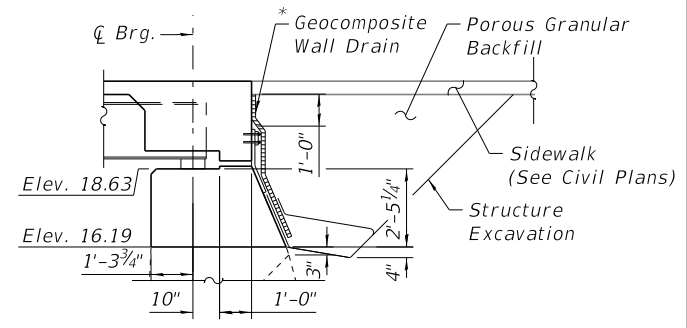
1. Bars indicated as 4x2-#7 etc. indicates 4 lines of bars with two lengths per line.
2. For diaphragm details, see Sheet S-22.

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h70(E)	3	#6	7'-0"	
h71(E)	3	#6	9'-8"	
h72(E)	38	#5	3'-6"	
p70(E)	16	#7	34'-6"	
p71(E)	2	#7	30'-4"	
p72(E)	4	#7	10'-8"	
p73(E)	4	#7	10'-5"	
p74(E)	1	#6	7'-10"	
p75(E)	1	#6	5'-2"	
p76(E)	8	#7	6'-11"	
s70(E)	44	#5	10'-5"	
s71(E)	15	#5	12'-1"	
s72(E)	9	#5	10'-9"	
s73(E)	10	#5	4'-7"	
v70(E)	88	#5	4'-11"	
v71(E)	48	#5	5'-10"	
v72(E)	20	#5	5'-9"	
Porous Granular Backfill	Cu Yd		47	
Concrete Removal	Cu Yd		26.3	
Structure Excavation	Cu Yd		28	
Reinforcement Bars, Epoxy Coated	Pound		3,460	
Epoxy Crack Injection High Performance Concrete Structures	Foot		32	
Structural Repair of Concrete (Depth Equal To Or Less Than 5 Inches)	Sq Ft		56	



SECTION THRU EAST ABUT. (At Roadway)



SECTION THRU EAST ABUT. (At Sidewalks)



USER NAME =	DESIGNED - KJD	REVISED -
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PLOT DATE = \$DATE\$	DRAWN - KJD	REVISED -
	CHECKED - JUS	REVISED -

CITY OF CHICAGO  
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DIVISION OF ENGINEERING

WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER

EAST ABUTMENT DETAILS II  
(STRUCTURE NO. 016-6057)

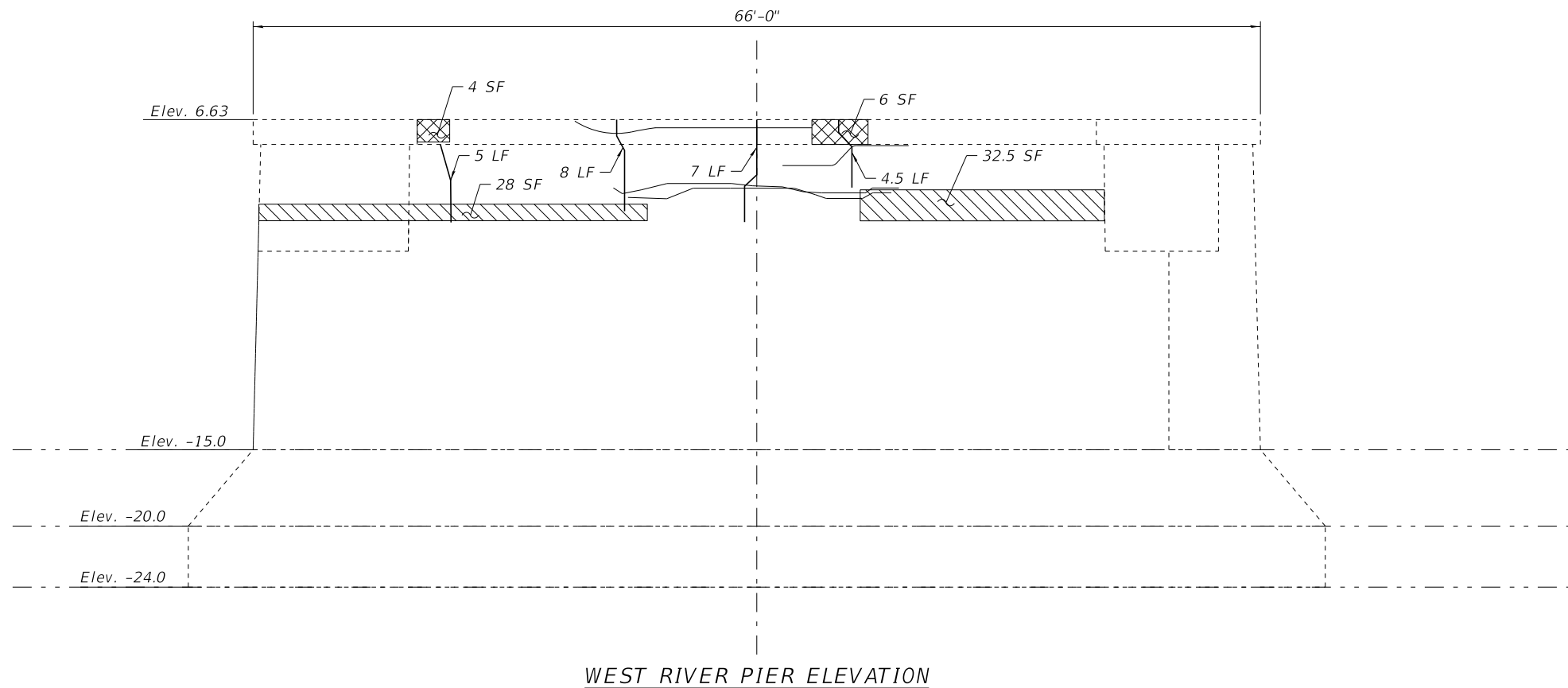
F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-97
CDOT PROJECT NO. E-1-525			140 of 210

**NOTES:**

1. Plan dimensions and details relative to existing plans are subject to nominal construction variations. The Contactor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.
2. The presented elevations and dimensions have been taken from historical design drawings and may not present "as-built" condition. All existing structure limits shall be field verified by the contractor and coordinated with the engineer prior to ordering materials, fabrication and construction of the proposed wall modification.
3. Existing Utilities in conflict with new construction shall be abandoned, protected or relocated according to directions given on roadway plans.

**BILL OF MATERIAL**

Item	Unit	Quantity
Epoxy Crack Injection	Foot	25
Structural Repair of Concrete (Depth Equal To or Less Than 5 Inches)	Sq. Ft.	61
Structural Repair of Concrete (Depth Greater Than 5 Inches)	Sq. Ft.	10




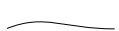


**REFERENCE DRAWINGS**

Drawing  
 General Layout of Substructure  
 Main Piers  
 West Piers - Reinforcement Bars

Sheet No.  
 1660570044  
 1660570045  
 1660570046

**LEGEND**

-  - Structural Repair of Concrete (Depth Equal To or Less Than 5 Inches)
-  - Structural Repair of Concrete (Depth Greater Than 5 Inches)
-  - Epoxy Crack Injection
-  - Hairline Crack (HL) (Width <0.06") (For Information Only)
- SF - Square Foot
- LF - Linear Foot



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PLOT DATE = \$DATE\$	CHECKED - MI	REVISED -

**CITY OF CHICAGO**  
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**WEBSTER AVENUE BRIDGE OVER  
 THE NORTH BRANCH CHICAGO RIVER**

**WEST RIVER PIER  
 REPAIR DETAILS  
 (STRUCTURE NO. 016-6057)**

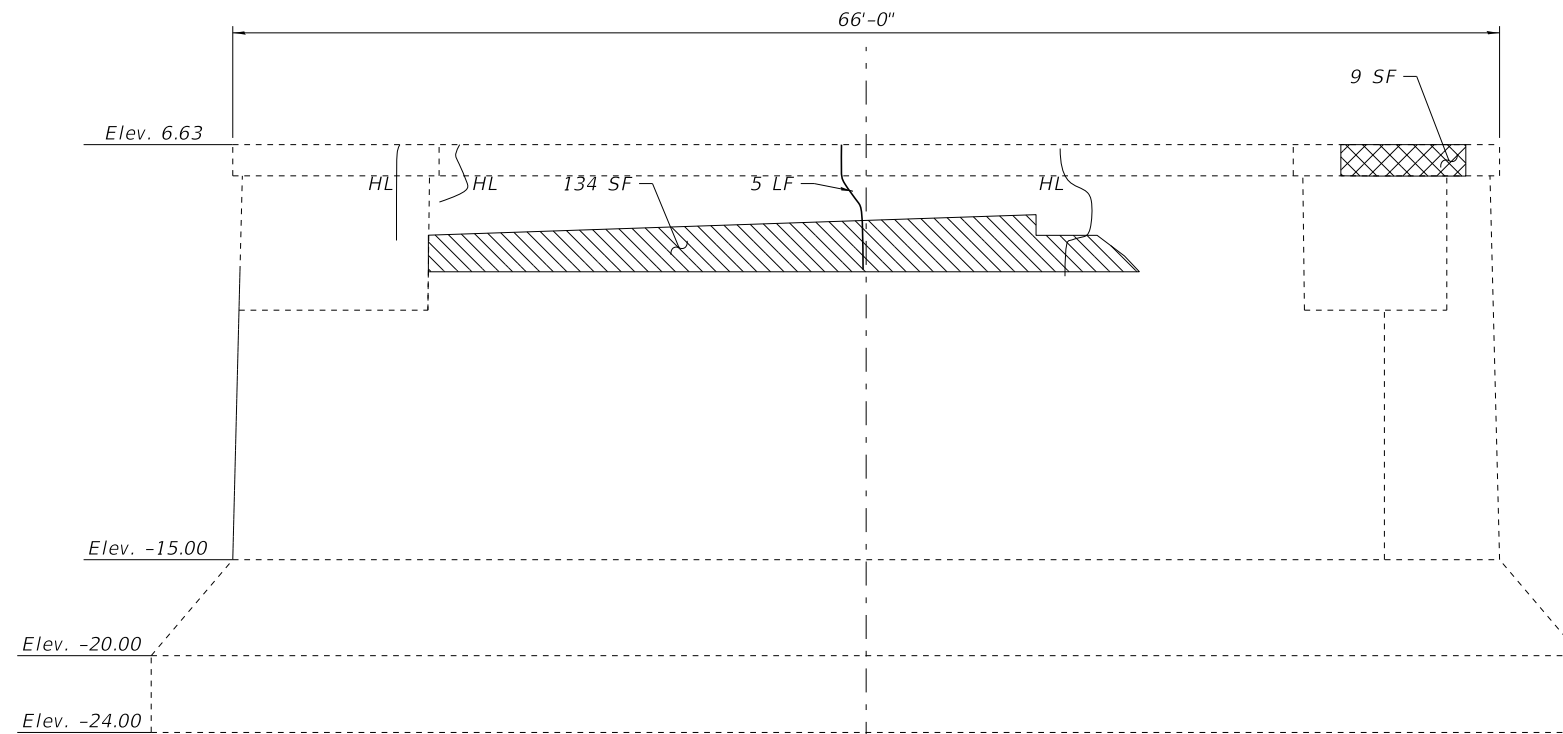
F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-98
CDOT PROJECT NO. E-1-525			141 of 210

**NOTES:**

1. Plan dimensions and details relative to existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.
2. The presented elevations and dimensions have been taken from historical design drawings and may not present "as-built" condition. All existing structure limits shall be field verified by the contractor and coordinated with the engineer prior to ordering materials, fabrication and construction of the proposed wall modification.
3. Existing Utilities in conflict with new construction shall be abandoned, protected or relocated according to directions given on roadway plans.





**BILL OF MATERIAL**

Item	Unit	Quantity
Epoxy Crack Injection	Foot	5
Structural Repair of Concrete (Depth Equal To or Less Than 5 Inches)	Sq. Ft.	134
Structural Repair of Concrete (Depth Greater Than 5 Inches)	Sq. Ft.	9



**EAST RIVER PIER ELEVATION**

**LEGEND**

-  - Structural Repair of Concrete (Depth Equal To or Less Than 5 Inches)
-  - Structural Repair of Concrete (Depth Greater Than 5 Inches)
-  - Epoxy Crack Injection
-  - Hairline Crack (HL) (Width <0.06") (For Information Only)
- SF - Square Foot
- LF - Linear Foot

**REFERENCE DRAWINGS**

Drawing  
 General Layout of Substructure  
 Main Piers  
 West Piers - Reinforcement Bars

Sheet No.  
 1660570044  
 1660570045  
 1660570046



USER NAME =	DESIGNED - AMI	REVISED -
	CHECKED - MI	REVISED -
PLOT SCALE = N.T.S.	DRAWN - AMI	REVISED -
PLOT DATE = \$DATE\$	CHECKED - MI	REVISED -

**CITY OF CHICAGO**  
 DEPARTMENT OF TRANSPORTATION  
 DIVISION OF ENGINEERING

**WEBSTER AVENUE BRIDGE OVER  
 THE NORTH BRANCH CHICAGO RIVER**

**EAST RIVER PIER  
 REPAIR DETAILS  
 (STRUCTURE NO. 016-6057)**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-99
CDOT PROJECT NO. E-1-525			142 of 210

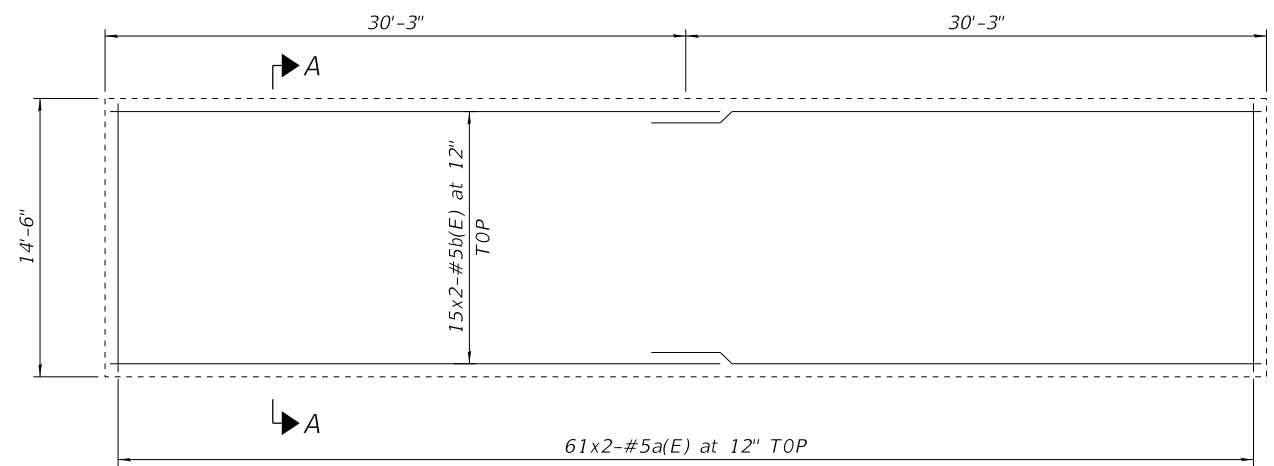
**BILL OF MATERIAL  
WEST FIXED SPAN**

Bar	No.	Size	Length	Shape
a(E)	61	#5	14'-2"	—
b(E)	15	#5	30'-7"	—
POROUS GRANULAR BACKFILL			CU YD	130
CLASS SI CONCRETE (MISCELLANEOUS)			CU YD	16.3
METAL LADDER			EACH	2

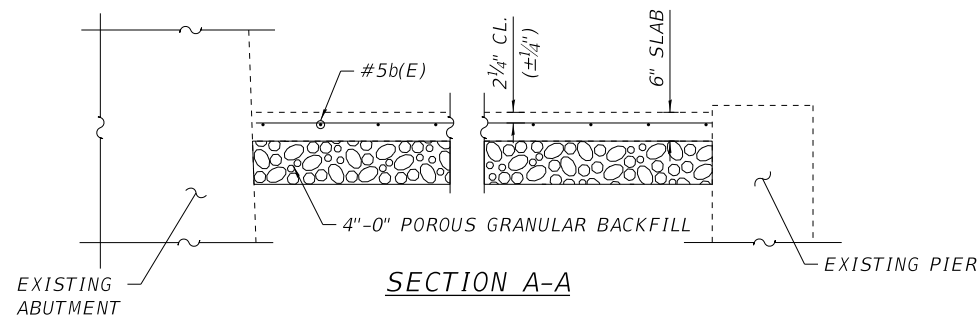
**BILL OF MATERIAL  
EAST FIXED SPAN**

Bar	No.	Size	Length	Shape
a(E)	61	#5	14'-2"	—
b(E)	15	#5	30'-7"	—
POROUS GRANULAR BACKFILL			CU YD	130
CLASS SI CONCRETE (MISCELLANEOUS)			CU YD	16.3
METAL LADDER			EACH	2

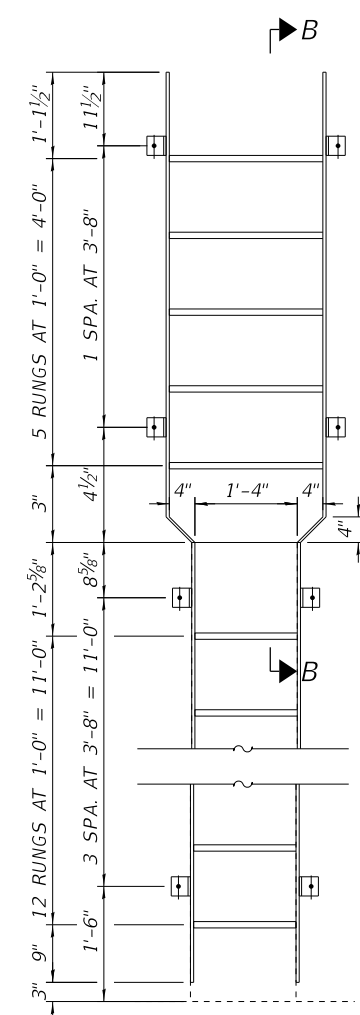
Note: Cost of Reinforcement bars, Epoxy Coated included with Class SI Concrete (Miscellaneous).



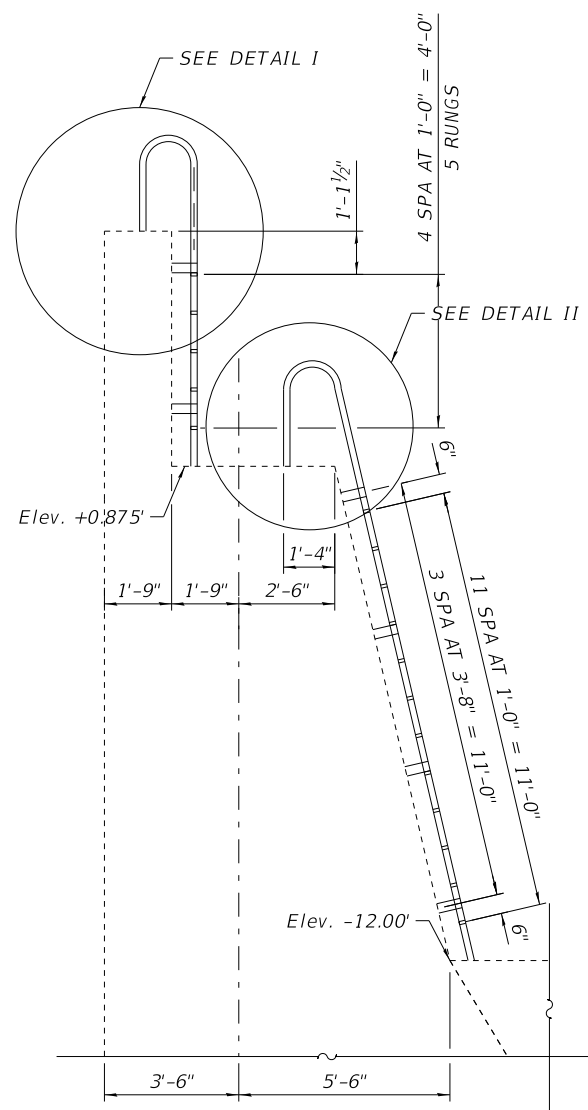
**EAST AND WEST PLAN-PIT ACCESS SLAB**



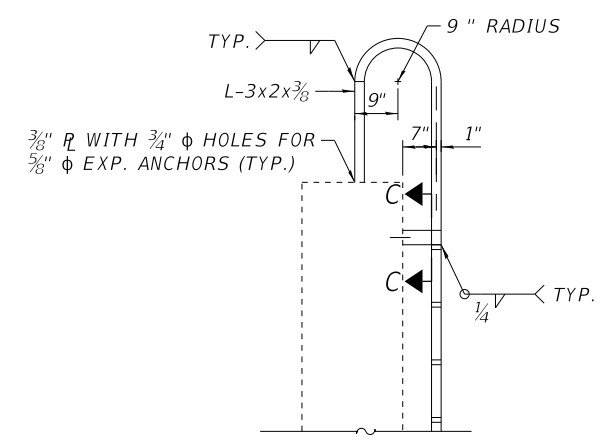
**SECTION A-A**



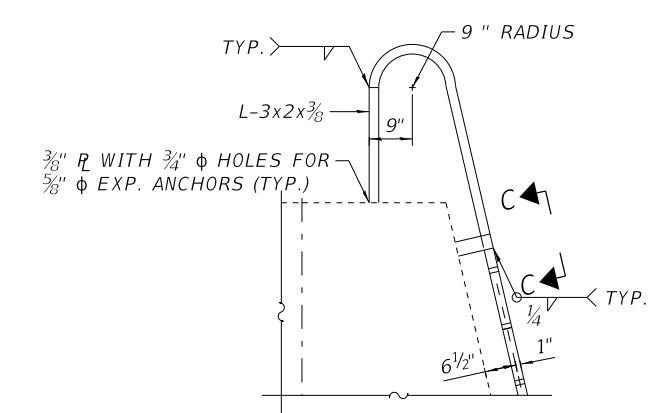
**LADDER ELEVATION-DETAILS**



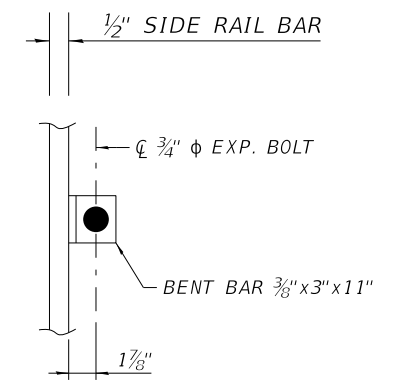
**SECTION B-B**



**DETAIL I**



**DETAIL II**



**SECTION C-C**

**NOTE:**

- After removal of existing access slab, the Contractor shall field verify POROUS GRANULAR BACKFILL amount needed and make necessary approved adjustments prior to construction of proposed access slab or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

**REFERENCE DRAWINGS**

Drawing	Sheet No.
General Layout of Substructure	1660570044
Main Piers	1660570045
West Piers - Reinforcement Bars	1660570046
East Piers - Reinforcement Bars and Bar Tables	1660570047



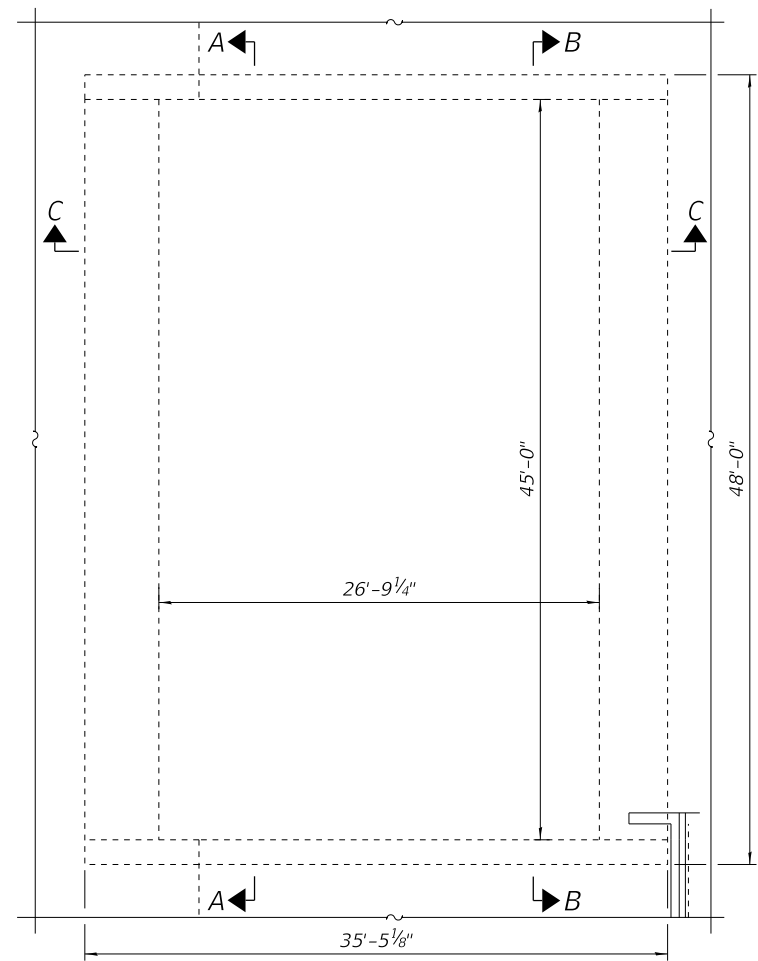
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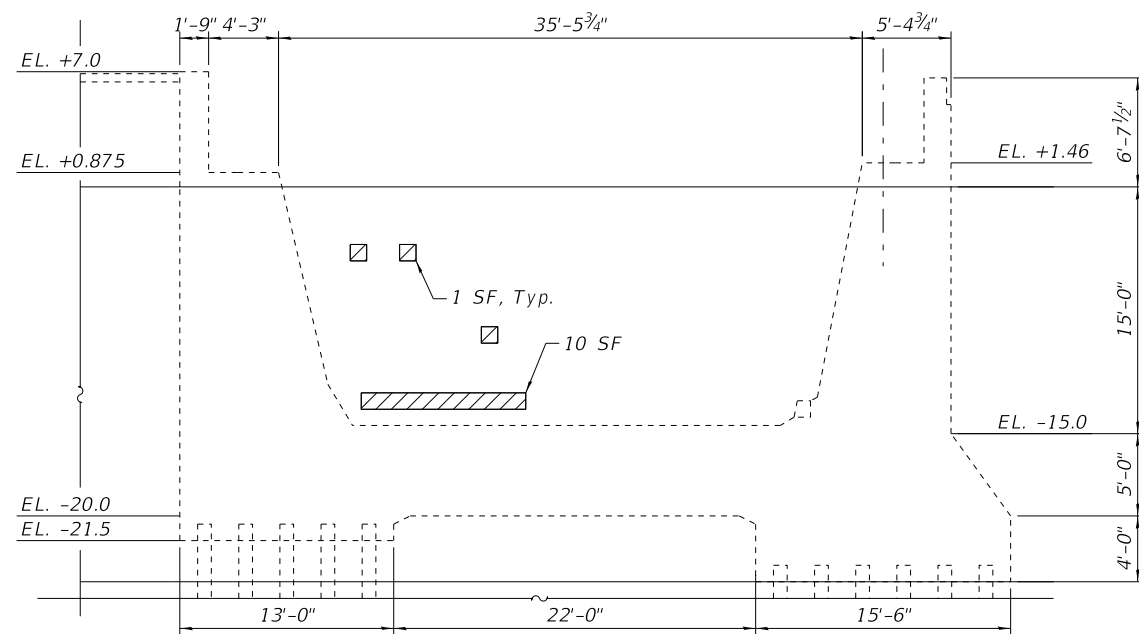
**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

**PLATFORM AND LADDER DETAILS  
WEST AND EAST FIXED SPANS  
(STRUCTURE NO. 016-6057)**

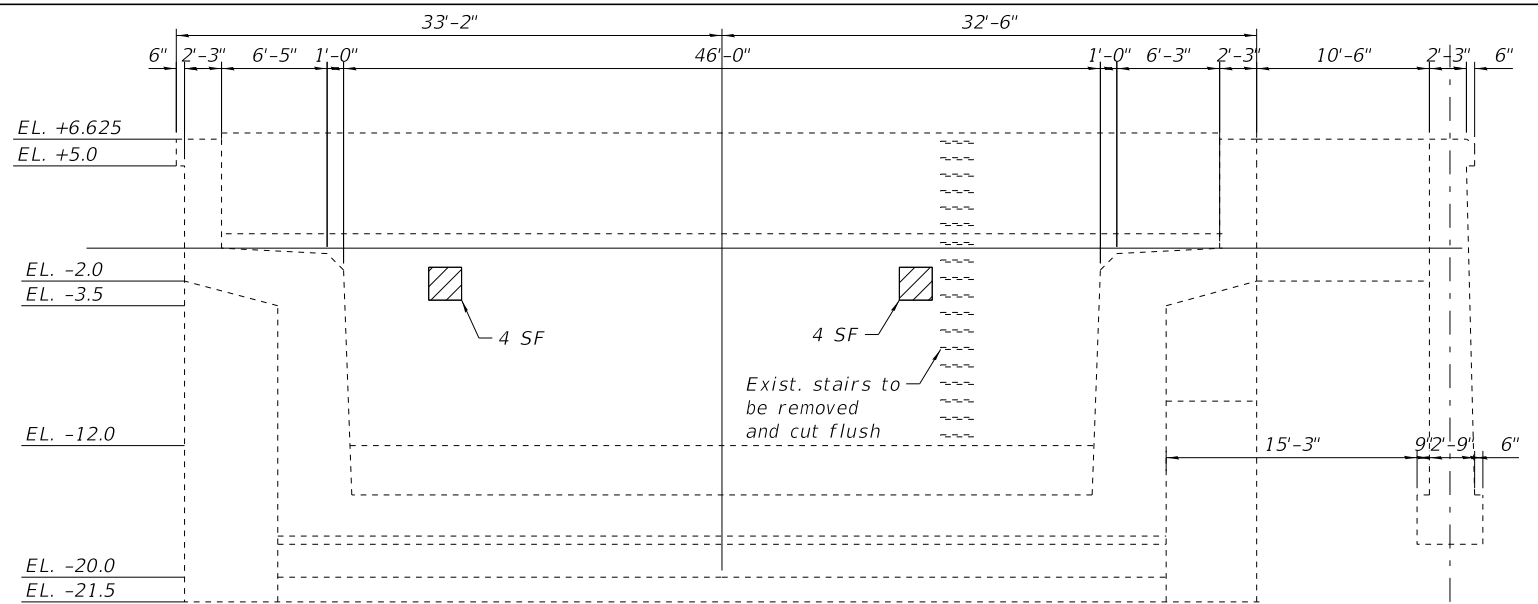
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1388	11-E1525-00-BR	COOK	S-100
CDOT PROJECT NO. E-1-525			143 of 210



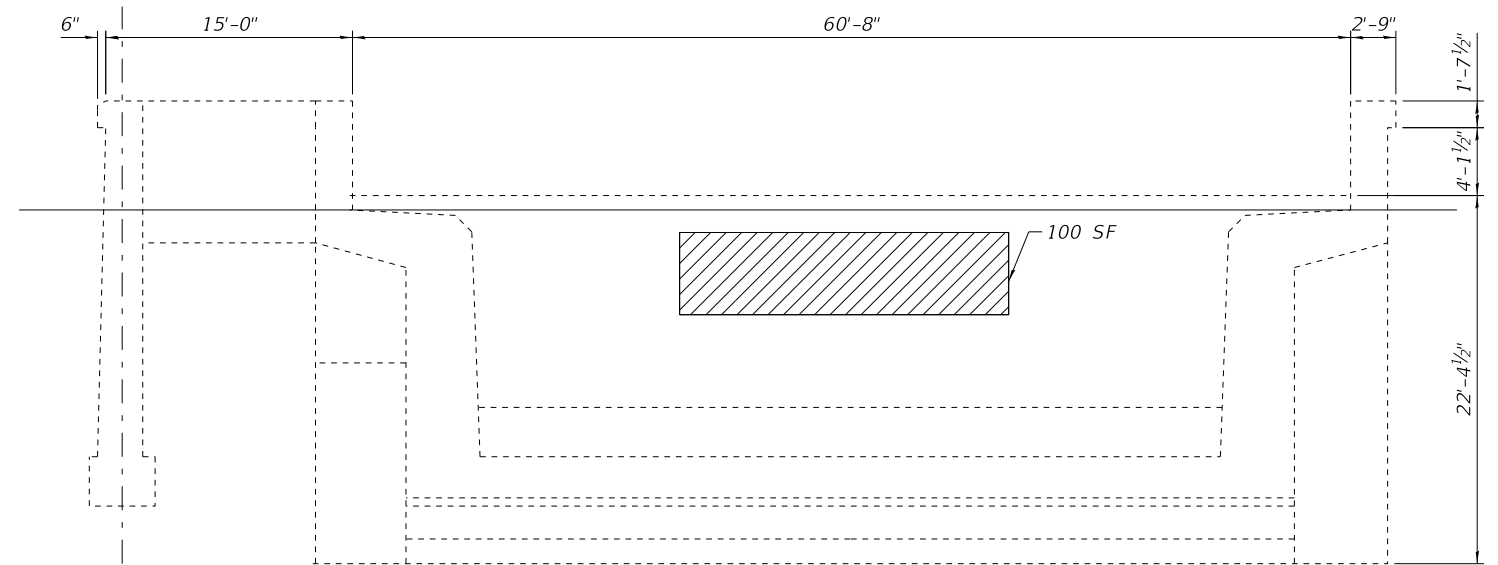
PLAN  
WEST COUNTERWEIGHT PIT



SECTION C-C



SECTION A-A



SECTION B-B

BILL OF MATERIAL

ITEM	UNIT	TOTAL QUANTITY
Structural Repair of Concrete (Depth Equal to or Less than 5 Inches)	Sq. Ft.	121

REFERENCE DRAWINGS

Drawing  
General Layout of Substructure  
Main Piers  
West Piers - Reinforcement Bars

Sheet No.  
1660570044  
1660570045  
1660570046

LEGEND:

- Structural Repair of Concrete (Depth Equal to or Less than 5 Inches)
- SF Square Foot
- LF Linear Foot



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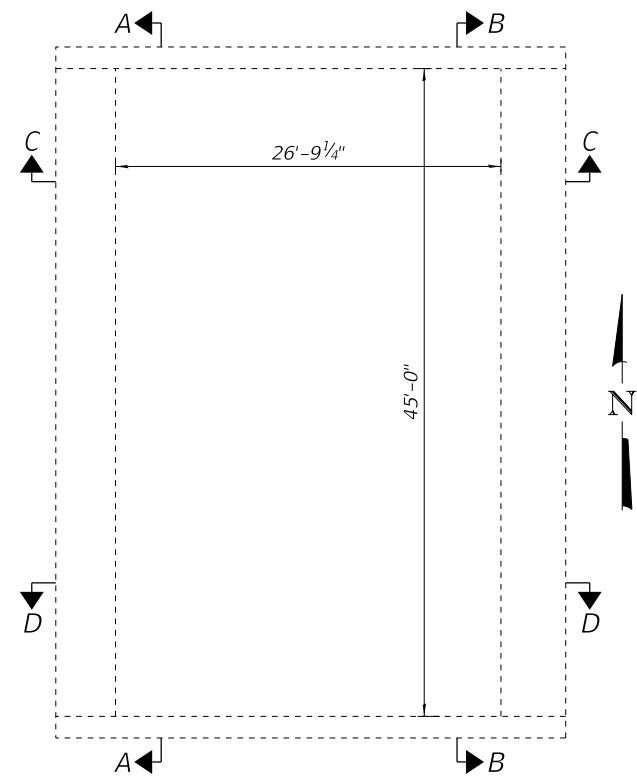
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PLOT DATE = \$DATE\$	CHECKED - MAA	REVISED -

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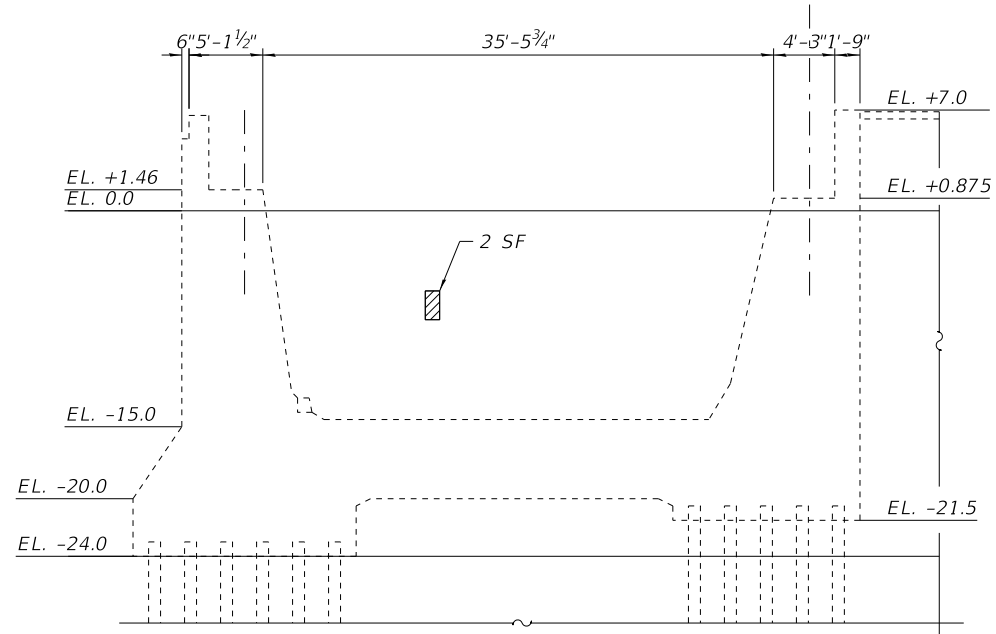
**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

**WEST PIT REPAIR DETAILS  
(STRUCTURE NO. 016-6057)**

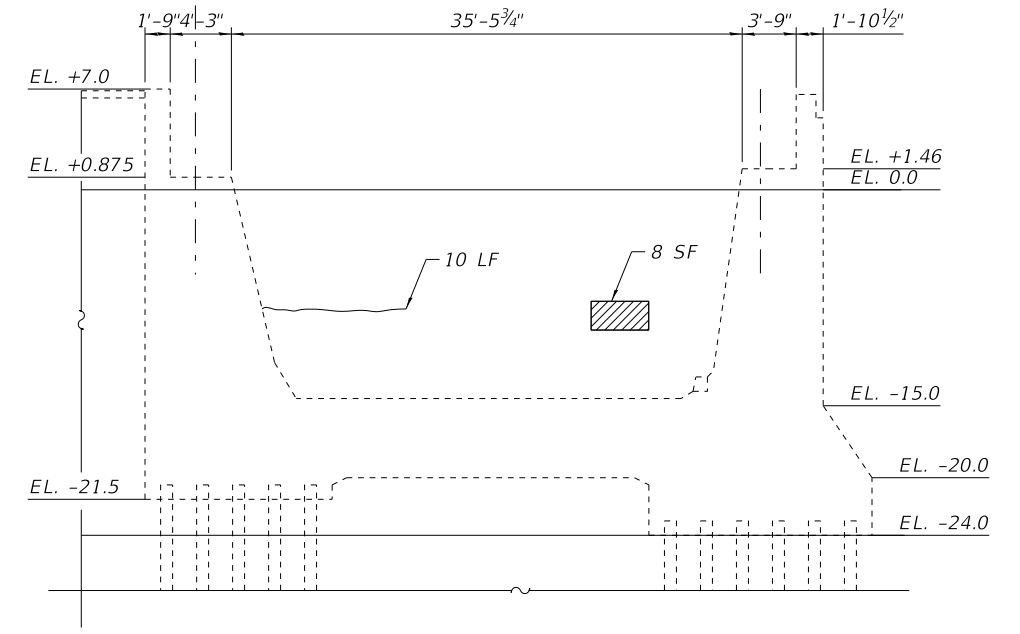
F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-101
CDOT PROJECT NO. E-1-525			144 of 210



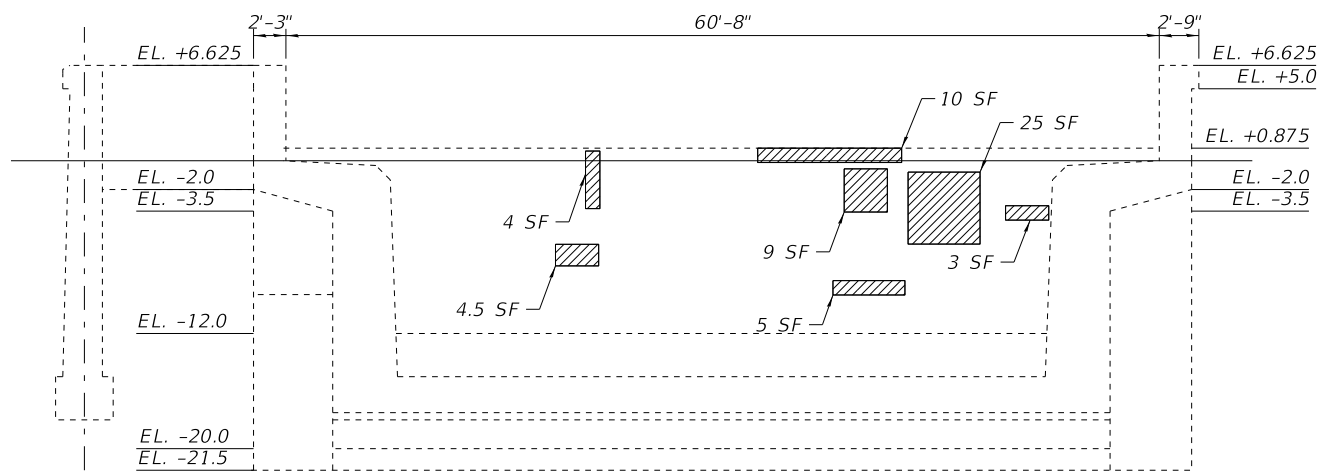
PLAN  
EAST COUNTERWEIGHT PIT



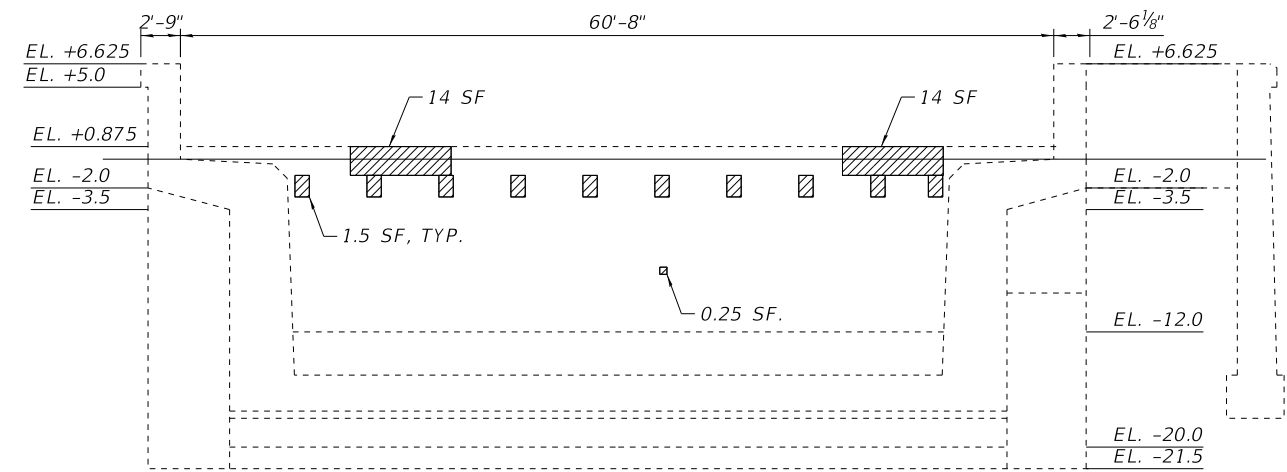
SECTION C-C



SECTION D-D



SECTION A-A



SECTION B-B

BILL OF MATERIAL

ITEM	UNIT	TOTAL QUANTITY
Epoxy Crack Injection	Foot	10
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq. Ft.	114

REFERENCE DRAWINGS

Drawing  
General Layout of Substructure  
Main Piers  
East Piers - Reinforcement Bars and Bar Tables

Sheet No.  
1660570044  
1660570045  
1660570047

LEGEND:

- Structural Repair of Concrete (Depth Equal to or Less than 5 Inches)
- Low Pressure Epoxy Injection
- SF Square Foot
- LF Linear Foot

**HBM**  
ENGINEERING GROUP, LLC

**wsp**  
WSP USA Inc.  
30 N. LA SALLE STREET  
SUITE 4000  
CHICAGO, IL 60602  
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FAX: (312) 782-1884

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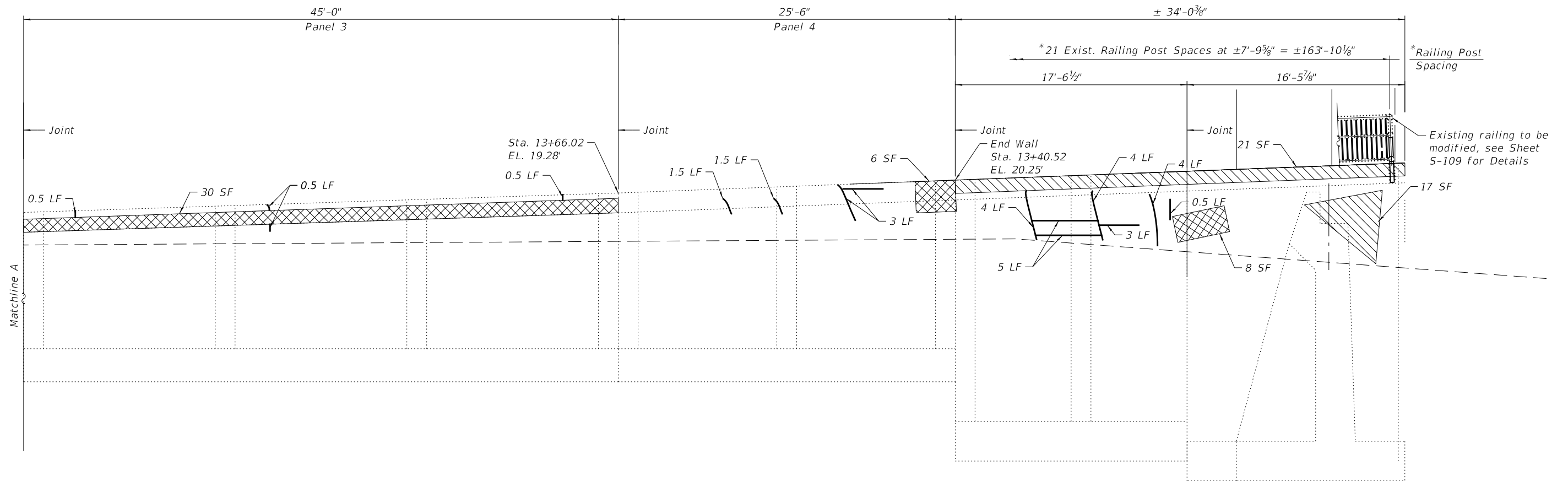
**CITY OF CHICAGO**  
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**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

**EAST PIT REPAIR DETAILS  
(STRUCTURE NO. 016-6057)**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-102
CDOT PROJECT NO. E-1-525			145 of 210





**ELEVATION**

\* Contractor shall determine/ verify the existing railing post spaces. See Sheet S-108 and S-109 for more details.

**BILL OF MATERIAL**

Item	Unit	Quantity
Epoxy Crack Injection	Foot	47
Structural Repair of Concrete (Depth Equal To or Less Than 5 Inches)	Sq. Ft.	38
Structural Repair of Concrete (Depth Greater Than 5 Inches)	Sq. Ft.	45.3

**NOTES:**

- Plan dimensions and details relative to existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.
- The presented elevations and dimensions have been taken from historical design drawings and may not present "as-built" condition. All existing structure limits shall be field verified by the contractor and coordinated with the engineer prior to ordering materials, fabrication and construction of the proposed wall modification.
- Existing Utilities in conflict with new construction shall be abandoned, protected or relocated according to directions given on roadway plans.

**LEGEND**

- Structural Repair of Concrete (Depth Equal To or Less Than 5 Inches)
- Structural Repair of Concrete (Depth Greater Than 5 Inches)
- Epoxy Crack Injection
- Hairline Crack (HL) (Width <0.06") (For Information Only)
- SF - Square Foot
- LF - Linear Foot

**REFERENCE DRAWINGS**

Drawing	Sheet No.
Survey Layout	1660570042
General Layout of Substructure	1660570044
East Approach - Retaining Wall Details and Reinforcement Bars	1660570051



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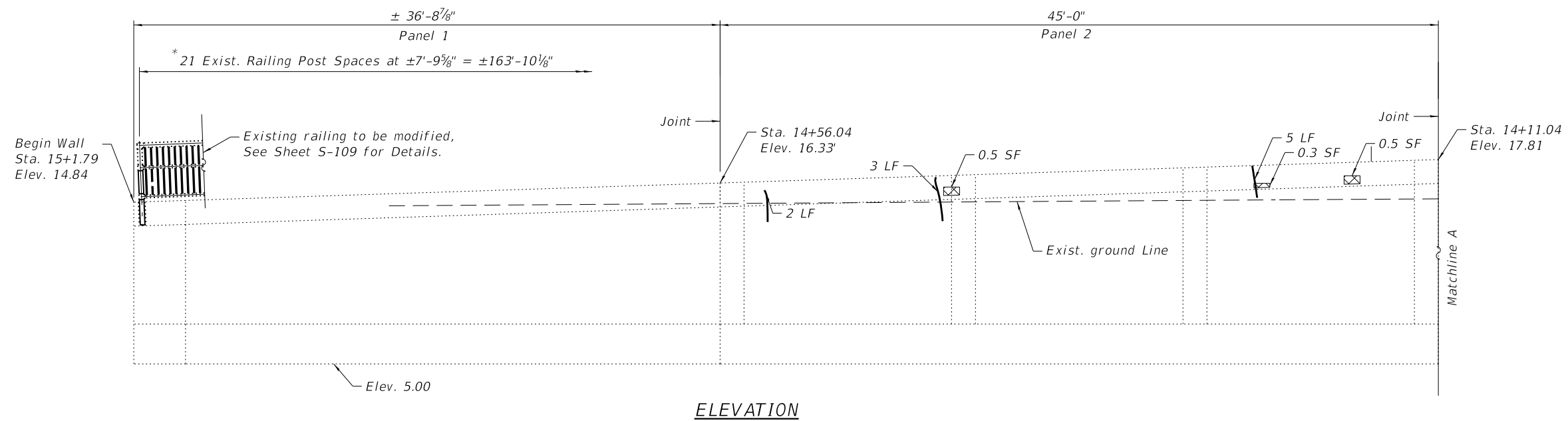
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PLOT DATE = 10/5/2020	CHECKED - MAA	REVISED -

**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

**NORTHEAST RETAINING WALL  
PLAN AND ELEVATION I  
(STRUCTURE NO. 016-6057)**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-103
CDOT PROJECT NO. E-1-525			146 of 210



\*Contractor shall determine/ verify the existing railing post spaces. See Sheets S-108 and S-109 for more details.



**NOTE:**

1. For notes, see Sheet S-103.

**REFERENCE DRAWINGS**

Drawing	Sheet No.
Survey Layout	1660570042
General Layout of Substructure	1660570044
East Approach - Retaining Wall Details and Reinforcement Bars	1660570051

**LEGEND**

-  - Structural Repair of Concrete (Depth Greater Than 5 Inches)
-  - Epoxy Crack Injection
- SF - Square Foot
- LF - Linear Foot



**wsp** WSP USA Inc.  
30 N. LASALLE STREET  
SUITE 4200  
CHICAGO, IL 60602  
TEL: (312) 782-8150  
FAX: (312) 782-1684

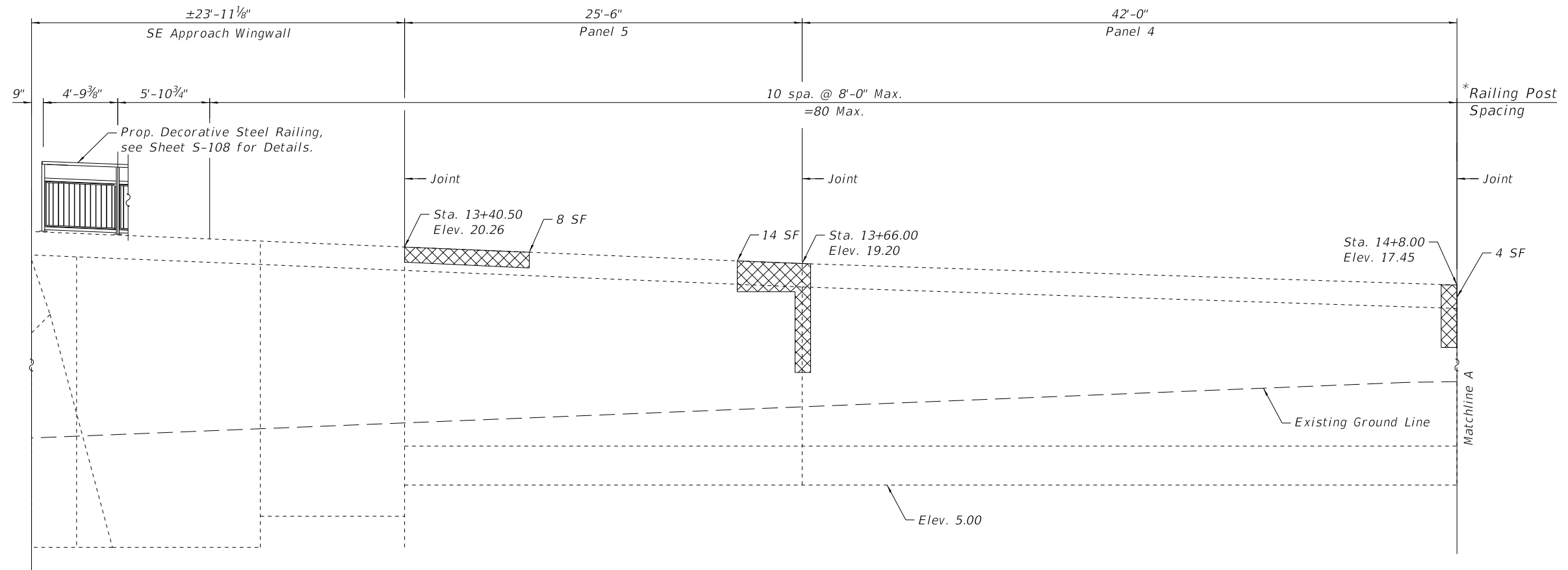
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**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

**NORTHEAST RETAINING WALL  
PLAN AND ELEVATION II  
(STRUCTURE NO. 016-6057)**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-104
CDOT PROJECT NO. E-1-525			147 of 210



ELEVATION

BILL OF MATERIAL

Item	Unit	Quantity
Epoxy Crack Injection	Foot	45
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq. Ft.	26
Structural Repair of Concrete (Depth Greater Than 5 Inches)	Sq. Ft.	34

\*Contractor shall determine final post spacing. See Sheet S-108.

LEGEND

- Structural Repair of Concrete (Depth Greater Than 5 Inches)
- SF - Square Foot

NOTE:

1. For notes, see Sheet S-103.

REFERENCE DRAWINGS

Drawing	Sheet No.
Survey Layout	1660570042
General Layout of Substructure	1660570044
East Approach - Retaining Wall Details and Reinforcement Bars	1660570051



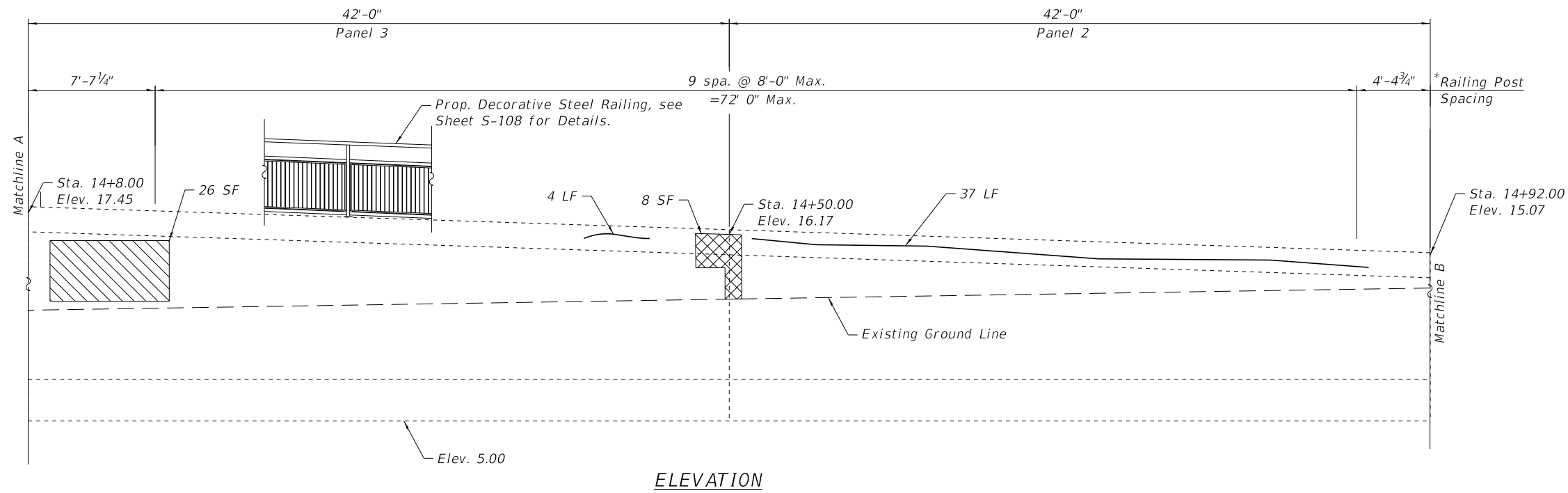
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**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

**SOUTHEAST RETAINING WALL  
PLAN AND ELEVATION I  
(STRUCTURE NO. 016-6057)**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-105
CDOT PROJECT NO. E-1-525			148 of 210



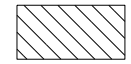
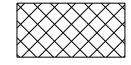

\*Contractor shall determine final post spacing. See Sheet S-108.

**NOTE:**  
1. For notes, see Sheet S-103.

**REFERENCE DRAWINGS**

Drawing	Sheet No.
Survey Layout	1660570042
General Layout of Substructure	1660570044
East Approach - Retaining Wall Details and Reinforcement Bars	1660570051

**LEGEND**

-  - Structural Repair of Concrete (Depth Equal To or Less Than 5 Inches)
-  - Structural Repair of Concrete (Depth Greater Than 5 Inches)
-  - Epoxy Crack Injection
- SF - Square Foot
- LF - Linear Foot



**wsp** WSP USA Inc.  
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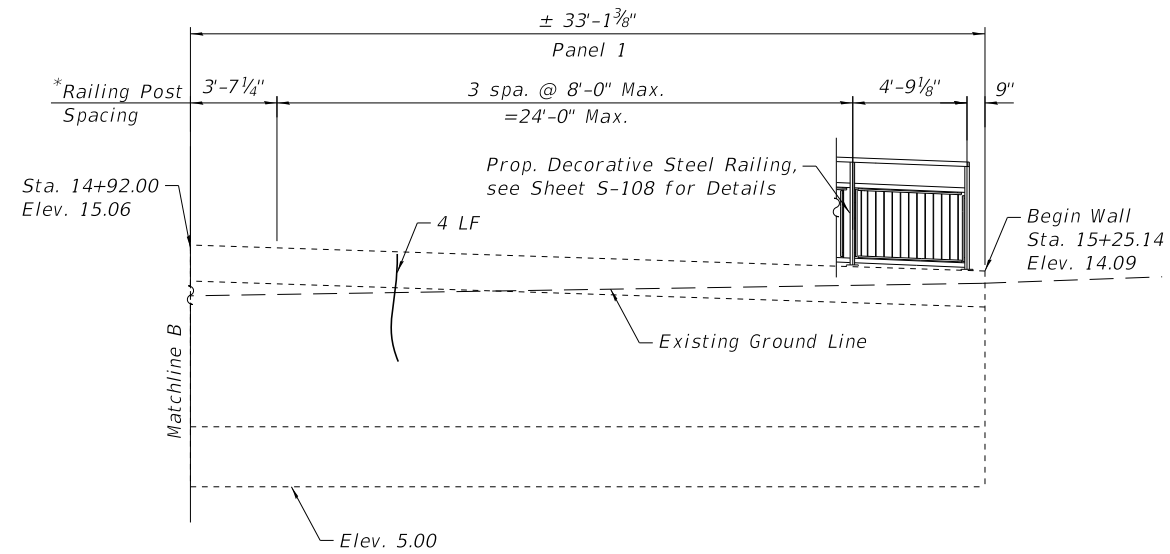
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**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

**SOUTHEAST RETAINING WALL  
PLAN AND ELEVATION II  
(STRUCTURE NO. 016-6057)**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-106
CDOT PROJECT NO. E-1-525			149 of 210



**ELEVATION**

\*Contractor shall determine final post spacing. See Sheet S-108.

**NOTE:**

1. For notes, see Sheet S-103.

**REFERENCE DRAWINGS**

Drawing	Sheet No.
Survey Layout	1660570042
General Layout of Substructure	1660570044
East Approach - Retaining Wall Details and Reinforcement Bars	1660570051

**LEGEND**

- Epoxy Crack Injection
- LF - Linear Foot



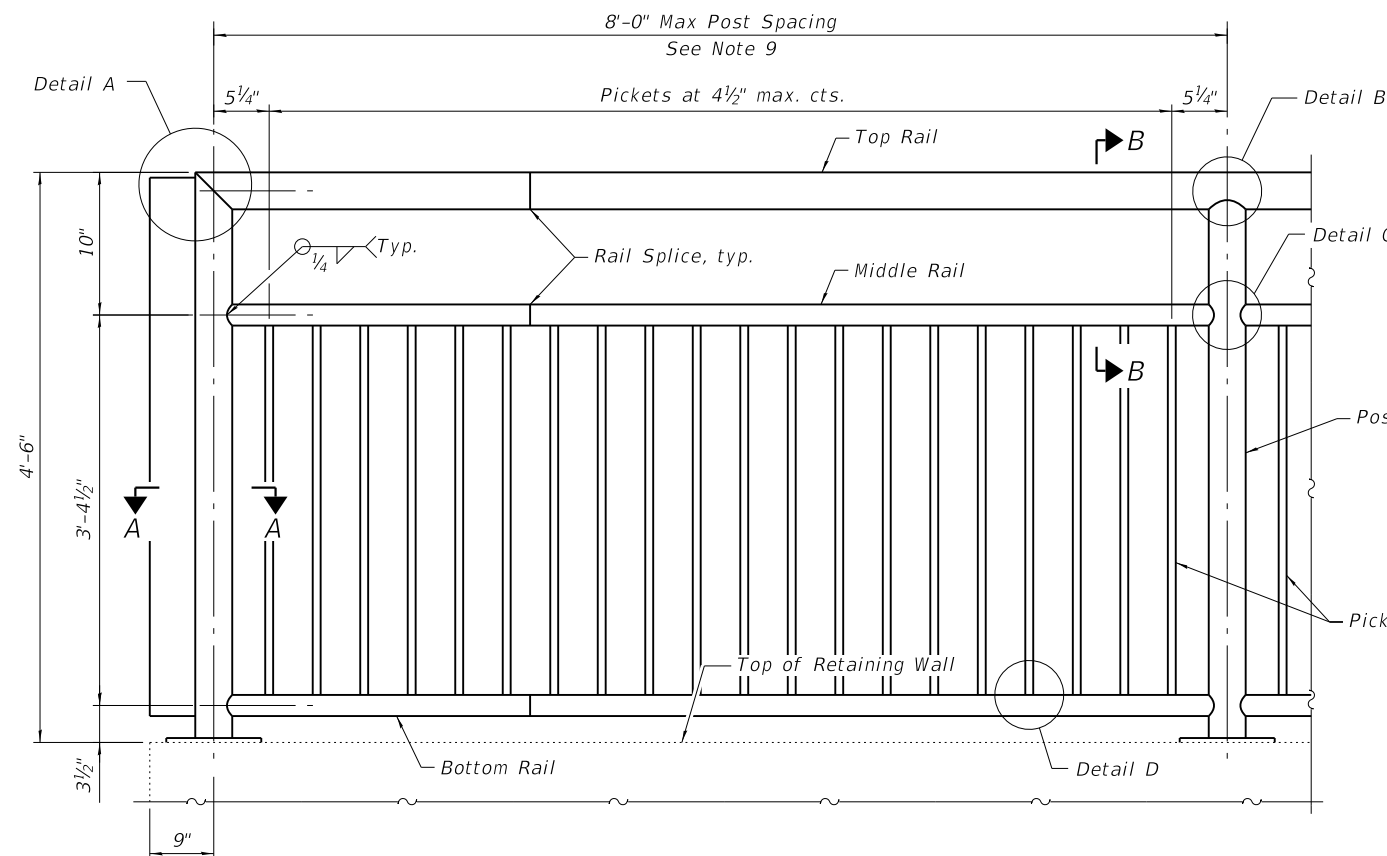
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**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

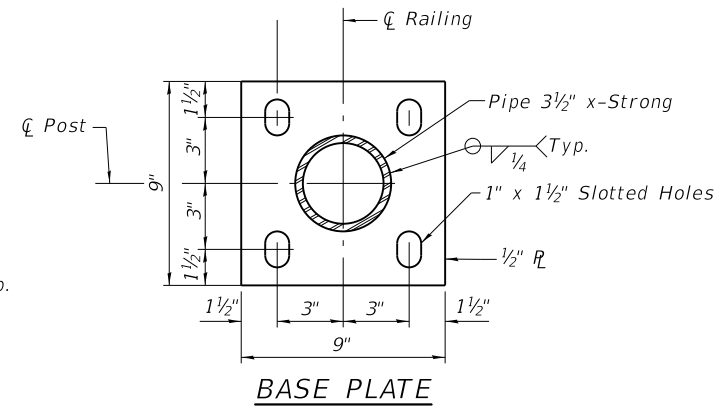
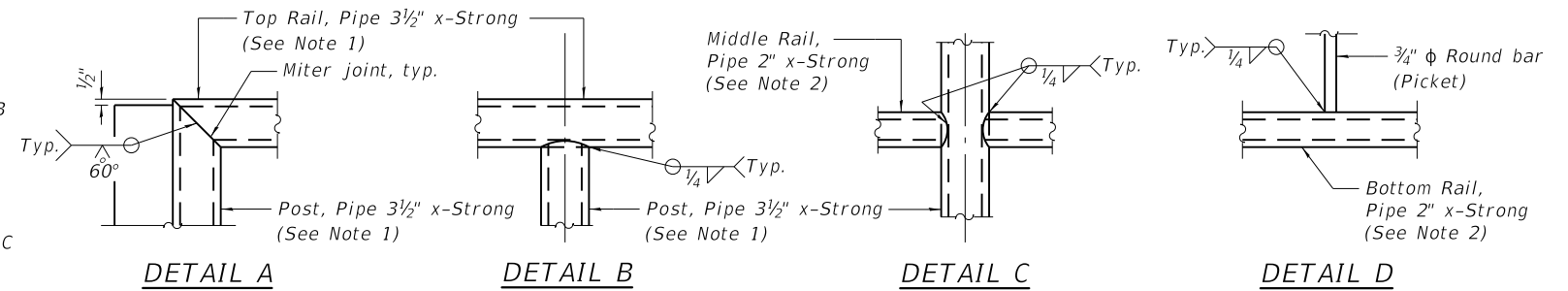
**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

**SOUTHEAST RETAINING WALL  
PLAN AND ELEVATION III  
(STRUCTURE NO. 016-6057)**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-107
CDOT PROJECT NO. E-1-525			150 of 210



**STEEL RAILING ELEVATION**

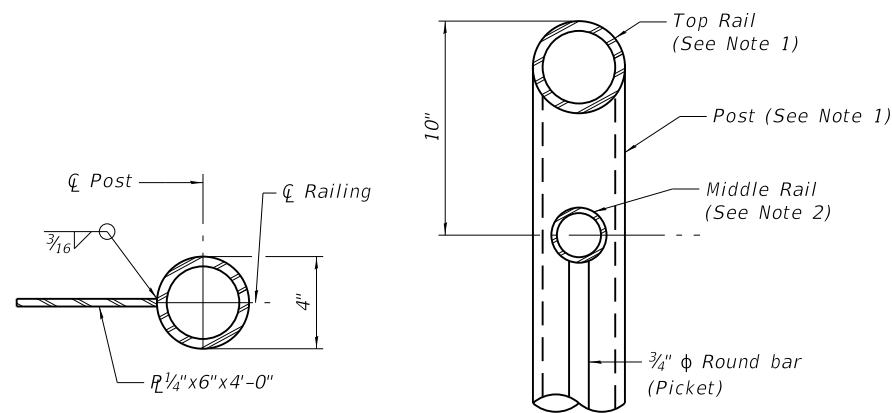


**RAIL SHOP SPLICE**

One shop splice per panel is permitted with minimum 85 percent penetration. The weld may be square groove or single vee groove. Grind smooth

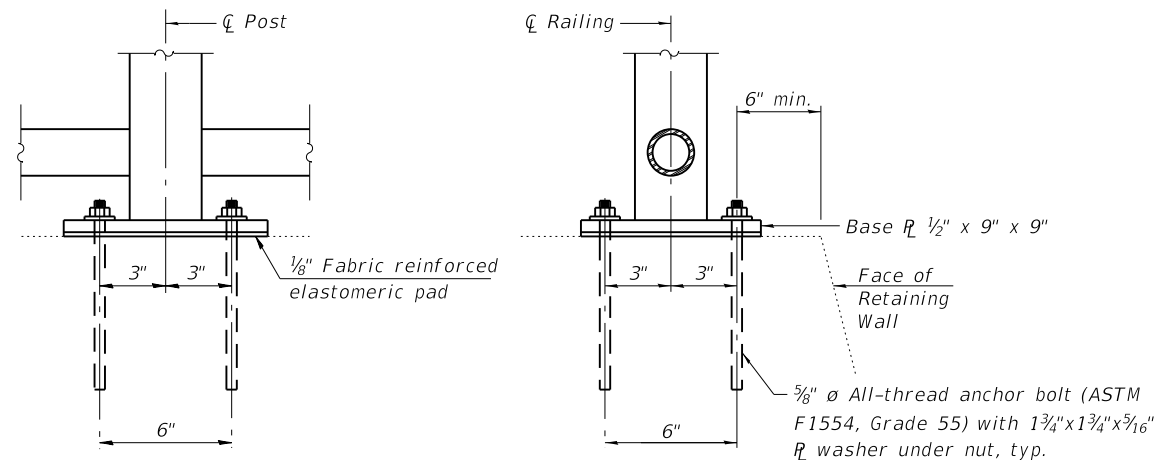
**Notes:**

1. Use Pipe 3 1/2" x-Strong (4" O.D., 0.318" wall thickness) for posts and top rail. Provide holes as needed in post and top rail for galvanizing drainage and venting. Plumb all posts.
2. Use 2" O x-Strong Pipe (2.380" O.D., 0.218" wall thickness) for middle and bottom rails. Parallel to top of retaining wall. Provide holes as needed for galvanizing drainage and venting.
3. Pipe will conform to ASTM-A53 Grade B. Steel plates and steel bars will conform to AASHTO M270 Gr. 50.
4. All rail elements shall be galvanized according to Article 509.05 of the Standard Specifications
5. Railing and any wall or other surface adjacent to them shall be free of any sharp or abrasive elements.
6. Submit shop drawings to the Engineer unless noted otherwise.
7. For all railings, erection drawings shall be submitted to the Commissioner for approval to ensure proper installation. Drawings shall show field splice locations, railing expansion joints (placed at the existing joint locations in the reinforced concrete wall), post spacing, anchor bolt drilling and setting procedures, profile slope, splice joint locations, shim plates, and railing lengths with identification showing where each railing goes on the layout.
8. Railing shall be fabricated such that longitudinal elements are parallel to the top of sidewalk and posts are plumb. Contractor shall field verify sidewalk profile slope.
8. All exposed edges will be rounded or chamfered to approximately 1/8" by grinding.
9. All existing railing removals and wall repairs shall be completed with the existing post connections marked on walls prior to installation of new decorative railings. Any existing anchors not fully removed shall be removed at least 2" below the surface of the new wall top. Installation of new anchors shall not begin until concrete repairs have reached a minimum of 3,000 psi. Contractor shall determine final post spacing to miss location of existing railing post anchor bolts and submit shop drawings to the Commissioner for approval prior to railing construction.



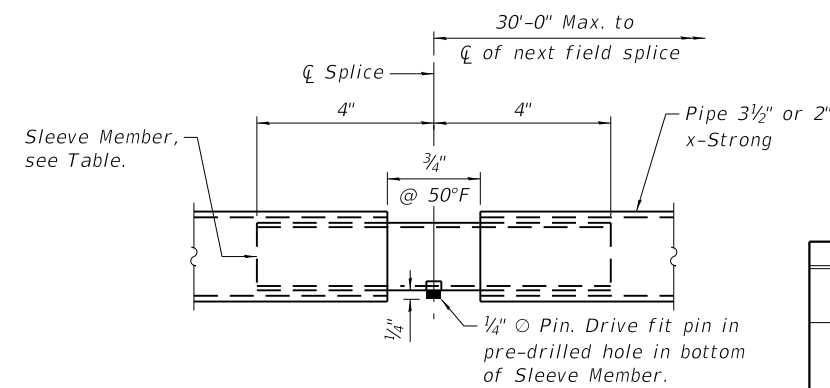
**SECTION A-A**

**SECTION B-B**



**ANCHOR BOLT DETAILS**

Drill and set 5/8" Ø anchor bolts according to Article 509.06 of the Standard Specifications. Embedment and edge distances shall be according to the manufacturer's specifications. Galvanize upper half of anchor bolt length and hardware in accordance with AASHTO M232. Cost of anchor bolts, hardware, galvanizing, drilling and setting is included in the cost of Decorative Steel Railing.



**RAIL FIELD SPLICE**

**SLEEVE MEMBER**

Rail Size	Sleeve Member
3 1/2" x-Strong	3 1/4" O MT Pipe (3 1/4" O.D., 0.120" wall thickness)
2" x-Strong	1 3/16" O MT Pipe (1 3/16" O.D., 0.120" wall thickness)

Mechanical tubing (MT) will conform to ASTM A513 Grade 1015 or higher.

**REFERENCE DRAWINGS**

Drawing East Approach - Retaining Wall Details and Reinforcement Bars

Sheet No. 1660570051

**BILL OF MATERIAL**

Item	Unit	Quantity
Decorative Steel Railing	Foot	210
Steel Railing Removal	Foot	206

0166057-E1525-S108-RETAIN-WALLRAILINGDET.DGN



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30 N. LA SALLE STREET  
SUITE 4200  
CHICAGO, IL 60602  
TEL: (312) 782-8150  
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USER NAME = USERNAME  
DESIGNED - IJL  
CHECKED - NBR  
PLOT SCALE = N.T.S.  
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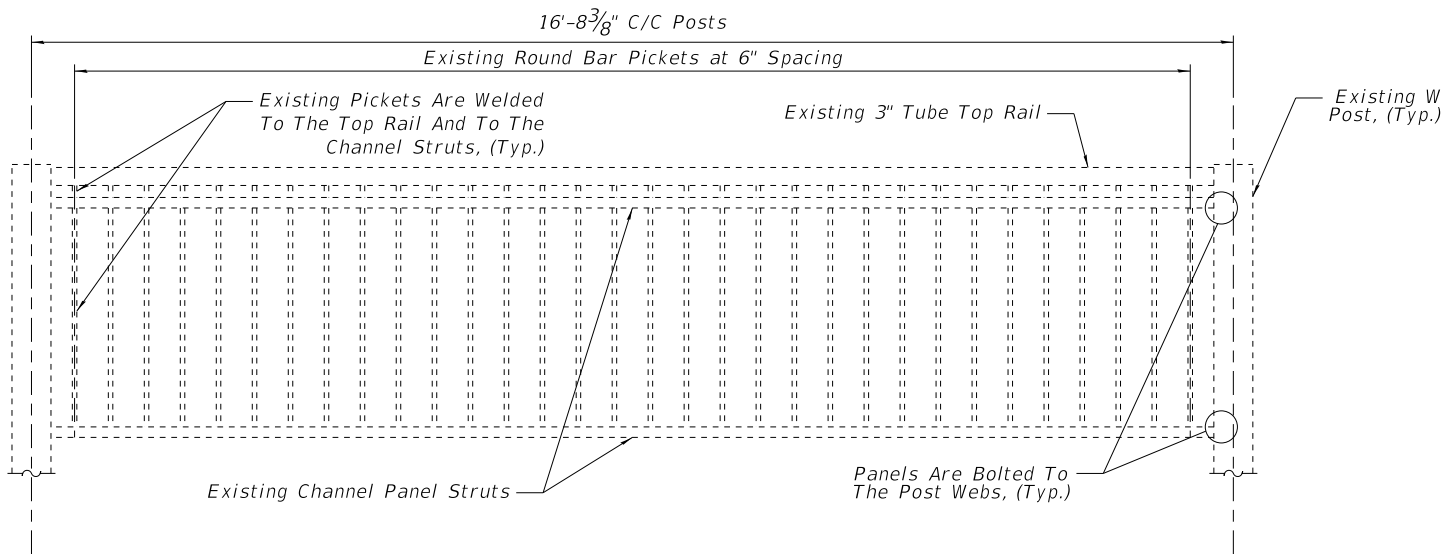
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**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

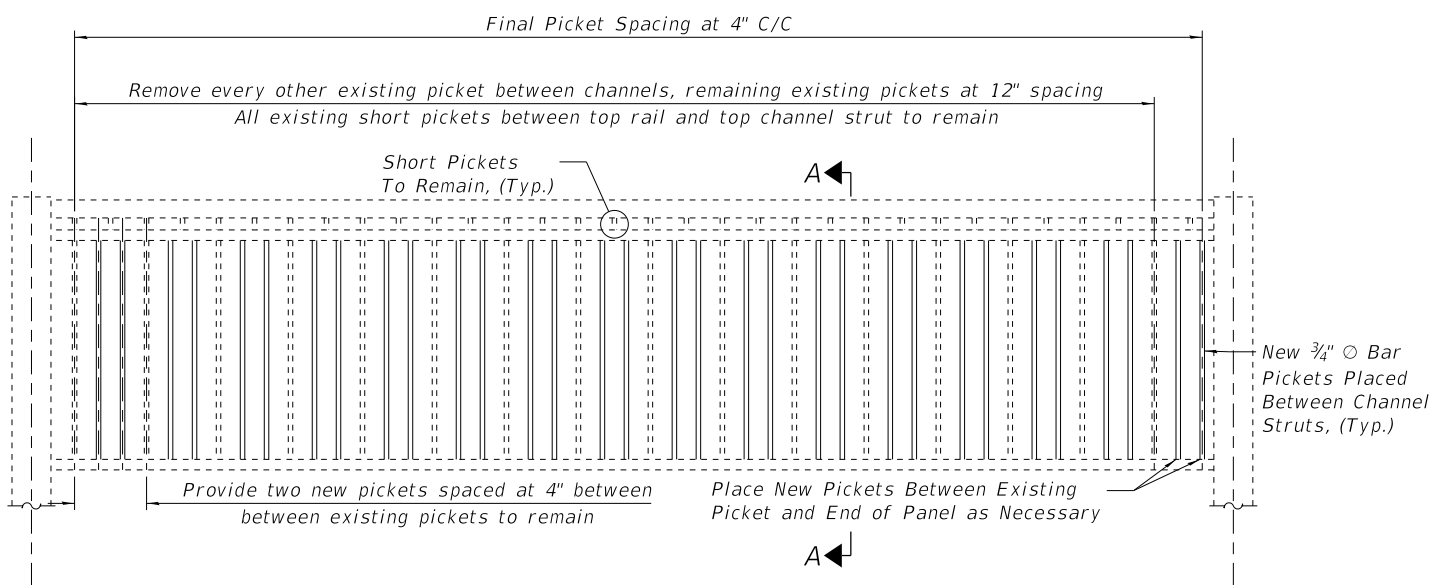
**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

**EAST RETAINING WALLS RAILING DETAILS**  
**(STRUCTURE NO. 016-6057)**

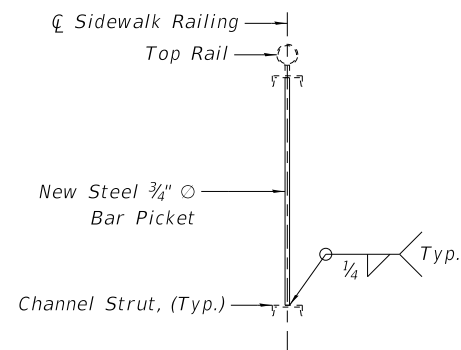
F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-108
CDOT PROJECT NO. E-1-525			151 of 210



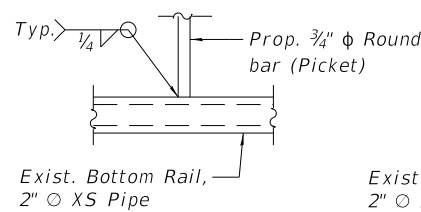
**EXISTING BASCULE SIDEWALK RAILING PANEL ELEVATION**  
(Sidewalk surface and panels other side of posts not shown)



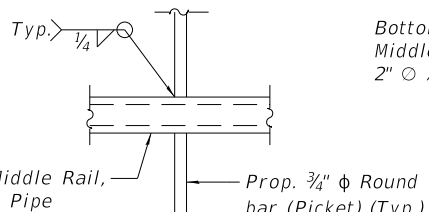
**MODIFIED BASCULE SIDEWALK RAILING PANEL ELEVATION**



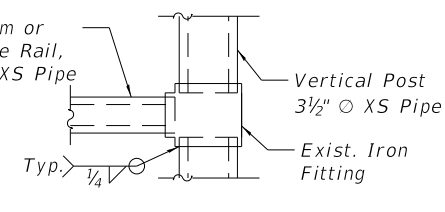
**SECTION A-A**



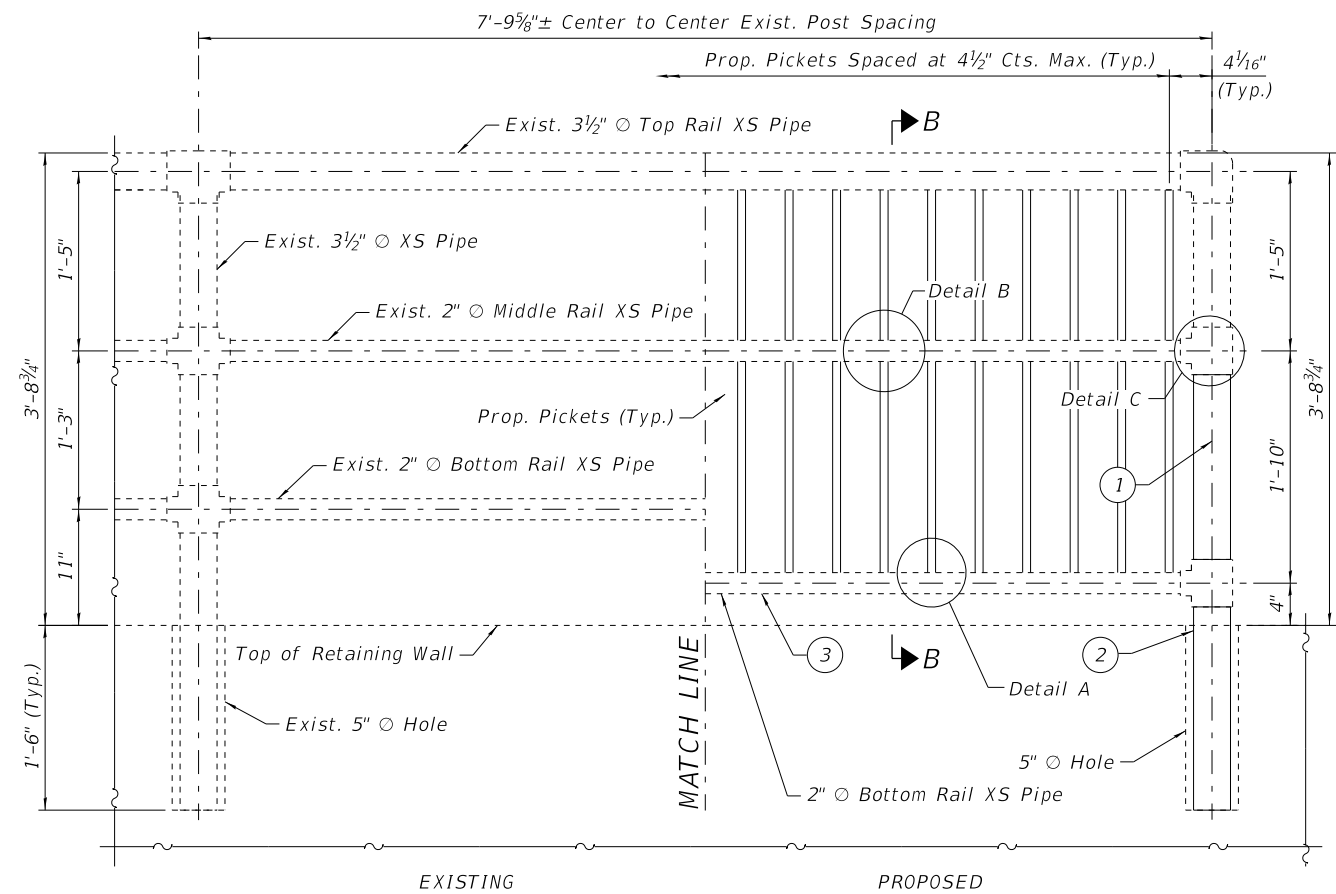
**DETAIL A**



**DETAIL B**



**DETAIL C**



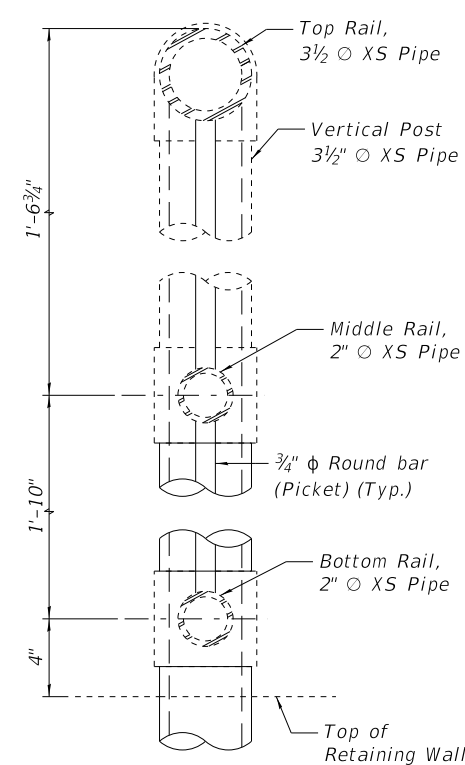
**STEEL RAILING ELEVATION**

Symbols:

- ① - Remove & replace existing 3 1/2" XS pipe post middle section to accommodate relocated bottom rail position.
- ② - Remove & replace existing 3 1/2" XS pipe post middle section to accommodate relocated bottom rail position and for embedding into wall.
- ③ - Cut exist. 2" XS pipe bottom rail and relocate to lower position.

Notes:

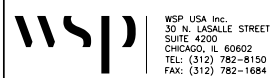
1. For limits of steel railing work, see sheet S-1, S-103 & S-104.
2. Sidewalk panels consist of the top rail, top and bottom channel struts, and the pickets.
3. All panels and posts shall be identified, located, and marked accordingly before removal from the bridge. The railing shall be delivered to the shop for the railing repairs indicated in the specification for the item Steel Railing (Special).
4. Prior to performing the work in this item, the panels shall be unbolted from the posts. Tack welds between the top rail and posts may be present and shall be ground. All welds on the struts after the picket removals shall be ground.
5. All work to clean railings, modify the panels, furnish and fabricate steel pickets, painting, delivery to and from the shop, reassembling the panels to posts at the same locations, and any other incidental work necessary to complete the work as described in Steel Railing (Special), is included in that item for payment.



**SECTION B-B**

Item	Unit	Quantity
Steel Railing (Special)	Foot	506

0166057-E1525-S109-STEELRAILINGDET.DGN



WSP USA Inc.  
30 N. LASALLE STREET  
SUITE 4200  
CHICAGO, IL 60602  
TEL: (312) 782-8150  
FAX: (312) 782-1684

USER NAME = P.JLAUX  
DESIGNED - IJL  
CHECKED - NBR  
PLOT SCALE = N.T.S.  
DRAWN - IJL  
PLOT DATE = \$DATE\$  
CHECKED - JIG

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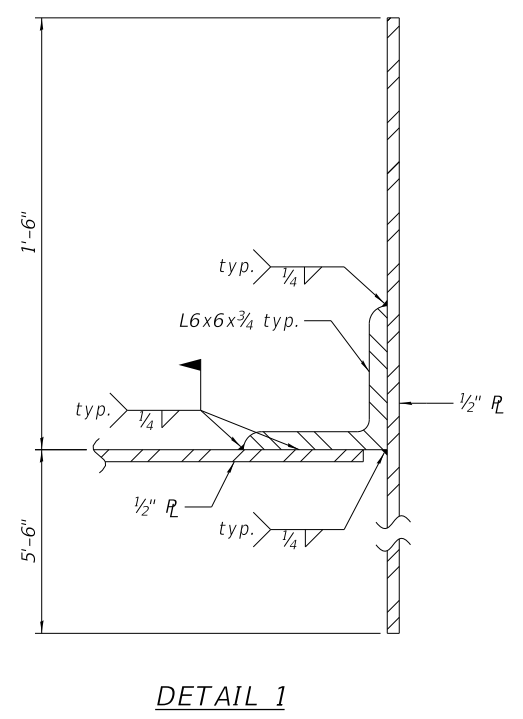
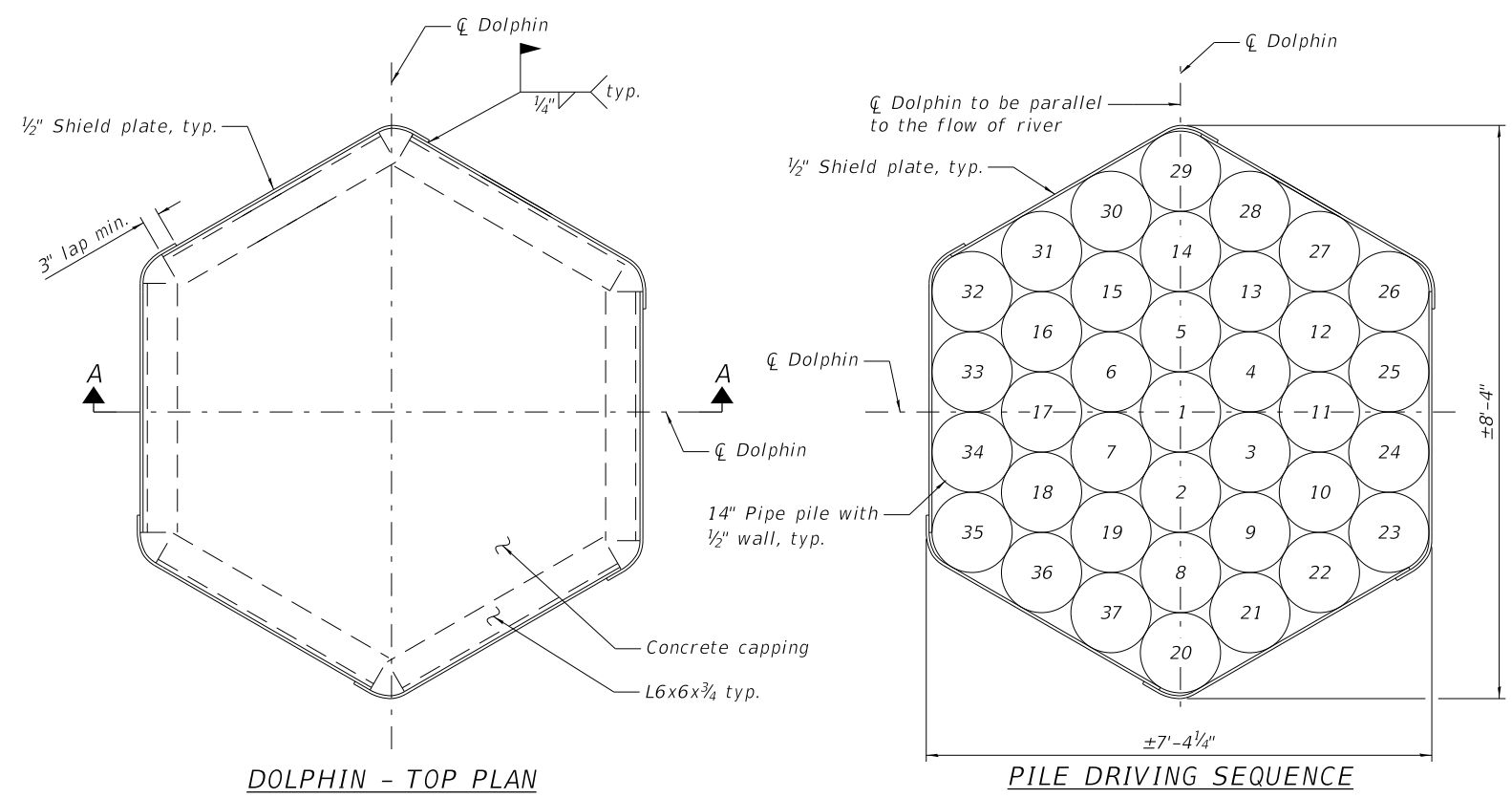
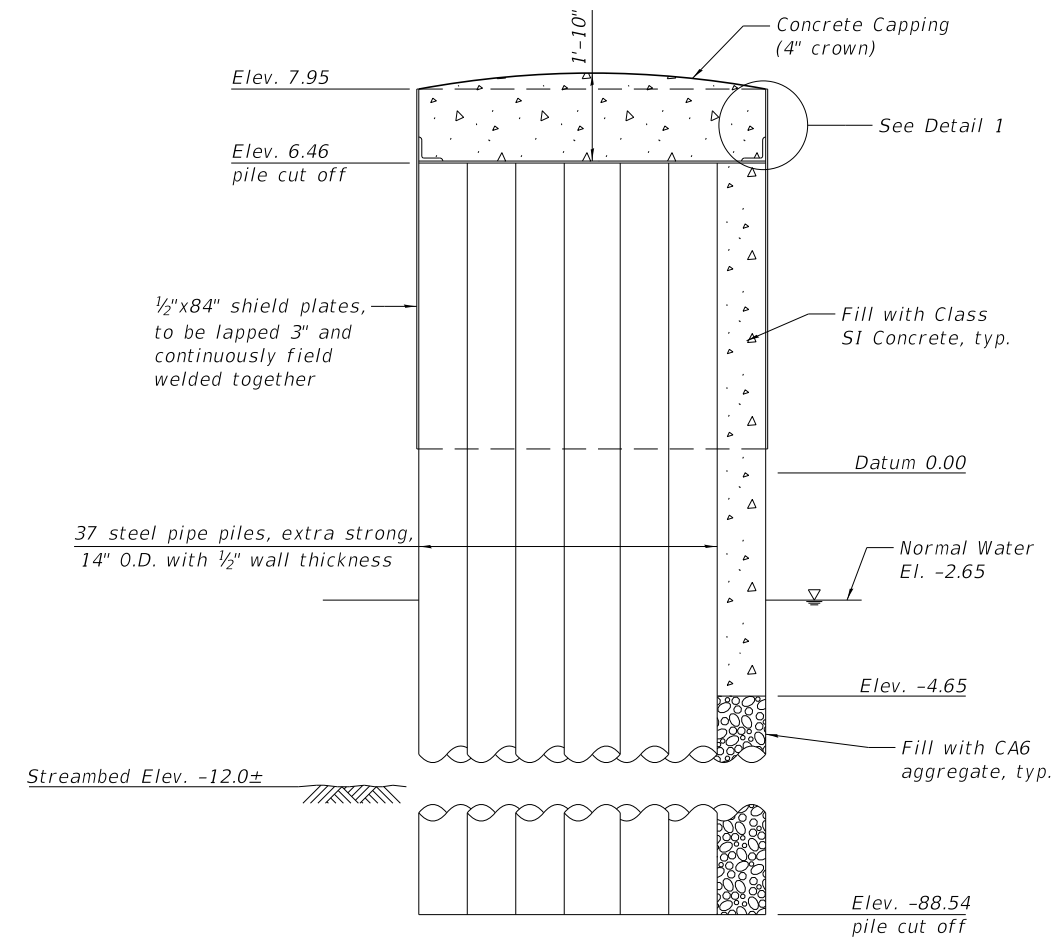
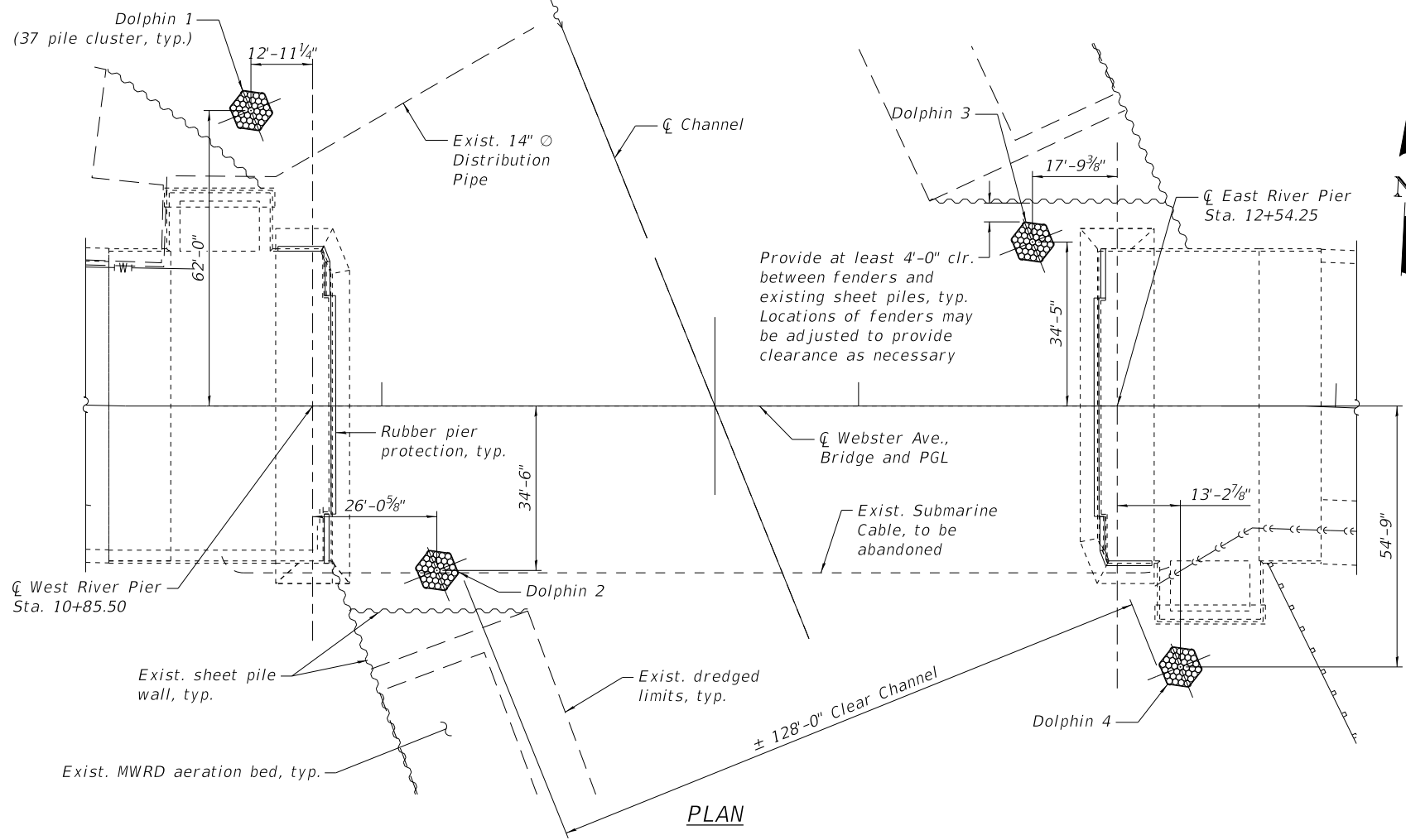
**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

**STEEL RAILING DETAILS  
(STRUCTURE NO. 016-6057)**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-109

CDOT PROJECT NO. E-1-525 152 of 210



**BILL OF MATERIAL**

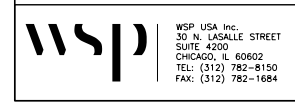
Item	Unit	Quantity
Dolphins	Each	4
Pier Protection Replacement	Foot	301

- Notes:
- It shall be the responsibility of the Contractor to verify all dimensions and conditions existing in the field prior to construction and ordering of materials.
  - Number on the piles denotes driving sequence.
  - See sheet S-111 for the layout plan of the rubber pier protection.
  - Removal of existing dolphins and fenders, and the placement of the new dolphins and rubber pier protection shall be included in the cost of Dolphins. See the Special Provisions.
  - Existing pier protection and dolphins are heavily deteriorated and not easily visible above the surface of the water. It is the responsibility of the Contractor to locate existing pier protection timber piles and dolphins for removal.
  - Pile driving at Dolphin 2 may conflict with existing submarine cables which are to be abandoned in place. Contractor shall plan this work accordingly.

**REFERENCE DRAWINGS**

Drawing	Sheet No.
Substructure Pier Protection	1660570043
Substructure Plan	1660570091
Substructure Pier Protection	1660570096

0166057-E1525-S110-DOLPHINS&PIERPROTECTION1.DGN



USER NAME = NBROMAN	DESIGNED - NBR	REVISED -
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PLOT DATE = \$DATE\$	DRAWN - NBR	REVISED -
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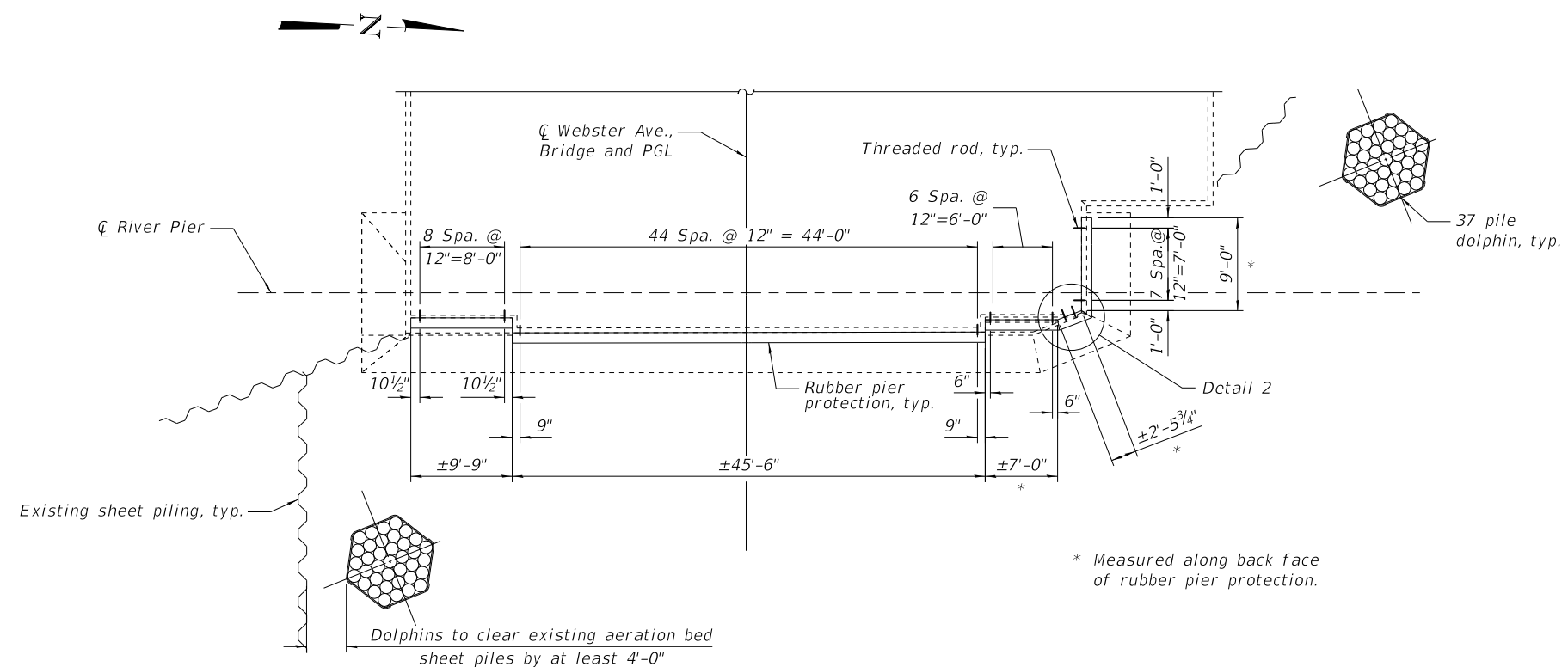
**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

**WEBSTER AVENUE BRIDGE OVER THE NORTH BRANCH CHICAGO RIVER**

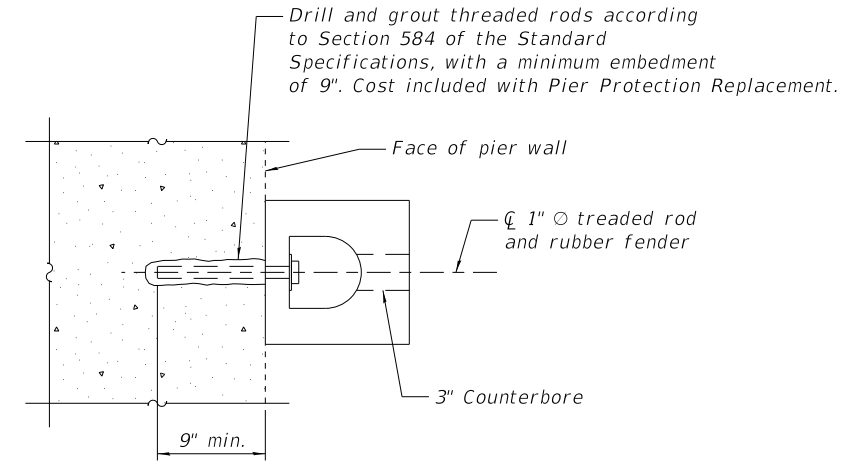
**DOLPHINS AND PIER PROTECTION I (STRUCTURE NO. 016-6057)**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-110
CDOT PROJECT NO. E-1-525			153 of 210

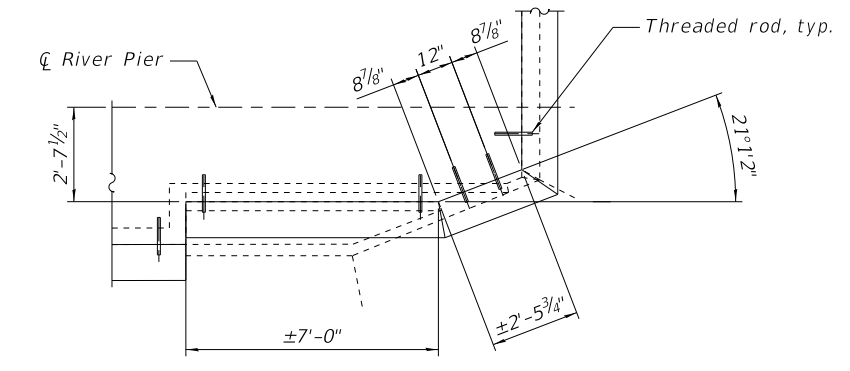




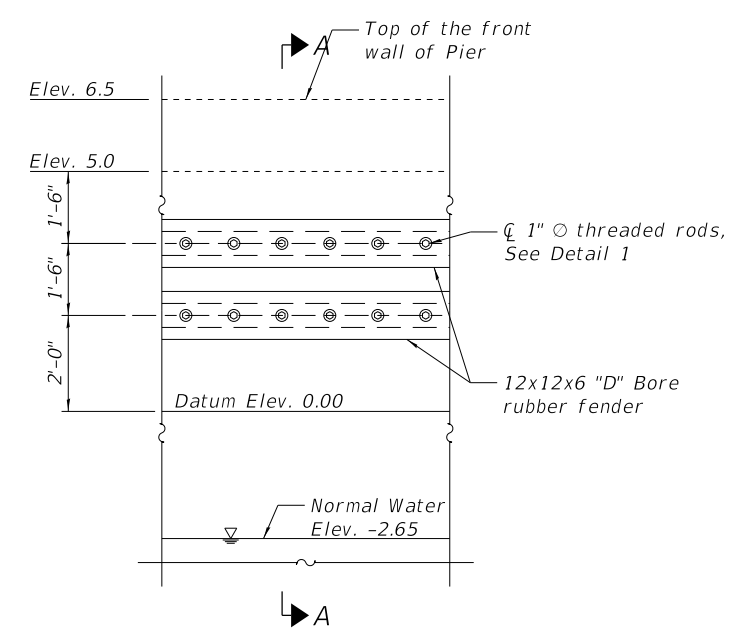
**PIER PROTECTION - LAYOUT PLAN**  
(West Pier shown, East Pier similar)



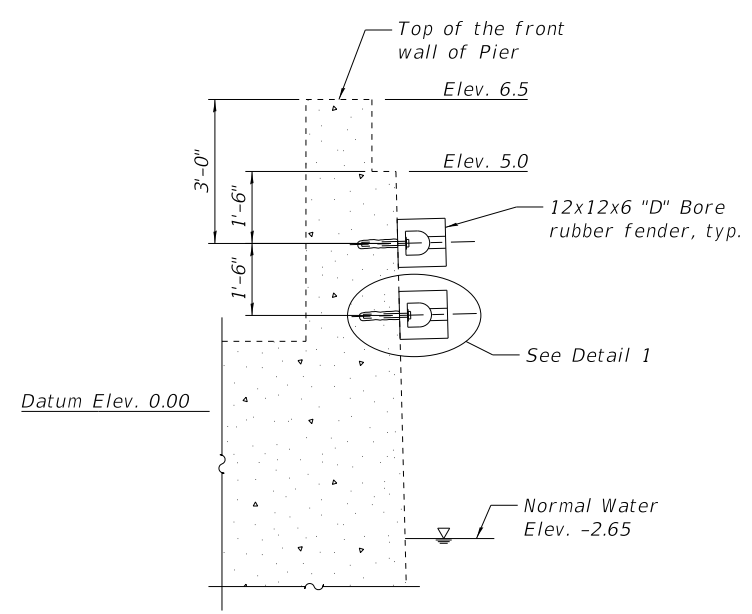
**DETAIL 1**



**DETAIL 2**  
(West Pier shown, East Pier similar)



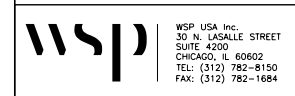
**PARTIAL ELEVATION**



**SECTION A-A**

- Notes:
1. For Dolphin layout, see sheet S-110.
  2. The rubber fender shall be a marine type, extruded rubber. Readily available lengths of rubber fender may be used for the long front face of pier as long as threaded rods are provided at 12" spaces and the minimum edge distances shall not be less than 9". Provide no more than 1" clearance between runs of rubber fenders. The costs for furnishing and erecting rubber fenders and all hardware are included with Pier Protection Replacement.
  3. All hardware, rods, nuts, and plate washers shall be galvanized in accordance with AASHTO M 232.
  4. The Contractor shall coordinate installation of the rubber pier protection with the structural repair of concrete on the river piers.

0166057-E1525-S111-DOLPHINS&PIERPROTECTION.I.DGN



USER NAME =	NBROMAN	DESIGNED -	NBR	REVISED -	
		CHECKED -	IJL	REVISED -	
PLOT SCALE =	N.T.S.	DRAWN -	NBR	REVISED -	
PLOT DATE =	\$DATE\$	CHECKED -	JIG	REVISED -	

**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

**DOLPHINS AND PIER PROTECTION II**  
(STRUCTURE NO. 016-6057)

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-111
CDOT PROJECT NO. E-1-525			154 of 210



GSG CONSULTANTS, INC.

855 West Adams, Suite 200  
Chicago, Illinois 60607  
tel: 312.733.6262 • fax: 312.733.5612

# SOIL BORING LOG

Page 1 of 4

Date 4/22/15

ROUTE F.A.U. Route 1388 DESCRIPTION Bridge Rehabilitation-Webster Ave over Chicago River LOGGED BY JJR

SECTION 11-E1525-00-BR LOCATION Northside of bridge Northing 1914745.514 Easting 1165501.335

COUNTY Cook DRILLING METHOD HSA HAMMER TYPE AUTO

STRUCT. NO. 016-6057  
Station 11+69.88

BORING NO. B-1  
Station NA  
Offset

Ground Surface Elev. 588.00 ft

DEPTH (ft)	GRAPHIC LOG	BLOWS (/6")	UCS (tsf)	MOIST (%)	DRY DENSITY (pcf)	ORGANIC (%)
------------	-------------	-------------	-----------	-----------	-------------------	-------------

Surface Water Elev. 576.54 ft  
Stream Bed Elev. 567.19 ft  
Groundwater Elev.:  
First Encounter 571.0 ft ▼  
Upon Completion None ft  
After NA Hrs. NA ft

NOTES:

6 inches of Topsoil 587.50  
Black, Wet  
FILL: SAND, with gravel, brick and cinders

4						
4				19		
5						
5						
7				18		
5						

582.00  
Brown and Black, Moist  
FILL: CLAY, with brick, cinders, gravel and wood

3						
3		2.0	15			
5		P				
3						
5		2.0	20			
5		P				

574.00  
Brown and Gray, Moist to Very Moist  
FILL: CLAY, with gravel, and wood

2						
2		1.3	18			
4		P				
2						
1		1.5	21			
2		P				

571.00 ▼  
Brown, Wet  
FILL: SAND, with wood, concrete fragments

1		1.8	30			
2		P				
10						
10/3"						
			30			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)  
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)



GSG CONSULTANTS, INC.

855 West Adams, Suite 200  
Chicago, Illinois 60607  
tel: 312.733.6262 • fax: 312.733.5612

# SOIL BORING LOG

Page 2 of 4

Date 4/22/15

ROUTE F.A.U. Route 1388 DESCRIPTION Bridge Rehabilitation-Webster Ave over Chicago River LOGGED BY JJR

SECTION 11-E1525-00-BR LOCATION Northside of bridge Northing 1914745.514 Easting 1165501.335

COUNTY Cook DRILLING METHOD HSA HAMMER TYPE AUTO

STRUCT. NO. 016-6057  
Station 11+69.88

BORING NO. B-1  
Station NA  
Offset

Ground Surface Elev. 588.00 ft

DEPTH (ft)	GRAPHIC LOG	BLOWS (/6")	UCS (tsf)	MOIST (%)	DRY DENSITY (pcf)	ORGANIC (%)
------------	-------------	-------------	-----------	-----------	-------------------	-------------

Surface Water Elev. 576.54 ft  
Stream Bed Elev. 567.19 ft  
Groundwater Elev.:  
First Encounter 571.0 ft ▼  
Upon Completion None ft  
After NA Hrs. NA ft

NOTES:

Brown, Wet  
FILL: SAND, with wood, concrete fragments (continued) 566.50

4						
6		2.1	17			
10		B				
2						
3		1.5	22			
3		P				

Stiff to Very Stiff  
Gray, Moist to Very Moist  
CLAY, trace gravel (CL)

1						
2		1.3	25			
3		P				
1						
2		1.3	25	105.4		
3		P				

553.00  
Very Stiff to Hard  
Gray, Moist to Very Moist  
SILTY CLAY, trace gravel (CL/ML)

2						
2		1.3	23			
4		B				
10						
12		6.0	12			
18		P				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)  
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)



USER NAME =	DESIGNED - PJL	REVISED -
CHECKED - IJL	REVISED -	
PLOT SCALE = N.T.S.	DRAWN - IJL	REVISED -
CHECKED - JIG	REVISED -	

CITY OF CHICAGO  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER

BORING LOGS I  
(STRUCTURE NO. 016-6057)

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-112
CDOT PROJECT NO. E-1-525			155 of 210



GSG CONSULTANTS, INC.

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# SOIL BORING LOG

Page 3 of 4

Date 4/22/15

ROUTE F.A.U. Route 1388 DESCRIPTION Bridge Rehabilitation-Webster Ave over Chicago River LOGGED BY JJR

SECTION 11-E1525-00-BR LOCATION Northside of bridge Northing 1914745.514 Easting 1165501.335

COUNTY Cook DRILLING METHOD HSA HAMMER TYPE AUTO

STRUCT. NO. 016-6057  
Station 11+69.88

BORING NO. B-1  
Station NA  
Offset

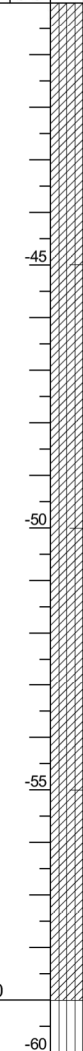
Ground Surface Elev. 588.00 ft

DEPTH (ft)	GRAPHIC LOG (/6")	UCS (tsf)	MOIST (%)	DRY DENSITY (pcf)	ORGANIC (%)
4					
7		2.5	18		
8		B			
11		5.5	14		
14		P			
18					
22			21		
20					

Surface Water Elev. 576.54 ft  
Stream Bed Elev. 567.19 ft  
Groundwater Elev.:  
First Encounter 571.0 ft ▼  
Upon Completion None ft  
After NA Hrs. NA ft

NOTES:

Very Stiff to Hard  
Gray, Moist to Very Moist  
SILTY CLAY, trace gravel  
(CL/ML) (continued)



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# SOIL BORING LOG

Page 4 of 4

Date 4/22/15

ROUTE F.A.U. Route 1388 DESCRIPTION Bridge Rehabilitation-Webster Ave over Chicago River LOGGED BY JJR

SECTION 11-E1525-00-BR LOCATION Northside of bridge Northing 1914745.514 Easting 1165501.335

COUNTY Cook DRILLING METHOD HSA HAMMER TYPE AUTO

STRUCT. NO. 016-6057  
Station 11+69.88

BORING NO. B-1  
Station NA  
Offset

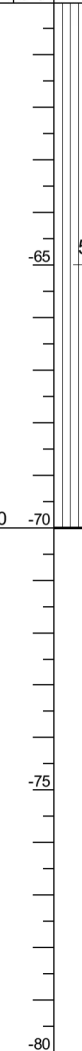
Ground Surface Elev. 588.00 ft

DEPTH (ft)	GRAPHIC LOG (/6")	UCS (tsf)	MOIST (%)	DRY DENSITY (pcf)	ORGANIC (%)
21					
46			12		
50/4"					
28					
23			14		
32					

Surface Water Elev. 576.54 ft  
Stream Bed Elev. 567.19 ft  
Groundwater Elev.:  
First Encounter 571.0 ft ▼  
Upon Completion None ft  
After NA Hrs. NA ft

NOTES:

Hard to Very Hard  
Gray, Moist  
SILT, trace gravel (ML)  
(continued)



The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)  
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)  
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)



USER NAME =	DESIGNED - PJL	REVISED -
CHECKED - IJL	REVISED -	
PLOT SCALE = N.T.S.	DRAWN - PJL	REVISED -
PLOT DATE = \$DATE\$	CHECKED - JIG	REVISED -

CITY OF CHICAGO  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER

BORING LOGS II  
(STRUCTURE NO. 016-6057)

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	S-113
CDOT PROJECT NO. E-1-525			156 of 210

**GENERAL NOTES - DEMOLITION**

- THE CONTRACT IS TO PERFORM THE DEMOLITION SCOPE OF WORK AS REQUIRED TO COMPLETE NEW CONSTRUCTION. COORDINATE ARCHITECTURAL DEMOLITION WITH CIVIL, STRUCTURAL, MECHANICAL AND ELECTRICAL DEMOLITION SCOPE OF WORK.
- THE CONTRACTOR MUST VISIT THE SITE AND BE KNOWLEDGEABLE OF ALL CONDITIONS. HE/SHE MUST INVESTIGATE, VERIFY, AND BE RESPONSIBLE FOR ALL CONDITIONS OF THE PROJECT AND MUST NOTIFY THE COMMISSIONER OF ANY CONDITIONS REQUIRING MODIFICATION BEFORE PROCEEDING WITH THE WORK.
- THE CONTRACTOR MUST PERFORM ALL WORK IN ACCORDANCE WITH ALL APPLICABLE CITY OF CHICAGO, COUNTY, STATE, AND FEDERAL LAWS AND REGULATIONS.
- DUMPSTER PLACEMENT LOCATIONS MUST BE APPROVED BY THE COMMISSIONER.
- TO THE BEST OF COMMISSIONER'S KNOWLEDGE, THESE DRAWINGS REPRESENT THE EXTENT OF THE EXISTING CONDITIONS. EXISTING CONSTRUCTION TO BE REMOVED, RELOCATED, OR REMAIN SHALL BE VERIFIED AT THE SITE BY THE CONTRACTOR AND COMMISSIONER.
- THE CONTRACTOR MUST NOTIFY THE COMMISSIONER IN WRITING OF ANY DISCREPANCIES ON THE DRAWING OR THE UNCOVERING OF HIDDEN CONDITIONS WHICH MAY AFFECT THE WORK.
- ITEMS OF CONSTRUCTION SHOWN AND NOTED TO BE REMOVED SHALL REPRESENT ALL SIMILAR CONDITIONS AND CONSTRUCTION UNLESS NOTED OTHERWISE.
- DO NOT REMOVE OR ALTER ANY EXISTING STRUCTURAL MEMBER OR PORTION OF THE STRUCTURAL FLOOR SYSTEM UNLESS SPECIFICALLY NOTED OR SHOWN ON THE CONTRACT DOCUMENTS.
- THE CONTRACTOR MUST NEATLY SAWCUT ALL CONCRETE WALLS AND CONCRETE FLOORS IN A CLEAN AND STRAIGHT MANNER.
- CONTRACTOR MUST PROVIDE CONTAINMENT INCLUDING CONSTRUCTION BARRICADES OR OTHER DUST COLLECTION METHODS TO PREVENT DUST GENERATED FROM DEMOLITION OR CONSTRUCTION FROM ENTERING THE PUBLIC AREAS.
- CONTRACTOR MUST PAY ALL APPLICABLE PERMIT FEES AND COSTS RELATED TO REMOVAL AND INSTALLATION.
- ANSI A-10.6 "SAFETY REQUIREMENTS FOR DEMOLITION" WILL GOVERN EXCEPT AS OTHERWISE MODIFIED HEREIN. WHERE THE REQUIREMENTS SPECIFIED HEREIN OR CONTAINED IN THE ANSI STANDARD DIFFER FROM OTHER APPLICABLE RULES, REGULATIONS, AND CODES, THE MORE STRINGENT REQUIREMENTS SHALL GOVERN THE WORK UNDER CONTRACT.
- BEFORE COMMENCING ANY WORK, SUBMIT TO THE COMMISSIONER FOR REVIEW A SCHEDULE SHOWING THE COMMENCEMENT OF WORK, THE ORDER, AND THE COMPLETION DATES FOR THE VARIOUS PARTS OF THIS WORK. THE CONTRACTOR MUST OBTAIN COMMISSIONER APPROVAL IN WRITING BEFORE PROCEEDING WITH THIS WORK.
- PROVIDE, ERECT, AND MAINTAIN TEMPORARY WORK INCLUDING, BUT NOT LIMITED TO BARRICADES, WARNING SIGNS, ETC. AS REQUIRED FOR PROPER PROTECTION OF THE PUBLIC AND PROPERTY DURING REMOVAL OPERATIONS.
- THE CONTRACTOR WILL BE RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PHASING OR PROCEDURES AND SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK. ALL WORK SHALL MEET THE QUALITY REQUIREMENTS NOTED IN THE CONTRACT DOCUMENTS.
- COMMISSIONER WILL NOT BE RESPONSIBLE FOR NOR WILL HAVE CONTROL OVER OR CHARGE OF CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PHASING OR PROCEDURES, SAFETY PRECAUTIONS, AND PROGRAMS IN CONNECTION WITH THE WORK, NOR WILL THEY BE RESPONSIBLE FOR THE CONTRACTOR'S FAILURE TO CARRY OUT THE WORK IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS. COMMISSIONER WILL NOT BE RESPONSIBLE FOR, OR HAVE CONTROL OR CHARGE OVER THE ACTS OR OMISSIONS OF THE CONTRACTOR, SUBCONTRACTORS, THEIR AGENTS OR EMPLOYEES, OR ANY OTHER PERSON PERFORMING ANY OF THE WORK.
- ALL DEMOLITION INDICATED TO BE REMOVED MUST BE REMOVED CAREFULLY. ANY ADJACENT MATERIAL DAMAGED SHALL BE REPLACED IN KIND AT THE CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE COMMISSIONER.
- MATERIAL AND/OR ITEMS REMOVED AND NOT DESIGNATED TO BECOME THE PROPERTY OF THE COMMISSIONER WILL BECOME THE PROPERTY OF THE CONTRACTOR AND REMOVED FROM THE JOB SITE. DELIVER ALL ITEMS DESIGNATED AS "SALVAGE" OR "REMIT" TO STORAGE SITE DESIGNATED BY COMMISSIONER. COORDINATE DELIVERY WITH COMMISSIONER.
- ANY EXISTING COMPONENT REMOVED OR DAMAGED TO ALLOW NEW WORK TO OCCUR MUST BE REINSTALLED OR REPLACED AT THE COMPLETION OF THE NEW WORK UNLESS NOTED OTHERWISE.
- NO BURNING OF MATERIAL ON THE PREMISES WILL BE PERMITTED. COMBUSTIBLE FUELS ARE PROHIBITED.
- UPON COMPLETION OF REMOVAL WORK, REMOVE ALL TOOLS, MATERIALS, APPARATUS, AND

- RUBBISH OF ANY SORT. THE PORTION OF THE JOB SITE THAT CAN BE SEEN BY THE PUBLIC MUST BE LEFT CLEAN, REMOVE RUBBISH EVERY DAY.
- REFER TO CONTRACT DOCUMENTS PLANS AND DETAILS INCLUDING APPLICABLE STRUCTURAL, CIVIL, MECHANICAL AND ELECTRICAL SCOPE OF WORK FOR EXISTING CONDITIONS AND NEW WORK COORDINATION.
  - NOTIFY COMMISSIONER IF ANY MATERIAL IS FOUND WHICH IS NOTED TO BE A HAZARDOUS MATERIAL.
  - THE FOLLOWING ITEMS/EQUIPMENT/SYSTEMS ARE TO BE REMOVED FROM THE PROJECT AND DELIVERED TO A SITE AS INDICTED BY THE COMMISSIONER UNLESS NOTED OTHERWISE:
    - ALL BRIDGE EQUIPMENT AT OPERATOR'S LEVEL THAT IS NOT GOING TO BE REUSED.
  - THE FOLLOWING AREAS ARE TO BE CLEANED:
    - COMPLETE CLEANING OF BRIDGE HOUSES, COST INCLUDED IN THE LUMP SUM PRICE FOR BRIDGE HOUSE PAY ITEMS.

**GENERAL NOTES - SCOPE OF WORK**

THE ARCHITECTURAL SCOPE OF WORK AND ASSOCIATED PAY ITEMS GENERALLY CONSISTS OF THE REHABILITATION OF THE BRIDGE HOUSES AND ABUTMENTS CLOSE TO THEIR ORIGINAL HISTORICAL CONDITION AND THE REPLACEMENT OF BRIDGE RAILINGS AND GUARDRAILS WITH HISTORIC RAILINGS AS INDICATED ON THE DRAWINGS.

**GENERAL NOTES - CONSTRUCTION**

- THE COMMISSIONER EXPRESSLY DISCLAIMS ANY RESPONSIBILITY ARISING FROM ANY UNAUTHORIZED USE OF THESE DRAWINGS, PLANS, AND NOTES. ANY AUTHORIZATIONS MUST BE IN WRITING. THESE DRAWINGS MAY HAVE BEEN REPRODUCED AT A SIZE DIFFERENCE THAT ORIGINALLY DRAWN.
- THE COMMISSIONER WILL NOT BE RESPONSIBLE FOR NOR WILL HAVE ANY CONTROL OVER OR CHARGE OF CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PHASING, OR PROCEDURES OF SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK, NOR WILL BE RESPONSIBLE FOR THE CONTRACTOR'S FAILURE TO CARRY OUR THE WORK IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS. THE COMMISSIONER WILL NOT BE RESPONSIBLE FOR OR HAVE ANY CONTROL OR CHARGE OVER THE ERRORS OR OMISSIONS OF THE CONTRACTOR, SUBCONTRACTORS, THEIR AGENTS, EMPLOYEES, OR ANY OTHER PERSON PERFORMING ANY OF THE WORK.
- THE CONTRACTOR SHALL VISIT THE SITE AND BE KNOWLEDGEABLE OF ALL CONDITIONS THEREON. THE CONTRACTOR SHALL INVESTIGATE, VERIFY, AND BE RESPONSIBLE FOR ALL CONDITIONS OF THE PROJECT AND SHALL NOTIFY THE COMMISSIONER OF ANY CONDITIONS REQUIRING MODIFICATION OR CLARIFICATION BEFORE PROCEEDING WITH THE WORK. NOTES APPEAR ON VARIOUS SHEETS FOR DIFFERENT SYSTEMS AND MATERIALS: NOTES REFER TO RELATED STRUCTURAL/MEP AND DETAIL DRAWINGS. THESE SHEETS ARE TO BE REVIEWED AND NOTES ON ANY ONE SHEET ARE TO BE APPLIED ON RELATED DRAWINGS AND DETAILS. WHERE DISCREPANCIES EXIST BETWEEN THE DRAWINGS OF VARIOUS DISCIPLINES, CONSULT THE COMMISSIONER DURING THE BID PERIOD AND PRIOR TO PROCEEDING WITH THE WORK.
- DRAWINGS THAT REPRESENT THE EXISTING PLAN CONDITIONS ARE DIAGRAMMATICALLY SHOWN. EXACT LOCATIONS, SIZES, EXTENT, AND CONDITIONS OF EXISTING CONSTRUCTION TO BE REMOVED, RELOCATED OR TO REMAIN SHALL BE VERIFIED AT THE SITE BY THE CONTRACTOR.
- THE CONTRACTOR MUST PROVIDE ALL REQUIRED PERMITS. THE CONTRACTOR WILL PERFORM ALL WORK IN ACCORDANCE WITH ALL APPLICABLE CITY OF CHICAGO, COUNTY, STATE, AND FEDERAL LAWS, CODES, ORDINANCES, AND REGULATIONS BY MUNICIPAL AUTHORITIES HAVING JURISDICTION, INCLUDING THE OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA) AND REGULATIONS ADOPTED PURSUANT THERETO.
- ALL FIRE RATINGS INDICATED FOR WALLS, CEILINGS, AND ROOF ARE TO COMPLY WITH UNDERWRITERS LABORATORIES TEST RATINGS OR AS REGULATED BY CITY OF CHICAGO BUILDING CODE AND NFPA 130 FIXED GUIDE WAY TRANSIT SYSTEMS.
- ANY DETAILS, SYSTEMS, OR MATERIALS (I.E. ARCHITECTURAL, STRUCTURAL, MECHANICAL, ETC.) WHICH ARE PROPOSED TO BE CHANGED OR SUBSTITUTED MUST BE FIRST REVIEWED AND APPROVED BY THE COMMISSIONER PRIOR TO THE PREPARATION AND SUBMITTAL OF SHOP DRAWINGS. THE COMMISSIONER RESERVES THE RIGHT TO REJECT SUBSTITUTIONS. THE CONTRACTOR IS RESPONSIBLE FOR ADDED JOB COSTS DUE TO HIS SUBSTITUTIONS IMPACTED ON OTHER TRADES.
- THE CONTRACTOR MUST BE RESPONSIBLE FOR PROVIDING ALL REQUIRED BLOCKING, SUPPORTS, AND BRACING REQUIRED TO ACHIEVE SPECIFIED REQUIREMENTS AND STANDARDS WHETHER SPECIFICALLY INDICATED OR NOT. FIRE RETARDANT BLOCKING MUST BE PROVIDED.
- ALL NEW GUARDRAILS AND HANDRAILS MUST MEET OSHA, NIOSH, AND ADA GUIDELINES, 200 PSF LIVE LOAD SAFETY CODE HORIZONTAL AND VERTICAL HANDRAIL REQUIREMENTS, UNLESS NOTED OTHERWISE.
- ALL DISSIMILAR METALS MUST BE EFFECTIVELY ISOLATED FROM EACH OTHER TO AVOID GALVANIC ACTION.
- DETAILS SHOWN ARE INTENDED TO BE INDICATIVE OF THE PROFILES AND TYPE OF DETAILING REQUIRED FOR THE WORK. CONDITIONS ARE NOT COVERED BY SPECIFIC DETAILS AND MUST MEET

- SPECIFIED DESIGN CRITERIA.
- DETAILS SHOWN MAY NOT NECESSARILY GRAPHICALLY REPRESENT ALL COMPONENTS NECESSARY TO COMPLETE THE TOTAL SYSTEM. THE CONTRACTOR MUST BE RESPONSIBLE TO COORDINATE ALL OF THE REQUIREMENTS SHOWN ON THE DRAWINGS WITH THOSE STATED IN THE APPLICABLE SPECIFICATIONS AND PROJECT NOTES TO PROVIDE A COMPLETE SYSTEM.
  - THE CONTRACTOR MUST COORDINATE ALL MECHANICAL AND ELECTRICAL FLOOR AND WALL SLEEVES, FLOOR PENETRATIONS, EMBEDDED CONDUIT AND MECHANICAL DUCTWORK WITH MECHANICAL, PLUMBING, FIRE PROTECTION, ELECTRICAL, STRUCTURAL, AND ARCHITECTURAL DISCIPLINES.
  - PROVIDE ACCESS PANELS AS REQUIRED BY APPLICABLE CODES AND AS REQUIRED FOR MECHANICAL AND ELECTRICAL EQUIPMENT. COORDINATE LOCATIONS WITH COMMISSIONER PRIOR TO INSTALLATION.
  - ALL PIPES, CONDUITS, AND DUCTWORK THAT PENETRATE WALLS OR ROOF SLABS SHALL BE INSTALLED IN A MANNER THAT WILL PRESERVE THE FIRE RESISTIVE, STRUCTURAL INTEGRITY, AND WATER-TIGHTNESS OF SUCH WALLS OR SLABS AND THE BUILDING. FIRESTOP ALL PENETRATIONS IN WALLS TO MATCH HOURLY RATING OF WALL.
  - DETAILS NOT SHOWN ARE SIMILAR IN CHARACTER TO THOSE SHOWN; WHERE SPECIFIC DIMENSIONS, DETAILS, OR DESIGN INTENT CANNOT BE DETERMINED, CONSULT THE COMMISSIONER BEFORE PROCEEDING WITH WORK.
  - CONTRACTOR TO REMOVE ANY GRAFFITI WITHIN 24 HOURS DURING CONSTRUCTION.
  - REFER TO THE TECHNICAL SPECIFICATIONS FOR ADDITIONAL INFORMATION AND COORDINATION OF THE WORK. IN THE EVENT OF DISCREPANCIES BETWEEN DRAWINGS OR DRAWINGS AND SPECIFICATIONS, CONSULT THE COMMISSIONER FOR CLARIFICATION BEFORE PROCEEDING WITH THE WORK.
  - THE CONTRACTOR MUST ASSURE ITSELF BY INDEPENDENT SURVEY THAT NO HAZARDOUS MATERIALS ARE HANDLED OR DISTRIBUTED. IF HAZARDOUS MATERIALS ARE ENCOUNTERED, IT MUST BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE COMMISSIONER.
  - THE CONTRACTOR WILL BE RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PHASING, PROCEDURES, SAFETY PRECAUTIONS, AND PROGRAMS IN CONNECTION WITH THE WORK. ALL WORK SHALL MEET THE QUALITY REQUIREMENTS NOTED IN THE CONTRACT DOCUMENTS.
  - THE CONTRACTOR IS TO REVIEW AND HAVE A COMPLETE COMMAND OF THE VARIOUS PHASES OF THE CONSTRUCTION WORK PLUS A TOTAL UNDERSTANDING OF THE UNIQUE MANPOWER AND SUPPLY SCHEDULE REQUIREMENTS SPECIFIC TO THE SITE. THE CONTRACTOR MUST COORDINATE ALL CONSTRUCTION RELATED ACTIVITIES WITH BRIDGE LIFT SCHEDULES, OPERATION REQUIREMENTS, AND RESULTING HAZARDOUS CONDITIONS.
  - THE CONTRACTOR MUST BE RESPONSIBLE FOR SECURING THE JOB SITE AND THE PROTECTION OF THE GENERAL PUBLIC FROM ALL POSSIBLE HAZARDS OF THE ENTIRE CONSTRUCTION SITE.
  - THE GENERAL CONTRACTOR AND/OR TRADE CONTRACTOR MUST PROTECT ALL EXISTING SITE ELEMENTS FROM DAMAGE DUE TO ALTERATIONS AND CONSTRUCTION OPERATIONS, AND REPAIR OR REPLACE ELEMENTS DAMAGED DURING THIS PROJECT AT HIS/HER OWN EXPENSE.
  - DRAWINGS ARE TO BE ISSUED TO THE SUBCONTRACTORS BY THE CONTRACTOR IN COMPLETE SETS SO THAT THE EXTENT AND COORDINATION OF WORK IS MADE POSSIBLE.
  - THE CONTRACTOR MUST BE SOLELY RESPONSIBLE FOR THE ACCURATE PLACEMENT AND CONDITIONS OF THE WORK.
  - THE CONTRACTOR IS TO PROTECT, MOVE, AND STORE THE OWNER'S FIXTURES, FURNISHINGS, AND EQUIPMENT.

**DIMENSION NOTES**

- ALL DIMENSIONS ARE FACE OF PARTITIONS, COLUMN CENTERLINE, OR FINISHED FACE OF EXTERIOR WALL UNLESS NOTED OTHERWISE.
- ALL DIMENSIONS SHALL BE VERIFIED IN THE FIELD BEFORE PROCEEDING WITH ANY WORK. THE COMMISSIONER SHALL BE NOTIFIED OF ANY DISCREPANCIES OR CORRECTIONS. DIMENSIONS OF NEW WORK ARE BASED ON RECORD DRAWING OF EXISTING WORK. ANY DISCREPANCIES IN EXISTING WORK THAT WILL AFFECT NEW WORK DIMENSIONS, NOTIFY THE COMMISSIONER. CONTRACTOR TO VERIFY EXISTING CONDITIONS.
- ALL DIMENSIONS, ELEVATIONS, REPRESENTATIONS OF THE SITE, EXISTING CONDITIONS, AND AS-BUILT DRAWINGS ARE BASED ON INFORMATION OBTAINED FROM COMMISSIONER. SOME VARIATIONS BETWEEN DRAWINGS AND FIELD CONDITIONS MUST BE ANTICIPATED AND ALLOWED FOR.
- IT IS IMPERATIVE THAT THE CONTRACTOR FULLY FAMILIARIZE ITSELF WITH ALL EXISTING SITE CONDITIONS, SURVEYS AND REPORTS. THE CONTRACTOR MUST FIELD VERIFY ALL DIMENSIONS AND CONDITIONS SHOP OR DESCRIBED TO BE EXISTING BY ITS OWN FIELD SURVEY PRIOR TO THE START OF SHOP DRAWINGS PREPARATION, FABRICATION, OR SITE CONSTRUCTION. NOTIFY THE COMMISSIONER OF DISCREPANCIES IN WRITING BEFORE PROCEEDING WITH WORK.

- THE EXISTING COLUMN-TO-COLUMN SPACING VARIES. THE CONTRACTOR MUST CONDUCT ITS OWN FIELD SURVEY TO ESTABLISH EXISTING DIMENSIONAL PARAMETERS AS RELATED TO THE DESIGN BEFORE PROCEEDING WITH THE WORK. NOTIFY THE COMMISSIONER IN WRITING OF DISCREPANCIES WHICH WILL AFFECT EXECUTION OF THE DESIGN AS SHOWN.

**PATCHING AND PAINTING NOTES**

- ALL EXISTING AREAS DAMAGED BY WORK OF THIS PROJECT SHALL BE PATCHED TO MATCH EXISTING ADJACENT SURFACES IN FINISH, COLOR, AND TEXTURE UNLESS OTHERWISE INDICATED.
- ALL EXISTING PAINTED SURFACES DAMAGED OR PATCHED AS PART OF THIS PROJECT SHALL BE PAINTED TO MATCH EXISTING ADJACENT COLOR, TEXTURE, AND FINISH. EXISTING PAINT COLOR, TEXTURE, AND FINISH SHALL BE VERIFIED BY CONTRACTOR IN THE FIELD PRIOR TO CONSTRUCTION.
- NEWLY INSTALLED EXPOSED ELECTRICAL ITEMS, INCLUDING BUT NOT LIMITED TO, CONDUIT HANGERS, AND FITTINGS SHALL BE PAINTED TO MATCH EXISTING ADJACENT SURFACES.
- PREFINISHED ITEMS, SUCH AS STAINLESS STEEL, ARE NOT TO BE PAINTED.
- CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF ALL ANCHOR BOLTS, CONDUIT STUBS, AND RELATED PROJECTIONS AND APPURTENANCES FROM FLOOR, WALL, AND CEILING AREAS WHERE ITEMS ARE REMOVED. REMOVE ALL ITEMS TO BELOW FINISH SURFACE PRIOR TO FLOOR PATCHING.
- ALL EXISTING FLOOR SURFACES DAMAGED OR PATCHED AS PART OF THIS PROJECT SHALL BE PATCHED TO MATCH EXISTING ADJACENT COLOR, TEXTURE, AND FINISH. EXISTING FLOOR FINISH SHALL BE VERIFIED BY CONTRACTOR IN THE FIELD PRIOR TO CONSTRUCTION.
- ALL NEW AND EXISTING EXPOSED CONCRETE WALLS TO BE CLEANED AND PAINTED. OR AS INDICATED IN THE DRAWINGS AND SPECIFICATIONS.

**GENERAL NOTES - HAZARDOUS MATERIALS**

ASBESTOS-CONTAINING BUILDING MATERIALS AND LEAD-BASED PAINT ARE, OR MAY BE, PRESENT IN THIS PROJECT. SEE ENVIRONMENTAL PAY ITEMS AND SPECIFICATION SECTIONS PRIOR TO DISTURBING. NO PERSON MAY DISTURB ASBESTOS-CONTAINING BUILDING MATERIALS UNLESS THAT PERSON IS A LICENSED ASBESTOS WORKER AND CONDUCTS SUCH WORK IN ACCORDANCE WITH SPECIFICATION(S) CONTAINED IN THE PROJECTS DOCUMENTS AND IN COMPLIANCE WITH ILLINOIS DEPARTMENT OF PUBLIC HEALTH RULES AND REGULATIONS.



**wsp** WSP USA Inc.  
30 N. LASSALLE STREET  
SUITE 4000  
CHICAGO, IL 60602  
TEL: (312) 782-8150  
FAX: (312) 782-1884

USER NAME =	YJL	DESIGNED --	YJL	REVISED --	
		CHECKED --	ECM	REVISED --	
PLOT SCALE =	1:2	DRAWN --	YJL	REVISED --	
PLOT DATE =	09/23/2020	CHECKED --	ECM	REVISED --	



**WEBSTER AVENUE BRIDGE OVER THE NORTH BRANCH CHICAGO RIVER**

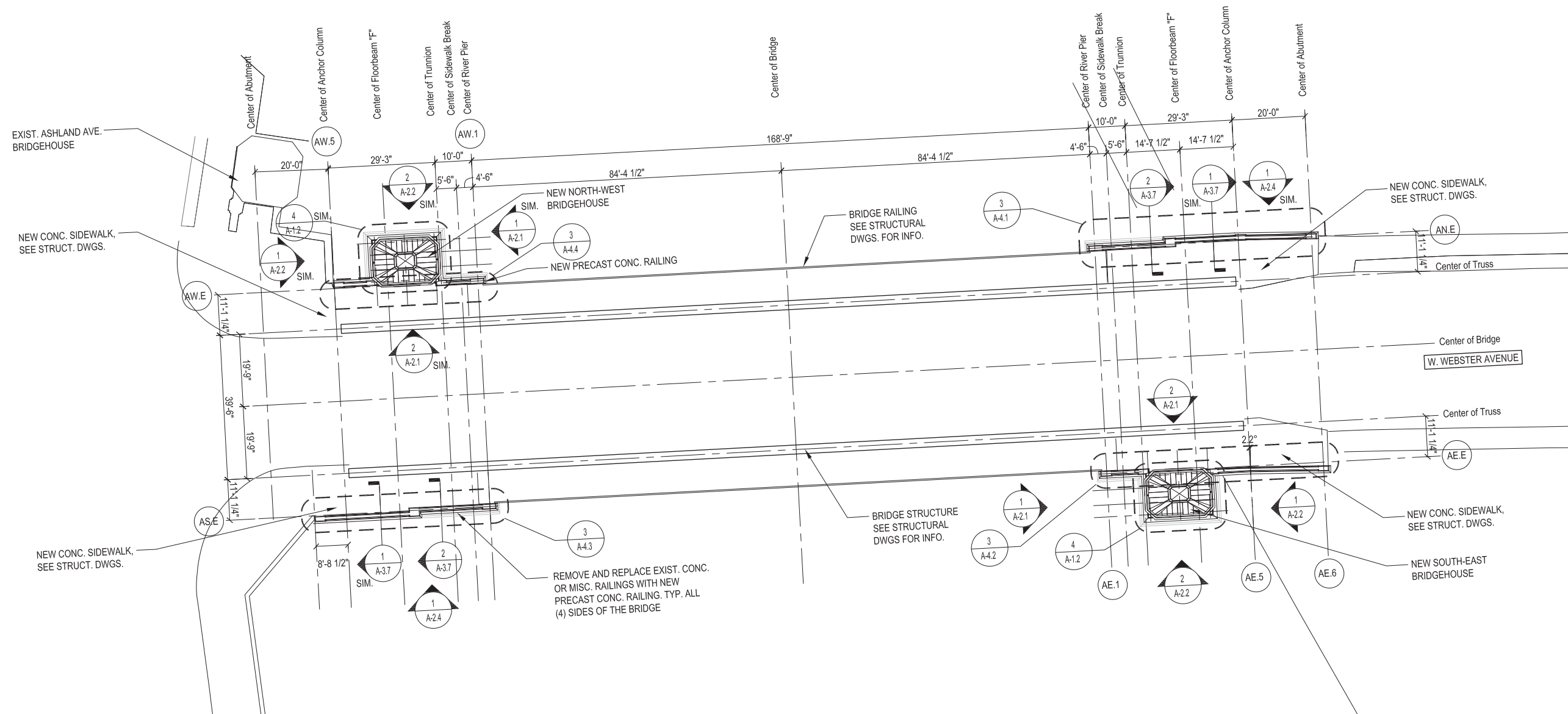
**ARCHITECTURAL GENERAL NOTES (STRUCTURE NO. 016-6057)**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	A-0.0
CDOT PROJECT NO. E-1-525			157 of 210

# SHEET NOTES

WEBSTER AVE. BRIDGEHOUSES & RAILINGS

1. CONTRACTOR TO VERIFY ALL DIMENSIONS IN THE FIELD
2. FIELD VERIFY EXISTING CONDITION, MAINTAIN ALL CLEARANCES AND HOLD ALL DIMENSIONS
3. REMOVE EXISTING BRIDGEHOUSE, SEE STRUCT. AND CIVIL DWGS.
4. REMOVE EXISTING CONCRETE AND MISCELLANEOUS RAILINGS, SEE STRUCT. AND CIVIL DWGS.
5. SEE SHEET A-1.3 FOR LOWER LEVEL PLAN



**1 ARCHITECTURAL SITE PLAN**  
SCALE: 1/16" = 1'-0"



WSP USA Inc.  
30 N. LASALLE STREET  
SUITE 4200  
CHICAGO, IL 60602  
TEL: (312) 782-8150  
FAX: (312) 782-1884

USER NAME = YJL	DESIGNED — YJL	REVISED —
PLOT SCALE = 1:2	CHECKED — ECM	REVISED —
PLOT DATE = 09/23/2020	DRAWN — YJL	REVISED —
	CHECKED — ECM	REVISED —

**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

**OVERALL SITE PLAN  
(STRUCTURE NO. 016-6057)**

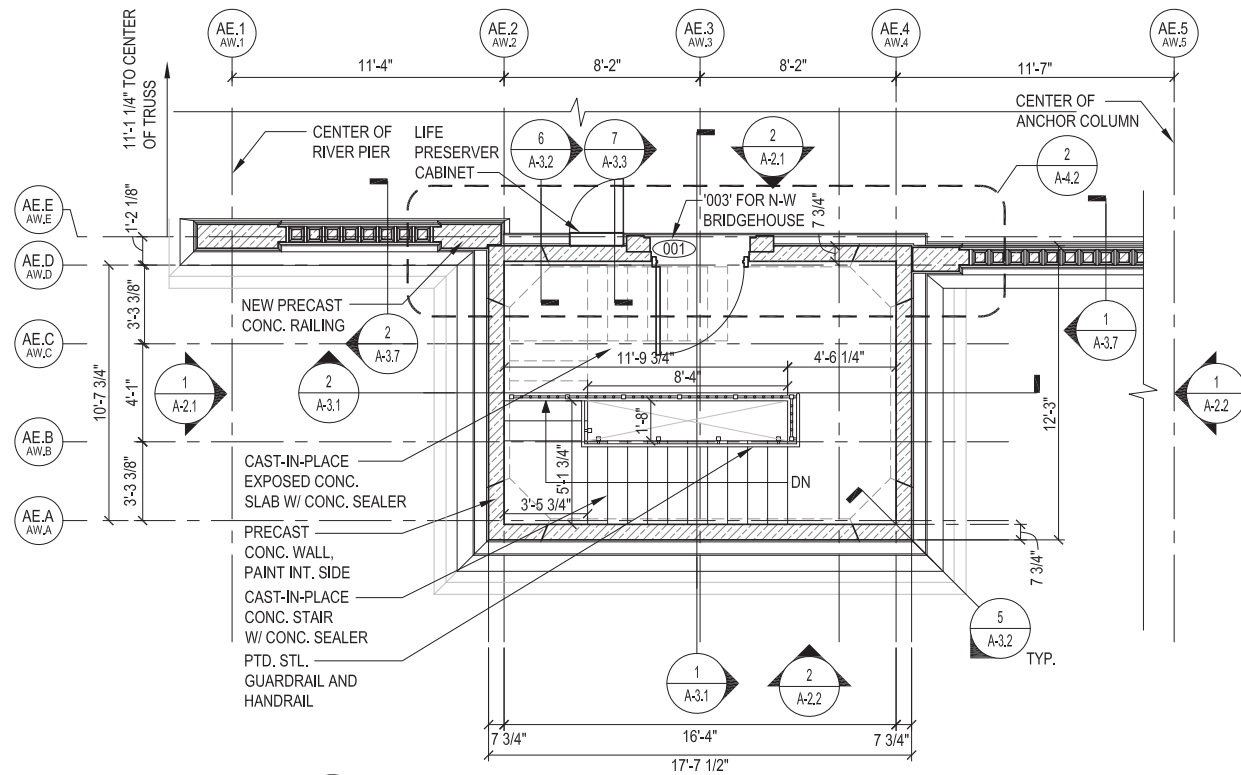
F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	A-1.1
CDOT PROJECT NO. E-1-525			158 of 210



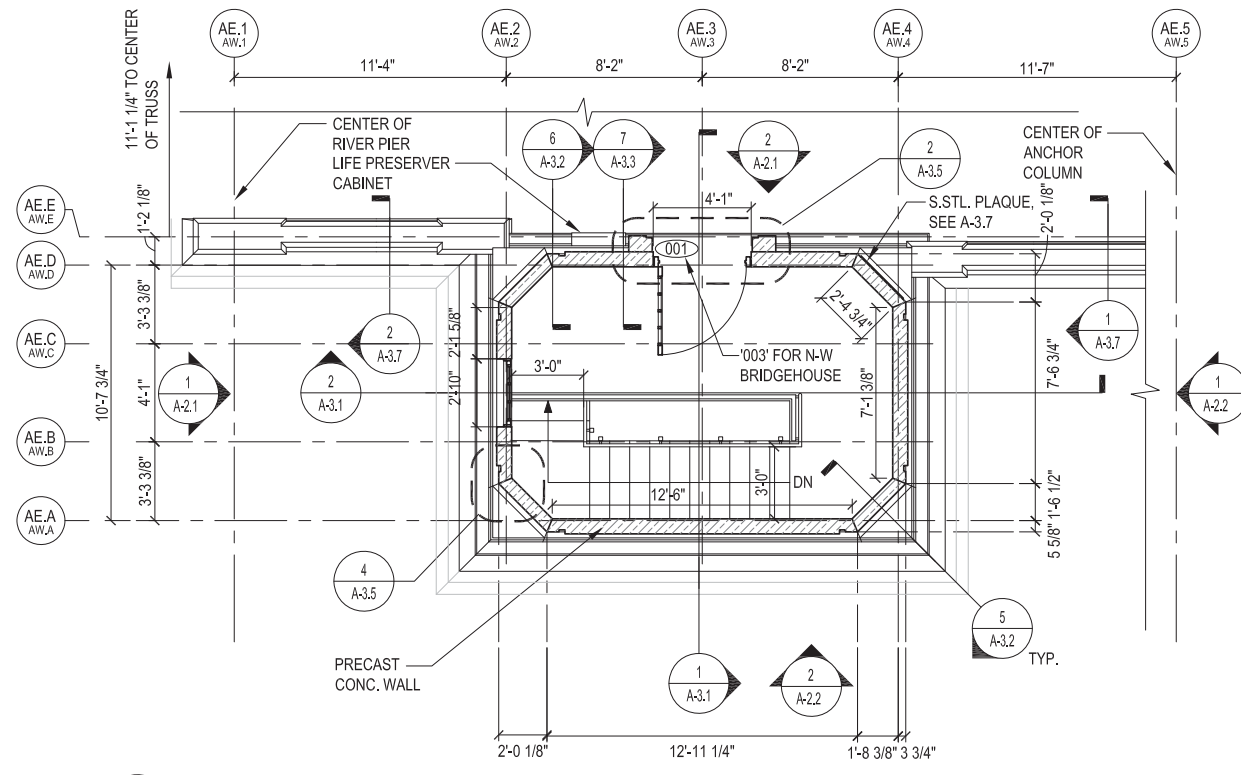
# SHEET NOTES

WEBSTER AVE. BRIDGEHOUSES & RAILINGS

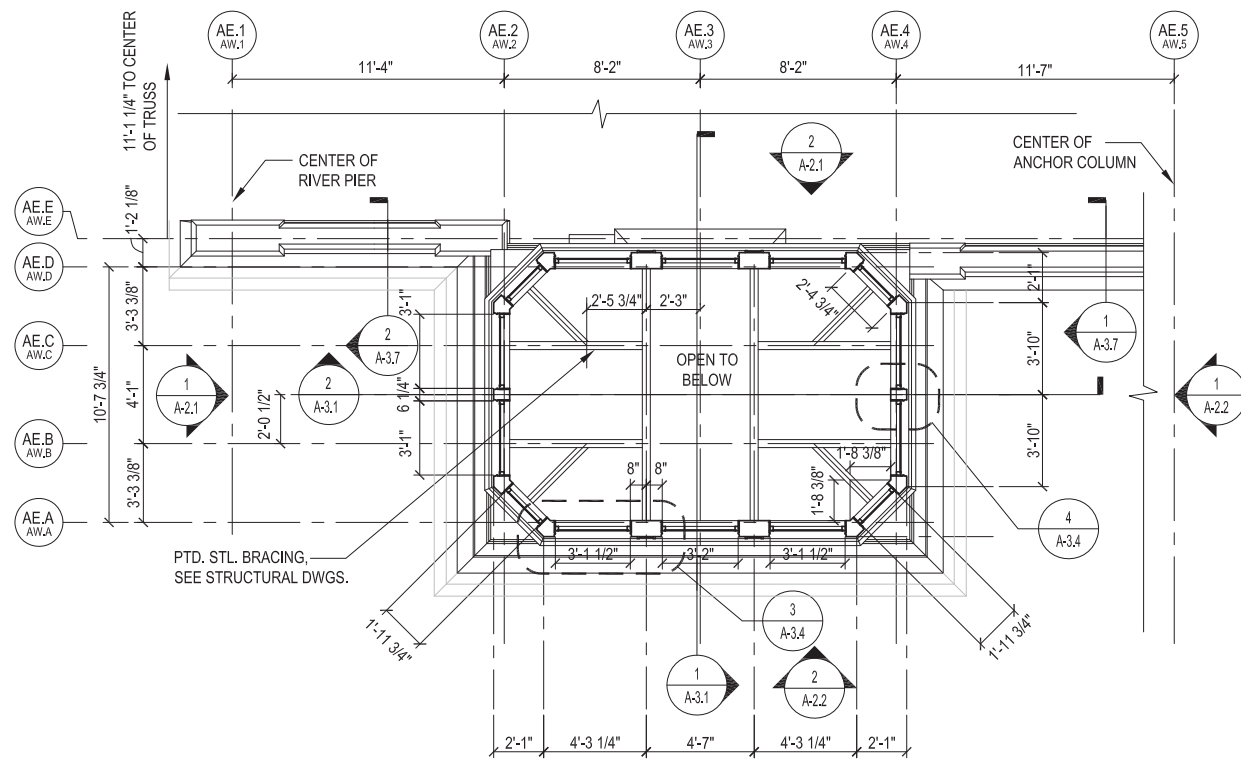
1. CONTRACTOR TO VERIFY ALL DIMENSIONS IN THE FIELD
2. FIELD VERIFY EXISTING CONDITION, MAINTAIN ALL CLEARANCES AND HOLD ALL DIMENSIONS
3. REMOVE EXISTING BRIDGEHOUSE, SEE STRUCT. DWGS.
4. REMOVE EXISTING CONCRETE AND MISCELLANEOUS RAILINGS, SEE STRUCT. DWGS.
5. SEE SHEET A-6.1 FOR MORE INFORMATION ON PRECAST CONCRETE WALL PANELS.
6. ALL ELEVATIONS ARE CITY OF CHICAGO DATUM (CCD)
7. PROVIDE A PAINTED GYP. BD. CEILING AT ELEV +42'-3" CCD., SUSPENDED FROM STRUCTURE ABOVE



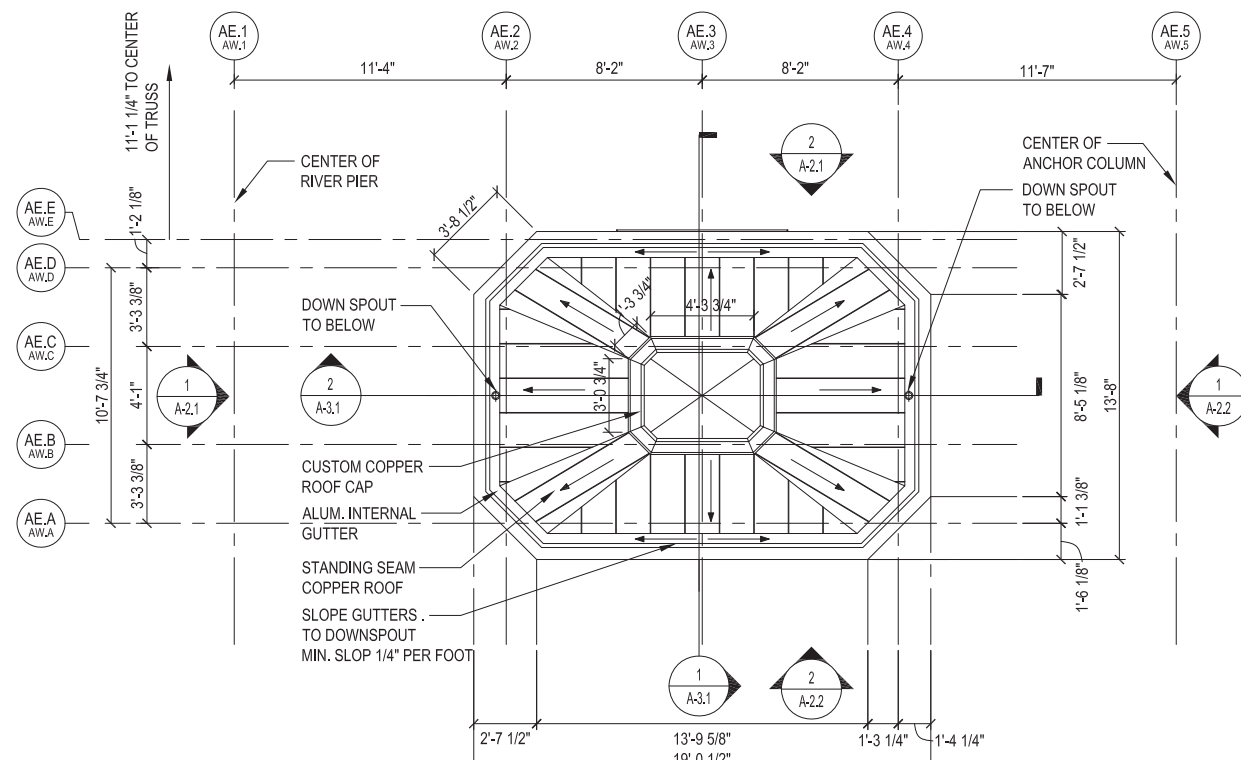
**1 SOUTH-EAST BRIDGE HOUSE PLAN AT ELEVATION +24'-7"**  
 SCALE: 1/4" = 1'-0" NORTH-WEST BRIDGE HOUSE SIMILAR  
 GRID 'AW.-' FOR N-W, 'AE.-' FOR S-E BRIDGE HOUSE



**2 SOUTH-EAST BRIDGE HOUSE PLAN AT ELEVATION +29'-7"**  
 SCALE: 1/4" = 1'-0" NORTH-WEST BRIDGE HOUSE SIMILAR  
 GRID 'AW.-' FOR N-W, 'AE.-' FOR S-E BRIDGE HOUSE



**3 SOUTH-EAST BRIDGE HOUSE PLAN AT ELEVATION +38'-1"**  
 SCALE: 1/4" = 1'-0" NORTH-WEST BRIDGE HOUSE SIMILAR  
 GRID 'AW.-' FOR N-W, 'AE.-' FOR S-E BRIDGE HOUSE



**4 SOUTH-EAST BRIDGE HOUSE ROOF PLAN**  
 SCALE: 1/4" = 1'-0" NORTH-WEST BRIDGE HOUSE SIMILAR  
 GRID 'AW.-' FOR N-W, 'AE.-' FOR S-E BRIDGE HOUSE



WSP USA Inc.  
 30 N. LASALLE STREET  
 SUITE 4200  
 CHICAGO, IL 60602  
 TEL: (312) 782-8150  
 FAX: (312) 782-1684

USER NAME = YJL	DESIGNED — YJL	REVISED —
PLOT SCALE = 1:2	CHECKED — ECM	REVISED —
PLOT DATE = 09/23/2020	DRAWN — YJL	REVISED —
	CHECKED — ECM	REVISED —

**CITY OF CHICAGO**  
 DEPARTMENT OF TRANSPORTATION  
 DIVISION OF ENGINEERING

**WEBSTER AVENUE BRIDGE OVER  
 THE NORTH BRANCH CHICAGO RIVER**

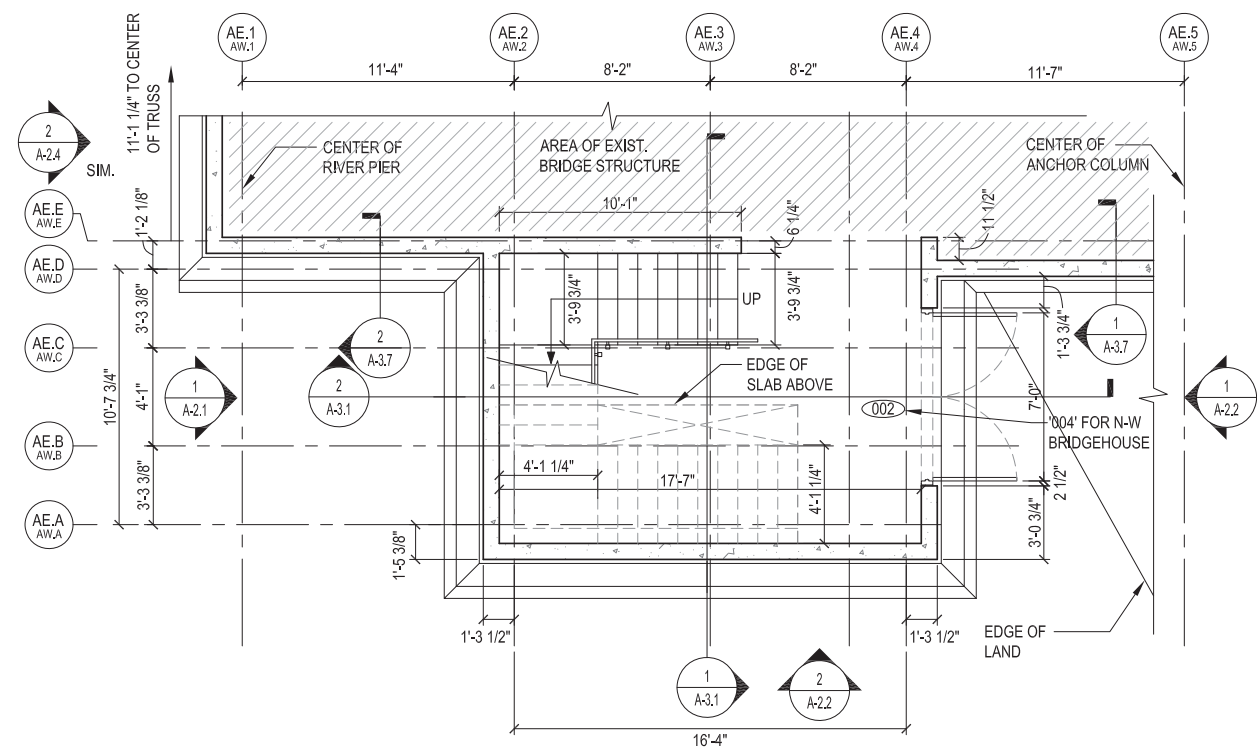
**BRIDGE HOUSE PLAN  
 (STRUCTURE NO. 016-6057)**

F.A.U. RT.E.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	A-1.2
CDOT PROJECT NO. E-1-525			159 of 210

# SHEET NOTES

WEBSTER AVE. BRIDGEHOUSES & RAILINGS

1. CONTRACTOR TO VERIFY ALL DIMENSIONS IN THE FIELD
2. FIELD VERIFY EXISTING CONDITION, MAINTAIN ALL CLEARANCES AND HOLD ALL DIMENSIONS
3. REMOVE EXISTING BRIDGEHOUSE, SEE STRUCT. DWGS.
4. REMOVE EXISTING CONCRETE AND MISCELLANEOUS RAILINGS, SEE STRUCT. DWGS.
5. SEE SHEET A-6.1 FOR MORE INFORMATION ON PRECAST CONCRETE WALL PANELS.
6. ALL ELEVATIONS ARE CITY OF CHICAGO DATUM (CCD)
7. PROVIDE A PAINTED GYP. BD. CEILING AT ELEV +42'-3" CCD., SUSPENDED FROM STRUCTURE ABOVE



**1 SOUTH-EAST BRIDGE HOUSE PLAN AT ELEVATION +11'-9"**  
 SCALE: 1/4" = 1'-0" NORTH-WEST BRIDGE HOUSE SIMILAR  
 GRID 'AW.' FOR N-W, 'AE.' FOR S-E BRIDGE HOUSE



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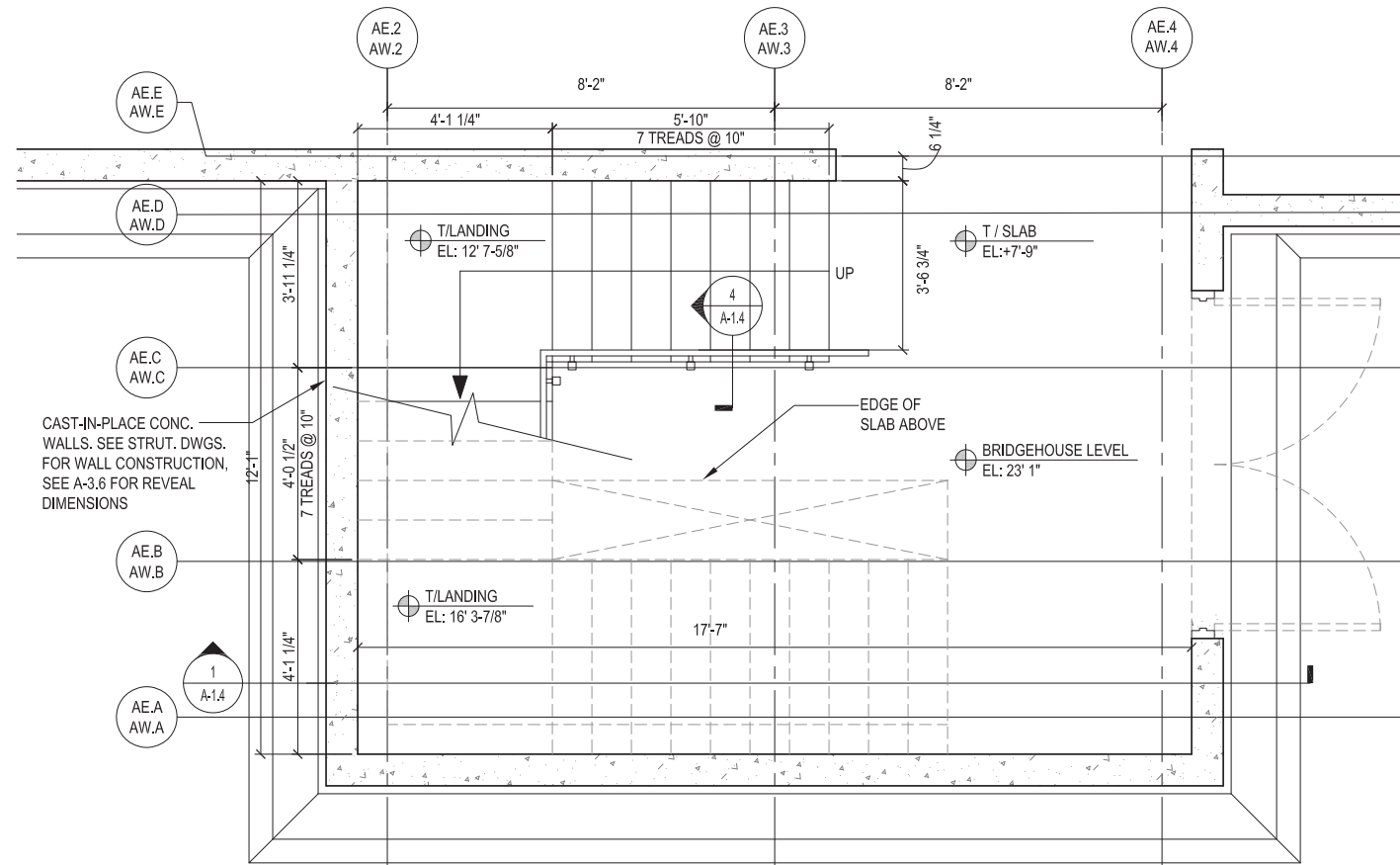
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PLOT SCALE = 1:2	CHECKED — ECM	REVISED —
PLOT DATE = 09/23/2020	DRAWN — YJL	REVISED —
	CHECKED — ECM	REVISED —

**CITY OF CHICAGO**  
 DEPARTMENT OF TRANSPORTATION  
 DIVISION OF ENGINEERING

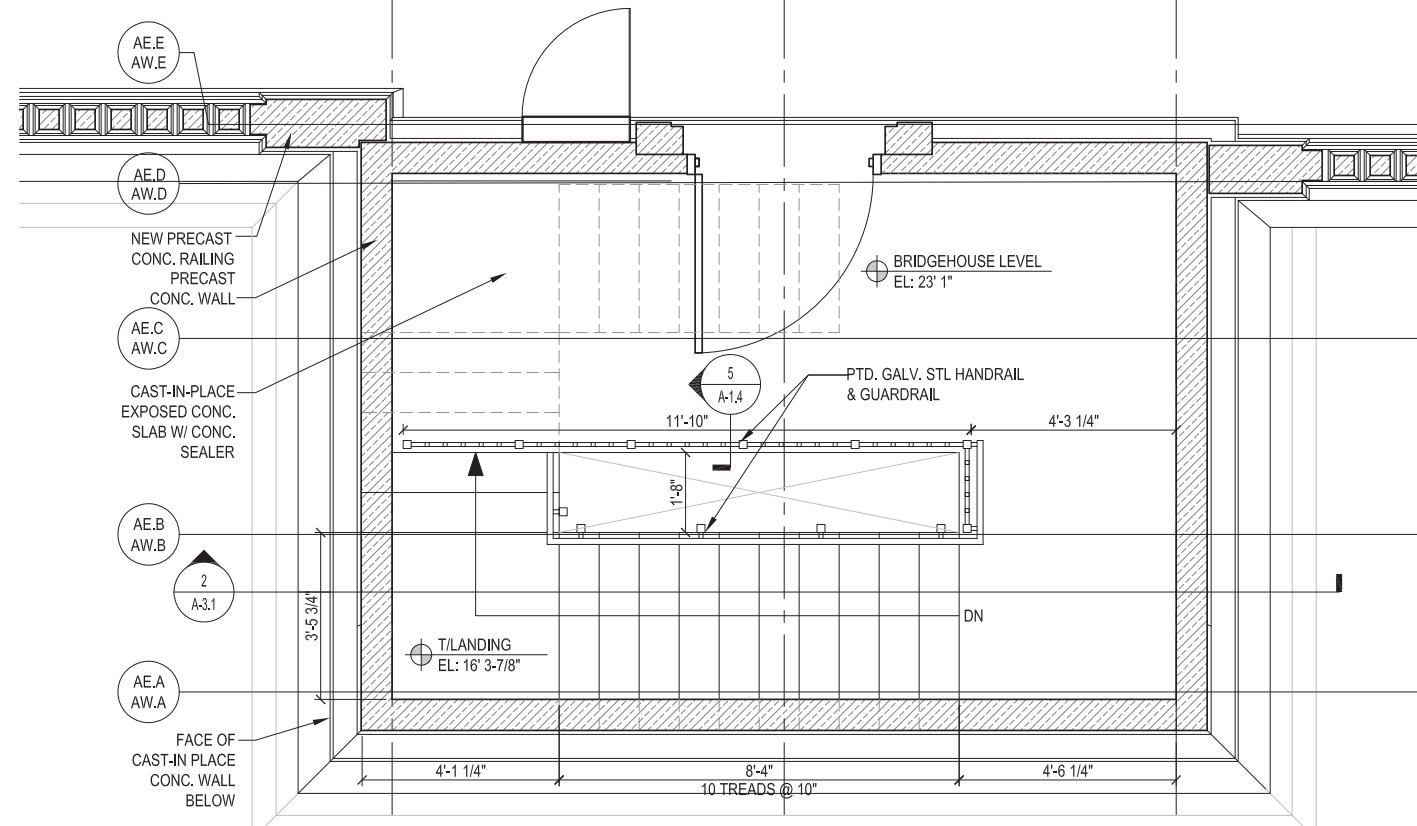
**WEBSTER AVENUE BRIDGE OVER  
 THE NORTH BRANCH CHICAGO RIVER**

**BRIDGE HOUSE PLAN  
 (STRUCTURE NO. 016-6057)**

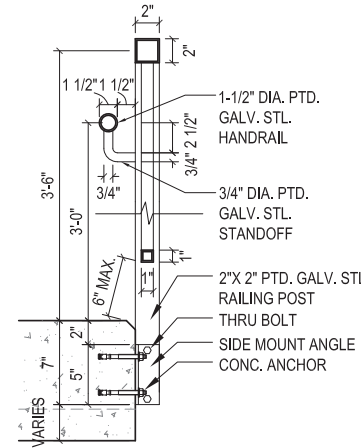
F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	A-1.3
CDOT PROJECT NO. E-1-525			160 of 210



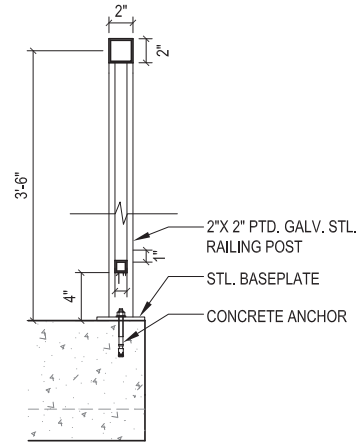
**1 SOUTH-EAST BRIDGE HOUSE STAIR PLAN AT ELEVATION +11'-9"**  
 SCALE: 1/2" = 1'-0" NORTH-WEST BRIDGE HOUSE SIMILAR  
 GRID 'AW.' FOR N-W, 'AE.' FOR S-E BRIDGE HOUSE



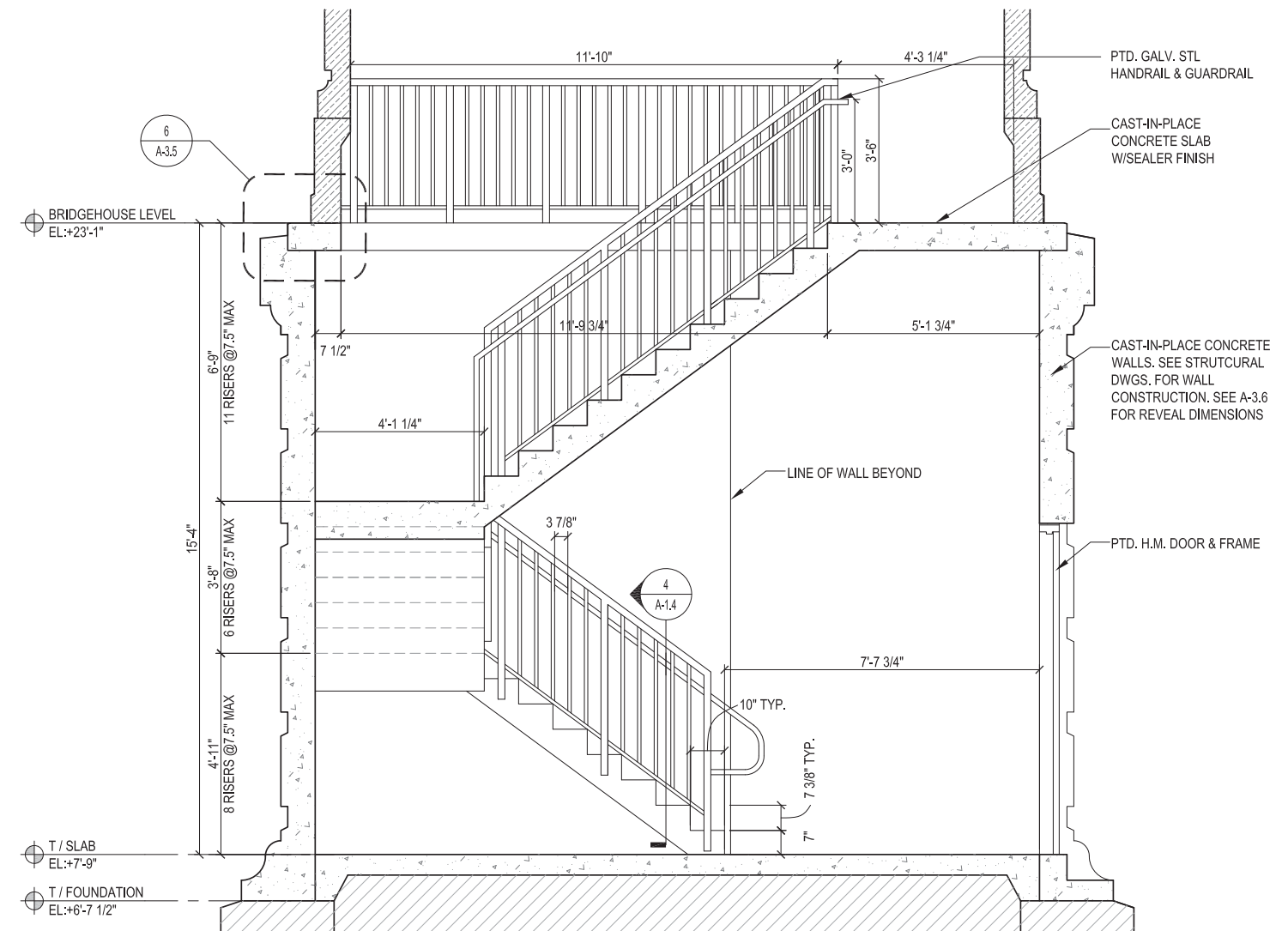
**2 SOUTH-EAST BRIDGE HOUSE STAIR PLAN AT ELEVATION +24'-7"**  
 SCALE: 1/2" = 1'-0" NORTH-WEST BRIDGE HOUSE SIMILAR  
 GRID 'AW.' FOR N-W, 'AE.' FOR S-E BRIDGE HOUSE



**4 TYPICAL RAILING DETAIL**  
 SCALE: 1-1/2" = 1'-0"



**5 TYPICAL RAILING DETAIL**  
 SCALE: 1-1/2" = 1'-0"



**3 SOUTH-EAST BRIDGE HOUSE STAIR SECTION**  
 SCALE: 1/2" = 1'-0" NORTH-WEST BRIDGE HOUSE SIMILAR  
 GRID 'AW.' FOR N-W, 'AE.' FOR S-E BRIDGE HOUSE



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 30 N. LASALLE STREET  
 SUITE 4000  
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 FAX: (312) 782-1684

USER NAME = YJL	DESIGNED — YJL	REVISED —
PLOT SCALE = 1:2	CHECKED — ECM	REVISED —
PLOT DATE = 09/23/2020	DRAWN — YJL	REVISED —
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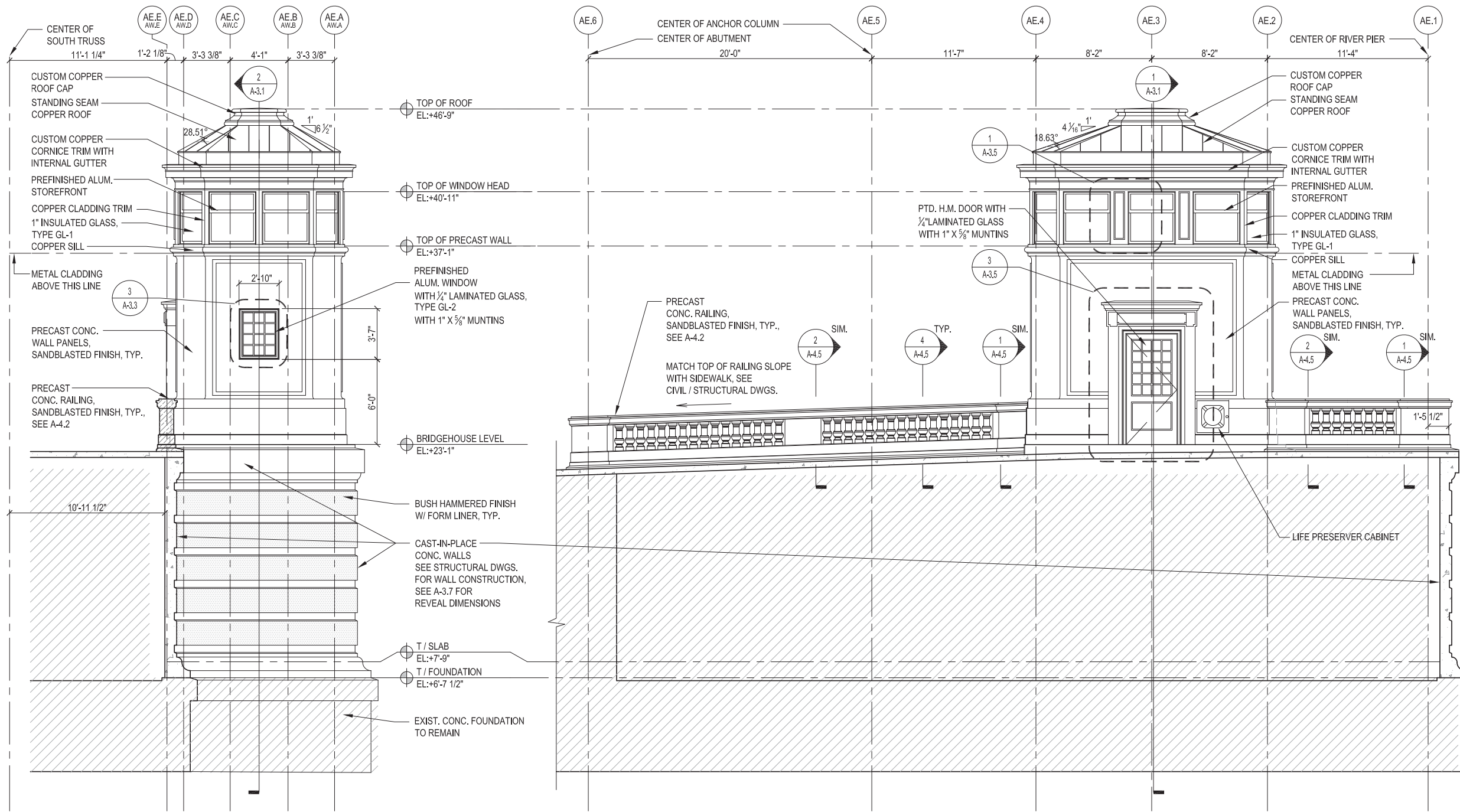
**CITY OF CHICAGO**  
 DEPARTMENT OF TRANSPORTATION  
 DIVISION OF ENGINEERING

**WEBSTER AVENUE BRIDGE OVER  
 THE NORTH BRANCH CHICAGO RIVER**

**BRIDGE HOUSE STAIR  
 PLAN, SECTION, DETAIL  
 (STRUCTURE NO. 016-6057)**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	A-1.4
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1 S-E BRIDGE HOUSE WEST ELEVATION  
SCALE: 1/4" = 1'-0"  
(N-W BRIDGE HOUSE EAST ELEVATION)

2 S-E BRIDGE HOUSE NORTH ELEVATION  
SCALE: 1/4" = 1'-0"



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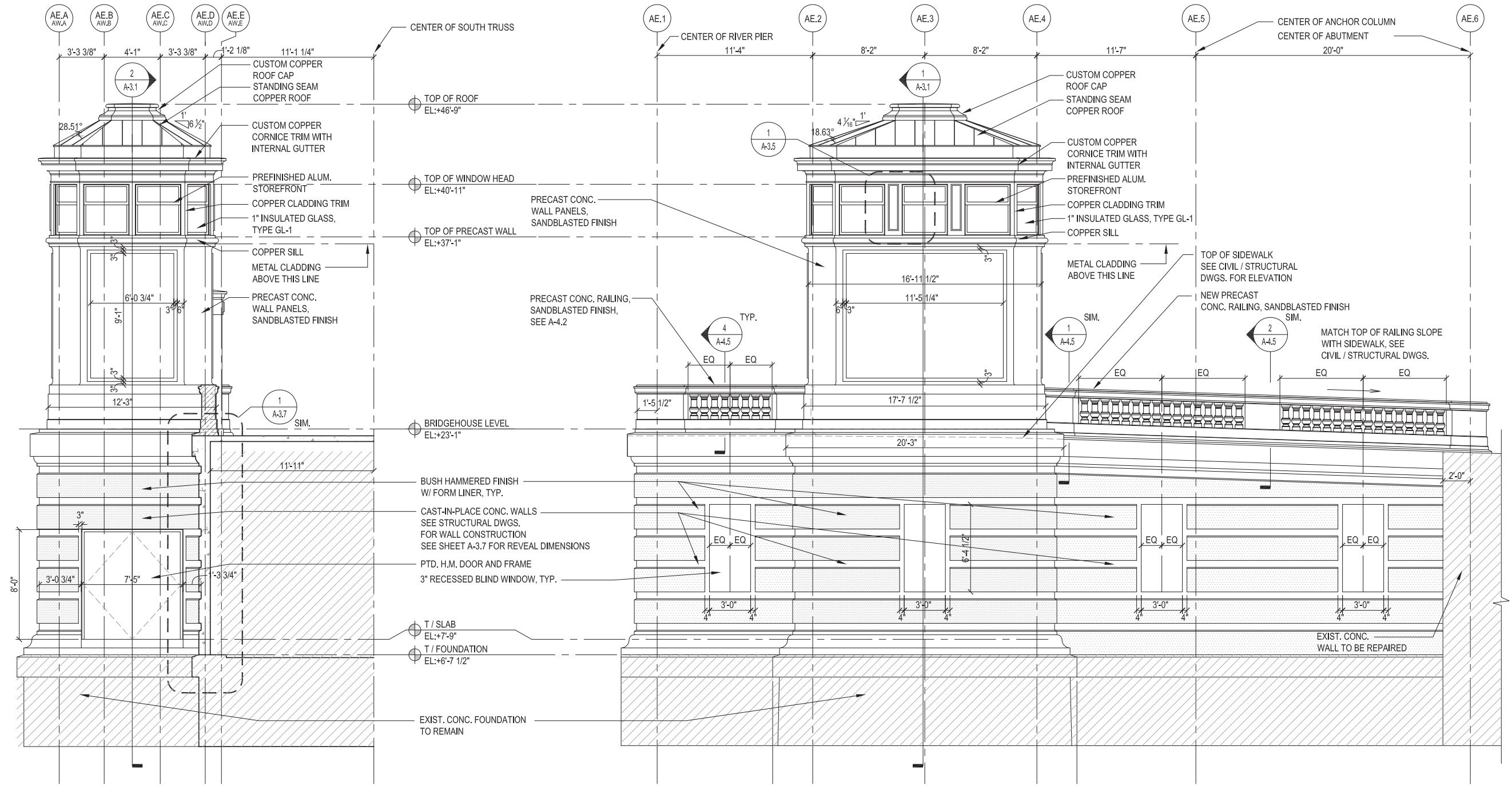
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**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

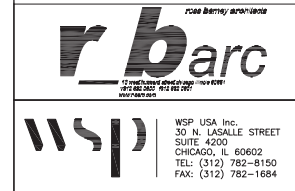
**SOUTHEAST BRIDGE HOUSE ELEVATION  
(STRUCTURE NO. 016-6057)**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	A-2.1
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1 S-E BRIDGE HOUSE EAST ELEVATION  
SCALE: 1/4" = 1'-0" (N-W BRIDGE HOUSE WEST ELEVATION)

2 S-E BRIDGE HOUSE SOUTH ELEVATION  
SCALE: 1/4" = 1'-0"



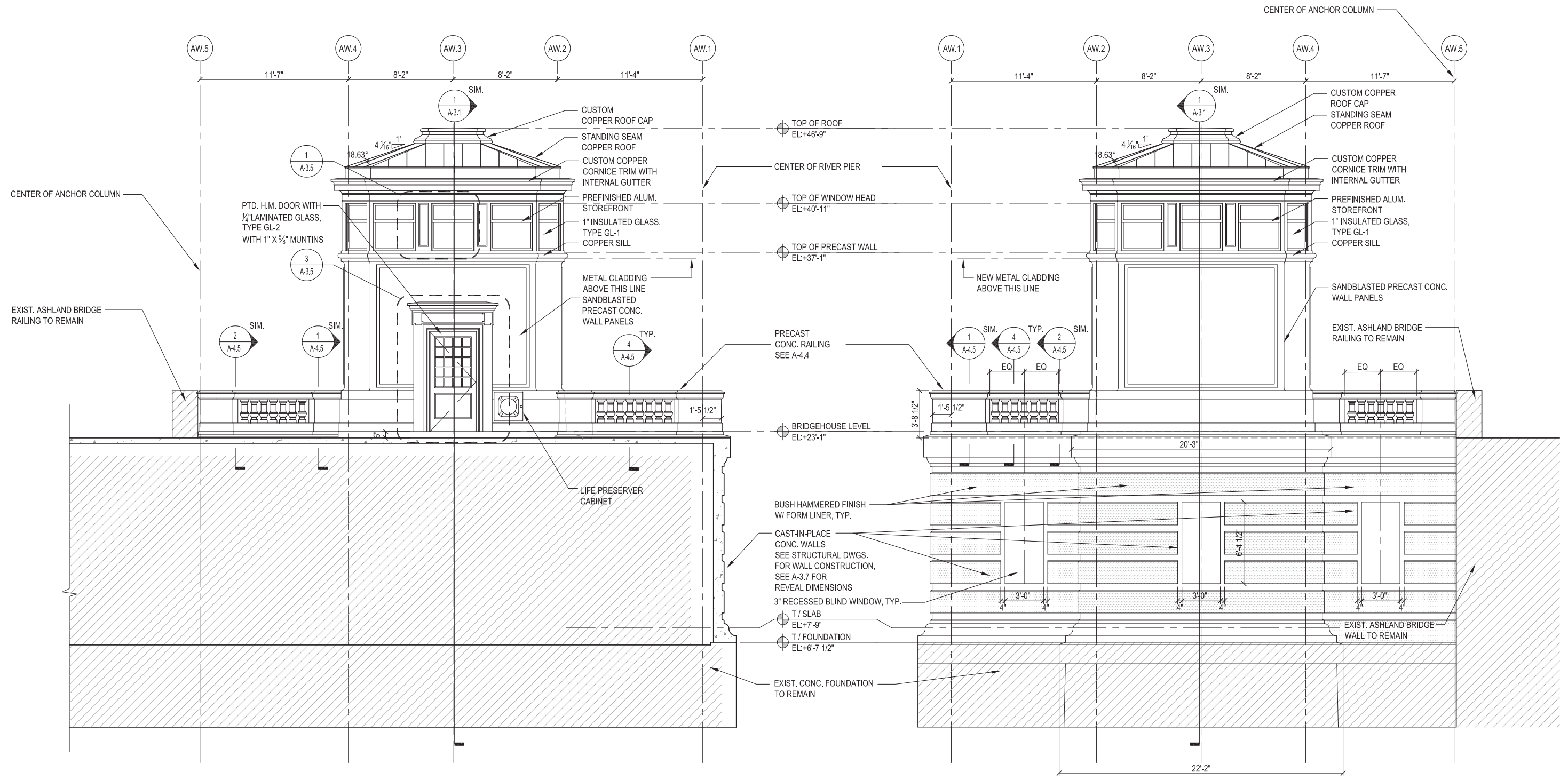
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**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

**SOUTHEAST BRIDGE HOUSE ELEVATION  
(STRUCTURE NO. 016-6057)**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	A-2.2
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CHICAGO, IL 60602  
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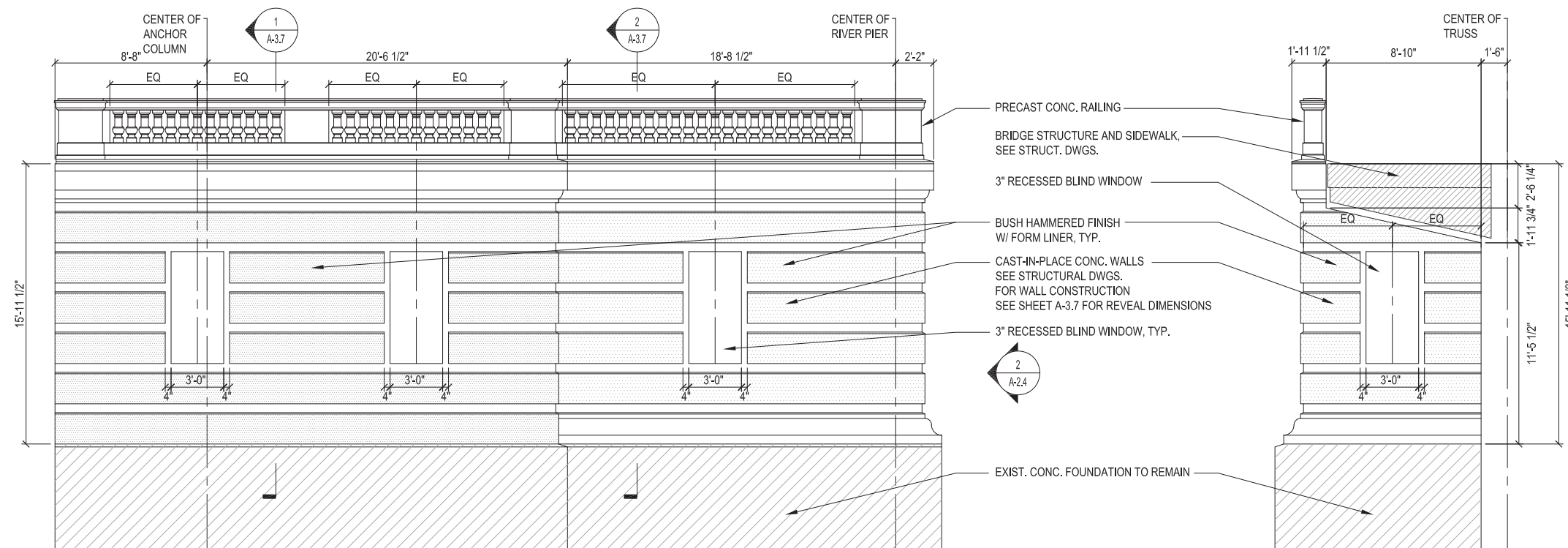
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**CITY OF CHICAGO**  
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DIVISION OF ENGINEERING

**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

**NORTHWEST BRIDGE HOUSE ELEVATION  
(STRUCTURE NO. 016-6057)**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	A-2.3
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1 S-W BRIDGE WALL ELEVATION  
SCALE: 1/4" = 1'-0"

2 S-W BRIDGE WALL ELEVATION  
SCALE: 1/4" = 1'-0"

**r\_barc**  
real beauty architecture

**wsp**  
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 SUITE 4200  
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 FAX: (312) 782-1884

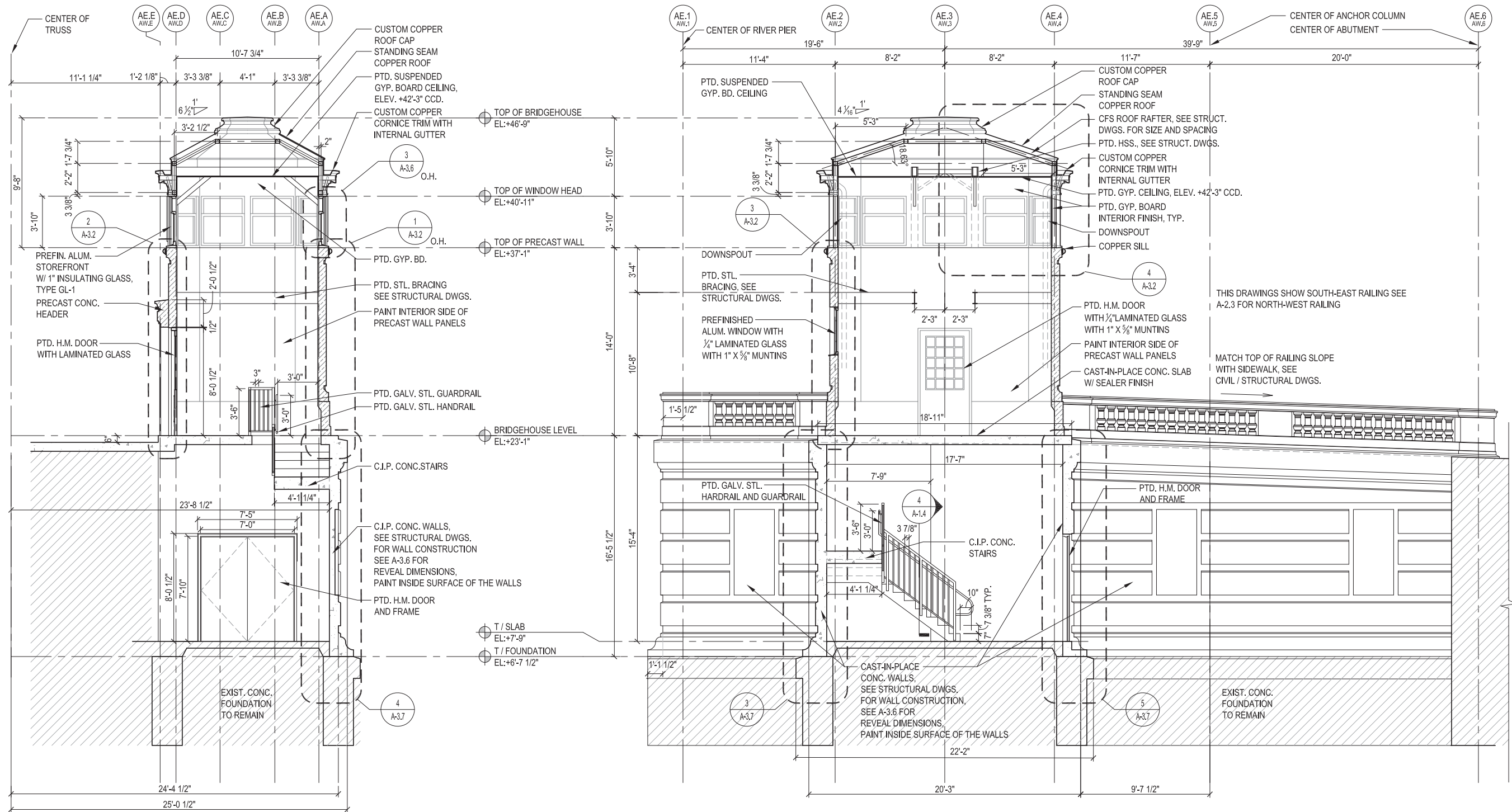
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**CITY OF CHICAGO**  
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 DIVISION OF ENGINEERING

**WEBSTER AVENUE BRIDGE OVER  
 THE NORTH BRANCH CHICAGO RIVER**

**SOUTHWEST & NORTHEAST  
 BRIDGE WALL ELEVATION  
 (STRUCTURE NO. 016-6057)**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	A-2.4
CDOT PROJECT NO. E-1-525			165 of 210



1 S-E BRIDGE HOUSE SECTION  
 SCALE: 1/4" = 1'-0"  
 (N-W BRIDGE HOUSE SECTION SIMILAR)

2 S-E BRIDGE HOUSE SECTION  
 SCALE: 1/4" = 1'-0"  
 (N-W BRIDGE HOUSE SECTION SIMILAR)



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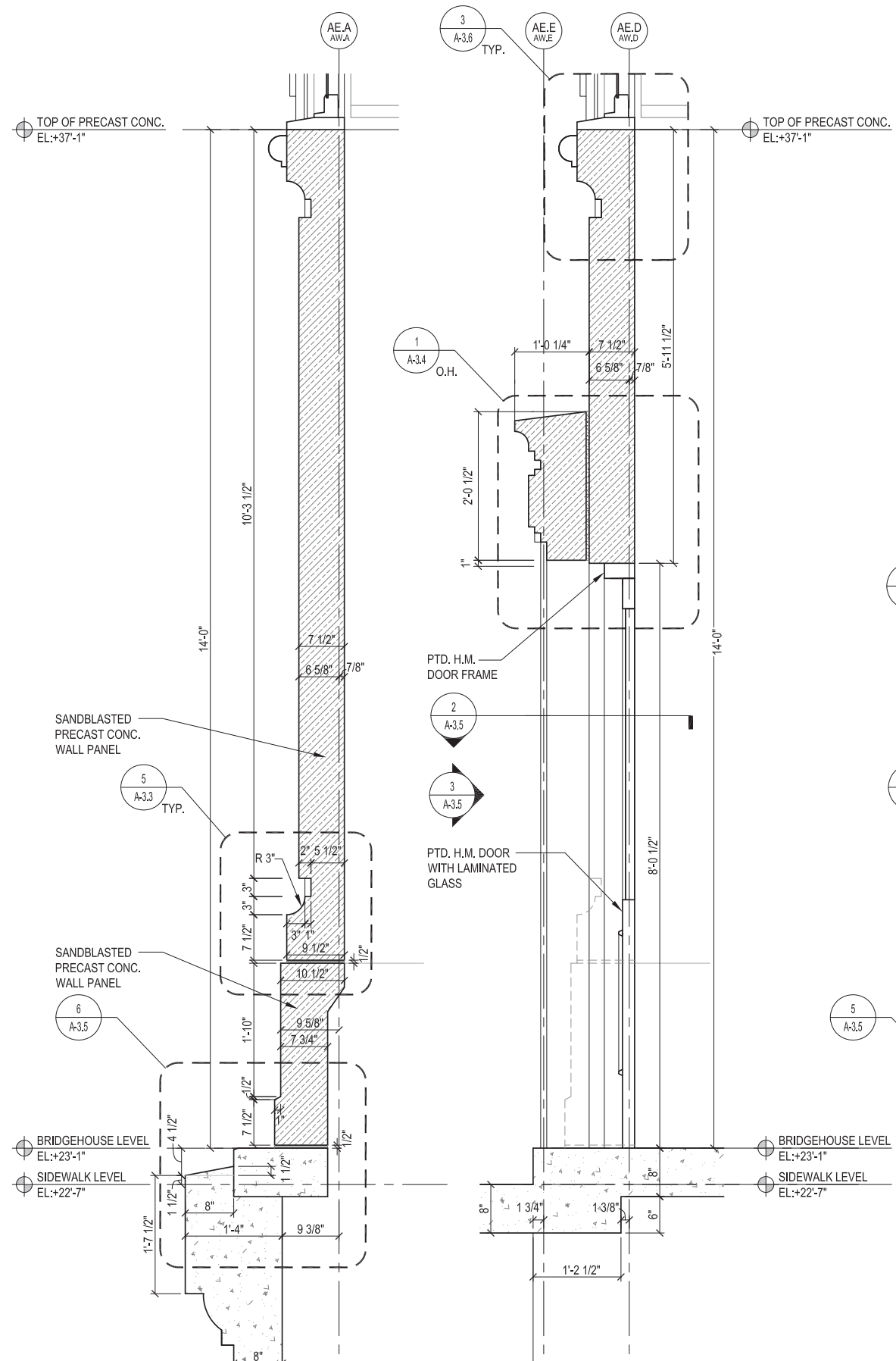
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**CITY OF CHICAGO**  
 DEPARTMENT OF TRANSPORTATION  
 DIVISION OF ENGINEERING

**WEBSTER AVENUE BRIDGE OVER  
 THE NORTH BRANCH CHICAGO RIVER**

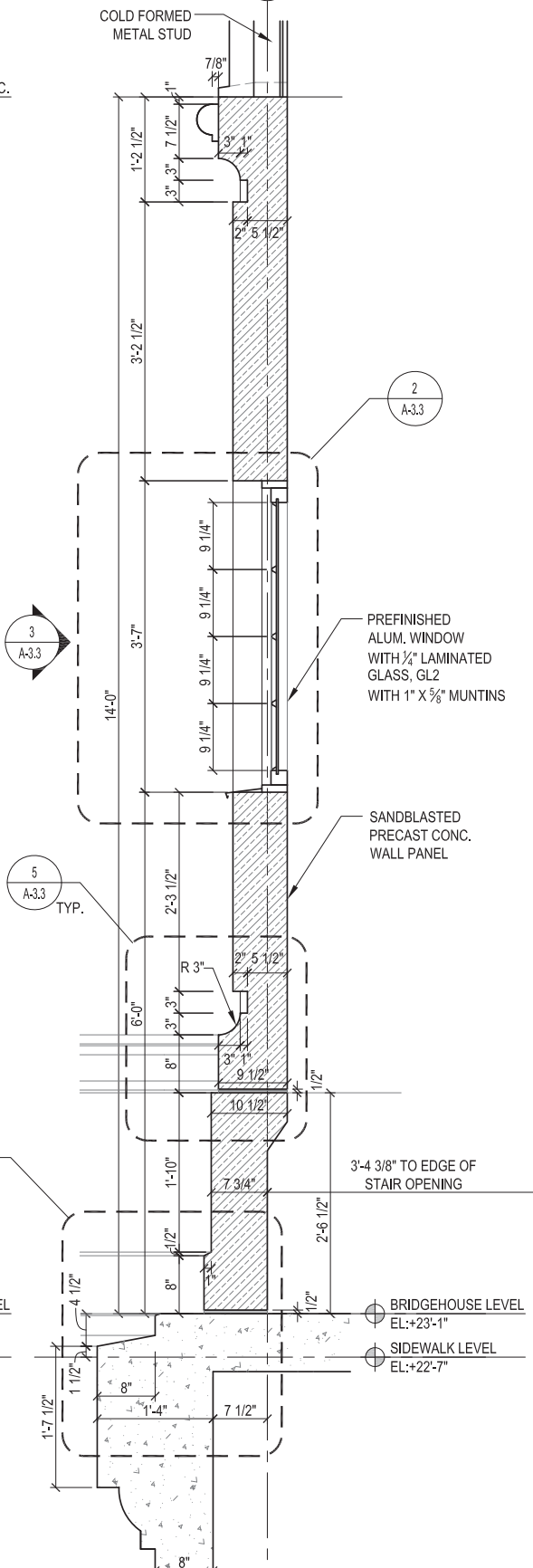
**BRIDGE HOUSE SECTION  
 (STRUCTURE NO. 016-6057)**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	A-3.1
CDOT PROJECT NO. E-1-525			166 of 210

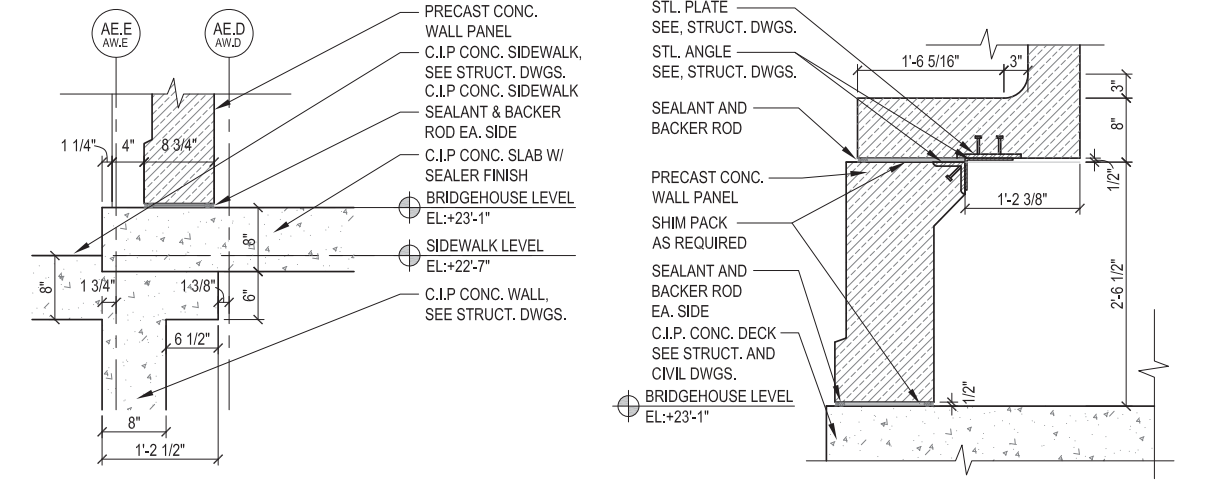


1 WALL SECTION, TYP.  
SCALE: 1" = 1'-0"

2 WALL SECTION  
SCALE: 1" = 1'-0"

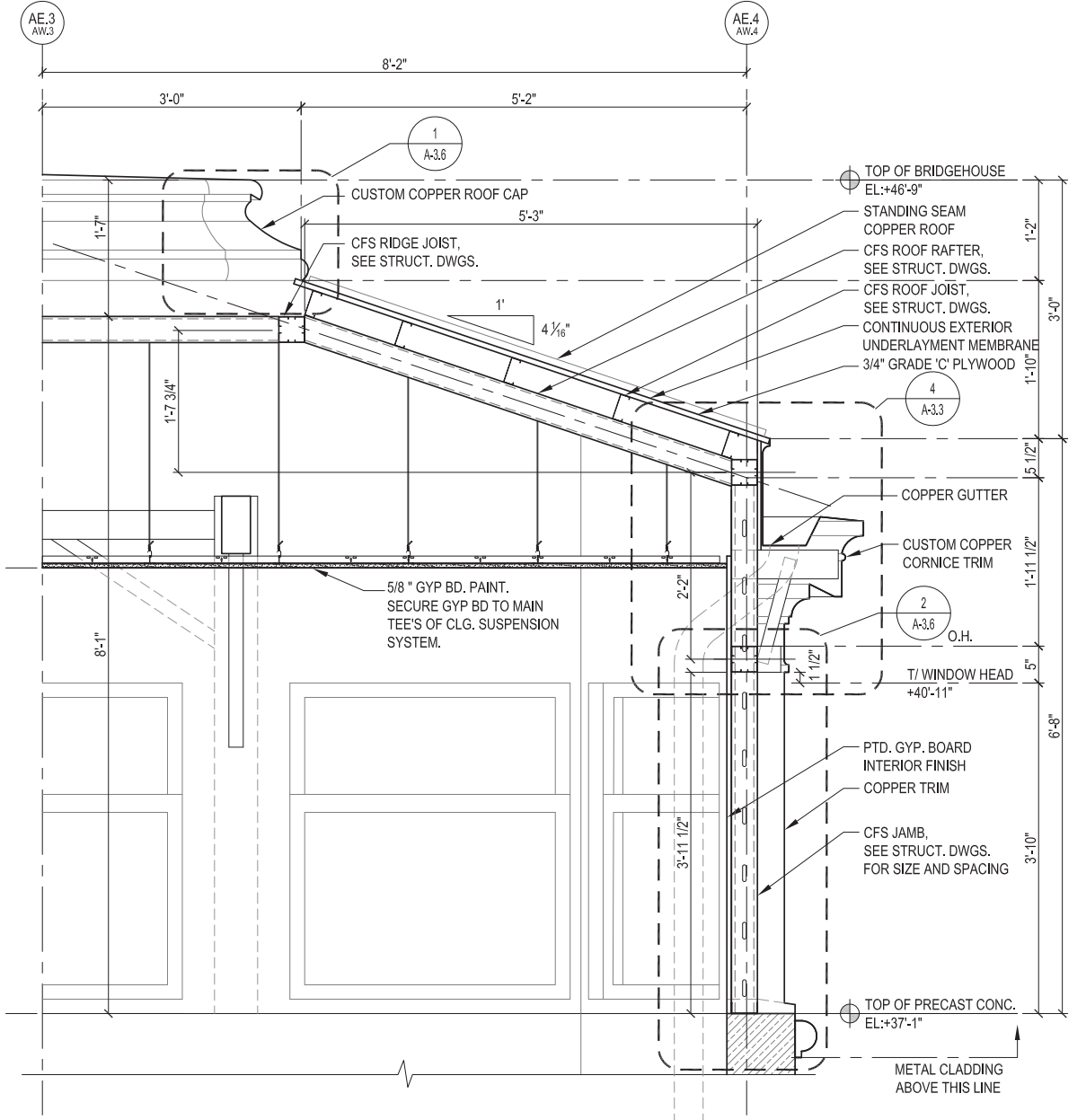


3 WALL SECTION  
SCALE: 1" = 1'-0"



6 WALL SECTION,  
SCALE: 1" = 1'-0"

5 WALL SECTION, TYP.  
SCALE: 1" = 1'-0"



4 SECTION, TYP.  
SCALE: 1" = 1'-0"



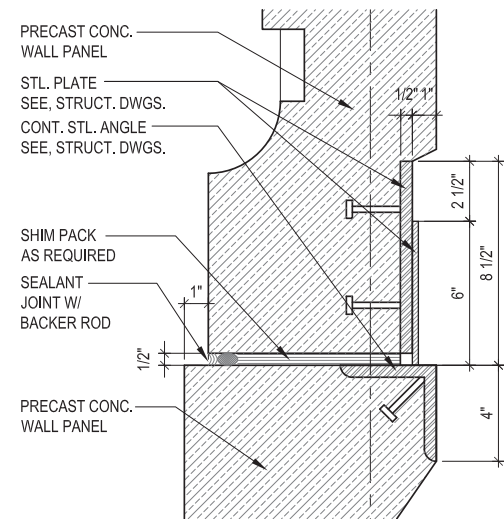
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**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

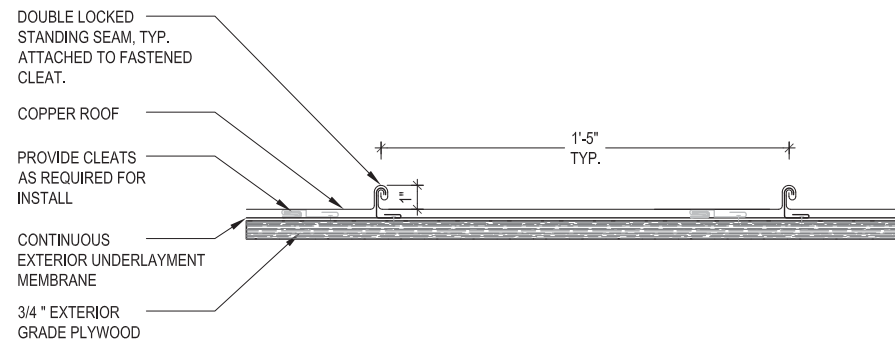
**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

**BRIDGE HOUSE WALL SECTION  
(STRUCTURE NO. 016-6057)**

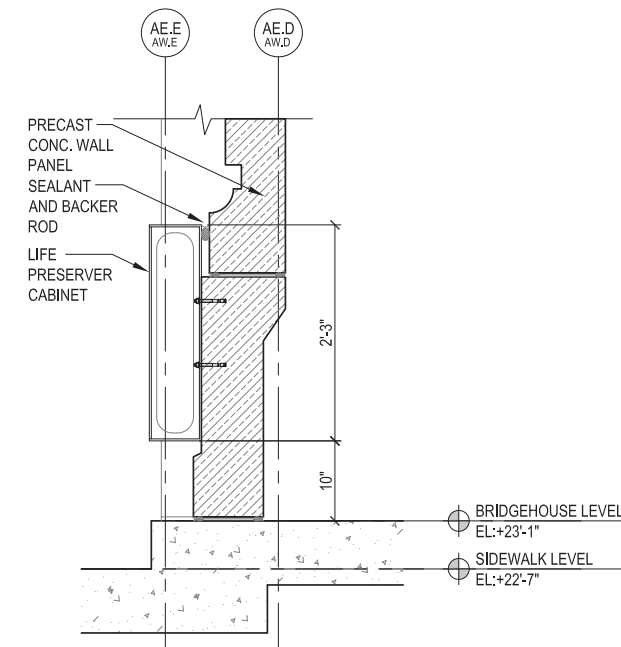
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CDOT PROJECT NO. E-1-525			167 of 210



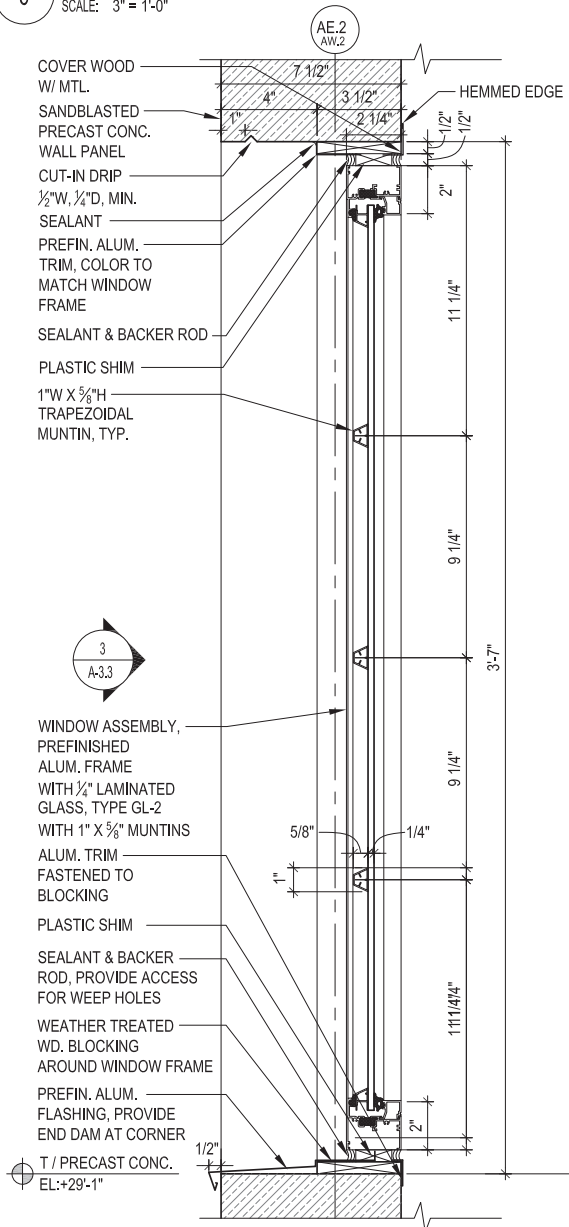
5 TYP. PRECAST CONC. WALL PANEL CONNECTION DETAIL  
SCALE: 3" = 1'-0"



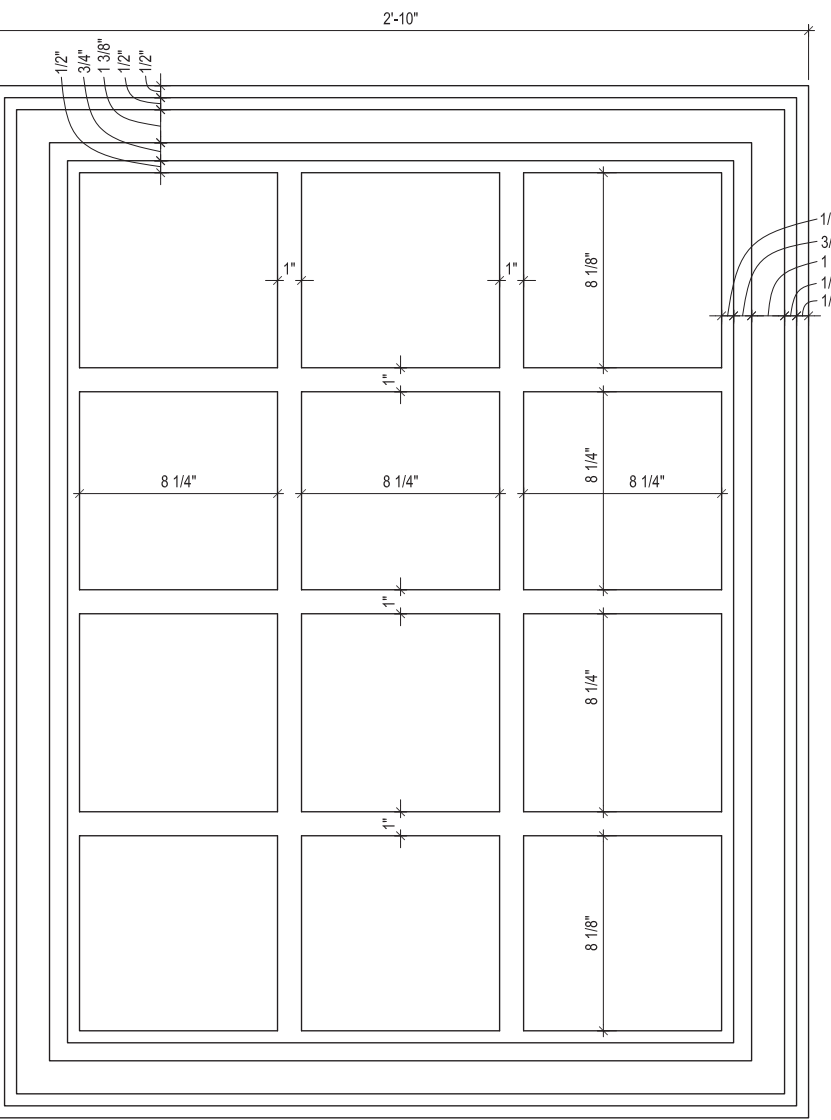
6 STANDING SEAM ROOF CLADDING SECTION DETAIL  
SCALE: 3" = 1'-0"



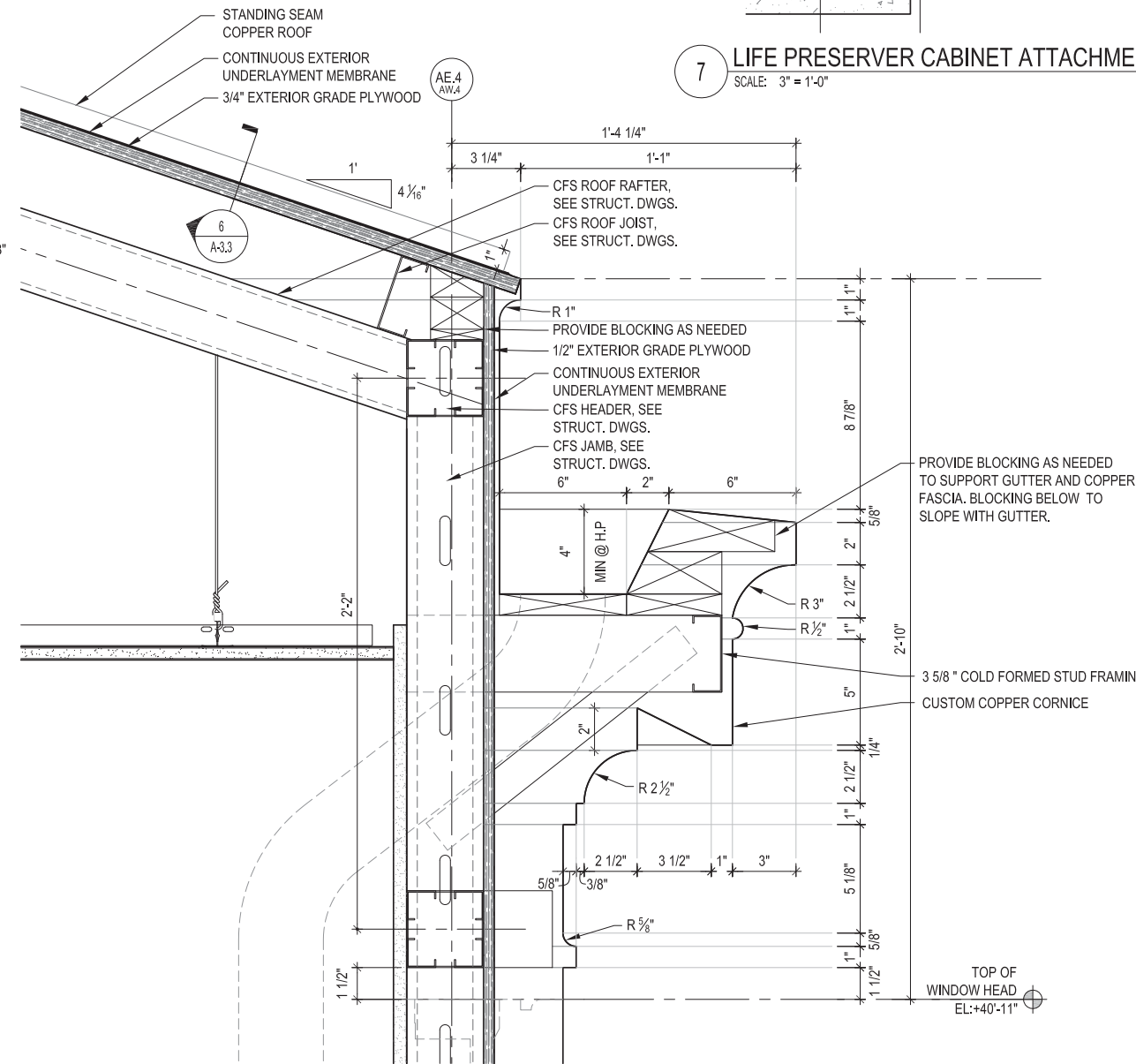
7 LIFE PRESERVER CABINET ATTACHMENT DETAIL  
SCALE: 3" = 1'-0"



2 WINDOW DETAIL  
SCALE: 3" = 1'-0"



3 WINDOW ELEVATION  
SCALE: 3" = 1'-0"



4 ROOF DETAIL  
SCALE: 3" = 1'-0"



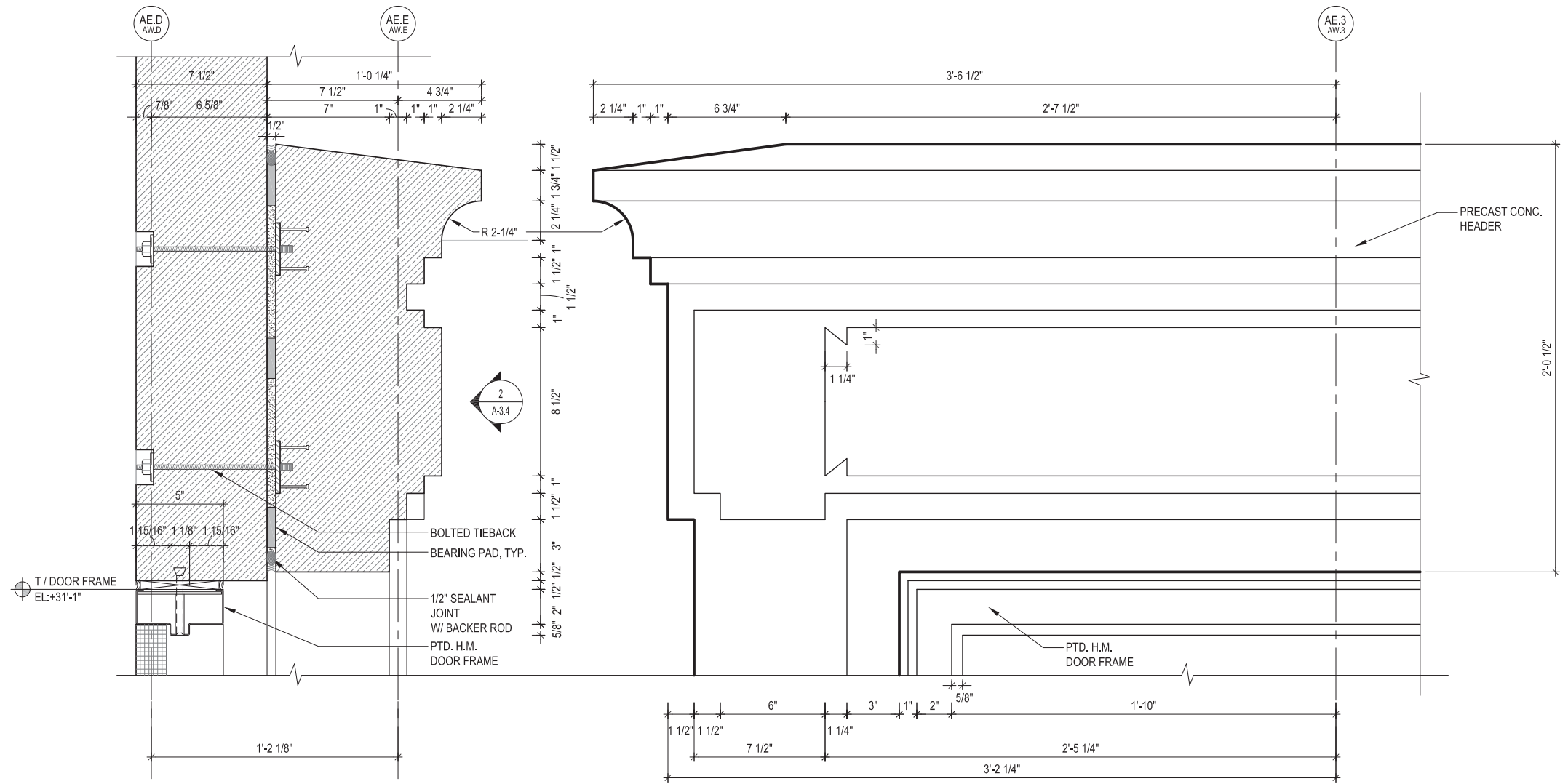
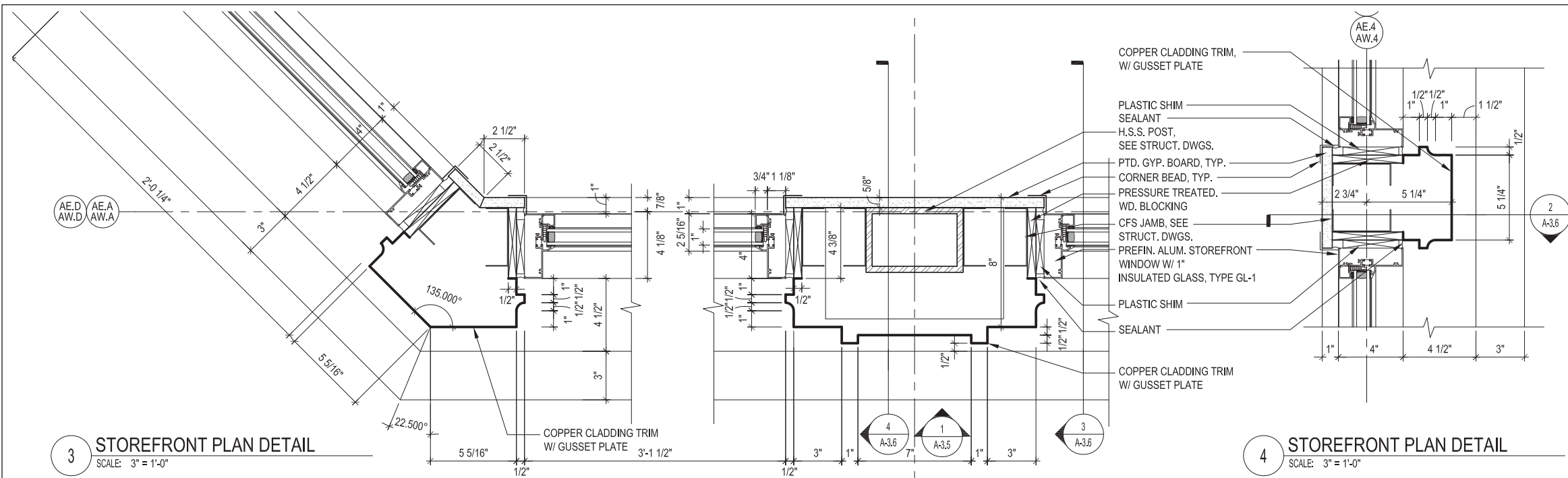
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PLOT DATE = 09/23/2020	DRAWN — YJL	REVISED —
	CHECKED — ECM	REVISED —

**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
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**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

**BRIDGE HOUSE DETAIL  
(STRUCTURE NO. 016-6057)**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
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**1 DOOR ORNAMENT SECTION**  
SCALE: 3" = 1'-0"

**2 DOOR ORNAMENT ELEVATION**  
SCALE: 3" = 1'-0"

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30 N. LASALLE STREET  
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USER NAME = YJL	DESIGNED — YJL	REVISED —
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PLOT DATE = 09/23/2020	DRAWN — YJL	REVISED —
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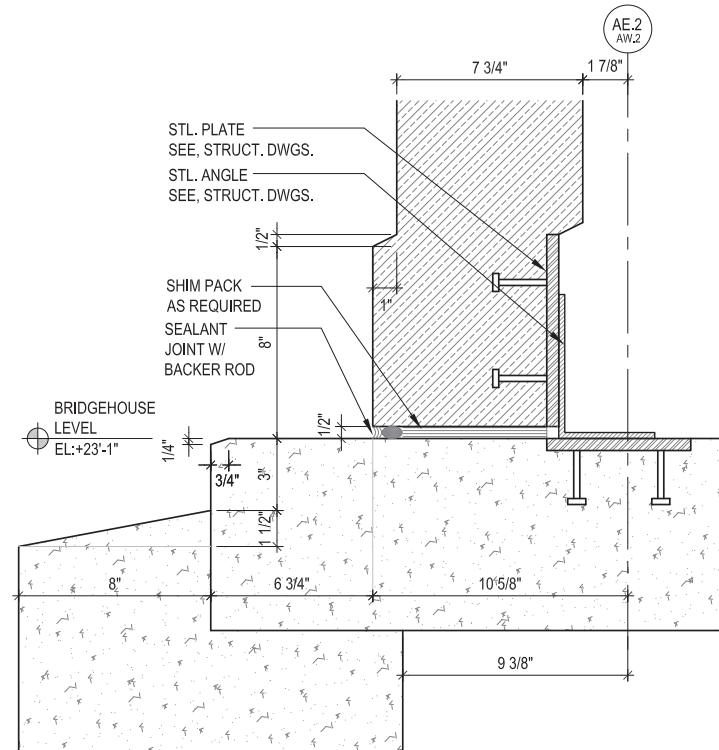
**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

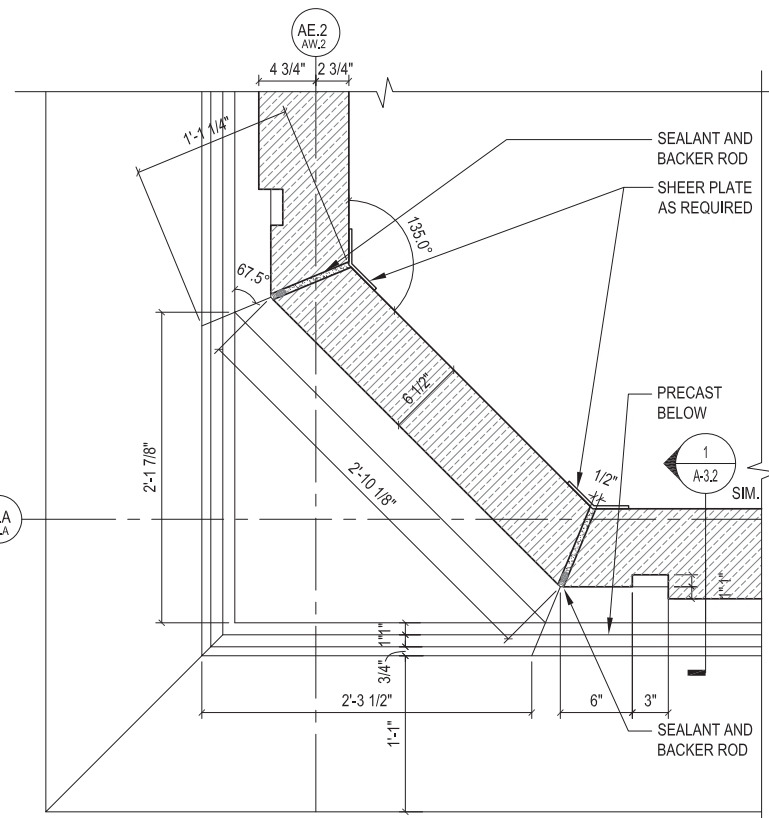
**BRIDGE HOUSE DETAIL  
(STRUCTURE NO. 016-6057)**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	A-3.4
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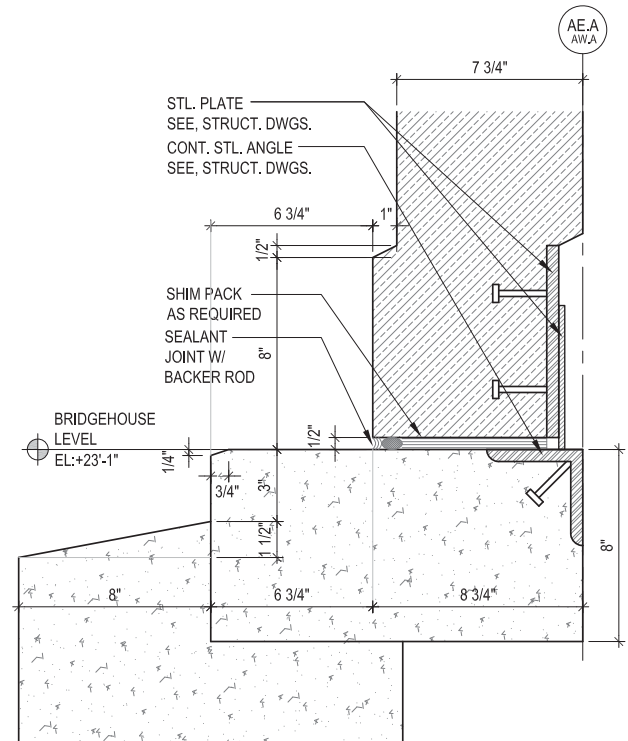




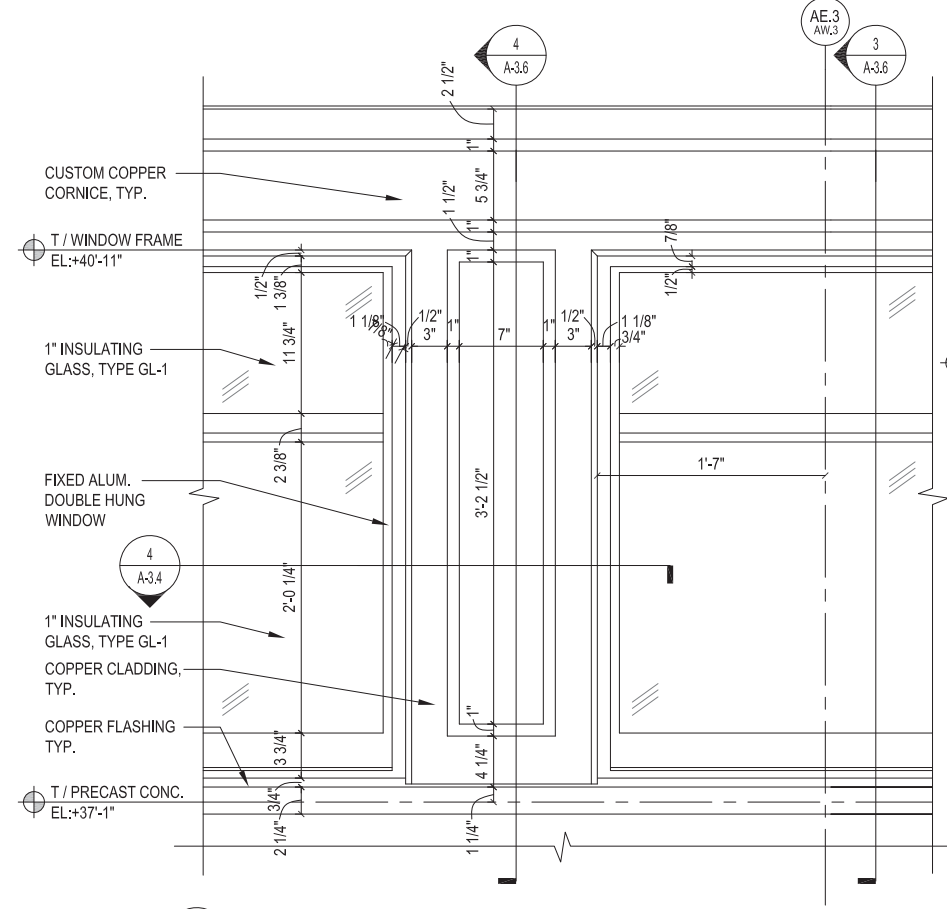
**5 WALL PANEL CONNECTION DETAIL**  
SCALE: 3" = 1'-0"



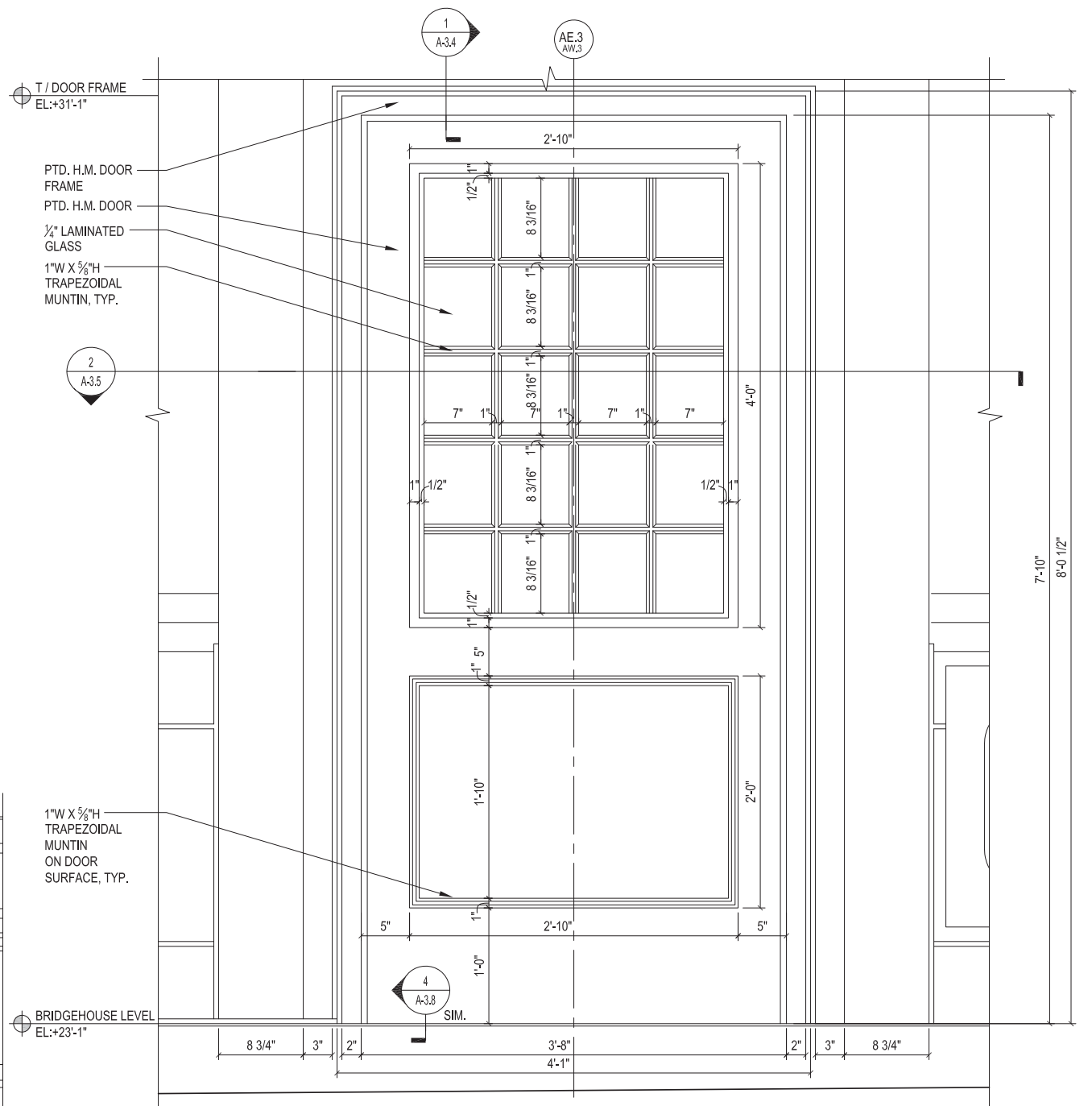
**4 WALL PANEL CONNECTION DETAIL**  
SCALE: 1-1/2" = 1'-0"



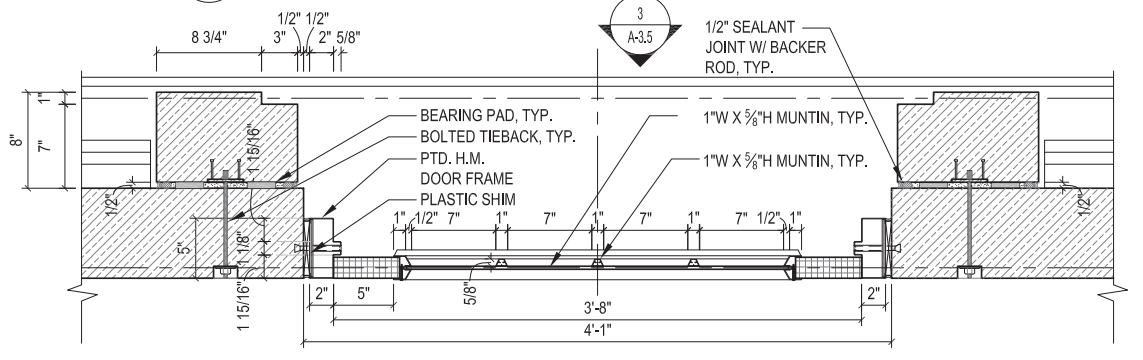
**6 WALL PANEL CONNECTION DETAIL**  
SCALE: 3" = 1'-0"



**1 STOREFRONT ELEVATION**  
SCALE: 1-1/2" = 1'-0"



**3 DOOR ELEVATION**  
SCALE: 1-1/2" = 1'-0"



**2 DOOR DETAIL**  
SCALE: 1-1/2" = 1'-0"



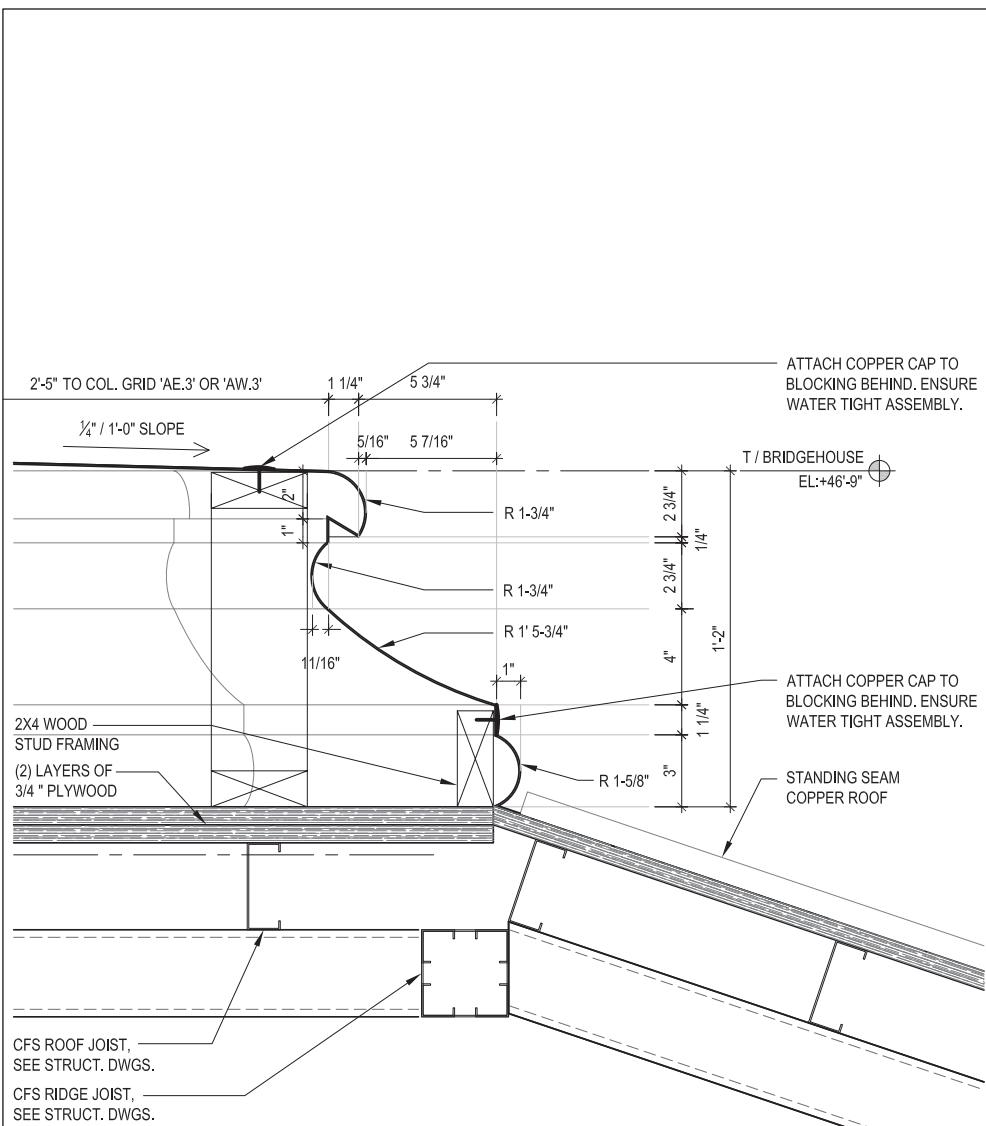
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	CHECKED — ECM	REVISED —

**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

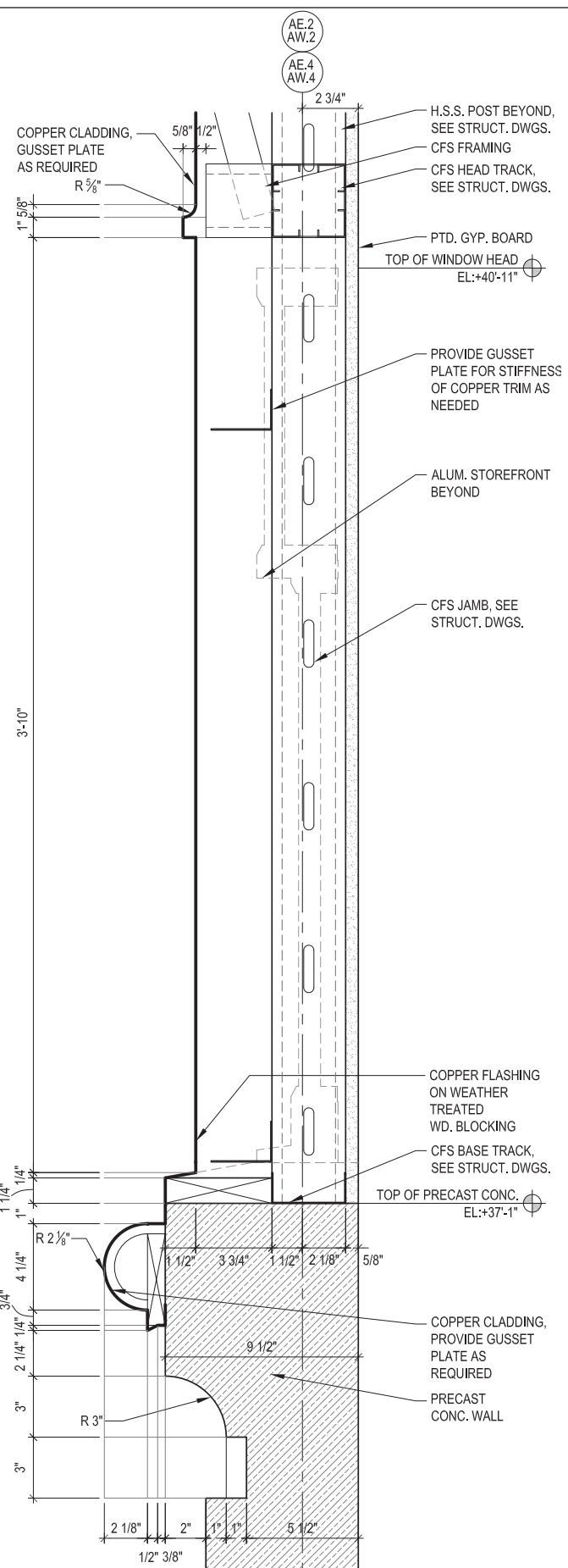
**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

**BRIDGE HOUSE DETAIL  
(STRUCTURE NO. 016-6057)**

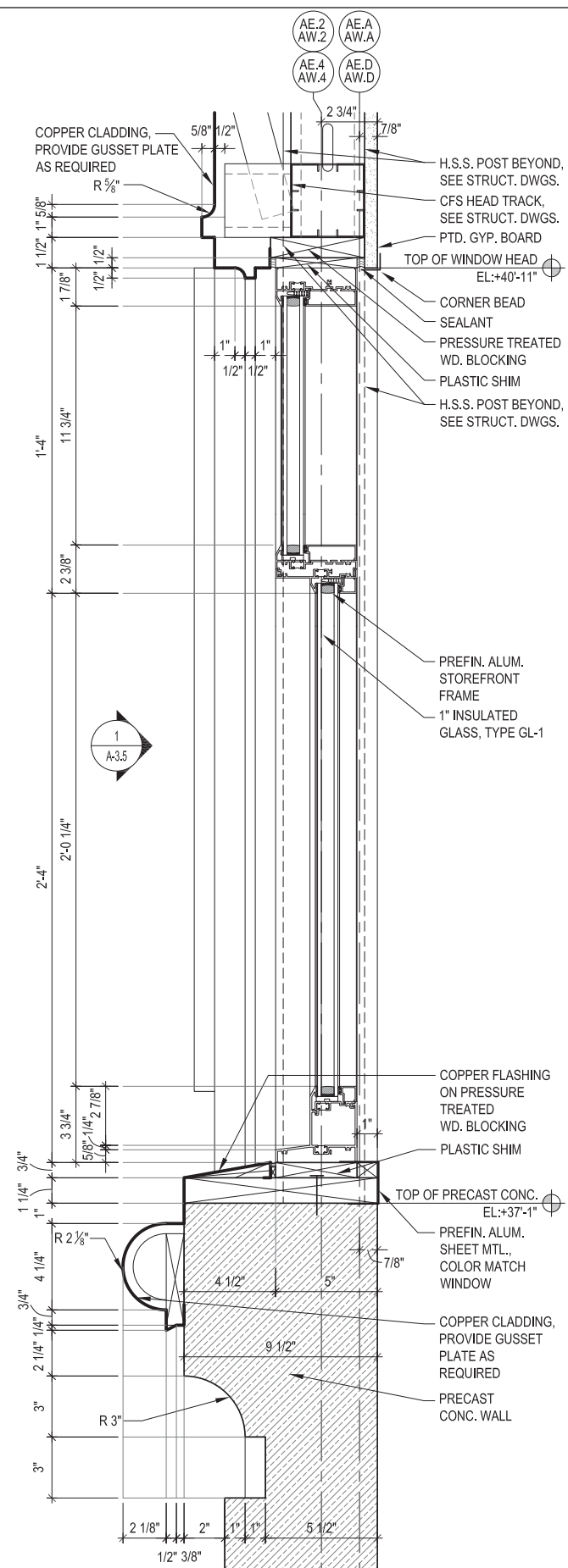
F.A.U. RTE. 1388	SECTION 11-E1525-00-BR	COUNTY COOK	SHEET NO. A-3.5
CDOT PROJECT NO. E-1-525			170 of 210



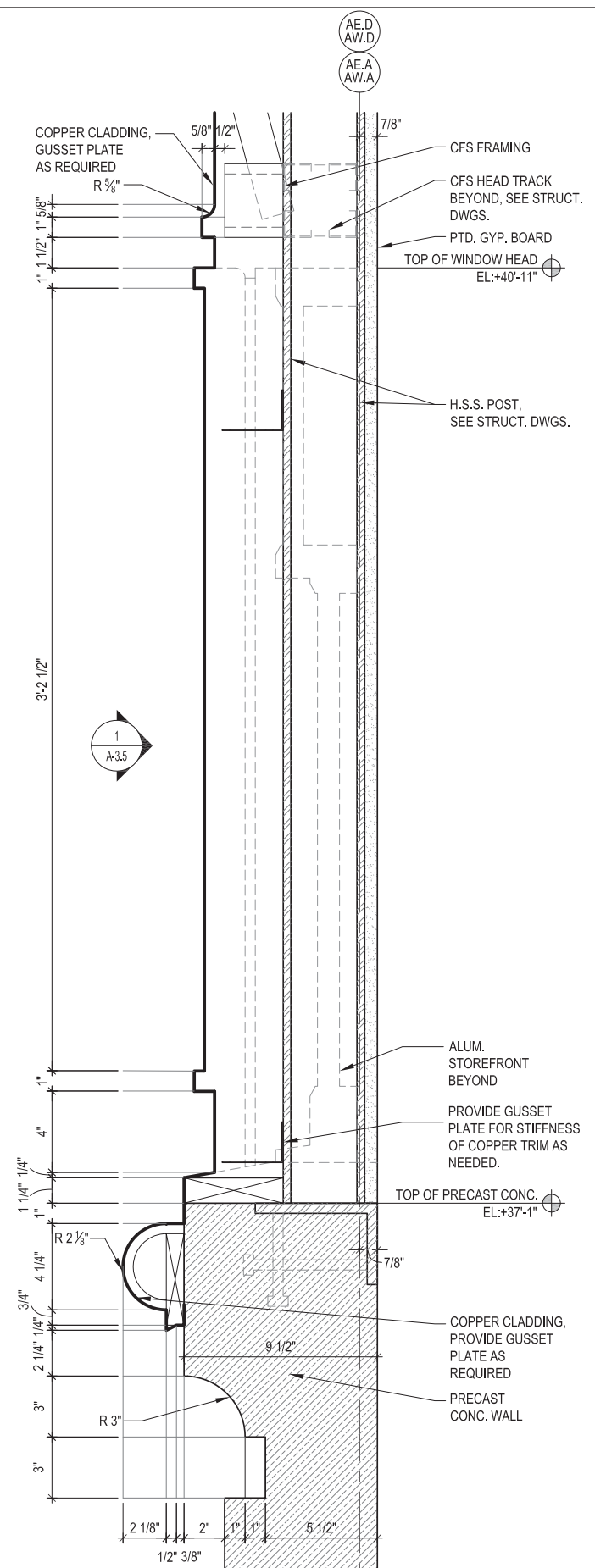
**1 ROOF CAP DETAIL**  
SCALE: 3" = 1'-0"



**2 STOREFRONT SECTION DETAIL**  
SCALE: 3" = 1'-0"



**3 STOREFRONT SECTION DETAIL**  
SCALE: 3" = 1'-0"



**4 STOREFRONT SECTION DETAIL**  
SCALE: 3" = 1'-0"



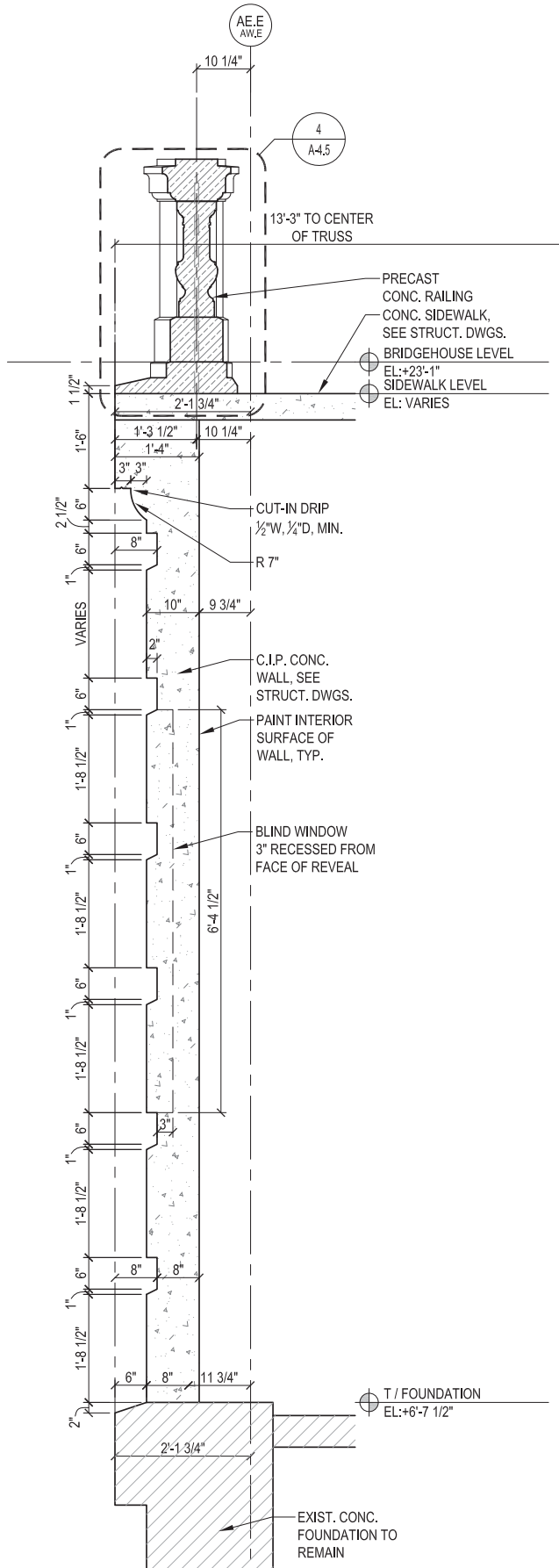
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PLOT SCALE = 1:2	CHECKED — ECM	REVISED —
PLOT DATE = 09/23/2020	DRAWN — YJL	REVISED —
	CHECKED — ECM	REVISED —

**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

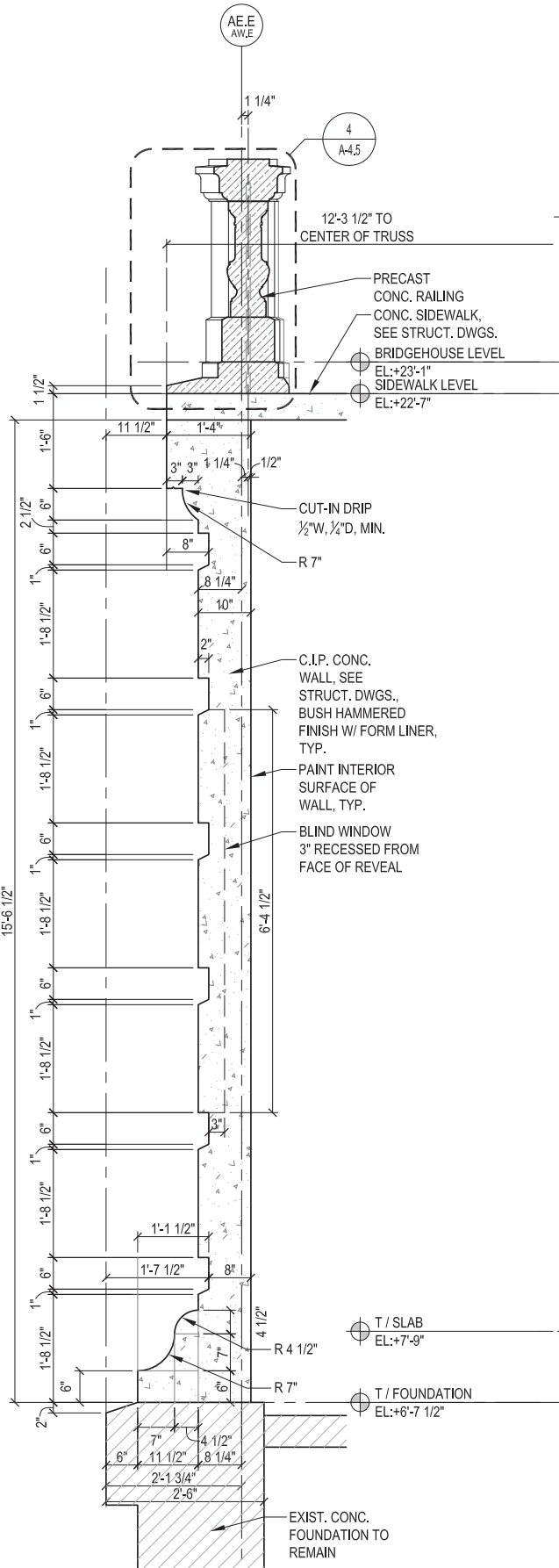
**WEBSTER AVENUE BRIDGE OVER THE NORTH BRANCH CHICAGO RIVER**

**BRIDGE HOUSE DETAIL**  
(STRUCTURE NO. 016-6057)

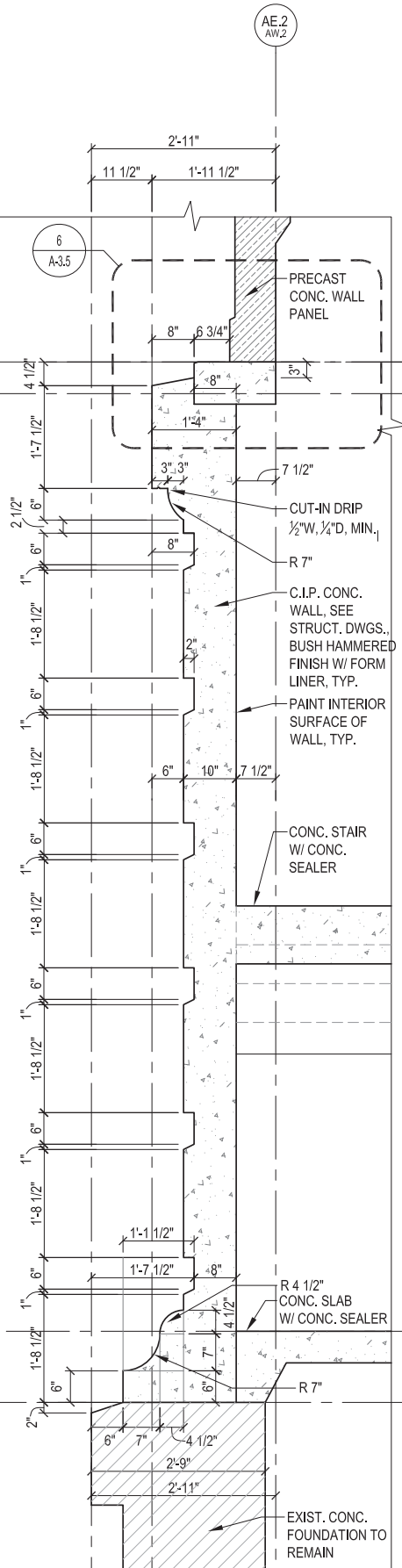
F.A.U. RTE. 1388	SECTION 11-E1525-00-BR	COUNTY COOK	SHEET NO. A-3.6
CDOT PROJECT NO. E-1-525			171 of 210



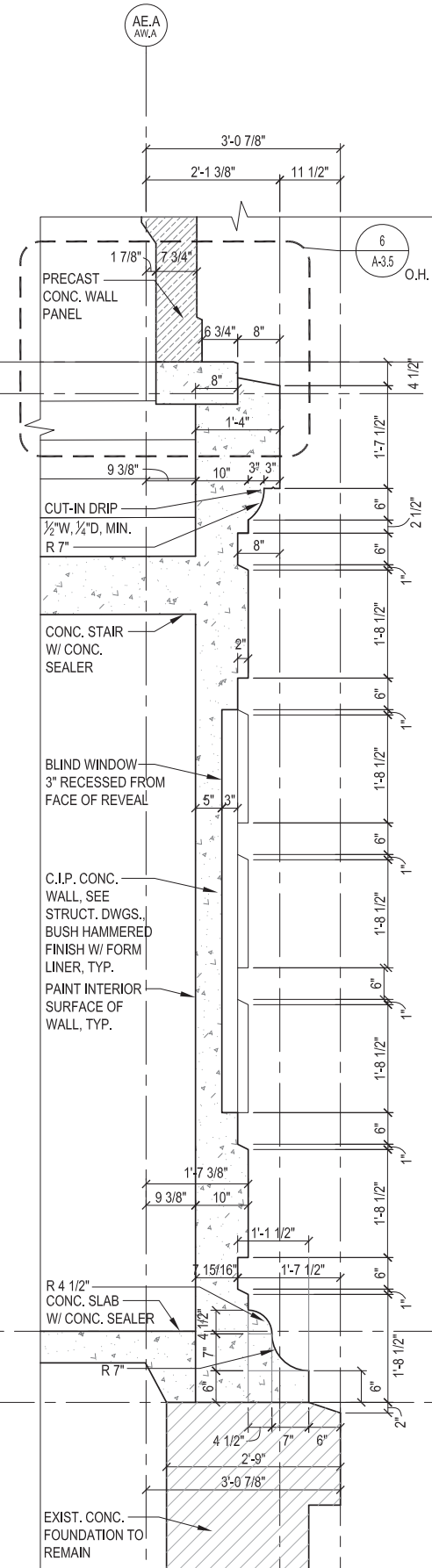
**1 LOWER WALL SECTION**  
SCALE: 3/4" = 1'-0"



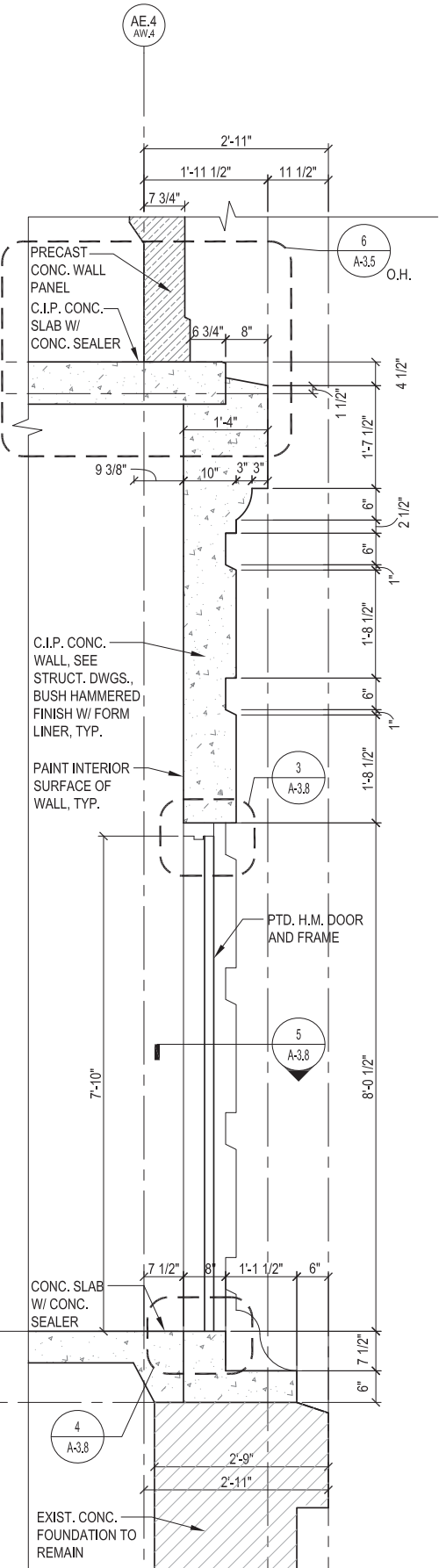
**2 LOWER WALL SECTION**  
SCALE: 3/4" = 1'-0"



**3 LOWER WALL SECTION**  
SCALE: 3/4" = 1'-0"



**4 LOWER WALL SECTION**  
SCALE: 3/4" = 1'-0"



**5 LOWER WALL SECTION**  
SCALE: 3/4" = 1'-0"



**wsp**  
WSP USA Inc.  
30 N. LASALLE STREET  
SUITE 4200  
CHICAGO, IL 60602  
TEL: (312) 782-8150  
FAX: (312) 782-1884

USER NAME = YJL	DESIGNED — YJL	REVISED —
PLOT SCALE = 1:2	CHECKED — ECM	REVISED —
PLOT DATE = 09/23/2020	DRAWN — YJL	REVISED —
	CHECKED — ECM	REVISED —

**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

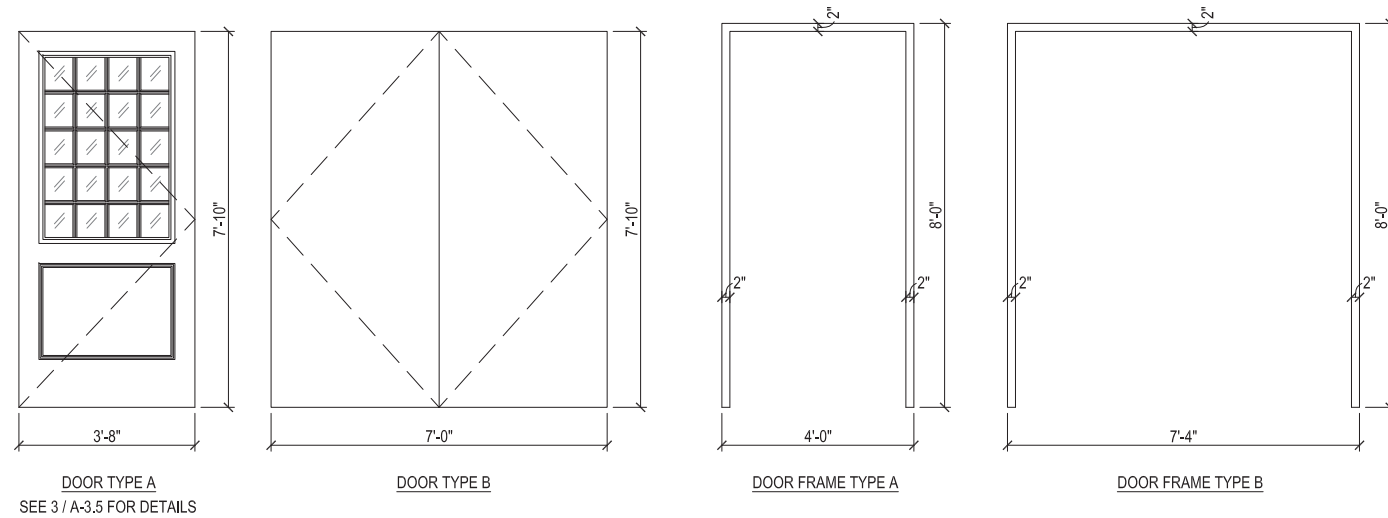
**LOWER WALL SECTION  
(STRUCTURE NO. 016-6057)**

F.A.U. RT. 1388	SECTION 11-E1525-00-BR	COUNTY COOK	SHEET NO. A-3.7
CDOT PROJECT NO. E-1-525			172 of 210

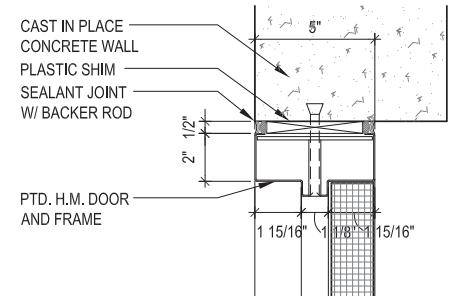
MARK	LOCATION	FIRE RATING	DOOR TYPE	WIDTH	HEIGHT	THICKNESS	DOOR MATERIAL	FRAME TYPE	FRAME MATERIAL	GLAZING	FINISH	HEAD	SILL	JAMB	HARDWARE SET	COMMENT
001	S-E BRIDGE HOUSE / BRIDGE LEVEL	NONE	A	3'-8"	7'-10"	1-3/4"	HM	A	HM	GL-2	PT	1 / A-3.4	4 / A-3.8 SIM.	2 / A-3.5	1	MUNTINS ON GLAZING &
002	S-E BRIDGE HOUSE / DOCK LEVEL	NONE	B	7'-0"	7'-10"	1-3/4"	HM	B	HM	NONE	PT	3 / A-3.8	4 / A-3.8	5 / A-3.8	2	
003	N-W BRIDGE HOUSE / BRIDGE LEVEL	NONE	A	3'-8"	7'-10"	1-3/4"	HM	A	HM	GL-2	PT	1 / A-3.4	4 / A-3.8 SIM.	2 / A-3.5	1	MUNTINS ON GLAZING &
004	N-W BRIDGE HOUSE / DOCK LEVEL	NONE	B	7'-0"	7'-10"	1-3/4"	HM	B	HM	NONE	PT	3 / A-3.8	4 / A-3.8	5 / A-3.8	2	

FINISH MATERIAL LEGEND

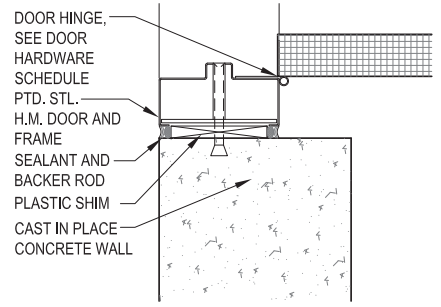
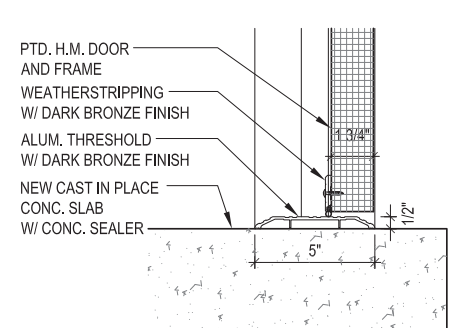
1 DOOR SCHEDULE  
SCALE: NONE



2 DOOR AND DOOR FRAME TYPE  
SCALE: NONE



3 DOOR DETAIL - HEAD  
SCALE: 3" = 1'-0"



4 DOOR DETAIL - SILL  
SCALE: 3" = 1'-0"

5 DOOR DETAIL - JAMB  
SCALE: 3" = 1'-0"



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	CHECKED — ECM	REVISED —

**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

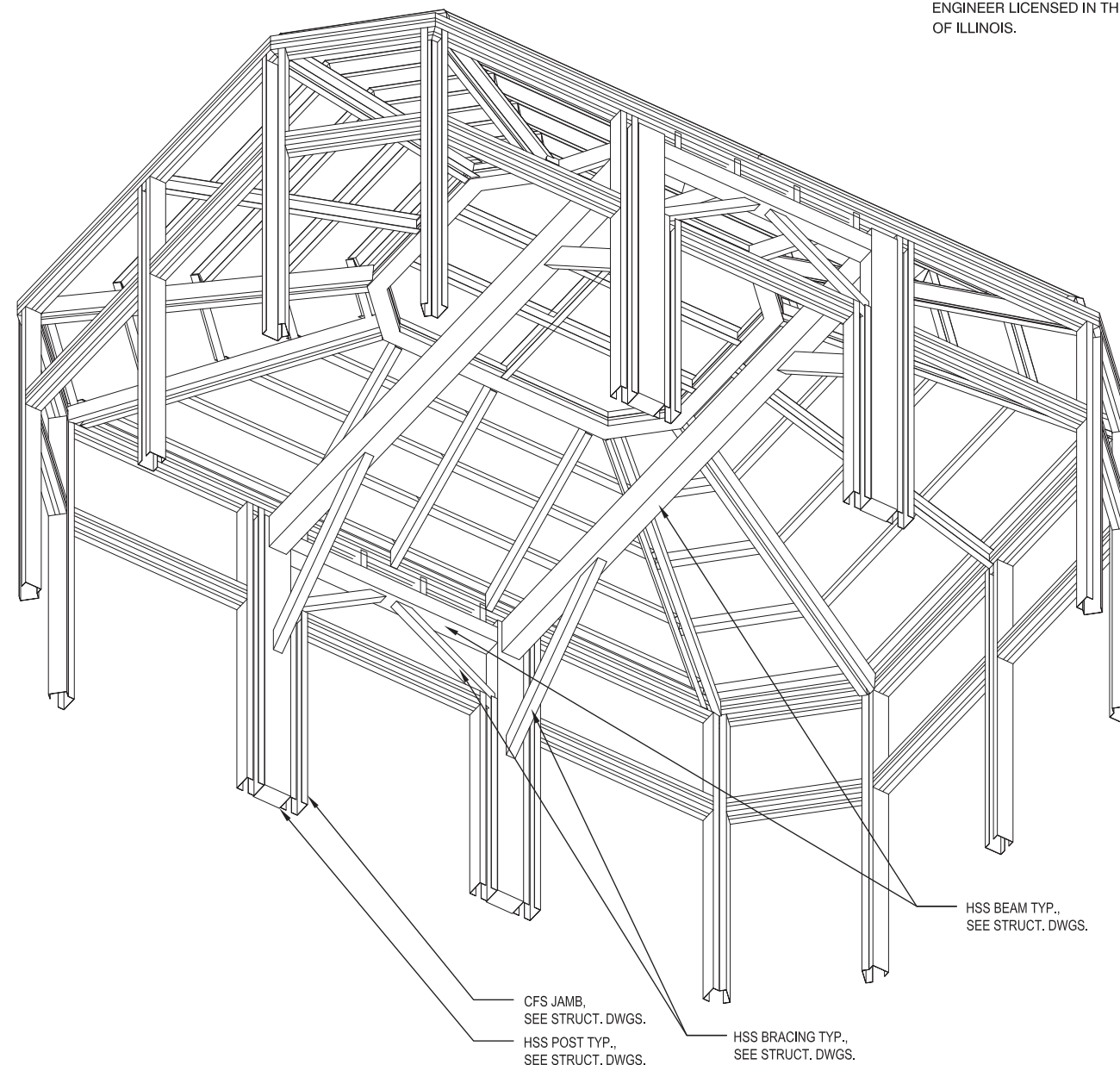
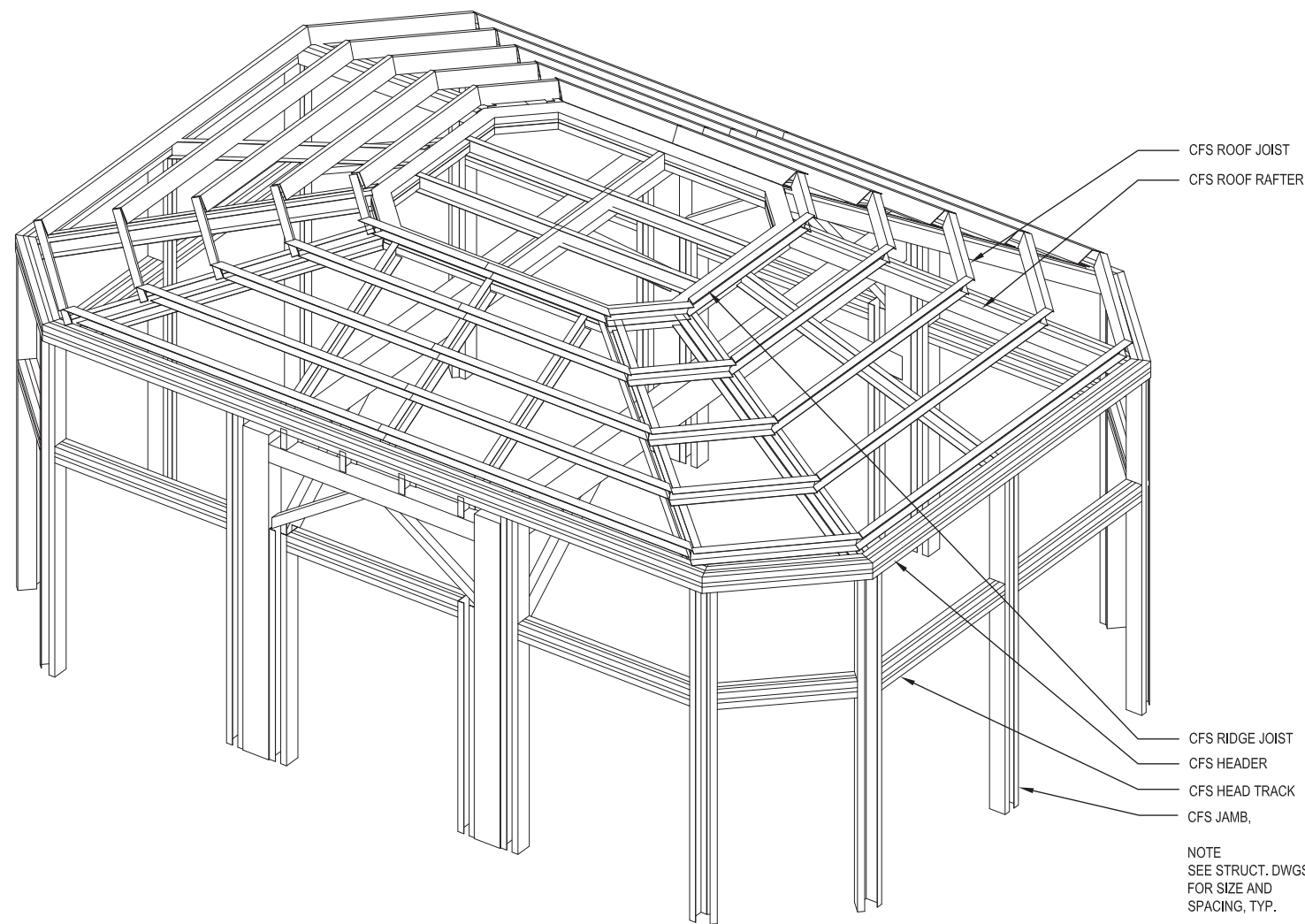
**DOOR SCHEDULE AND DETAILS  
(STRUCTURE NO. 016-6057)**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	A-3.8
CDOT PROJECT NO. E-1-525			173 of 210

# SHEET NOTES

WEBSTER AVE. BRIDGEHOUSES & RAILINGS

1. NOT ALL STUDS AND JOISTS ARE SHOWN FOR CLARITY. THE NECESSARY STUDS, JOISTS, BRACING SHOULD BE PROVIDED AS REQUIRED FOR THE LOADS INDICATED IN THE DOCUMENTS.
2. ALL STUD AND JOIST CONNECTIONS, SIZE, SPACING SHALL BE DESIGNED AND DETAILED BY THE FABRICATOR. THE CONNECTIONS SHALL BE DESIGNED BY A STRUCTURAL ENGINEER LICENSED IN THE STATE OF ILLINOIS.



1 BRIDGE HOUSE ROOF FRAMING - AXONOMETRIC VIEW  
SCALE: NONE  
(REFERENCE ONLY)



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PLOT DATE = 09/23/2020	CHECKED — ECM	REVISED —

**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

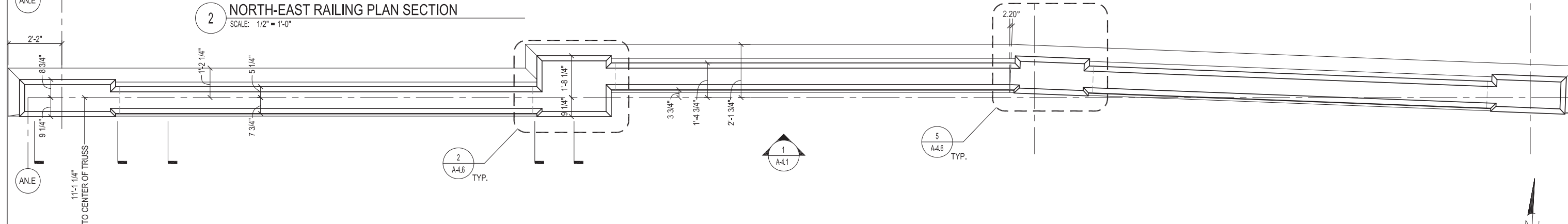
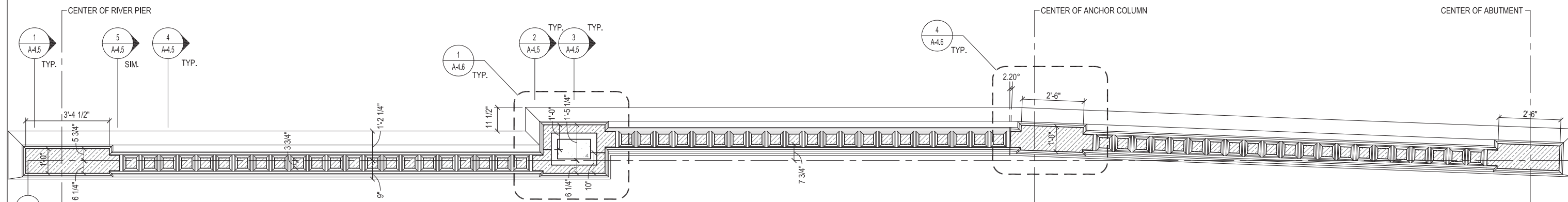
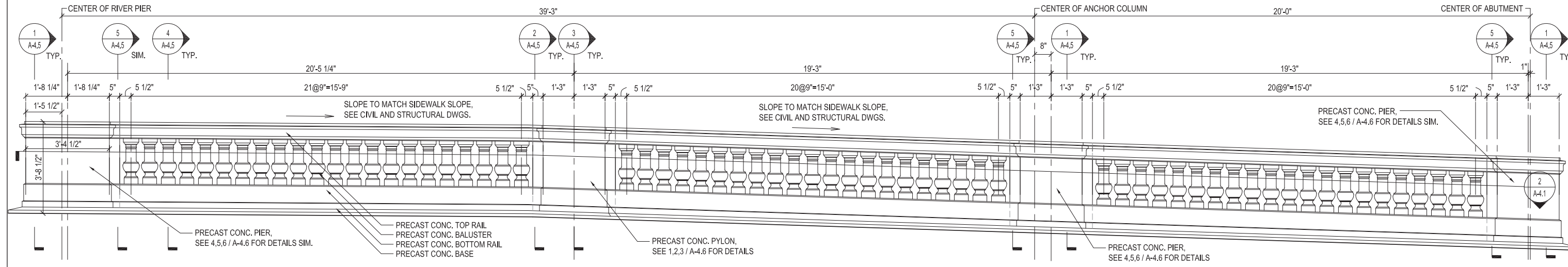
WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER

BRIDGE HOUSE ROOF FRAMING  
AXONOMETRIC VIEW  
(STRUCTURE NO. 016-6057)

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	A-3.9
CDOT PROJECT NO. E-1-525			174 of 210

# SHEET NOTES

- WEBSTER AVE. BRIDGEHOUSES & RAILINGS
1. PRECAST CONCRETE RAILING SYSTEM FINISH: SAND BLASTED
  2. ALL DIMENSION SHOULD BE FIELD VERIFIED



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PLOT DATE = 09/23/2020	DRAWN — YJL	REVISED —
	CHECKED — ECM	REVISED —

**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

**NORTHEAST RAILING  
PLAN, SECTION AND ELEVATION  
(STRUCTURE NO. 016-6057)**

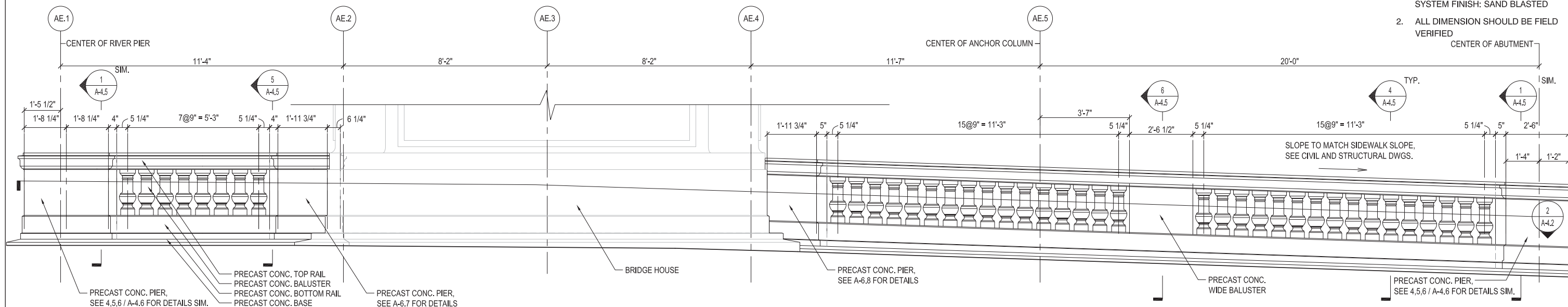
F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	A-4.1
CDOT PROJECT NO. E-1-525			175 of 210



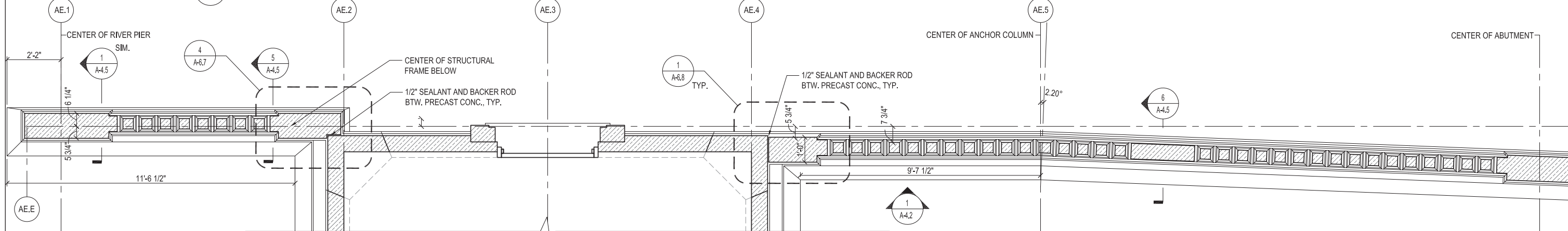
# SHEET NOTES

WEBSTER AVE. BRIDGEHOUSES & RAILINGS

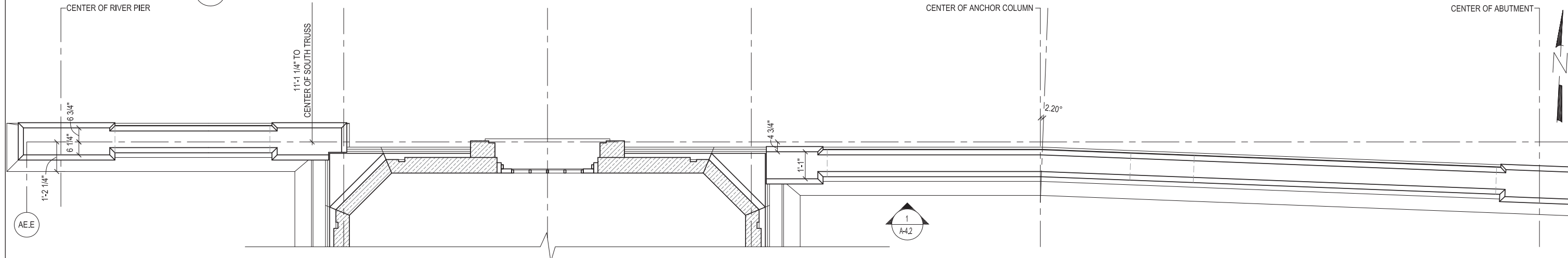
1. PRECAST CONCRETE RAILING SYSTEM FINISH: SAND BLASTED
2. ALL DIMENSION SHOULD BE FIELD VERIFIED



1 SOUTH-EAST RAILING SOUTH ELEVATION  
SCALE: 1/2" = 1'-0"



2 SOUTH-EAST RAILING PLAN SECTION  
SCALE: 1/2" = 1'-0"



3 SOUTH-EAST RAILING PLAN - TOP OF RAILING  
SCALE: 1/2" = 1'-0"



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PLOT DATE = 09/23/2020	DRAWN — YJL	REVISED —
	CHECKED — ECM	REVISED —

**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER

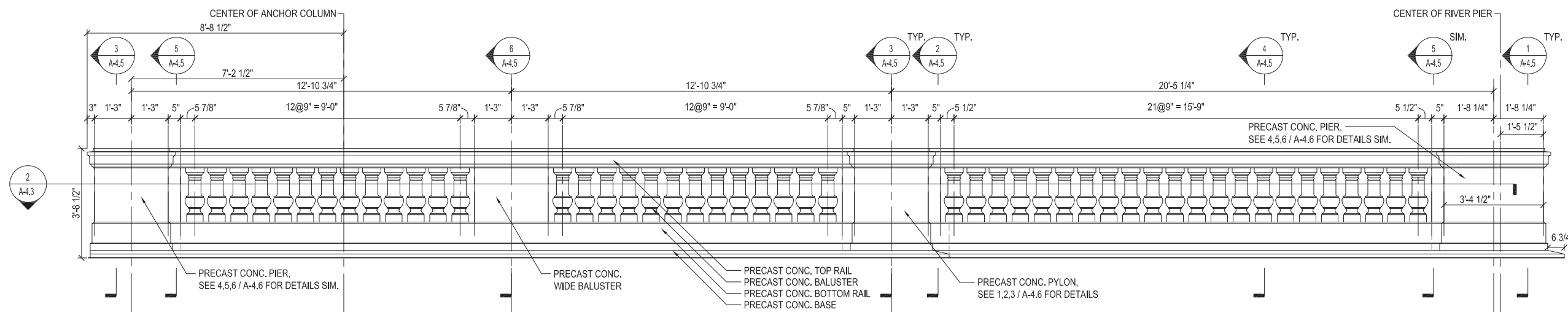
SOUTHEAST RAILING  
PLAN, SECTION AND ELEVATION  
(STRUCTURE NO. 016-6057)

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	A-4.2
CDOT PROJECT NO. E-1-525			176 of 210

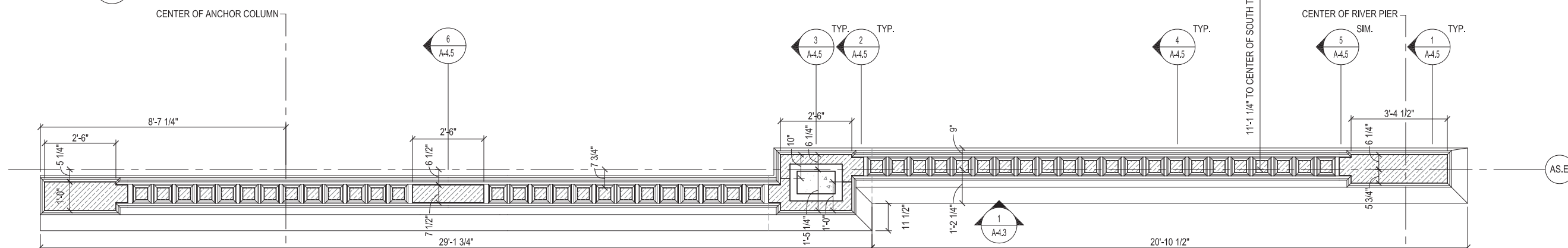
# SHEET NOTES

WEBSTER AVE. BRIDGEHOUSES & RAILINGS

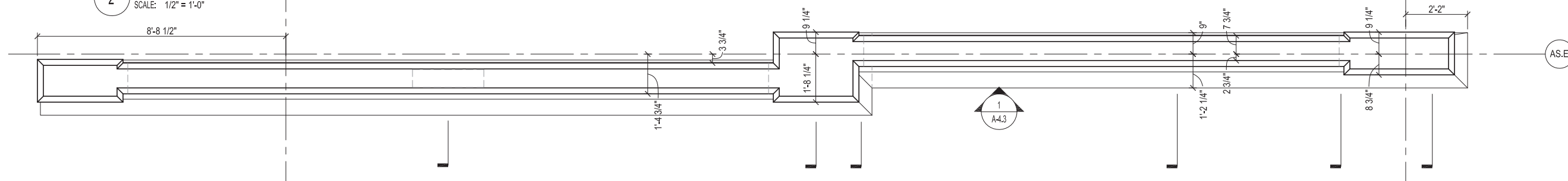
1. PRECAST CONCRETE RAILING SYSTEM FINISH: SAND BLASTED
2. ALL DIMENSION SHOULD BE FIELD VERIFIED



1 SOUTH-WEST RAILING SOUTH ELEVATION  
SCALE: 1/2" = 1'-0"



2 SOUTH-WEST RAILING PLAN SECTION  
SCALE: 1/2" = 1'-0"



3 SOUTH-WEST RAILING PLAN - TOP OF RAILING  
SCALE: 1/2" = 1'-0"



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**CITY OF CHICAGO**  
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DIVISION OF ENGINEERING

WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER

SOUTHWEST RAILING  
PLAN, SECTION AND ELEVATION  
(STRUCTURE NO. 016-6057)

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	A-4.3
CDOT PROJECT NO. E-1-525			177 of 210

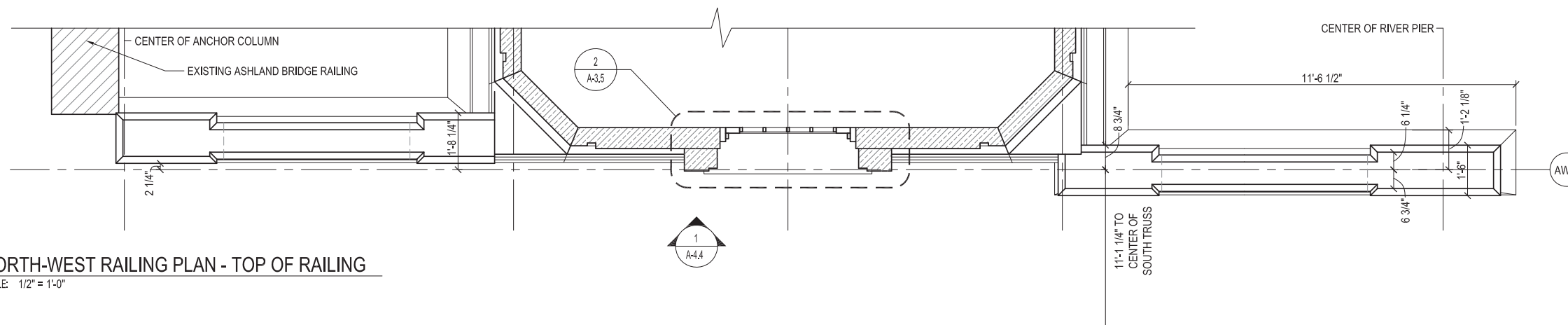
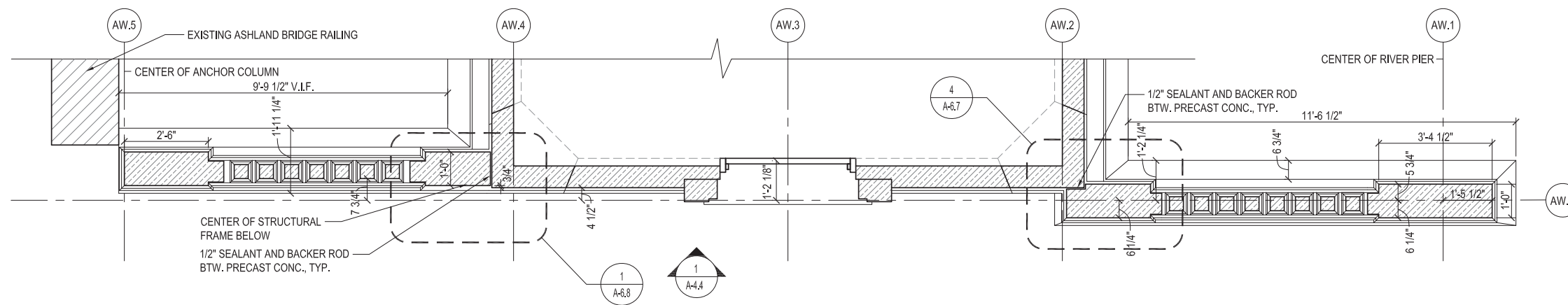
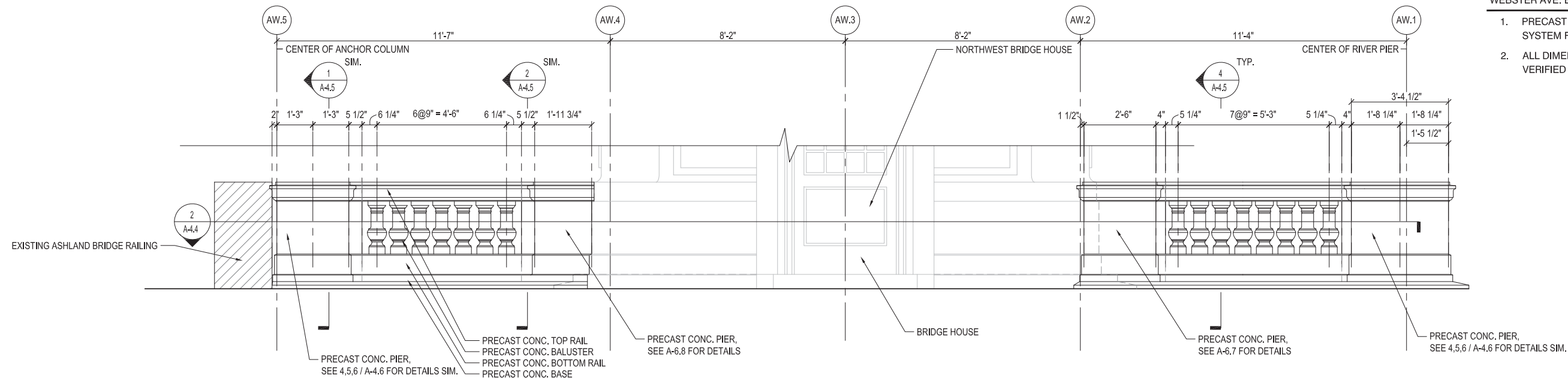




# SHEET NOTES

WEBSTER AVE. BRIDGEHOUSES & RAILINGS

1. PRECAST CONCRETE RAILING SYSTEM FINISH: SAND BLASTED
2. ALL DIMENSION SHOULD BE FIELD VERIFIED



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**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

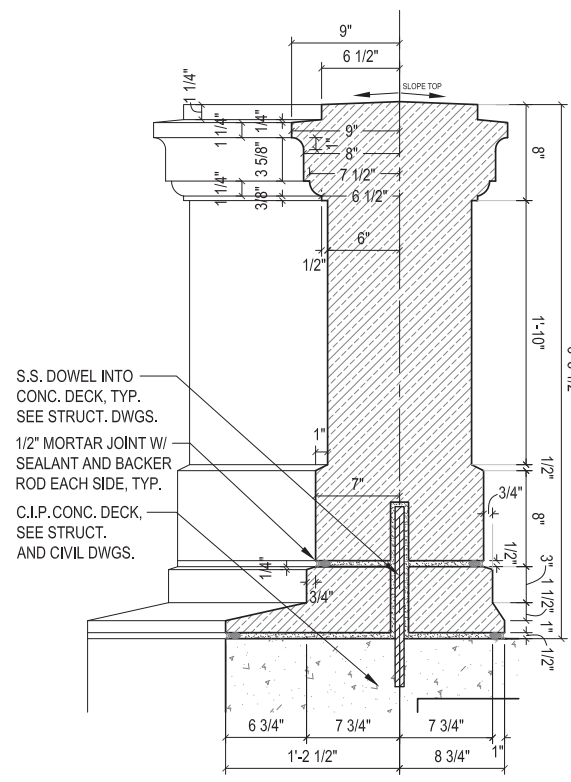
**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

**NORTHWEST RAILING  
PLAN, SECTION AND ELEVATION  
(STRUCTURE NO. 016-6057)**

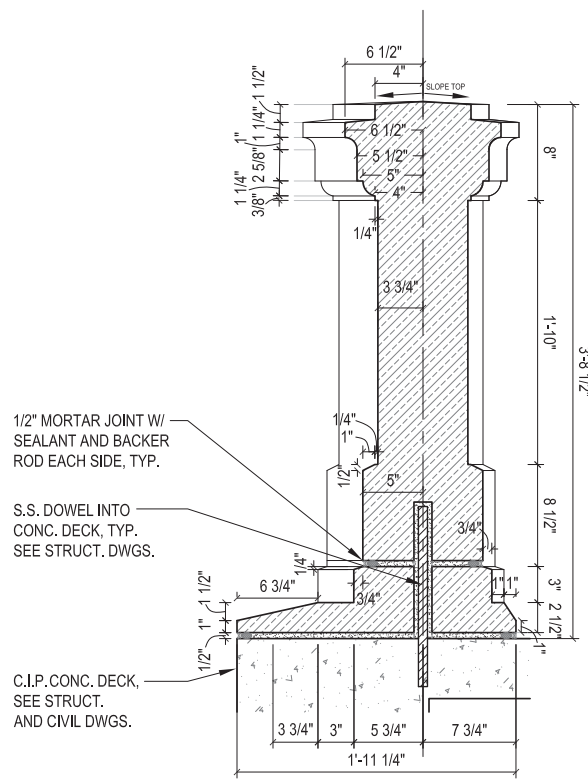
F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	A-4.4
CDOT PROJECT NO. E-1-525			178 of 210

**PRECAST CONC. NOTE**  
WEBSTER AVE. BRIDGEHOUSES & RAILINGS

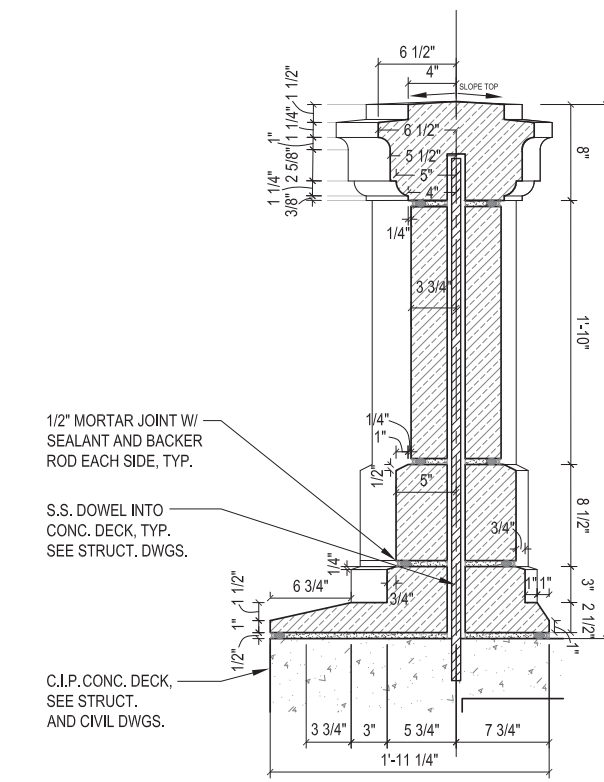
1. DIMENSIONS ARE BASED ON 1/2" JOINT (MORTAR AND/OR SEALANT), SEE DETAIL.
2. CONTRACTOR RESPONSIBLE FOR DESIGNING CONNECTION DETAILS, SEE SPECIFICATION FOR ADDITIONAL INFORMATION.
3. PRECAST CONCRETE FINISH: SAND BLASTED



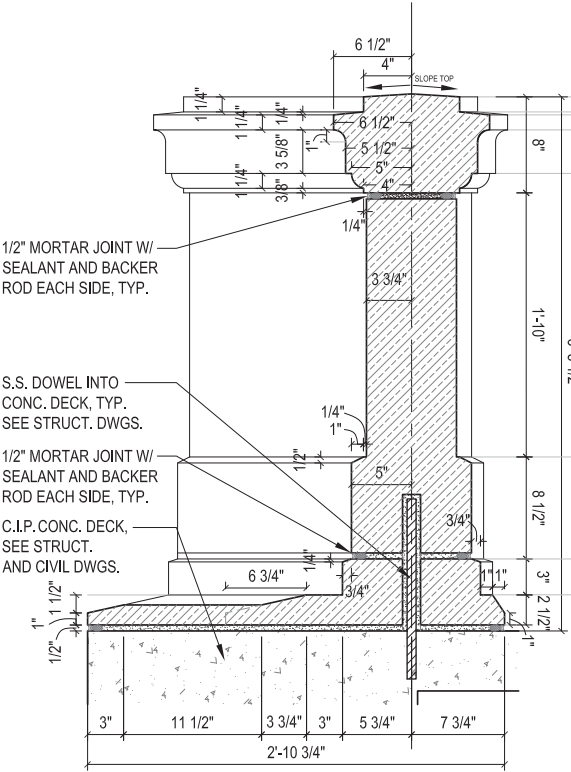
**1 RAILING SECTION @ PIER**  
SCALE: 1-1/2" = 1'-0"



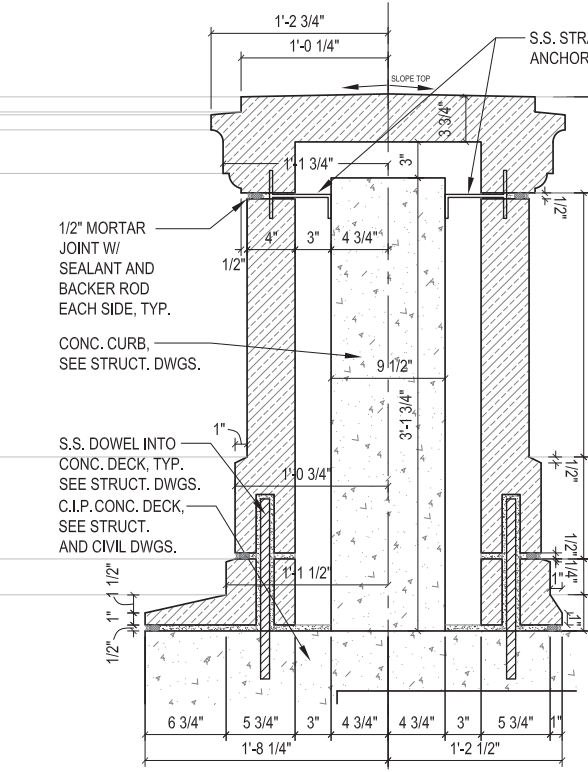
**5 RAILING SECTION @ PIER**  
SCALE: 1-1/2" = 1'-0"



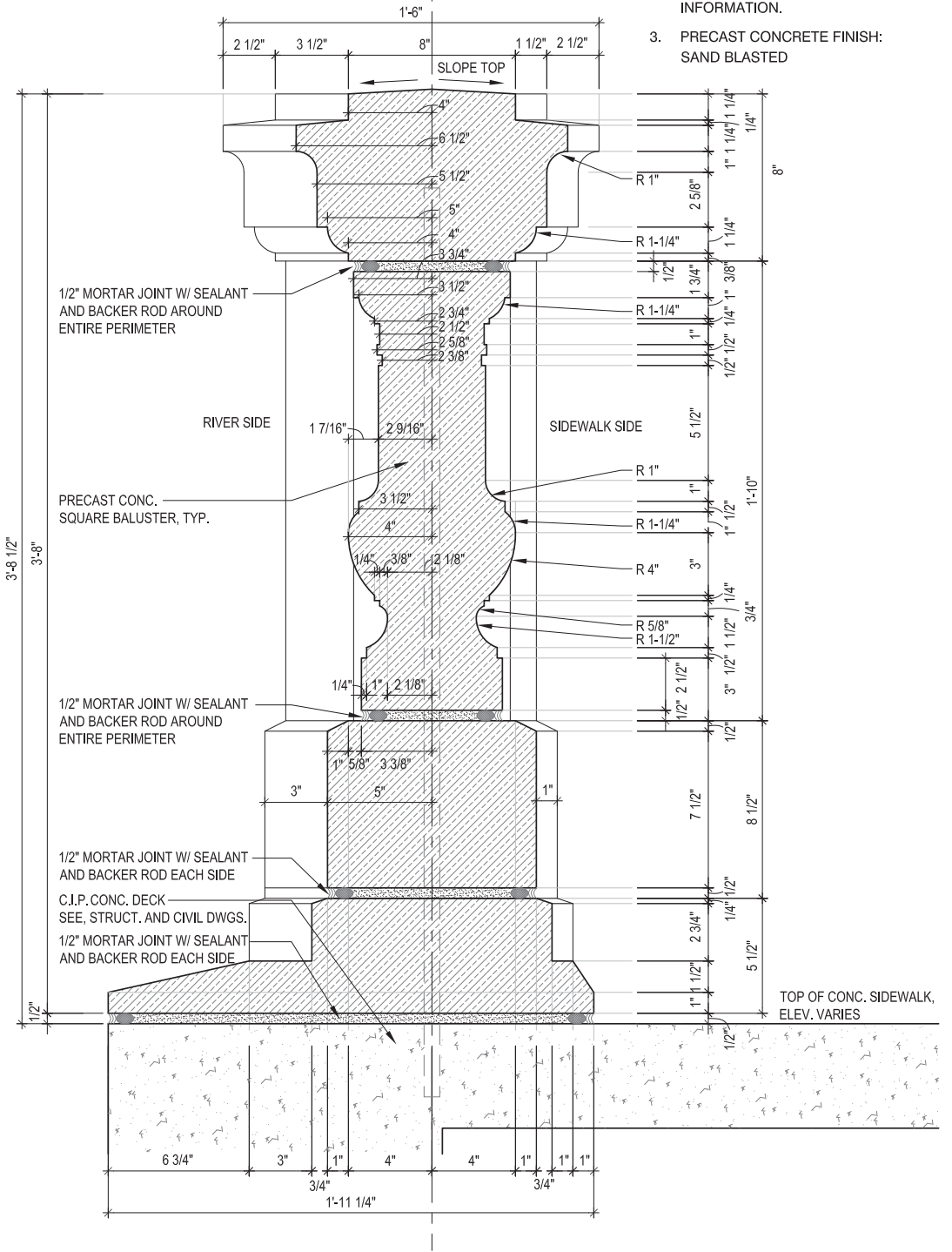
**6 RAILING SECTION @ WIDE BALUSTER**  
SCALE: 1-1/2" = 1'-0"



**2 RAILING SECTION @ PYLON**  
SCALE: 1-1/2" = 1'-0"



**3 RAILING SECTION @ PYLON**  
SCALE: 1-1/2" = 1'-0"



**4 BALUSTERS / RAILING PROFILE**  
SCALE: 3" = 1'-0"



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PLOT SCALE = 1:2	CHECKED — ECM	REVISED —
PLOT DATE = 09/23/2020	DRAWN — YJL	REVISED —
	CHECKED — ECM	REVISED —

**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

**PRECAST CONCRETE RAILING DETAIL  
(STRUCTURE NO. 016-6057)**

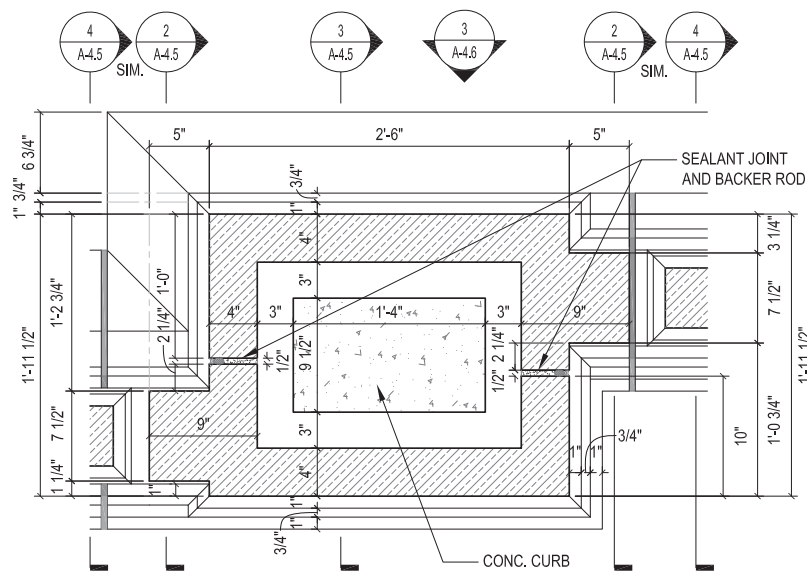
F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	A-4.5
CDOT PROJECT NO. E-1-525			179 of 210

**PRECAST CONC. NOTE**  
WEBSTER AVE. BRIDGEHOUSES & RAILINGS

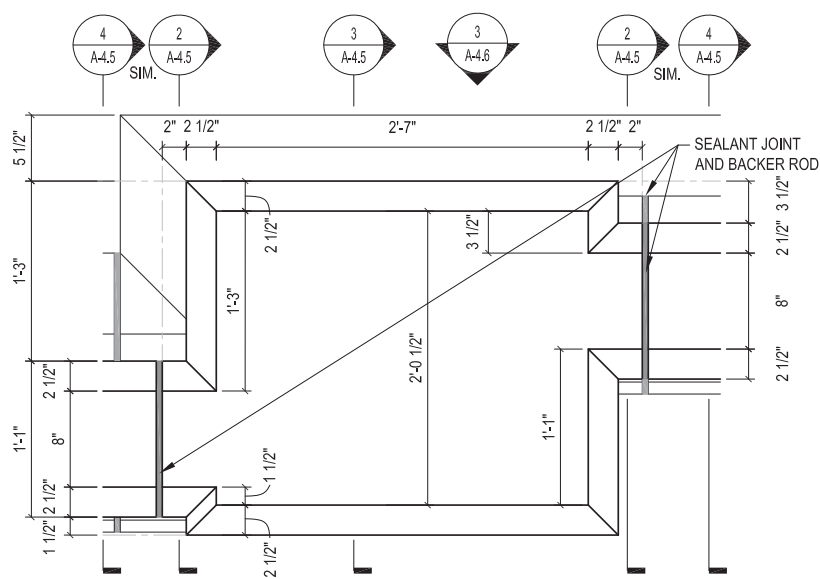
1. DIMENSIONS ARE BASED ON 1/2" JOINT (MORTAR AND/OR SEALANT), SEE DETAIL.
2. CONTRACTOR RESPONSIBLE FOR DESIGNING CONNECTION DETAILS, SEE SPECIFICATION FOR ADDITIONAL INFORMATION.
3. PRECAST CONCRETE FINISH: SAND BLASTED

**SHEET NOTES**  
WEBSTER AVE. BRIDGEHOUSES & RAILINGS

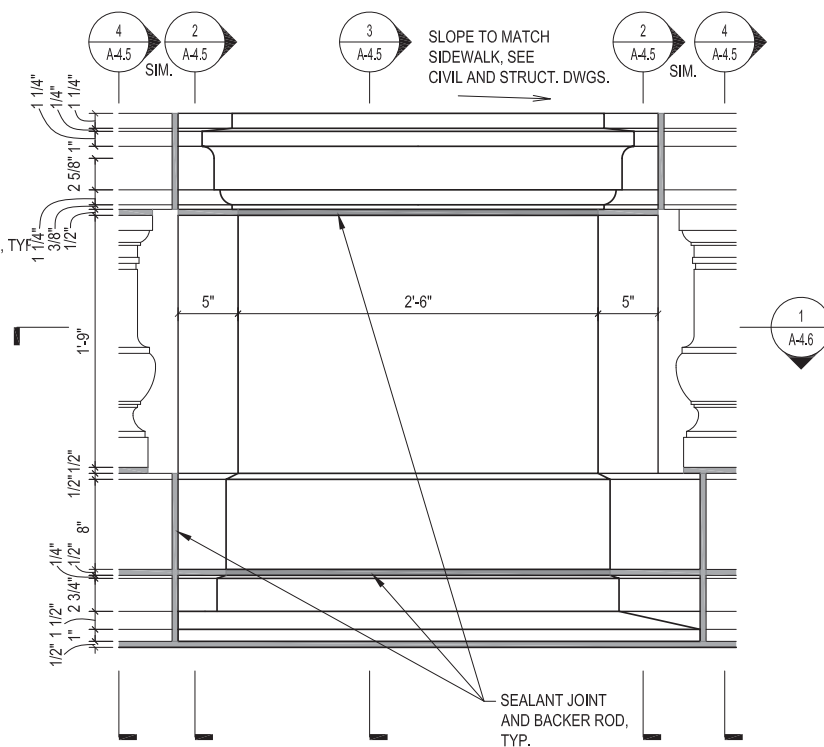
1. FOR DIMENSIONS FOLLOWED BY " \*\* ", REFER TO ELEVATIONS ON SHEET A-4.1, A-4.2, A-4.3, A-4.4



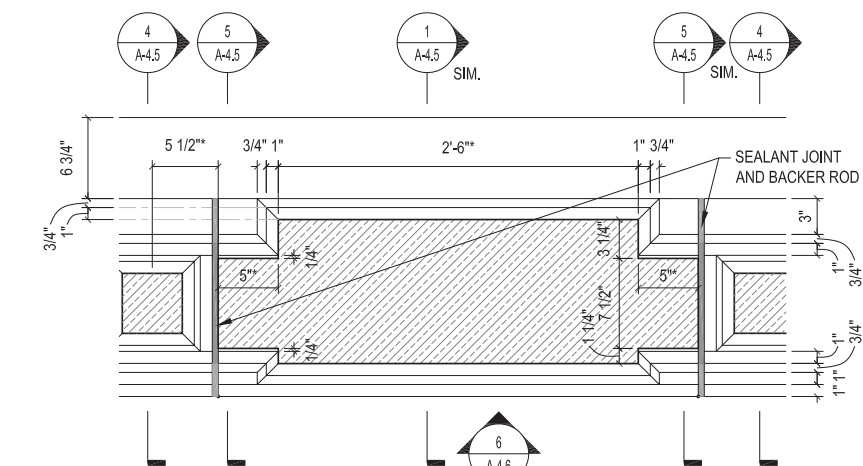
1 PYLON PLAN SECTION  
SCALE: 1-1/2" = 1'-0"



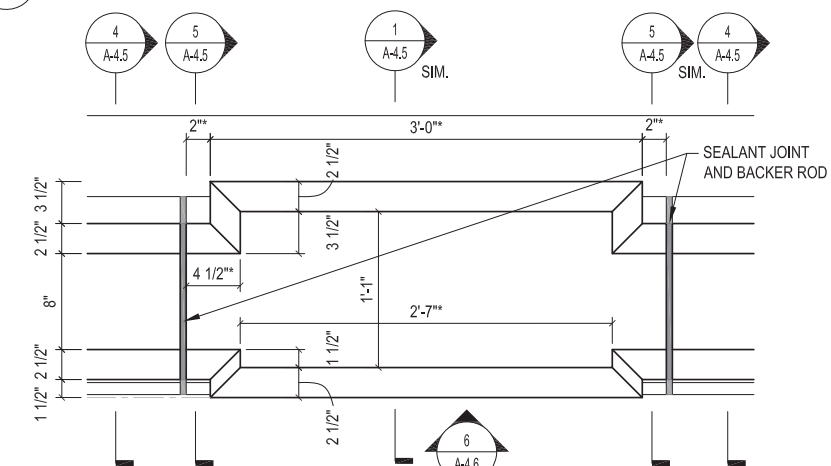
2 PYLON PLAN - TOP OF RAILING  
SCALE: 1-1/2" = 1'-0"



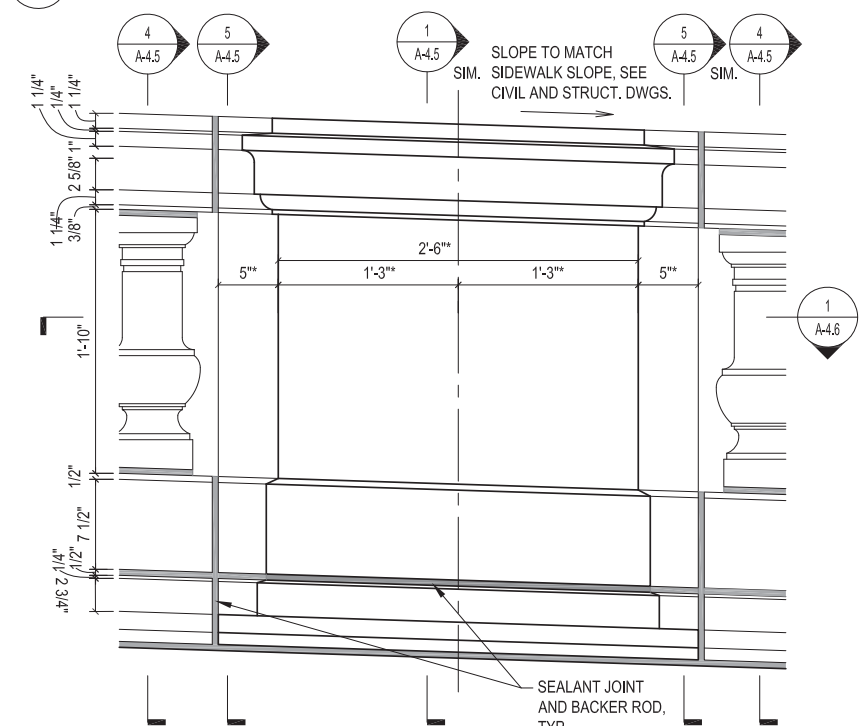
3 PYLON ELEVATION  
SCALE: 1-1/2" = 1'-0"



4 PIER PLAN SECTION  
SCALE: 1-1/2" = 1'-0"



5 PIER PLAN - TOP OF RAILING  
SCALE: 1-1/2" = 1'-0"



6 PIER ELEVATION  
SCALE: 1-1/2" = 1'-0"



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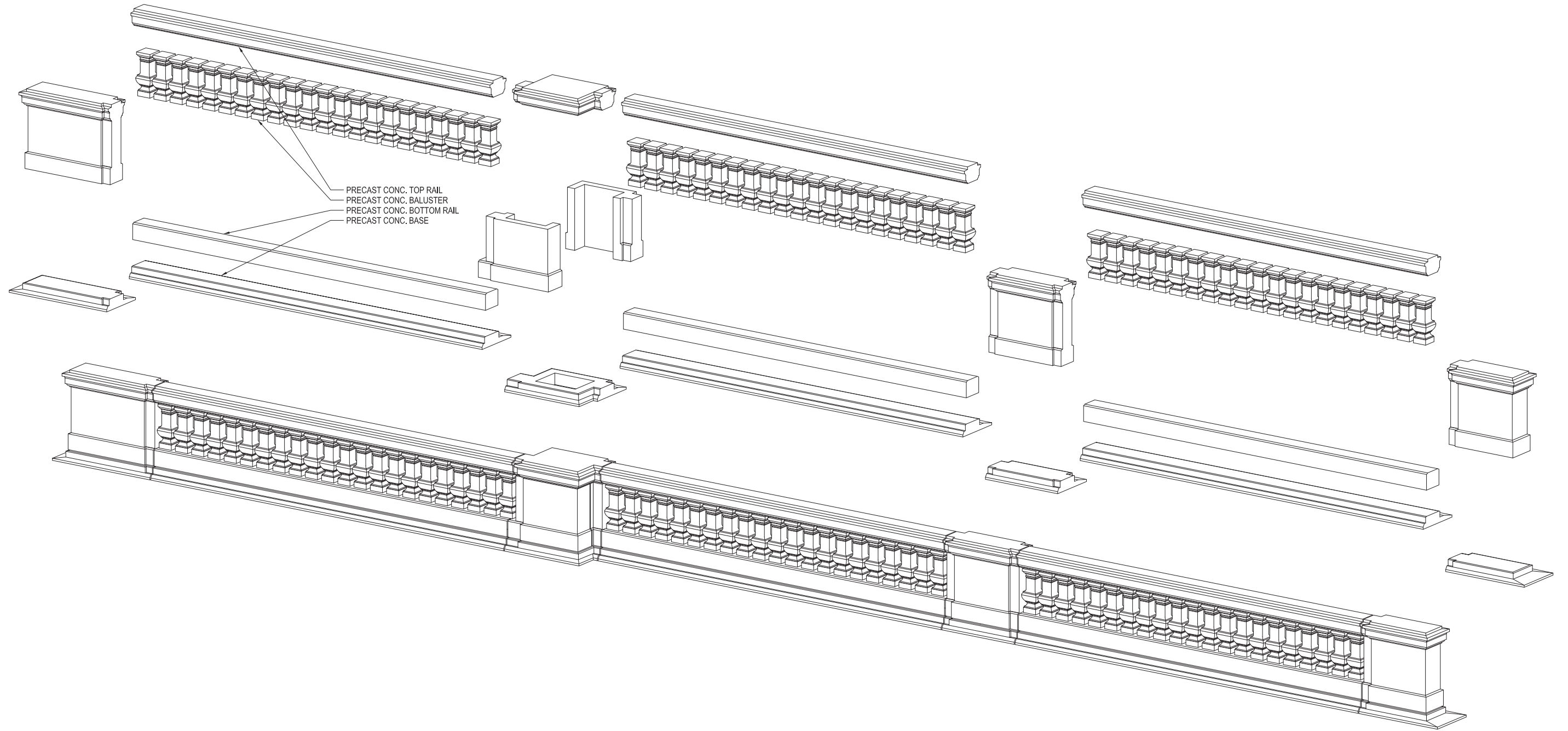
USER NAME = YJL	DESIGNED — YJL	REVISED —
PLOT SCALE = 1:2	CHECKED — ECM	REVISED —
PLOT DATE = 09/23/2020	DRAWN — YJL	REVISED —
	CHECKED — ECM	REVISED —

**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER

PRECAST CONCRETE RAILING DETAIL  
(STRUCTURE NO. 016-6057)

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	A-4.6
CDOT PROJECT NO. E-1-525			180 of 210



1 RAILING AXONOMETRIC VIEW  
SCALE: NONE



WSP USA Inc.  
30 N. LASALLE STREET  
SUITE 4200  
CHICAGO, IL 60602  
TEL: (312) 782-8150  
FAX: (312) 782-1884

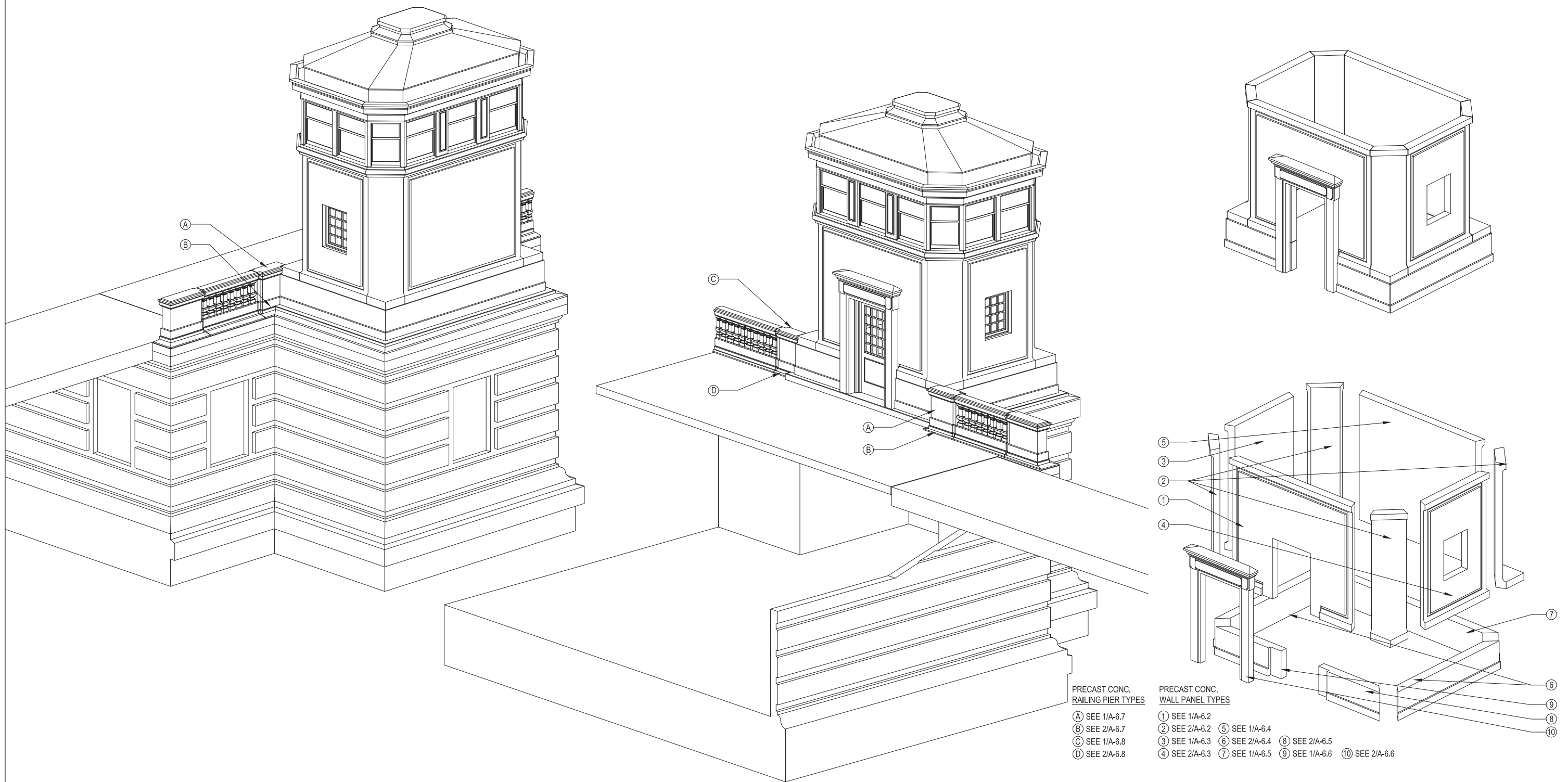
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PLOT SCALE = 1:2	CHECKED — ECM	REVISED —
PLOT DATE = 09/23/2020	DRAWN — YJL	REVISED —
	CHECKED — ECM	REVISED —

**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER

PRECAST CONCRETE RAILING  
AXONOMETRIC VIEW  
(STRUCTURE NO. 016-6057)

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	A-4.7
CDOT PROJECT NO. E-1-525			181 of 210



1 BRIDGE HOUSE AXONOMETRIC VIEW  
SCALE: NONE

- PRECAST CONC.  
RAILING PIER TYPES
- A SEE 1/A-6.7
  - B SEE 2/A-6.7
  - C SEE 1/A-6.8
  - D SEE 2/A-6.8

- PRECAST CONC.  
WALL PANEL TYPES
- 1 SEE 1/A-6.2
  - 2 SEE 2/A-6.2
  - 3 SEE 1/A-6.3
  - 4 SEE 2/A-6.3
  - 5 SEE 1/A-6.4
  - 6 SEE 2/A-6.4
  - 7 SEE 1/A-6.5
  - 8 SEE 2/A-6.5
  - 9 SEE 1/A-6.6
  - 10 SEE 2/A-6.6



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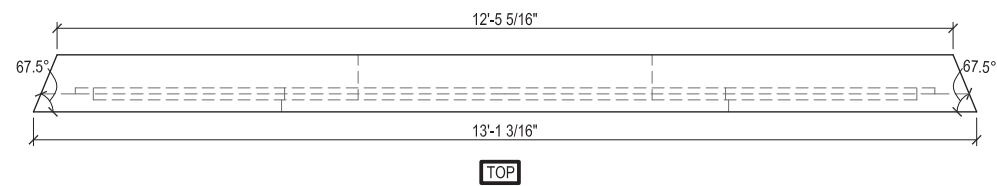
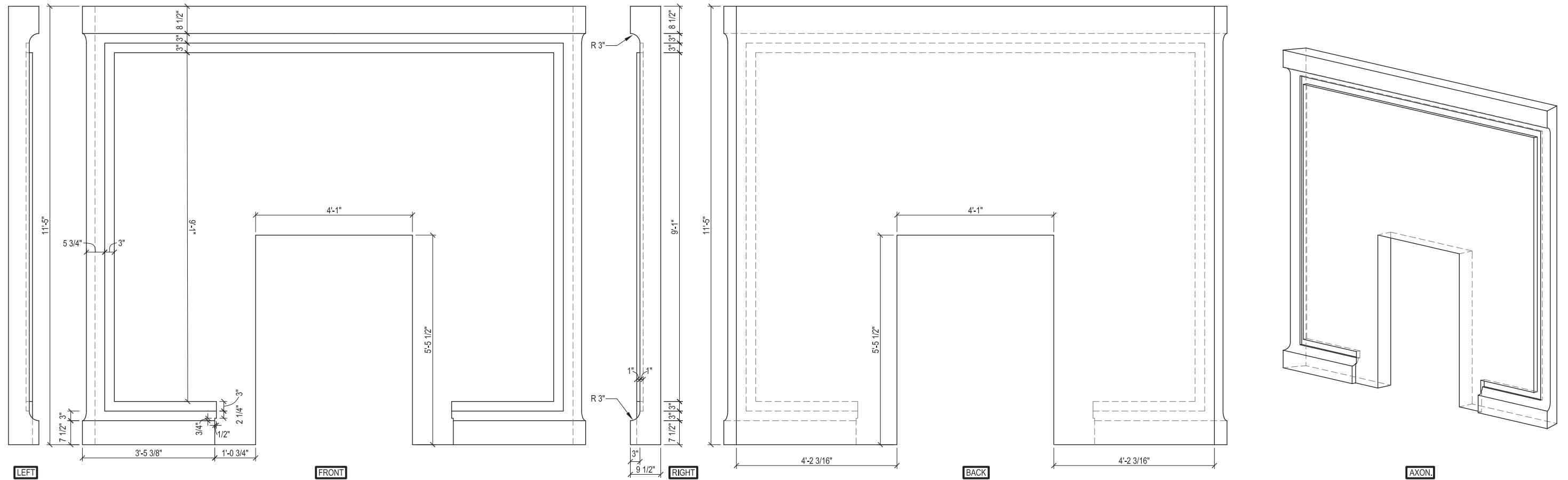
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PLOT SCALE = 1:2	CHECKED — ECM	REVISED —
PLOT DATE = 09/23/2020	DRAWN — YJL	REVISED —
	CHECKED — ECM	REVISED —

**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER

BRIDGE HOUSE AXONOMETRIC VIEW  
(STRUCTURE NO. 016-6057)

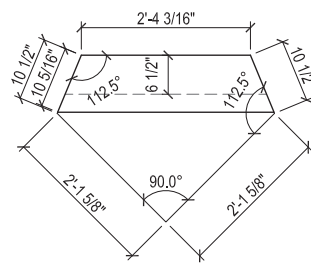
F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	A-6.1
CDOT PROJECT NO. E-1-525			182 of 210



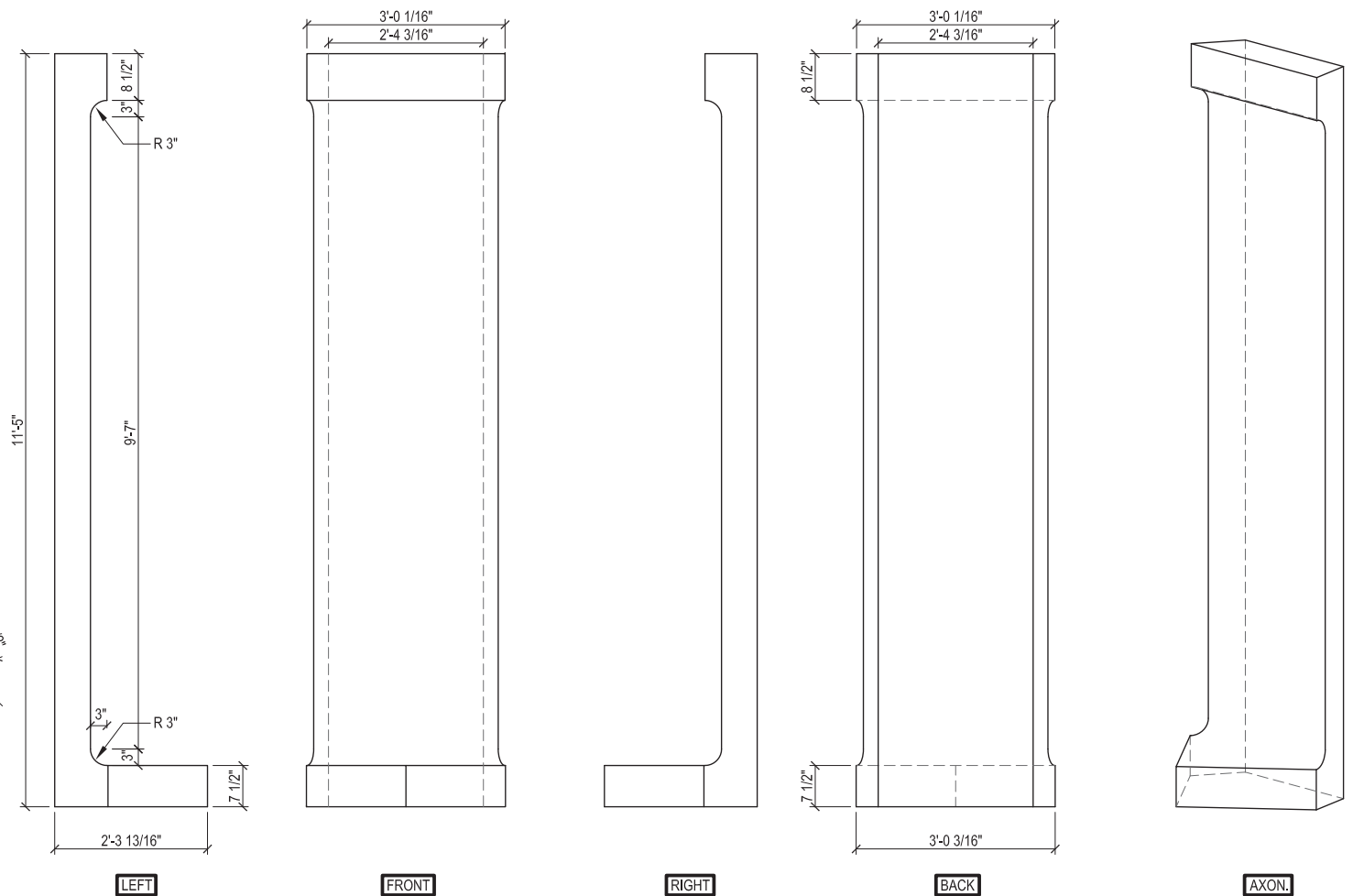
**1 PRECAST PANEL NO.1**  
SCALE: 3/4" = 1' / NONE FOR AXON.

**PRECAST CONC. NOTE**  
WEBSTER AVE. BRIDGEHOUSES & RAILINGS

1. DIMENSIONS ARE BASED ON 1/2" JOINT (MORTAR AND/OR SEALANT), SEE DETAIL.
2. CONTRACTOR RESPONSIBLE FOR DESIGNING CONNECTION DETAILS, SEE SPECIFICATION FOR ADDITIONAL INFORMATION.
3. PRECAST CONCRETE FINISH: SAND BLASTED



**2 PRECAST PANEL NO.2**  
SCALE: 3/4" = 1' / NONE FOR AXON.



USER NAME = YJL	DESIGNED — YJL	REVISED —
PLOT SCALE = 1:2	CHECKED — ECM	REVISED —
PLOT DATE = 09/23/2020	DRAWN — YJL	REVISED —
	CHECKED — ECM	REVISED —

**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER

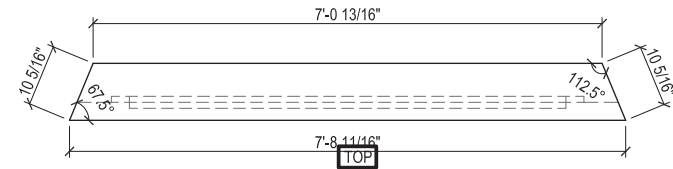
BRIDGEHOUSE PRECAST CONCRETE PANEL  
(STRUCTURE NO. 016-6057)

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	A-6.2
CDOT PROJECT NO. E-1-525			183 of 210

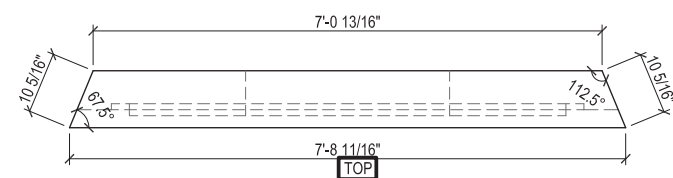
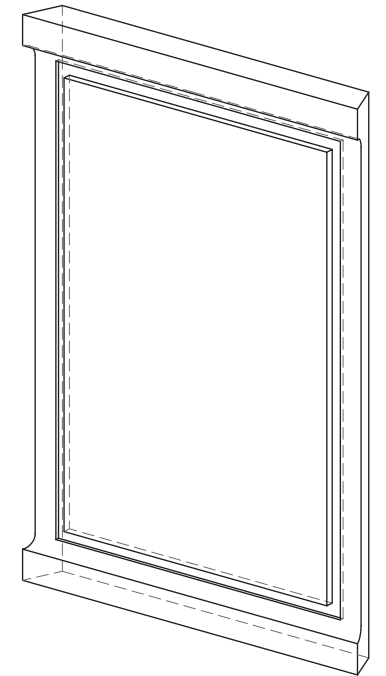
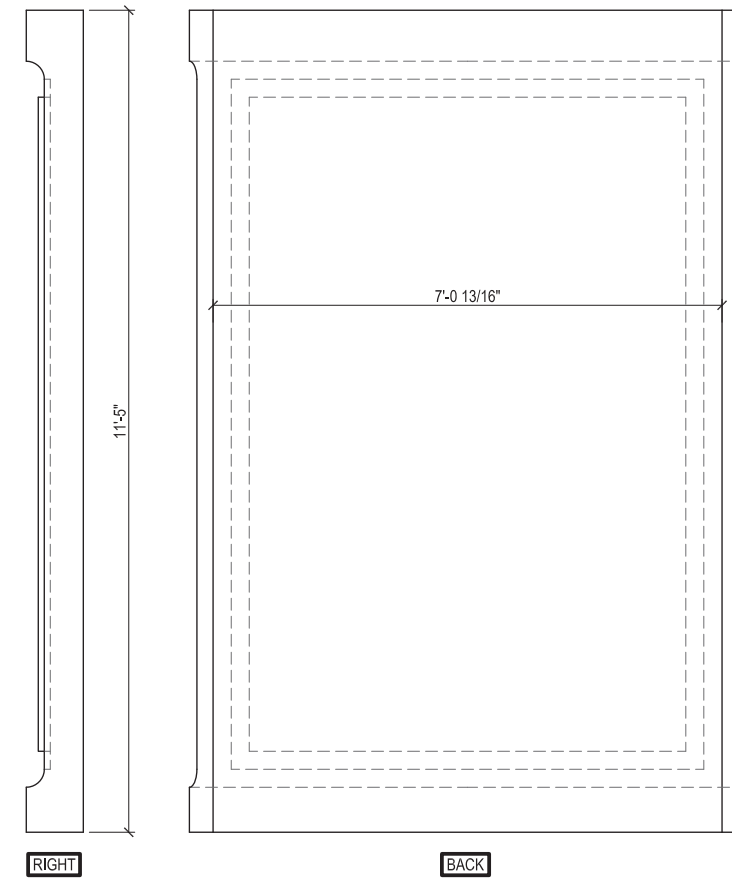
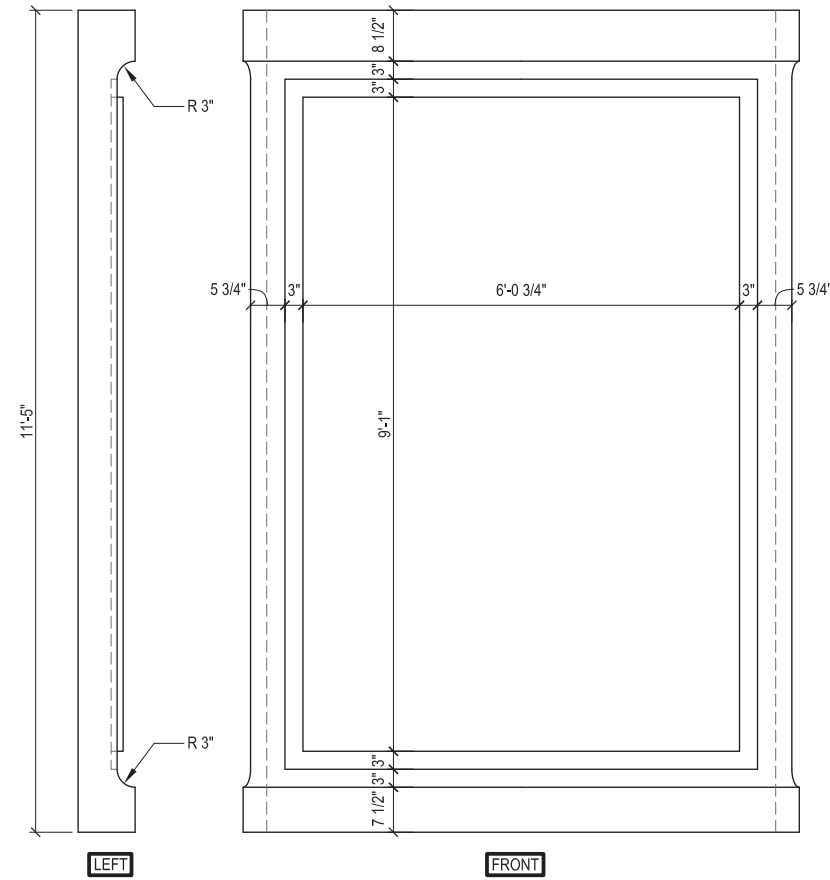
**PRECAST CONC. NOTE**

WEBSTER AVE. BRIDGEHOUSES & RAILINGS

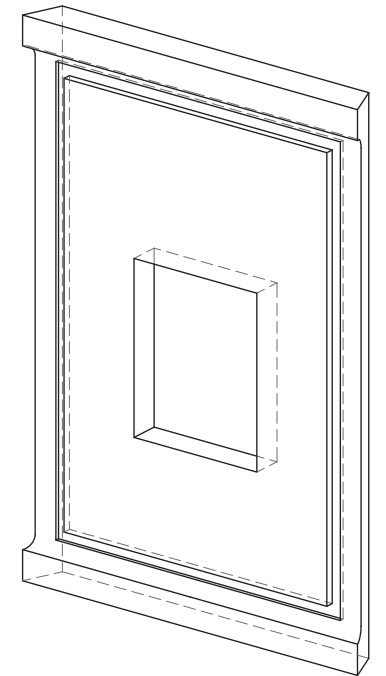
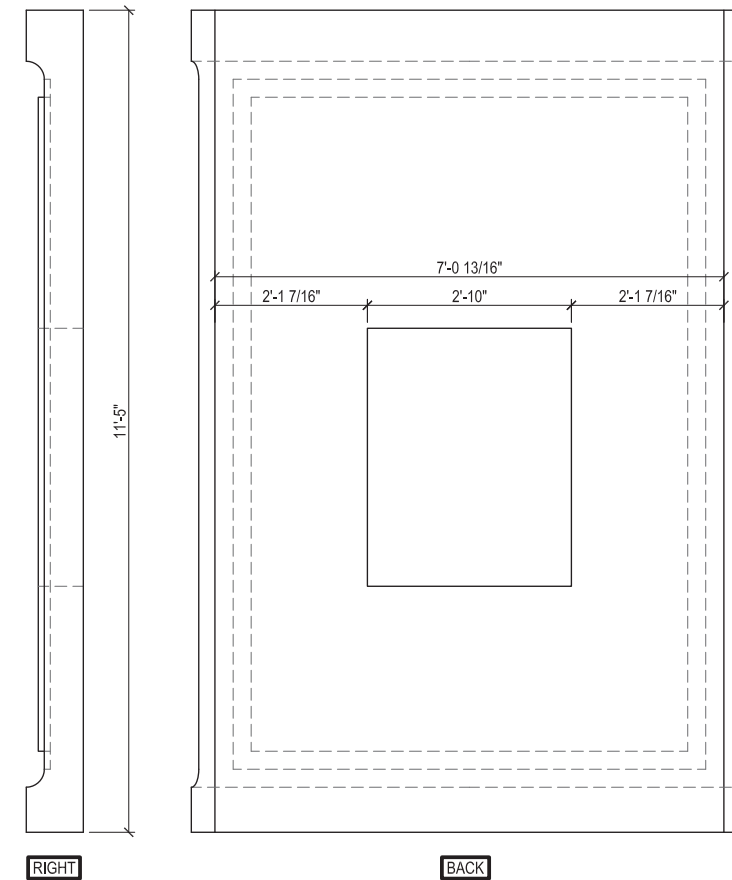
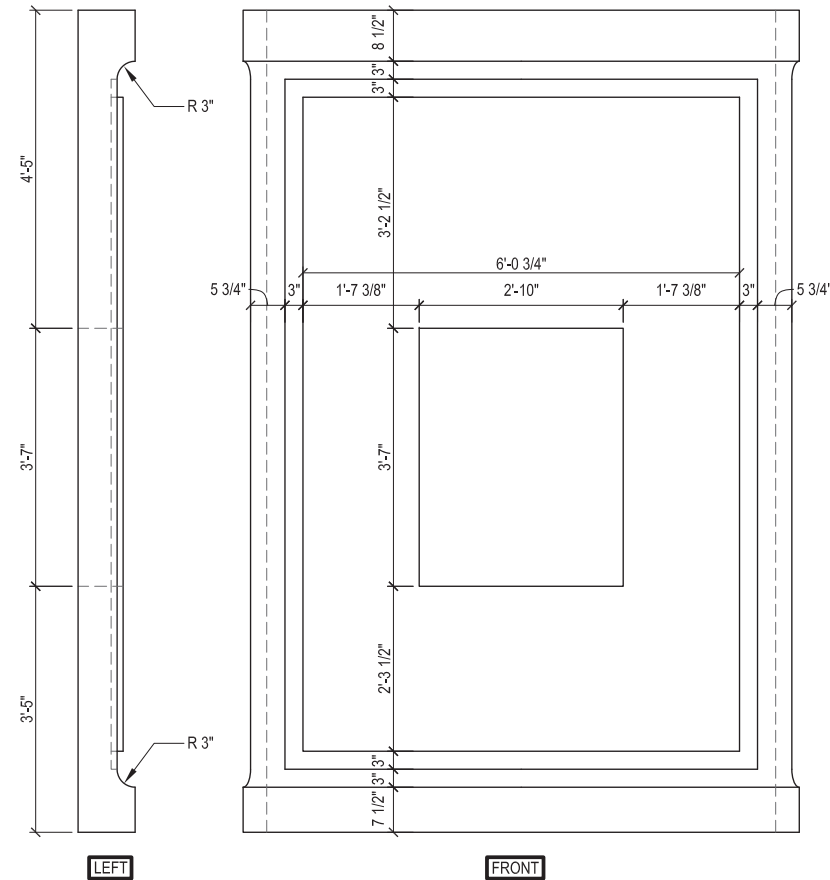
1. DIMENSIONS ARE BASED ON 1/2" JOINT (MORTAR AND/OR SEALANT), SEE DETAIL.
2. CONTRACTOR RESPONSIBLE FOR DESIGNING CONNECTION DETAILS, SEE SPECIFICATION FOR ADDITIONAL INFORMATION.
3. PRECAST CONCRETE FINISH: SAND BLASTED



**1 PRECAST PANEL NO.3**  
SCALE: 3/4" = 1' / NONE FOR AXON.



**2 PRECAST PANEL NO.4**  
SCALE: 3/4" = 1' / NONE FOR AXON.



**wsp** WSP USA Inc.  
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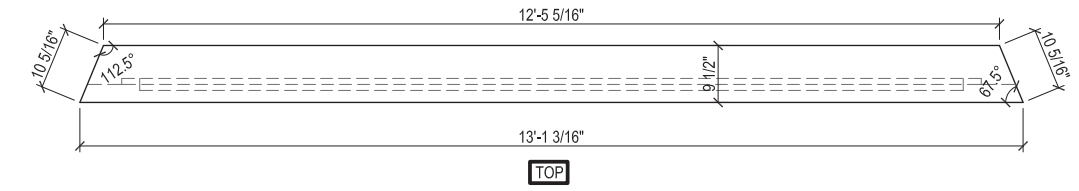
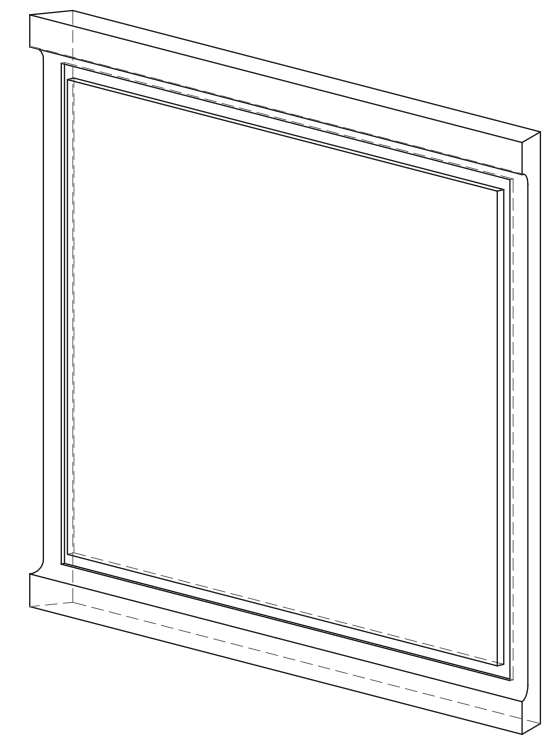
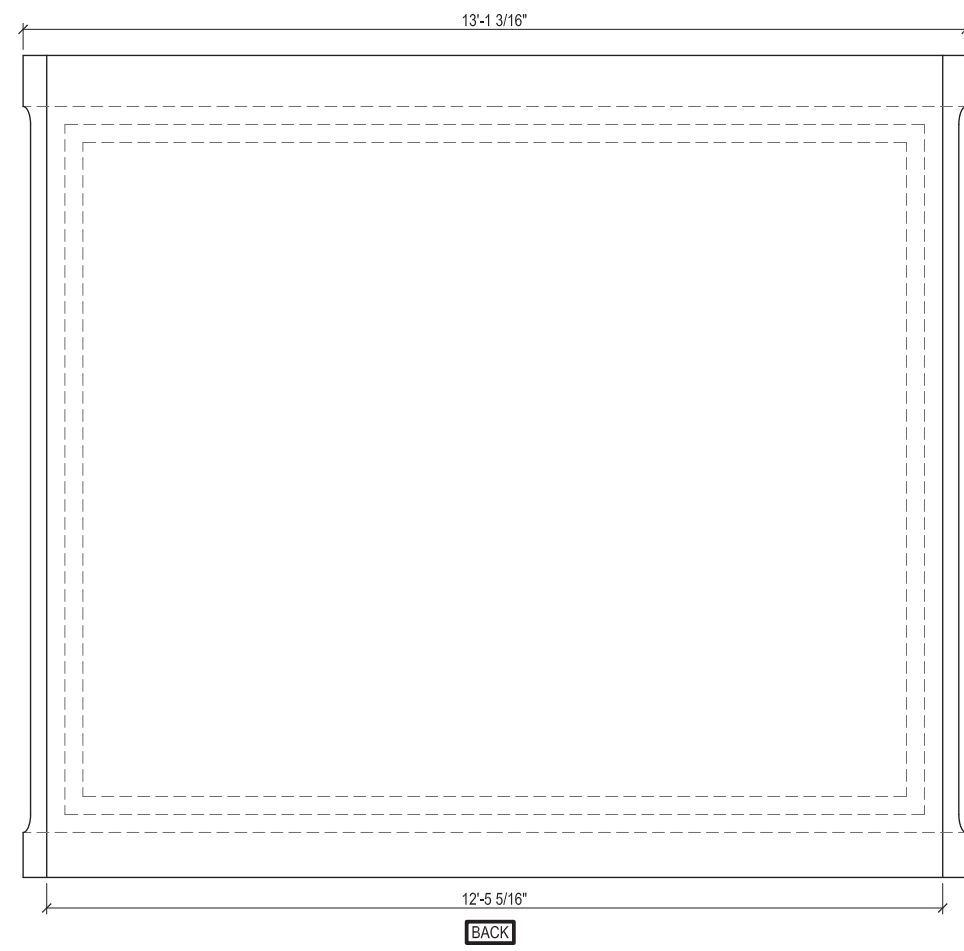
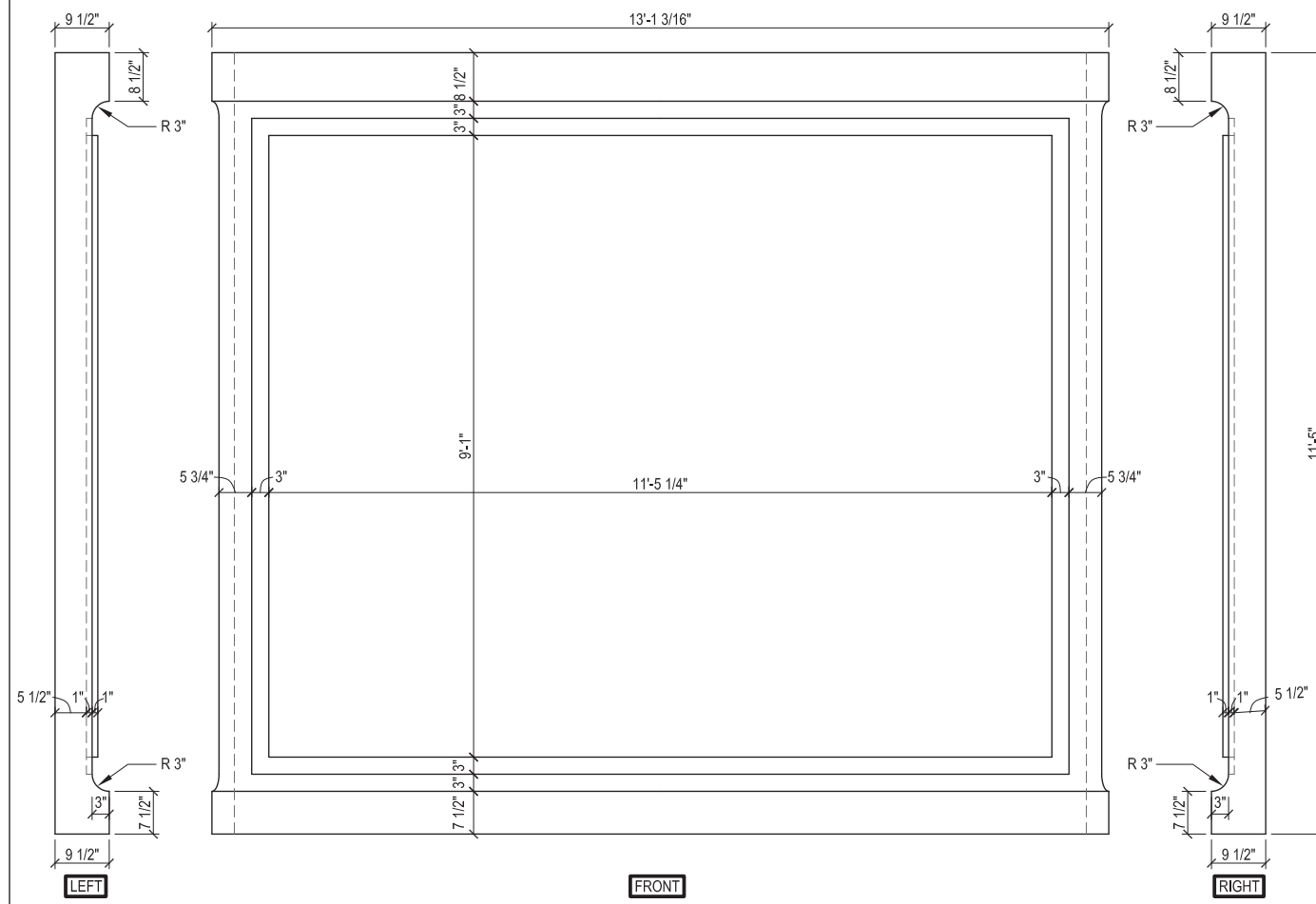
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PLOT SCALE = 1:2	CHECKED — ECM	REVISED —
PLOT DATE = 09/23/2020	DRAWN — YJL	REVISED —
	CHECKED — ECM	REVISED —

**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

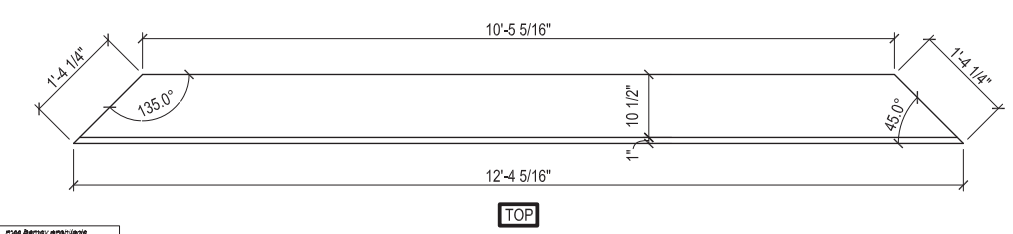
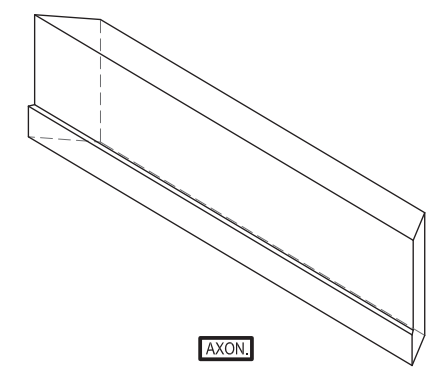
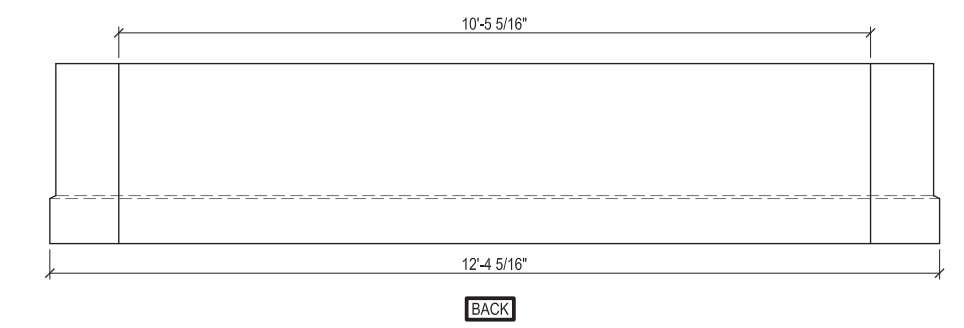
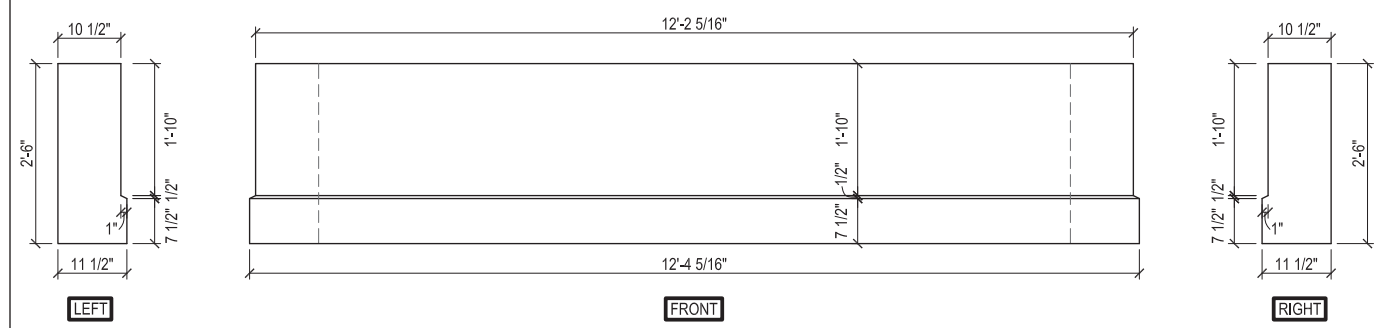
WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER

BRIDGEHOUSE PRECAST CONCRETE PANEL  
(STRUCTURE NO. 016-6057)

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	A-6.3
CDOT PROJECT NO. E-1-525			184 of 210



**1 PRECAST PANEL NO.5**  
SCALE: 3/4" = 1' / NONE FOR AXON.



**2 PRECAST PANEL NO.6**  
SCALE: 3/4" = 1' / NONE FOR AXON.

**PRECAST CONC. NOTE**  
WEBSTER AVE. BRIDGEHOUSES & RAILINGS

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PLOT DATE = 09/23/2020	DRAWN — YJL	REVISED —
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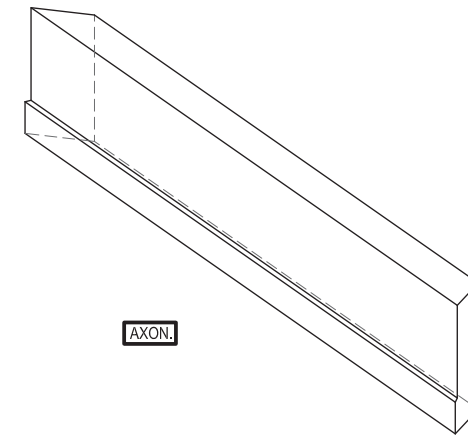
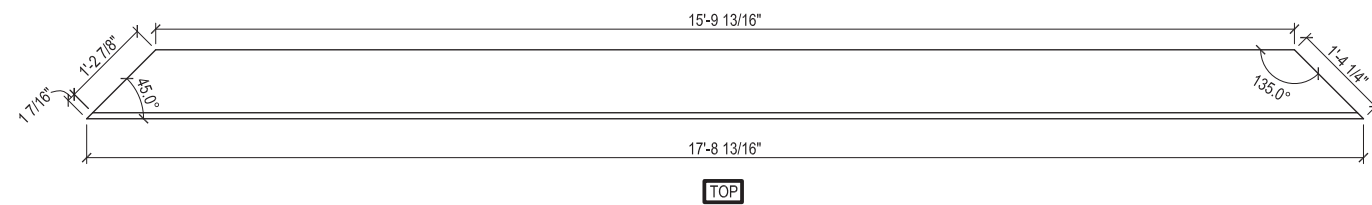
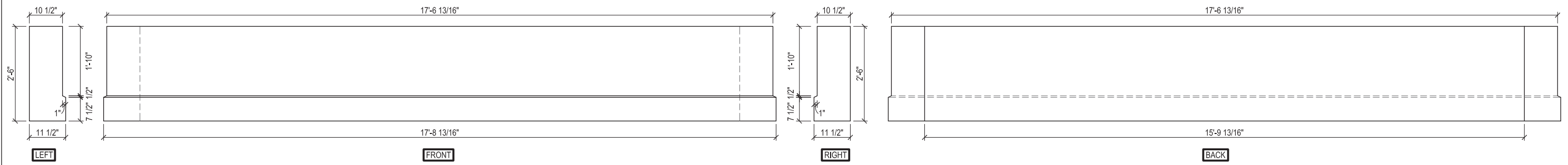
**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

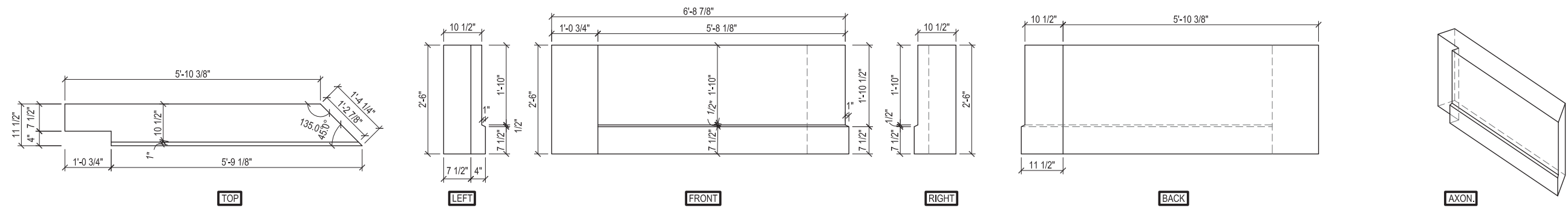
**BRIDGEHOUSE PRECAST CONCRETE PANEL  
(STRUCTURE NO. 016-6057)**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	A-6.4
CDOT PROJECT NO. E-1-525			185 of 210





1 PRECAST PANEL NO.7  
SCALE: 3/4" = 1' / NONE FOR AXON.



2 PRECAST PANEL NO.8  
SCALE: 3/4" = 1' / NONE FOR AXON.

**PRECAST CONC. NOTE**  
WEBSTER AVE. BRIDGEHOUSES & RAILINGS

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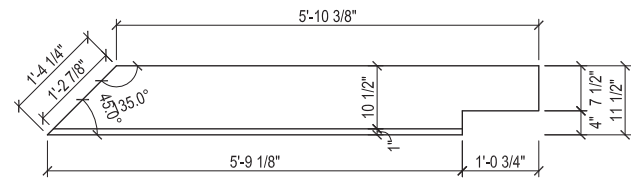
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PLOT SCALE = 1:2	CHECKED — ECM	REVISED —
PLOT DATE = 09/23/2020	DRAWN — YJL	REVISED —
	CHECKED — ECM	REVISED —

**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

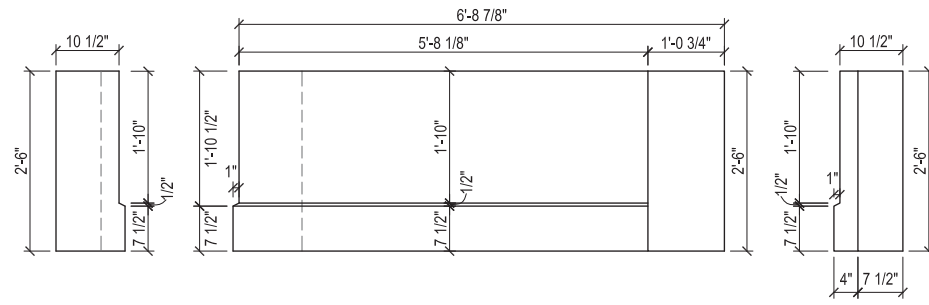
WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER

BRIDGEHOUSE PRECAST CONCRETE PANEL  
(STRUCTURE NO. 016-6057)

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	A-6.5
CDOT PROJECT NO. E-1-525			186 of 210



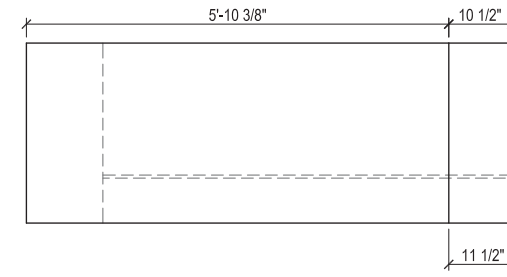
TOP



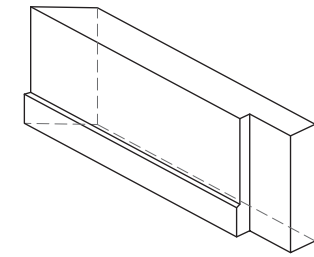
LEFT

FRONT

RIGHT

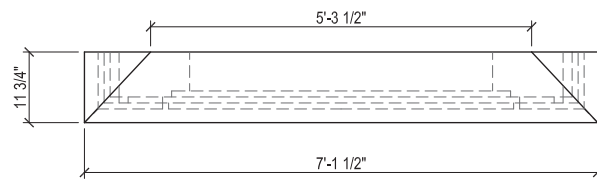


BACK

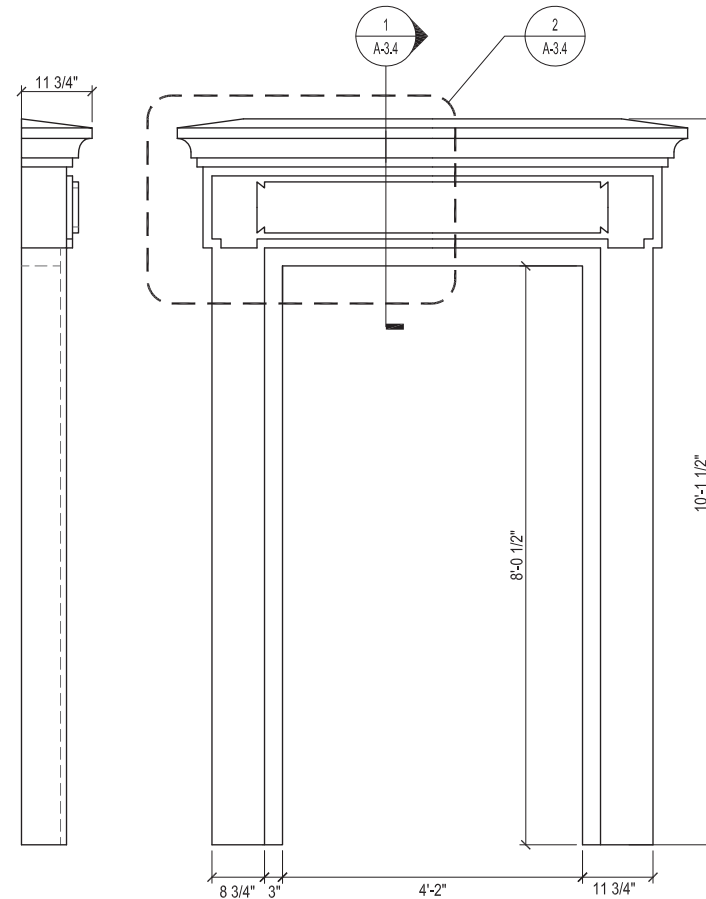


AXON.

1 PRECAST PANEL NO.9  
SCALE: 3/4" = 1' / NONE FOR AXON.

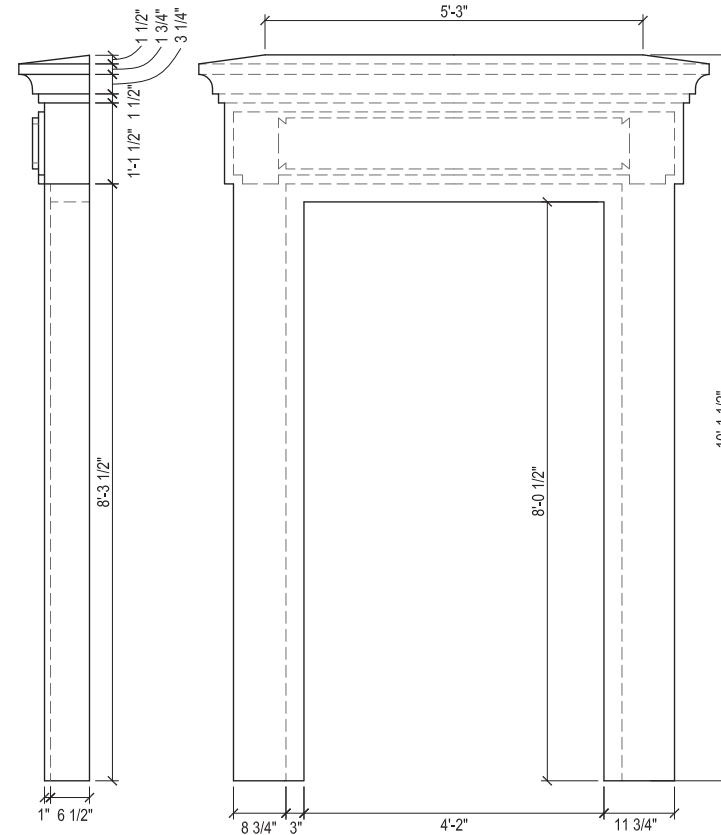


TOP



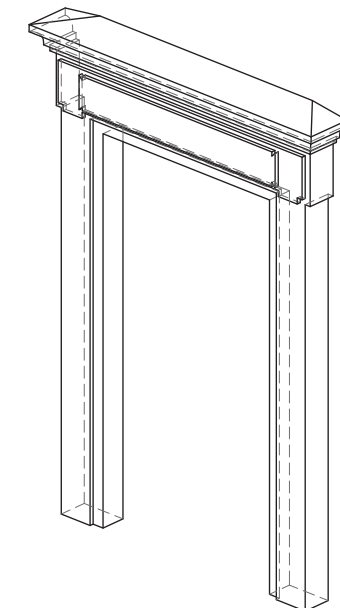
LEFT

FRONT



RIGHT

BACK



AXON.

2 PRECAST PANEL NO.10  
SCALE: 3/4" = 1' / NONE FOR AXON.

- PRECAST CONC. NOTE**  
WEBSTER AVE. BRIDGEHOUSES & RAILINGS
- DIMENSIONS ARE BASED ON 1/2" JOINT (MORTAR AND/OR SEALANT), SEE DETAIL.
  - CONTRACTOR RESPONSIBLE FOR DESIGNING CONNECTION DETAILS, SEE SPECIFICATION FOR ADDITIONAL INFORMATION.
  - PRECAST CONCRETE FINISH: SAND BLASTED



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USER NAME = YJL	DESIGNED — YJL	REVISED —
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PLOT DATE = 09/23/2020	DRAWN — YJL	REVISED —
	CHECKED — ECM	REVISED —

**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER

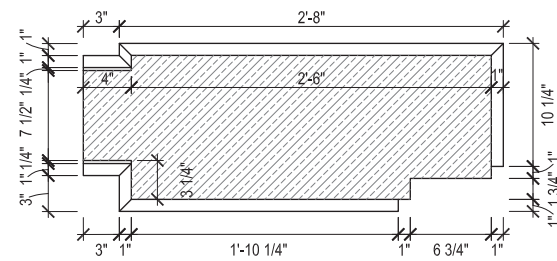
BRIDGEHOUSE PRECAST CONCRETE PANEL  
(STRUCTURE NO. 016-6057)

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	A-6.6
CDOT PROJECT NO. E-1-525			187 of 210

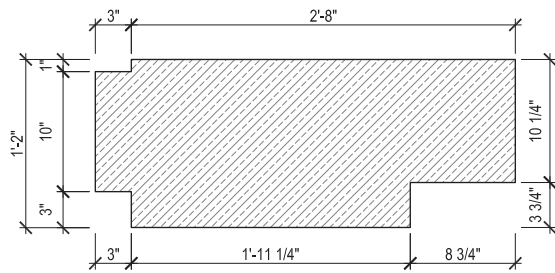
**PRECAST CONC. NOTE**

WEBSTER AVE. BRIDGEHOUSES & RAILINGS

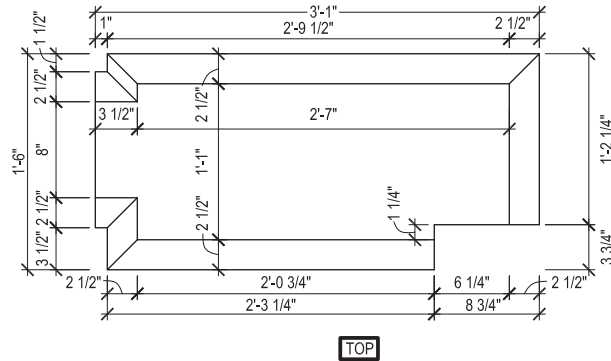
1. DIMENSIONS ARE BASED ON 1/2" JOINT (MORTAR AND/OR SEALANT), SEE DETAIL.
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3. PRECAST CONCRETE FINISH: SAND BLASTED



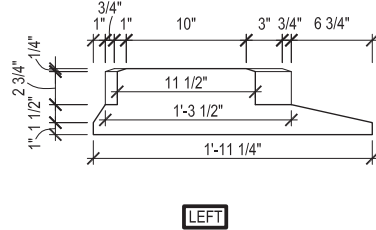
**4 PRECAST CONC. PIER PLAN SECTION**  
SCALE: 1-1/2" = 1'



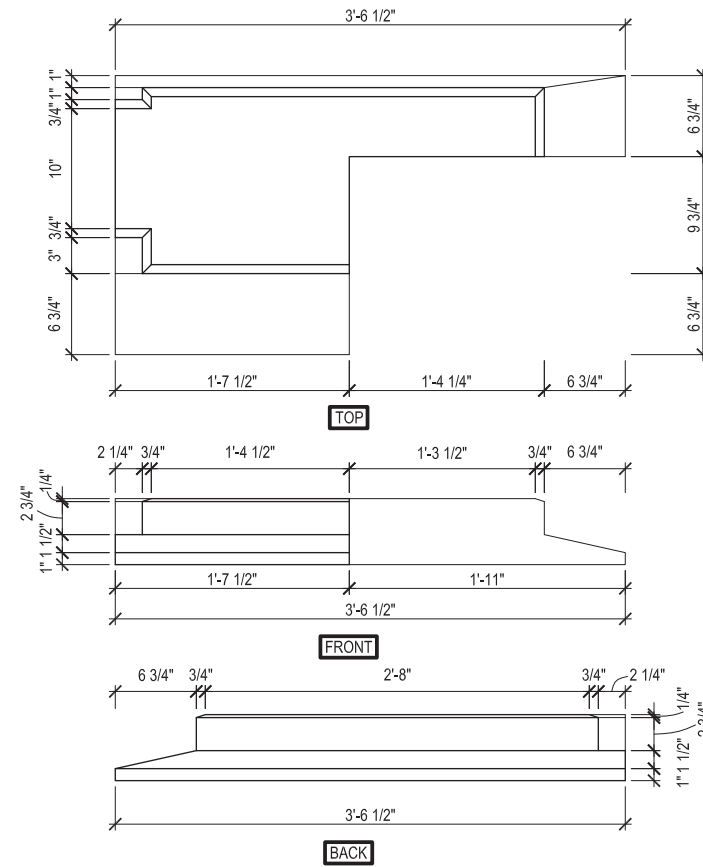
**5 PRECAST CONC. PIER PLAN SECTION**  
SCALE: 1-1/2" = 1'



**2 PRECAST CONC. BASE - B**  
SCALE: 1-1/2" = 1'



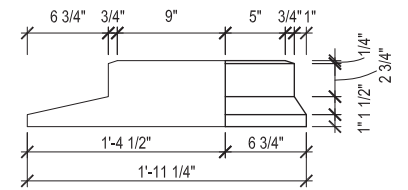
**LEFT**



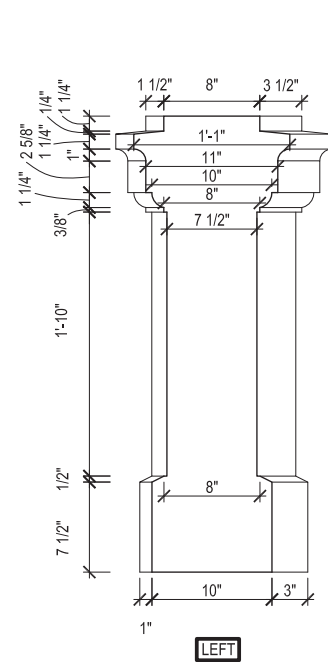
**TOP**

**FRONT**

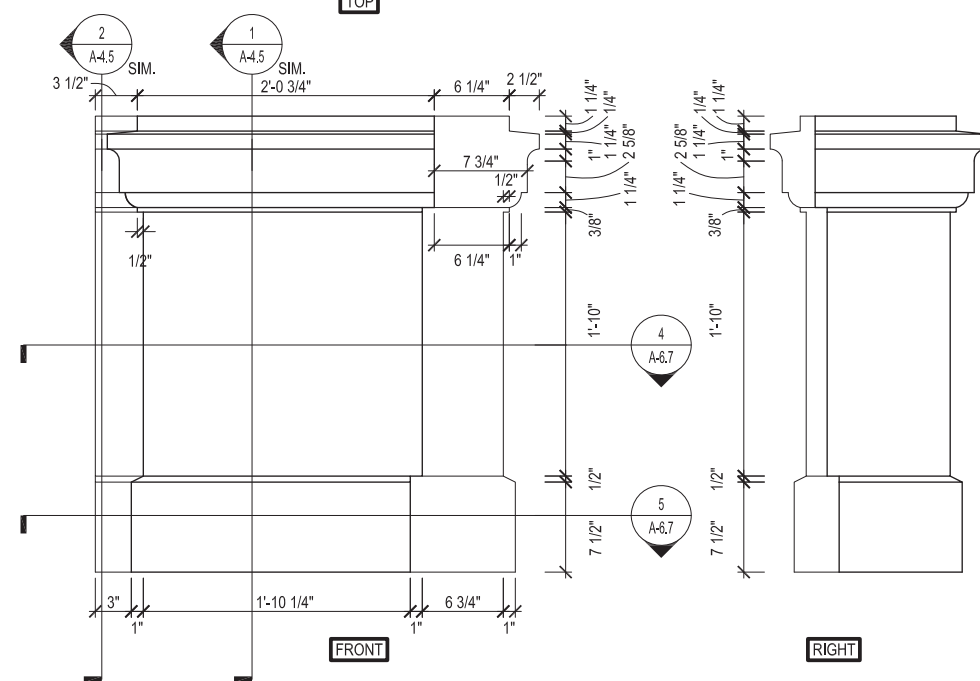
**BACK**



**RIGHT**

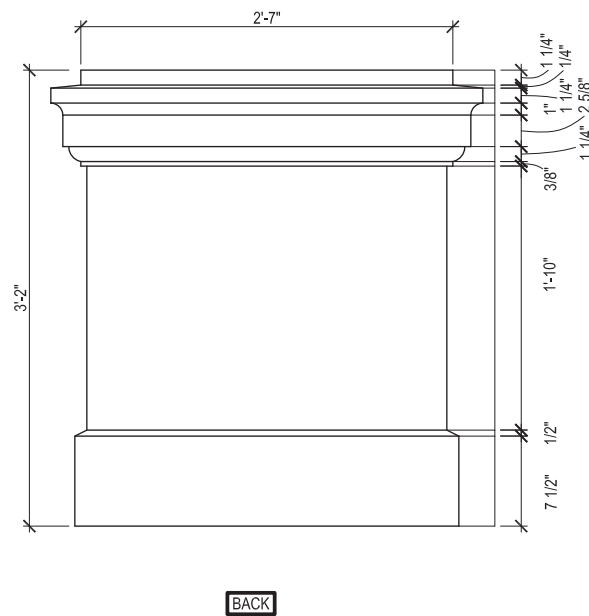


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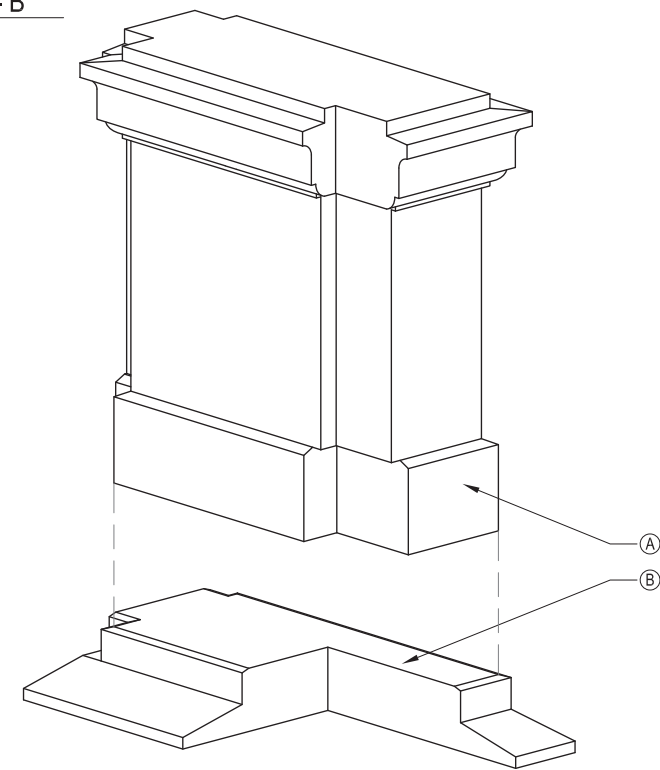
**FRONT**

**RIGHT**



**BACK**

**1 PRECAST CONC. PIER - A**  
SCALE: 1-1/2" = 1'



**3 PRECAST CONC. PIER AXON. VIEW - A,B**  
SCALE: NONE



**wsp**  
WSP USA Inc.  
30 N. LASALLE STREET  
SUITE 4000  
CHICAGO, IL 60602  
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USER NAME = YJL	DESIGNED — YJL	REVISED —
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	CHECKED — ECM	REVISED —

**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER

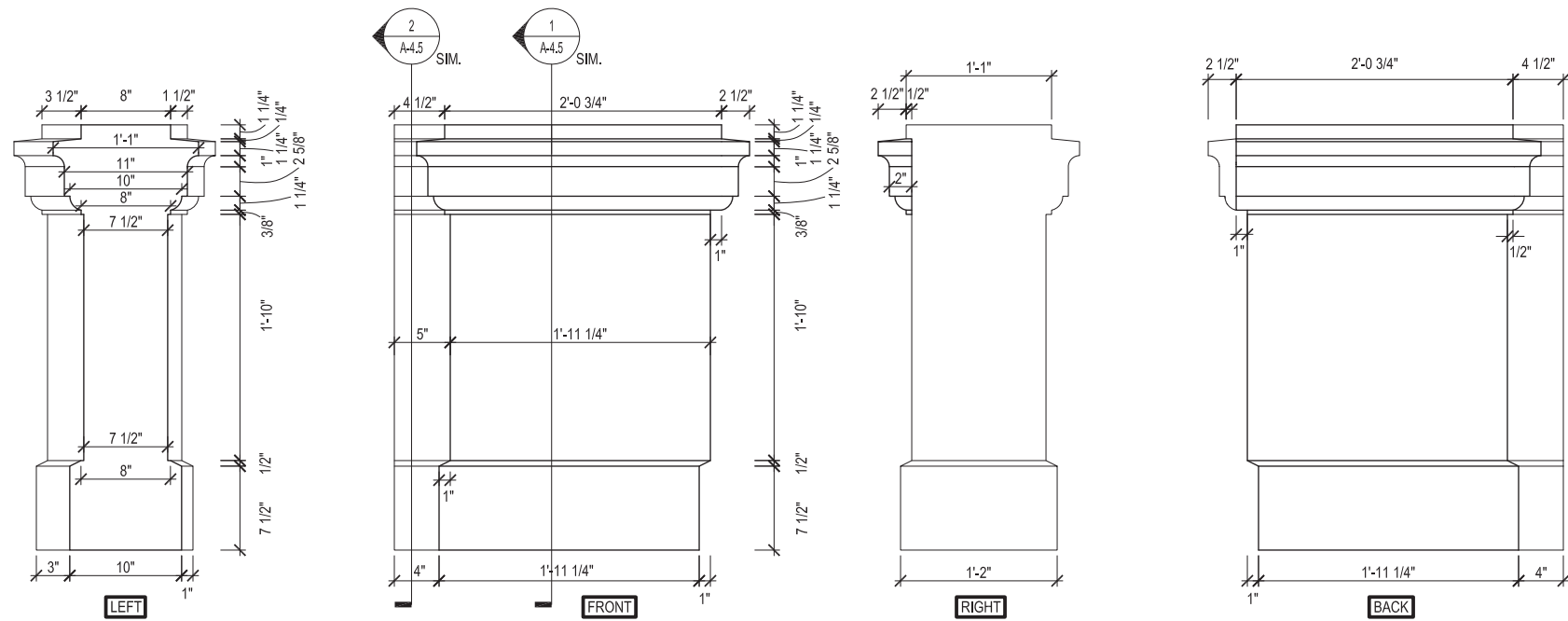
PRECAST CONCRETE RAILING PYLON  
AT BRIDGE HOUSE  
(STRUCTURE NO. 016-6057)

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	A-6.7
CDOT PROJECT NO. E-1-525			188 of 210

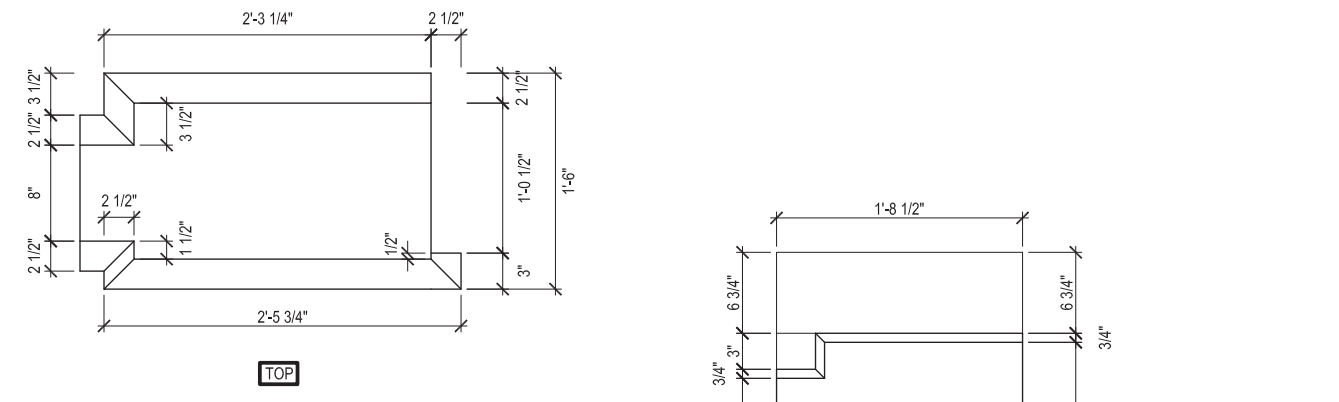
**PRECAST CONC. NOTE**

WEBSTER AVE. BRIDGEHOUSES & RAILINGS

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2. CONTRACTOR RESPONSIBLE FOR DESIGNING CONNECTION DETAILS, SEE SPECIFICATION FOR ADDITIONAL INFORMATION.
3. PRECAST CONCRETE FINISH: SAND BLASTED

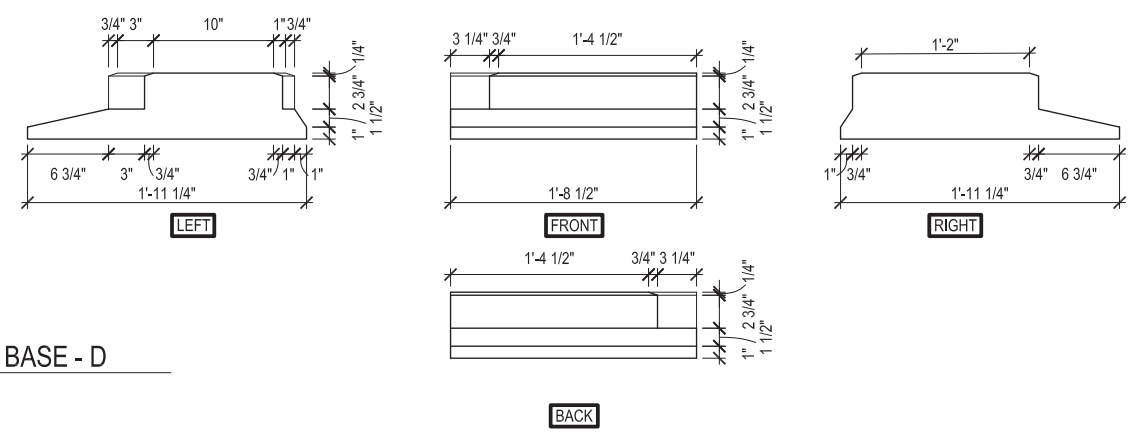


5 PRECAST CONC. PIER PLAN SECTION  
SCALE: 1-1/2" = 1'

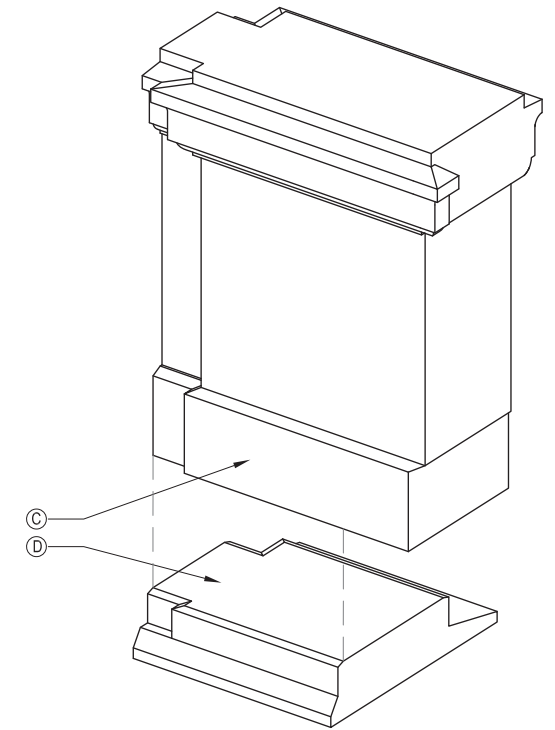


4 PRECAST CONC. PIER PLAN SECTION  
SCALE: 1-1/2" = 1'

1 PRECAST CONC. PIER - C  
SCALE: 1-1/2" = 1'



2 PRECAST CONC. BASE - D  
SCALE: 1-1/2" = 1'



3 PRECAST CONC. PIER AXON. VIEW - C,D  
SCALE: NONE



WSP USA Inc.  
30 N. LASALLE STREET  
SUITE 4200  
CHICAGO, IL 60602  
TEL: (312) 782-8150  
FAX: (312) 782-1884

USER NAME = YJL	DESIGNED — YJL	REVISED —
PLOT SCALE = 1:2	CHECKED — ECM	REVISED —
PLOT DATE = 09/23/2020	DRAWN — YJL	REVISED —
	CHECKED — ECM	REVISED —

**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER

PRECAST CONCRETE RAILING PYLON  
AT BRIDGE HOUSE  
(STRUCTURE NO. 016-6057)

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	A-6.8
CDOT PROJECT NO. E-1-525			189 of 210

PROPOSED PRESENT

Table of traffic signal and street lighting symbols and descriptions. Includes items like SIGNAL, TRAFFIC 3 SECTION 1-WAY ADJUSTABLE, 12" OR AS NOTED; SIGNAL, TRAFFIC 3 SECTION 2-WAY ADJUSTABLE, 12" OR AS NOTED; SIGNAL OPTICALLY PROGRAMMED; SIGNAL, PEDESTRIAN, COUNTDOWN; SIGNAL, PEDESTRIAN, DON'T WALK/WALK; SIGNAL FACE ARROW, 12" COLOR AS NOTED; SIGNAL FACE, 1 SECTION YELLOW/GREEN ARROW DUAL INDICATION; PUSH BUTTON, PEDESTRIAN; SIGN, ILLUMINATED, WITH MESSAGE OR SYMBOL AS INDICATED; MAST ARM, MONOTUBE, STEEL. SIZE AS INDICATED (SEE DWG. #870); MAST ARM, TRUSS, ALUMINUM. SIZE AS INDICATED; CONTROLLER, TRAFFIC SIGNAL. PEDESTAL OR BASE MOUNTED AS INDICATED; CONTROLLER, STREET LIGHTING. PEDESTAL OR BASE MOUNTED. (DWG. 876 or 880); CONTROLLER, STREET LIGHTING. POLE MOUNTED (DWG. #11940); POLE, WOOD. COMMONWEALTH EDISON COMPANY, SERVICE; POLE, CITY STEEL, ANCHOR BASE, 34'-6", 7 GA. 10" DI A. AND 15" B.C. 24"x7' FND. W/1 1/4" ANCHOR RODS DRG. #818; POLE, CITY STEEL, ANCHOR BASE, 34'-6", 3 GA. 10" DIA. AND 15" B.C. 24"x9' FND. W/1 1/4" ANCHOR RODS DRG. #818 (16', 20' or 26' M.A.); POLE, CITY STEEL, ANCHOR BASE, 34'-6", 3GA., 11" DIA. AND 17 1/4" B.C. 30"x9' FND. W/1 1/4" ANCHOR RODS DRG. #816. (30' M.A.); POLE, CITY STEEL, ANCHOR BASE 34'-6", 3 GA. 12 1/2" DIA. AND 16 1/2" B.C. 30"x11' FND. W/1 1/4" ANCHOR RODS DRG.#817. (35', 40' or 44' M.A.); POLE, CITY STEEL, ANCHOR BASE, 32'-6", 3 GA. 10" DIA., WITH 3 GA. BAL. HSG. BASE AND 17 1/4" B. C. ON 30"x9' FND. W/ 11/4" ANCHOR RODS DRG. #816; POLE, CITY STEEL, ANCHOR BASE, 20', 27'-6", 29'-6", 7 GA. WITH STEEL BAL. HSG. BASE AND FND. W/10" D. B.C. AND 1" ANCHOR RODS DRG. #716; POLE, CITY STEEL, ANCHOR BASE, 20', 27'-6", 29'-6", 3 GA., WITH STEEL BAL. HSG. BASE AND FND. W/10" D. B.C. AND 1" ANCHOR RODS DWG.#719; POLE, CITY STEEL, ANCHOR BASE, 20', 27'-6", 29'-6" 7 GA., AND ALUMINUM RESIDENTIAL DAVIT AND FND. WITH 10" B.C. AND 1" ANCHOR RODS DWG.#565 (CONCRETE) OR DWG.#936 (HELIX); POLE, CITY STEEL, ANCHOR BASE, 20', 27'-6", 29'-6" 3 GA., AND FND. WITH 10" B.C. AND 1" ANCHOR RODS DWG. #565 (CONCRETE) OR DWG.#936 (HELIX); POLE, CITY STEEL, ANCHOR BASE, 32'-6", 7 GA., AND FND. WITH 11 1/2" B.C. AND 1" ANCHOR RODS DWG. #753; POLE, CITY STEEL, ANCHR BASE, 32'-6", 3 GA., AND FND. WITH 11 1/2" B.C. AND 1" ANCHOR RODS DWG. #753; POLE, CITY STEEL, ANCHOR BASE, 32'-6" 7 GA., ALUM. BHB AND FND. WITH 15" B.C.-24"x7' WITH 1" ANCHOR RODS DRG. #691; POLE, CITY STEEL, ANCHOR BASE, 32'-6", 3 GA., ALUM. BHB AND FND. WITH 15" B.C. 24"x 7' WITH 1" ANCHOR RODS DWG. #691; POLE, CITY ALUMINUM, WITH ROUND BAL. HSG. BASE, 25', 28', or 30' ON FND. WITH 14" B.C., ACQUIRED FROM CHICAGO PARK DISTRICT; POLE, CITY STEEL, EMBEDDED, 4"x 9"x 35' 7 GA., TAPERED TUBULAR. (DWG. #658); POLE, CITY STEEL, EMBEDDED, 4"x 9"x 35' 3 GA., TAPERED TUBULAR. (DWG. #658); POLE, CITY STEEL, EMBEDDED. (ACQUIRED FROM CTA); COLUMN, ELEVATED STRUCTURE; POLE, WOOD. (SIZE AS NOTED); POLE, FOUNDATION WITH ELBOWS AS INDICATED. (SIZE AS NOTED); POLE, ORNAMENTAL OR OTHER, AS INDICATED ON THE PLANS; RESIDENTIAL STREET LIGHTING CONTROLLER

PROPOSED PRESENT

Table of utility and infrastructure symbols and descriptions. Includes items like MANHOLE, 3'x4'x4' 24" F & C (DWG.#730) (A) 30" F & C (DWG.#729) (B); MANHOLE, 4'x6'x6' 24" F & C (DWG.#732) (C) 30" F & C (DWG.#733) (D); HANDHOLE, HEAVY DUTY, 36" I.D. (DWG.#866) 24" F & C (E). (DWG.#871) 30" F & C (F); HANDHOLE, CIRCULAR WITH 24" FRAME & COVER, 30" I.D. (#867) (G); FOUNDATION, CONTROLLER OR PEDESTAL, 13" B.C., 20"x5' (DWG. #709); FOUNDATION, TRAFFIC CONTROLLER DWG. #854. F.A. TERMINAL FND. DWG. #11972; FOUNDATION, TRAFFIC TYPE "P", BASE MOUNT. (DWG. #888); FOUNDATION, CONTROLLER STREET LIGHT, SPECIAL, 100A & 200A. (DWG.#876 & #880); FOUNDATION, TRANSCLOSURE; TRANSCLOSURE HOUSING. (DWG.#583 & #891); CONTROLLER, UNDERPASS LIGHTING 120V. & 240V. (DWG. #860 & #861); MANHOLE, UTILITY, E=COMMONWEALTH EDISON; T=ILL BELL TEL.; G=PEOPLES GAS; W=CITY WATER; P=CHGO PARK DISTRICT; CTA=C.T.A.; S=SEWER JUNCTION BOX, IN PAVEMENT (DWG. #815); DETECTOR LOOP IN PAVEMENT; CONDUIT or P.V.C., NUMBER, SIZE & TYPE. (AS NOTED); CONDUIT or P.V.C. ENCASED IN CONCRETE. (SECTION or NUMBER OF CONDUIT INDICATED); LUMINAIRE, H.P.S.V. 400W LAMP, 240V, SEMI-CUTOFF; LUMINAIRE, H.P.S.V. 400W LAMP, 240V, CUTOFF; LUMINAIRE, H.P.S.V. 310W LAMP, 240V; LUMINAIRE, H.P.S.V. 310W LAMP 240V, CUTOFF; LUMINAIRE, H.P.S.V. 150W LAMP, 240V; LUMINAIRE, H.P.S.V. 150W LAMP, 120V; LUMINAIRE, H.P.S.V. 250W LAMP, 120V, (ALLEY LIGHT); LUMINAIRE, H.P.S.V. 250W LAMP, 120V; LUMINAIRE, H.P.S.V. 400W LAMP, 240V, (FLOOD LIGHT); TERMINAL, CABINET F.A. & P.C.; FIRE ALARM BOX, MOUNTED; FIRE ALARM BOX, POLE MOUNTED; CABLE, TRAFFIC SIGNAL, COMMUNICATION, 1-PAIR #14 SHIELDED, IN CONDUIT; CABLE, TRAFFIC SIGNAL POWER SUPPLY, 2/C- #4, 600 V. EPR. IN CONDUIT; CABLE, TRAFFIC SIGNAL POWER SUPPLY, 2 1/C-#2 or #1/0 600V. EPR IN CONDUIT; CABLE, TRAFFIC SIGNAL POWER SUPPLY, 2/C-#10 or #6, 600V NSRI, IN CONDUIT; CABLE, TRAFFIC SIGNAL, 7/C-#12 or #14, 600V, EPR IN CONDUIT; CABLE, TRAFFIC SIGNAL, 10/C-#12 600V. EPR IN CONDUIT; CABLE, TRAFFIC SIGNAL, 14/C-#14, 600V. EPR IN CONDUIT; CABLE, TRAFFIC SIGNAL, 19/C-#12 600V, EPR IN CONDUIT; CABLE, STREET LIGHT, 2 1/C-#6, 600V. RINS IN PARKWAY; CABLE, STREET LIGHT, 2 1/C-#6, 600V. RINS IN CONDUIT; CABLE, STREET LIGHT, 2 1/C-#6 EPRN 600V. & 1 1/C-#8 GREEN, TRIPLEXED, IN CONDUIT; CABLE, STREET LIGHT, 3 1/C-#1/0, or #2/0, or #4, 600V. EPR IN CONDUIT; WIRE, STREET LIGHT, 2 1/C-#6, HDNS. AERIAL; WIRE, STREET LIGHT, 2 1/C-#6 & 1 1/C #8, HDNS. AERIAL; CABLE, STREET LIGHT AERIAL, 3 1/C-#4 or #2 SELF SUPPORTING, 600V EPR; WIRE, F.A. & P.C. AERIAL, 1/C-#10, NUMERAL DENOTES QUANTITY; CABLE, F.A. & P.C. AERIAL, W/ MESSENGER #19-(NUMBER OF PAIRS AS INDICATED); CABLE, F.A. & P.C. AERIAL, SELF SUPPORTING, #19-(NUMBER OF PAIRS AS INDICATED); CABLE, F.A. & P.C., IN CONDUIT, #19-(NUMBER OF PAIRS AS INDICATED); DOWNLIGHT ASSEMBLY. (DWG. #850); LIGHT, TRAFFIC SAFETY ISLAND; FLASHING BEACON & DOWNLIGHT

C.M.H. LUMINAIRES

Table of C.M.H. Luminaire symbols and descriptions. Includes items like LUMINAIRE, C.M.H. 315W LAMP, 240V; LUMINAIRE, C.M.H. 315W LAMP, 240V, (FLOOD); LUMINAIRE, C.M.H. 210W LAMP, 240V; LUMINAIRE, C.M.H. 140W LAMP, 240V; LUMINAIRE, C.M.H. 140W LAMP, 120V, (ALLEY); LUMINAIRE, C.M.H. 90W LAMP, 240V; LUMINAIRE, C.M.H. 90W LAMP, 240V (ACORN); LUMINAIRE, C.M.H. 60W LAMP, 240V (ACORN)

H.P.S.V. ORNAMENTAL LUMINAIRES

Table of H.P.S.V. Ornamental Luminaire symbols and descriptions. Includes items like 310W PENDANT (240V); 400W PENDANT (240V); 250W PENDANT (240V); 150W ACORN (120V); 150W ACORN (240V); 50W ACORN (240V); 100W ACORN (240V); 150W GLOBE (240V); 100W GLOBE (240V); 50W GLOBE (240V)

L.E.D. LUMINAIRES

Table of L.E.D. Luminaire symbols and descriptions. Includes items like (400W HPSV EQUIVALENT), 240V; (100W HPSV EQUIVALENT), 240V, ACORN; (310W HPSV EQUIVALENT), 240V; (100/150W HPSV EQUIVALENT), 240V ACORN; (250W HPSV EQUIVALENT), 240V; (50W HPSV EQUIVALENT), 240V, ACORN

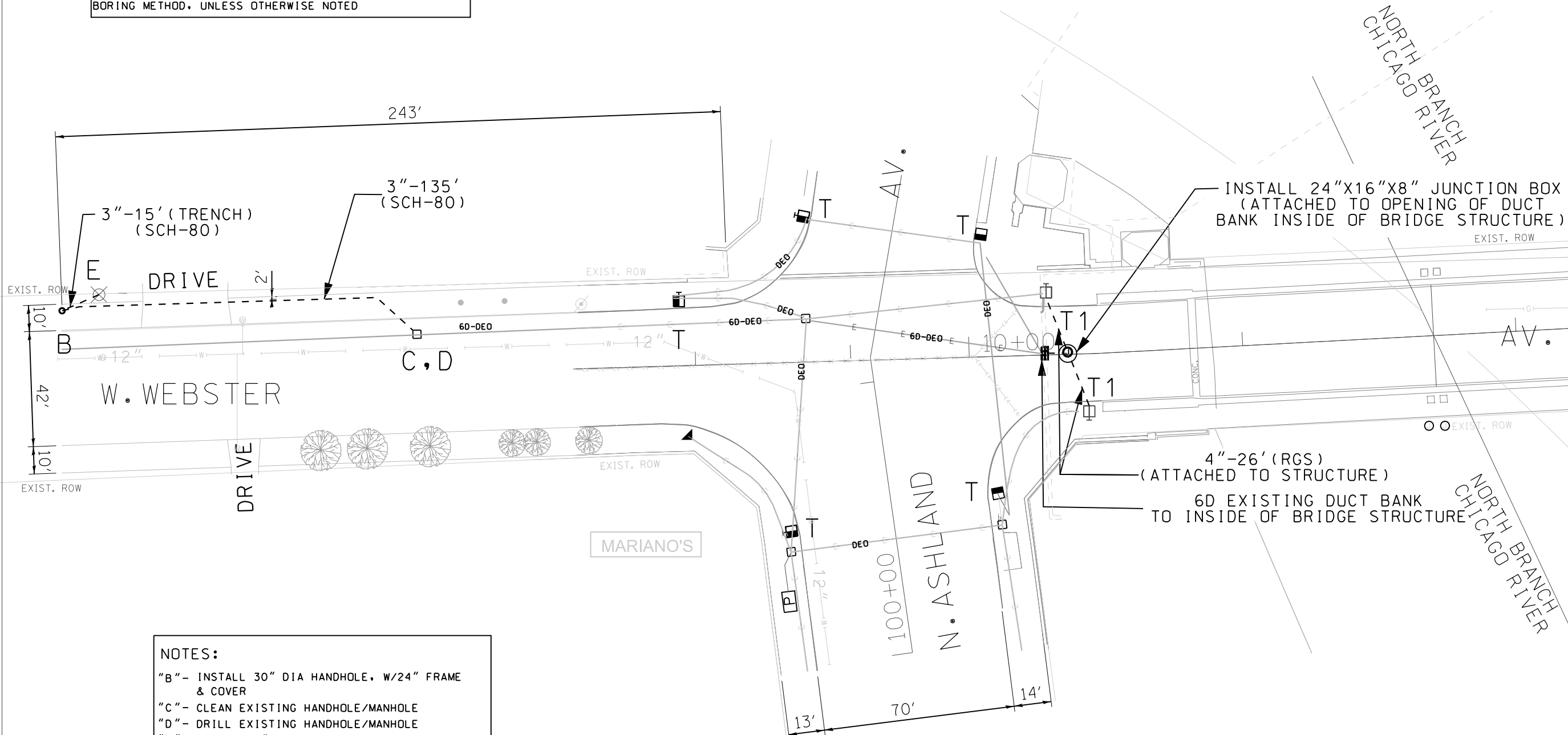
Revision table with columns for DATE and REVISION. Includes entries like 09-19-13 ADDED CMH LUMINAIRES A.VIEU; 02-06-04 REVISED/REDRAW R.POOL/B.I.; 04-01-02 REVISED/REDRAW R.POOL/B.I.; 12-4-01 ADDED ORNAMENTAL SYMBOLS; 8-6-96 REDRAWN

Project information block including: STANDARD CODE FOR TRAFFIC SIGNALS/ STREET LIGHTING; CITY OF CHICAGO; DEPT. OF TRANSPORTATION; DIVISION OF ENGINEERING; ELECTRICAL SECTION; DRAFTSMAN: R. IVY; CHIEF DRAFTSMAN: R. CARTER; ENGINEER: R. POOL/R.C./W.T.; SUPERVISING ENGINEER: ELEC. DESIGN ENGR.; DWG. NO. 826; DATE: 09-19-13

SEE SHEET E-1 FOR DEO STANDARD DRAWING NO. 826 -  
STANDARD CODES FOR TRAFFIC SIGNALS / STREET LIGHTING

ALL EXISTING CONDUITS THAT WILL CONTAIN PROPOSED CABLES NEED TO ROD & CLEANED

ALL CONDUIT IS TO BE INSTALLED BY THE DIRECTIONAL  
BORING METHOD, UNLESS OTHERWISE NOTED



**NOTES:**  
 "B"- INSTALL 30" DIA HANDHOLE, W/24" FRAME & COVER  
 "C"- CLEAN EXISTING HANDHOLE/MANHOLE  
 "D"- DRILL EXISTING HANDHOLE/MANHOLE  
 "E"- INSTALL 3" ELBOW & RISER ON COMED POLE  
 "T"- EXISTING FOUNDATION TO REMAIN  
 "T1"-SEE TRAFFIC DRAWING FOR PROPOSED TRAFFIC POLE FOUNDATION

MATCH LINE "A"  
SEE SHEET NO. "E-3"

\$\$\$DGN\$\$\$  
\$\$\$SYM\$\$\$

TranSmart/EJM  
 TRANSMART/EJM  
 411 S. WELLS STREET  
 SUITE 1000  
 CHICAGO, IL 60607  
 TEL: (312) 922-1700  
 FAX: (312) 922-3311

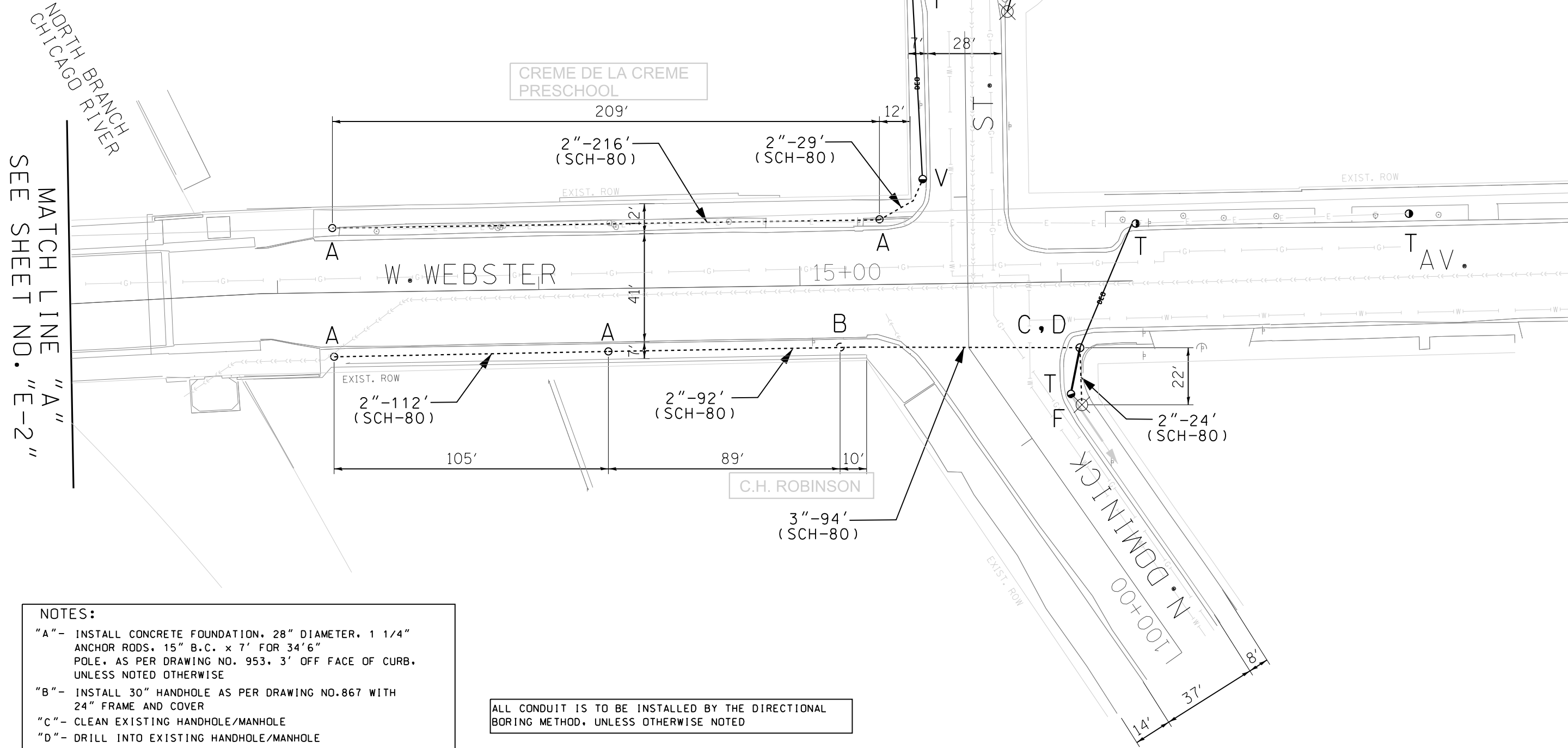
USER NAME = \$USER\$	DESIGNED - N,J	REVISED -
	CHECKED - M,R	REVISED -
PLOT SCALE = 1' = 20"	DRAWN - R,S	REVISED -
PLOT DATE = \$DATE\$	CHECKED - M,R	REVISED -

**CITY OF CHICAGO**  
 DEPARTMENT OF TRANSPORTATION  
 DIVISION OF ENGINEERING

WEBSTER AVENUE BRIDGE OVER  
 THE NORTH BRANCH CHICAGO RIVER

ROADWAY FOUNDATION &  
 CONDUIT PLAN  
 (STRUCTURE NO. 016-6057)

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	E-2
CDOT PROJECT NO. E-1-525			191 of 210



**NOTES:**

"A"- INSTALL CONCRETE FOUNDATION, 28" DIAMETER, 1 1/4" ANCHOR RODS, 15" B.C. x 7' FOR 34'6" POLE, AS PER DRAWING NO. 953, 3' OFF FACE OF CURB, UNLESS NOTED OTHERWISE

"B"- INSTALL 30" HANDHOLE AS PER DRAWING NO.867 WITH 24" FRAME AND COVER

"C"- CLEAN EXISTING HANDHOLE/MANHOLE

"D"- DRILL INTO EXISTING HANDHOLE/MANHOLE

"F"- INSTALL 3" ELBOW & 3" RISER ON COMED POLE

"T"- EXISTING FOUNDATION TO REMAIN

"V"- INSTALL CONDUIT INTO EXISTING HELIX FOUNDATION

ALL CONDUIT IS TO BE INSTALLED BY THE DIRECTIONAL BORING METHOD, UNLESS OTHERWISE NOTED

SEE SHEET E-1 FOR DEO STANDARD DRAWING NO. 826 - STANDARD CODES FOR TRAFFIC SIGNALS / STREET LIGHTING

\$\$\$DGN\$\$\$  
\$\$SYTIME\$

**TranSmart/EJM**  
TRANSNART/EJM  
411 S. WELLS STREET  
SUITE 1000  
CHICAGO, IL 60607  
TEL: (312) 922-1700  
FAX: (312) 922-3311

USER NAME = \$USER\$	DESIGNED - N.J	REVISED -
PLOT SCALE = 1' = 20"	CHECKED - M.R	REVISED -
PLOT DATE = \$DATE\$	DRAWN - R.S	REVISED -
	CHECKED - M.R	REVISED -

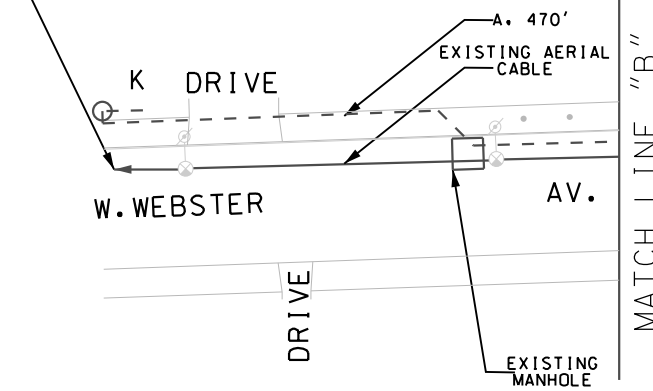
**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER

ROADWAY FOUNDATION &  
CONDUIT PLAN  
(STRUCTURE NO. 016-6057)

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	E-3
CDOT PROJECT NO. E-1-525			192 of 210

ATLAS NO. L-17  
GROUP NO. 6  
(10) 195W HPS LUM.  
(32) 341W HPS LUM.  
240V



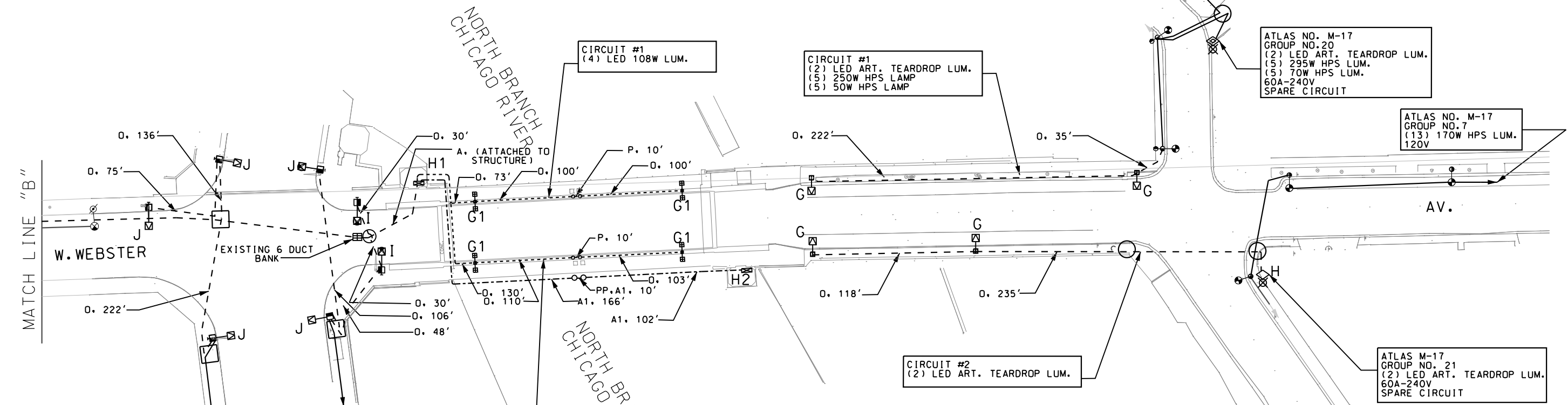
**NOTES:**

1. ALL CONDUITS ATTACHED TO STRUCTURE SHALL BE RIGID STEEL CONDUIT UNLESS OTHERWISE SPECIFIED.
2. ALL BRIDGE LIGHTING CONDUIT & POWER CONDUIT BETWEEN BRIDGE HOUSES SHALL BE ATTACHED TO STRUCTURE.
3. ALL CONDUITS FROM LIGHTING JUNCTION BOX TO LIGHTS SHALL BE LIQUID TIGHT FLEXIBLE CONDUITS.
4. ALL CONDUIT AND CONDUIT FITTINGS SHALL BE UL LISTED FROM APPROVED VENDOR.
5. ALL CONDUITS TO BE FASTENED SECURELY AT 5' INTERVALS WITH BEAM CLAMPS.

----- PROPOSED PED/BIKE LIGHTING CABLE & CONDUIT ATTACHED TO STRUCTURE.. TRIPLEX, 2-1/C#6, 1-1/C#8 GND, EPRN, 600V  
 - - - - - PROPOSED POWER CABLE & CONDUIT ATTACHED TO STRUCTURE

SEE SHEET E-1 FOR DEO STANDARD DRAWING NO. 826 - STANDARD CODES FOR TRAFFIC SIGNALS / STREET LIGHTING

ALL LIGHT POLES MOUNTED ON BRIDGE STRUCTURE SHALL MATCH STANDARD GLOSSY COLOR CODE R76G34B35(SW2717.BORDEAUX)



ATLAS NO. L-17  
GROUP NO. 3  
(7) LED ART. TEARDROP LUM.  
(22) 341W HPS LUM.  
240V

CIRCUIT #2  
(4) LED 108W LUM.

CIRCUIT #1  
(4) LED 108W LUM.

CIRCUIT #1  
(2) LED ART. TEARDROP LUM.  
(5) 250W HPS LAMP  
(5) 50W HPS LAMP

ATLAS NO. M-17  
GROUP NO. 20  
(2) LED ART. TEARDROP LUM.  
(5) 295W HPS LUM.  
(5) 70W HPS LUM.  
60A-240V  
SPARE CIRCUIT

ATLAS NO. M-17  
GROUP NO. 7  
(13) 170W HPS LUM.  
120V

ATLAS M-17  
GROUP NO. 21  
(2) LED ART. TEARDROP LUM.  
60A-240V  
SPARE CIRCUIT

**NOTES:**

"A"-- PROPOSED POWER CABLE, 3-1/C#350 KCMIL  
 "A1"-- PROPOSED POWER CABLE, 3-1/C#2/0 INSTALLED IN PROPOSED 3" RGS CONDUIT  
 "G"-- INSTALL 34.5' POLE, 8' CHICAGO 2000 ARM & BASE, LED ARTERIAL TEARDROP LUMINAIRE WITH NODE AS PER DRAWING NO. 930, 930B, 930C, 931A  
 "G1"-- INSTALL DUAL 4' DAVIT MAST ARMS ON PROPOSED POLE MOUNTED ON BRIDGE STRUCTURE AS PER DETAIL "AA" IN SHEET E-8  
 INSTALL (2) 108W LED RESIDENTIAL STREET LIGHTING LUMINAIRES W/ NODES  
 "H"-- INSTALL 60A-240V RESIDENTIAL STREET LIGHT CONTROLLER AS PER DRAWING NO. 955  
 "H1"-- INSTALL 300A POWER CABINET NEAR EXISTIN POWER CABINET IN BRIDGE HOUSE.SEE SHEET E-10 FOR CABINET DETAILS  
 "H2"-- INSTALL 100A POWER CABINET NEAR EXISTING POWER CABINET IN BRIDGE HOUSE.SEE SHEET E-10 FOR CABINET DETAILS  
 "I"-- INSTALL CHICAGO 2000 ARM ASSEMBLY 10", CHICAGO 2000 BASE, & LED ARTERIAL TEARDROP LUMINAIRE WITH NODE ON PROPOSED POLE.  
 "J"-- INSTALL CHICAGO 2000 ARM ASSEMBLY 10", CHICAGO 2000 BASE, & LED ARTERIAL TEARDROP LUMINAIRE WITH NODE ON EXISTING POLE & PAINT POLE COMPLETE  
 "K"-- INSTALL SERVICE EQUIPMENT ON COMED POLE AS PER DWG. NO. 11925  
 "O"-- PROPOSED STREET LIGHT CABLE, TRIPLEX, 2-1/C #6, & 1-1/C#8 GND, EPRN, 600V INSTALLED IN RGS 1" CONDUIT  
 "P"-- PROPOSED STREET LIGHT CABLE INSTALLED IN 1" LIQUID TIGHT FLEXIBLE CONDUIT BETWEEN JUNCTION BOXES  
 "PP"-- PROPOSED POWER CABLE INSTALLED IN 3" LIQUID TIGHT FLEXIBLE CONDUIT BETWEEN JUNCTION BOXES

TranSmart/EJM  
 TRANSMART/EJM  
 411 S. WELLS STREET  
 SUITE 1000  
 CHICAGO, IL 60607  
 TEL: (312) 922-1700  
 FAX: (312) 922-3311

USER NAME = \$USER\$	DESIGNED - N,J	REVISED -
PLOT SCALE = N.T.S	CHECKED - M,R	REVISED -
PLOT DATE = \$DATE\$	DRAWN - R,S	REVISED -
	CHECKED - M,R	REVISED -

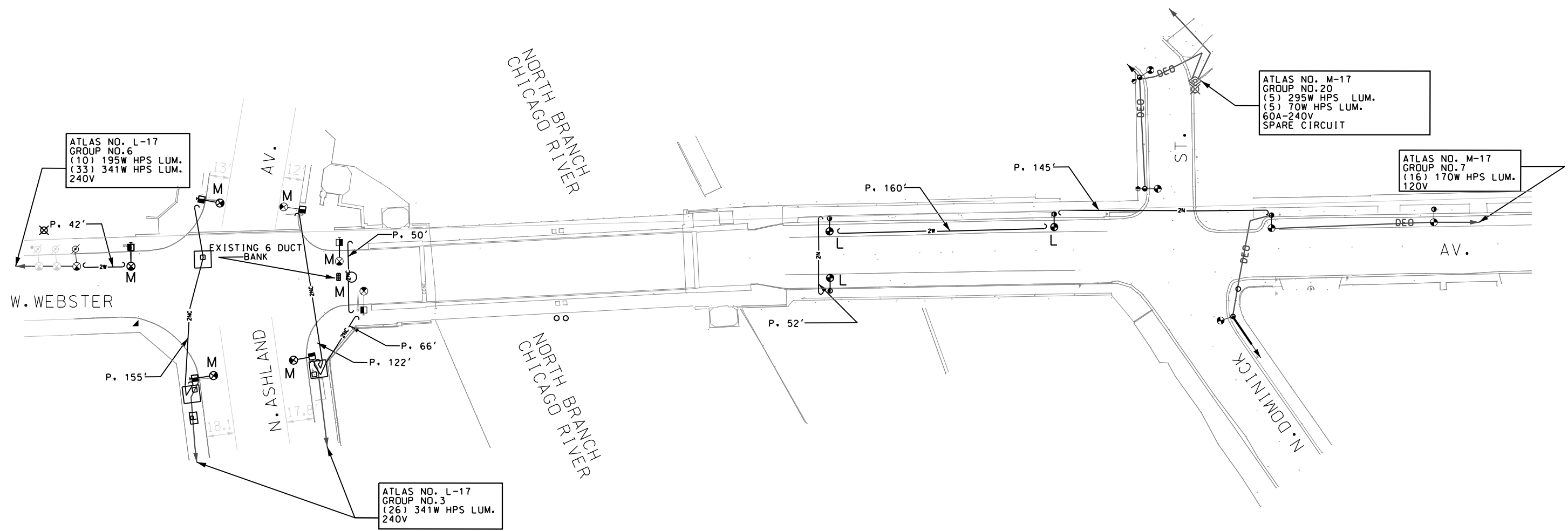
**CITY OF CHICAGO**  
 DEPARTMENT OF TRANSPORTATION  
 DIVISION OF ENGINEERING

WEBSTER AVENUE BRIDGE OVER  
 THE NORTH BRANCH CHICAGO RIVER

ROADWAY LIGHTING  
 INSTALLATION PLAN  
 (STRUCTURE NO. 016-6057)

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	E-4
CDOT PROJECT NO. E-1-525			193 of 210





**NOTES:**

"L" - REMOVE ANCHOR BASE POLE, MAST ARM WITH LUMINAIRE AND BREAKDOWN FOUNDATION

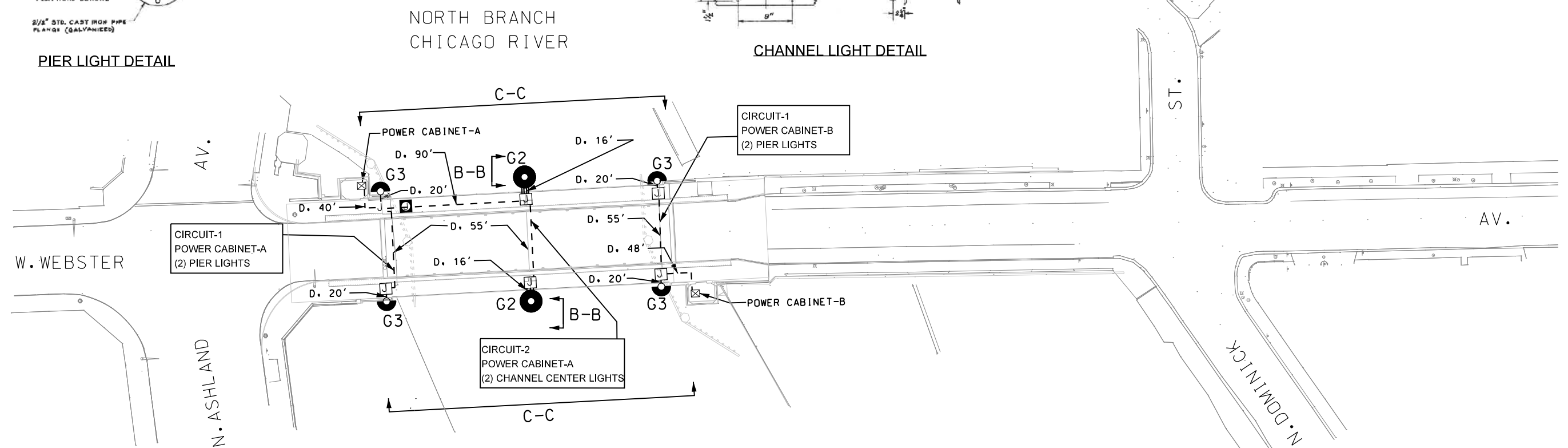
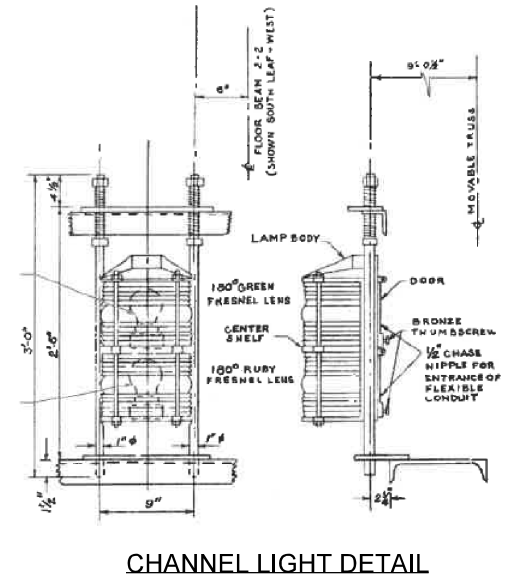
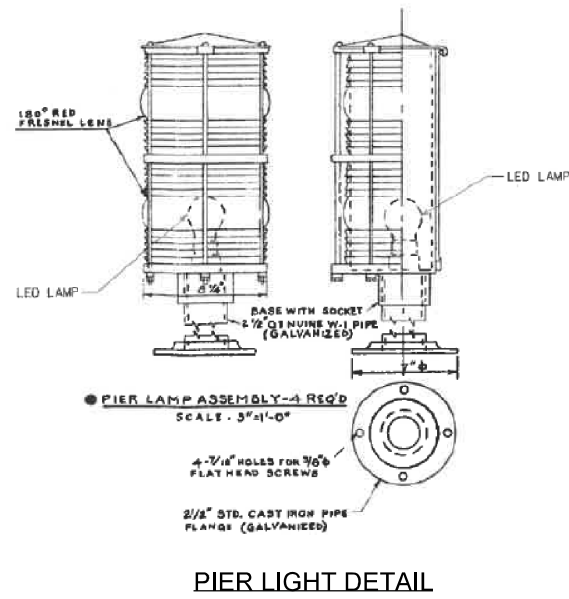
"M" - REMOVE MAST ARM WITH LUMINAIRE

"P" - REMOVE STREET LIGHTING CABLE

SEE SHEET E-1 FOR DEO STANDARD DRAWING NO. 826 - STANDARD CODES FOR TRAFFIC SIGNALS / STREET LIGHTING

USER NAME = \$USER\$	DESIGNED - N.J	REVISED -
	CHECKED - M.R	REVISED -
PLOT SCALE = N.T.S	DRAWN - R.S	REVISED -
PLOT DATE = \$DATE\$	CHECKED - M.R	REVISED -

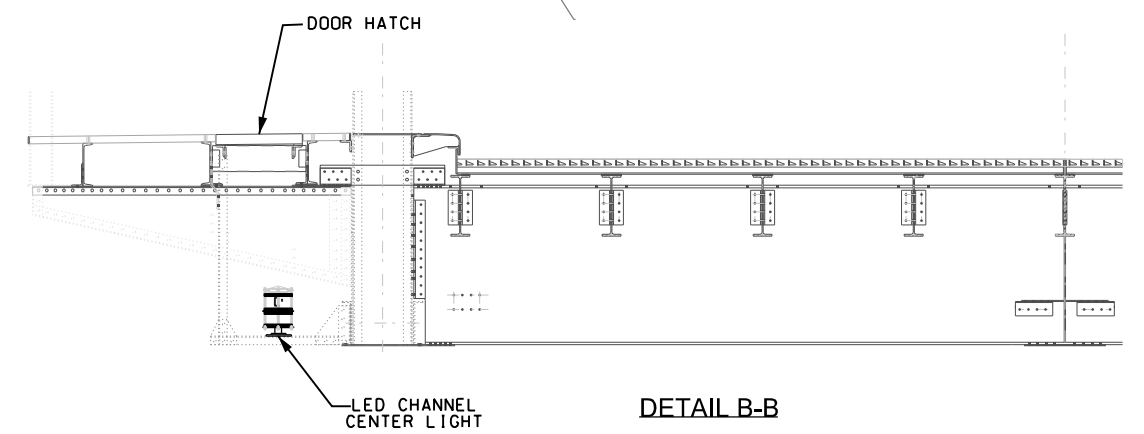
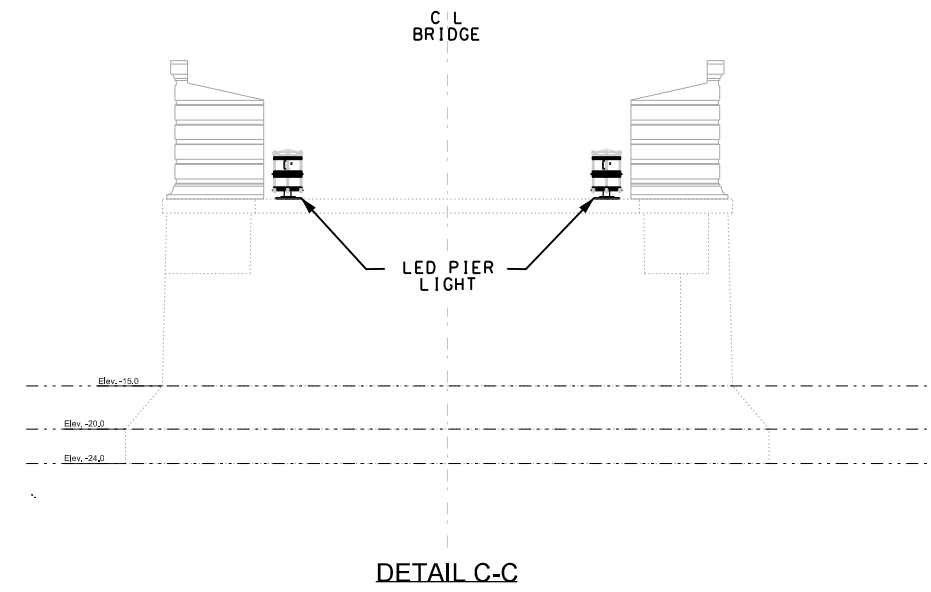
F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	E-5
CDOT PROJECT NO. E-1-525			194 of 210

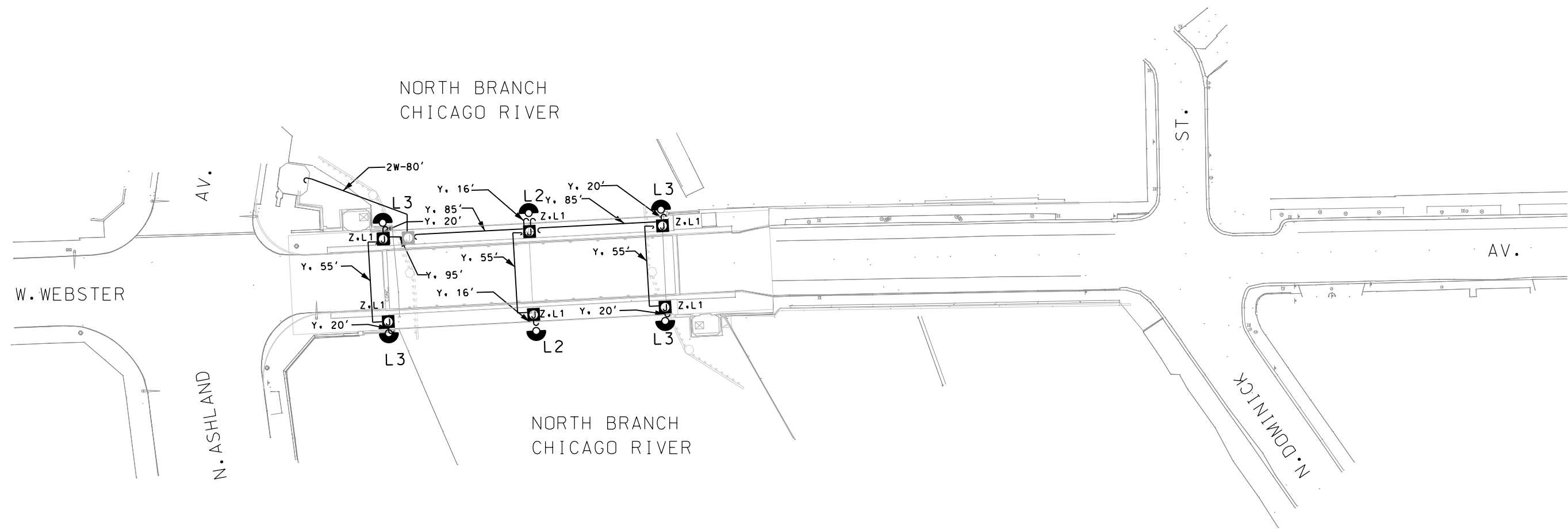


- SYMBOLS:**
- CHANNEL CENTER - 360° GREEN
  - PIER - 180° RED
  - PROPOSED JUNCTION BOX
  - POWER CABINET

- NOTES:**
- "G2"-INSTALL LED CHANNEL CENTER SIGNAL
  - "G3"-INSTALL LED PIER LIGHTS
  - "D"- PROPOSED CABLE, 2-1/C#10, 1-1/C#12 GND INSTALLED IN 1" CONDUIT

- NOTES:**
1. ALL CONDUITS ATTACHED TO STRUCTURE SHALL BE 1" RIGID STEEL CONDUIT.
  2. ALL CONDUITS FROM LIGHTING JUNCTION BOX TO LIGHTS SHALL BE LIQUID TIGHT FLEXIBLE CONDUIT.
  3. ALL CONDUIT AND CONDUIT FITTINGS SHALL BE UL LISTED FROM APPROVED VENDOR.





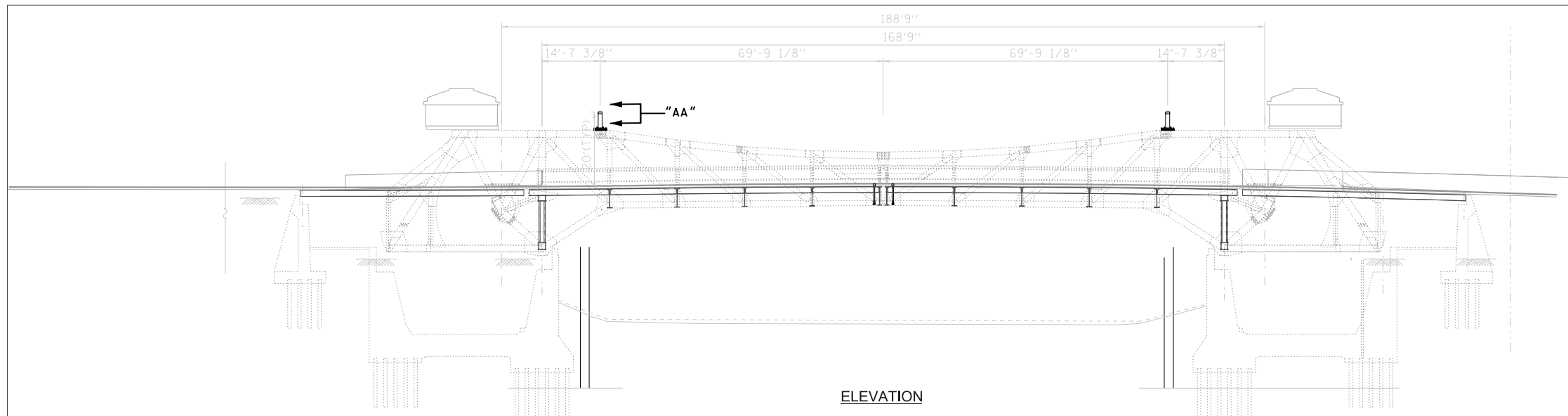
**SYMBOLS:**

	CHANNEL CENTER - 180° GREEN
	PIER - 180° RED
	EXISTING JUNCTION BOX
	EXISTING POWER CABINET

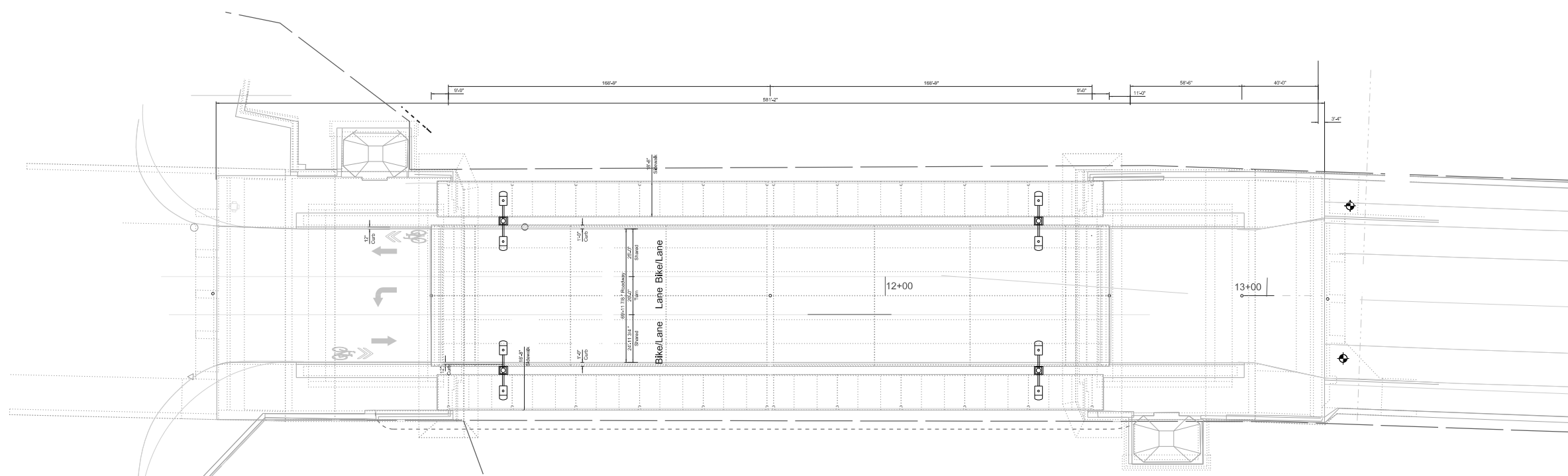
**NOTES:**

"L1"-REMOVE EXISTING JUNCTION BOX ATTACHED TO STRUCTURE
"L2"-REMOVE CHANNEL CENTER SIGNAL
"L3"-REMOVE AXIS SIGNAL
"Y"- CABLE, 2-1/C#12, 1-1/C#10 GND
"Z"- LIQUID TIGHT FLEXIBLE NON-METALLIC CONDUIT

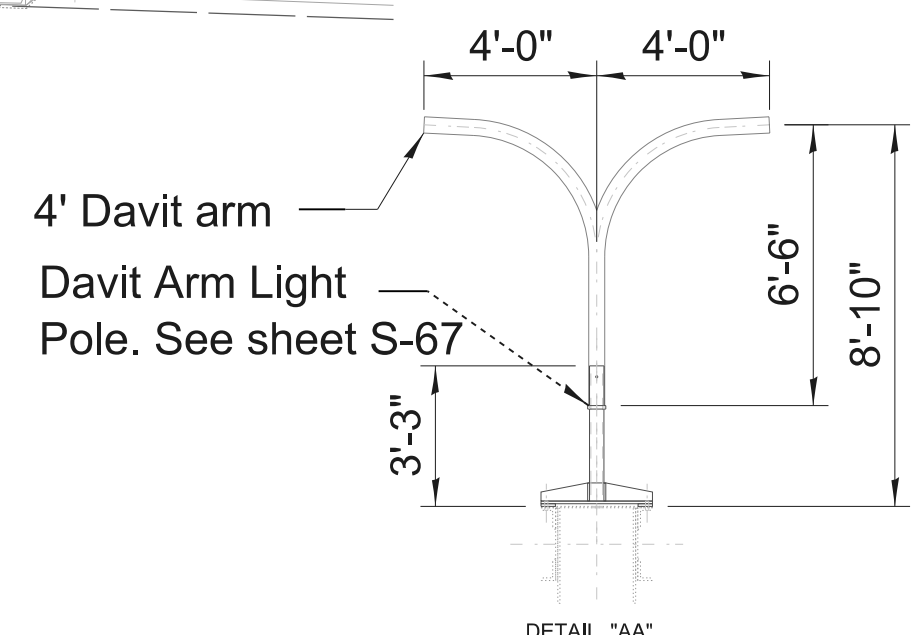
REMOVE ALL EXISTING ELECTRICAL ITEMS IN BRIDGE HOUSE AND ABOVE/BELOW FIXED DECKS/BEAMS. ITEMS ASSOCIATED WITH THE OPERATION OF THE BRIDGE SAY MOTORS, DRIVE MACHINERY ETC SHALL REMAIN IN PLACE



ELEVATION



PLAN



4' Davit arm  
 Davit Arm Light Pole. See sheet S-67

DETAIL "AA"

\$\$\$DGN\$\$\$  
 \$\$\$SYM\$\$\$

**TranSmart/EJM**  
 TRANSMART/EJM  
 411 S. WELLS STREET  
 SUITE 1000  
 CHICAGO, IL 60607  
 TEL: (312) 922-1700  
 FAX: (312) 922-3311

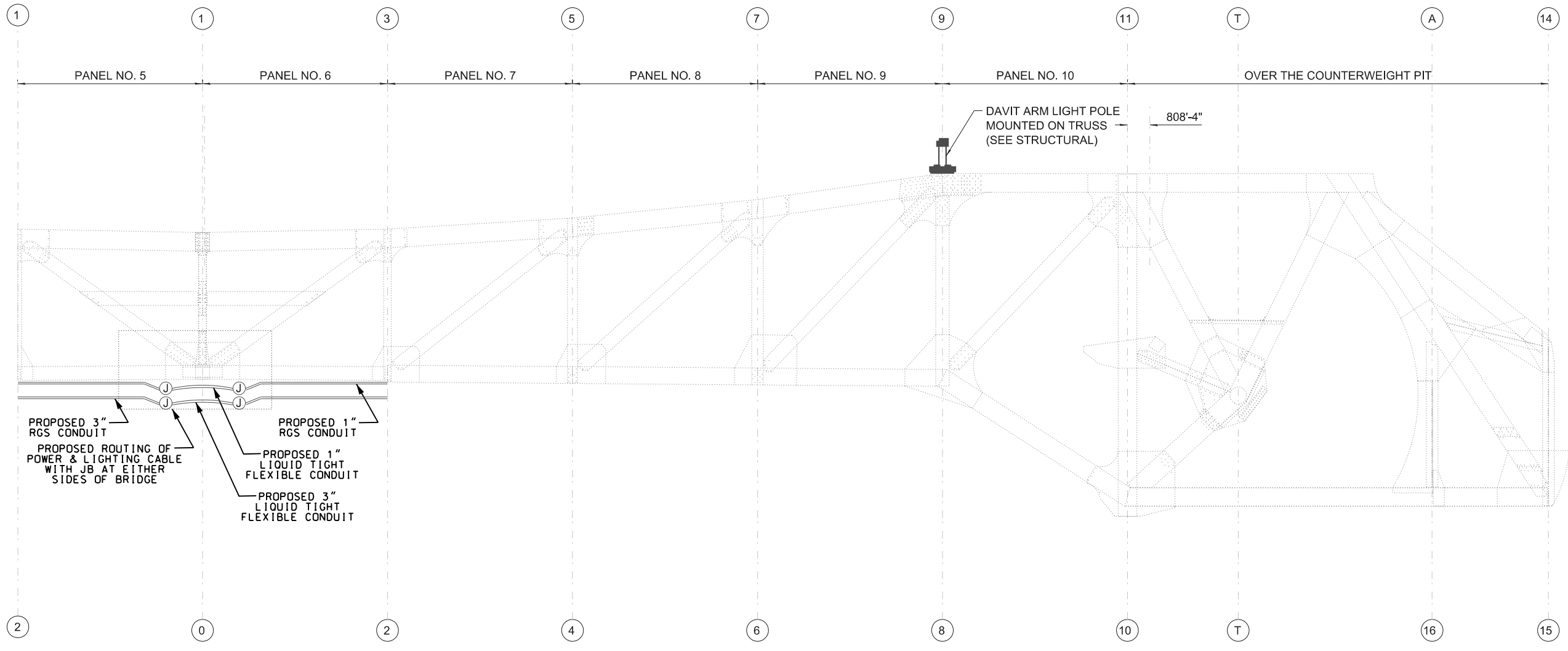
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	CHECKED - M,R	REVISED -
PLOT SCALE =	DRAWN - R,S	REVISED -
PLOT DATE = \$DATE\$	CHECKED - M,R	REVISED -

**CITY OF CHICAGO**  
 DEPARTMENT OF TRANSPORTATION  
 DIVISION OF ENGINEERING

**WEBSTER AVENUE BRIDGE OVER  
 THE NORTH BRANCH CHICAGO RIVER**

**ELECTRICAL DETAILS  
 (STRUCTURE NO. 016-6057)**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	E-8
CDOT PROJECT NO. E-1-525			197 of 210



TRUSS ELEVATION LOOKING NORTH

\$\$\$DGN\$\$\$  
 \$\$\$YTIMES\$\$\$

**TranSmart/EJM**  
 TRANSMART/EJM  
 411 S. WELLS STREET  
 SUITE 1000  
 CHICAGO, IL 60607  
 TEL: (312) 922-1700  
 FAX: (312) 922-3311

USER NAME = \$USER\$	DESIGNED - N,J	REVISED -
	CHECKED - M,R	REVISED -
PLOT SCALE =	DRAWN - R,S	REVISED -
PLOT DATE = \$DATE\$	CHECKED - M,R	REVISED -

**CITY OF CHICAGO**  
 DEPARTMENT OF TRANSPORTATION  
 DIVISION OF ENGINEERING

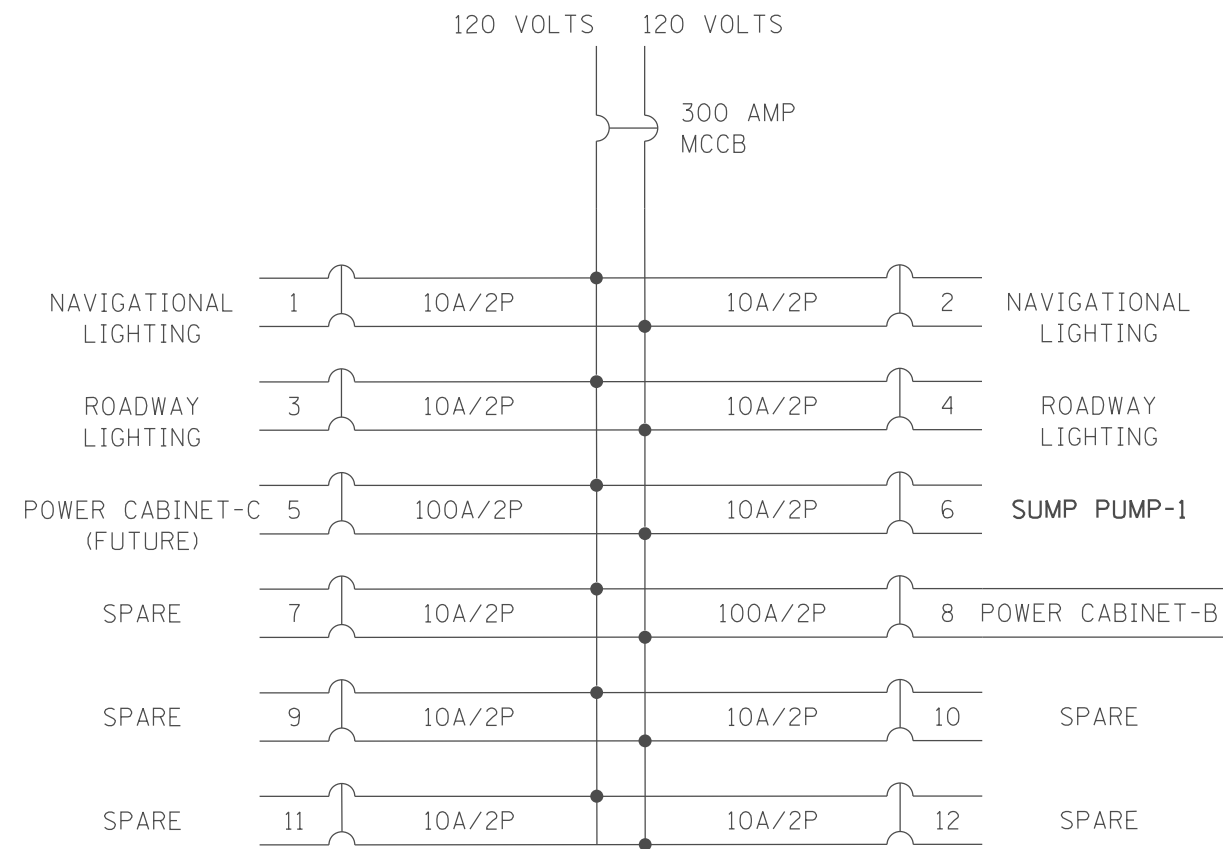
**WEBSTER AVENUE BRIDGE OVER  
 THE NORTH BRANCH CHICAGO RIVER**

**ELECTRICAL DETAILS  
 (STRUCTURE NO. 016-6057)**

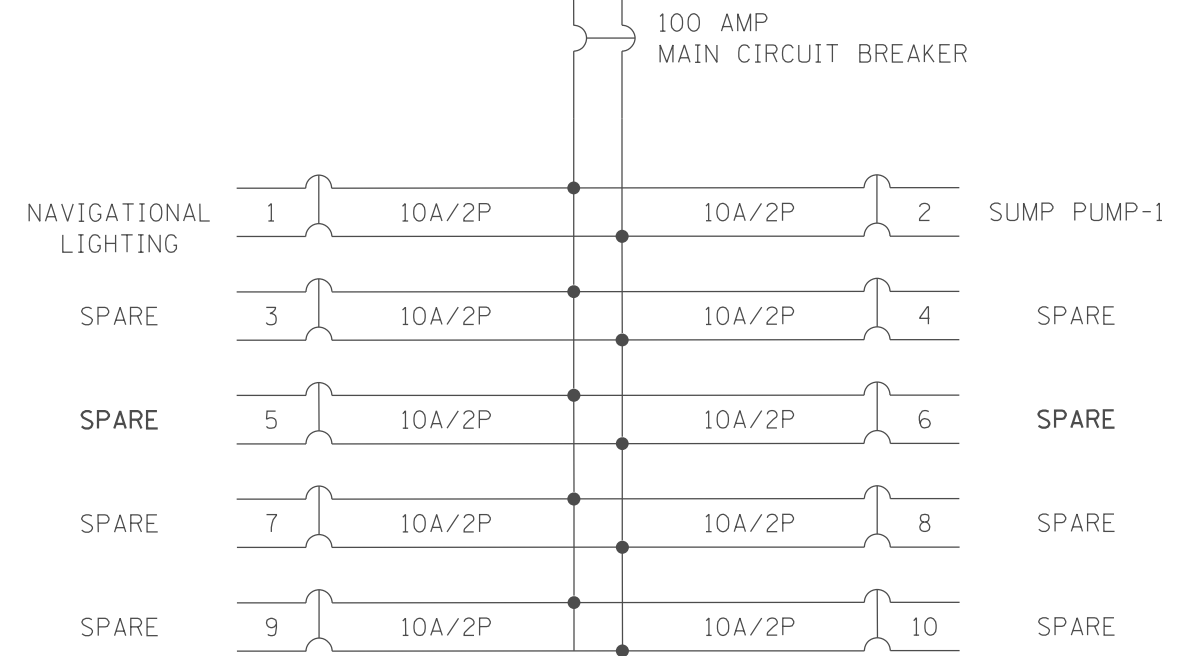
F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	<b>E-9</b>
CDOT PROJECT NO. E-1-525			198 of 210

**NOTES:**

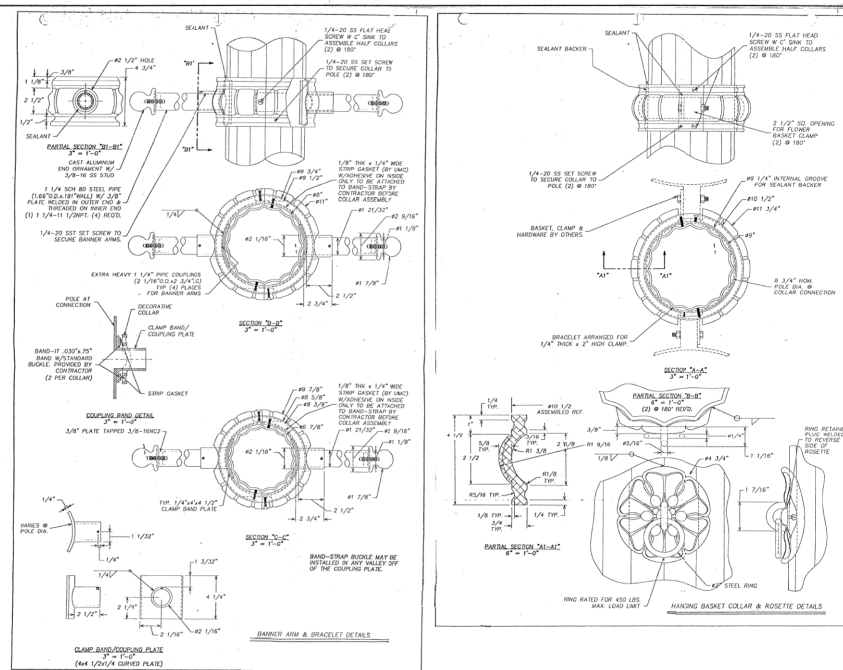
1. ALL ELECTRICAL PANELS SHALL BE 316L, SS, NEMA-4X, UL LISTED
2. ALL PANELS SHALL BE GROUNDED



**POWER CABINET-A  
BRIDGE HOUSE- 1**



**POWER CABINET-B  
BRIDGE HOUSE- 2**



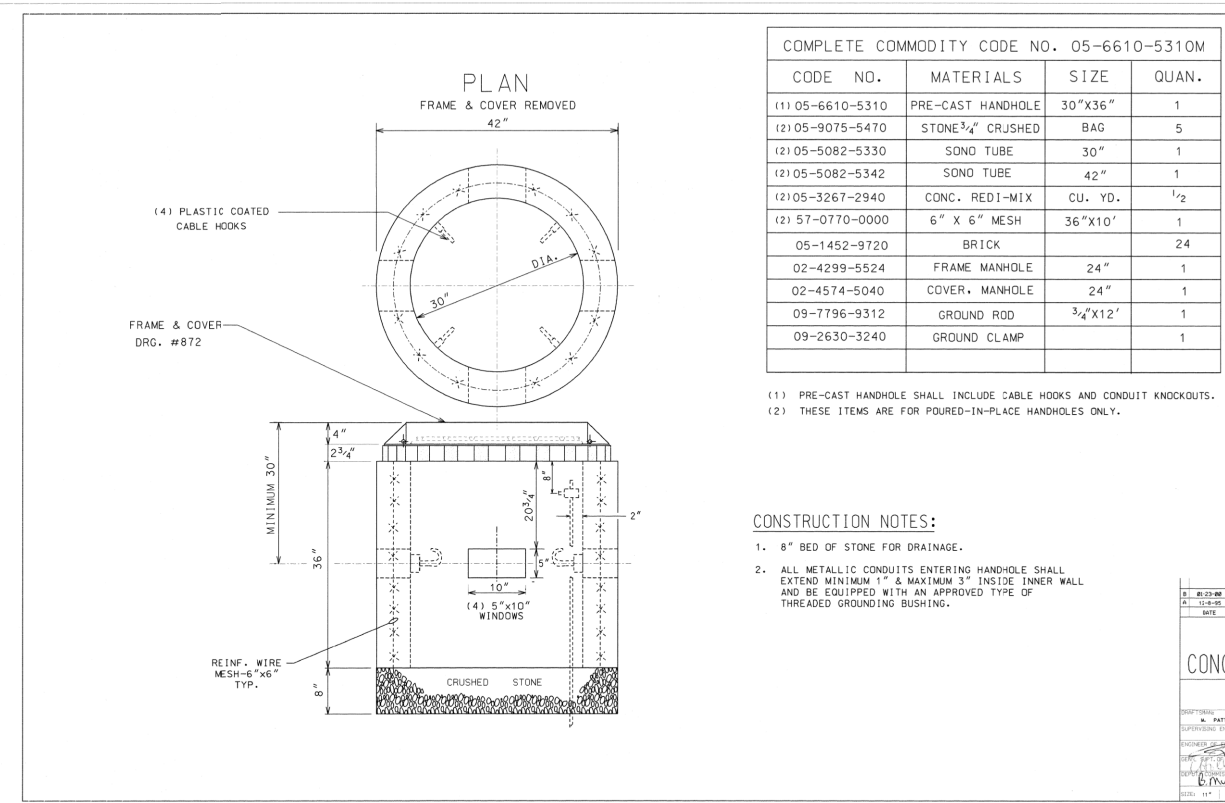
**CHICAGO 2000 BRACELETS**

**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

DESIGNED BY: *[Signature]* DATE: 01/22/2007  
CHECKED BY: *[Signature]* DATE: 01/22/2007  
DRAWN BY: *[Signature]* DATE: 01/22/2007

PROJECT NO. 05-6610-5310  
SHEET NO. 930 B

DATE: 2-9-05



COMPLETE COMMODITY CODE NO. 05-6610-5310M

CODE NO.	MATERIALS	SIZE	QUAN.
(1) 05-6610-5310	PRE-CAST HANDHOLE	30"x36"	1
(2) 05-9075-5470	STONE 3/4" CRJSHED	BAG	5
(2) 05-5082-5330	SOND TUBE	30"	1
(2) 05-5082-5342	SOND TUBE	42"	1
(2) 05-3267-2940	CONC. REDI-MIX	CU. YD.	1/2
(2) 57-0770-0000	6" X 6" MESH	36"x10'	1
05-1452-9720	BRICK		24
02-4299-5524	FRAME MANHOLE	24"	1
02-4574-5040	COVER, MANHOLE	24"	1
09-7796-9312	GROUND ROD	3/4"x12'	1
09-2630-3240	GROUND CLAMP		1

- (1) PRE-CAST HANDHOLE SHALL INCLUDE CABLE HOOKS AND CONDUIT KNOCKOUTS.  
(2) THESE ITEMS ARE FOR POURED-IN-PLACE HANDHOLES ONLY.

**CONSTRUCTION NOTES:**

- 8" BED OF STONE FOR DRAINAGE.
- ALL METALLIC CONDUITS ENTERING HANDHOLE SHALL EXTEND MINIMUM 1" & MAXIMUM 3" INSIDE INNER WALL AND BE EQUIPPED WITH AN APPROVED TYPE OF THREADED GROUNDING BUSHING.

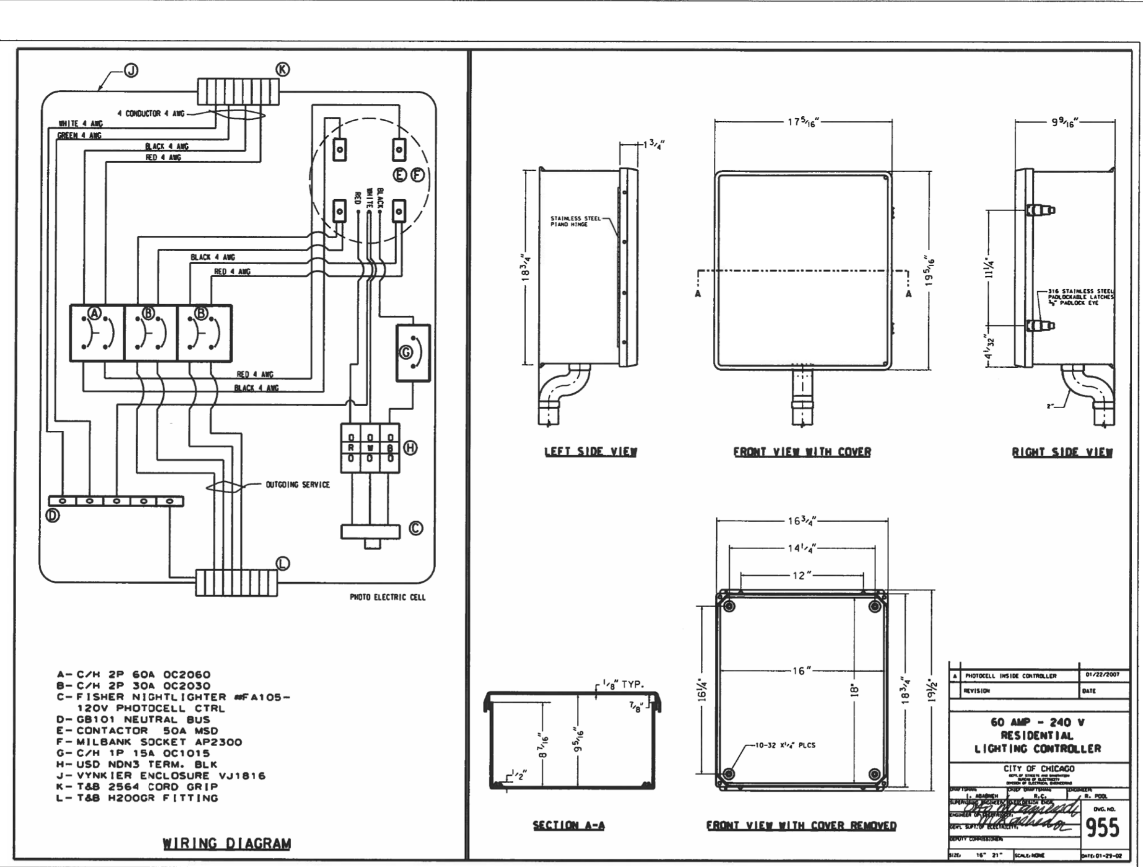
**30" DIA. CONCRETE HANDHOLE**

**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

DESIGNED BY: *[Signature]* DATE: 01/22/2007  
CHECKED BY: *[Signature]* DATE: 01/22/2007  
DRAWN BY: *[Signature]* DATE: 01/22/2007

PROJECT NO. 05-6610-5310  
SHEET NO. 930 B

DATE: 2-9-05



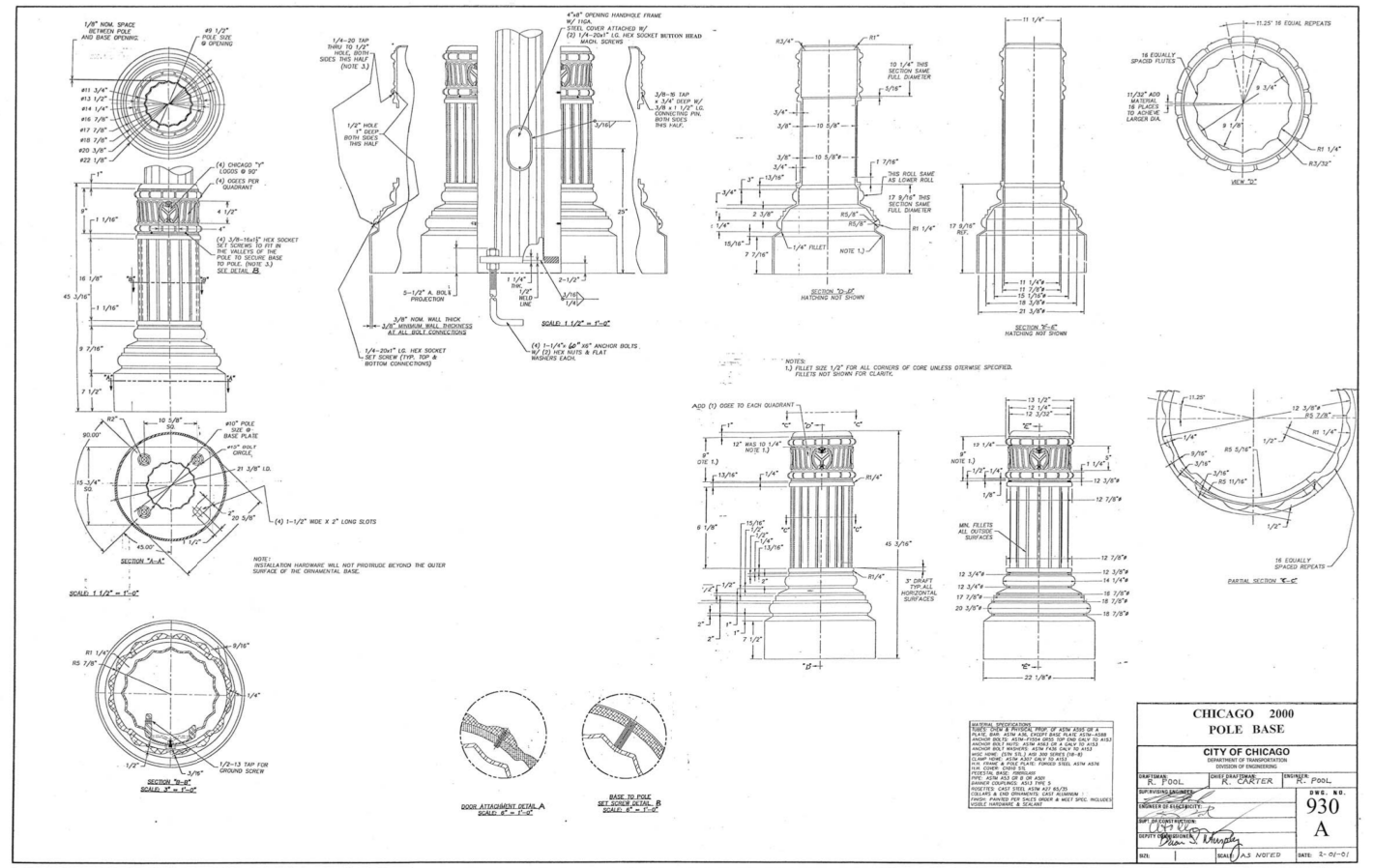
**60 AMP - 240 V RESIDENTIAL LIGHTING CONTROLLER**

**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

DESIGNED BY: *[Signature]* DATE: 01/22/2007  
CHECKED BY: *[Signature]* DATE: 01/22/2007  
DRAWN BY: *[Signature]* DATE: 01/22/2007

PROJECT NO. 05-6610-5310  
SHEET NO. 930 B

DATE: 2-9-05



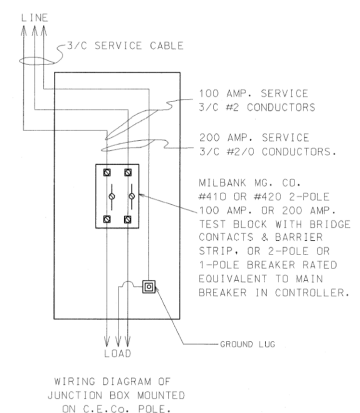
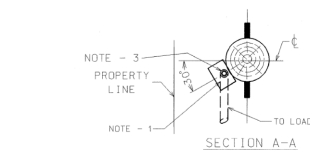
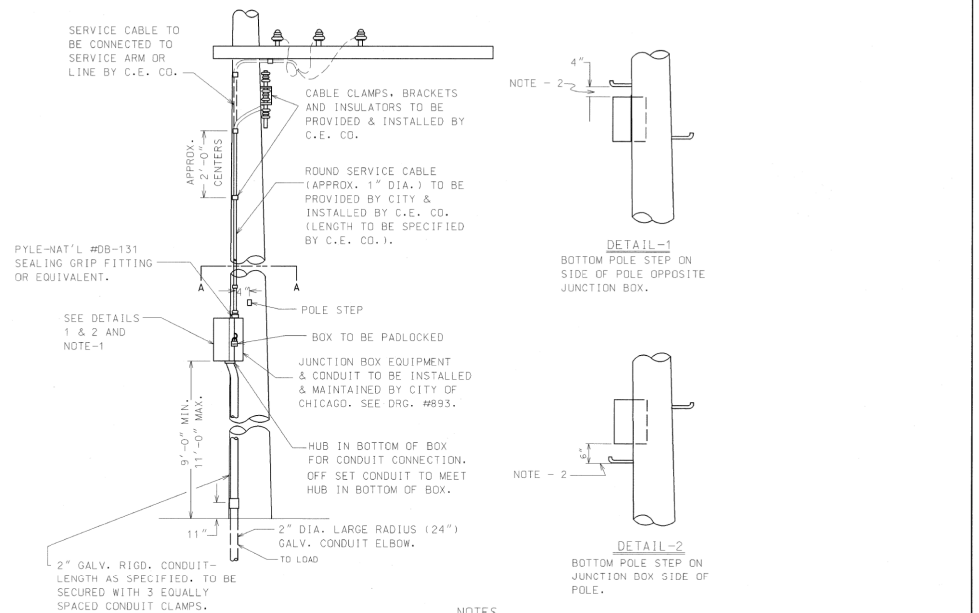
**CHICAGO 2000 POLE BASE**

**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

DESIGNED BY: *[Signature]* DATE: 01/22/2007  
CHECKED BY: *[Signature]* DATE: 01/22/2007  
DRAWN BY: *[Signature]* DATE: 01/22/2007

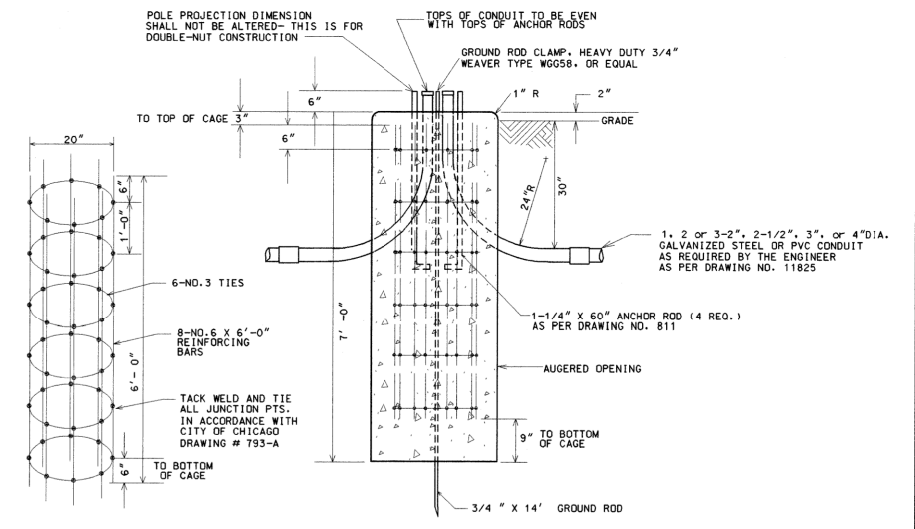
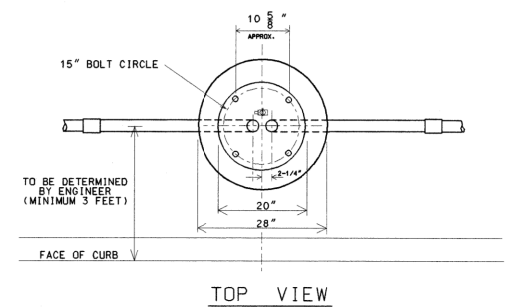
PROJECT NO. 05-6610-5310  
SHEET NO. 930 A

DATE: 2-9-05



- NOTES**
- WHERE POSSIBLE THE JUNCTION BOX SHALL BE LOCATED FACING THE PROPERTY LINE.
  - BOX SHALL HAVE A MINIMUM CLEARANCE OF 4" BELOW POLE STEP, DETAIL-1, OR 6" ABOVE STEP, DETAIL-2.
  - SERVICE CABLE TO ENTER BOX THROUGH SEALING GRIP FITTING IN TOP.

9-3-96	REDRAW	MF
DATE	REVISION	
<b>INSTALLATION OF SERVICE EQUIPMENT ON C.E. CO. WOOD POLES</b>		
<b>CITY OF CHICAGO</b> DEPT. OF STREETS AND SANITATION BUREAU OF ELECTRICITY DIVISION OF ELECTRICAL ENGINEERING		
DRAFTSMAN: E. LEMASTER	CHIEF DRAFTSMAN: J. BORE	ENGINEER: J. BORE
SUPERVISING ENGINEER: S. W. BERTRAM	ELEC. DESIGN ENGR. <i>[Signature]</i>	DWG. NO. <b>11925</b>
ENGINEER OF ELECTRICITY: <i>[Signature]</i>	GEN'L. Supt. OF ELECTRICITY: <i>[Signature]</i>	DATE: 12-26-96
DEPUTY ADMINISTRATOR: <i>[Signature]</i>	SIZE:	



ISOMETRIC VIEW OF STEEL CAGE

ELEVATION

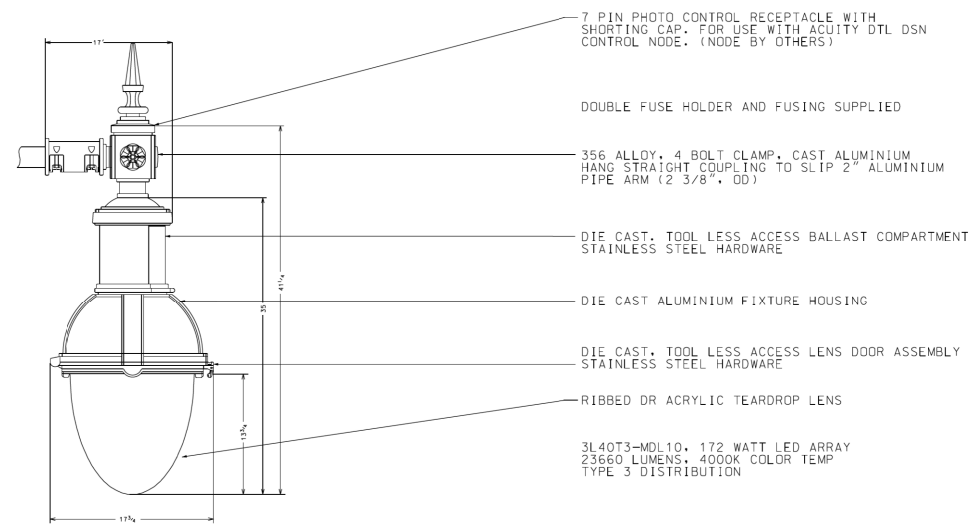
NOTE:  
HOLE FOR FOUNDATION MUST BE AUGERED IN UNDISTURBED SOIL

- NOTES:**
- CONCRETE MUST MEET IDOT REQUIREMENTS FOR PORTLAND CEMENT CLASS S1 CONCRETE.
  - REINFORCING BARS MUST MEET ASTM A-615 GRADE 60.

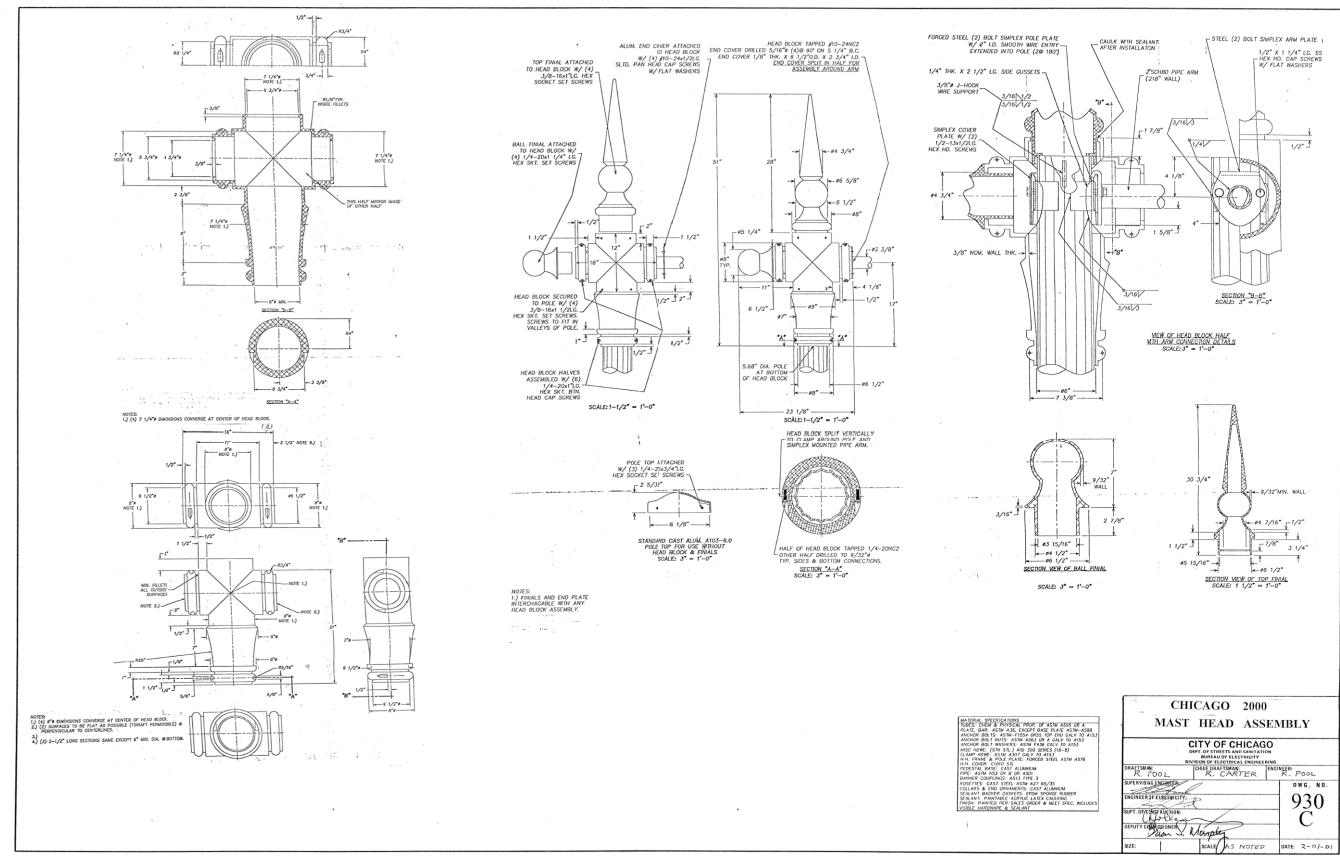
CODE	COMMODITY	SIZE	QUANTITY
05-3267-2940	REDI-MIX CONCRETE	CU. YD.	1.11
09-4001-	ELBOW, LARGE RADIUS	2", 2-1/2", 3", 4"	AS REQUIRED
37-8180-0200	ANCHOR ROD	1-1/4" X 60"	4
05-5054-6910	RE-BAR CAGE	20" X 8' X 0"	1
09-7796	GROUND ROD	3/4" X 14'-0"	1
09-2636-	GROUND ROD CLAMP	3/4"	1
	GROUND BUSHING	2", 2-1/2", 3", 4"	AS REQUIRED

DATE	REVISION
<b>FOUNDATION FOR CHICAGO 2000 GATEWAY POLE &amp; CHICAGO 2000 PEDESTRIAN POLE</b>	
<b>CITY OF CHICAGO</b> DEPT. OF STREETS AND SANITATION BUREAU OF ELECTRICITY DIVISION OF ELECTRICAL ENGINEERING	
DRAFTSMAN: B. GARNSEY	ENGINEER: B. GARNSEY
ELECTRICAL ENGINEER: R. CARTER	DRAWING NO. <b>953</b>
GENERAL SUPERVISOR: <i>[Signature]</i>	DATE: 8/21/02
DEPUTY ADMINISTRATOR: <i>[Signature]</i>	SCALE: NONE
SIZE: 11" x 17"	

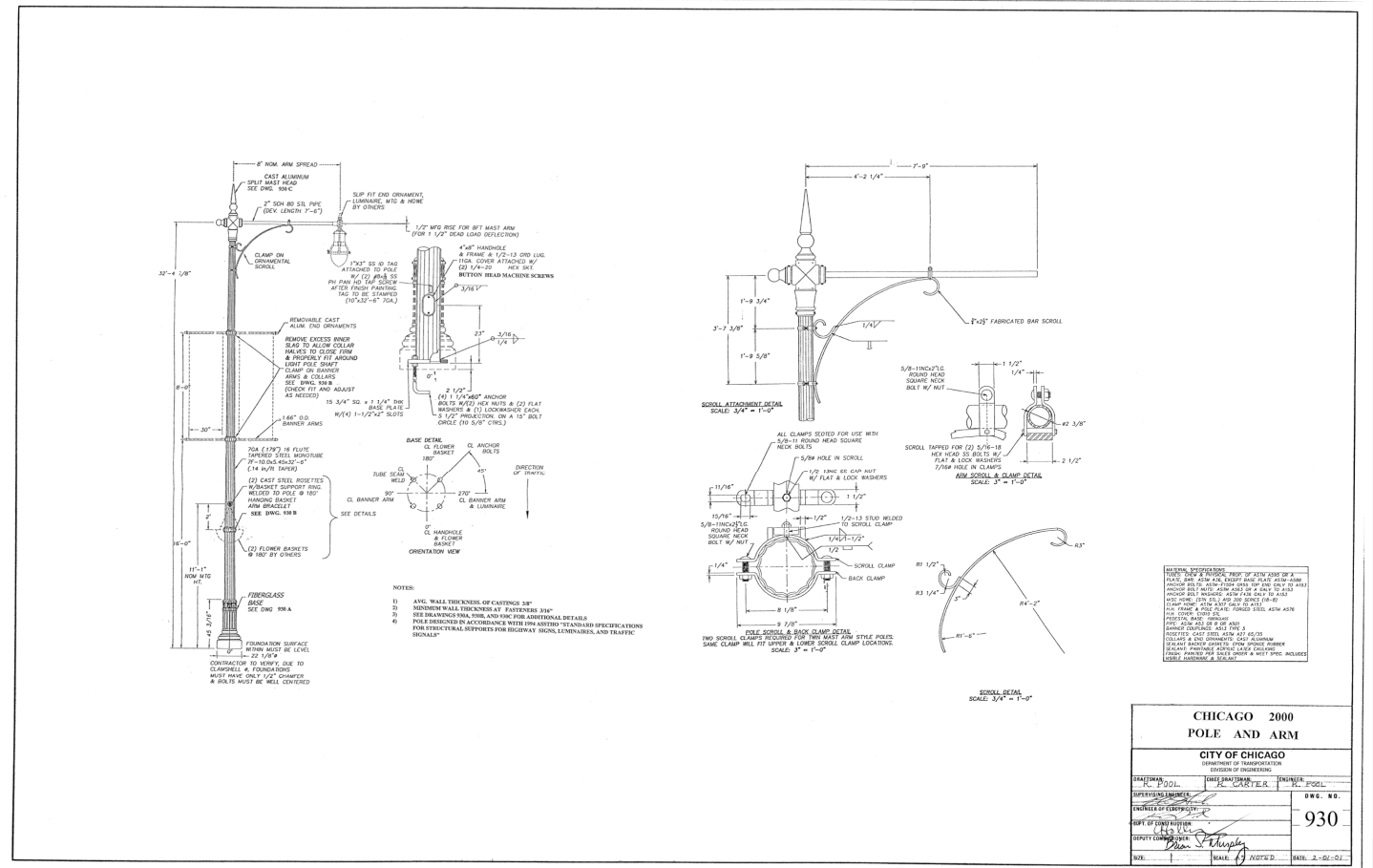




REVISION	DATE
TEARDROP LUMINAIRE FOR CHICAGO 2000 POLE	
CITY OF CHICAGO	
DEPARTMENT OF TRANSPORTATION DIVISION OF ENGINEERING	
DESIGNED BY:	DATE:
DRAWN BY:	DATE:
CHECKED BY:	DATE:
APPROVED BY:	DATE:
SCALE:	SCALE:



CHICAGO 2000 MAST HEAD ASSEMBLY	
CITY OF CHICAGO	
DEPARTMENT OF TRANSPORTATION DIVISION OF ENGINEERING	
DESIGNED BY:	DATE:
DRAWN BY:	DATE:
CHECKED BY:	DATE:
APPROVED BY:	DATE:
SCALE:	SCALE:



CHICAGO 2000 POLE AND ARM	
CITY OF CHICAGO	
DEPARTMENT OF TRANSPORTATION DIVISION OF ENGINEERING	
DESIGNED BY:	DATE:
DRAWN BY:	DATE:
CHECKED BY:	DATE:
APPROVED BY:	DATE:
SCALE:	SCALE:

**GENERAL MACHINERY NOTES**

- The Contractor shall perform all work in accordance with these Contact Drawings, the Contract Specifications, and all other Contract Documents as defined within the Specifications. Any reference to the specifications includes references to all supplemental specifications, special provisions, and specifications referenced herein.
- The existing details, dimensions, and elevations shown on these plans have been obtained from record drawings and field measurements on the existing structure. The Contractor shall perform a field survey to verify all dimensions affecting fabrication or construction. Shop and construction drawings shall indicate field verified dimensions. Payment for completing the field survey shall be considered as included within the cost for fabrication of materials affected.
- Details of machinery shall conform to the 2007 Standard Specifications for Movable Highway Bridges published by the American Association of State Highway and Transportation Officials, and all interim revisions. Welding shall be in accordance with AWS Bridge Welding Code AASHTO/AWS D1.5.M/D1.5: 2015
- Materials: The following items shall be of the materials specified and conformed to the following ASTM code provisions unless otherwise noted:
  - Weldment and Plates: ASTM A709 Grade 50.
  - Structural steel supports for mechanical components: ASTM A709 Grade 50.
- Provide ASTM A449 H.S. (High strength) turned bolts as required to connect machinery to structural steel. All H.S. turned bolts shall have an ANSI B4.1 LC6 clearance between the body of the bolt and the hole. All H.S. Fasteners shall have a hardened plain washer under the head and the nut. New ASTM A449 bolts shall not be torqued more than once. Replacement of turned bolts shall be of the same nominal size as existing except as shown. Bolt area and bolt holes shall be cleaned by a wire brush before new bolt installation.
- All H.S. fasteners shall have nuts conforming to ASTM A563. All nuts shall be secured by effective locks. If double nuts are used, both nuts shall be of the same thickness unless otherwise noted. All H.S. fasteners shall have a hardened plain washer under the head and the nut. All hardened steel plain washers shall conform to ASTM F436.
- Provide type 316 stainless steel shims for leveling and aligning all machinery components. Shims shall be 1/2 inch nominal thickness, unless otherwise specified, with adjustment variations and described in the Specifications. All shims to be full footprint of machinery component. U-shaped or slotted shims are not permitted.
- Machinery dimensions shown on drawings are dimensions after machining.
- All machinery support surfaces shall be flat, level, and parallel to each other and the mounting base plate. Thickness of mounting plates given are for after finishing. Machinery supports shall be machined after welding and stress relief to provide a uniform mounting surface.
- All dimensions for machine finished surfaces shall be held to 0.01 inch except as otherwise required, shown on the plans, by Specifications or as directed by the Engineer.
- Fits and finishes for machinery shall be as follows:

Surface	Fit (Per ANSI B4.1)	Finished (Microinches)
Machinery Parts in Fixed Contact	-	125
Shaft Journal	RC6	8
Journal Bushings	RC6	16
Solid Bushing in Base (To 1/4" Wall)	FN1	63
Solid Bushing in Base (Over 1/4" Wall)	FN2	63
Hubs on Shafts (To 2" Bore)	FN2	32
Hubs on Shafts (Over 2" Bore)	FN2	63
Split Bushing in Base	LC1	125
Sliding Bearings	RC6	32
Keys and Keyways	LC4	63
Shafts	-	63
Turned Bolts in Finished Holes	LC6	63

The above fits for cylindrical parts shall also apply to the dimensions of non-cylindrical parts.

**GENERAL MACHINERY NOTES (CONTINUED)**

- The Contractor shall perform all work with care such that any materials that are to remain in place, that are to be re-used, or that are to remain the property of the City of Chicago will not be damaged. If the Contractor damages any such materials, the damaged materials shall be repaired or replaced in a manner satisfactory to the Engineer, at no additional cost to the City.
- Where new steel is to be connected to existing steel, the existing surfaces shall be cleaned to bare steel of all paint, loose rust, and other foreign material, then, painted with one coat of primer prior to the installation of new material. Existing paint shall be cleaned from all areas within 2 inches of high strength bolts. The cost for this cleaning shall be included in the cost for installation of new material.
- The existing machinery components coating contains lead. The Contractor shall take appropriate precautions to deal with the present of lead on this project in accordance with the Mechanical Equipment Detailed Specification.
- The Contractor shall submit to the Engineer final design, drawings, and design calculations of temporary access, construction platforms, and temporary protective shields.
- All weldments shall be stress relieved after welding and before machining.
- The Contractor shall submit sketches showing the method of bringing up or lowering the materials. The Contractor shall propose locations of support or hanging of the lifting equipment. The Contractor shall obtain the Engineer's approval for these location and connection details.
- Drawings shall be fully dimensioned and shall show existing members, drawings, and calculations shall each bear the signature and raised, embossed seal of the designer, who shall be a Licensed Professional Engineer in the State of Illinois. Drawings shall conform to the requirements stated in the Specifications.
- The Contractor shall not disturb any existing utilities except as specifically defined within the scope of work for this Contract. Where work affects or is affected by the existing utilities, the work shall be coordinated with the Department.

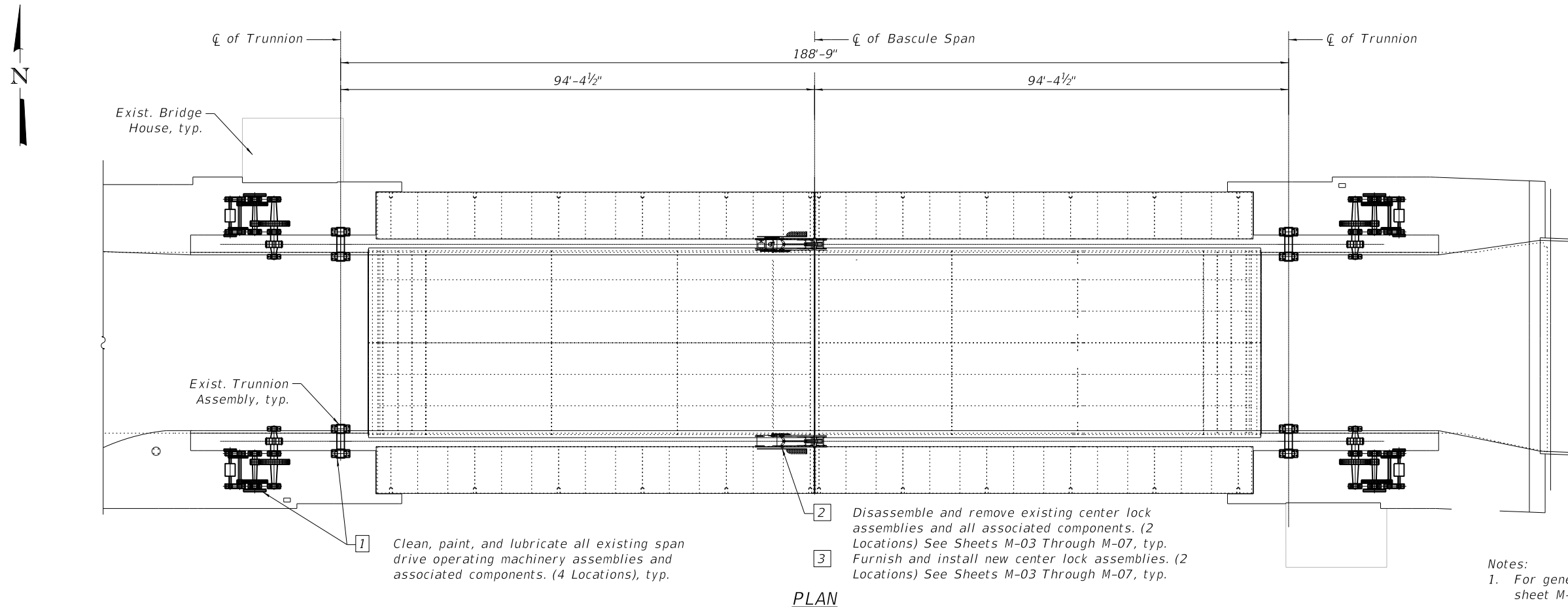
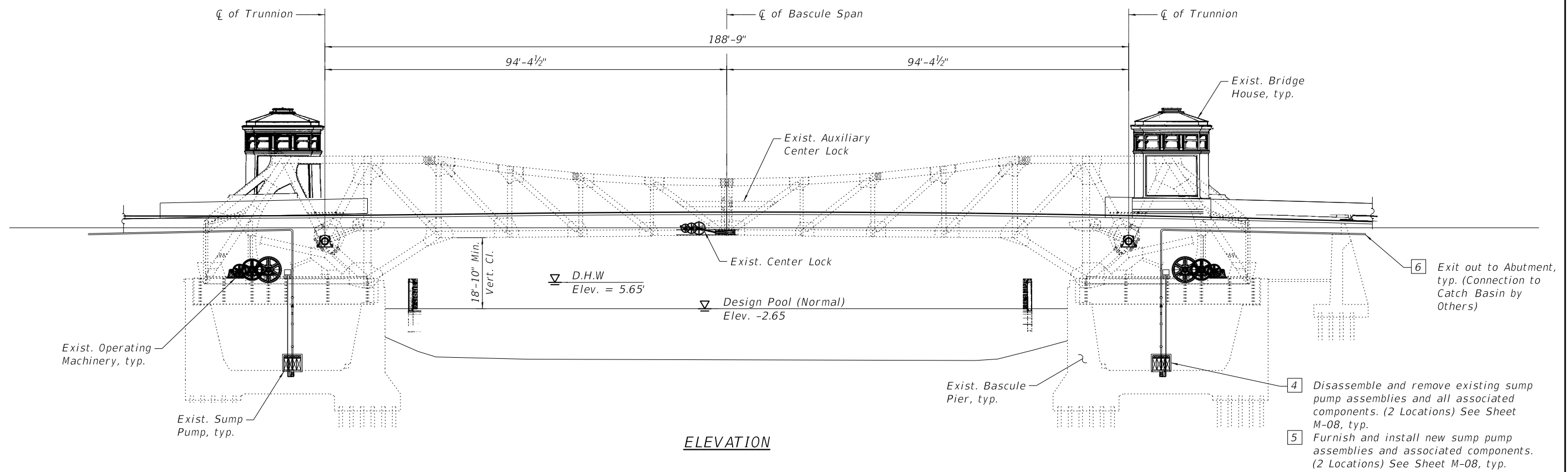
**PAY ITEM LIST AND SCOPE OF WORK**

- ITEM 156 CLEANING, PAINTING, AND LUBRICATING OPERATING MACHINERY ASSEMBLIES
- 1 Clean, paint, and lubricate all existing span drive operating machinery assemblies and associated components as accessibility allows and per direction from Commissioner.
- ITEM 157 REPLACEMENT OF CENTER LOCKS
- 2 Disassemble and remove existing center lock assemblies and all associated components.
- 3 Furnish and install new center lock assemblies.
- ITEM 158 FURNISH AND INSTALL NEW SUMP PUMPS
- 4 Disassemble and remove existing sump pump assemblies and all associated components.
- 5 Furnish and install new sump pump assemblies and associated components.
- 6 Connect to Drainage System, see special provisions. Drainage System to exit out back to abutment. Drainage System to be connected to catch basin (by others).

**INDEX OF MECHANICAL DRAWINGS**

SHEET NO.	SHEET TITLE
M-1	GENERAL MACHINERY NOTES
M-2	GENERAL PLAN AND ELEVATION
M-3	EXISTING CENTER LOCK DEMOLITION PLAN
M-4	NEW CENTER LOCK ASSEMBLY
M-5	NEW CENTER LOCK DETAILS 1
M-6	NEW CENTER LOCK DETAILS 2
M-7	NEW CENTER LOCK DETAILS 3
M-8	NEW SUMP PUMP ASSEMBLY

0166057-E1525-M001.dgn



Notes:  
 1. For general machinery notes, refer to sheet M-1.

0166057-E1525-M002.dgn

**wsp**  
 WSP USA Inc.  
 30 N. LASALLE STREET  
 SUITE 4200  
 CHICAGO, IL 60602  
 TEL: (312) 782-8150  
 FAX: (312) 782-1684

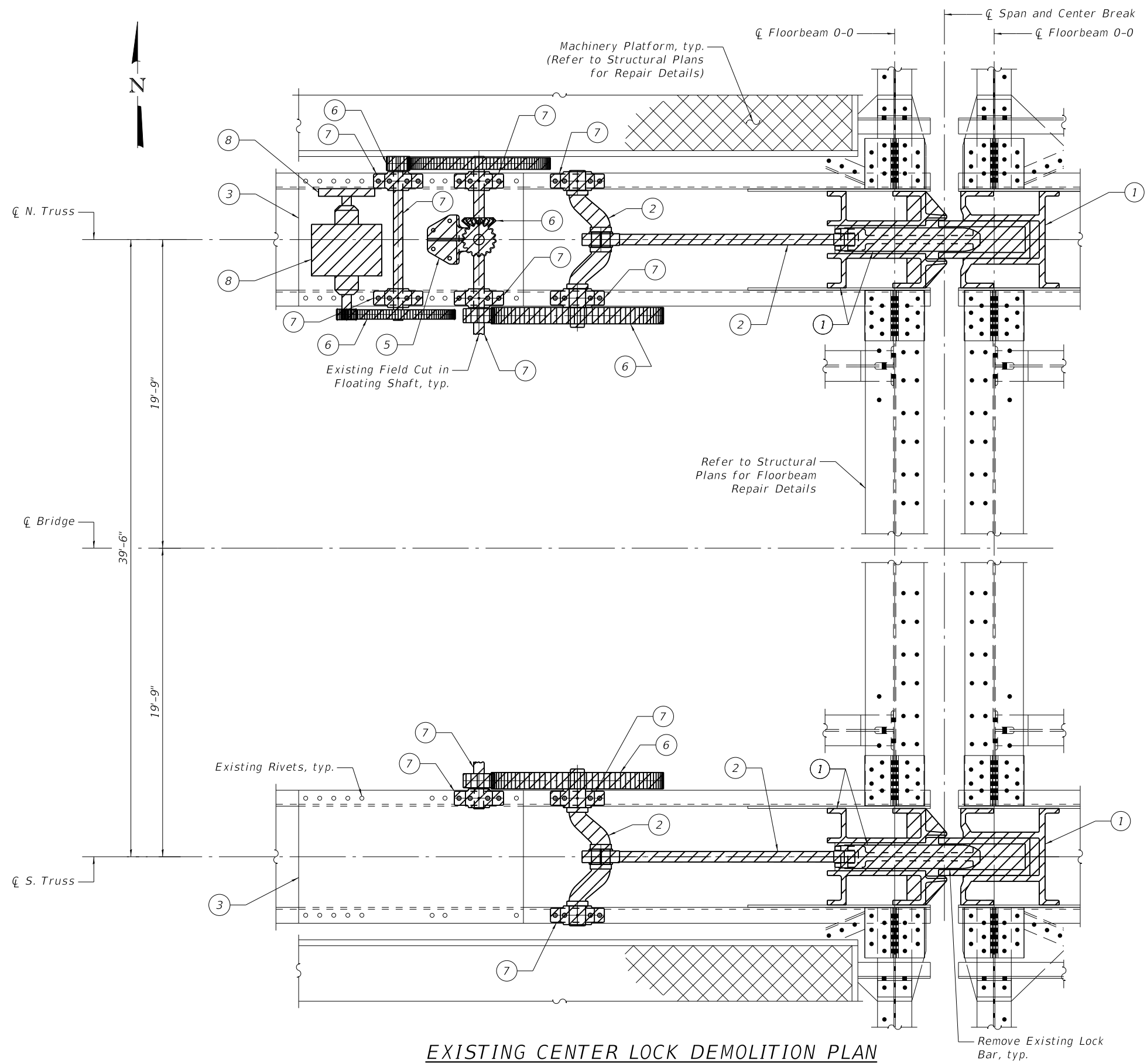
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PLOT SCALE =	N.T.S.	DRAWN -	RA	REVISED -	
PLOT DATE =	9/24/2020	CHECKED -	JB	REVISED -	

**CITY OF CHICAGO**  
 DEPARTMENT OF TRANSPORTATION  
 DIVISION OF ENGINEERING

**WEBSTER AVENUE BRIDGE OVER  
 THE NORTH BRANCH CHICAGO RIVER**

**GENERAL PLAN AND ELEVATION  
 (STRUCTURE NO. 016-6057)**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	<b>M-2</b>
CDOT PROJECT NO. E-1-525			204 OF 210



**SCOPE OF WORK FOR CENTER LOCK DEMOLITION:**

Remove and dispose of all existing center lock equipment and associated supports. Demolition shall include but not limited to the following.

- ① All lock bars, guides, and receiver assemblies and all associated components.
- ② All lock bar cranks, actuating linkages assemblies, and associated components.
- ③ All machinery supports.
- ④ All limit switch assemblies.
- ⑤ All manual drive mechanisms, associated components, and associated supports.
- ⑥ All spur gears, reducers, shafts, and keys.
- ⑦ All transverse line shafts, associated bearings, and couplings
- ⑧ All electrical motors, brakes, and all associated electrical components.
- ⑨ All lubrication lines and associated components.

**LEGEND:**

Remove and Discard

**NOTES:**

- 1. For general machinery notes, see sheet M-1.
- 2. Contractor shall field verify all dimensions.
- 3. All removals and disposals shall be in accordance with all city, state, and federal regulations.
- 4. Machinery equipment contains lubricating oil or grease. Removals and disposals shall be in accordance with all city, state, and federal regulations.
- 5. All existing lock bar guides and receivers are bolted and tack welded to the bascule truss. Guide and receiver removal will require breaking welds and unbolting the guides and receivers. All tack welds shall be ground smooth and flush with the surface of the bascule truss.
- 6. Existing structural support to remain unless otherwise noted.
- 7. Refer to the Mechanical Equipment Detailed Specifications for Demolition Requirements.

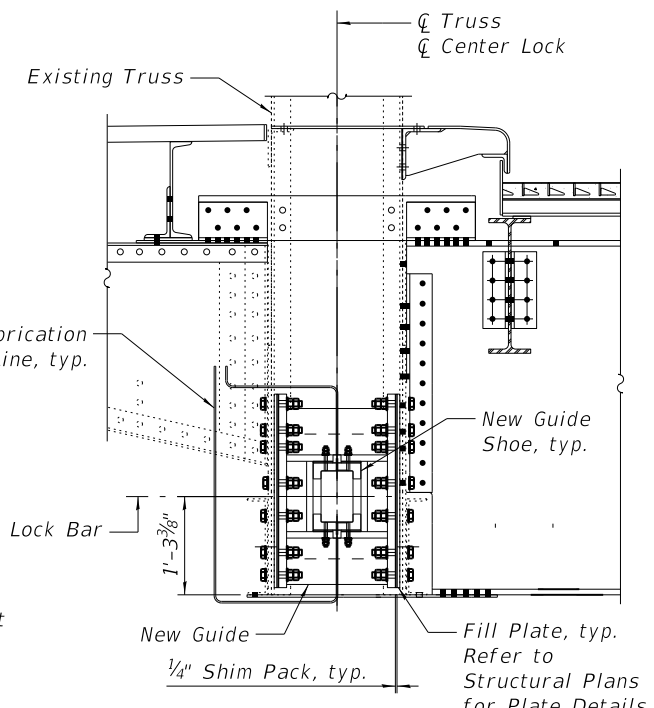
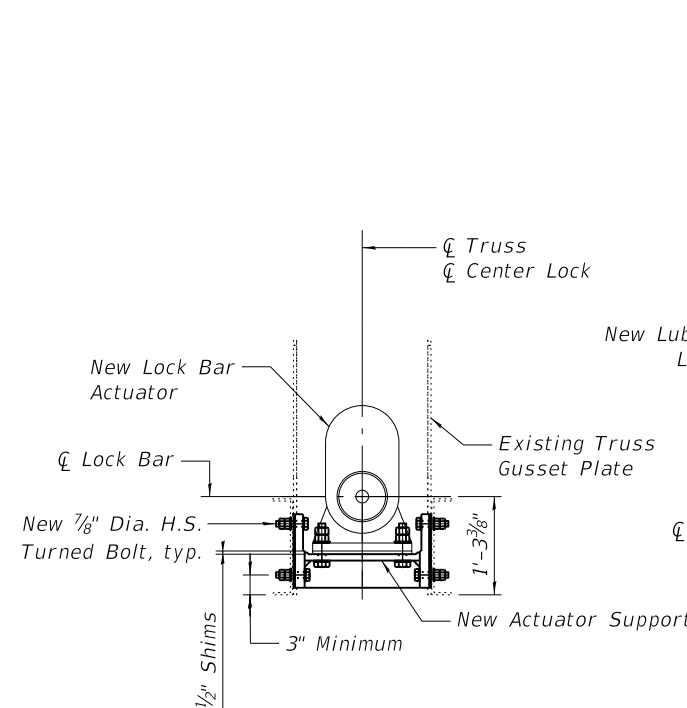
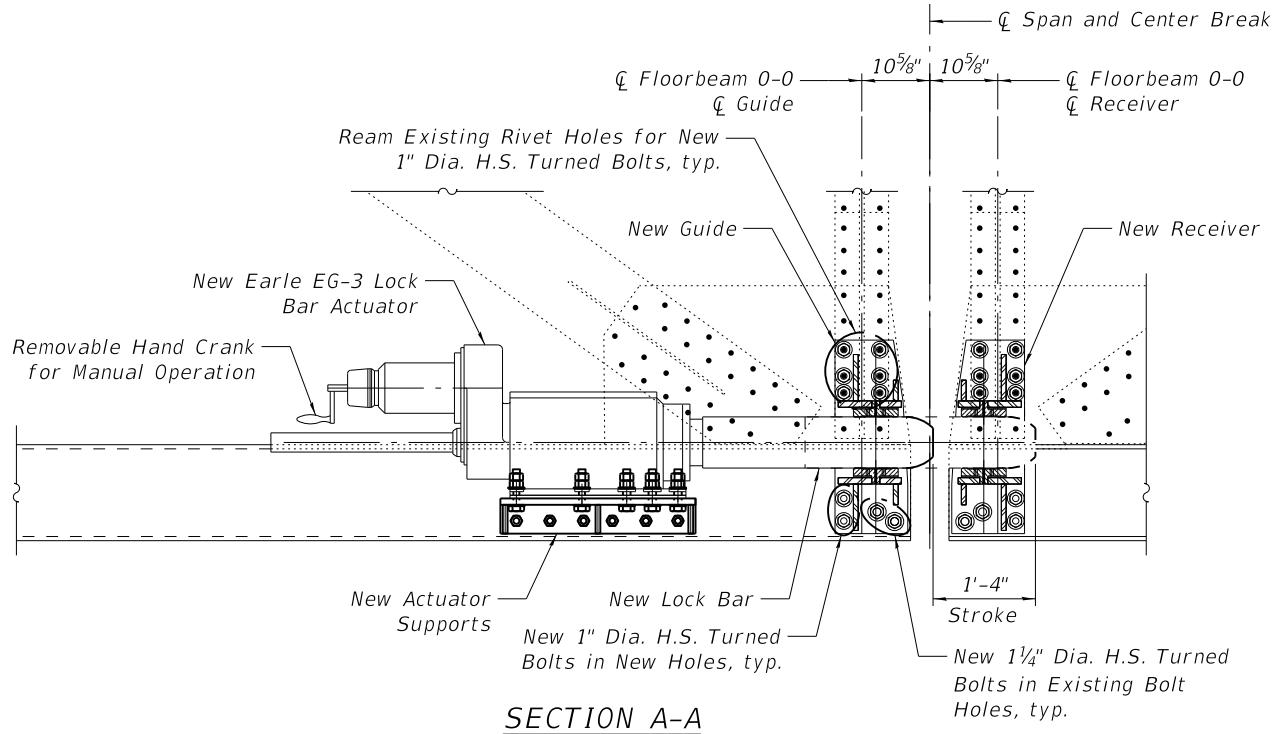
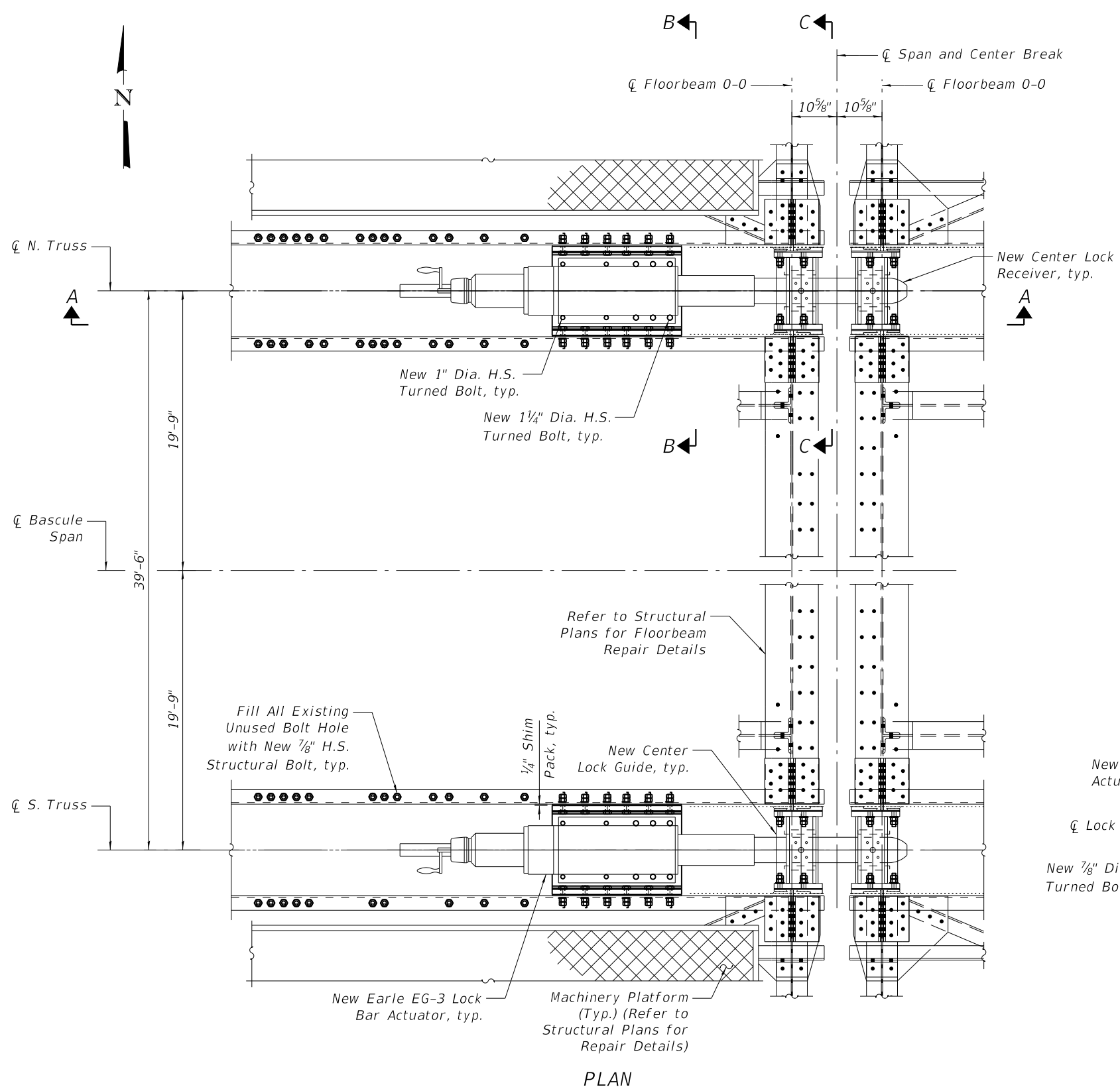
**REFERENCE DRAWINGS**

Drawing	Sheet No.
Center Lock Machinery	1660570229
Details of Lock and Lock Indicator	1660570230

**EXISTING CENTER LOCK DEMOLITION PLAN**

0166057-E1525-M003.dgn

	WSP USA Inc. 30 N. LASALLE STREET SUITE 4000 CHICAGO, IL 60602 TEL: (312) 782-8150 FAX: (312) 782-1684	USER NAME = RALGAZI	DESIGNED - RA	REVISED -	<b>CITY OF CHICAGO</b> DEPARTMENT OF TRANSPORTATION DIVISION OF ENGINEERING	<b>WEBSTER AVENUE BRIDGE OVER THE NORTH BRANCH CHICAGO RIVER</b>	<b>EXISTING CENTER LOCK DEMOLITION PLAN</b>  (STRUCTURE NO. 016-6057)	F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
	PLOT SCALE = N.T.S.	DRAWN - RA	REVISED -	1388				11-E1525-00-BR	COOK	M-3	
	PLOT DATE = 9/24/2020	CHECKED - JB	REVISED -				CDOT PROJECT NO. E-1-525				205 OF 210



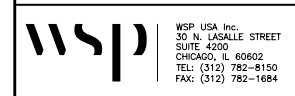
**NOTES:**

1. For general machinery notes, see sheet M-1.
2. Work this drawing with Sheets M-5 thru M-7.
3. Contractor shall ensure that all components are installed and aligned properly by furnishing shims needed to properly install and align the lock bar actuator, guide, and receivers for proper operation.
4. Adjustment of live load bearings and span lock guide and receiver may require multiple iterations of adjustment to achieve proper adjustment within allowable tolerances. Such adjustment shall be considered part of the work.
5. Live load reaction shoe adjustment must be completed before adjusting the lock bar receiver shoes.
6. Contractor shall field verify all dimensions.

**REFERENCE DRAWINGS**

Drawing: Center Lock Machinery Details of Lock and Lock Indicator  
 Sheet No.: 1660570229  
 1660570230

0166057-E1525-M004.dgn



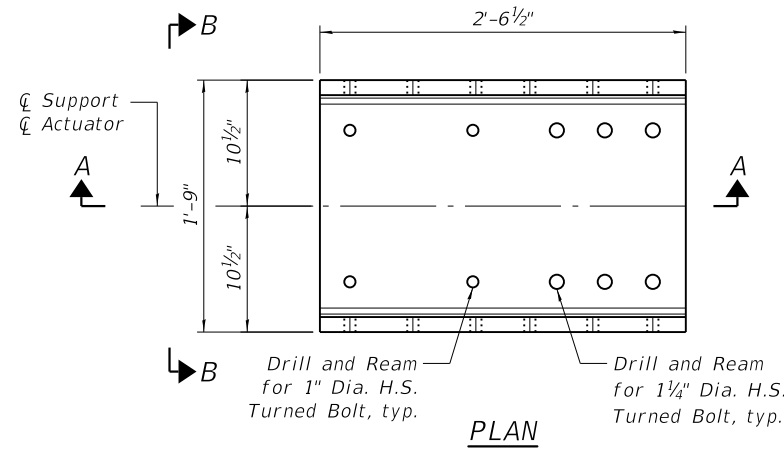
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PLOT SCALE = N.T.S.	CHECKED - JB	REVISED -
PLOT DATE = 9/24/2020	DRAWN - RA	REVISED -
	CHECKED - JB	REVISED -

**CITY OF CHICAGO**  
 DEPARTMENT OF TRANSPORTATION  
 DIVISION OF ENGINEERING

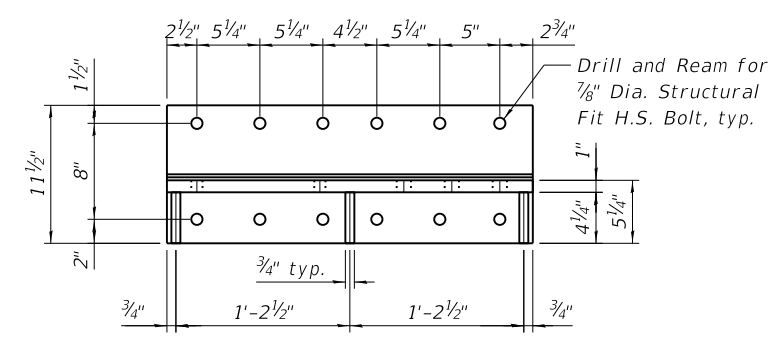
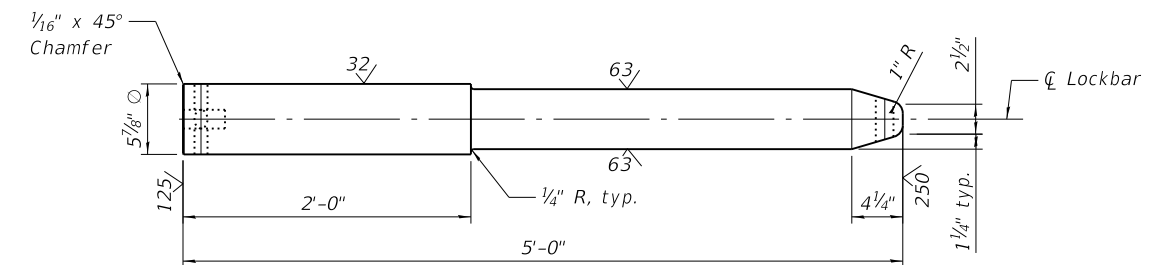
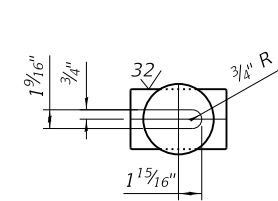
**WEBSTER AVENUE BRIDGE OVER THE NORTH BRANCH CHICAGO RIVER**

**NEW CENTER LOCK ASSEMBLY**  
 (STRUCTURE NO. 016-6057)

F.A.U. RTE. 1388	SECTION 11-E1525-00-BR	COUNTY COOK	SHEET NO. M-4
CDOT PROJECT NO. E-1-525			206 OF 210

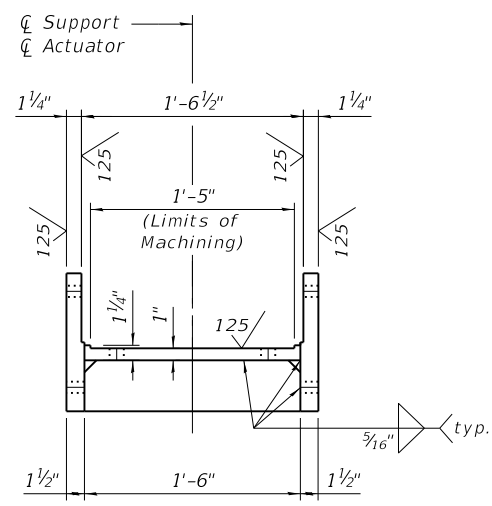


PLAN

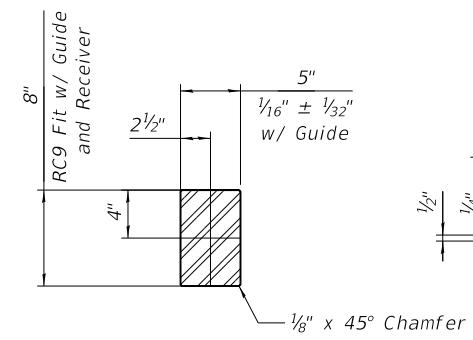


SECTION A-A

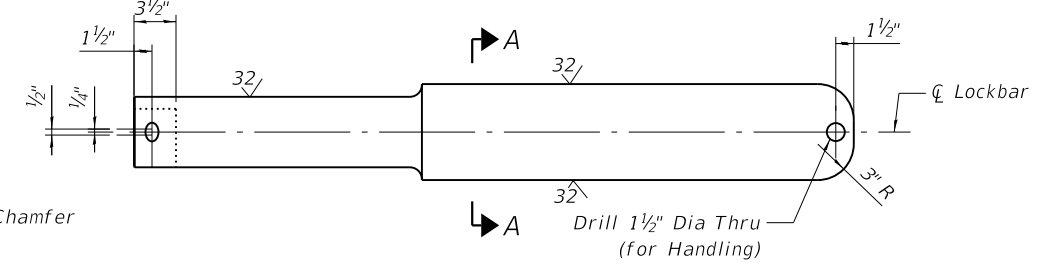
NEW ACTUATOR SUPPORT  
Material: ASTM A709, Grade 50



VIEW B-B



SECTION A-A



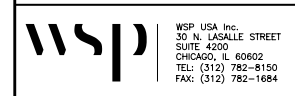
NEW LOCKBAR

Material: ASTM A668, Class M Forging  
Quenched and Tempered to 290-320 BHN.

NOTES:

1. For general machinery notes, see sheet M-1.
2. Work this drawing with sheets M-4 thru M-7.
3. Contractor shall field verify all dimensions.
4. Coat machined surfaces of lock bar that does not contact the guide and receiver with anti-corrosion compound after installation.

0166057-E1525-M005.dgn



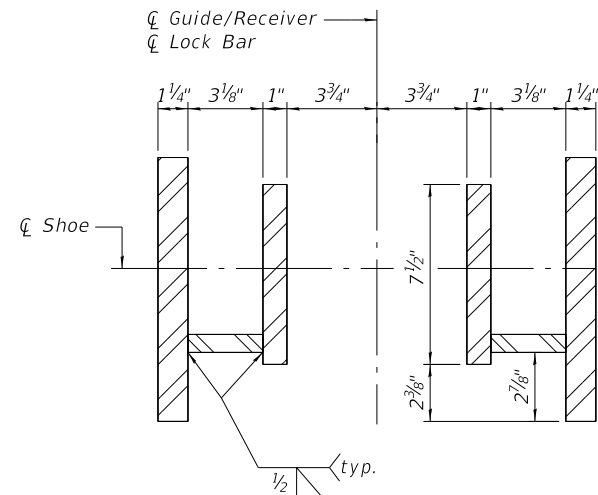
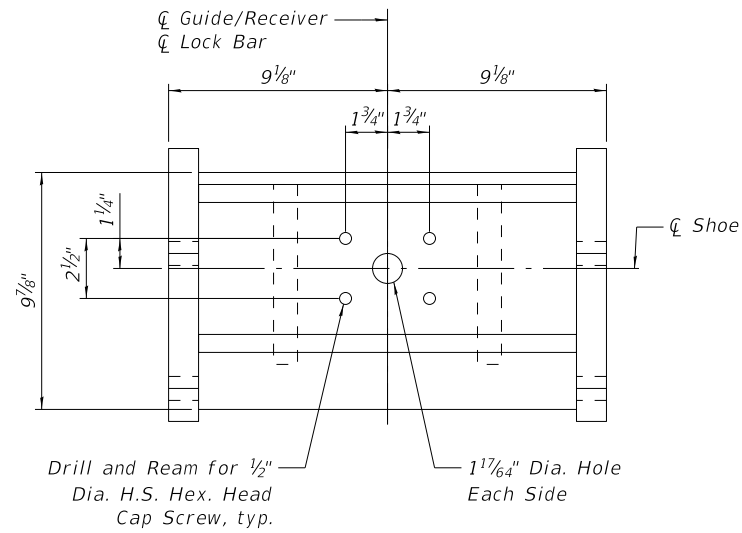
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PLOT SCALE = N.T.S.	CHECKED - JB	REVISED -
PLOT DATE = 9/24/2020	DRAWN - RA	REVISED -
	CHECKED - JB	REVISED -

**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER

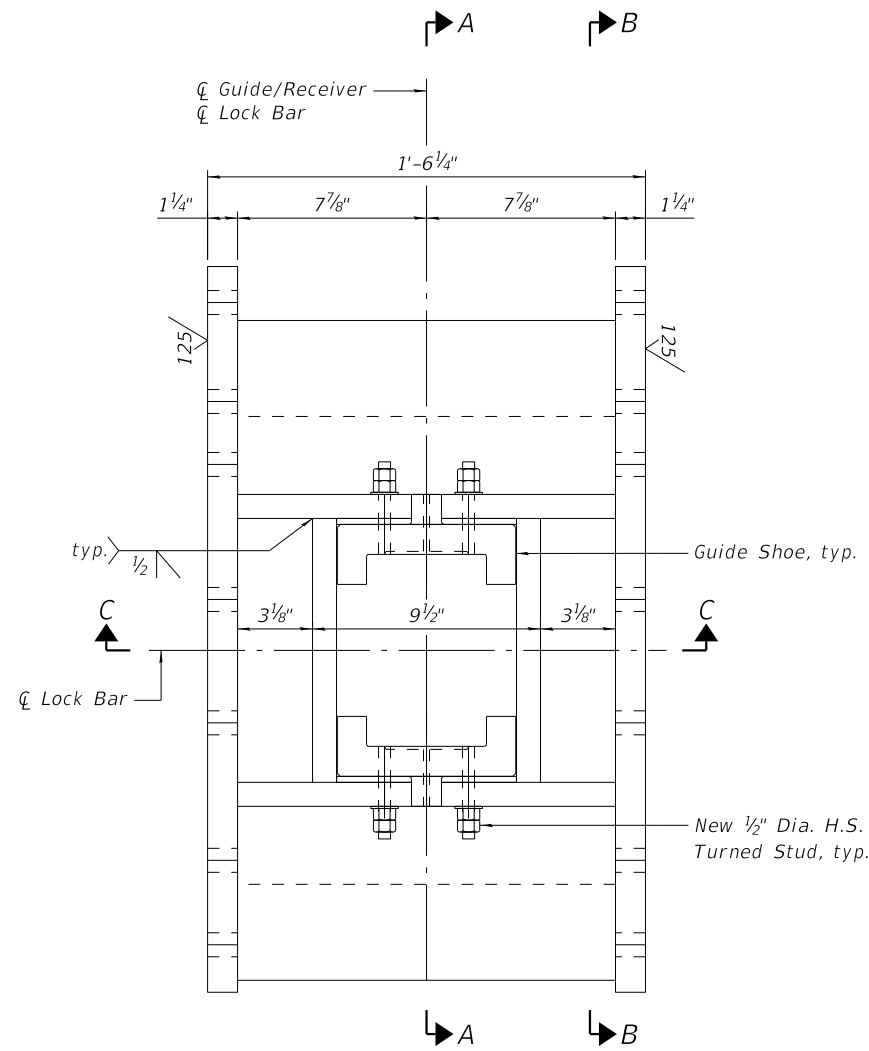
NEW CENTER LOCK DETAILS 1  
(STRUCTURE NO. 016-6057)

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	M-5
CDOT PROJECT NO. E-1-525			207 OF 210



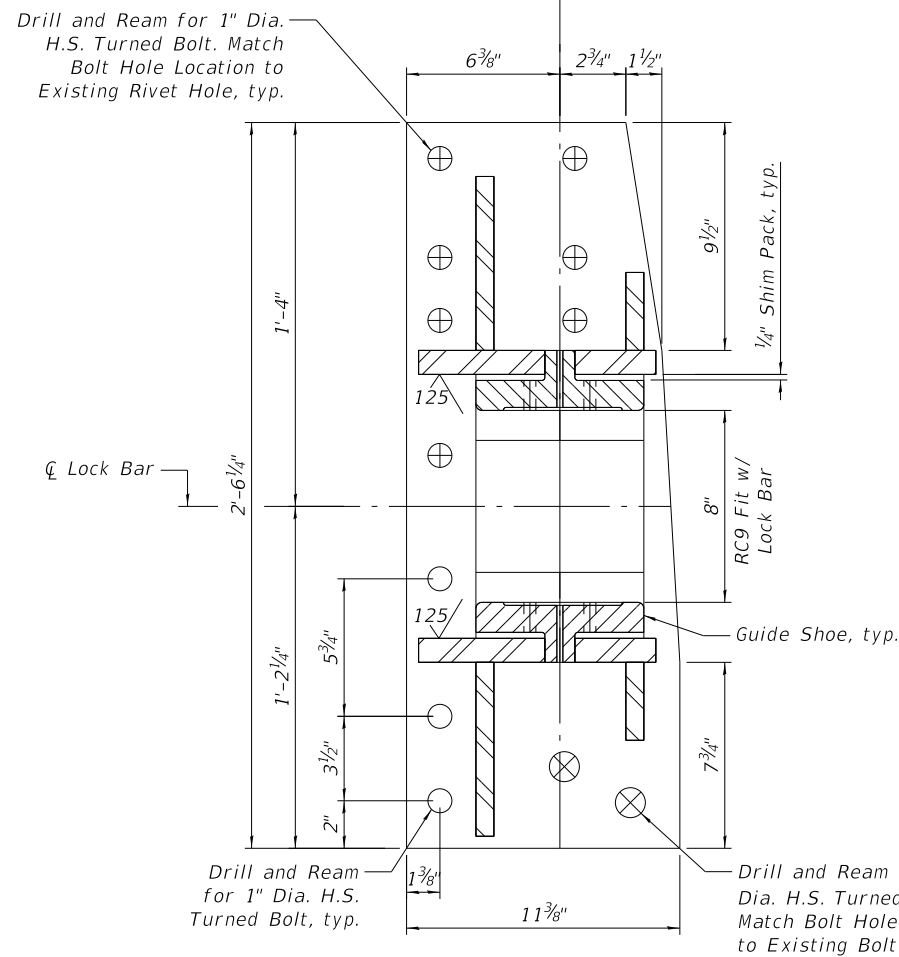
SECTION C-C

- NOTES:**
1. For general machinery notes, see sheet M-1.
  2. Work this drawing with sheets M-4 thru M-7.
  3. All welds not shown shall be 1/2" continuous fillet weld with no open joints. Stress relieve after welding.
  4. Stress relieve all weldments prior to machining.
  5. Contractor shall field verify all dimensions.

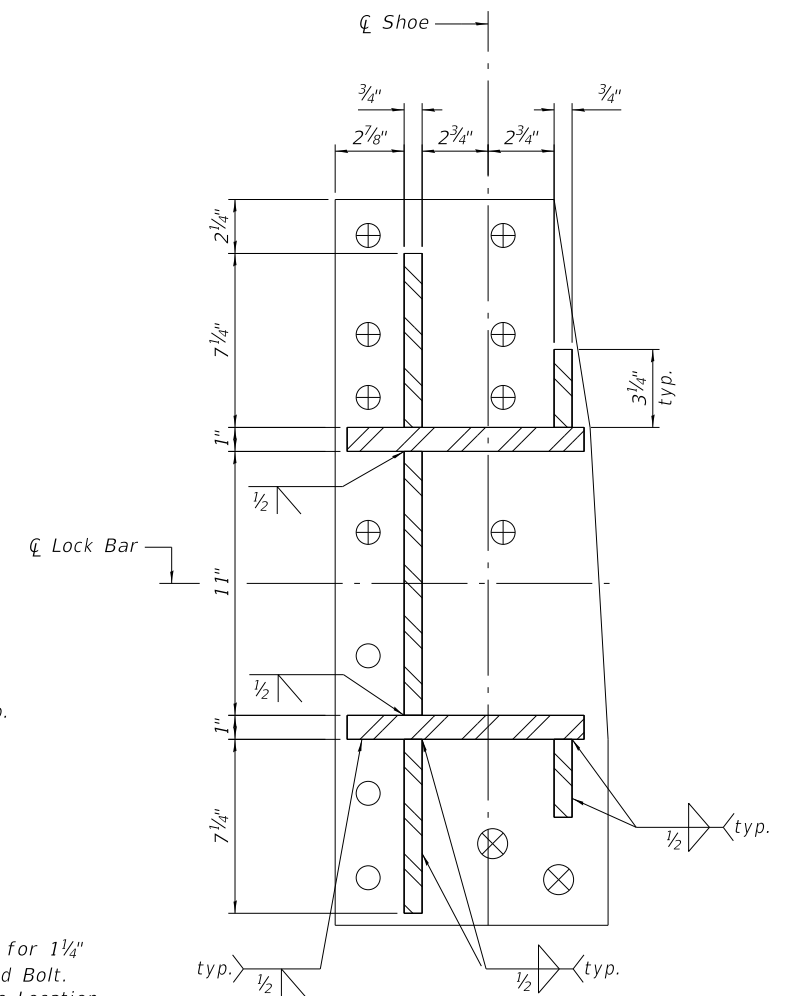


CENTER LOCK GUIDE AND RECEIVER

Material: ASTM A709 Gr. 50  
Guide Shown, Receiver Similar

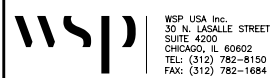


SECTION A-A



SECTION B-B

0166057-E1525-M06.dgn



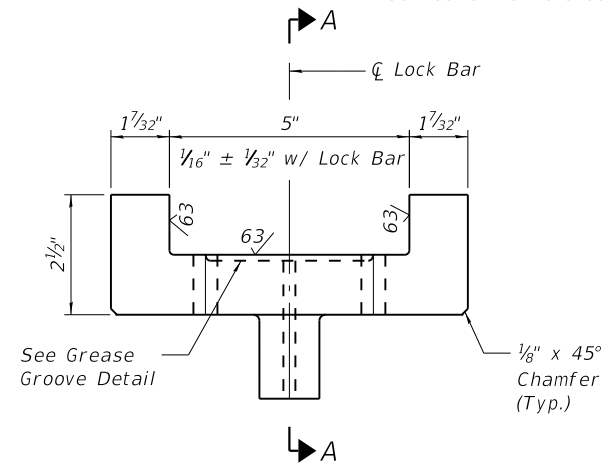
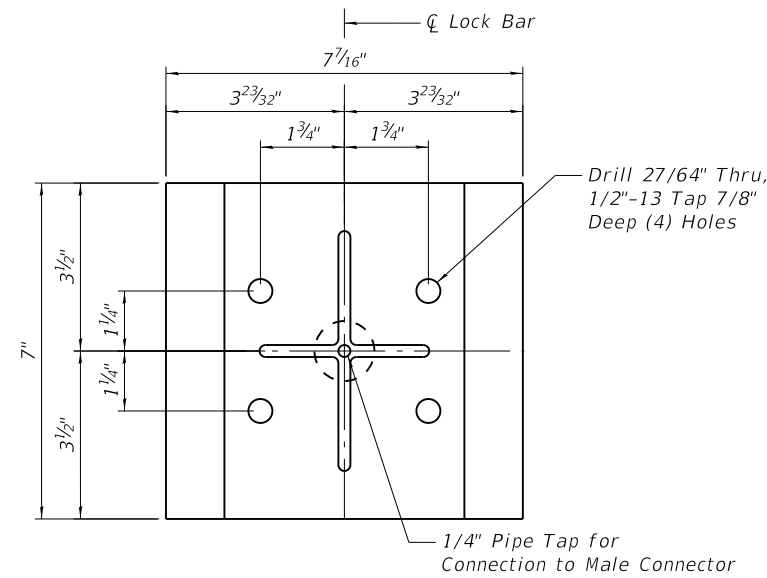
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PLOT SCALE = N.T.S.	CHECKED - JB	REVISED -
PLOT DATE = 9/24/2020	DRAWN - RA	REVISED -
	CHECKED - JB	REVISED -

**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

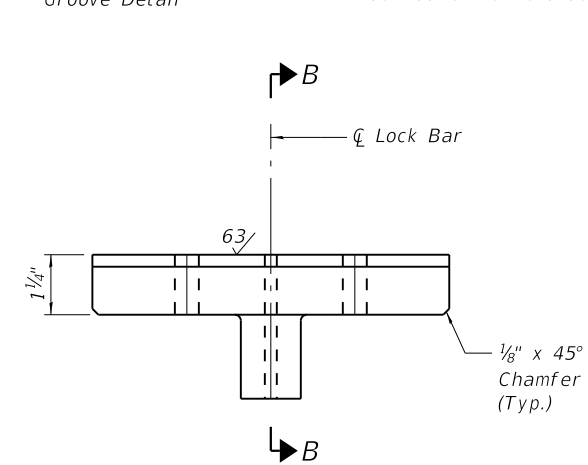
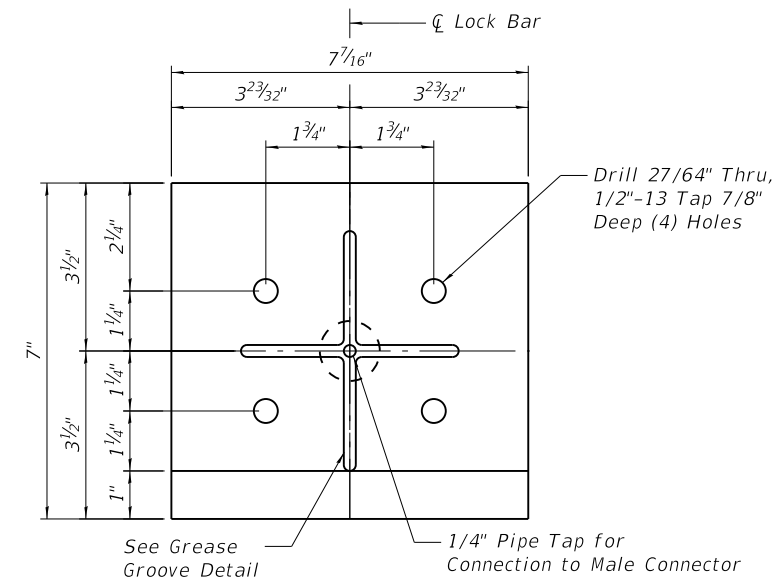
WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER

NEW CENTER LOCK DETAILS 2  
(STRUCTURE NO. 016-6057)

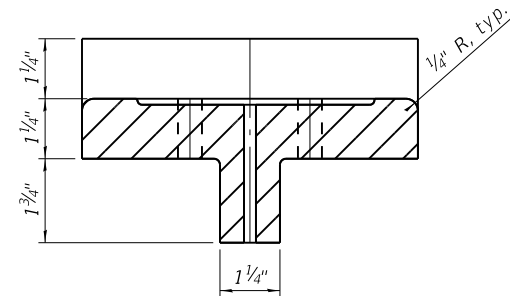
F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	M-6
CDOT PROJECT NO. E-1-525			208 OF 210



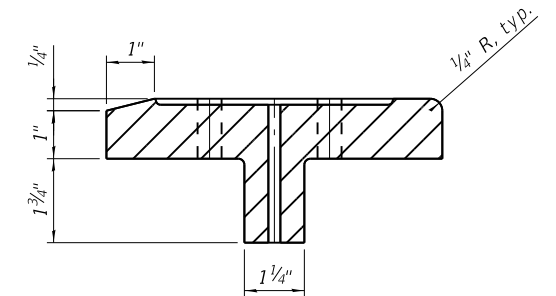
**GUIDE SHOE**  
Material: ASTM B22 C86300



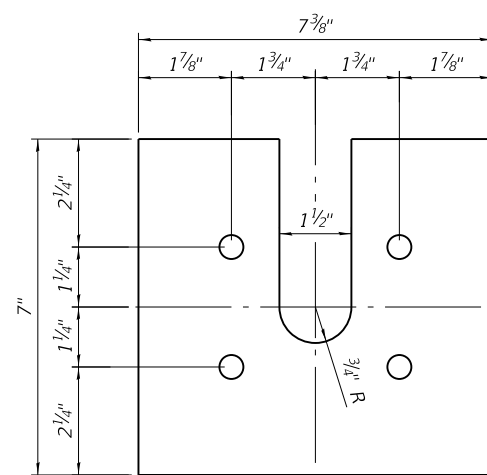
**RECEIVER SHOE**  
Material: ASTM B22 C86300



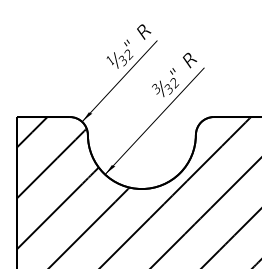
**SECTION A-A**



**SECTION B-B**



**SHIM PACK DETAIL**  
(See Note 4)



**GREASE GROOVE DETAIL**

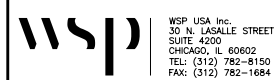
**TABLE OF CENTER LOCK COMPONENTS**

Item	Quantity
Earle EG-3 Linear Actuator w/ Manual Hand Crank, 5 HP Motor, 1'-6" Stroke Manufactured by Steward Machine Co. (Or Approved Equal)	2
Lock Bar	2
Guide	2
Receiver	2
Actuator Support	2
Guide Shoe	4
Receiver Shoe	4

**NOTES**

1. For general machinery notes, see sheet M-1.
2. Work this drawing with sheets M-4 thru M-7.
3. Contractor shall field verify all dimensions.
4. Refer to the Mechanical Equipment Detailed Specifications for shim pack material and thickness variation requirements.

0166057-E1525-M007.dgn



WSP USA Inc.  
30 N. LASALLE STREET  
SUITE 4000  
CHICAGO, IL 60602  
TEL: (312) 782-8150  
FAX: (312) 782-1684

USER NAME = RALGAZI  
DESIGNED - RA  
CHECKED - JB  
PLOT SCALE = N.T.S.  
DRAWN - RA  
PLOT DATE = 9/24/2020  
CHECKED - JB

REVISED -  
REVISED -  
REVISED -  
REVISED -

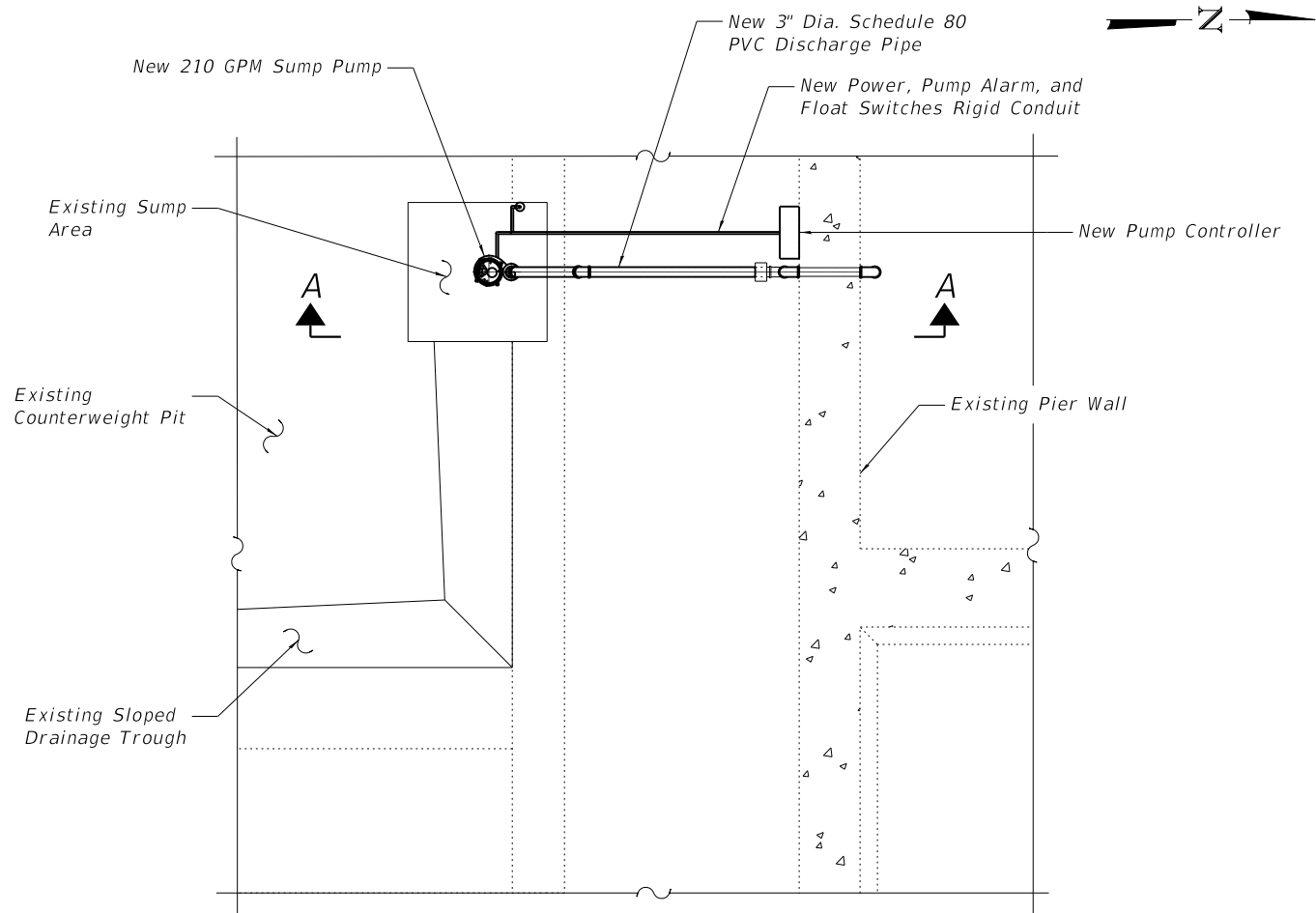
**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

**WEBSTER AVENUE BRIDGE OVER  
THE NORTH BRANCH CHICAGO RIVER**

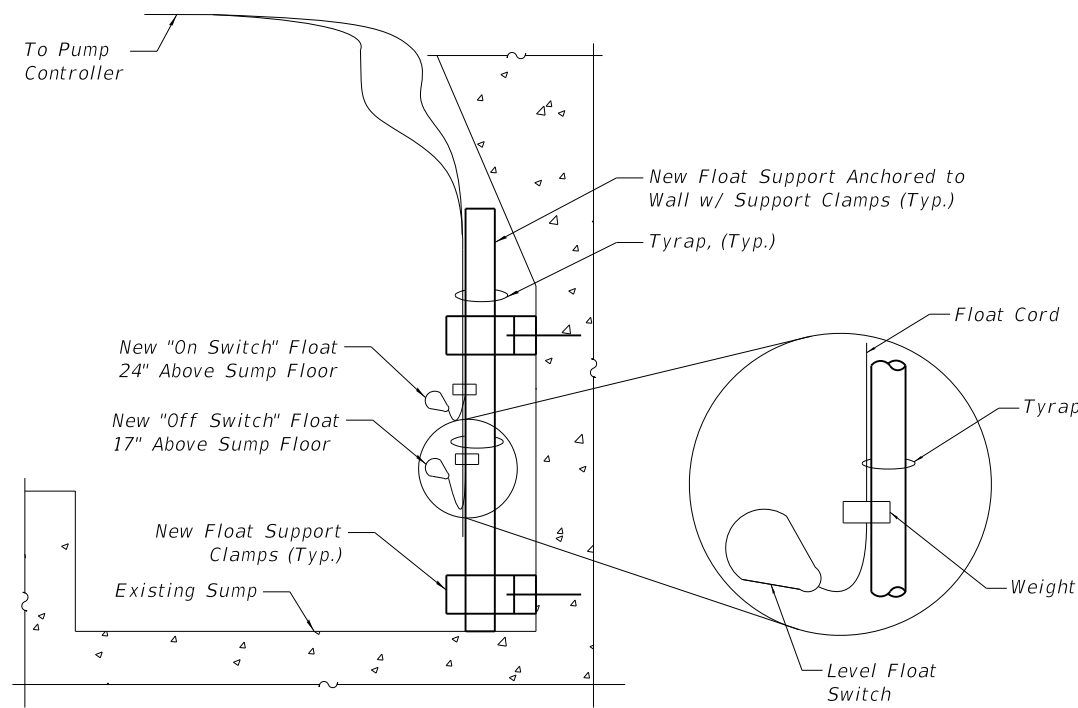
**NEW CENTER LOCK DETAILS 3  
(STRUCTURE NO. 016-6057)**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	M-7
CDOT PROJECT NO. E-1-525			209 OF 210

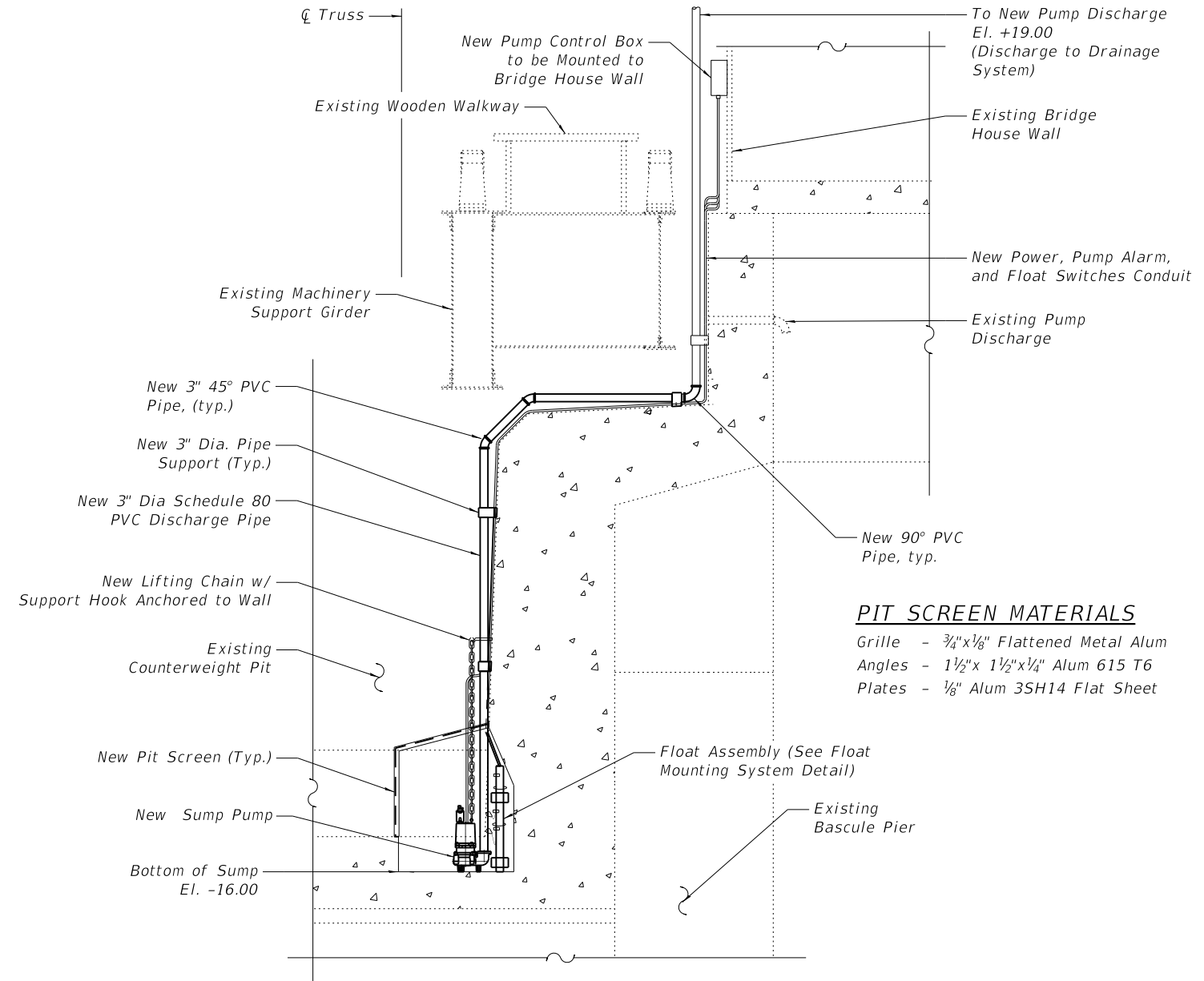




**PLAN**  
(West Pier Shown, East Pier Similar)



**FLOAT MOUNTING SYSTEM DETAIL**



**SECTION A-A**  
Typical for 2

**PIT SCREEN MATERIALS**  
 Grille - 3/4"x1/8" Flattened Metal Alum  
 Angles - 1 1/2"x 1 1/2"x 1/4" Alum 615 T6  
 Plates - 1/8" Alum 3SH14 Flat Sheet

**PUMP SCHEDULE**

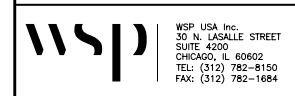
Location	Flow (GPM)	Voltage	Phase	H.P.	RPM	Type	MFG., Model*
East Pier	210	230	1	2	3450	Submersible, Non-Clog	Liberty Pumps LEH202M3
West Pier	210	230	1	2	3450	Submersible, Non-Clog	Liberty Pumps LEH202M3

\* Or Approved Equal

**NOTES**

- For general machinery notes, see Sheet M-1
- Contractor shall field verify all dimensions before beginning fabrication and installation. All field measurements shall be indicated on the shop drawings.
- See the Mechanical Equipment Detailed Specifications for sump pump requirements.
- The materials for all anchor bolts, nuts, washers, and lifting chain shall be 316 stainless steel.
- All float switches shall be tied separately to support pipe.
- All support clamps, pipe clamps, and bracket holders for all discharge and float mounting pieces shall be stainless steel.
- Provide all support clamps, bracket holders as necessary.
- Provide openings in pit screen for all float power and float cords, discharge pipes, float support pipes, and lifting chain.
- Ensure all new piping and conduit do not interfere with the bascule span in any position.

0166057-E1525-M008.dgn



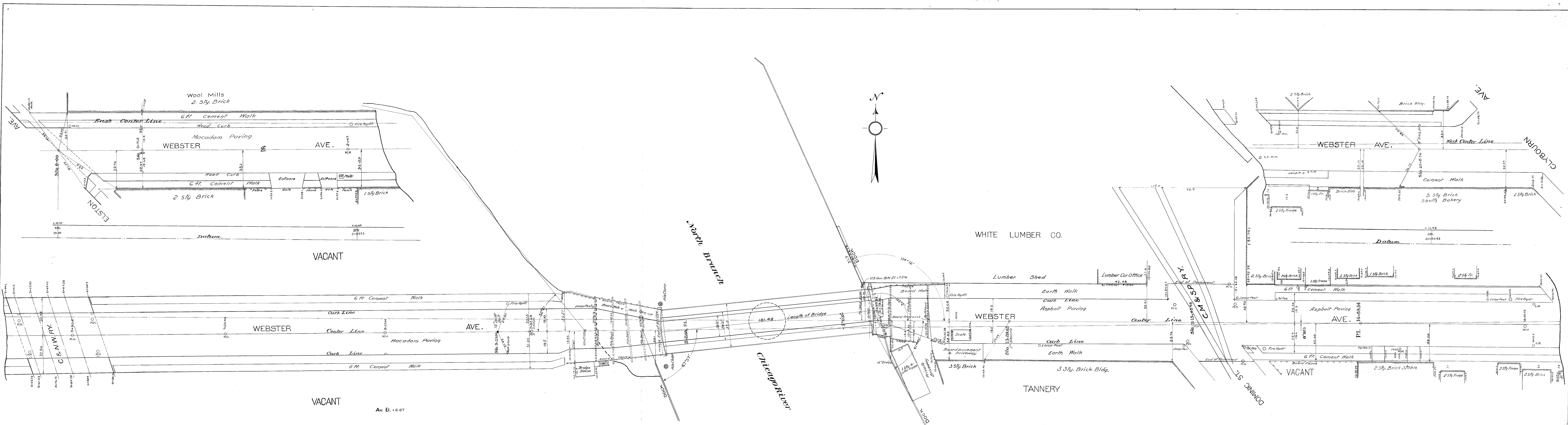
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PLOT DATE = 10/2/2020	DRAWN - DP	REVISED -
	CHECKED - RA	REVISED -

**CITY OF CHICAGO**  
 DEPARTMENT OF TRANSPORTATION  
 DIVISION OF ENGINEERING

**WEBSTER AVENUE BRIDGE OVER  
 THE NORTH BRANCH CHICAGO RIVER**

**NEW SUMP PUMP ASSEMBLY  
 (STRUCTURE NO. 016-6057)**

F.A.U. RTE.	SECTION	COUNTY	SHEET NO.
1388	11-E1525-00-BR	COOK	M-8
CDOT PROJECT NO. E-1-525			210 OF 210



PLAN



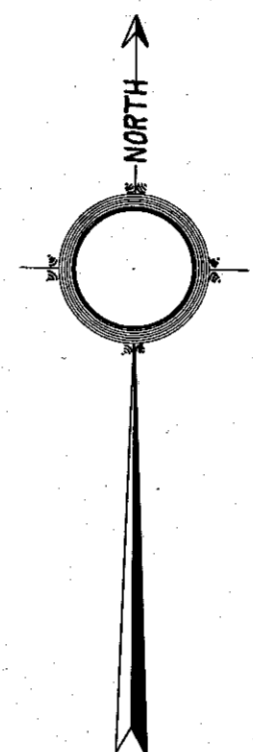
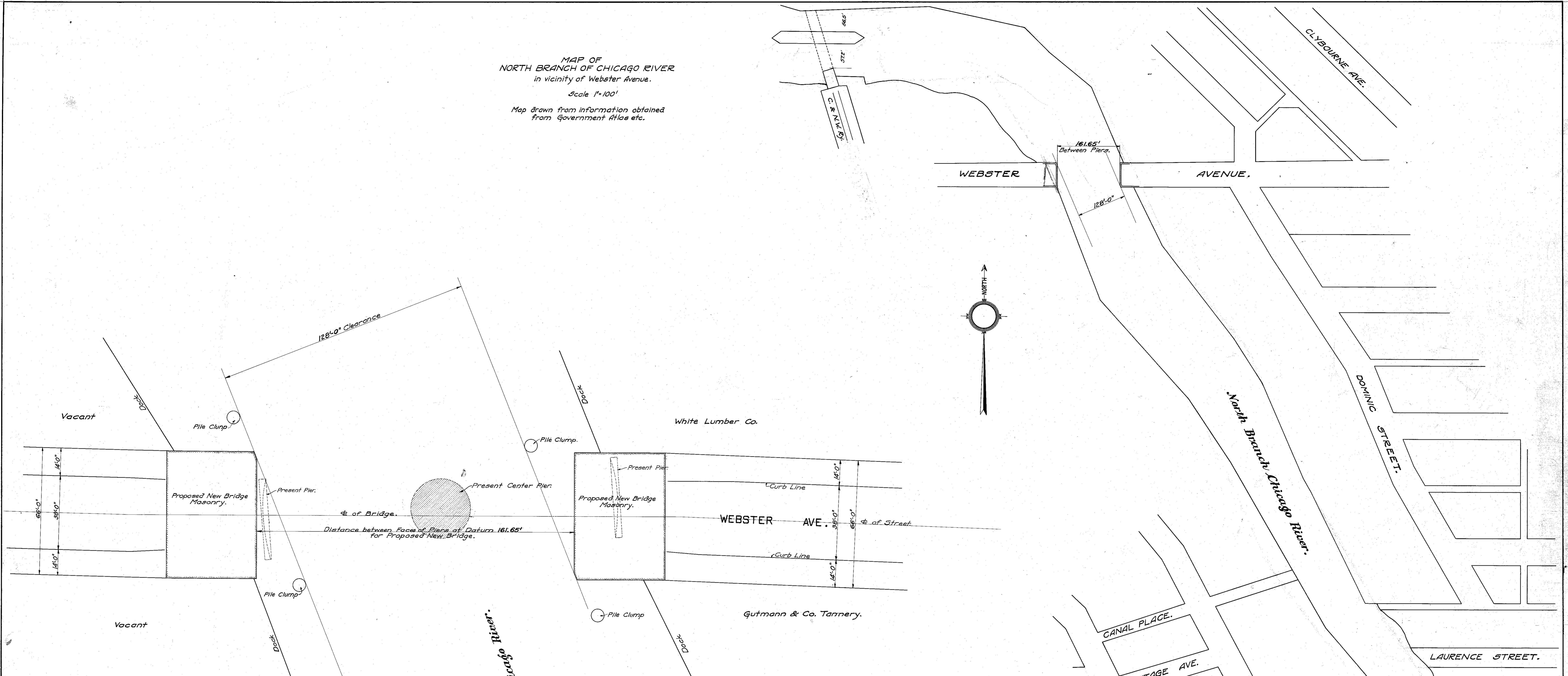
ELEVATION

CITY OF CHICAGO  
 DEPARTMENT OF PUBLIC WORKS  
 BUREAU OF ENGINEERING  
 DIVISION OF BRIDGES AND HARBOUR  
**SURVEY OF  
 WEBSTER AVE. BRIDGE**  
 Over the  
 NORTH BRANCH CHICAGO RIVER  
 Scale 20 ft. to 1 inch July, 1913.  
 Survey made by Johnson, 1908.  
 Revised by Heinrich, 1912.  
 Checked by McKay 3-11-1913.

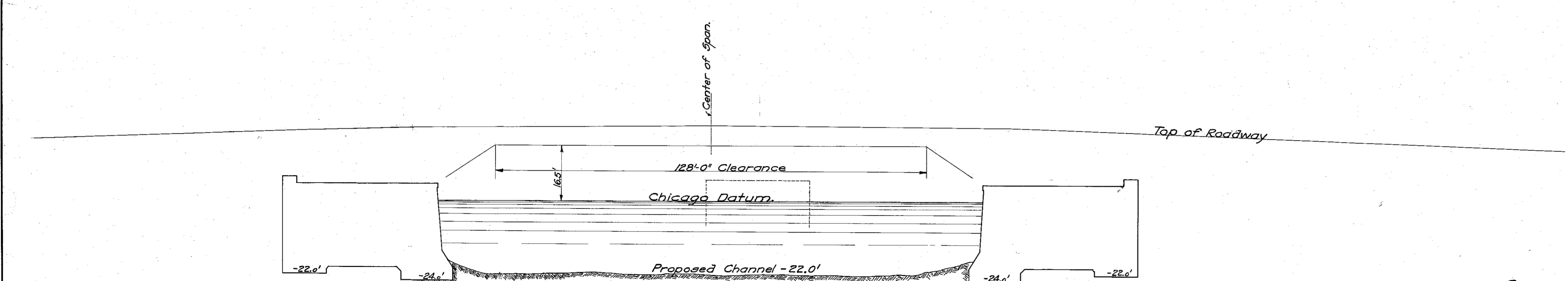
Drawing No 420  
 FILE No 13-6A-1

166057000?

MAP OF  
NORTH BRANCH OF CHICAGO RIVER  
in vicinity of Webster Avenue.  
Scale 1"=100'  
Map drawn from information obtained  
from Government Atlas etc.



Plan.



Profile.

Corrected: *Alexander von Biele, Jr.*  
Engineer of Bridge Design  
Approved: *Alonso H. ...*  
Engineer in Charge of Bridges & Harbor  
Approved: *John ...*  
City Engineer  
Approved: *L. E. McGinnis*  
Commissioner of Public Works

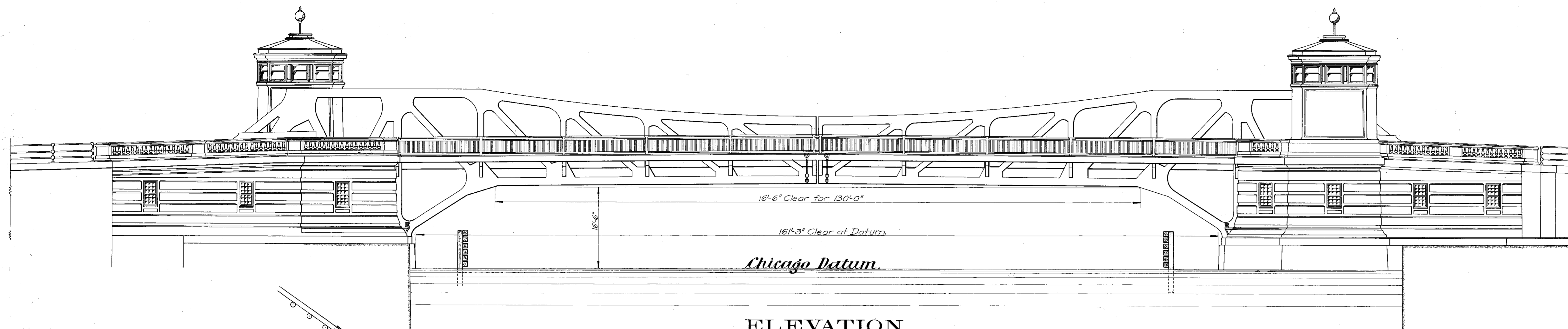
City of Chicago,  
Department of Public Works,  
Bureau of Engineering,  
Division of Bridges and Harbor.  
Plan showing location and clearance  
of proposed Bascule Bridge  
over the North Branch of Chicago River at

—WEBSTER AVE.—

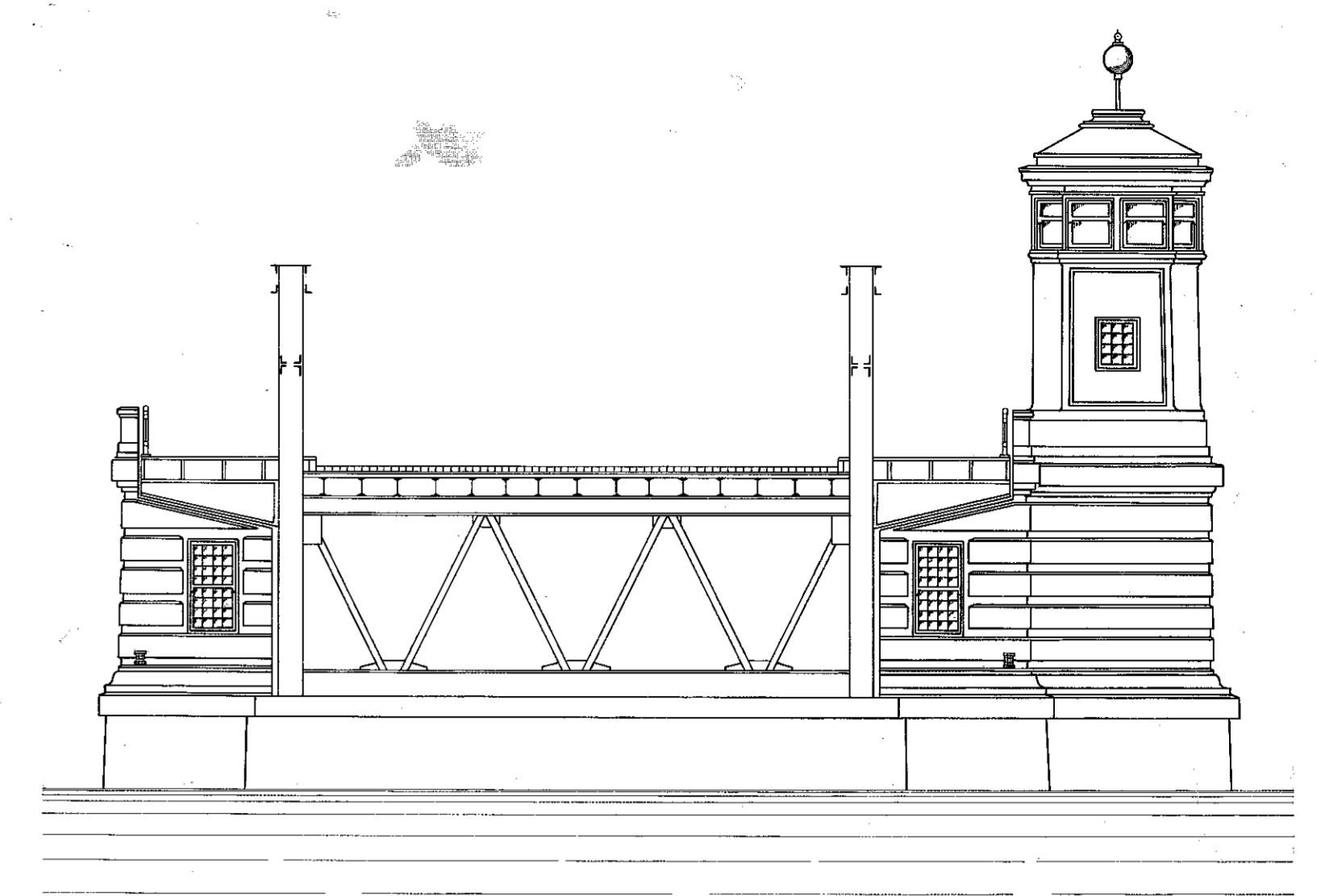
Scale: 20' & 100' 1" = 1" August 1913.  
DRAWING NO. 433.  
FILE NO. 11-6A-2

1660570003

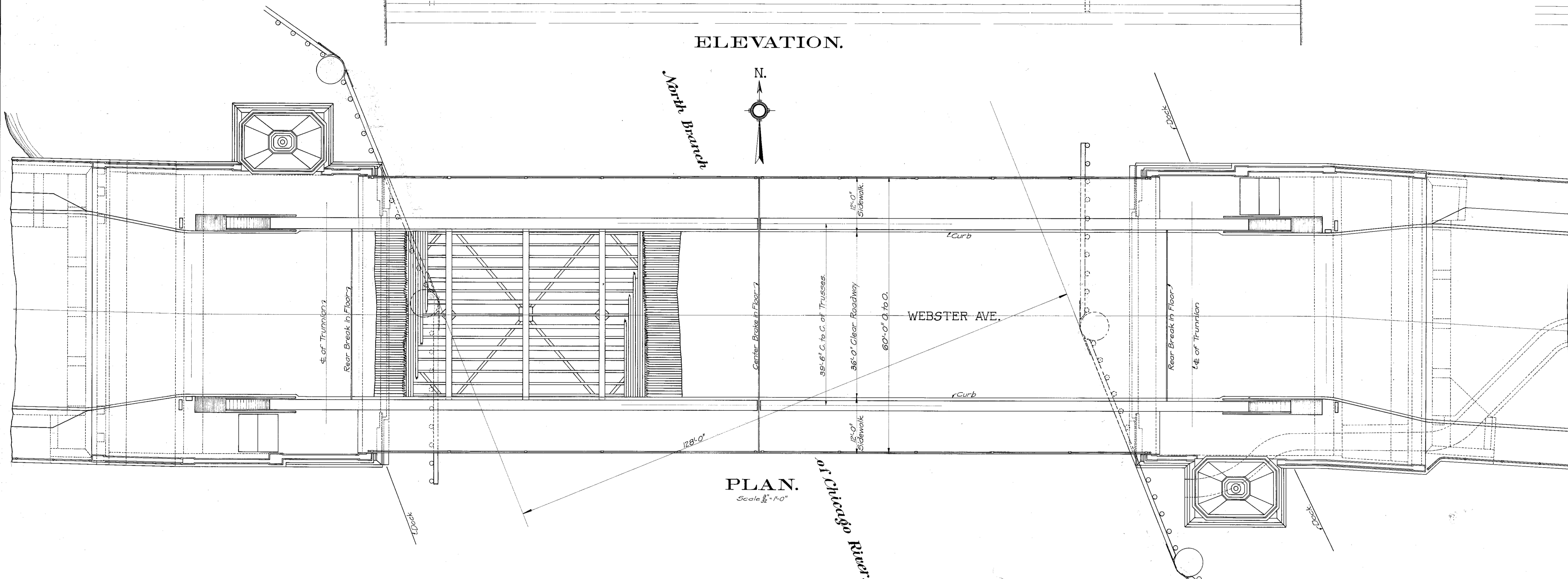
SIZE 27" x 41"



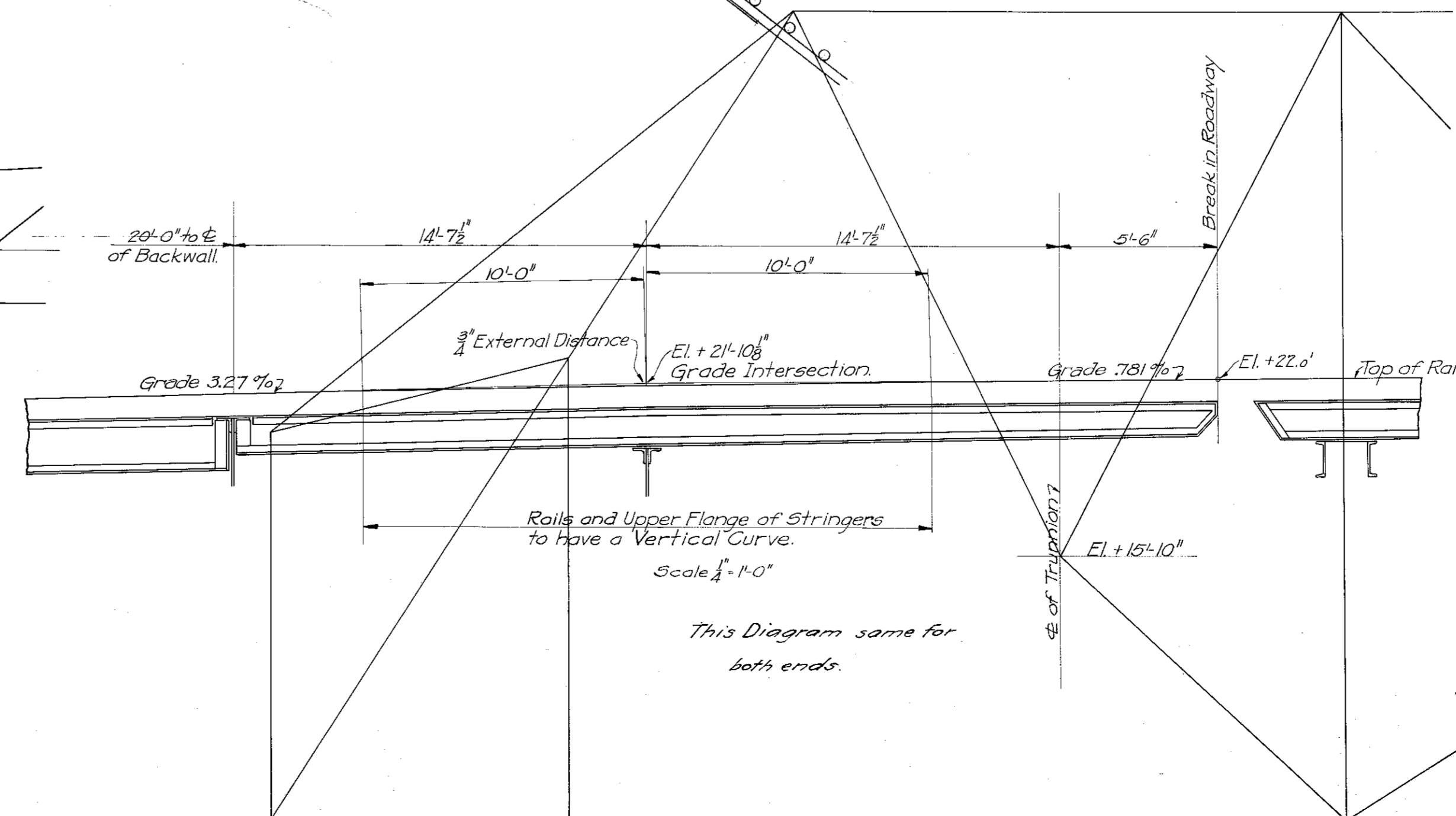
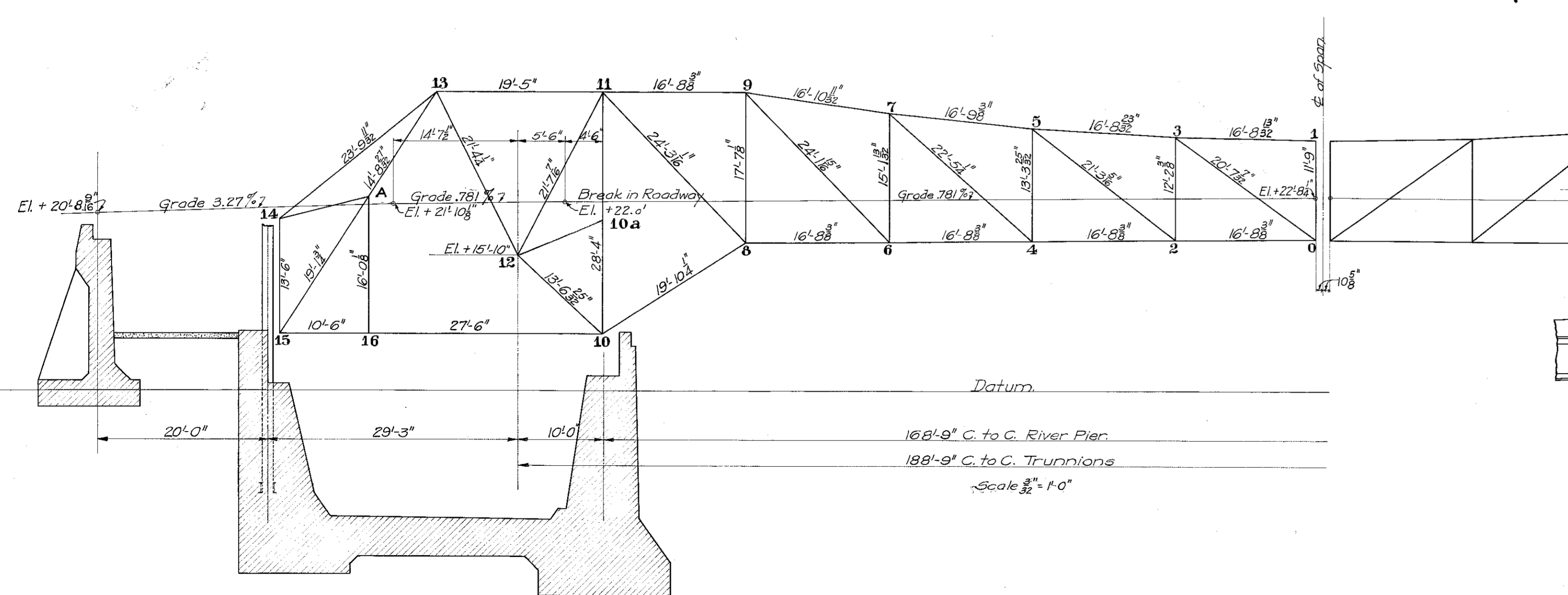
ELEVATION.



Sectional Elevation.



PLAN.  
Scale 1/8" = 1'-0"



Corrected by *High E. Young*  
 Bridge Designing Engineer  
 Approved *Alexander von Seltz*  
 Engineer of Bridge Design  
 Approved *Thos. G. Wallcut*  
 Engineer of Bridges and Harbors  
 Approved *John Peterson*  
 City Engineer  
 Approved *Bureau*  
 Commissioner of Public Works

CITY OF CHICAGO  
 DEPARTMENT OF PUBLIC WORKS  
 BUREAU OF ENGINEERING  
 DIVISION OF BRIDGES AND HARBOR  
**DOUBLE LEAF TRUNNION BASCULE BRIDGE**  
 AT  
**WEBSTER AVENUE**  
 OVER  
 NORTH BRANCH OF THE CHICAGO RIVER  
 SUB & SUPERSTRUCTURE  
 General Plan

Scale: 1/8" = 1 ft. April, 1914.

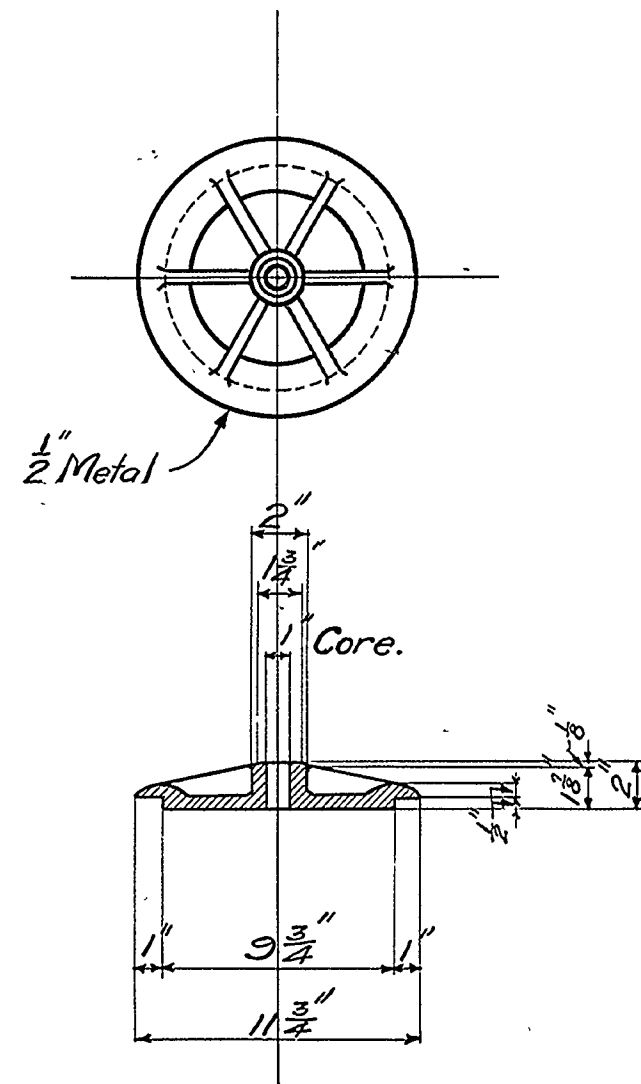
Drawn by *2167*  
 Traced by *2167*

Checked by *2167*  
 Drawing No. **783**

1 OF 12  
 1 OF 38

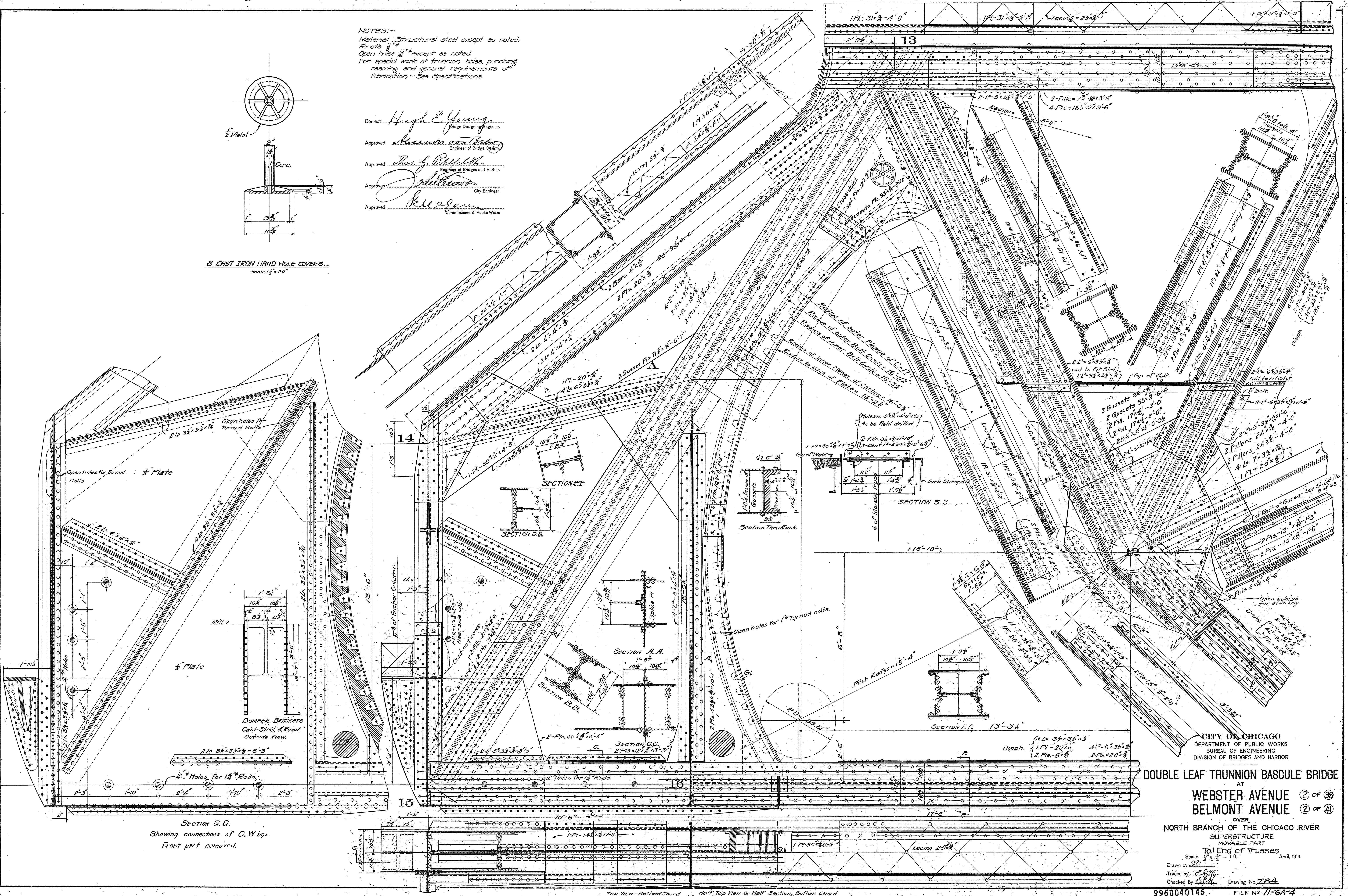
Revised (Pier Protection) 9/16/15 Checked by *2167*  
 FILE No. 11-64-3

NOTES:-  
 Material: Structural steel except as noted.  
 Rivets  $\frac{3}{4}$ " except as noted.  
 Open holes  $\frac{1}{4}$ " except as noted.  
 For special work of trunnion holes, punching  
 reaming and general requirements of  
 fabrication - See Specifications.



8. CAST IRON HAND HOLE COVERS.  
 Scale  $\frac{1}{2}$ " = 1'-0"

Correct: *Hugh E. Young*  
 Bridge Designing Engineer.  
 Approved: *Massimo von Bodo*  
 Engineer of Bridge Dept.  
 Approved: *John J. Pugh*  
 Engineer of Bridges and Harbor.  
 Approved: *John J. Pugh*  
 City Engineer.  
 Approved: *Kuegan*  
 Commissioner of Public Works.

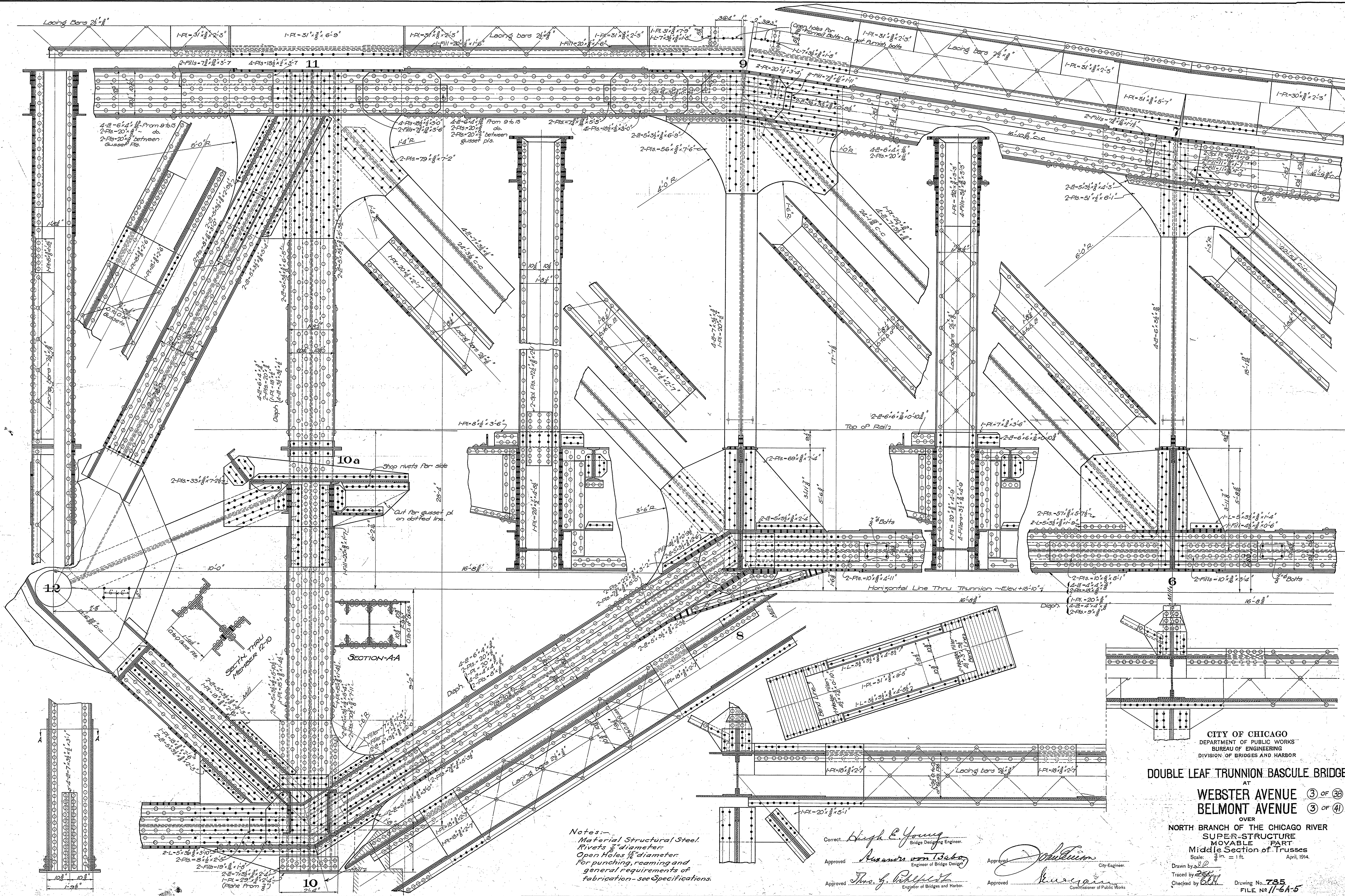


Section G.G.  
 Showing connections of C.W. box.  
 Front part removed.

CITY OF CHICAGO  
 DEPARTMENT OF PUBLIC WORKS  
 BUREAU OF ENGINEERING  
 DIVISION OF BRIDGES AND HARBOR

**DOUBLE LEAF TRUNNION BASCULE BRIDGE**  
 AT  
**WEBSTER AVENUE** (2 OF 38)  
**BELMONT AVENUE** (2 OF 41)  
 OVER  
 NORTH BRANCH OF THE CHICAGO RIVER  
 SUPERSTRUCTURE  
 MOVABLE PART  
 Tail End of Trusses

Scale:  $\frac{1}{4}$ " = 1'-0"  
 April, 1914.  
 Drawn by: *C. G. M.*  
 Traced by: *C. G. M.*  
 Checked by: *C. G. M.*  
 Drawing No. 784  
 FILE NO. 11-6A-4  
 9960040145  
 1466570005



Notes:—  
 Material Structural Steel.  
 Rivets 3/4" diameter.  
 Open Holes 1/2" diameter  
 for punching, reaming and  
 general requirements of  
 fabrication—see Specifications.

Corrected *High E. Young*  
 Bridge Designing Engineer.  
 Approved *Russell Wm. T. Sato*  
 Engineer of Bridge Design.  
 Approved *Thos. G. Robert*  
 Engineer of Bridges and Harbor.

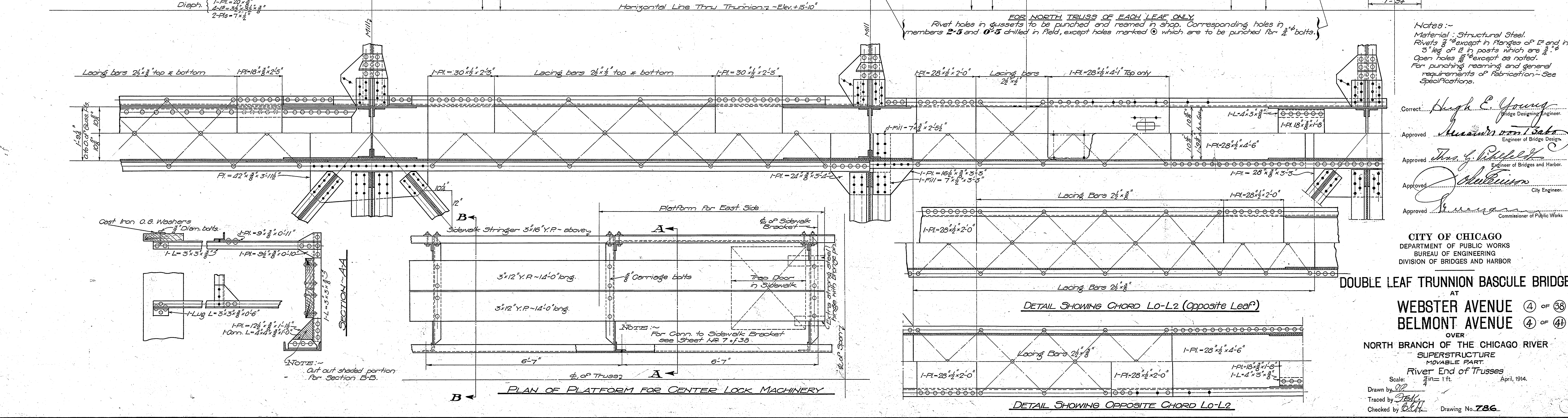
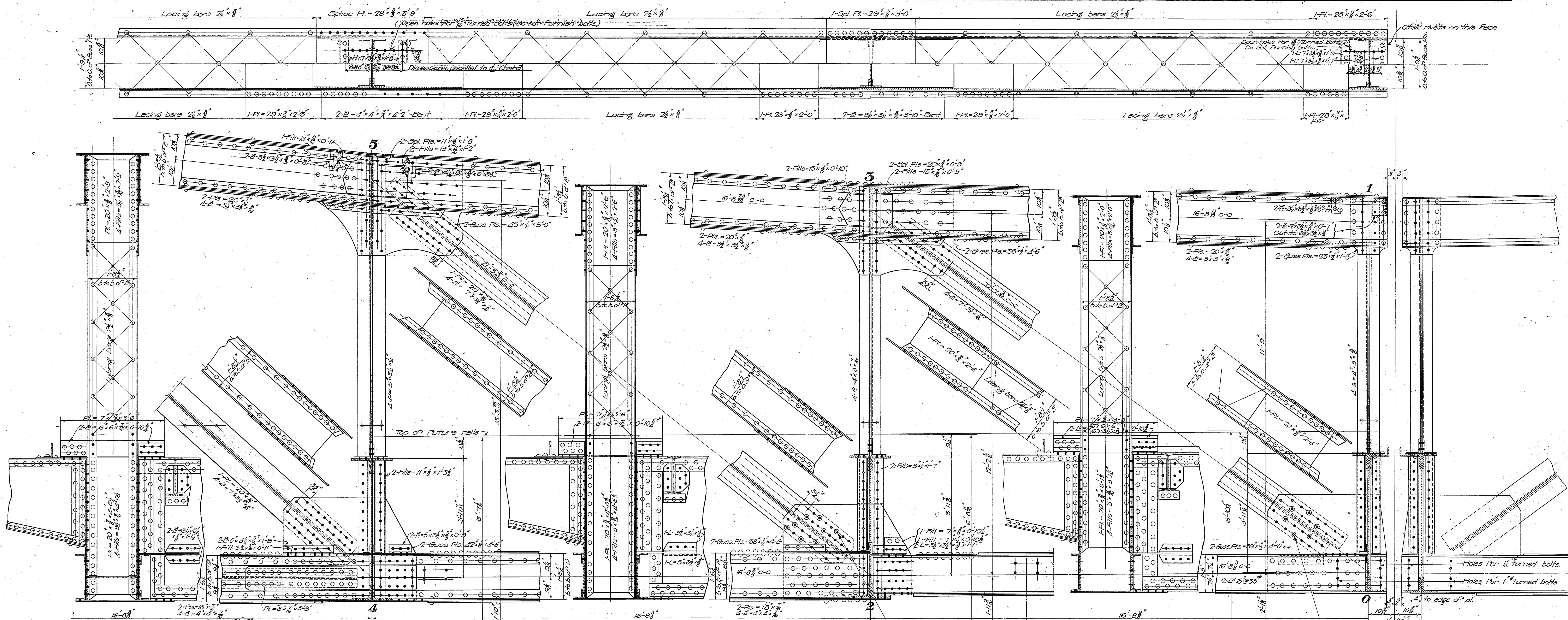
Approved *Johnston*  
 City Engineer.  
 Approved *Kucan*  
 Commissioner of Public Works.

CITY OF CHICAGO  
 DEPARTMENT OF PUBLIC WORKS  
 BUREAU OF ENGINEERING  
 DIVISION OF BRIDGES AND HARBOR

**DOUBLE LEAF TRUNNION BASCULE BRIDGE**  
 AT  
**WEBSTER AVENUE** (3 of 36)  
**BELMONT AVENUE** (3 of 41)  
 OVER  
 NORTH BRANCH OF THE CHICAGO RIVER  
 SUPER-STRUCTURE  
 MOVABLE PART  
 Middle Section of Trusses

Scale: 1/2" = 1 ft.  
 April, 1914.  
 Drawing No. 785  
 FILE No. 11-6A-5

9960040146  
 1660570006



Notes:-  
 Material: Structural Steel.  
 Rivets 3/4" except in flanges of I's and in 3" leg of L's in posts which are 1/2".  
 Open holes 1/2" except as noted.  
 For punching, reaming and general requirements of fabrication - See Specifications.

Corrected by *Hugh E. Young*  
 Approved by *Maurice van T. Sata*  
 Approved by *Trus G. R. Sells*  
 Approved by *W. H. ...*

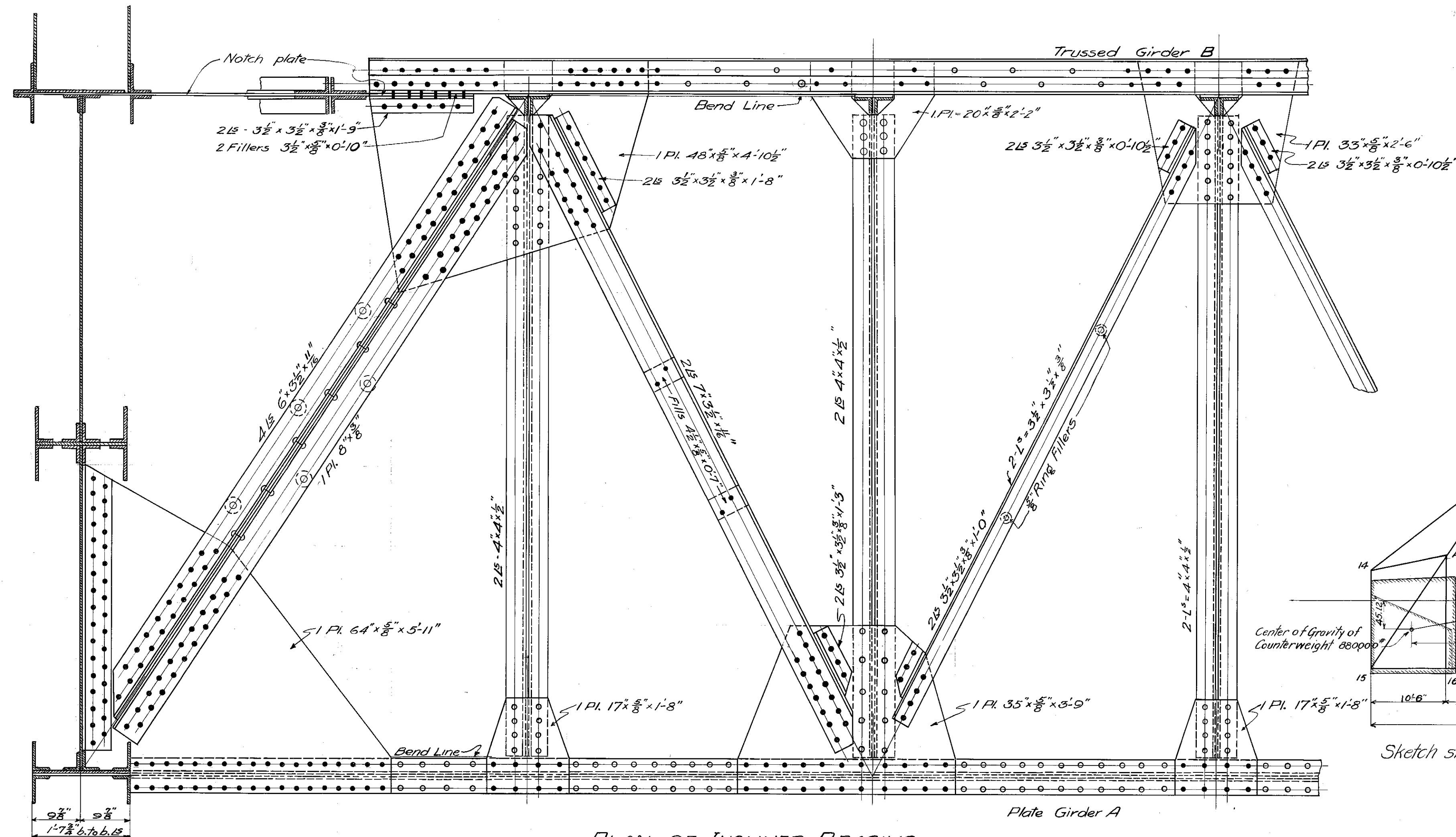
CITY OF CHICAGO  
 DEPARTMENT OF PUBLIC WORKS  
 BUREAU OF ENGINEERING  
 DIVISION OF BRIDGES AND HARBOR

**DOUBLE LEAF TRUNNION BASCULE BRIDGE**  
 AT  
**WEBSTER AVENUE** (4 of 38)  
**BELMONT AVENUE** (4 of 41)  
 OVER  
 NORTH BRANCH OF THE CHICAGO RIVER  
 SUPERSTRUCTURE  
 MOVABLE PART  
 River End of Trusses

Scale: 1/2" = 1'-0"  
 Drawn by *[Signature]*  
 Traced by *[Signature]*  
 Checked by *[Signature]*  
 Drawing No. 786  
 FILE No. 11-6A-6  
 9960040147  
 1660570007



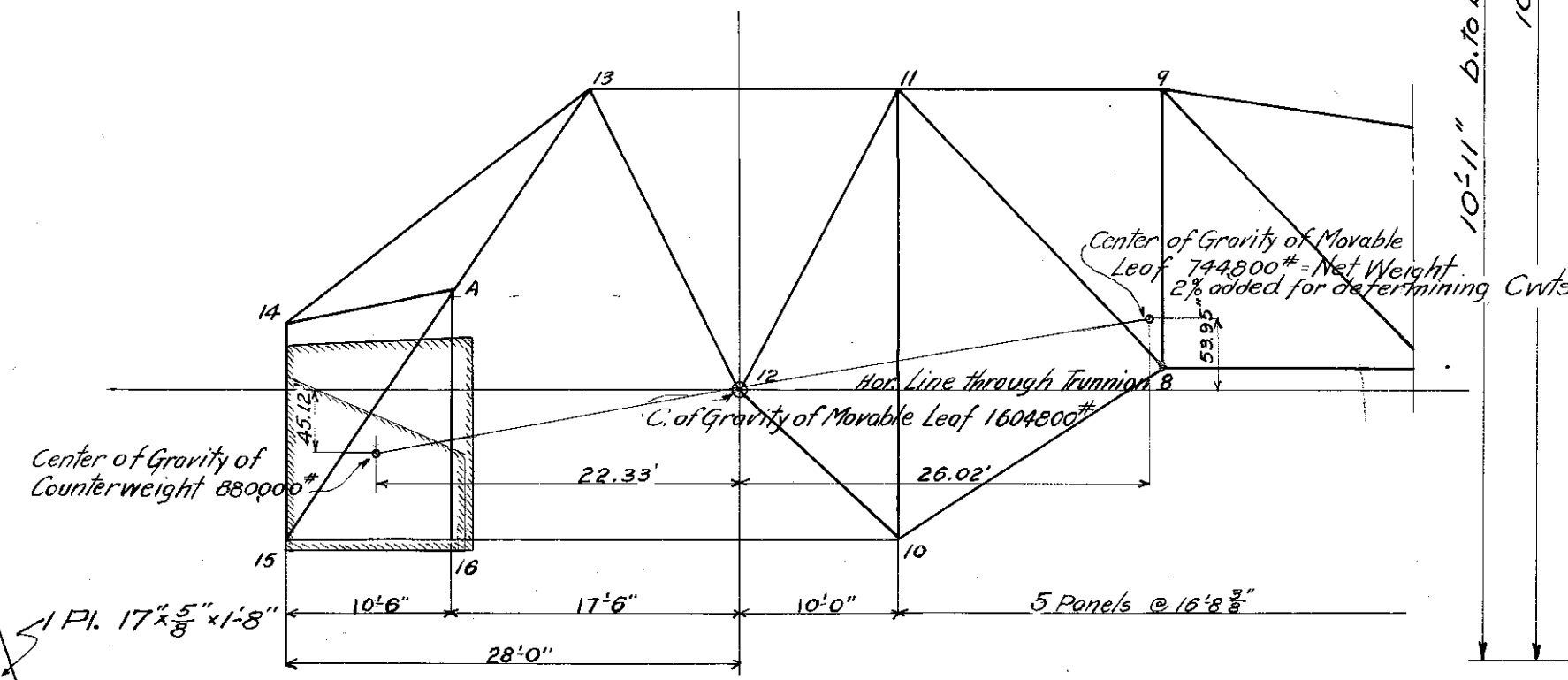




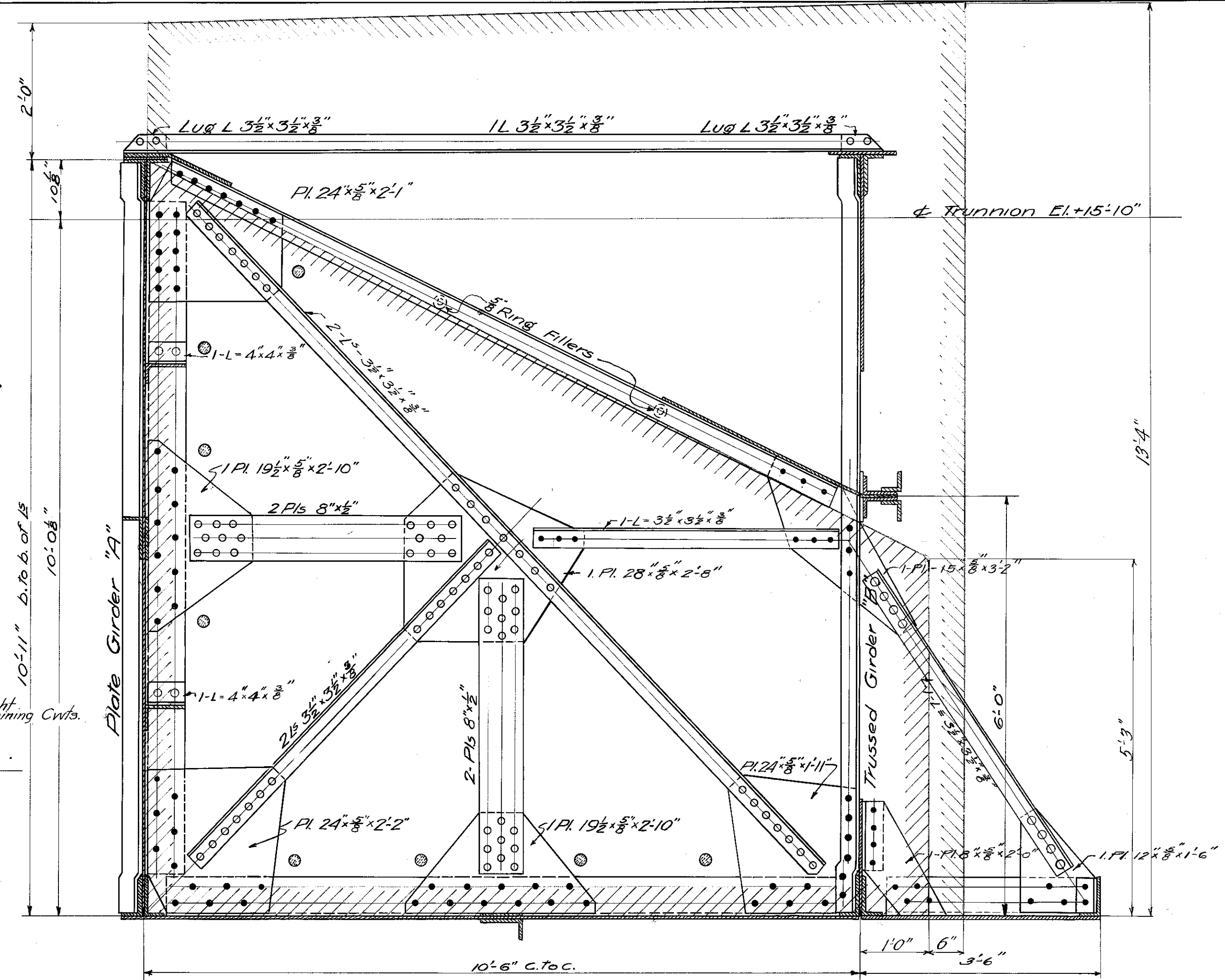
PLAN OF INCLINED BRACING

**NOTE FOR COUNTERWEIGHT CONCRETE.**

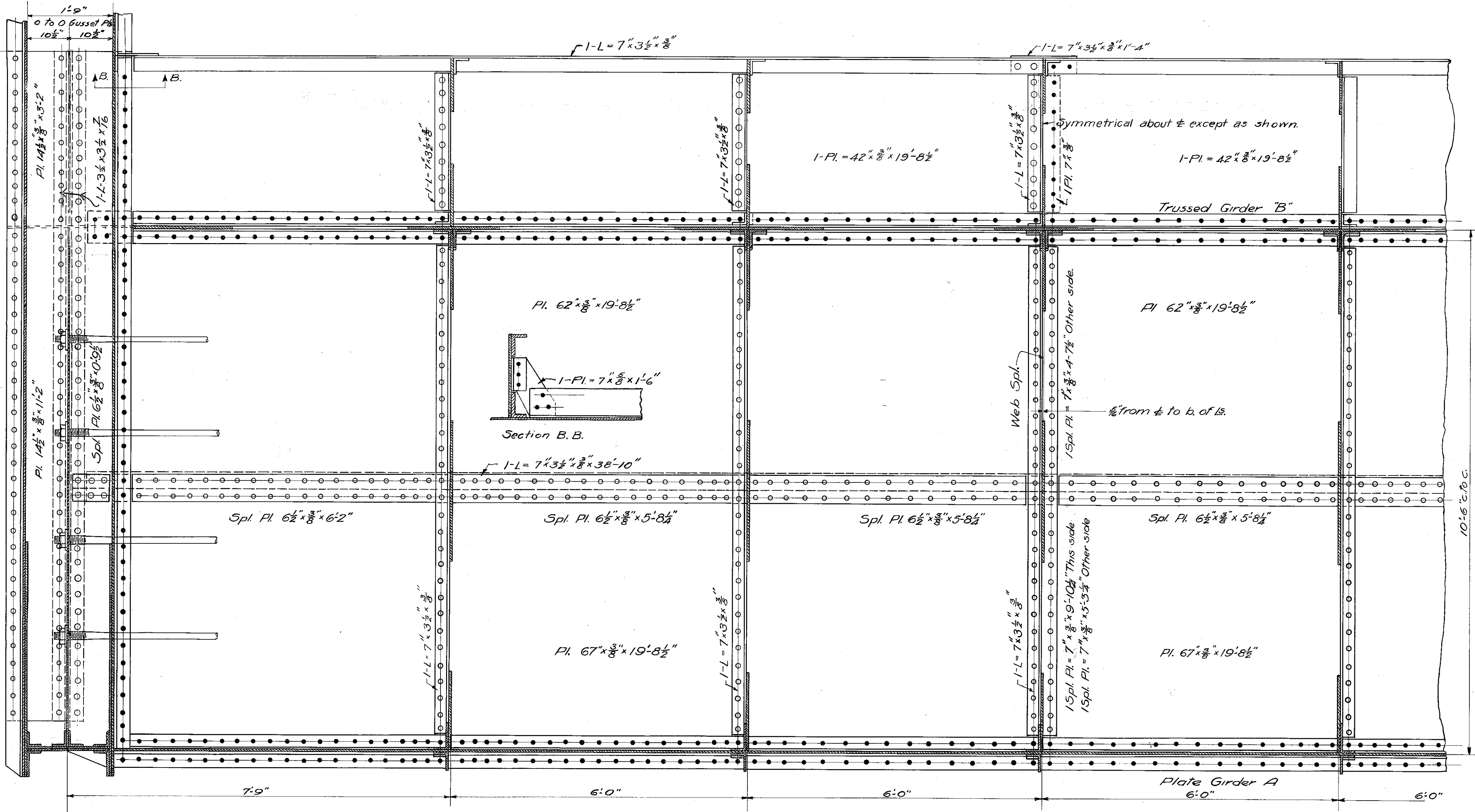
Wooden forms shall be used for construction of Pockets. All exposed surfaces of Concrete also inside walls of Pockets, shall have a smooth and finished appearance. If any voids or pockets are discovered, when the forms are removed, they shall immediately be filled and smoothed over with a one to two cement mortar.



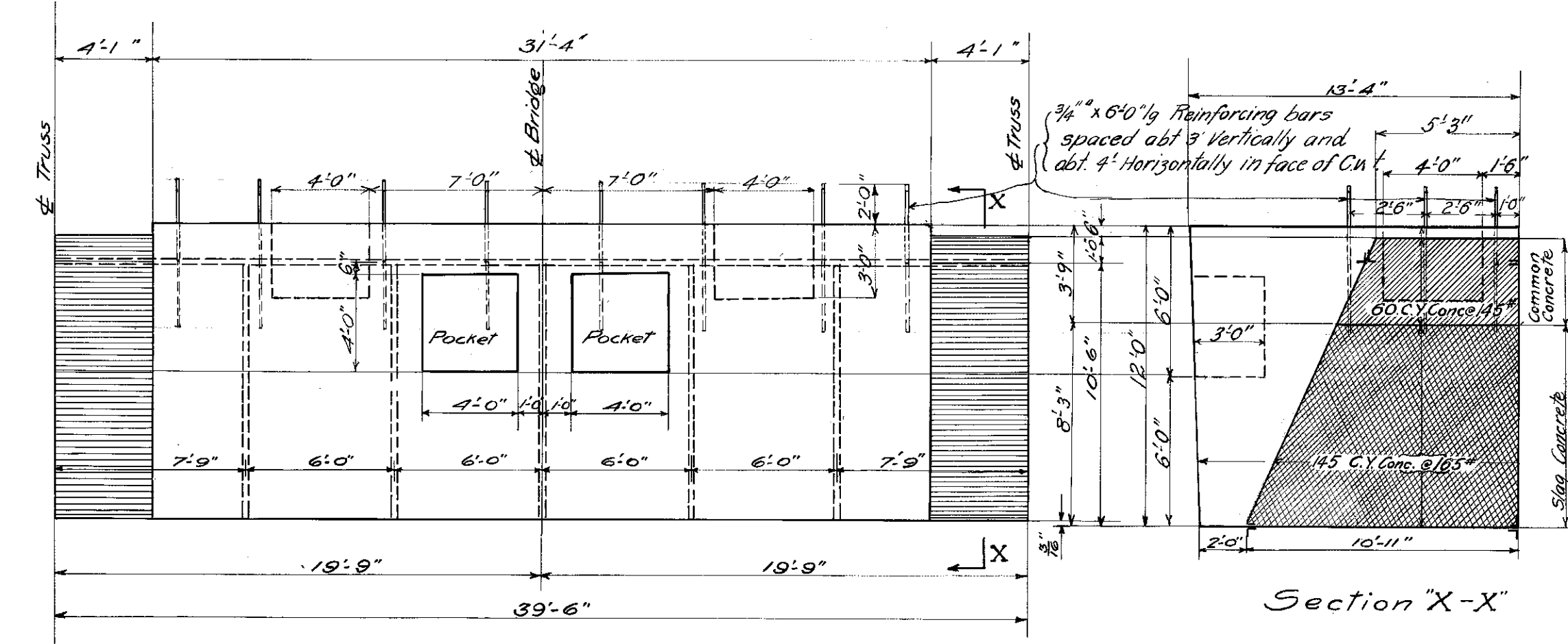
Sketch showing Weights & Cof Gravity of Movable Leaf.



TYPICAL CROSS FRAME



PLAN OF BOTTOM



Top View of Counterweight Box loaded, showing Pockets

**Note on Counterweight Material**  
 The amount of Counterweight reqd for each bridge Leaf is 880000 consisting of 60 Cubic Yds. of common Concrete of 1:3:5 proportion, weighing 145# per Cu. Ft., and 145 Cu. Yds of Slag Concrete weighing 165# per Cu. Ft. making a total of 410 Cu. Yds of Concrete for both Bridge Leaves, which shall be included in the lump sum bid.  
 The mixture of Slag Concrete shall be as follows:- 1 part of Portland Cement, 5 parts of Slag, and not more than 3 parts of Torpedo Sand. The Slag shall be broken into pieces ranging in size from 1/2 to 2" in diameter.

Note: 1000 lbs of 3/4" square reinforcing bars for each counterweight box furnished by Contractor and to be included in Contract

Notes:-  
 Material Structural Steel  
 Rivets 3/8"  
 Open holes 1/8"  
 For punching reaming and general requirements of Fabrication - See Specifications.

CITY OF CHICAGO  
 DEPARTMENT OF PUBLIC WORKS  
 BUREAU OF ENGINEERING  
 DIVISION OF BRIDGES AND HARBOR

**DOUBLE LEAF TRUNNION BASCULE BRIDGE  
 AT  
 WEBSTER AVENUE**

OVER  
 NORTH BRANCH OF THE CHICAGO RIVER  
 SUPERSTRUCTURE  
 MOVABLE PART  
 Counterweight Box, Top & Bottom & Cwt. Distribution  
 Scale: 1" = 1 ft.  
 April, 1914.

Corrected: Hugh C. Young  
 Bridge Designing Engineer.  
 Approved: Hermann von Boto  
 Engineer of Bridge Design.  
 Approved: John G. Phillips  
 Engineer of Bridges and Harbor.  
 Approved: John L. ...  
 City Engineer.  
 Approved: ...  
 Commissioner of Public Works.

Drawn by: ...  
 Traced by: ...  
 Checked by: ...  
 Drawing No. 188.  
 FILE NO. 11-6A-B

For detail of casting see drawing No. 790

For detail of lamp connection see drawing for Signal lights

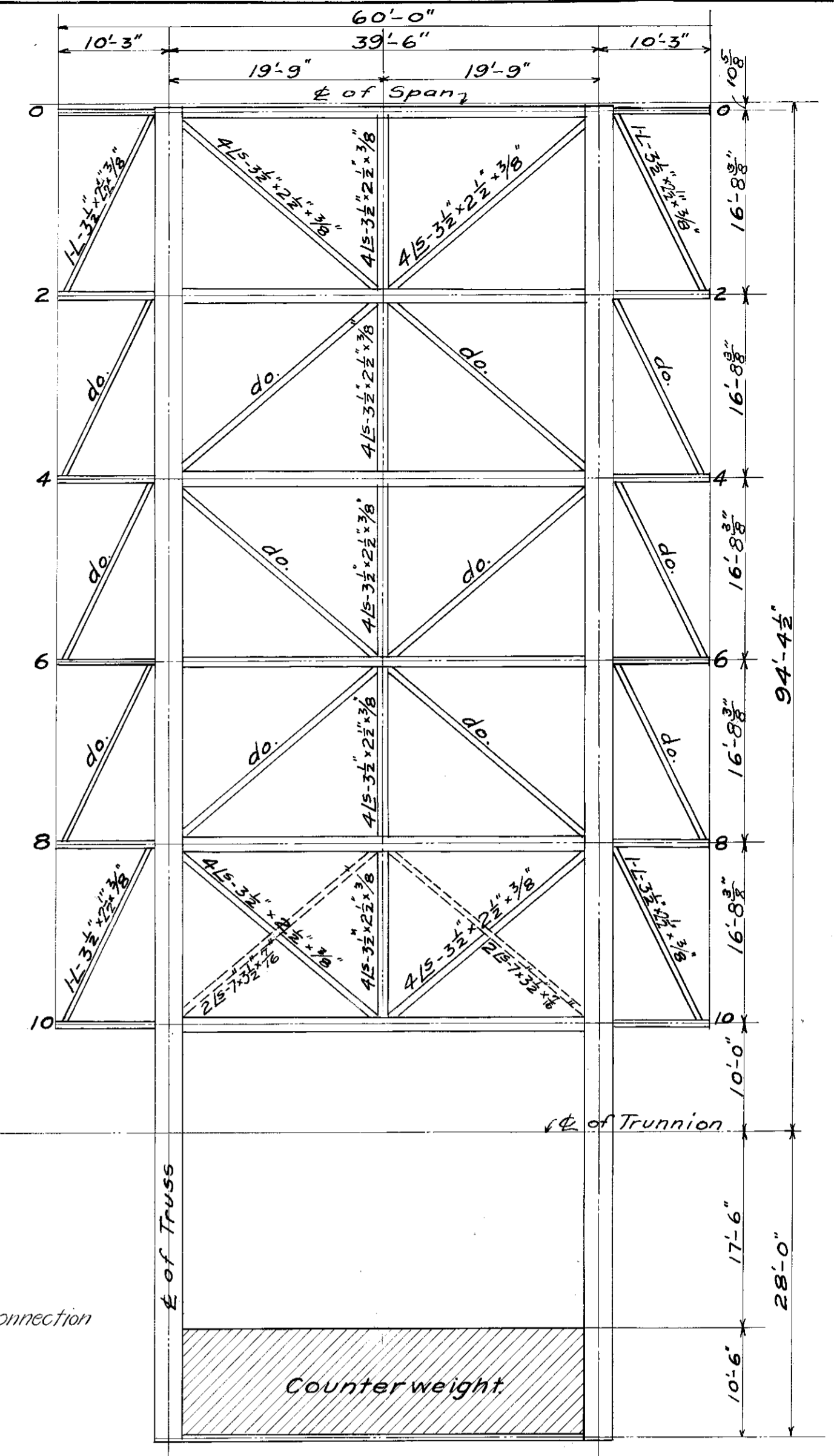
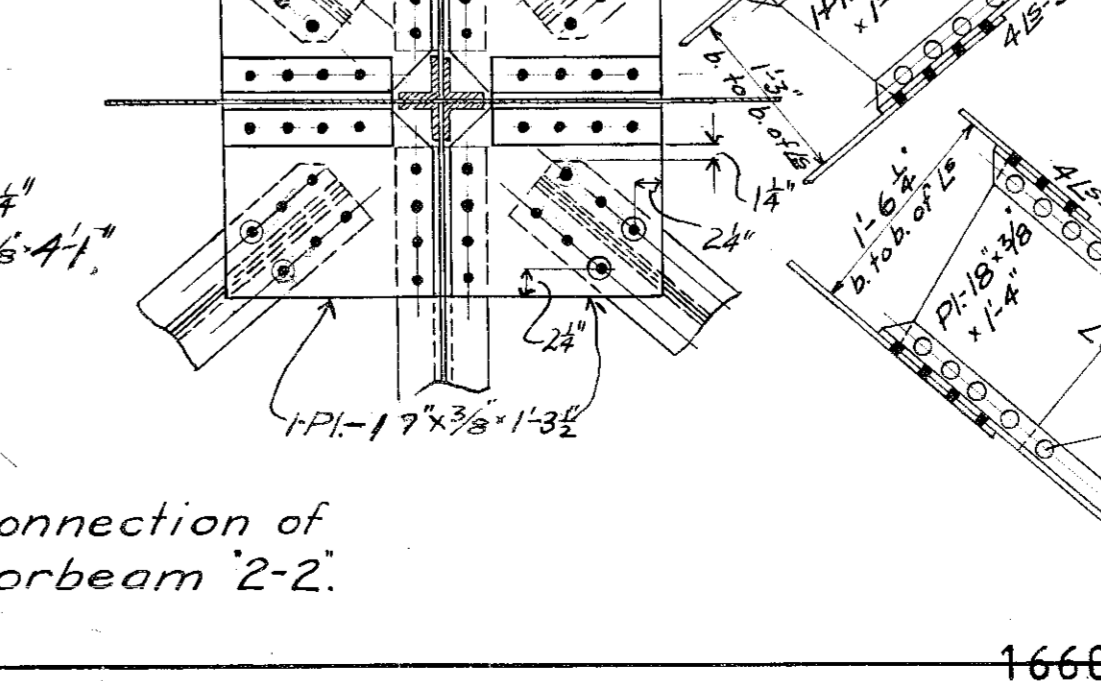
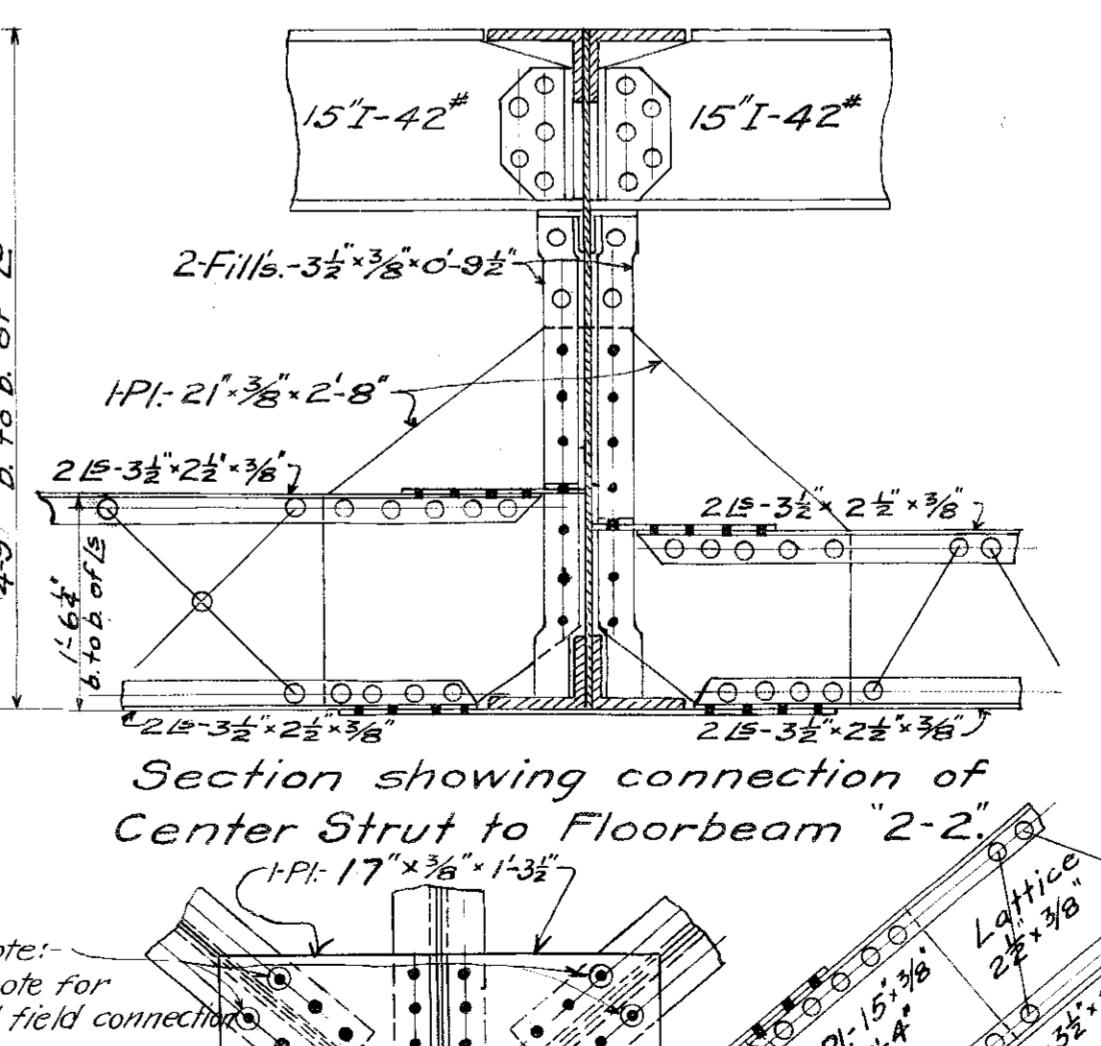
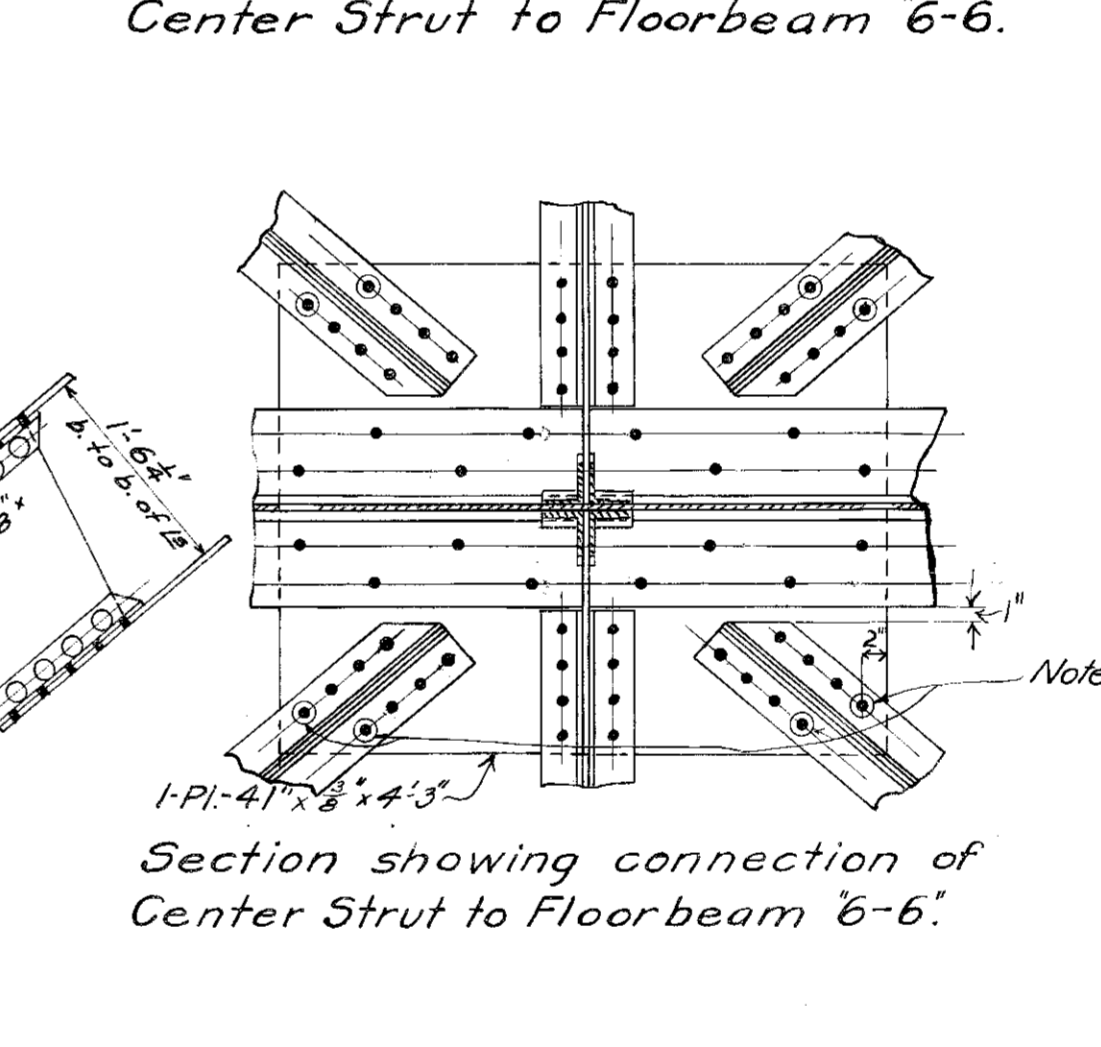
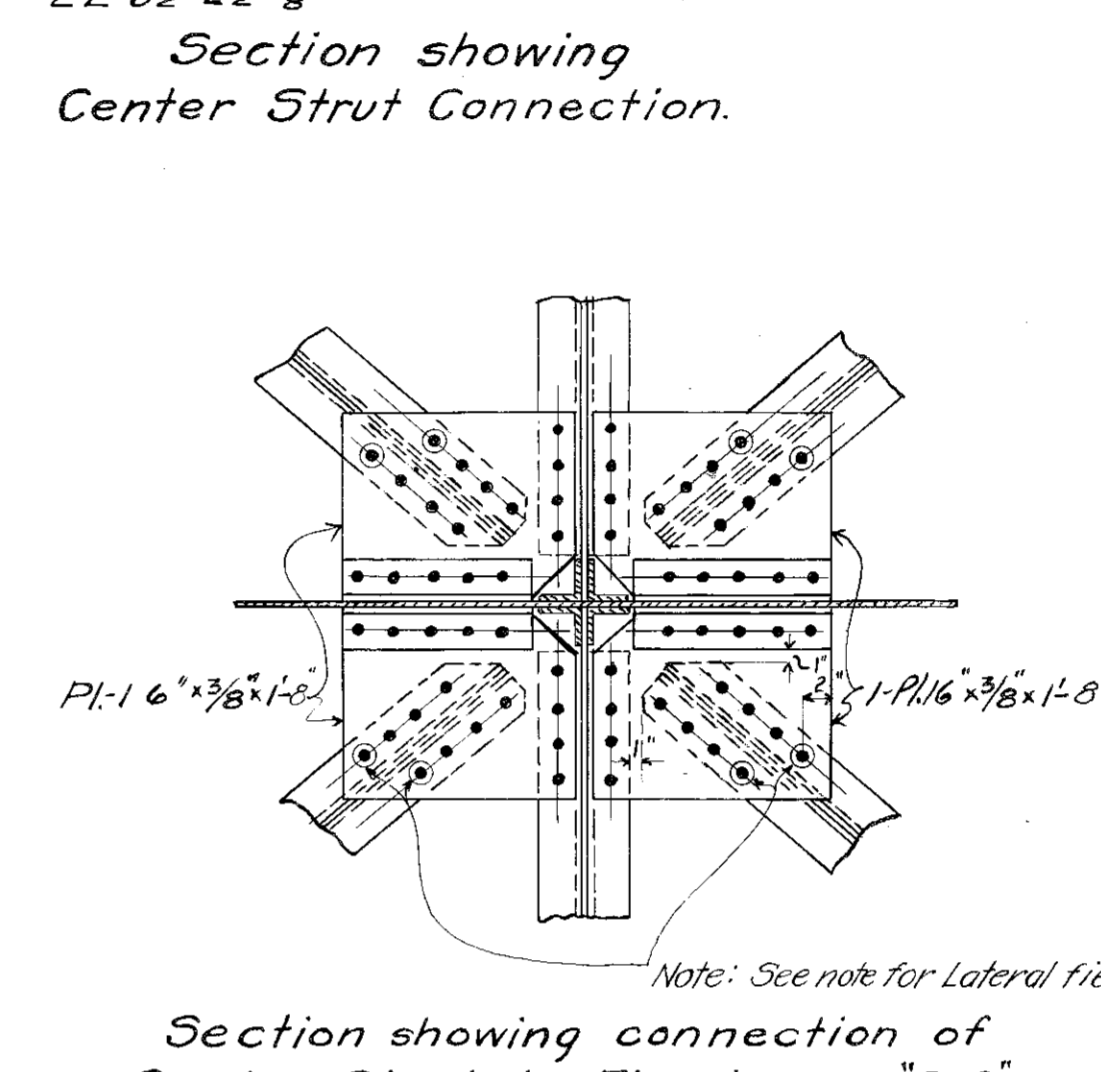
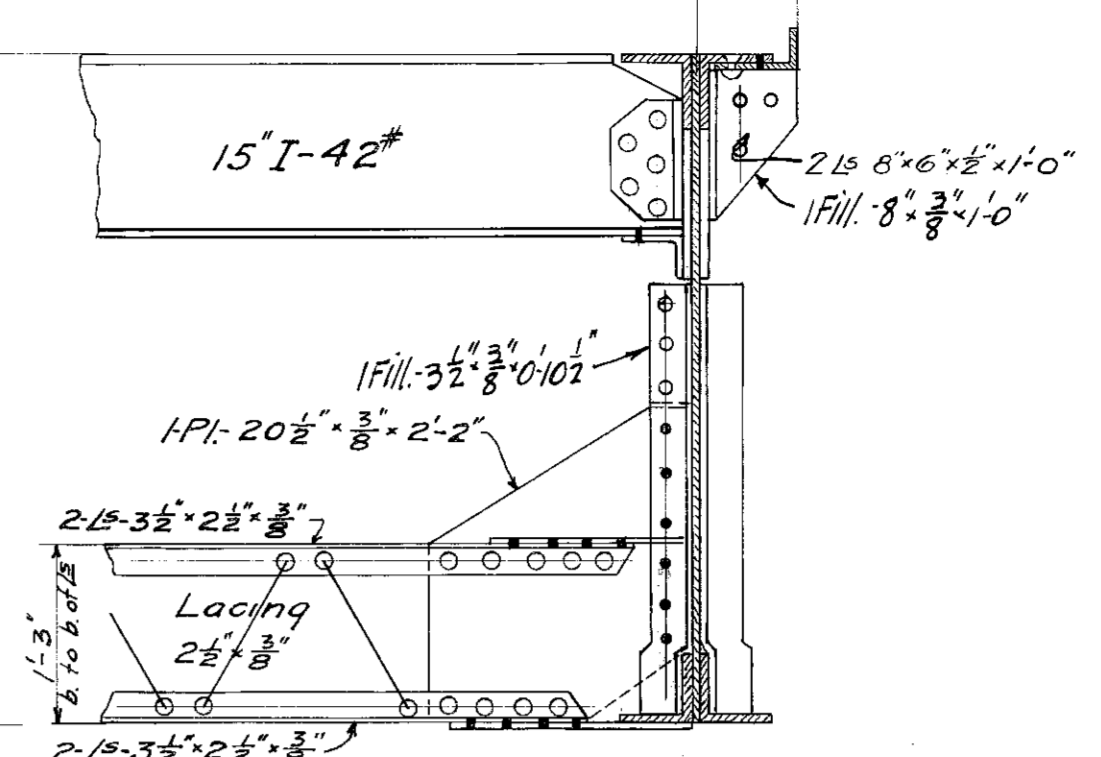
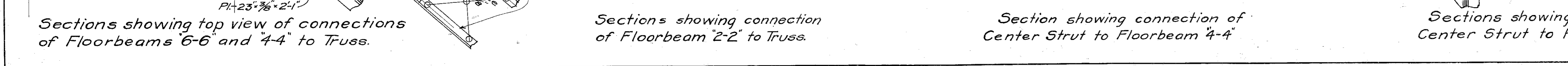
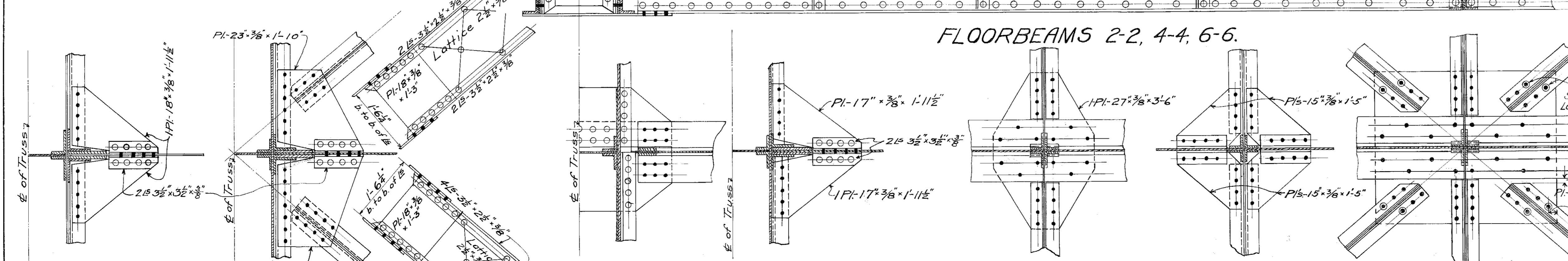
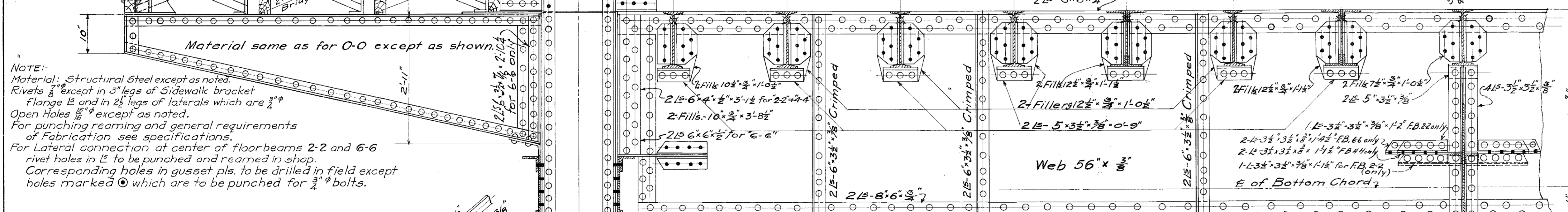
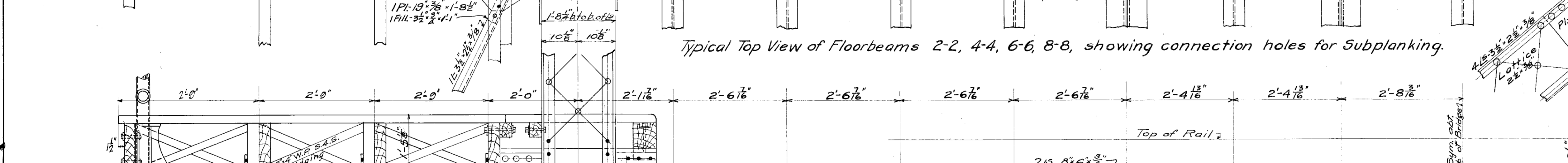
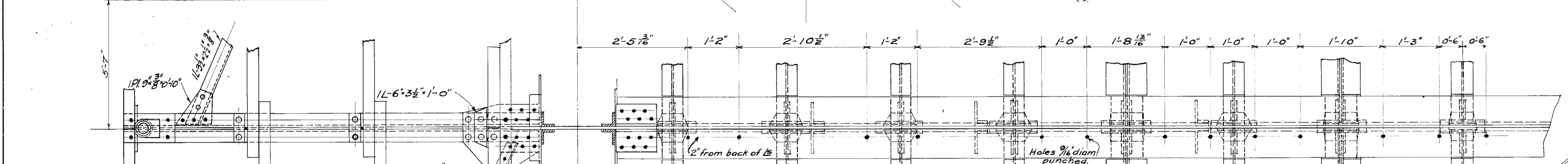
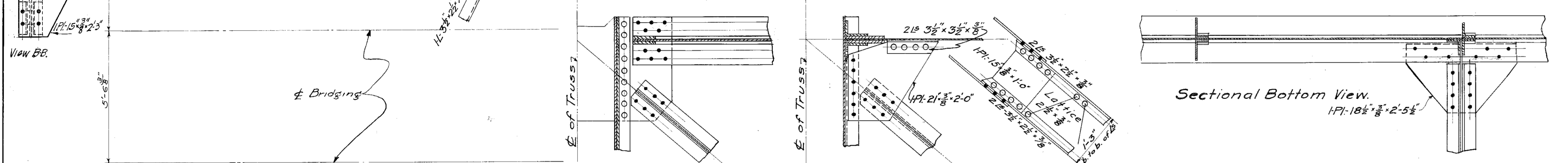
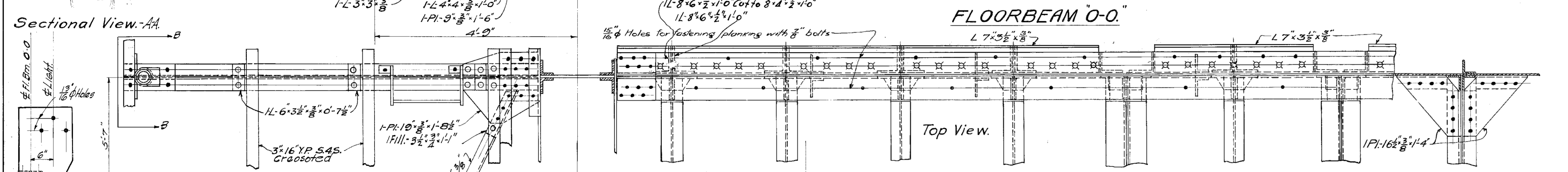
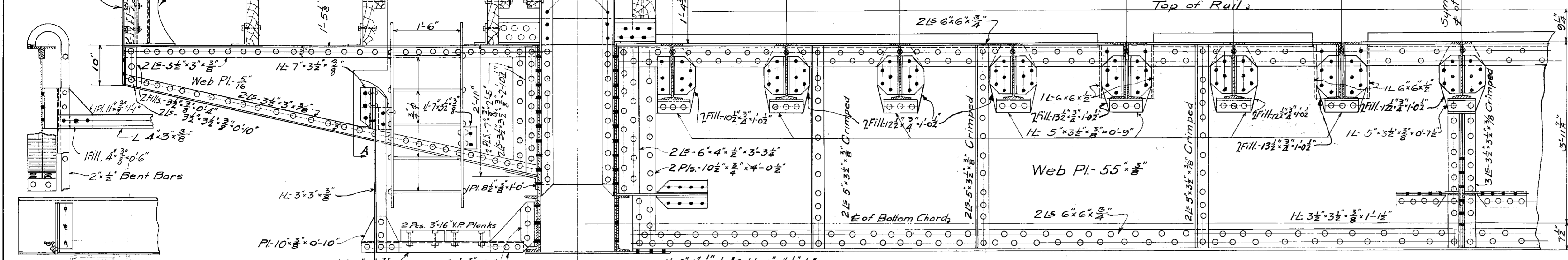
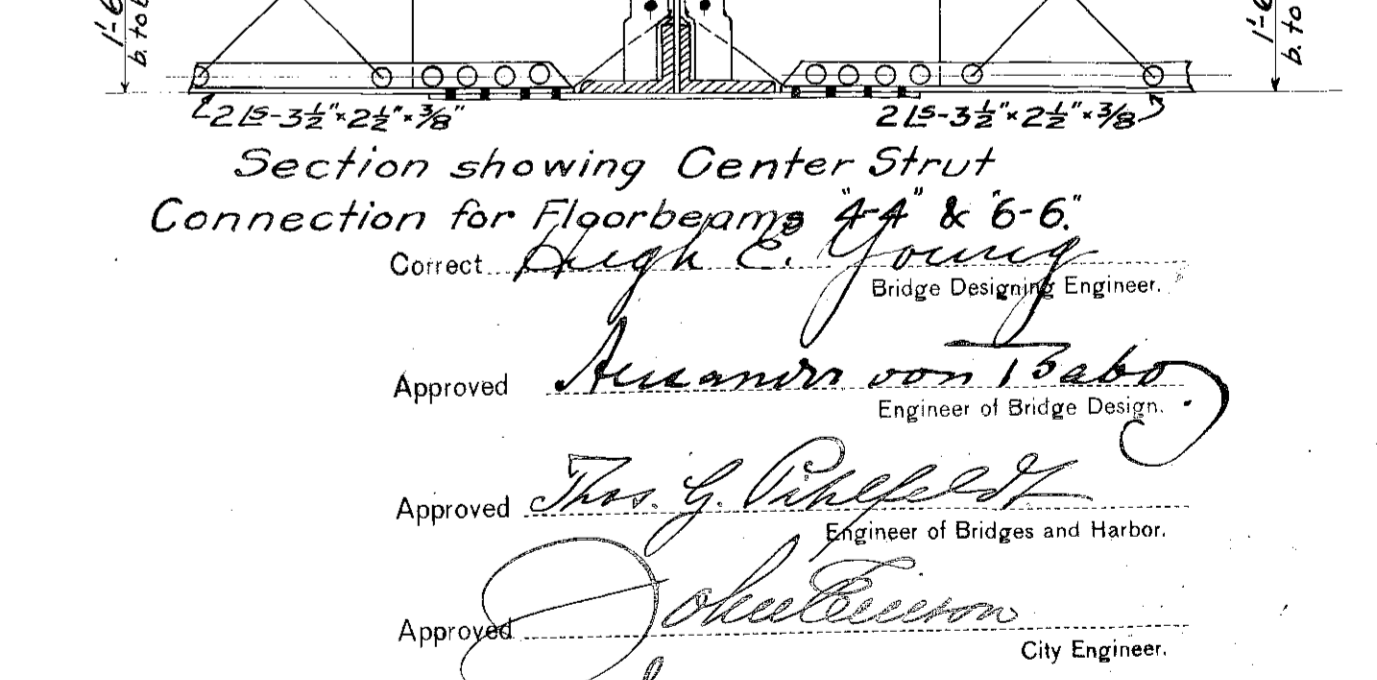
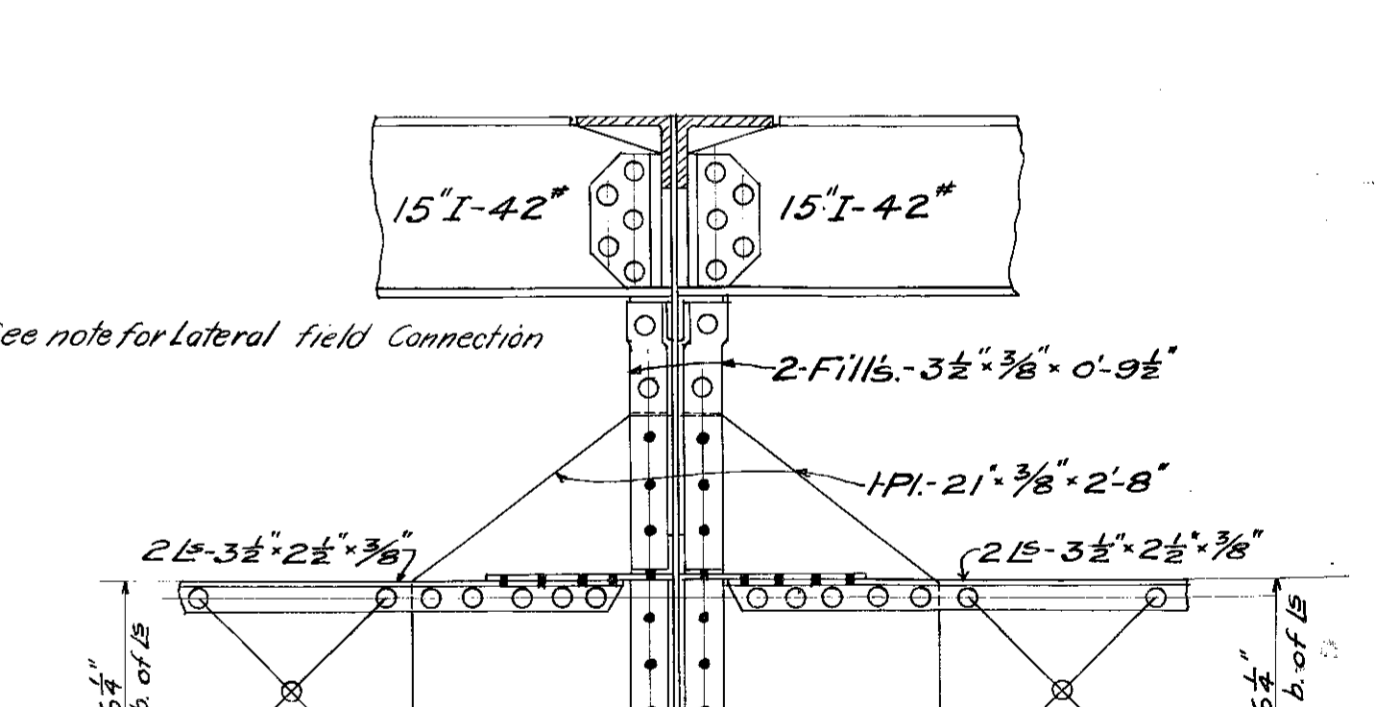


DIAGRAM OF BOTTOM LATERALS. Scale 3/4 to 1 ft.



Approved *Richard von Raban*  
 Engineer of Bridge Design

Approved *John G. Vincent*  
 Engineer of Bridges and Harbor

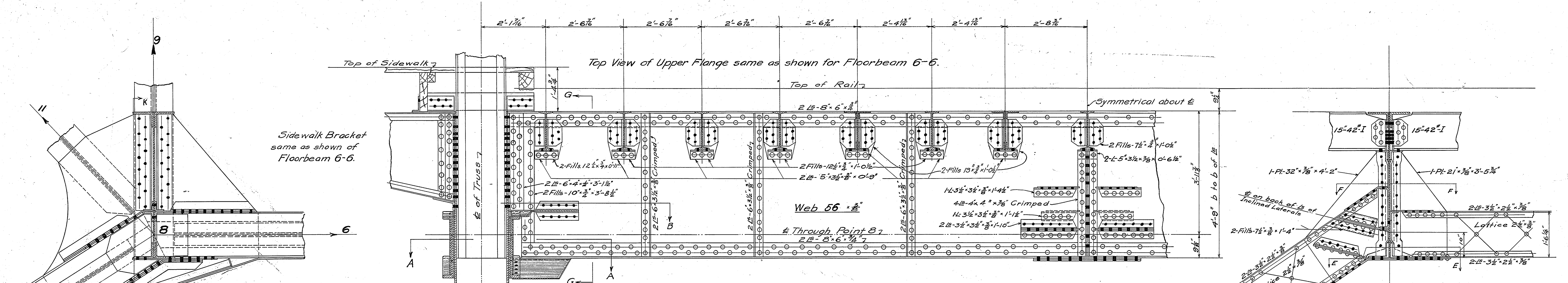
Approved *John E. ...*  
 City Engineer

Approved *...*  
 Commissioner of Public Works

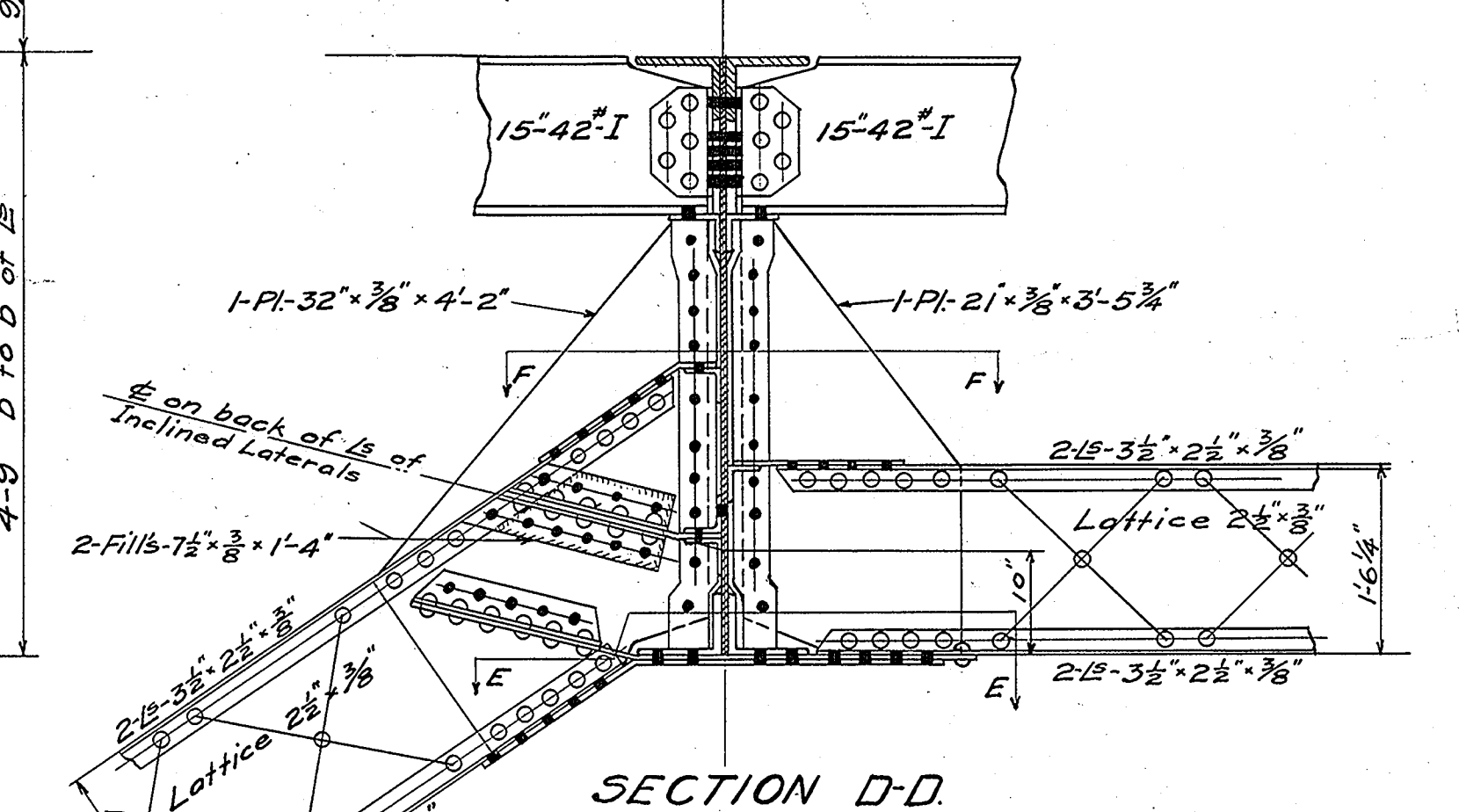
**CITY OF CHICAGO**  
 DEPARTMENT OF PUBLIC WORKS  
 BUREAU OF ENGINEERING  
 DIVISION OF BRIDGES AND HARBOR

**DOUBLE LEAF TRUNNION BASCULE BRIDGE**  
 AT  
**WEBSTER AVENUE** ⑦ OF ③⑧

OVER  
 NORTH BRANCH OF THE CHICAGO RIVER  
 SUPERSTRUCTURE  
 MOVABLE PART  
 Floorbeams 0-2-4-6-8  
 Scale: 1/4\"/>

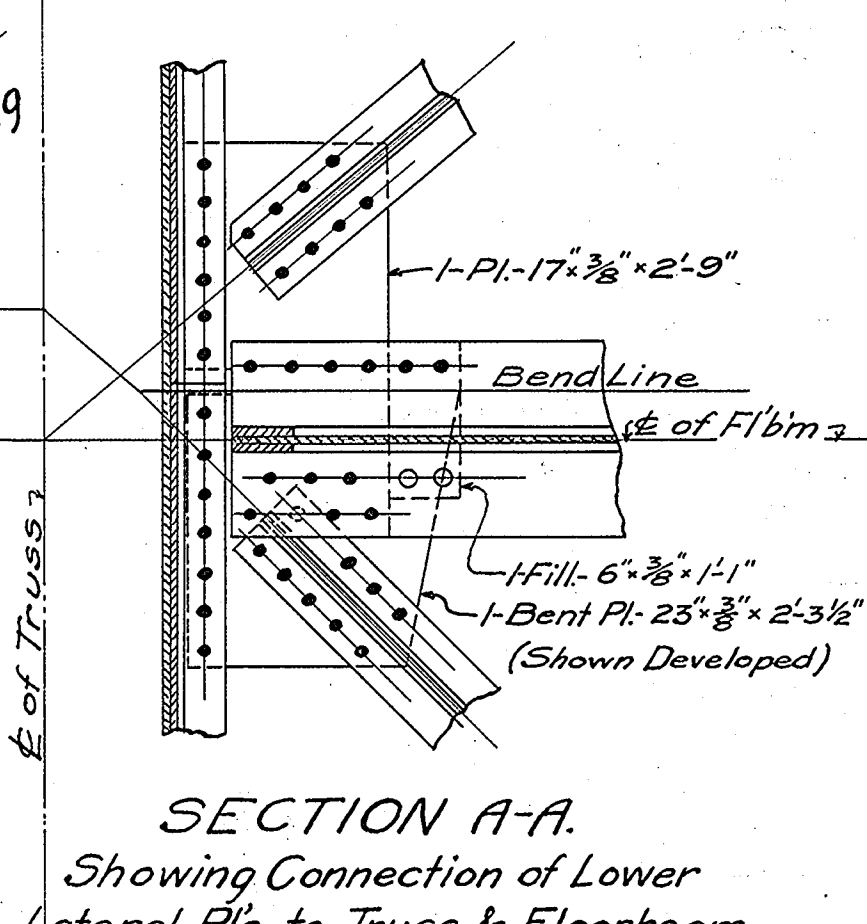
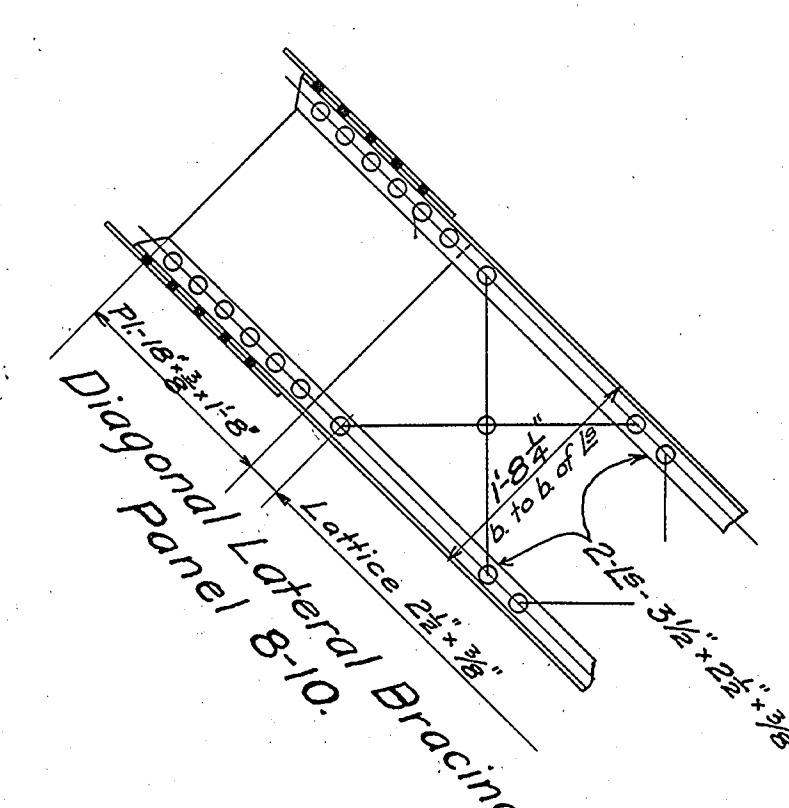
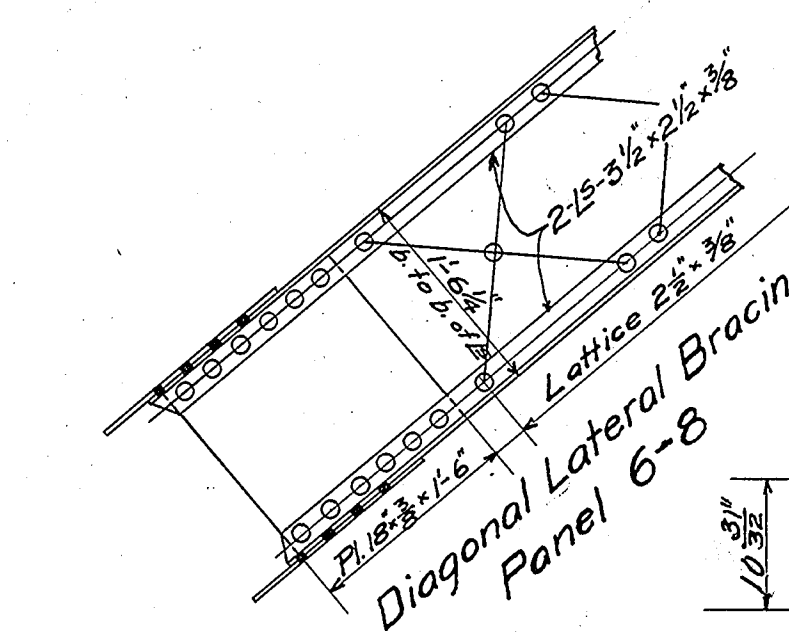
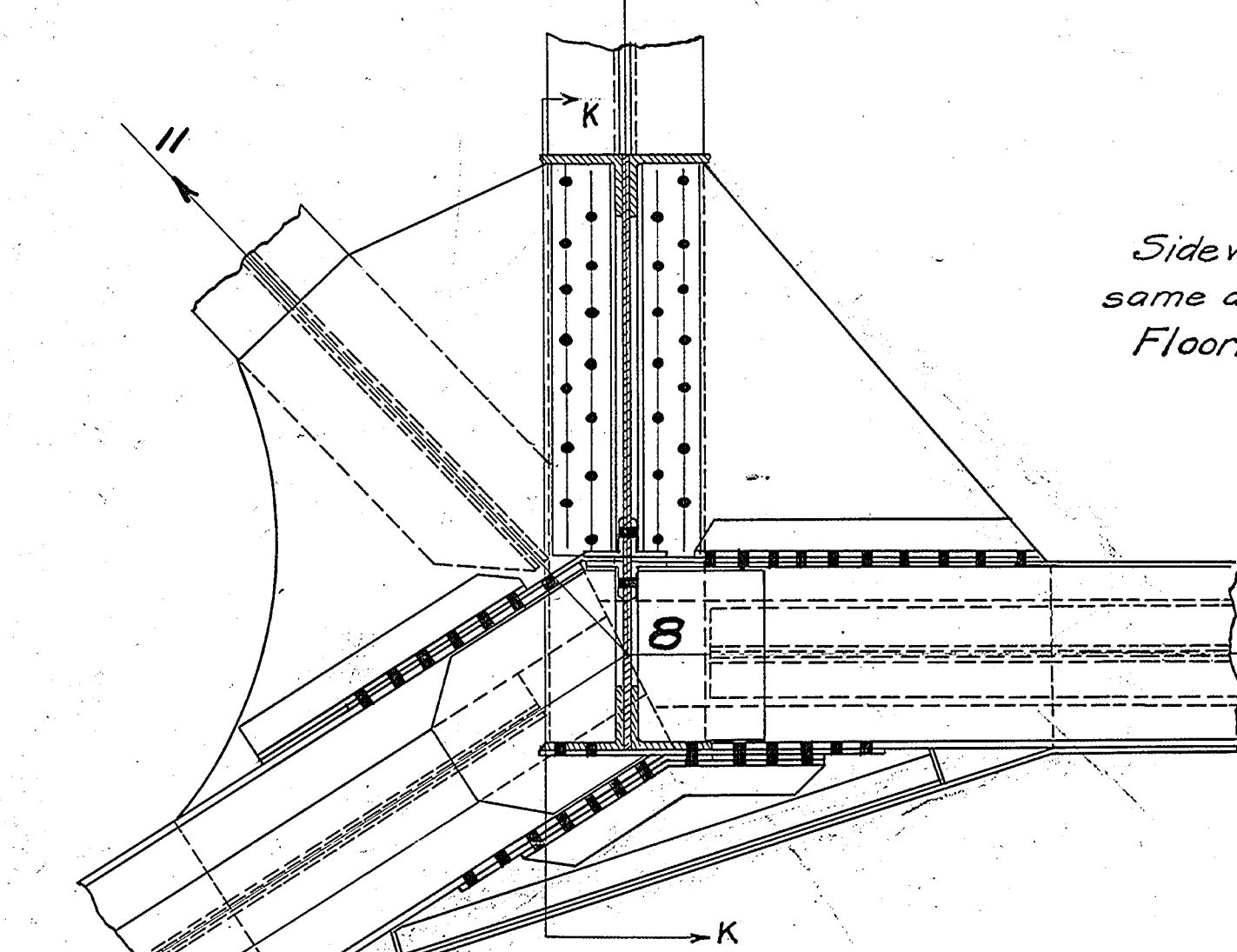


**FLOORBEAM 8-8**  
Section K-K  
Scale 3/4" = 1'-0"

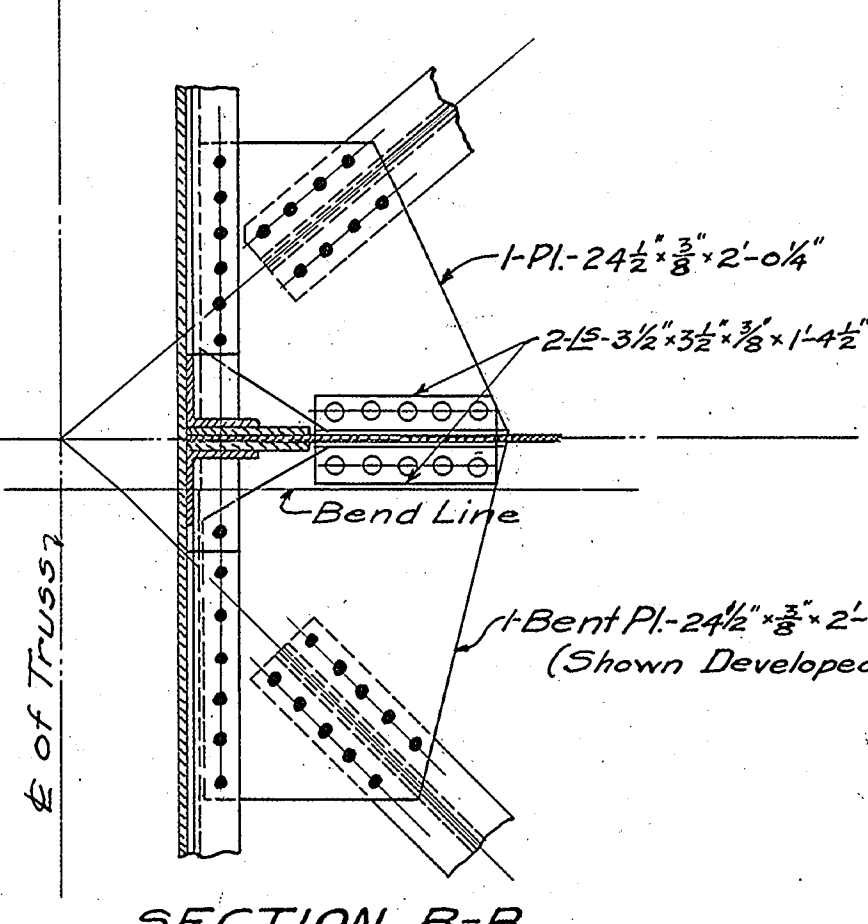


**SECTION D-D**

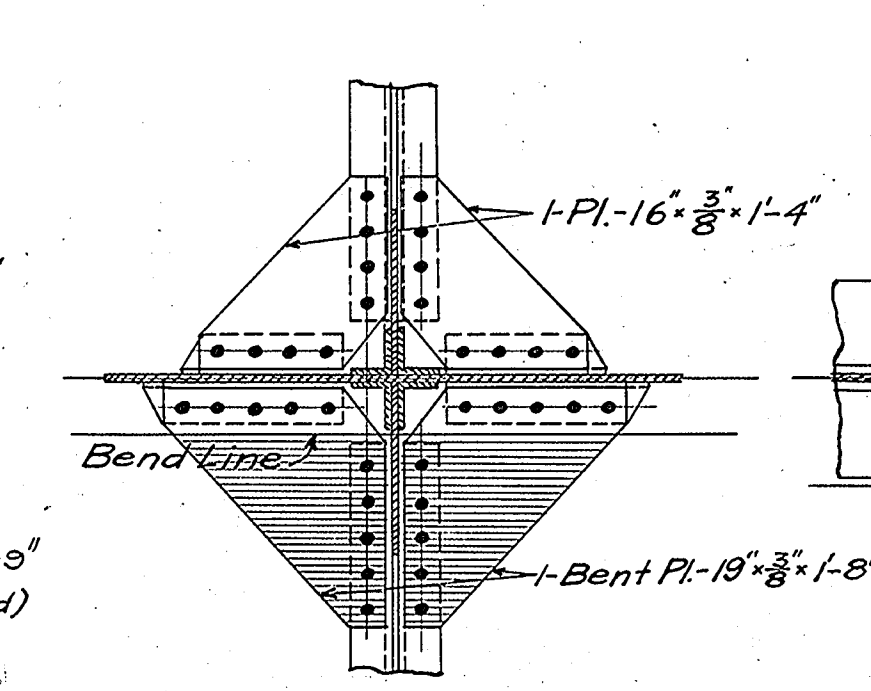
**SECTION G-G**  
Showing Connection of Floorbeam to Truss.



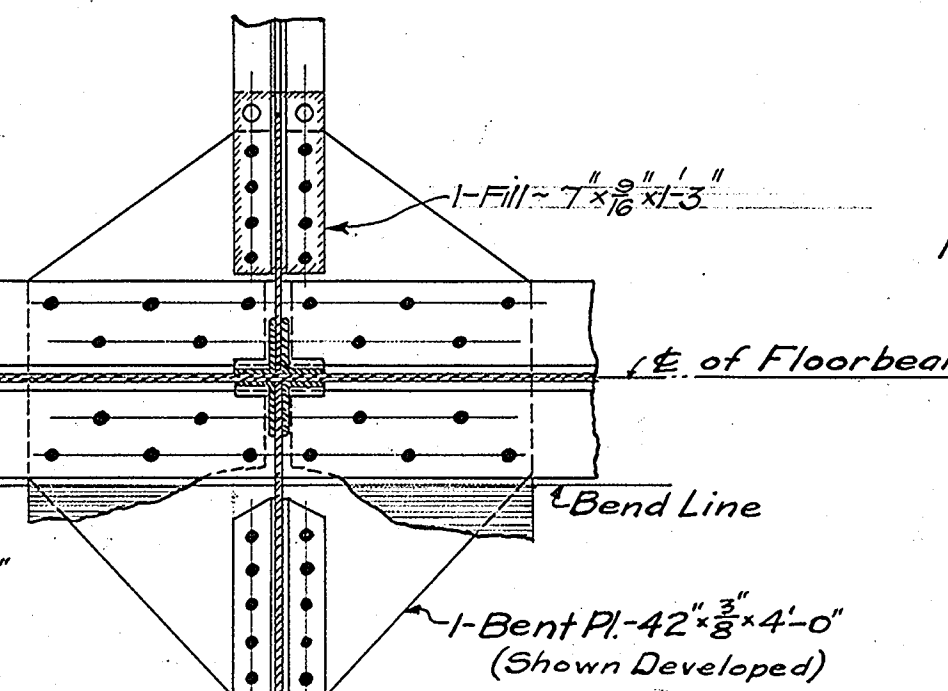
**SECTION A-A**  
Showing Connection of Lower Lateral Pls. to Truss & Floorbeam.



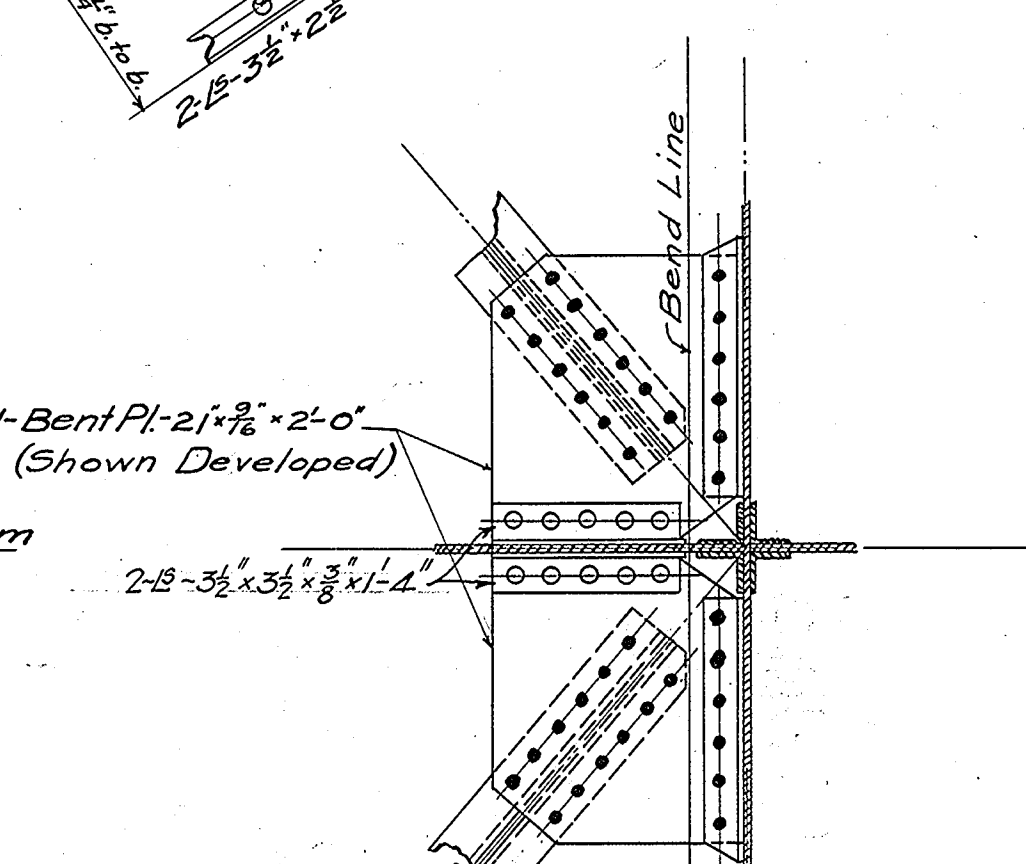
**SECTION B-B**  
Showing Connection of Lower Lateral Pls. to Truss & Floorbeam.



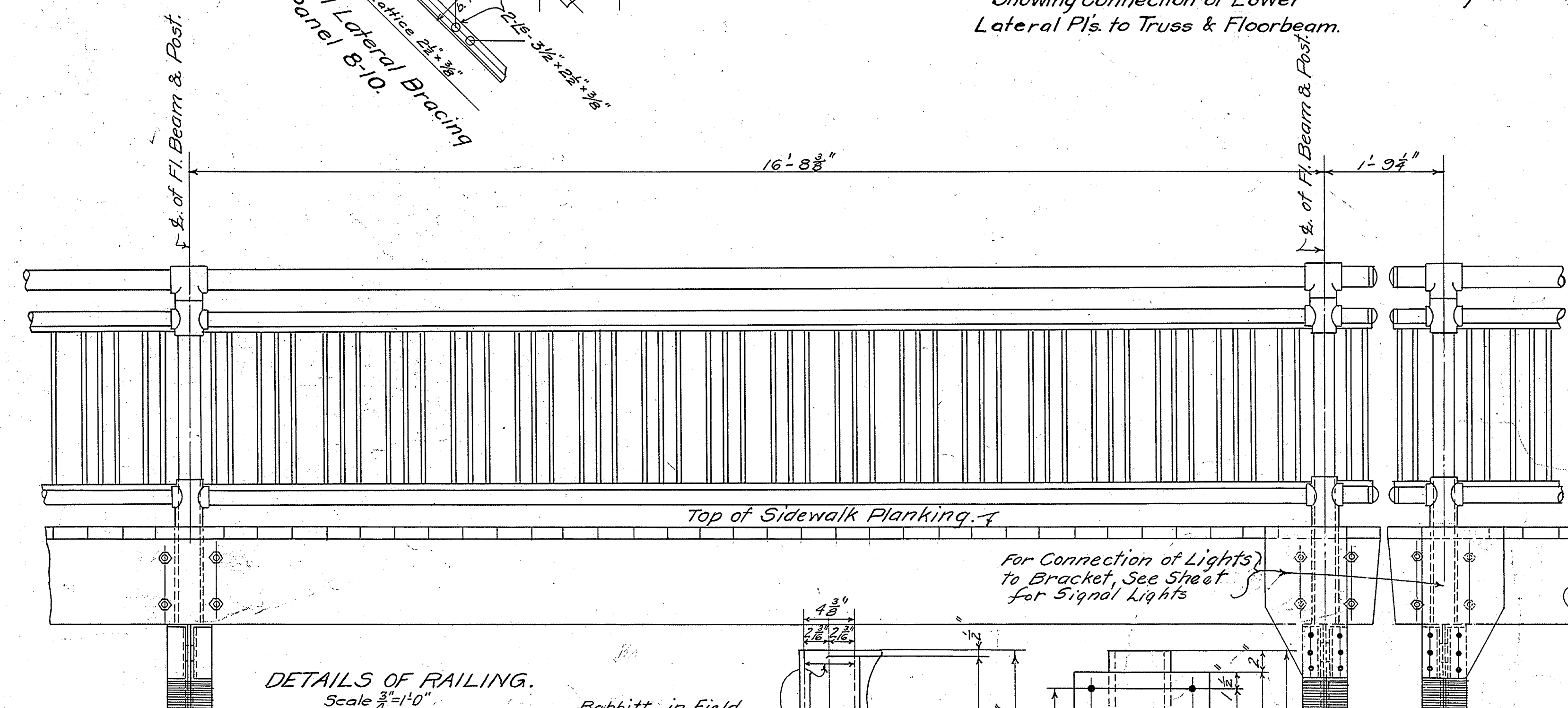
**SECTION F-F**  
Showing Connection of Center Struts to Floorbeam Top Plates. Diagonal Lateral not shown.



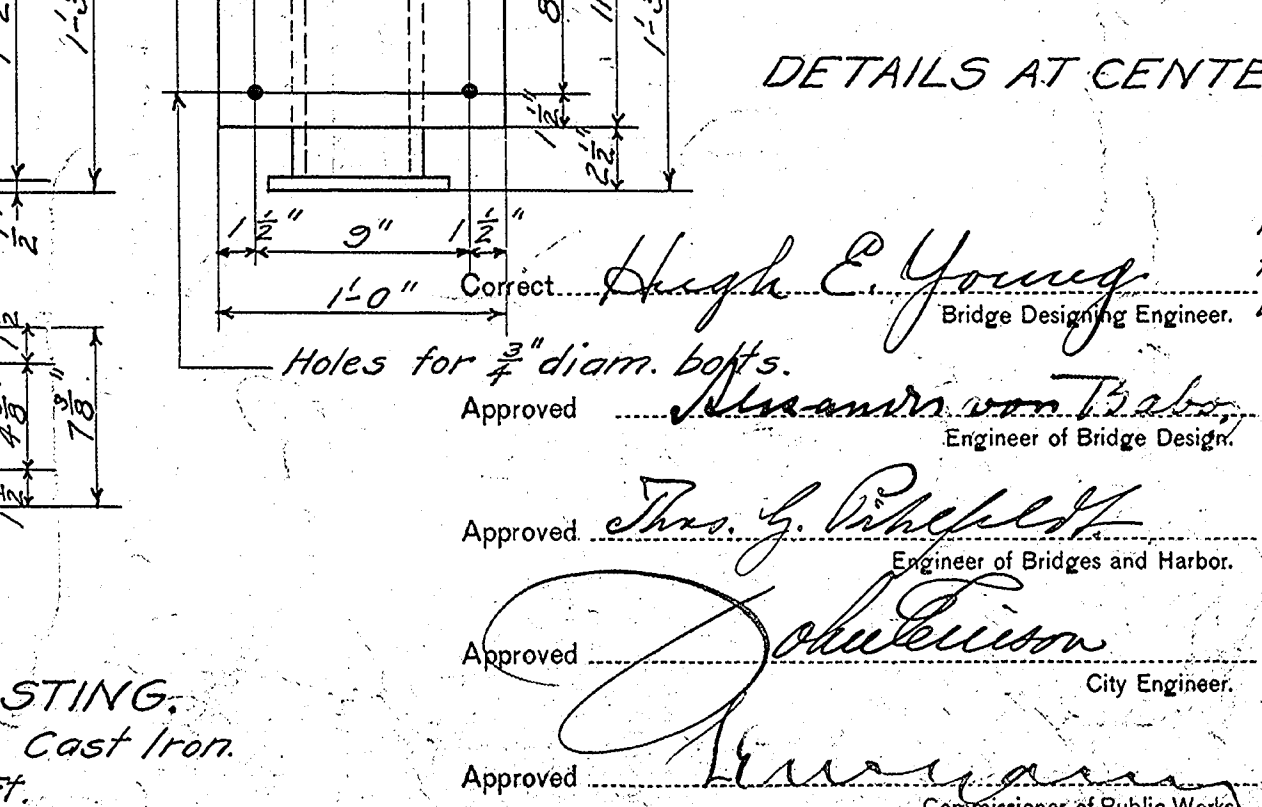
**SECTION E-E**  
Showing Connection of Center Struts to Bottom Flange of Floorbeam.



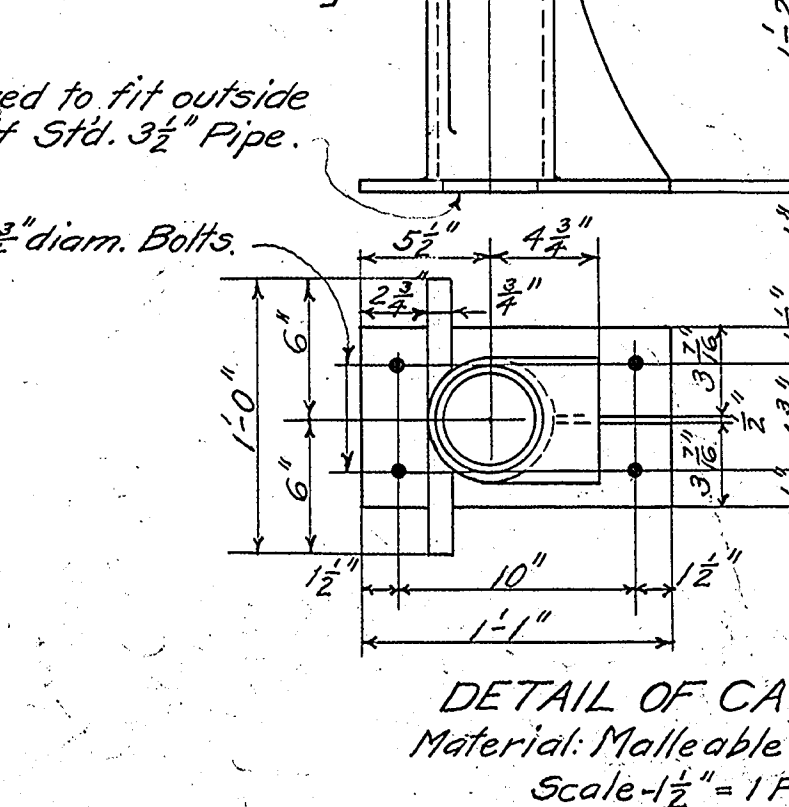
**SECTION D-D**  
Top View of Connection of Inclined Lateral to Center Strut & Floorbeam 8-8.



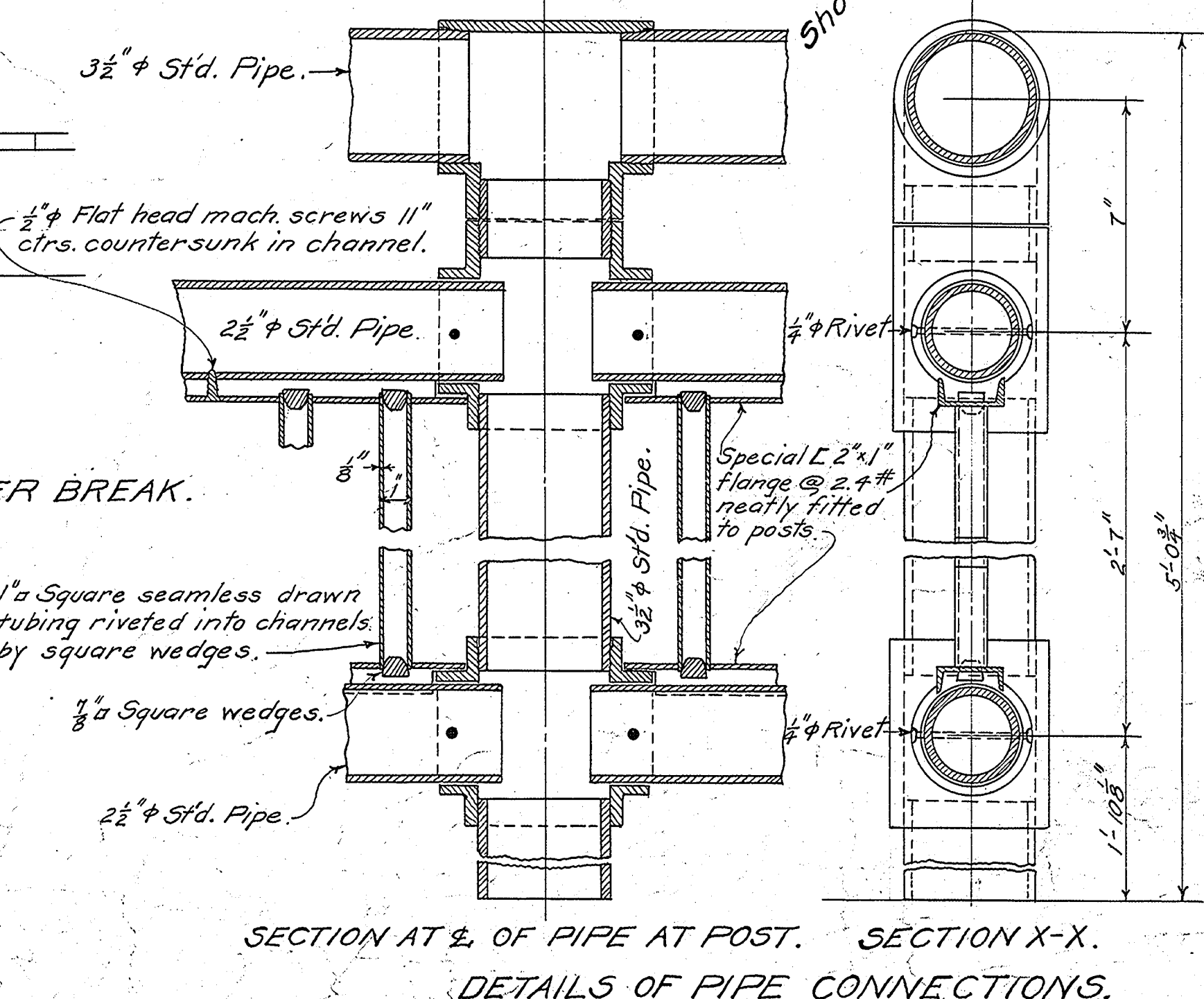
**DETAILS OF RAILING.**  
Scale 3/4" = 1'-0"



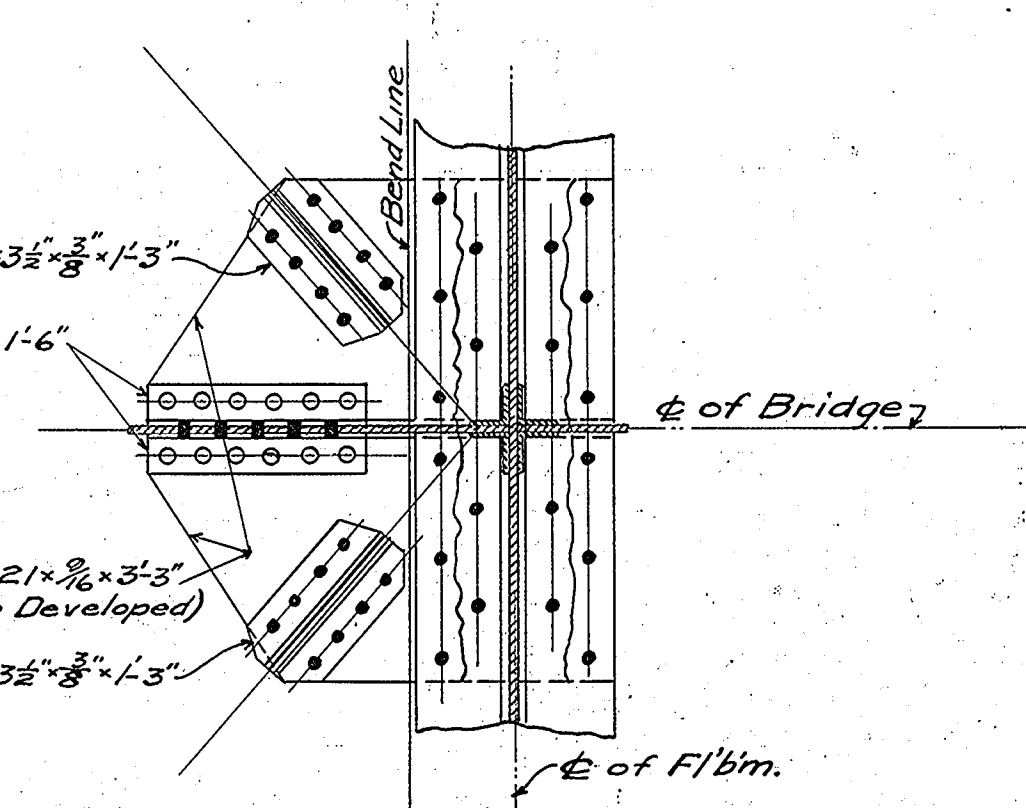
**DETAILS AT CENTER BREAK.**



**DETAIL OF CASTING.**  
Material: Malleable Cast Iron  
Scale 1/2" = 1'-0"



**SECTION AT E OF PIPE AT POST. SECTION X-X.**  
**DETAILS OF PIPE CONNECTIONS.**  
Scale 3/4" = 1'-0"



**SECTION C-C**  
Showing Inclined Lateral Strut

**Section showing Connection of Inclined Lateral to Center Strut and Floorbeam 8-8.**

**NOTES:**  
Material: Structural steel.  
Rivets 3/4" except in 2 1/2" leg of lateral E which are 1/2" x 3/4"  
Open holes 3/4" except as noted.  
For punching, reaming and general requirements of fabrication - See Specifications.  
Pipe to be standard wrought iron gas pipe.  
Fittings to be malleable iron, and have a smooth finish.  
All slip joints to have a close fit, and to be riveted with 1/2" rivets.

**CITY OF CHICAGO**  
DEPARTMENT OF PUBLIC WORKS  
BUREAU OF ENGINEERING  
DIVISION OF BRIDGES AND HARBOR

**DOUBLE LEAF TRUNNION BASCULE BRIDGE**  
AT  
**WEBSTER AVENUE** (8 OF 38)  
**BELMONT AVENUE** (8 OF 41)  
OVER  
NORTH BRANCH OF THE CHICAGO RIVER  
SUPERSTRUCTURE  
MOVABLE PART  
Floorbeam 8-8 & Railing  
Scale: 3/4" = 1'-0" April, 1914.

Traced by [Signature]  
Checked by [Signature]  
Drawing No. 290  
9960040149  
1660570011  
FILE NO. 11-6A-10

Approved: *Hugh C. Young*  
Bridge Designing Engineer.  
Approved: *Maximilian von Babo*  
Engineer of Bridge Design.  
Approved: *John J. Russell*  
Engineer of Bridges and Harbor.  
Approved: *John J. Russell*  
City Engineer.  
Approved: *John J. Russell*  
Commissioner of Public Works.

HALF PLAN - TOP CHORD.

HALF SECTION - TOP CHORD.

ELEVATION OF FLOORBEAM-10-10.

TOP VIEW OF BOTTOM CHORD.

SECTION - A-A' - Showing Bracket Conn. to Post.

SECTION C-C' - Showing Conn. of Bottom Chord to Truss.

SECTION SHOWING CONN. of BOTTOM CHORD to TRUSS.

SECTION - D-D' - Showing Conn. of Bottom Chord to Truss.

SECTION SHOWING CONNECTION OF TOP CHORD TO TRUSS.

SECTION SHOWING CONN. OF CENTER STRUT TO BOTT. CHORD.

SECTIONAL PLAN SHOWING CONN. OF LATERALS TO BOTT. CHORD.

Notes:-  
Material: Structural Steel.  
Rivets 3/8" except in 2 1/2" leg of lateral L which are 1/2".  
Open holes 1/8" except as noted.  
For punching, reaming and general requirements of fabrication - See Specifications.

CITY OF CHICAGO  
DEPARTMENT OF PUBLIC WORKS  
BUREAU OF ENGINEERING  
DIVISION OF BRIDGES AND HARBOR

DOUBLE LEAF TRUNNION BASCULE BRIDGE

AT  
WEBSTER AVENUE (9 OF 33)  
BELMONT AVENUE (9 OF 41)

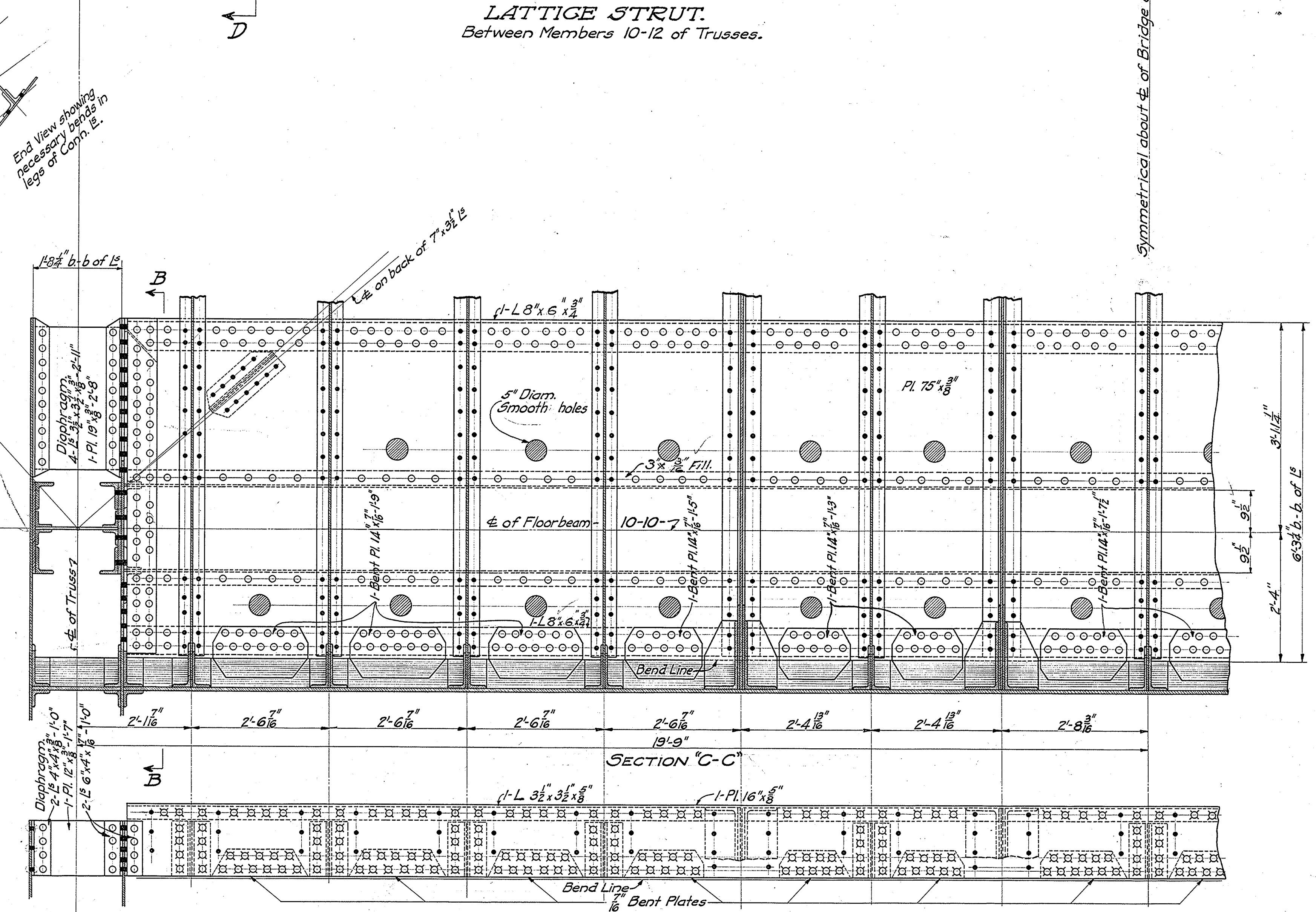
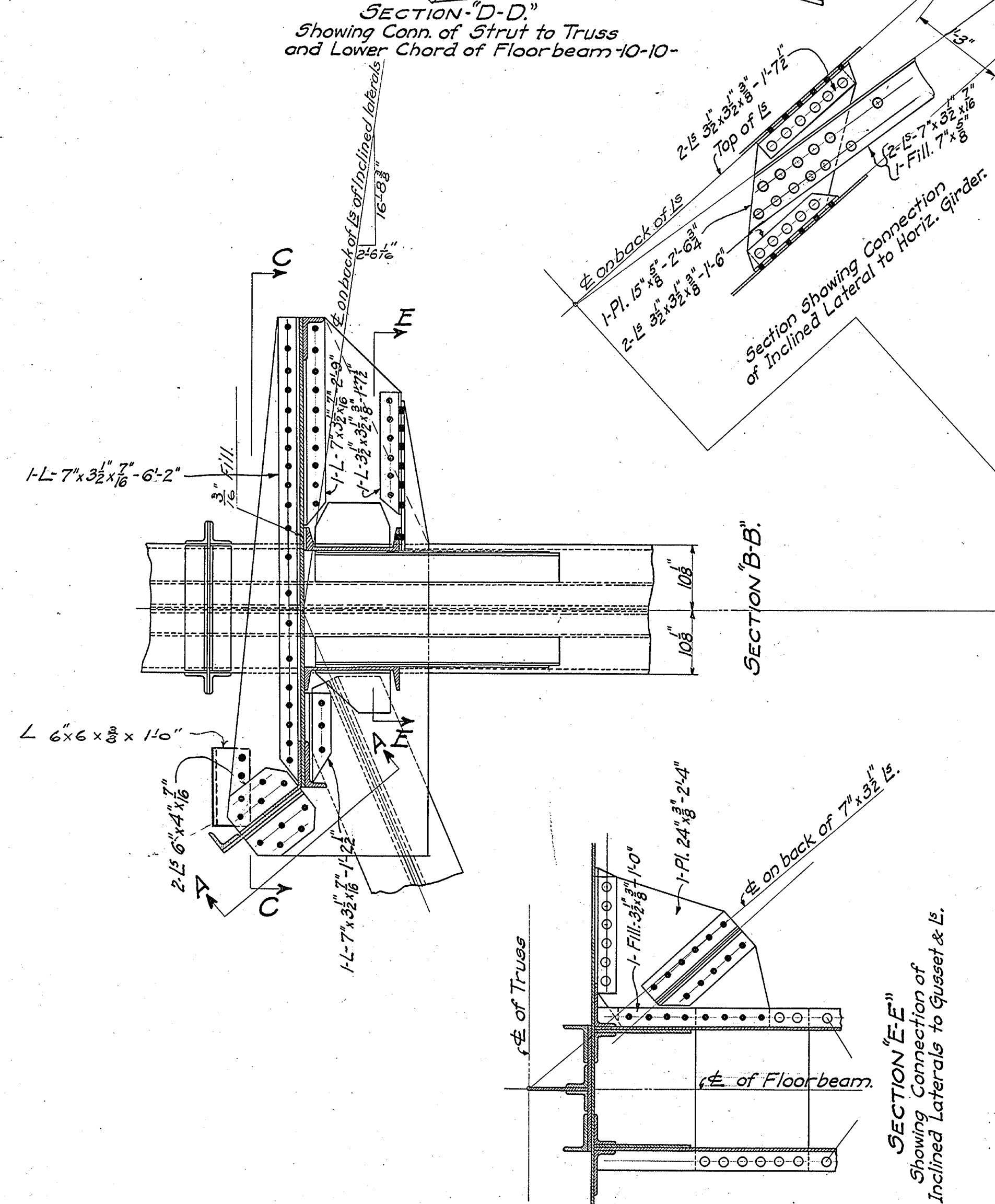
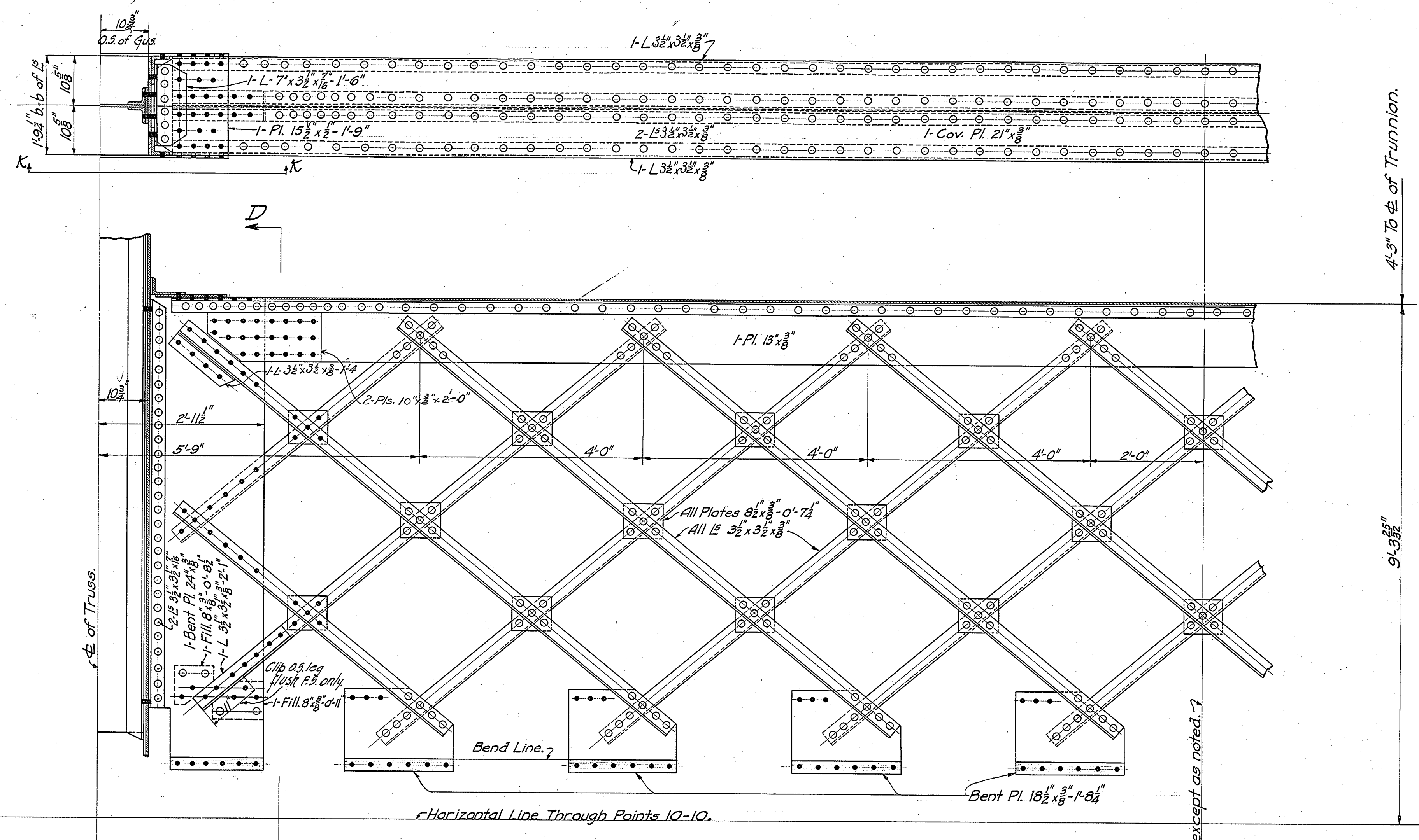
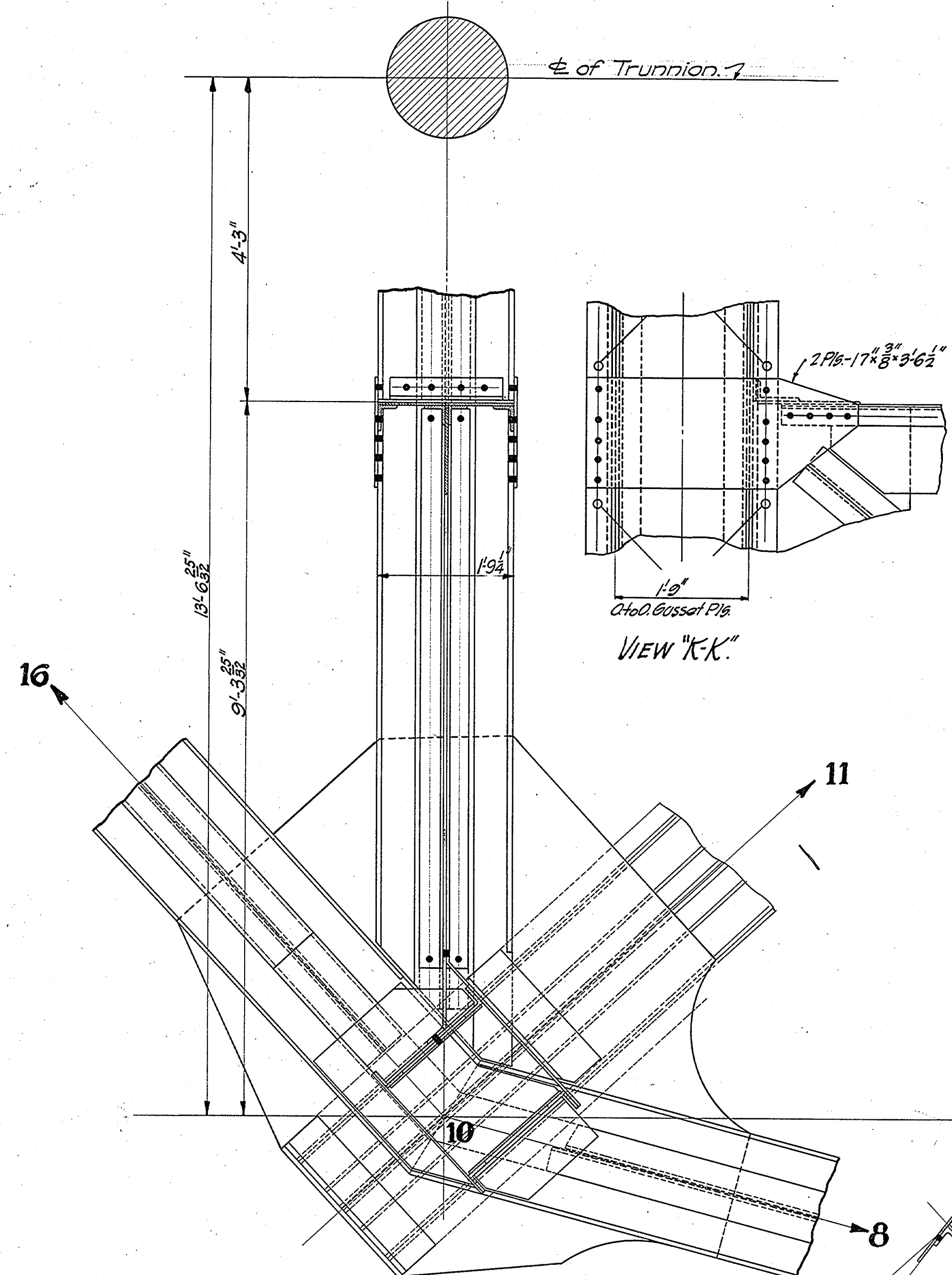
OVER  
NORTH BRANCH OF THE CHICAGO RIVER  
SUPERSTRUCTURE  
MOVABLE PART  
Floorbeam-10-10

Scale: 1/8" = 1'-0"  
April, 1914.

Corrected by *Hugh E. Young*  
Bridge Designing Engineer.  
Approved by *Amundson von Tetta*  
Engineer of Bridge Design.  
Approved by *James J. Sullivan*  
Engineer of Bridges and Harbor.  
Approved by *John J. Sullivan*  
City Engineer.  
Approved by *Amundson*  
Commissioner of Public Works.

Scale: 1/8" = 1'-0"  
April, 1914.  
Drawing No. 791

9960040150  
1660570012  
FILE NO. 11-6A-11



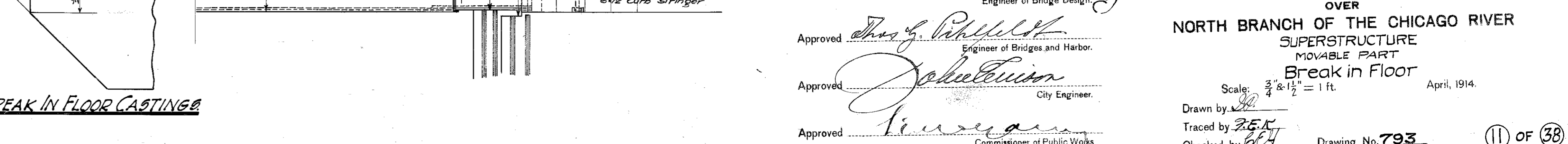
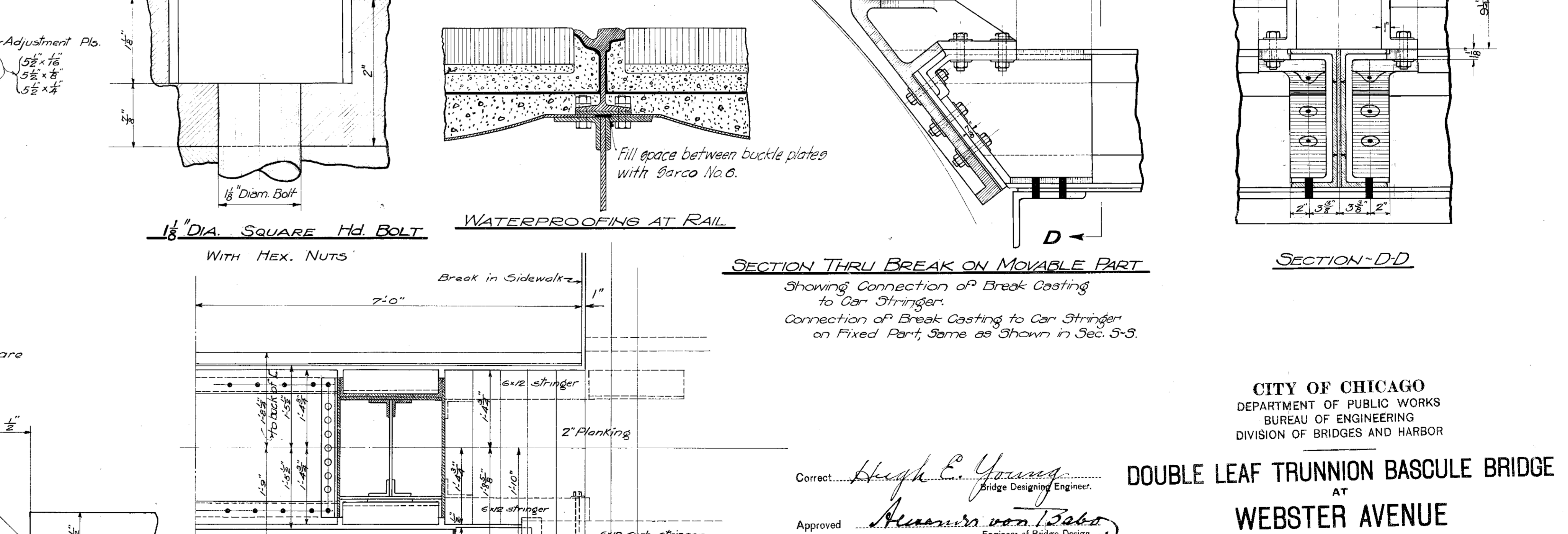
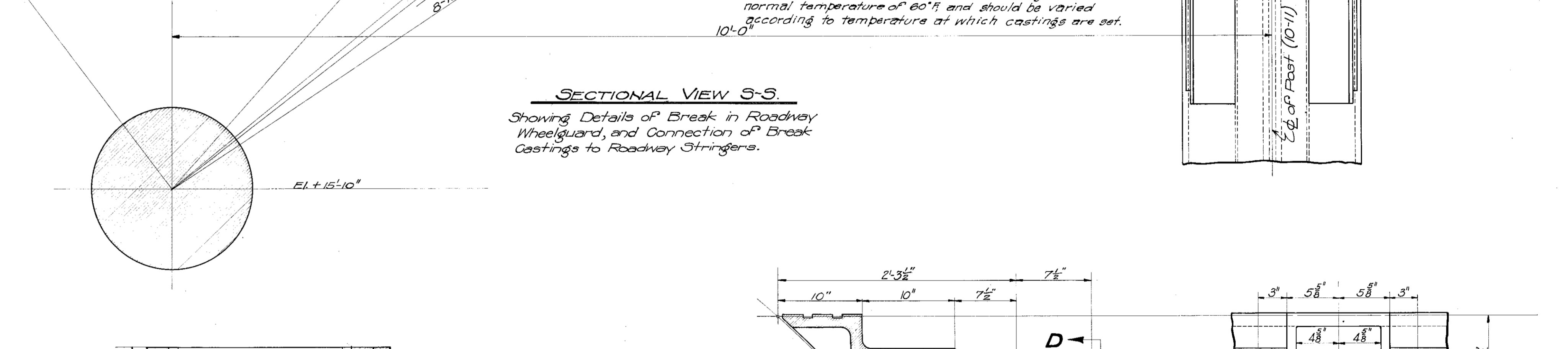
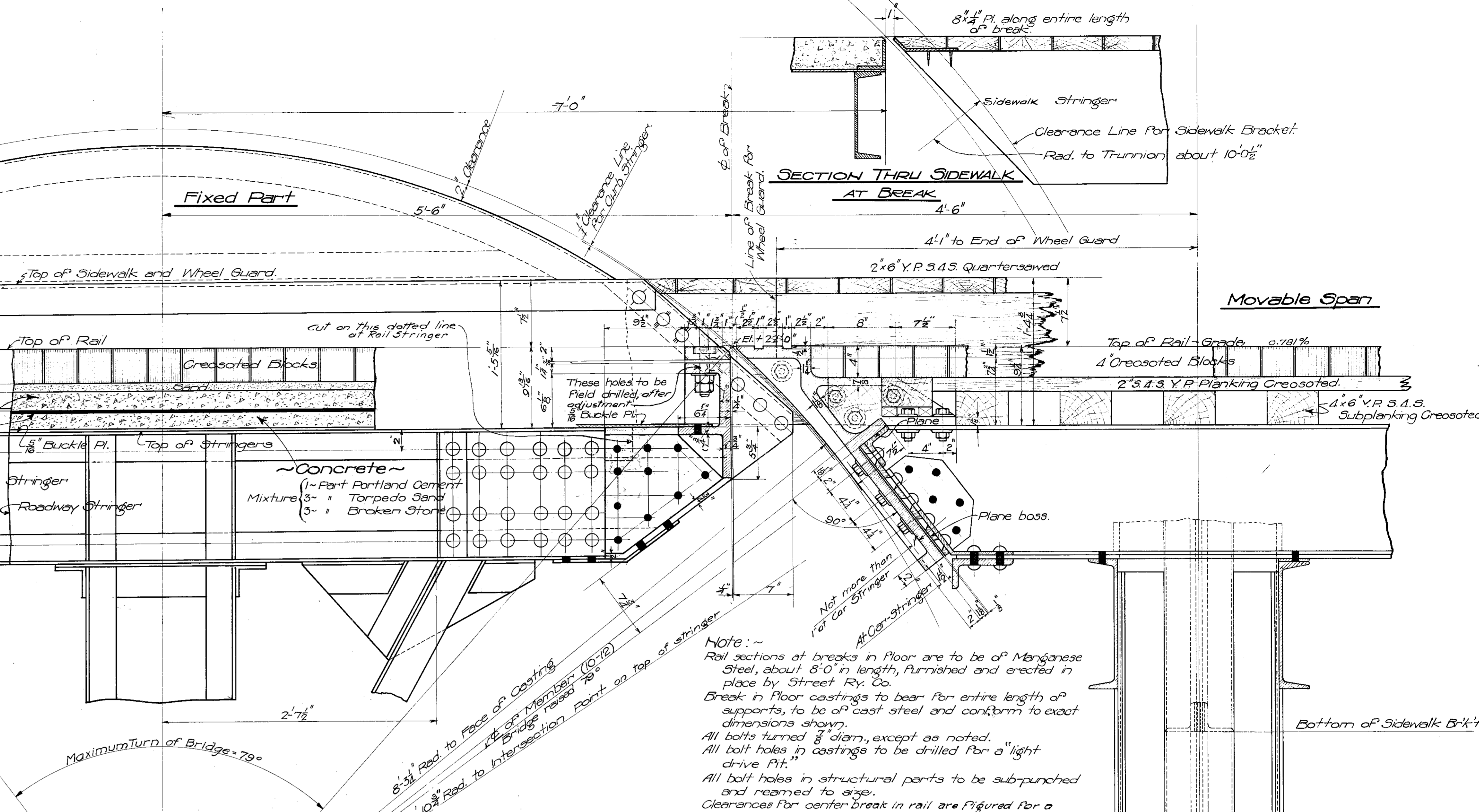
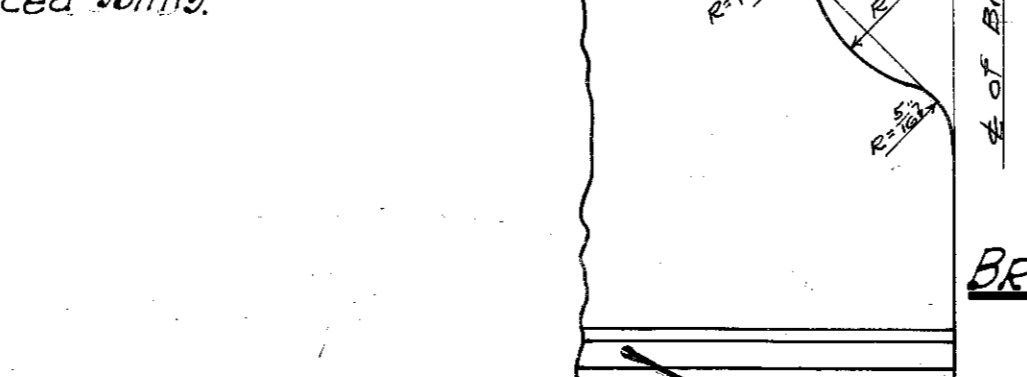
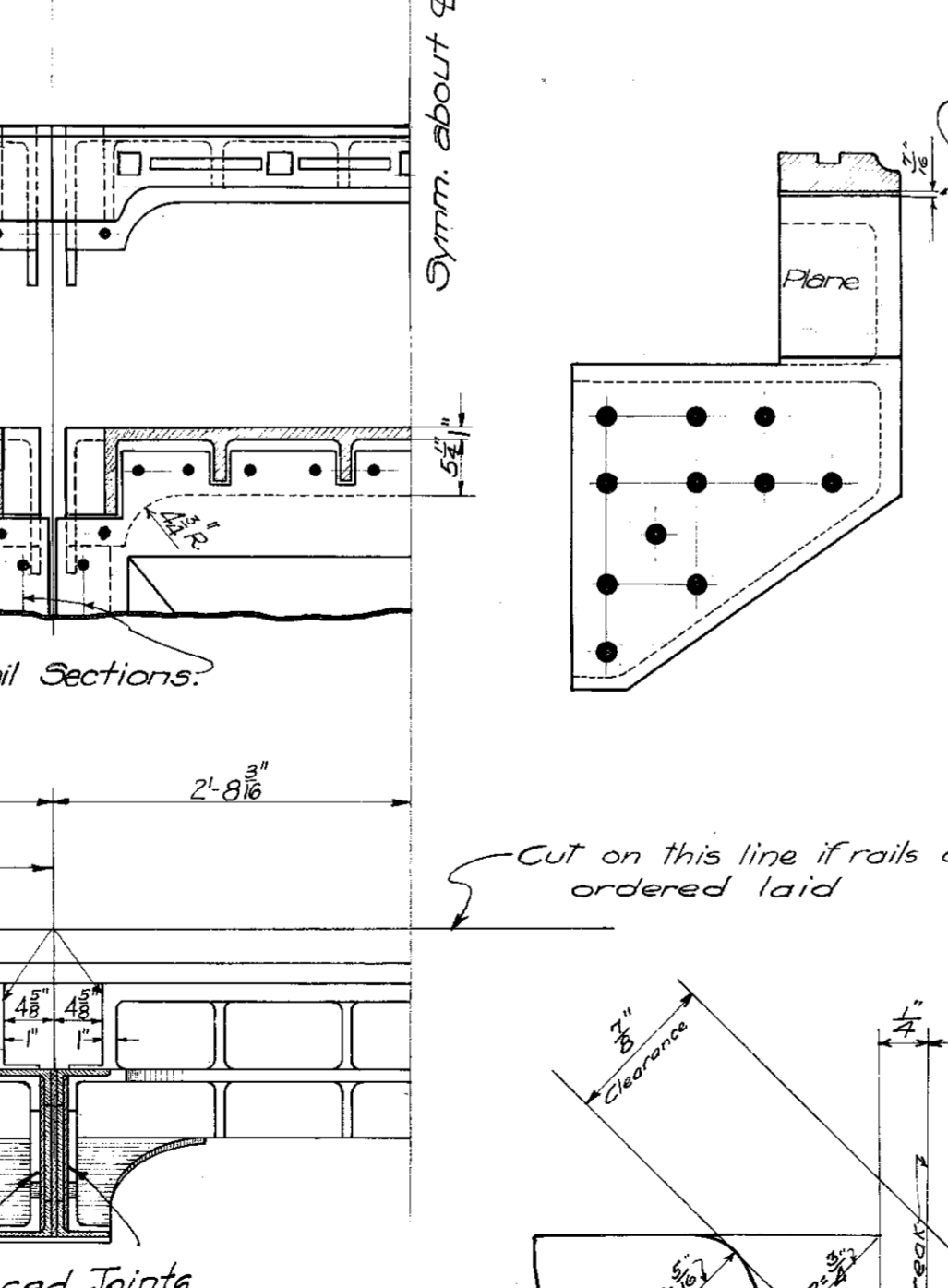
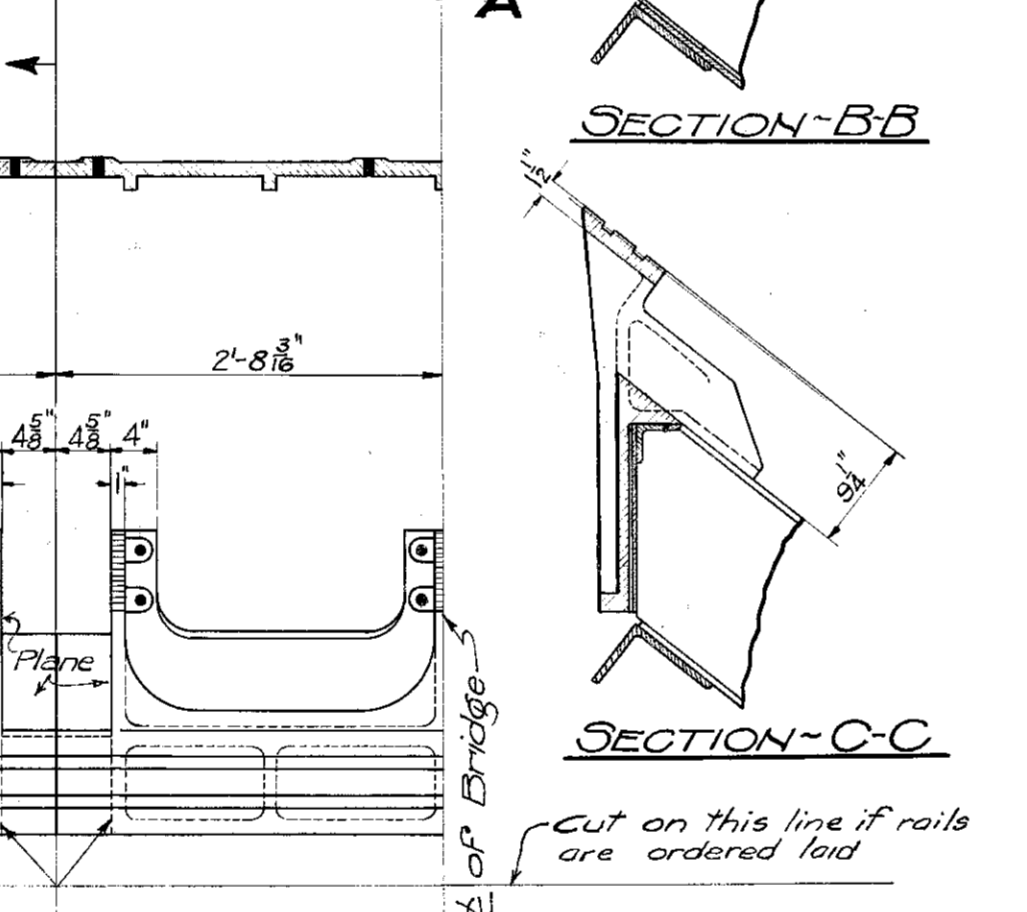
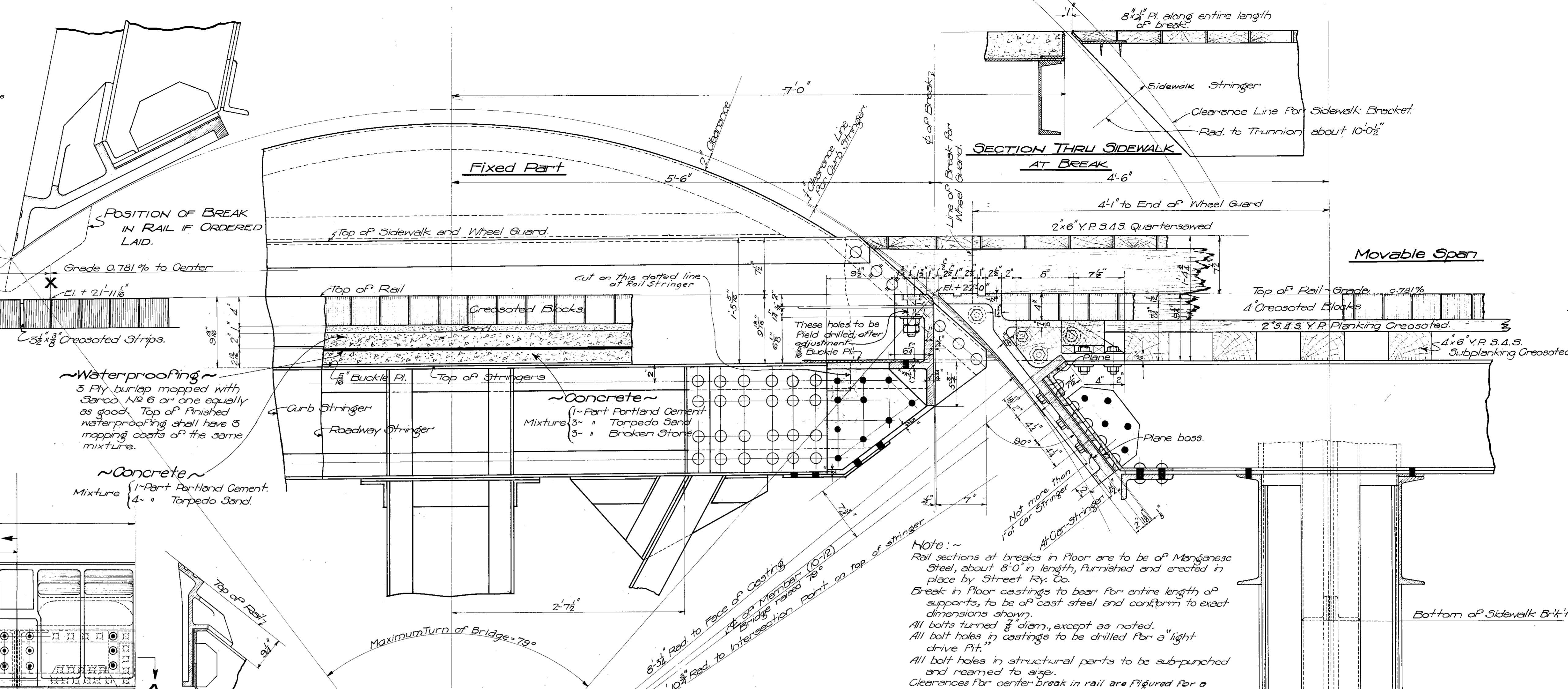
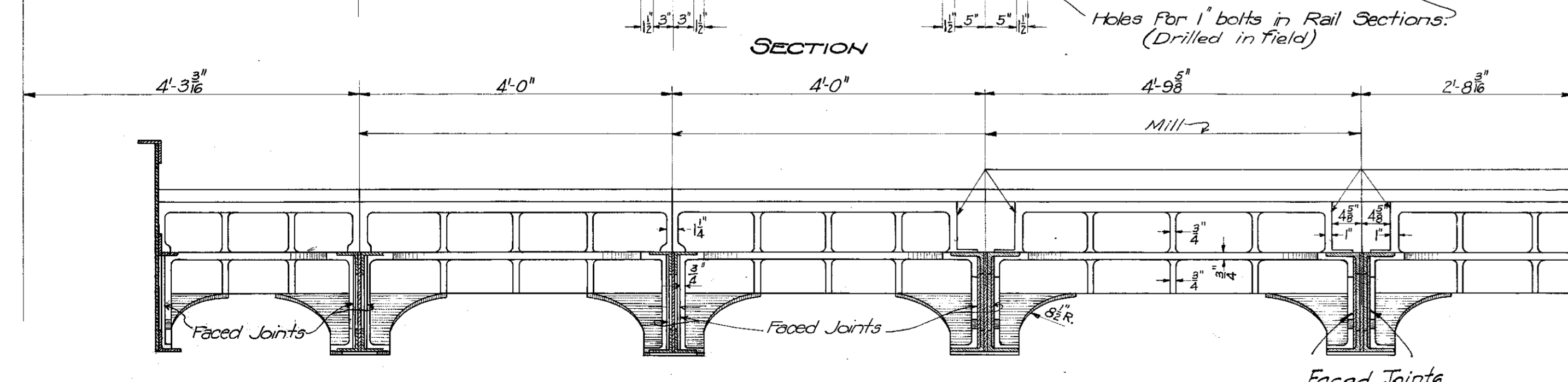
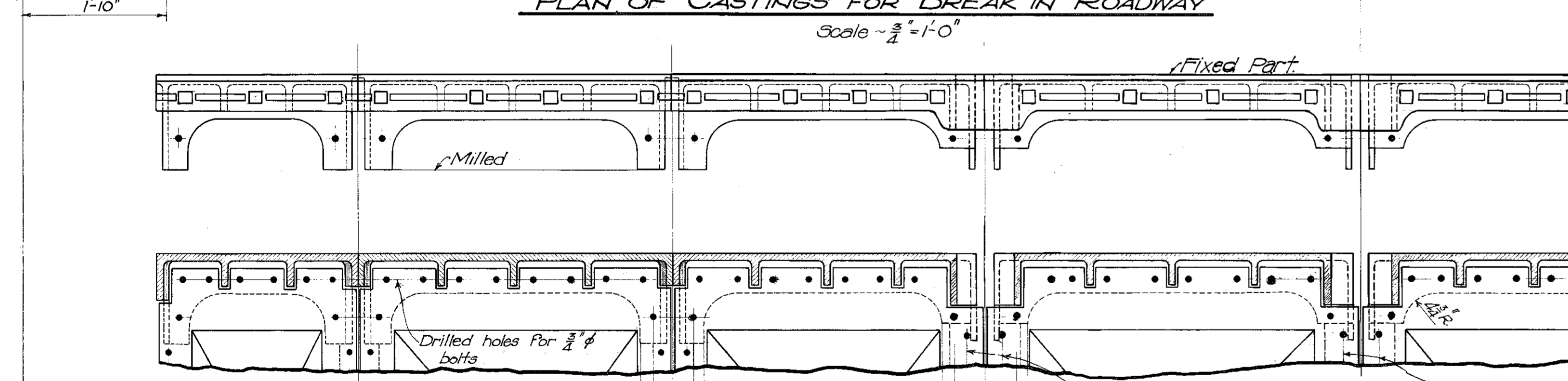
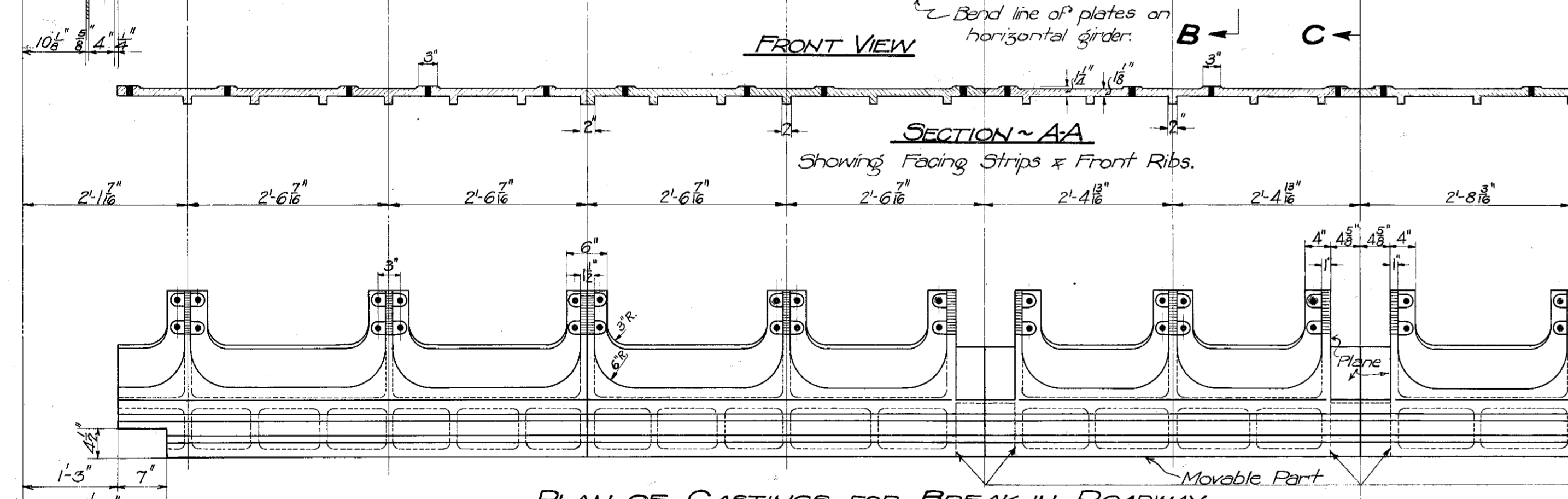
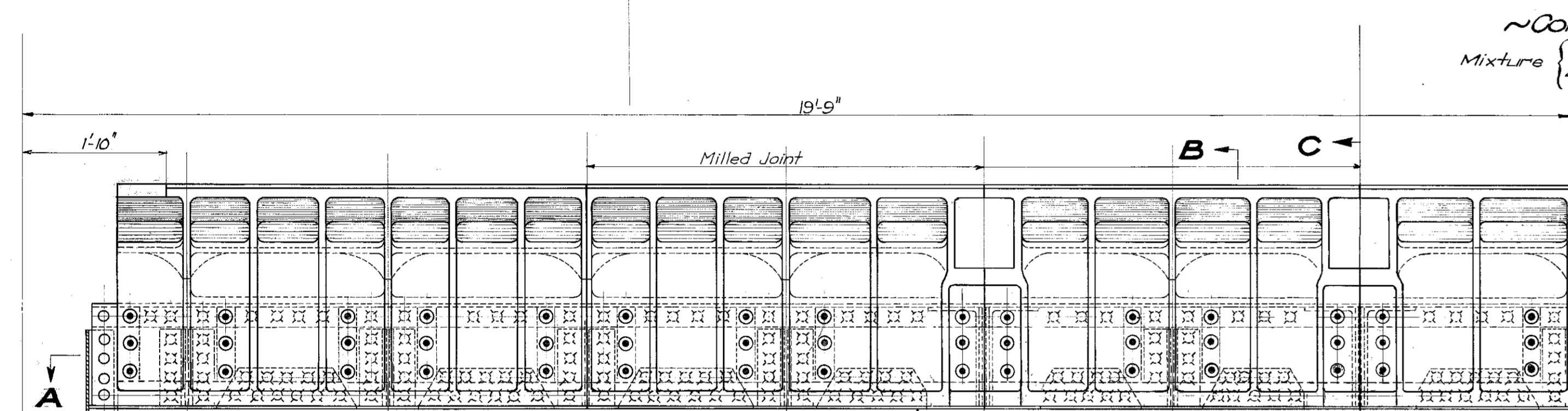
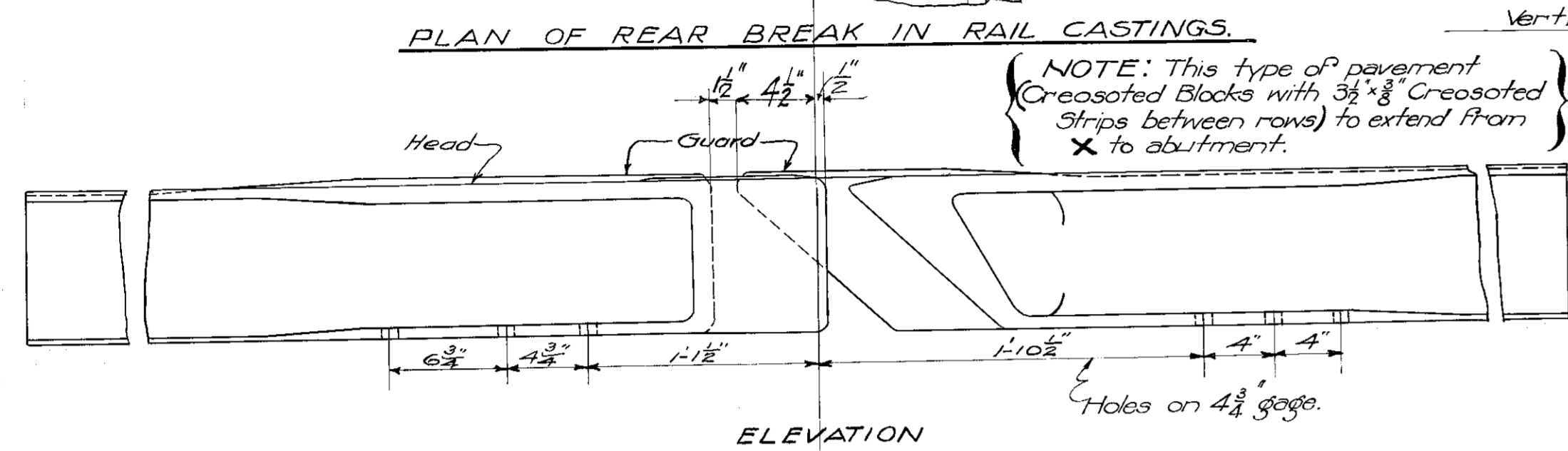
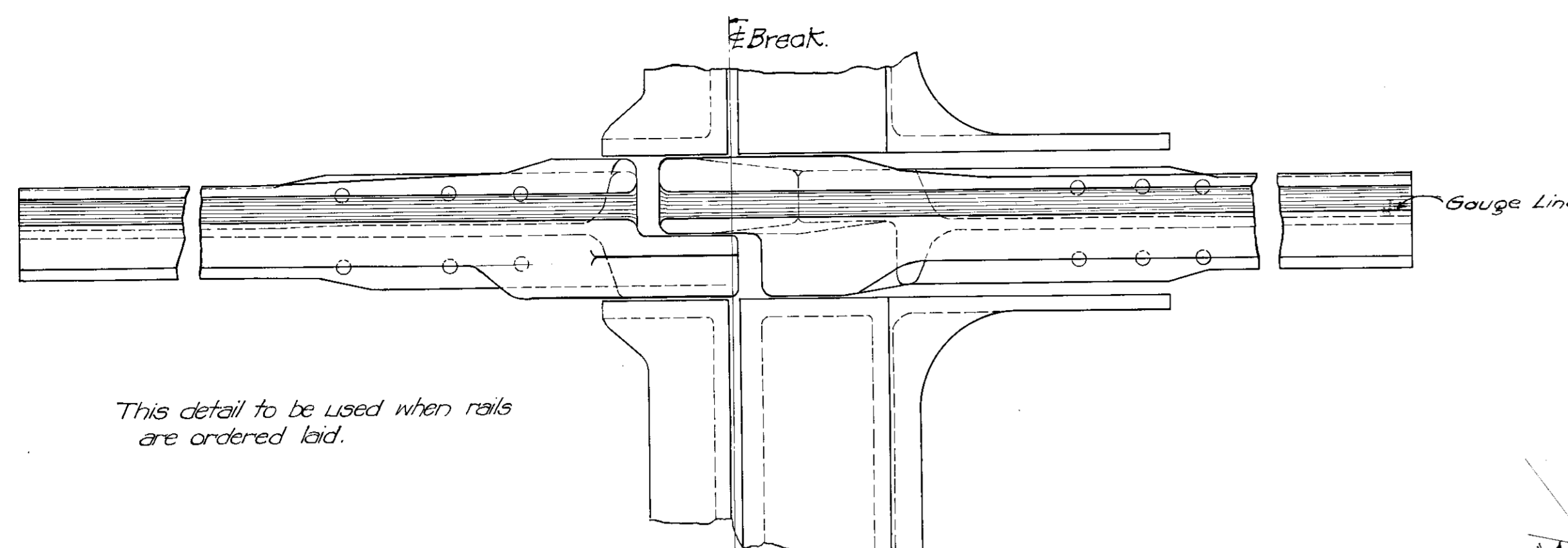
Notes: ~  
Material: Structural Steel.  
Rivets 3/4" except in Planges of B and I beam stringers which are 5/8".  
Open holes 5/8" except as noted.  
For punching reaming and general requirements of fabrication - See Specifications.

CITY OF CHICAGO  
DEPARTMENT OF PUBLIC WORKS  
BUREAU OF ENGINEERING  
DIVISION OF BRIDGES AND HARBOR

DOUBLE LEAF TRUNNION BASCULE BRIDGE  
AT  
WEBSTER AVENUE (10 OF 38)  
BELMONT AVENUE (10 OF 41)  
OVER  
NORTH BRANCH OF THE CHICAGO RIVER  
SUPERSTRUCTURE  
MOVABLE PART  
Latticed Strut and Horizontal Girder  
Scale: 3/8" = 1 ft. April, 1914.

Corrected by *Hugh E. Young*  
Approved by *William W. Baker*  
Approved by *John J. ...*  
Approved by *...*

Traced by *J.E.M.*  
Checked by *G.H.H.*  
Drawing No. 792  
FILE No. 11-6A-12  
9960040151 1660570013



Note: - Rail sections at breaks in floor are to be of Manganese Steel, about 8'-0" in length, furnished and erected in place by Street Ry. Co.  
Break in floor castings to bear for entire length of supports, to be of cast steel and conform to exact dimensions shown.  
All bolts turned 3/8" diam, except as noted.  
All bolt holes in castings to be drilled for a "light drive fit."  
All bolt holes in structural parts to be sub-punched and reamed to size.  
Clearances for center break in rail are figured for a normal temperature of 60°F and should be varied according to temperature at which castings are set.  
10'-0"

CITY OF CHICAGO  
DEPARTMENT OF PUBLIC WORKS  
BUREAU OF ENGINEERING  
DIVISION OF BRIDGES AND HARBOR

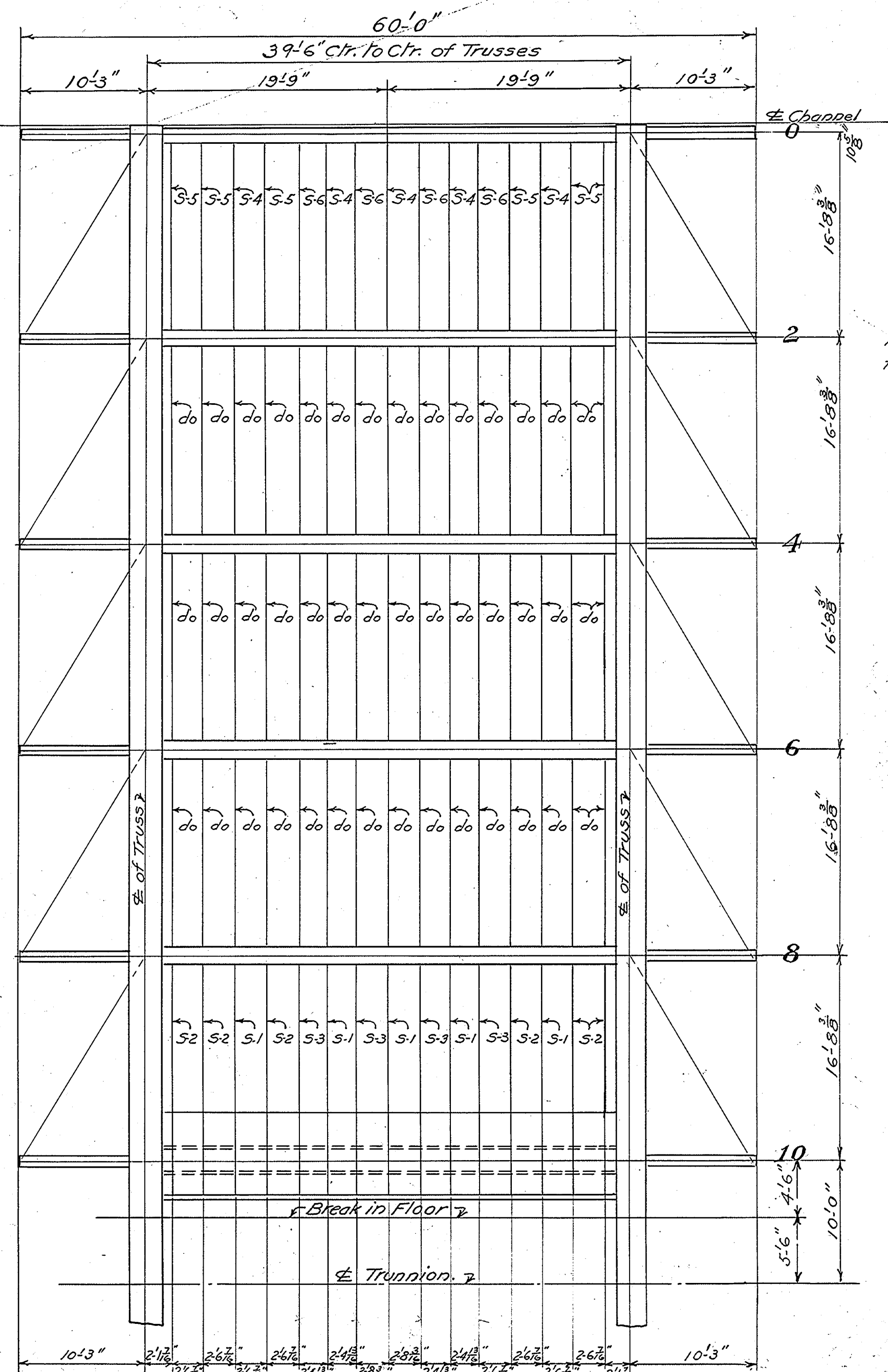
**DOUBLE LEAF TRUNNION BASCULE BRIDGE**  
AT  
**WEBSTER AVENUE**  
OVER  
NORTH BRANCH OF THE CHICAGO RIVER  
SUPERSTRUCTURE  
MOVABLE PART  
Break in Floor

Scale: 3/8" = 1 ft. April, 1914.

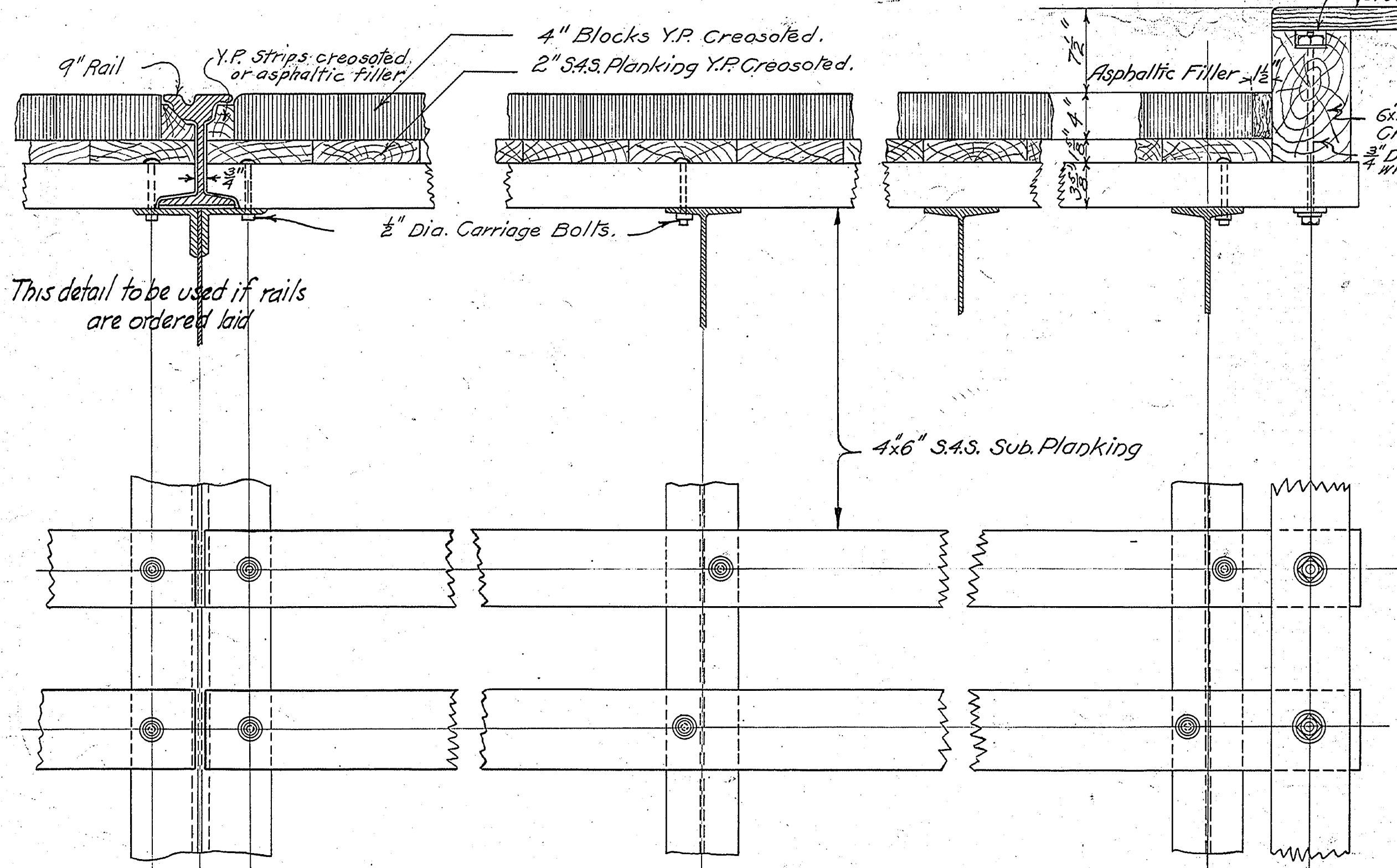
Drawn by [Signature]  
Traced by [Signature]  
Checked by [Signature]

Corrected by [Signature] Bridge Designing Engineer.  
Approved by [Signature] Engineer of Bridge Design.  
Approved by [Signature] Engineer of Bridges and Harbor.  
Approved by [Signature] City Engineer.  
Approved by [Signature] Commissioner of Public Works.

FILE No. 11-6A-13



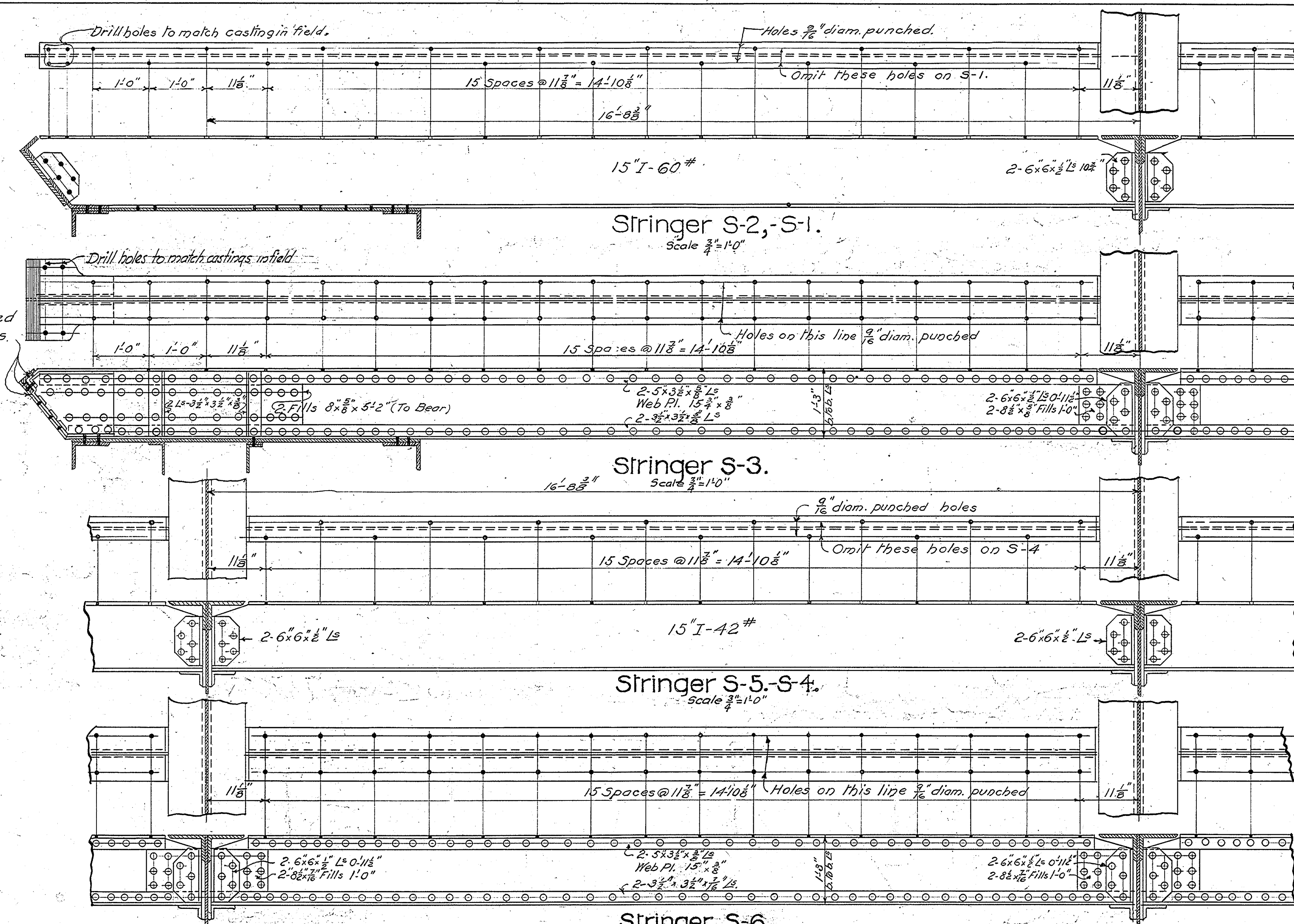
Stringer Diagram.  
Scale  $\frac{3}{8}$ " to 1'-0"



Detail

Showing method of fastening Sub-Planking and Wheel Guard Timber.  
Scale  $\frac{1}{2}$ " to 1'-0"

All lumber for movable part must be S. A. S., except as noted.

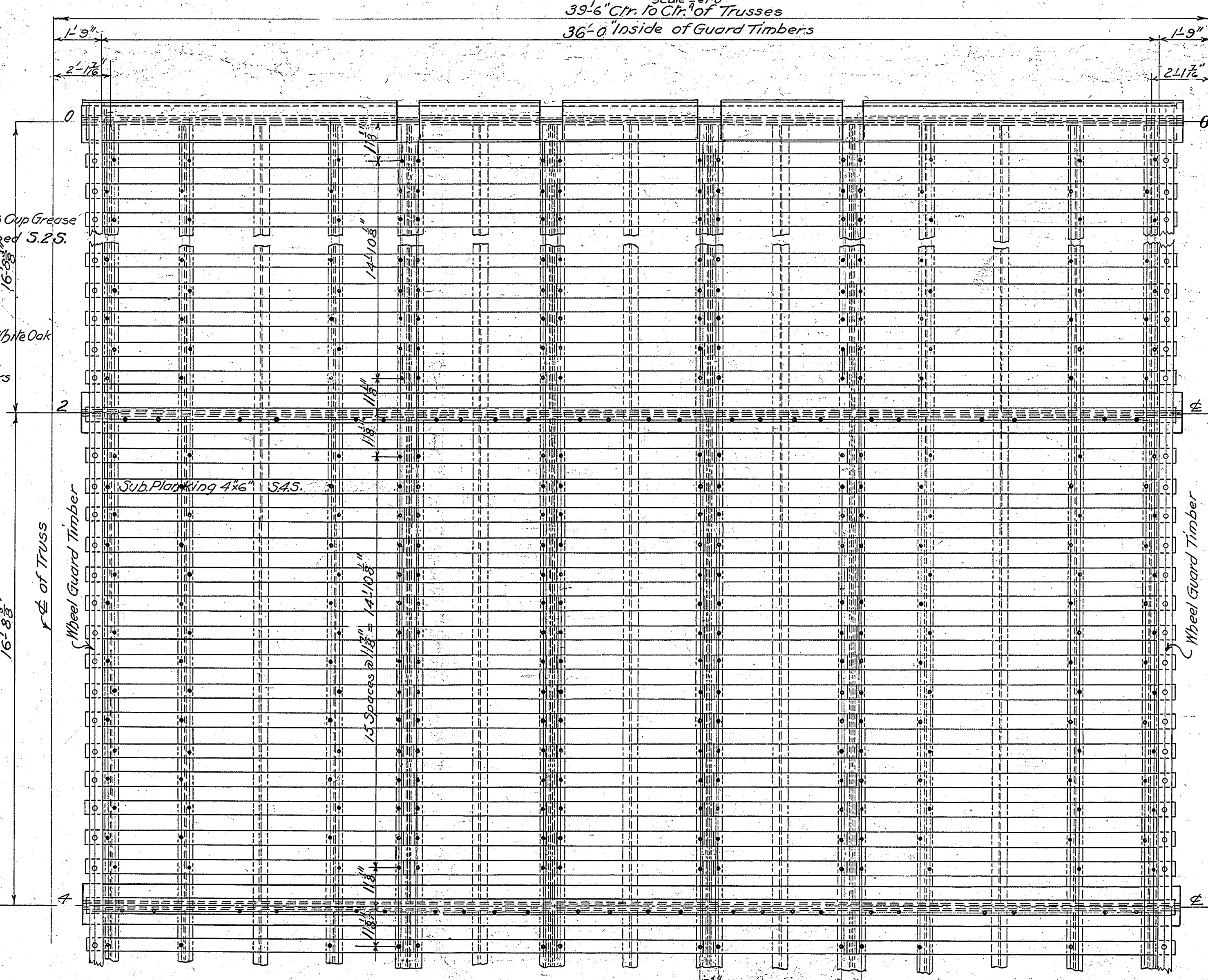


Stringer S-2, S-1.

Stringer S-3.

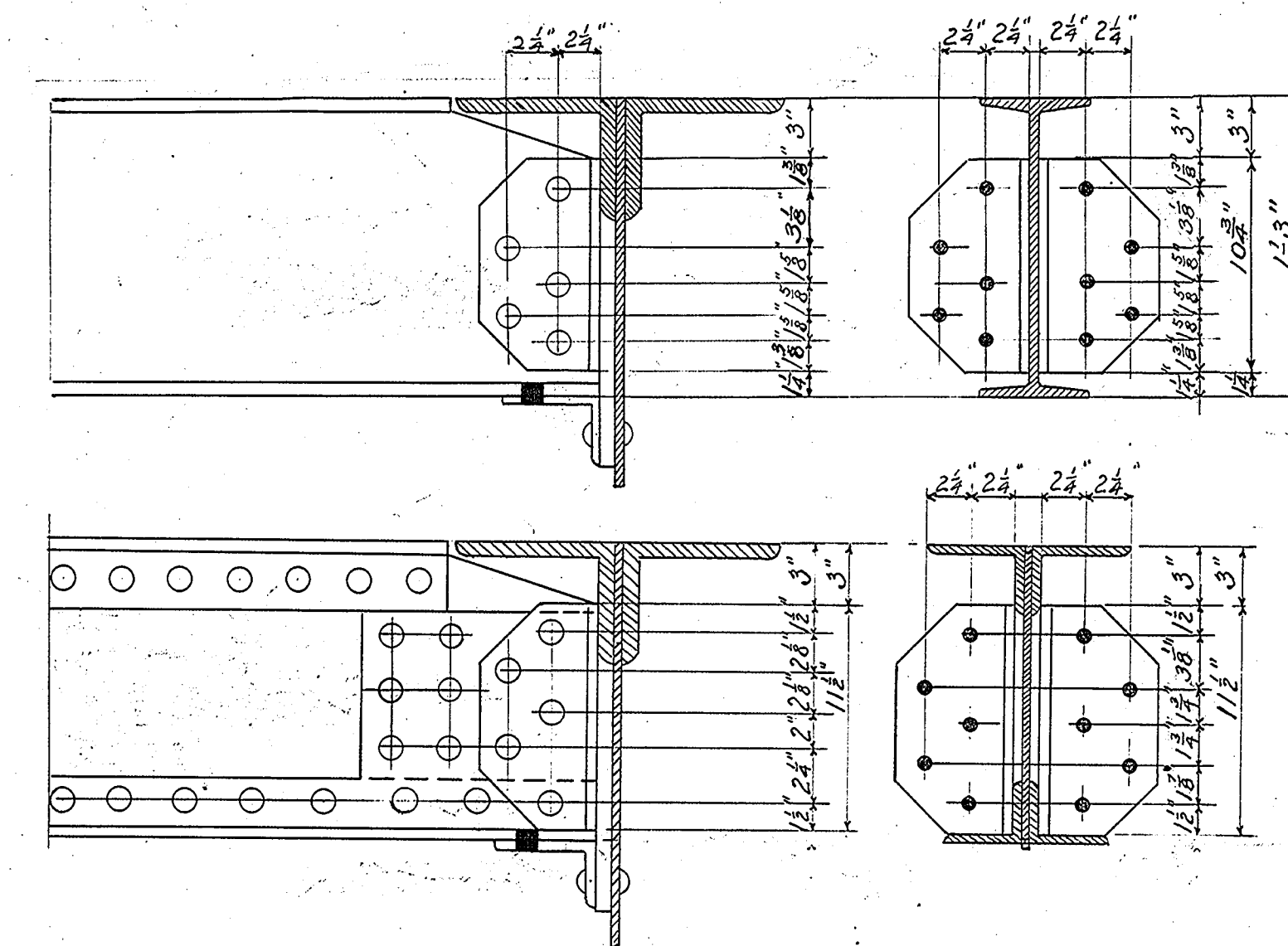
Stringer S-5-S-4.

Stringer S-6.

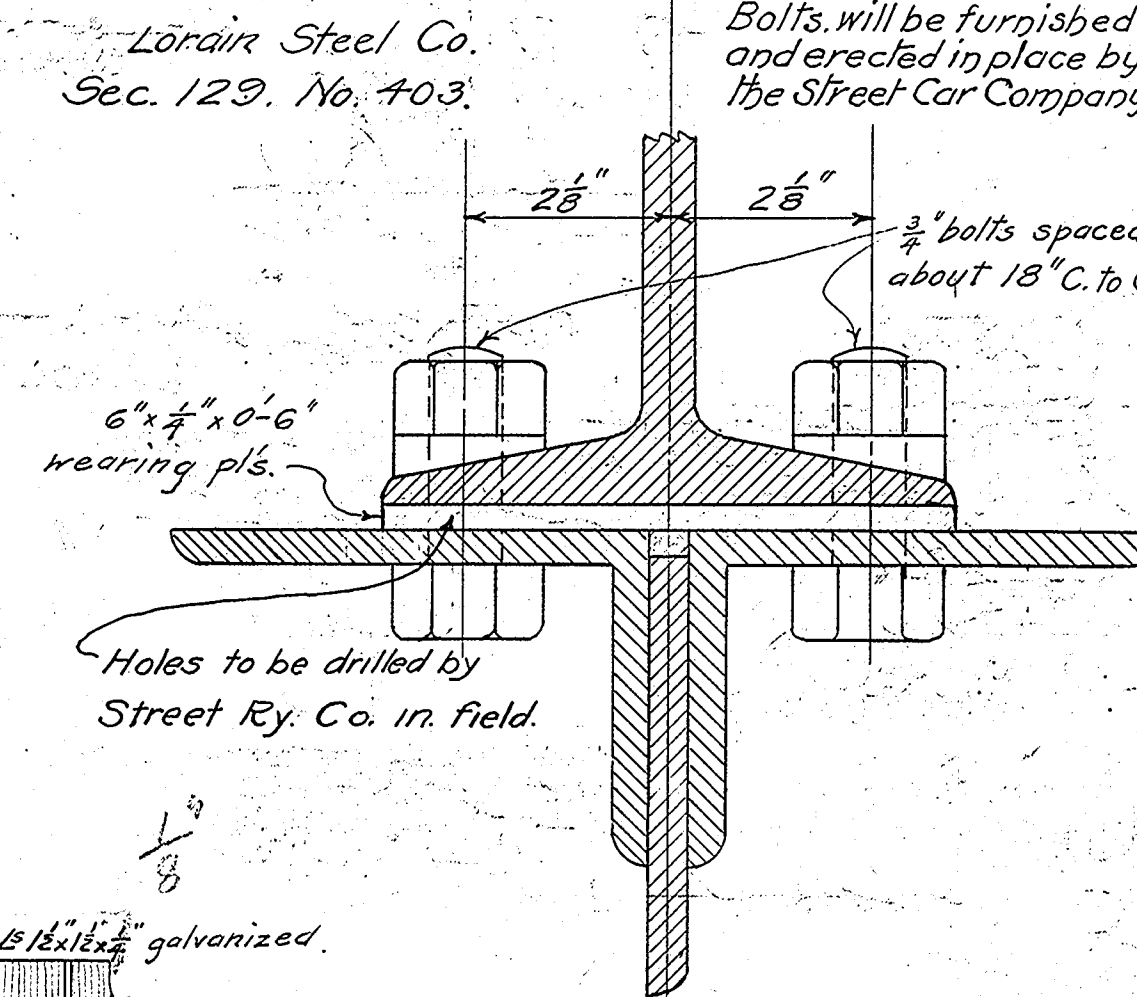


Plan

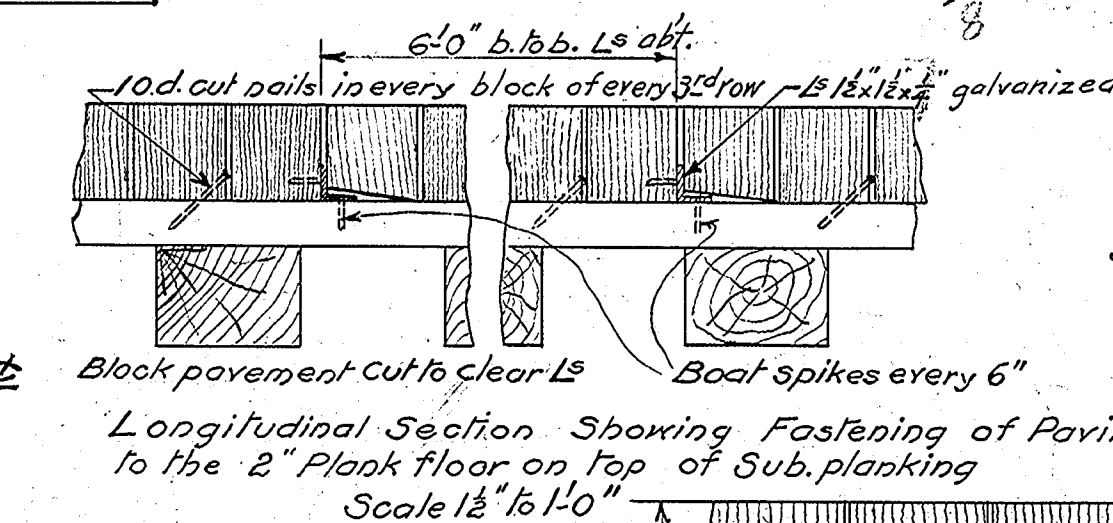
Showing method of laying and fastening Sub-Planking  
If no rails are laid subplanking shall be in long lengths.



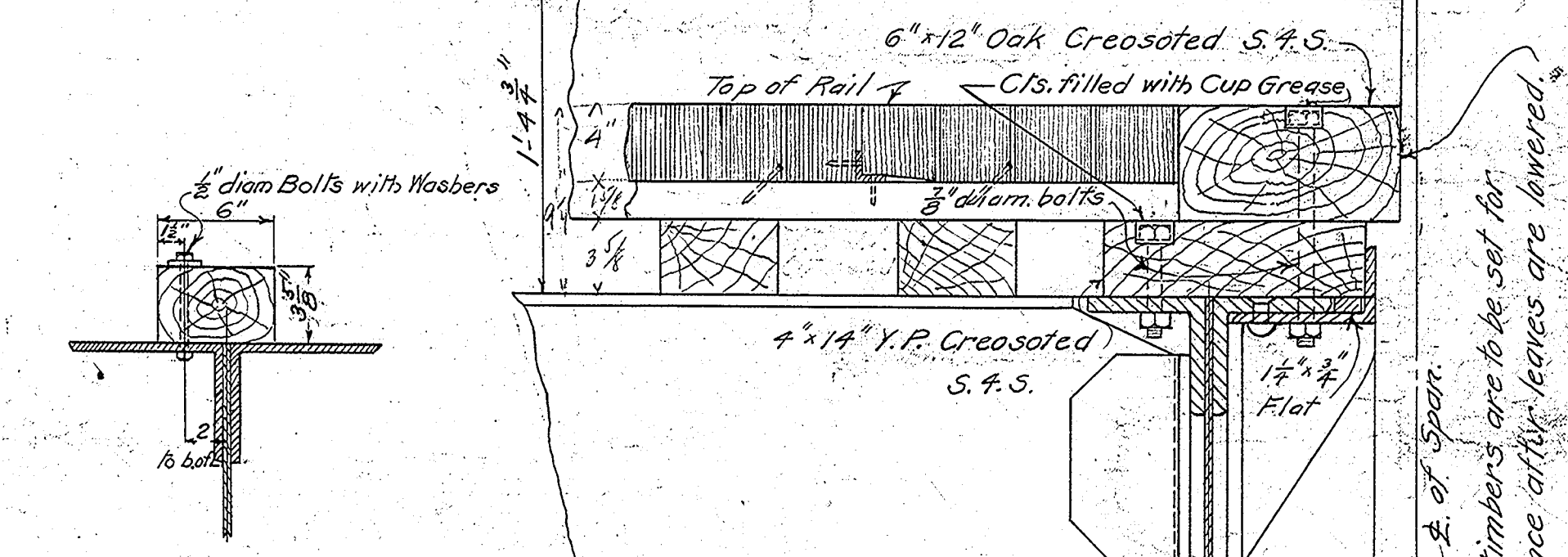
Typical Connections  
of Stringers to Floor Beams  
Scale  $\frac{1}{2}$ " to 1'-0"



Detail  
Showing method of bolting down Rails,  
if ordered laid.  
Scale  $\frac{1}{2}$ " to 1'-0"



Longitudinal Section Showing Fastening of Paving Blocks  
to the 2" Plank floor on top of Sub-planking  
Scale  $\frac{1}{2}$ " to 1'-0"



Detail  
Showing finishing of Roadway etc. at 0-0.  
Scale  $\frac{1}{2}$ " to 1'-0"

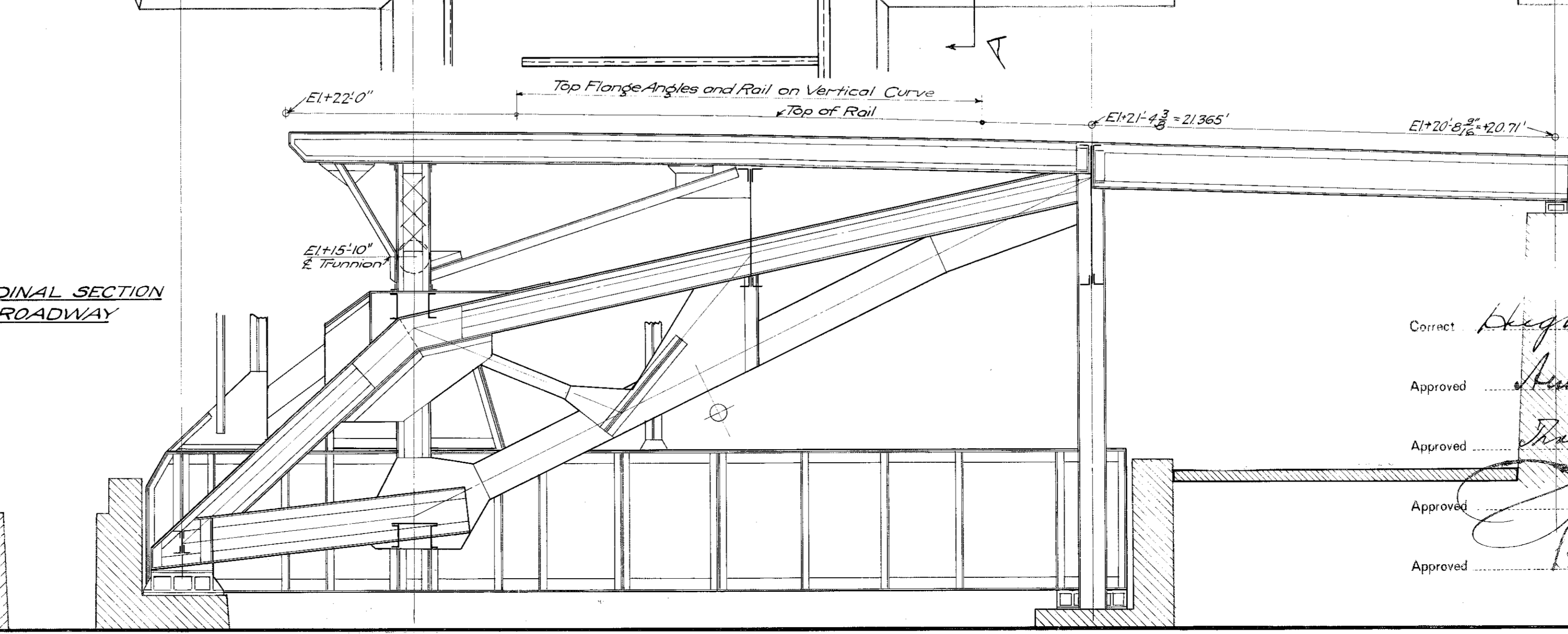
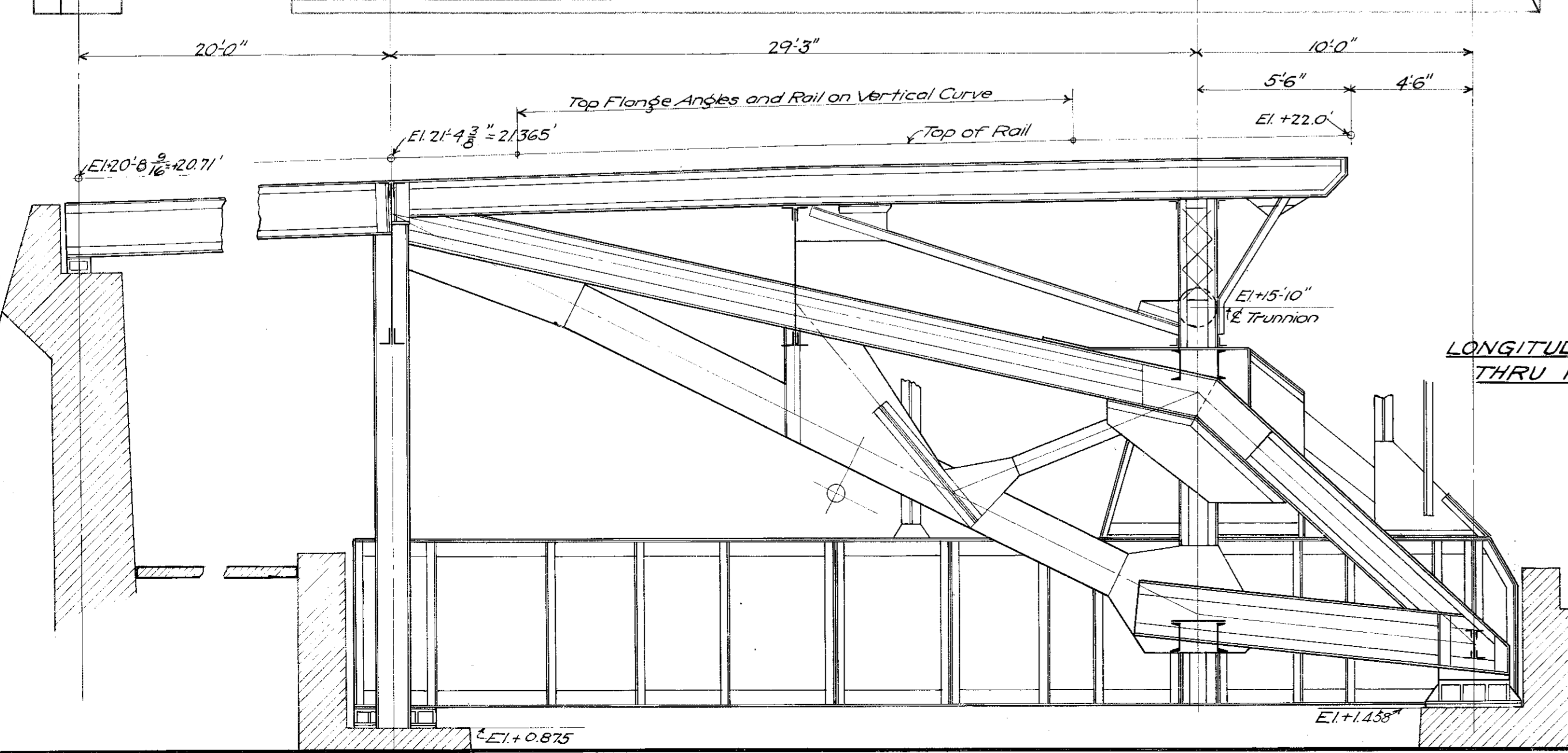
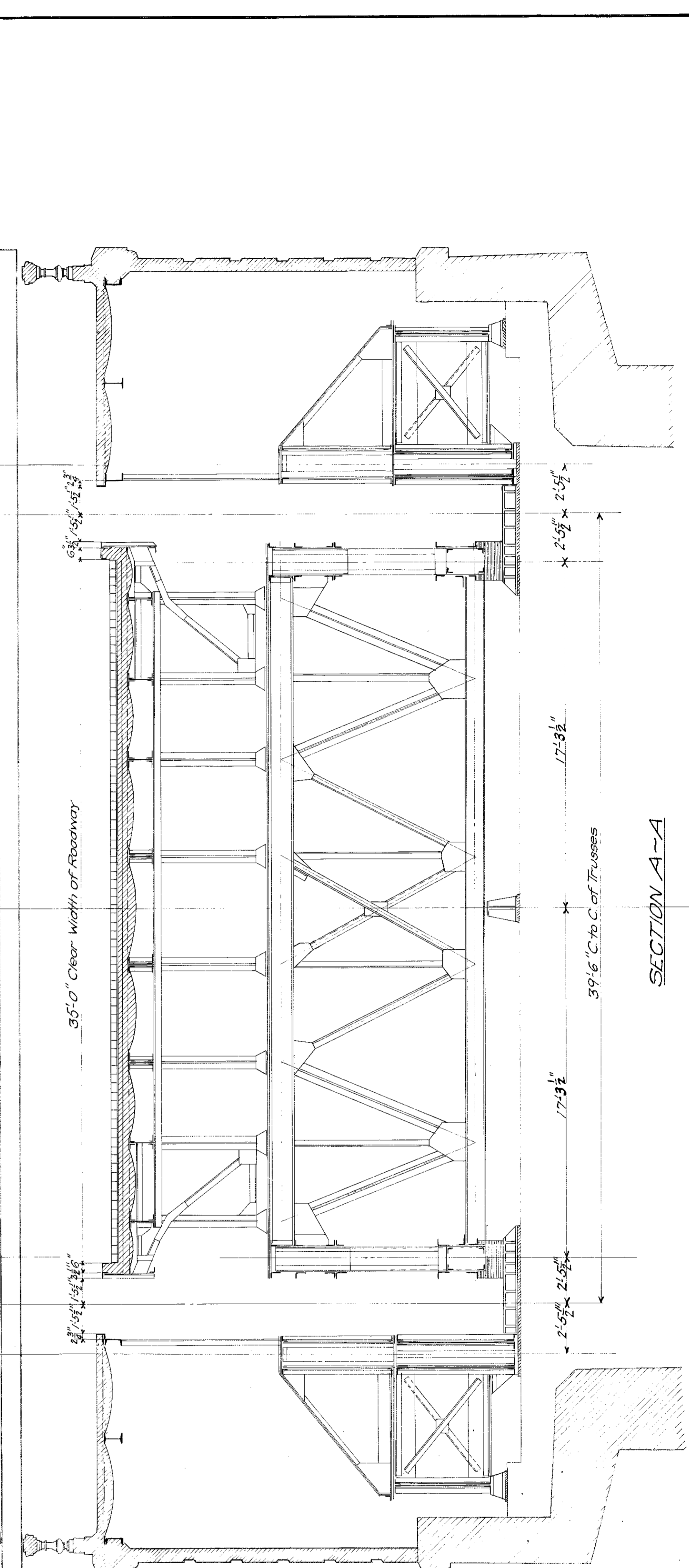
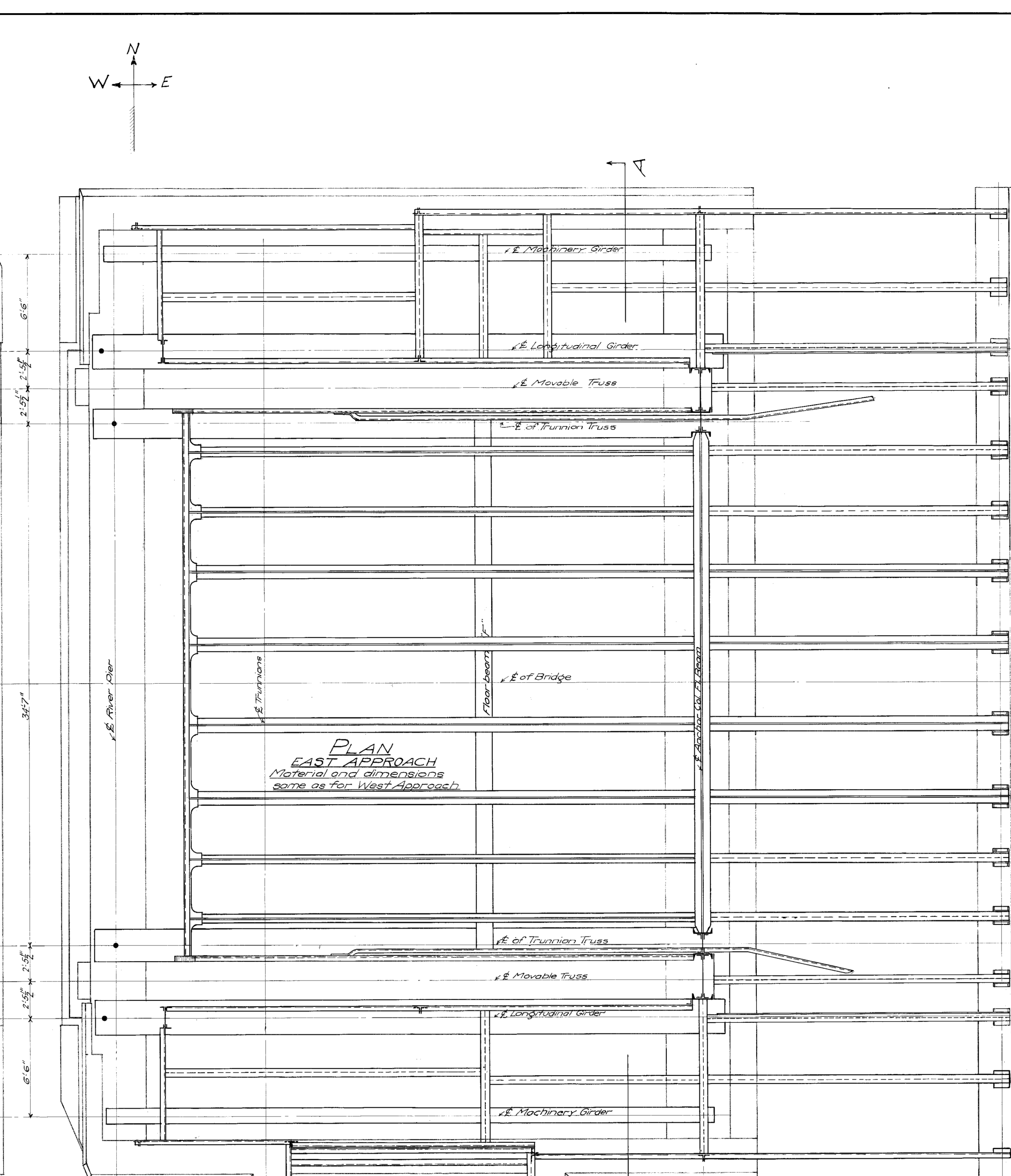
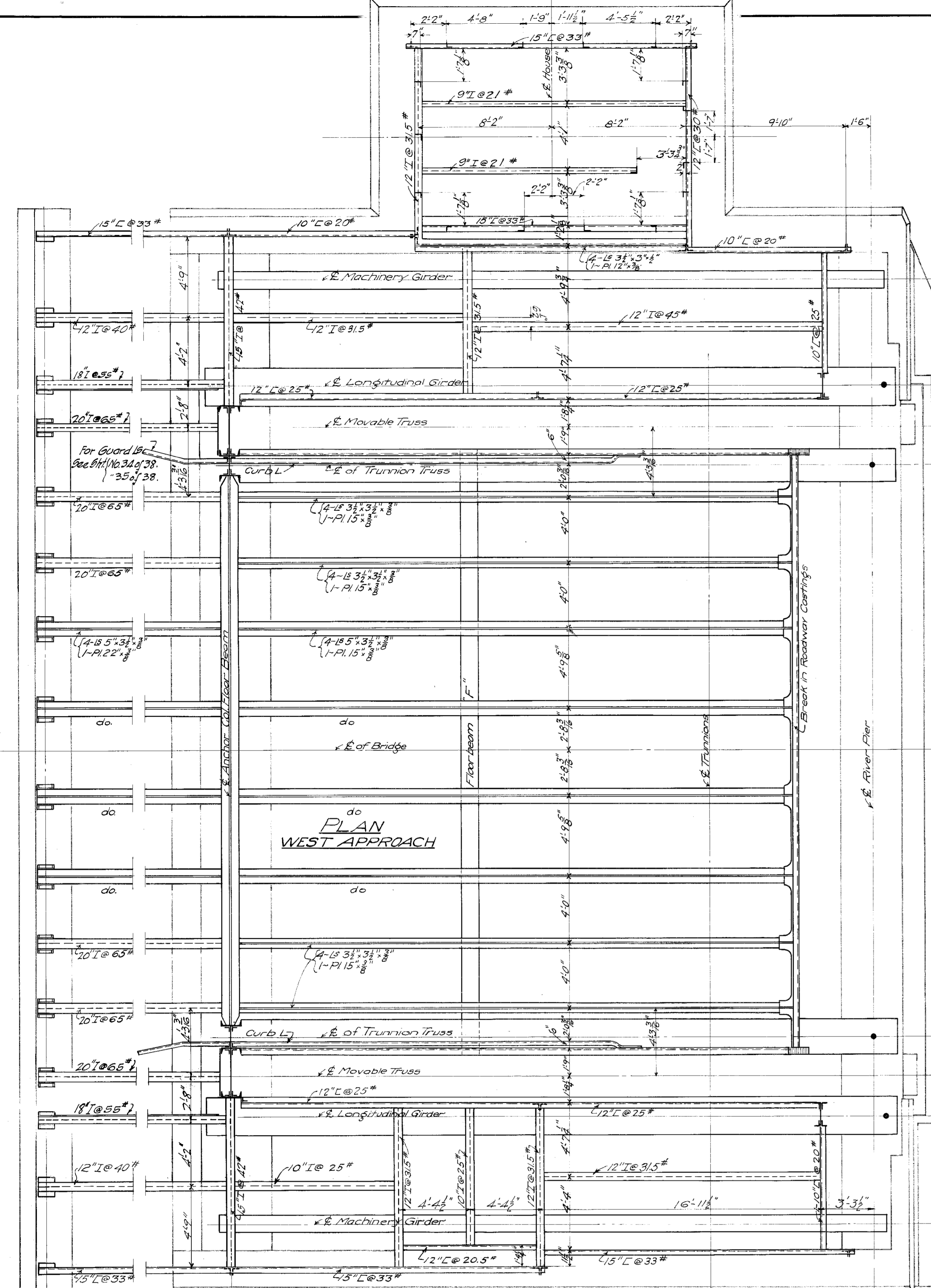
Notes: ~  
Material: Structural Steel.  
Rivets  $\frac{3}{4}$ "  
Open holes  $\frac{1}{8}$ " except as noted.  
For punching, reaming and general requirements  
of fabrication - See Specifications.

Corrected by *Hugh P. Young*  
Approved by *William van Buren*  
Approved by *Stan J. Schmitt*  
Approved by *John L. ...*  
Approved by *...*

CITY OF CHICAGO  
DEPARTMENT OF PUBLIC WORKS  
BUREAU OF ENGINEERING  
DIVISION OF BRIDGES AND HARBOR

DOUBLE LEAF TRUNNION BASCULE BRIDGE  
AT  
WEBSTER AVENUE (12 OF 38)  
BELMONT AVENUE (12 OF 41)  
OVER  
NORTH BRANCH OF THE CHICAGO RIVER  
SUPERSTRUCTURE  
MOVABLE PART  
Stringers & Sub-Planking  
Scale  $\frac{3}{8}$ " to 1'-0" April 1914.

Drawn by *...*  
Traced by *...*  
Checked by *...*  
FILE NO. 11-6A-14  
9960040152 1660570015



CITY OF CHICAGO  
 DEPARTMENT OF PUBLIC WORKS  
 BUREAU OF ENGINEERING  
 DIVISION OF BRIDGES AND HARBOUR

**DOUBLE LEAF TRUNNION BASCULE BRIDGE**  
 AT  
**WEBSTER AVENUE**  
 OVER  
 NORTH BRANCH OF THE CHICAGO RIVER  
 SUPERSTRUCTURE  
 FIXED PART  
 General Plan

Scale: 1/4" = 1'-0"  
 April, 1914.

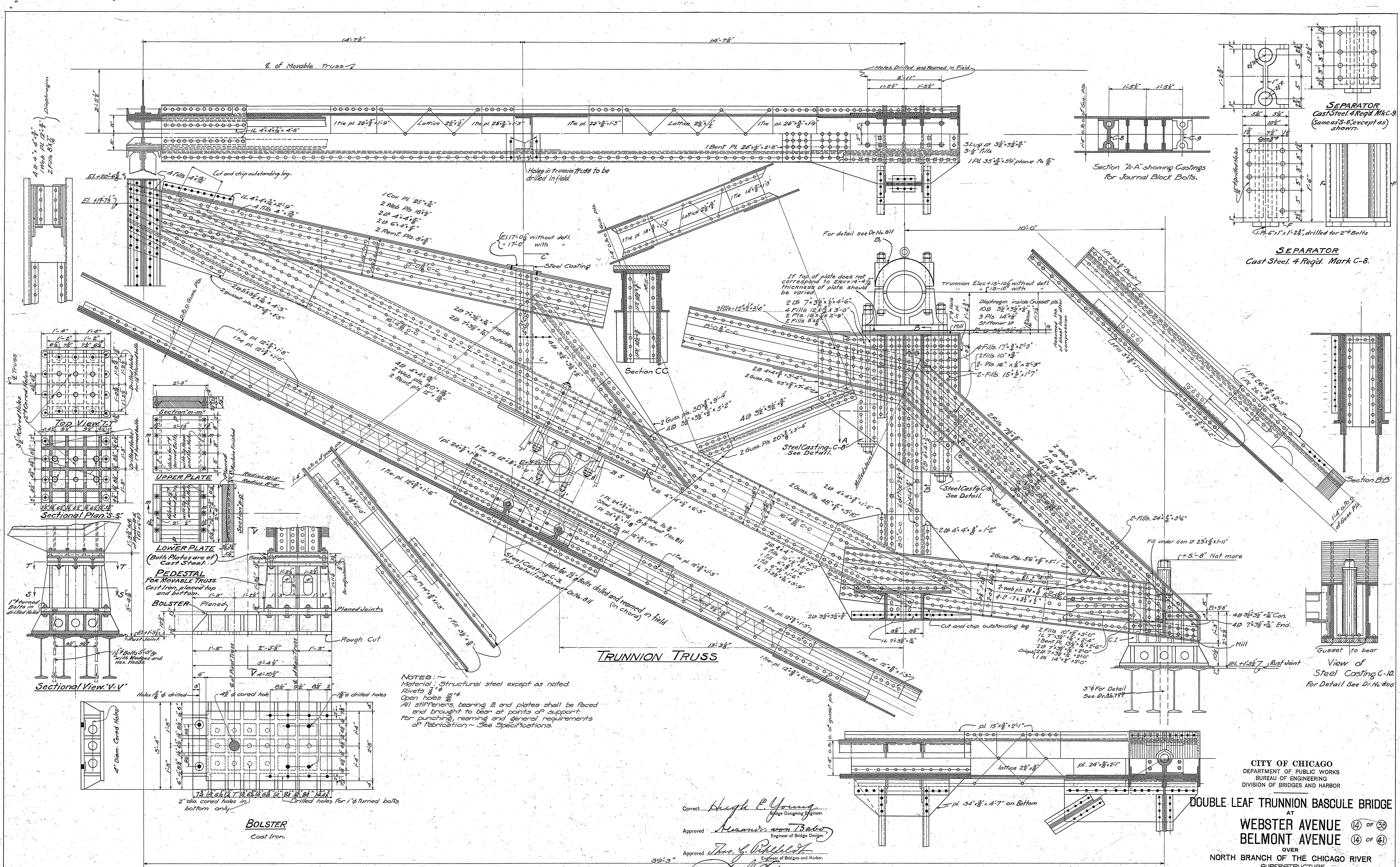
Corrected by *High E. Young*, Bridge Designing Engineer  
 Approved by *Adrian van Tubbe*, Engineer of Bridge Design  
 Approved by *Frederick J. W. ...*, Engineer of Bridges and Harbors  
 Approved by *John ...*, City Engineer  
 Approved by *...*, Commissioner of Public Works

Drawn by *...*  
 Traced by *...*  
 Checked by *...*

Drawing No. 795  
 FILE No. 11-6A-15

17  
 13 of 38





NOTES: ~  
 Material: Structural steel except as noted.  
 Rivets 3/4" dia.  
 Open holes 1/2"  
 All stiffeners, bearing & and plates shall be faced and brought to bear at points of support.  
 For punching, reaming and general requirements of fabrication ~ See Specifications.

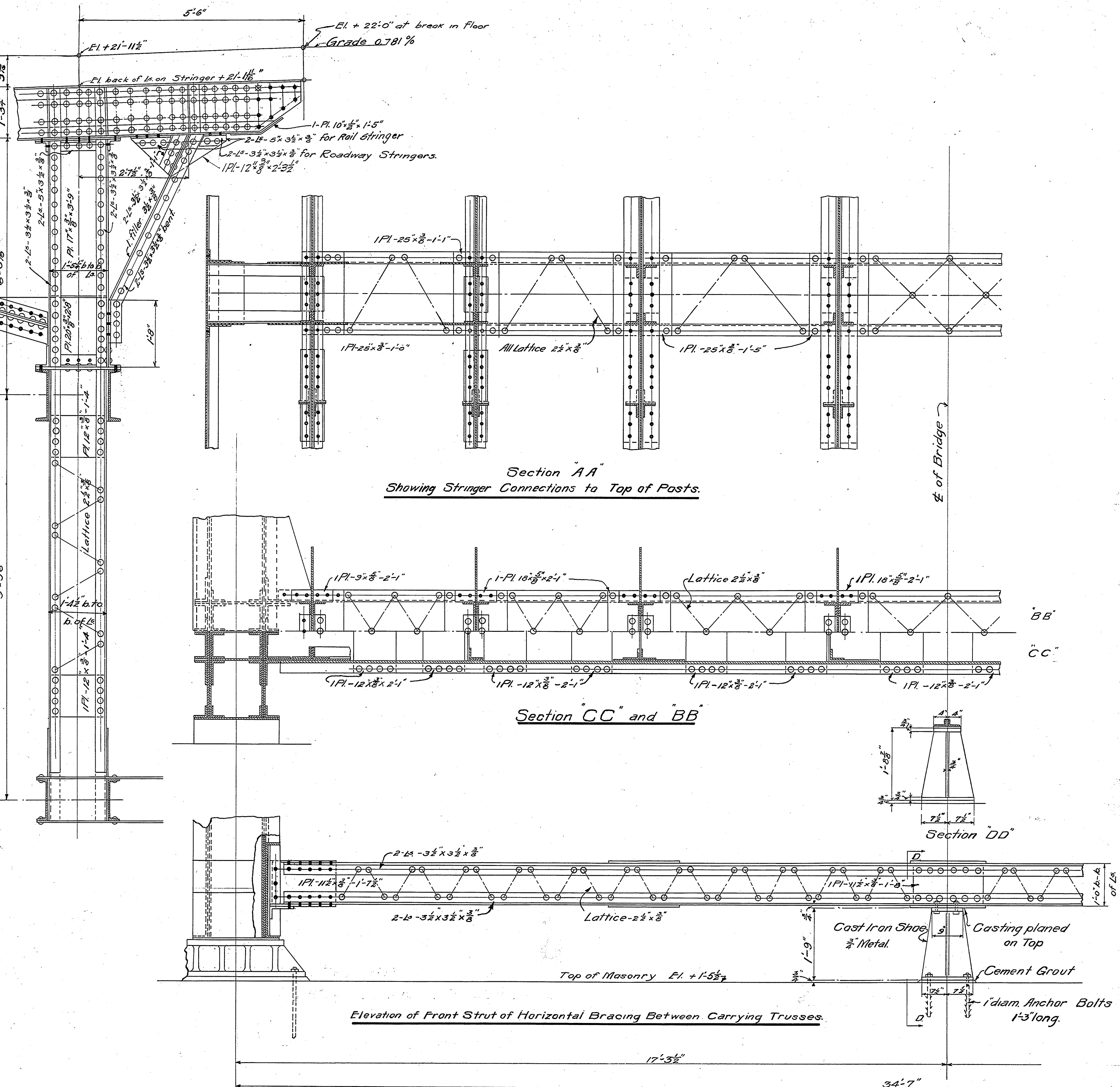
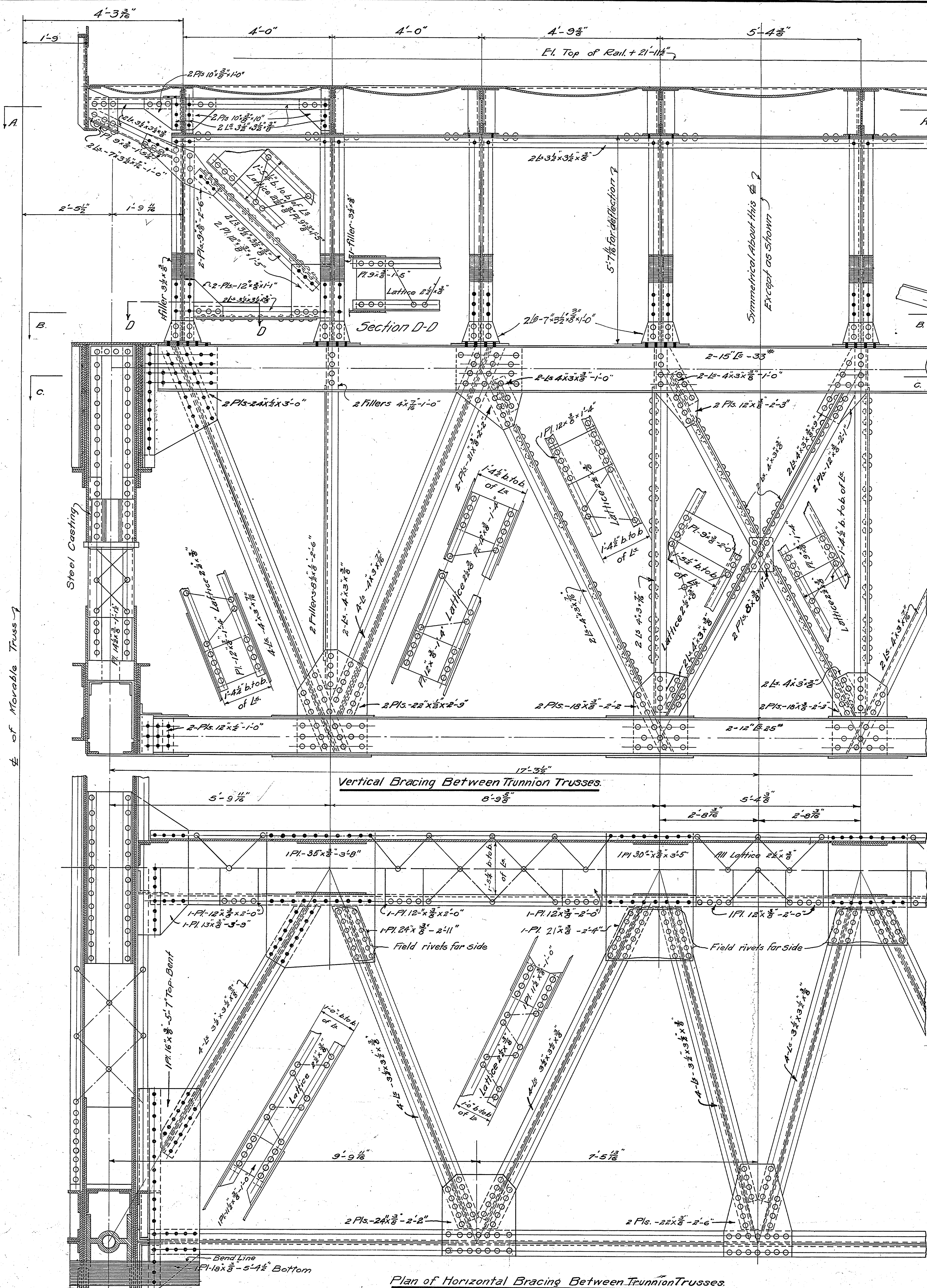
Corrected *Hugh E. Young*  
 Approved *Wm. J. B. ...*  
 Approved *John ...*  
 Approved *...*

CITY OF CHICAGO  
 DEPARTMENT OF PUBLIC WORKS  
 BUREAU OF ENGINEERING  
 DIVISION OF BRIDGES AND HARBOR

DOUBLE LEAF TRUNNION BASCULE BRIDGE  
 AT  
 WEBSTER AVENUE (14 OF 33)  
 BELMONT AVENUE (14 OF 41)  
 OVER  
 NORTH BRANCH OF THE CHICAGO RIVER  
 SUPERSTRUCTURE  
 FIXED PART  
 TRUNNION TRUSSES

Scale: 3/8" = 1 ft.  
 April, 1914.  
 Drawn by *A.B.C.*  
 Traced by *L.S.B.*  
 Checked by *...*

1660570017  
 9960040153  
 Drawing No. 726  
 FILE NO. 11-6A-16



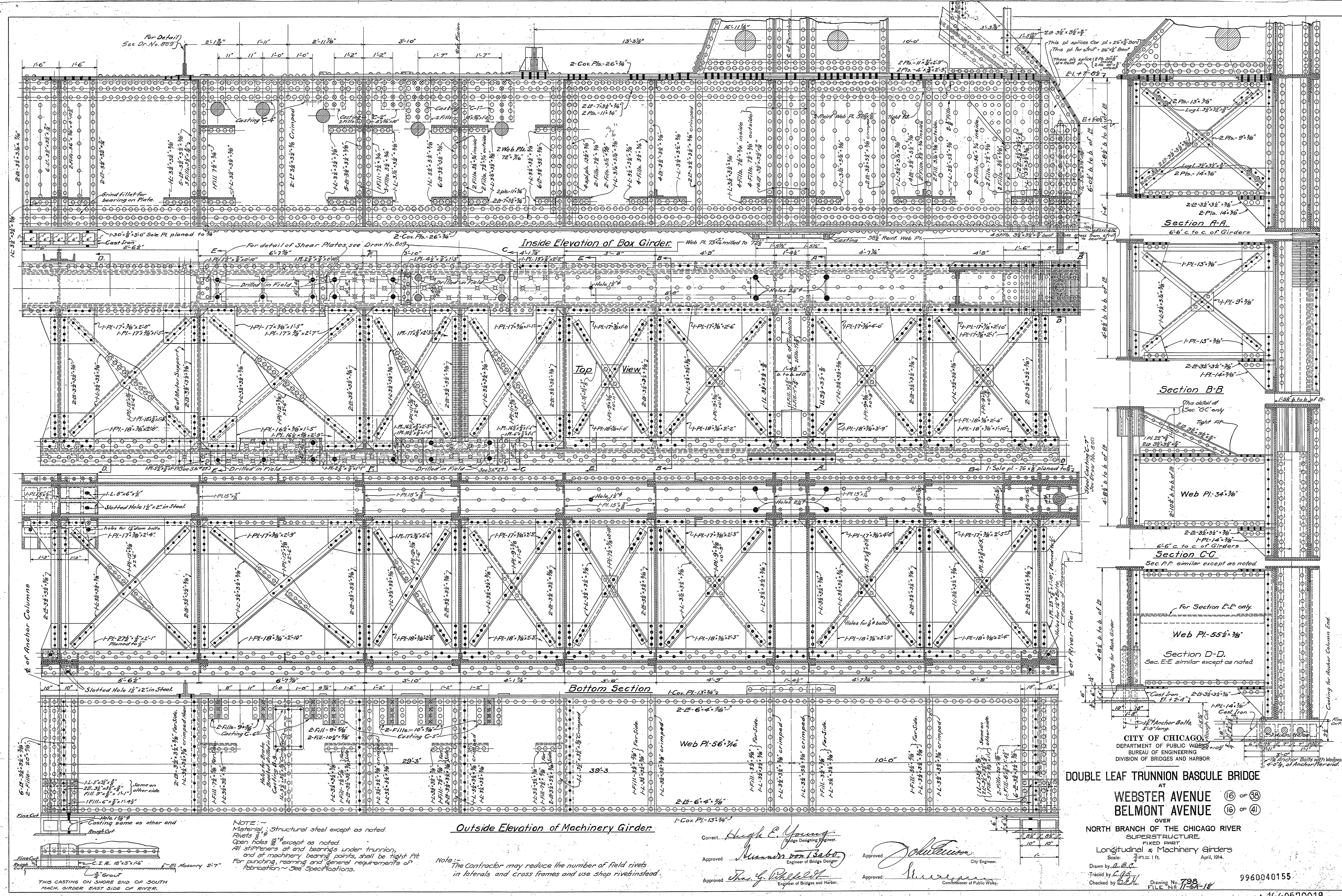
Notes:—  
 Material Structural Steel except as noted.  
 Rivets 3/4" except in 5" leg of L and in  
 Planges of C which are 3/8"  
 Open holes 1/8" except as noted.  
 For punching, reaming and general re-  
 quirements of Fabrication - See  
 Specifications.

CITY OF CHICAGO  
 DEPARTMENT OF PUBLIC WORKS  
 BUREAU OF ENGINEERING  
 DIVISION OF BRIDGES AND HARBOR

**DOUBLE LEAF TRUNNION BASCULE BRIDGE**  
 AT  
**WEBSTER AVENUE** (15 OF 39)  
**BELMONT AVENUE** (15 OF 41)  
 OVER  
 NORTH BRANCH OF THE CHICAGO RIVER  
 SUPERSTRUCTURE  
 FIXED PART  
 Trussed Bracing Between Trunnion Trusses

Corrected by *Hugh C. Young*  
 Approved by *Alexander W. T. Baker*  
 Approved by *John M. Schmitt*  
 Approved by *...*

Scale: 1/4" = 1 ft.  
 April, 1914.  
 Drawing No. 797  
 FILE No. 11-6A-17  
 9960040154 1660570018



**NOTE:**  
 Material - Structural steel except as noted.  
 Rivets - Rivers except as noted.  
 All stiffeners at end bearings under trunnion and at machinery bearing points, shall be tight fit for punching, reaming and general requirements of fabrication - See Specifications.

**Note:** The Contractor may reduce the number of field rivets in laterals and cross frames and use shop rivets instead.

Corrected: *Hugh C. Young*  
 Designing Engineer

Approved: *Maurice von Sabe*  
 Engineer of Bridge Design

Approved: *John T. ...*  
 City Engineer

Approved: *John G. ...*  
 Engineer of Bridges and Harbor

Approved: *...*  
 Commissioner of Public Works

**CITY OF CHICAGO**  
 DEPARTMENT OF PUBLIC WORKS  
 BUREAU OF ENGINEERING  
 DIVISION OF BRIDGES AND HARBOR

**DOUBLE LEAF TRUNNION BASCULE BRIDGE**  
 AT  
**WEBSTER AVENUE** (16 OF 33)  
**BELMONT AVENUE** (16 OF 41)  
 OVER  
 NORTH BRANCH OF THE CHICAGO RIVER  
 SUPERSTRUCTURE

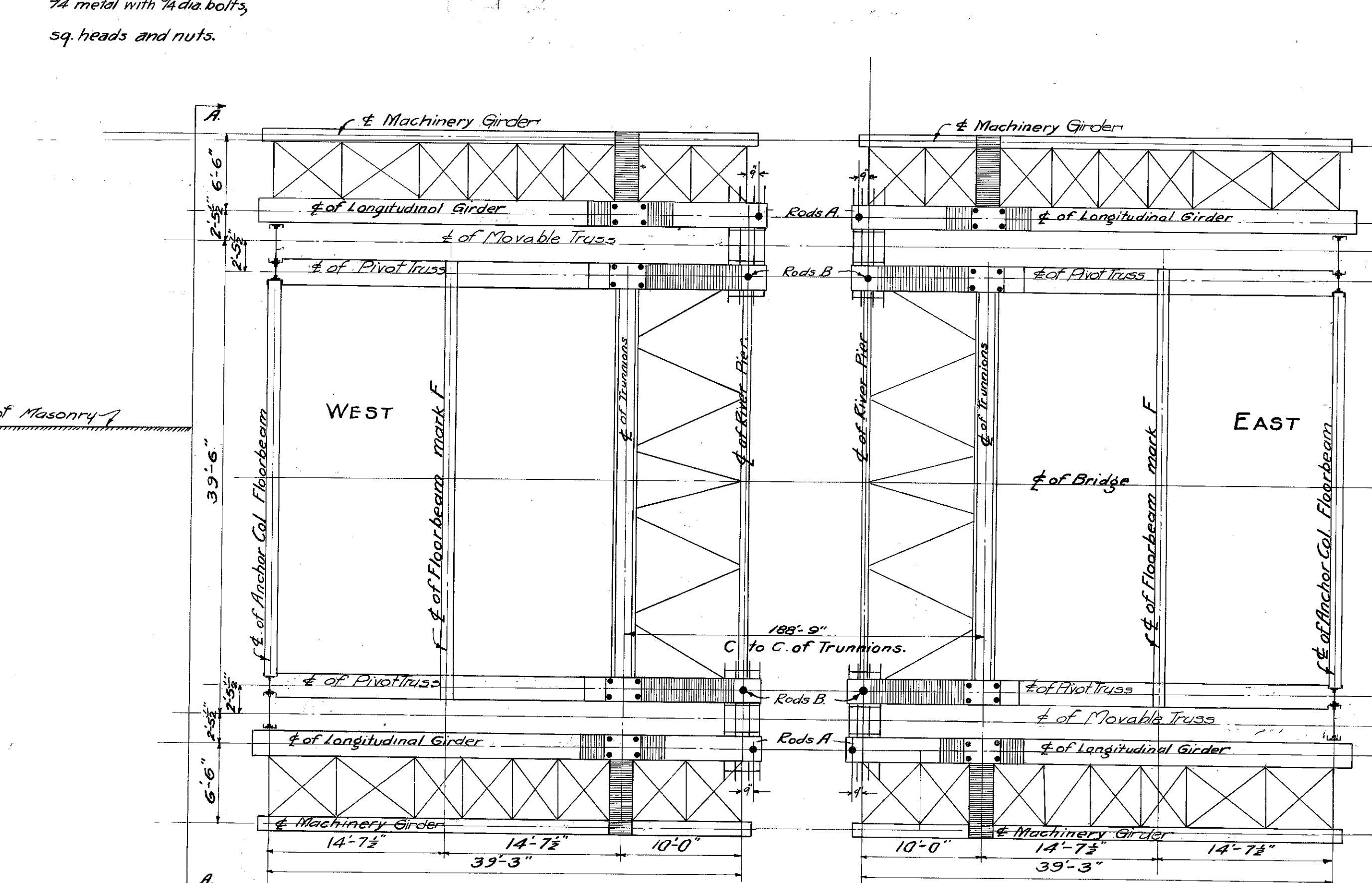
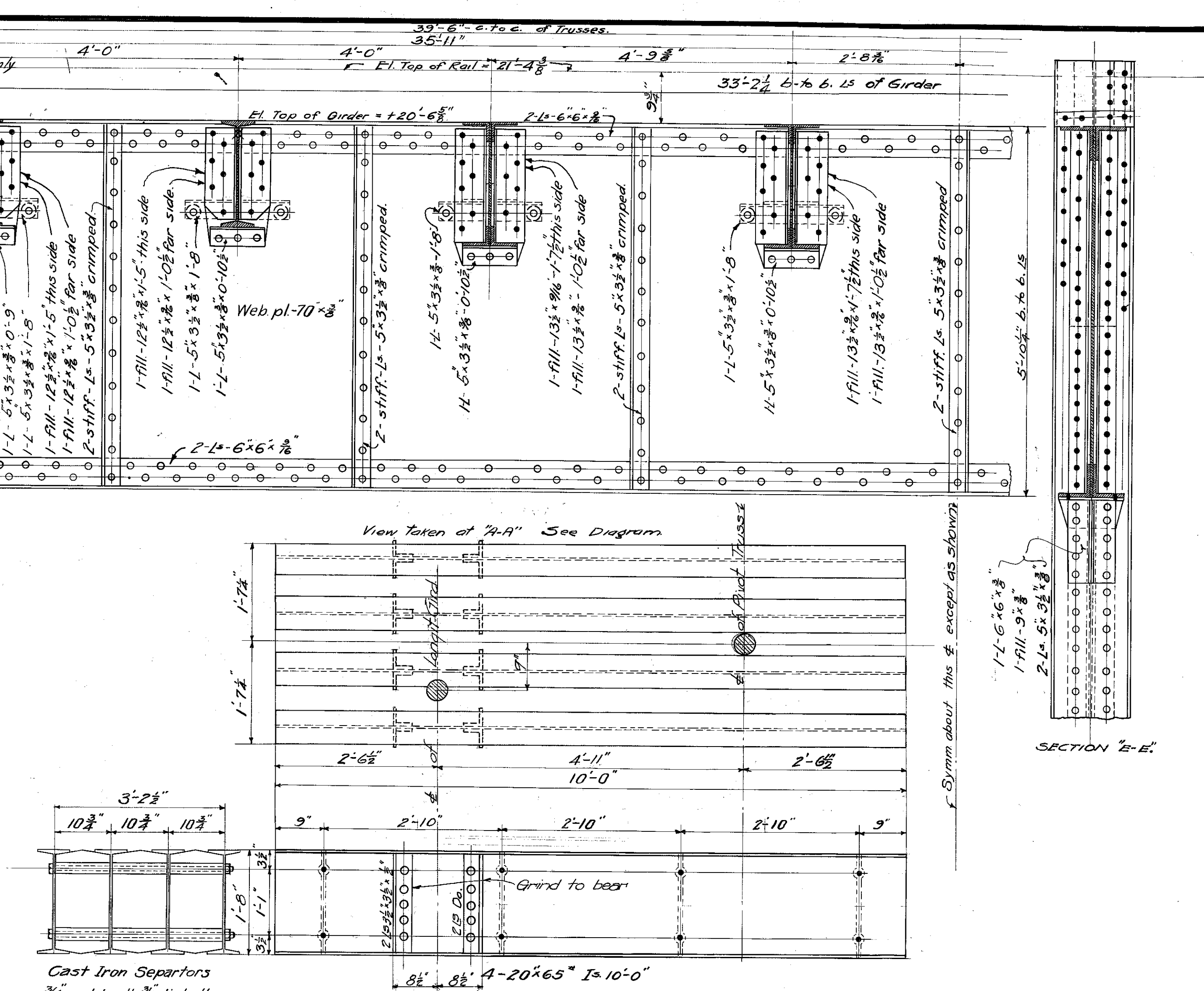
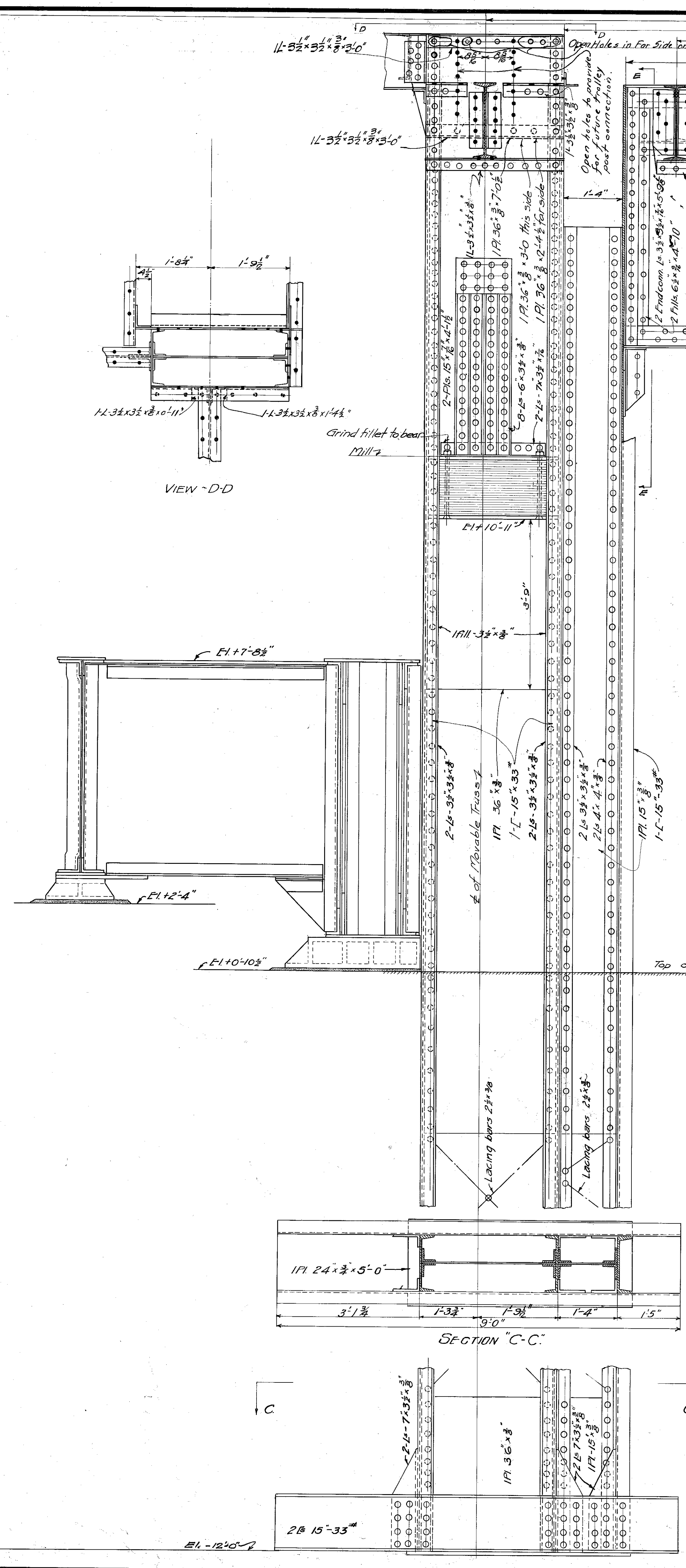
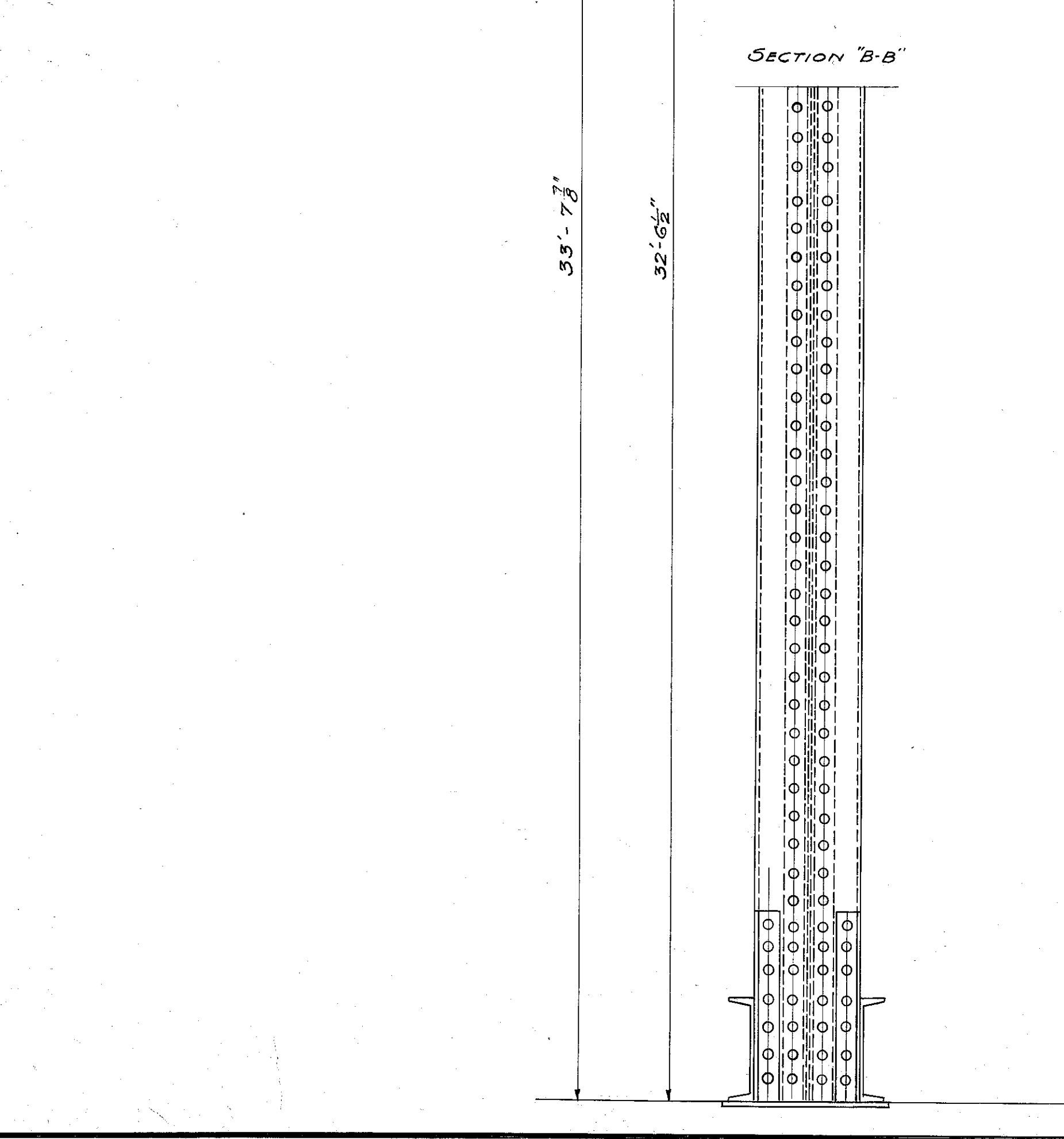
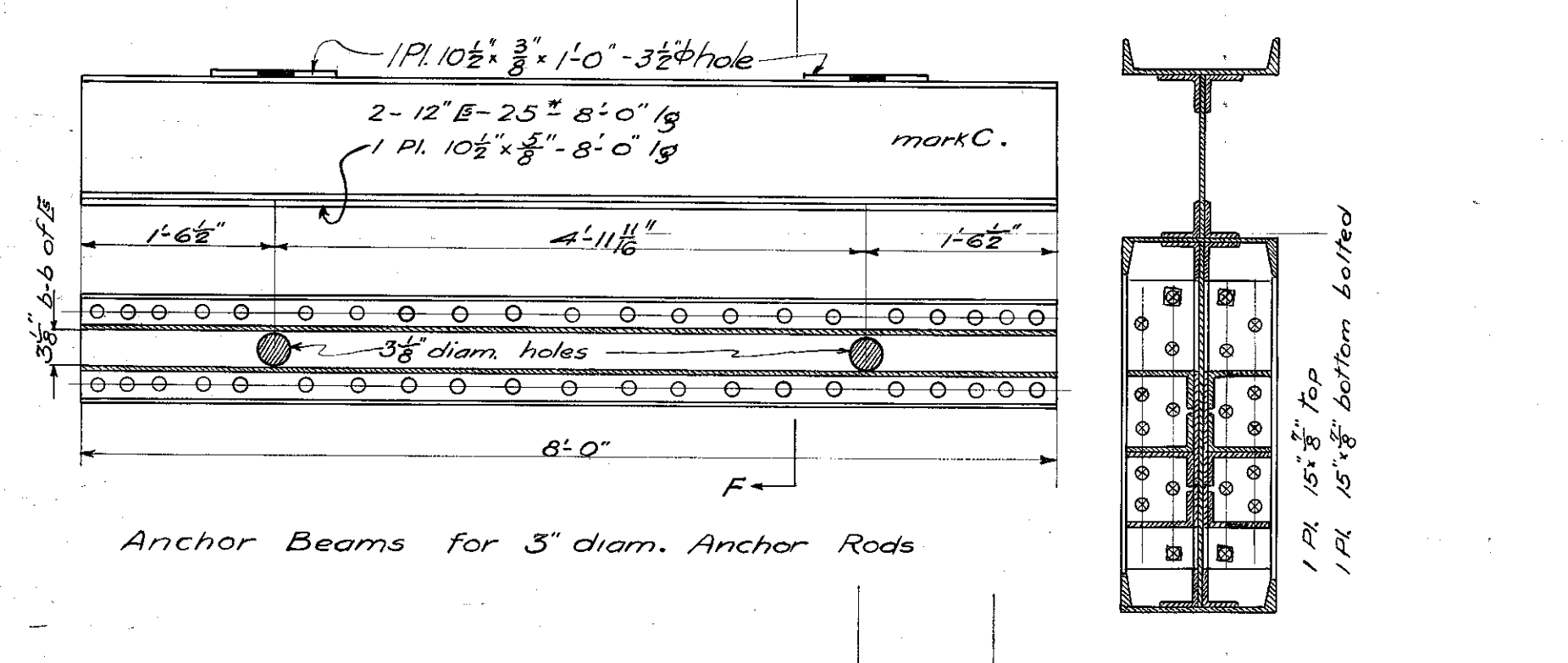
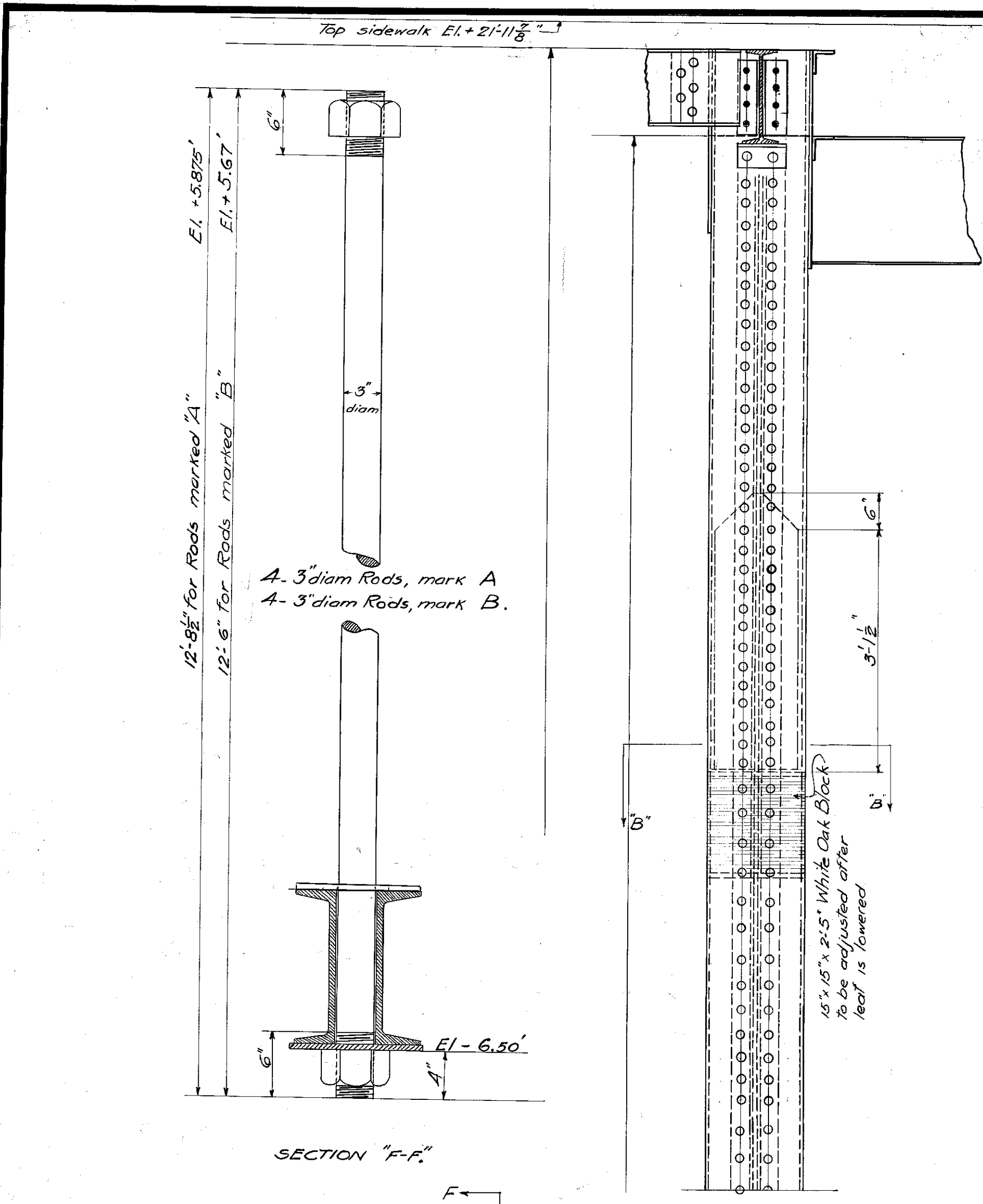
Longitudinal & Machinery Girders  
 Scale: 3/8" = 1'-0"  
 April, 1914.

Drawn by *...*  
 Traced by *...*  
 Checked by *...*

Drawing No. **798**  
 FILE No. **11-24-18**

9960040155

1660570019



NOTES:-  
 Material: Structural Steel  
 Rivets: 3/4"  
 Open holes 1/2" except as noted.  
 For punching, reaming and general requirements of fabrication - See Specifications.

CITY OF CHICAGO  
 DEPARTMENT OF PUBLIC WORKS  
 BUREAU OF ENGINEERING  
 DIVISION OF BRIDGES AND HARBOR

DOUBLE LEAF TRUNNION BASCULE BRIDGE  
 AT  
 WEBSTER AVENUE (2 of 12, 17 of 38)

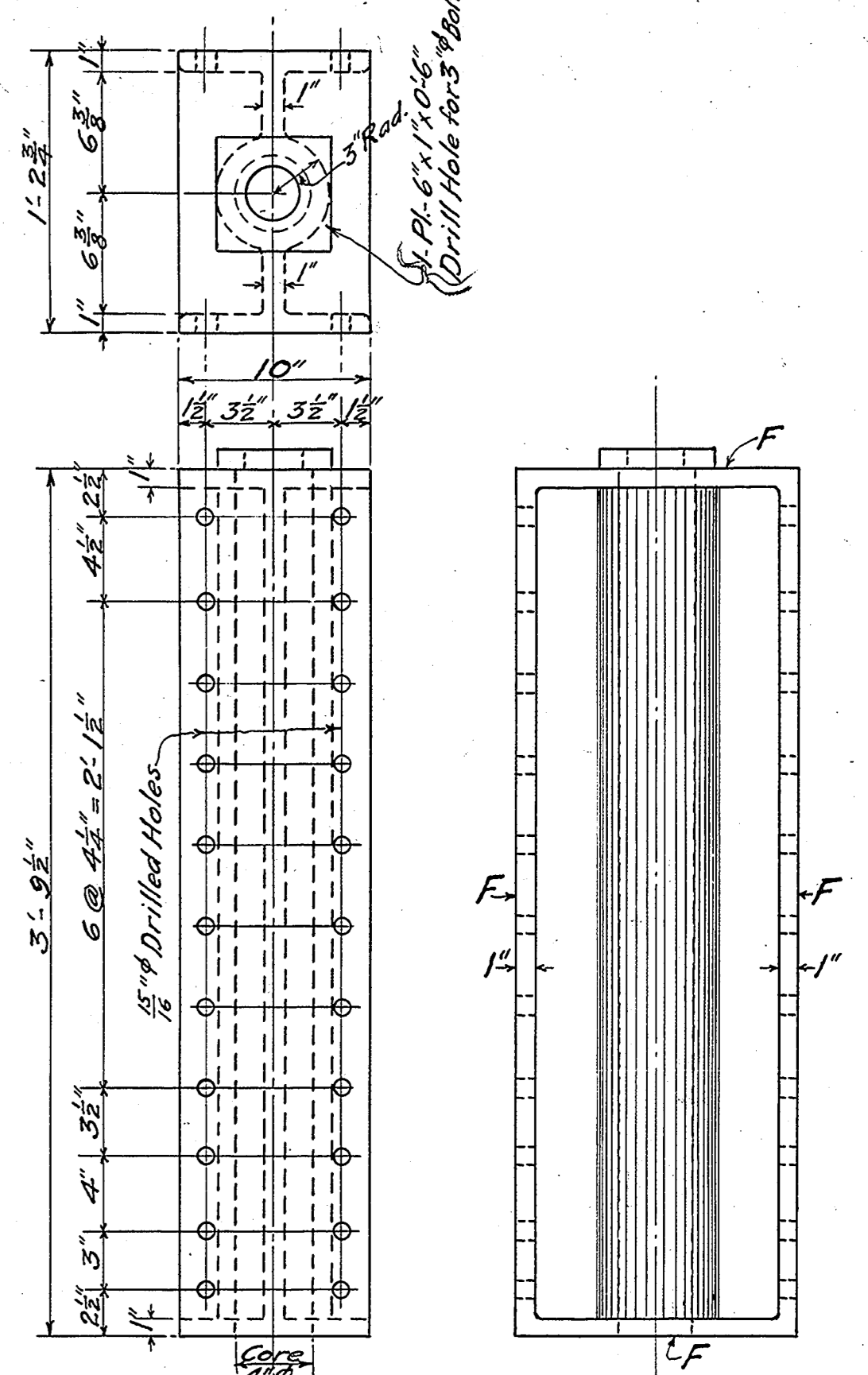
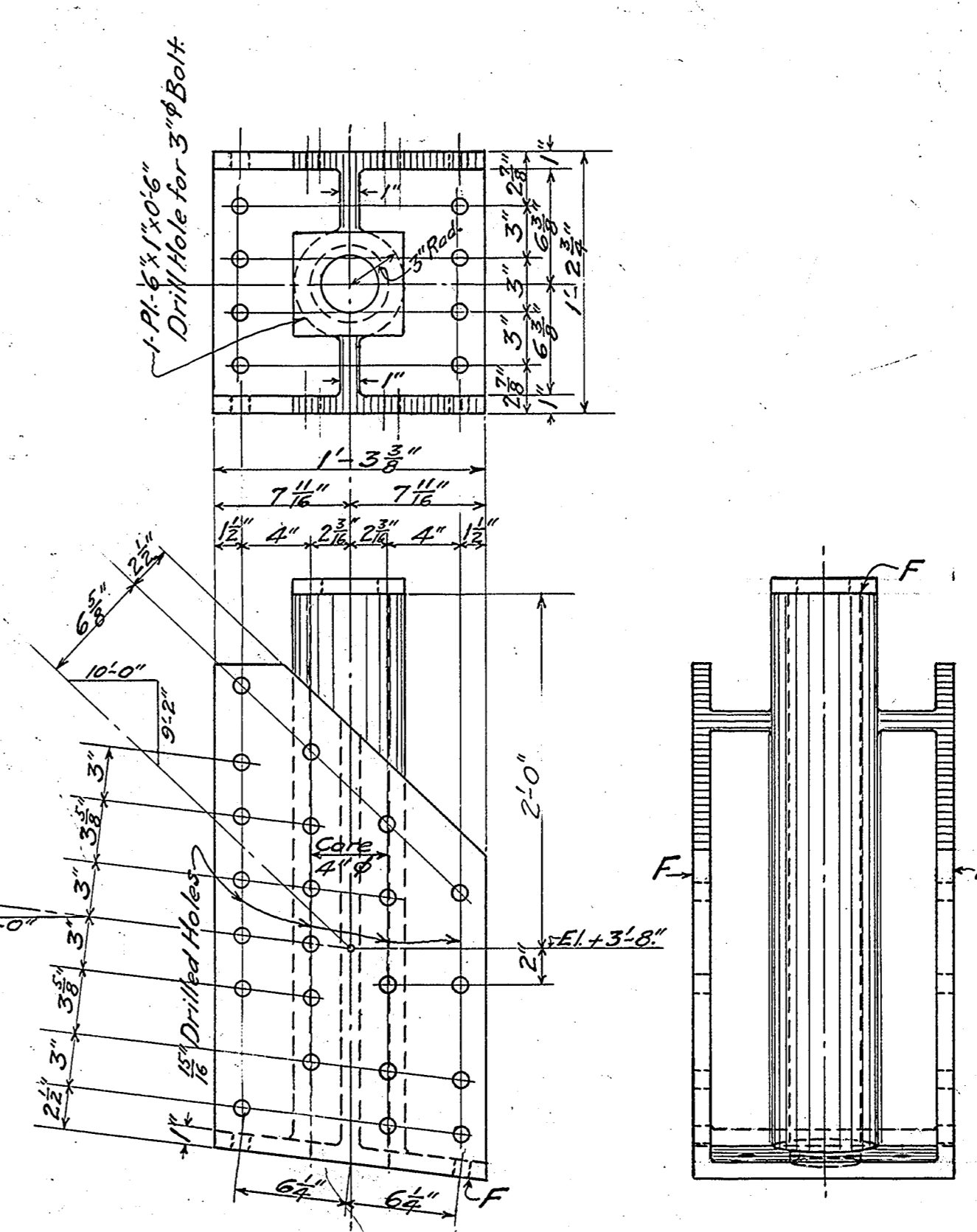
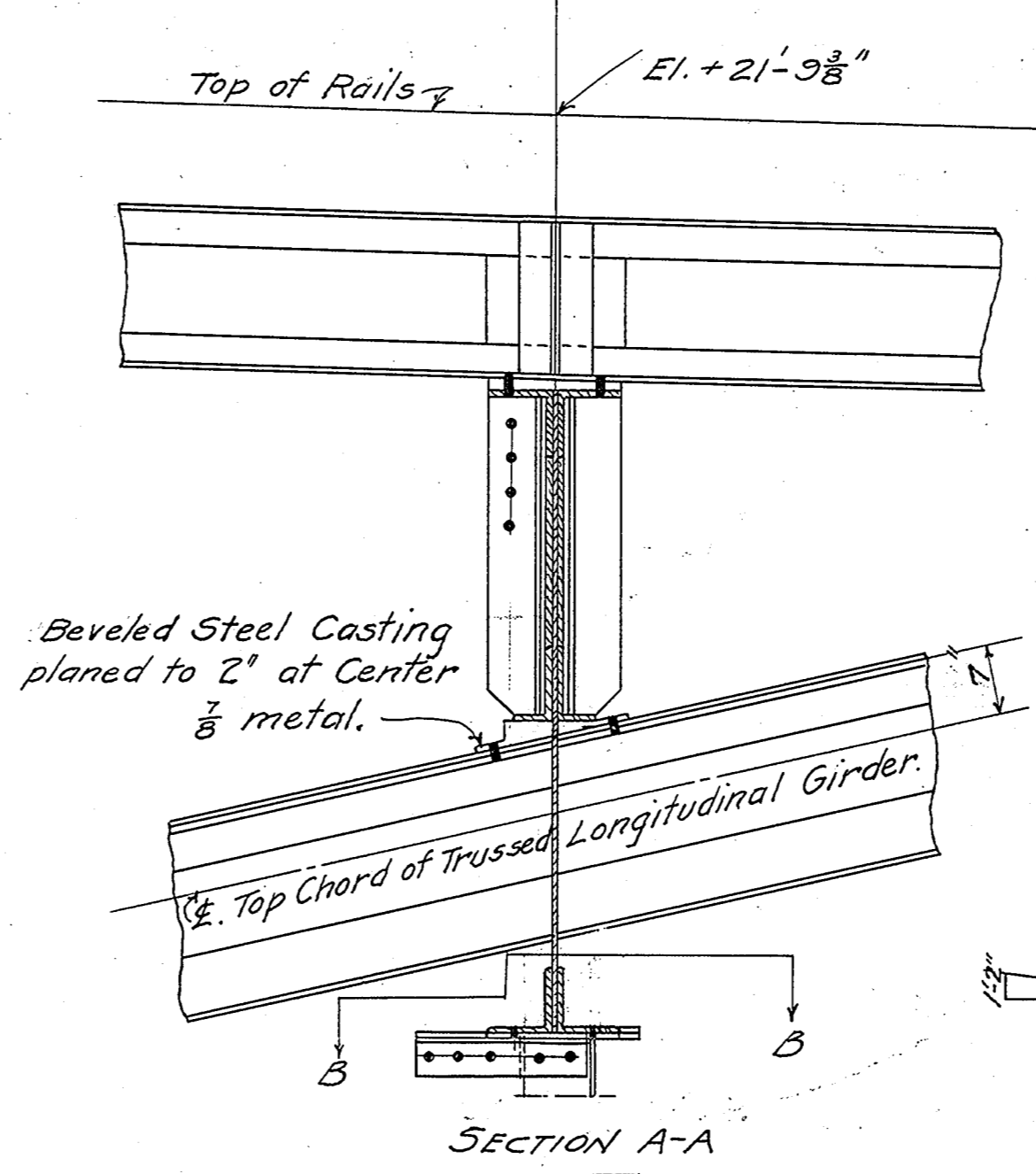
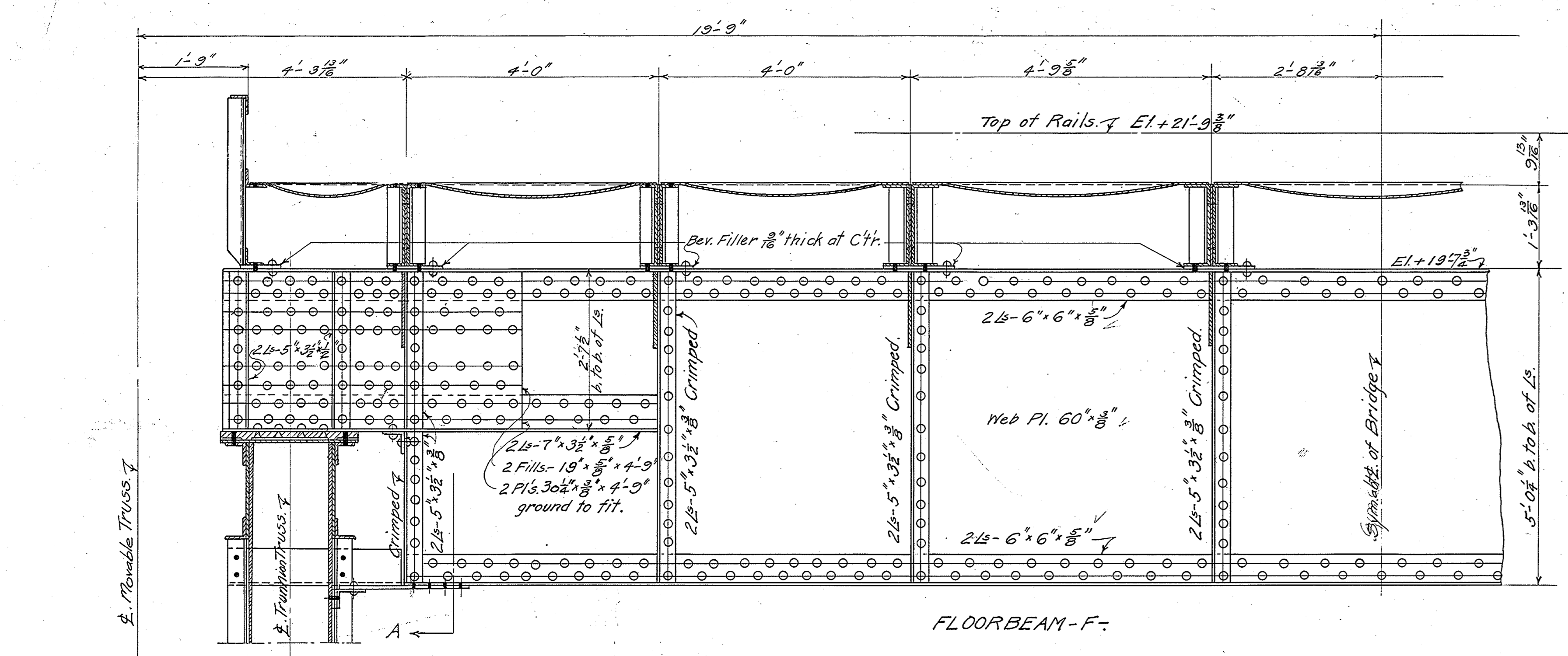
OVER  
 NORTH BRANCH OF THE CHICAGO RIVER  
 SUB. & SUPERSTRUCTURE  
 FIXED PART  
 Anchor Columns etc.

Scale: 1/4" = 1 ft.  
 April, 1914.

Drawn by A.B.C.  
 Traced by E.D.M.  
 Checked by C.L.H.

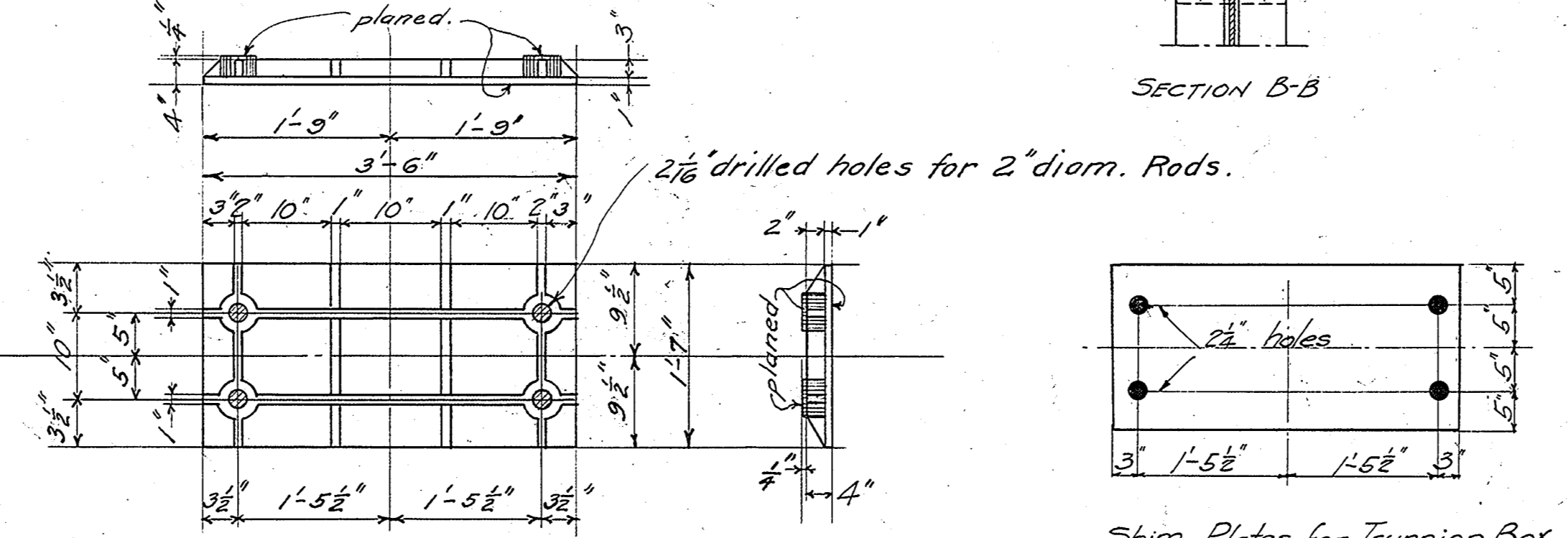
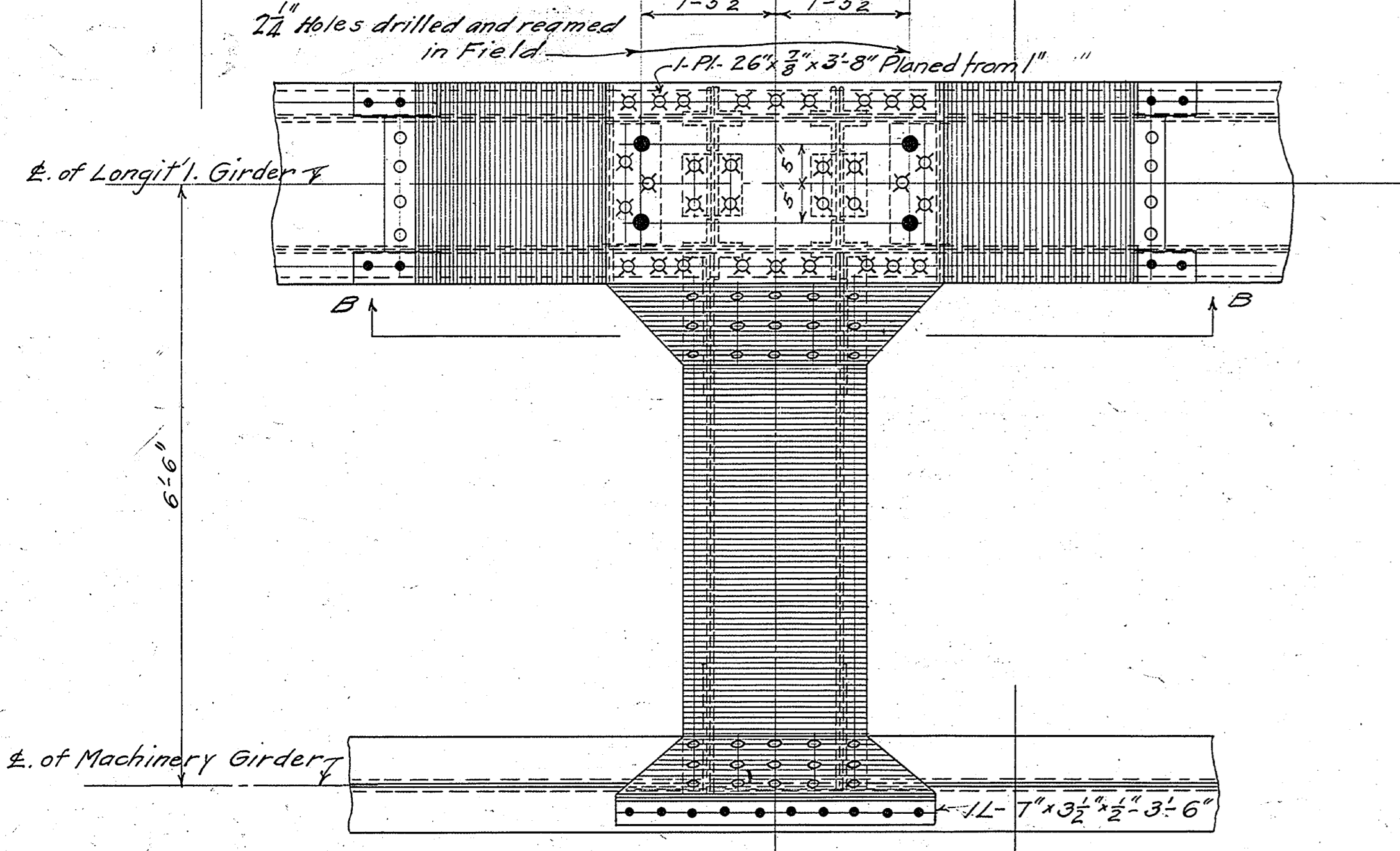
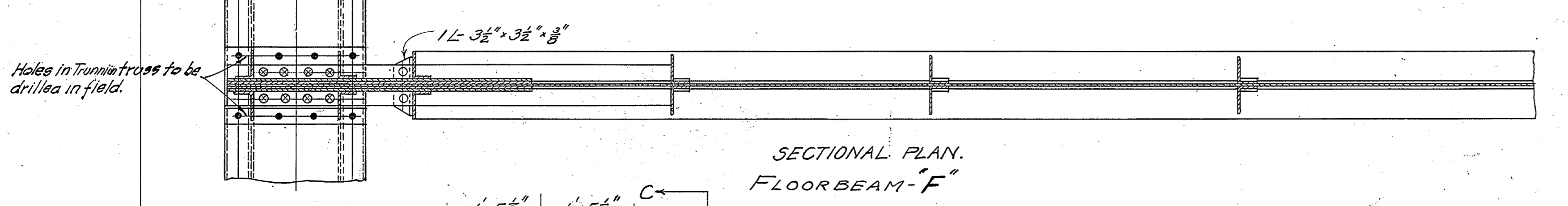
Corrected: Hugh E. Young, Bridge Designing Engineer  
 Approved: Hermann von T. Sabe, Engineer of Bridge Design  
 Approved: T. G. Pugh, Engineer of Bridges and Harbor  
 Approved: J. W. ... City Engineer  
 Approved: ... Commissioner of Public Works

Drawing No. 799  
 FILE NO. 11-6A-19



**SEPARATOR**  
Cast Steel. 4 Req'd. Mark C-10.  
For the River Pier Anchor Bolts of Carrying Truss.  
Scale 1/2"=1'-0"

**SEPARATOR**  
Cast Steel. 4 Required. Mark C-7.  
For River Pier End of Carrying Girder.  
Scale 1/2"=1'-0"



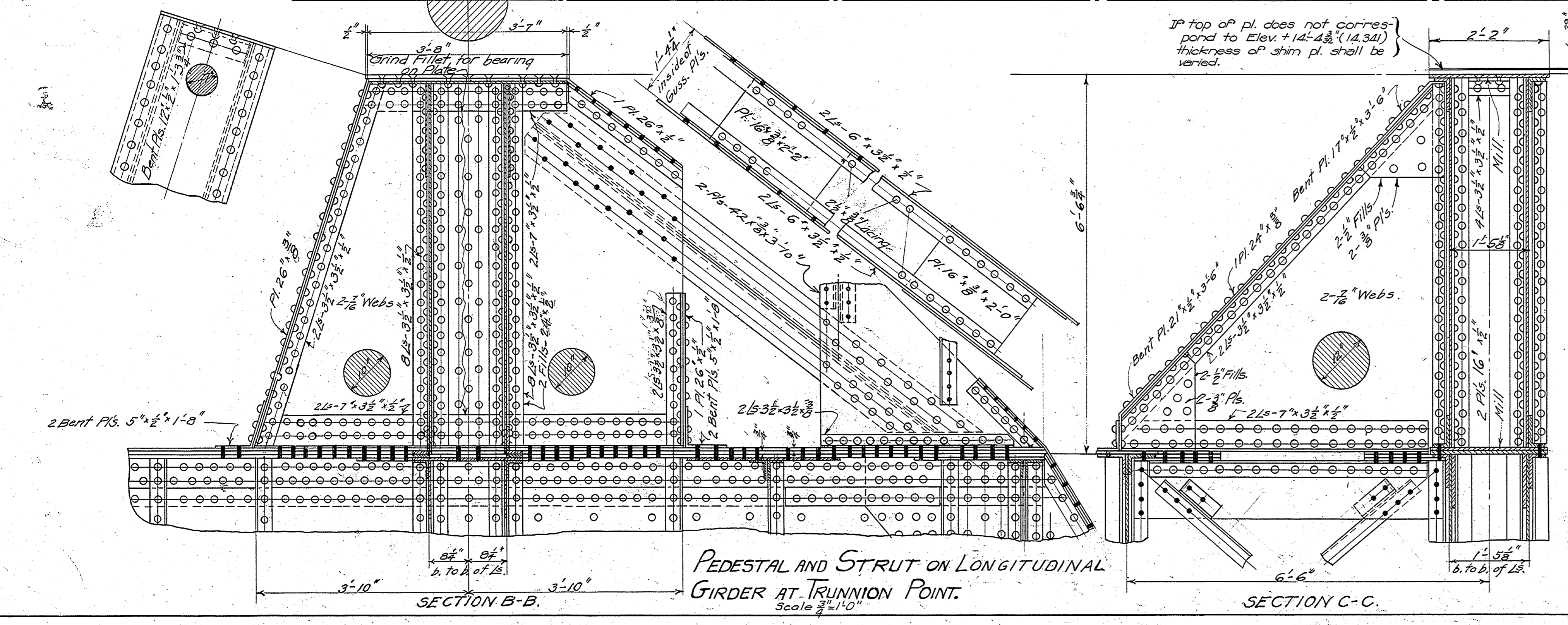
Steel Casting for 2" diam. Machinery Rods at bottom of Longl. Girders for fastening Trunnion Journal Blocks.  
4 Required.  
**TRUNNION BOLT BLOCKS.**  
Scale 3/4"=1'-0"

Shim Plates for Trunnion Box  
4 Required 20 x 1 1/2 x 3'-5"  
4 " 20 x 3/4 x 3'-5"  
8 Res. sheet lead Req. 20 x 3/4 x 3'-5"  
Scale 3/4"=1'-0"

El. of Trunnion +15'-10 1/2" without deflection.  
El. of Trunnion +15'-10" with deflection.

If top of pl. does not correspond to Elev. +14'-4 3/8" (14.34) thickness of shim pl. shall be varied.  
Assumed thickness of steel lead after compression.

**NOTES:**  
Material: Structural steel except as noted.  
Rivets 3/4"  
Open holes 1/2" except as noted.  
All stiffeners, bearing pl. and pls. shall be Peaced and brought to bear at points of support.  
For punching, reaming and general requirements of Fabrication - See Specifications.



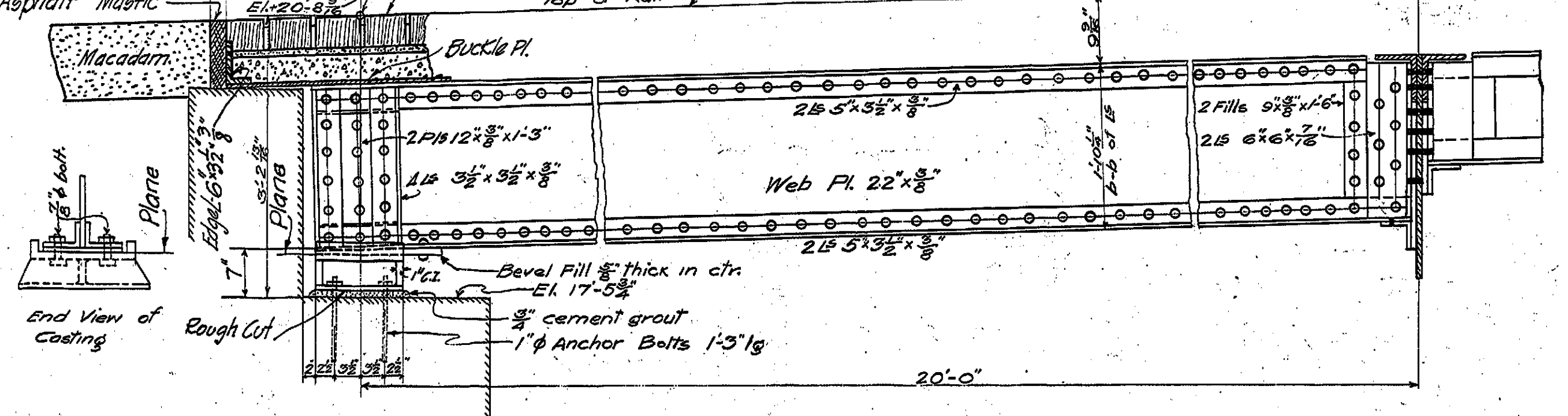
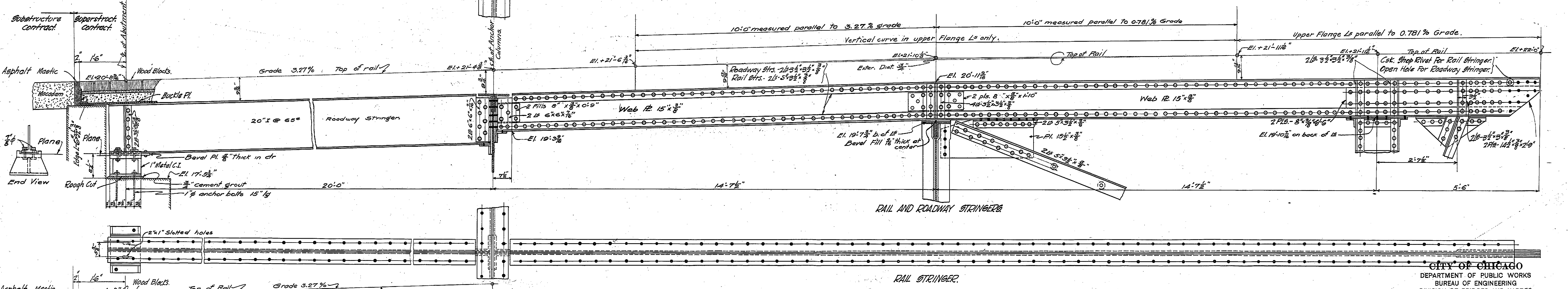
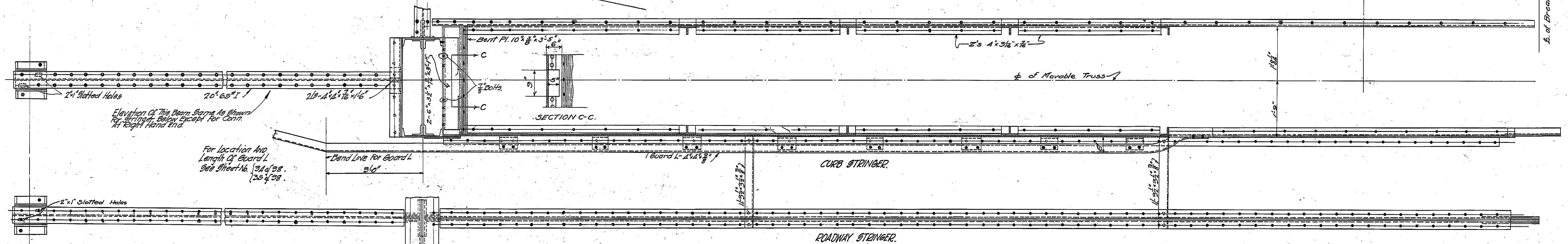
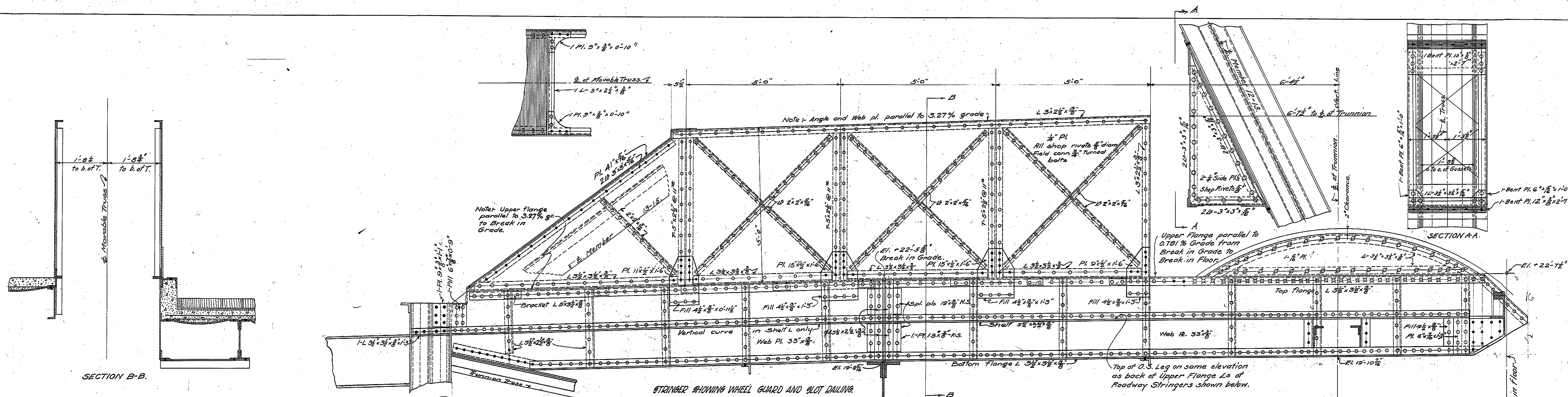
**PEDESTAL AND STRUT ON LONGITUDINAL GIRDER AT TRUNNION POINT.**  
Scale 3/4"=1'-0"

**SECTION C-C.**

Corrected by *Hugh E. Young*  
Approved by *Alexander von Bahr*  
Approved by *Paul G. ...*  
Approved by *John ...*  
Approved by *...*

**CITY OF CHICAGO**  
DEPARTMENT OF PUBLIC WORKS  
BUREAU OF ENGINEERING  
DIVISION OF BRIDGES AND HARBOR

**DOUBLE LEAF TRUNNION BASCULE BRIDGE**  
AT  
**WEBSTER AVENUE** (18 OF 39)  
**BELMONT AVENUE** (18 OF 41)  
OVER  
NORTH BRANCH OF THE CHICAGO RIVER  
SUPERSTRUCTURE  
FIXED PART  
Floorbeam 'F' & Pedestals on Long Girder  
Scale: 3/4"=1 ft. April, 1914.  
Drawn by *A.C.B.*  
Traced by *A.C.B.*  
Checked by *...*  
Drawing No. 800  
FILE No. 11-6A-20  
9960040156 1660570021



NOTES:-  
 Material: Structural steel except as noted.  
 Rivets 3/8" except in buckle pl. which are 1/2"  
 and in slot railing which are 5/8"  
 Open holes 3/4" except as noted.  
 For punching, reaming and general requirements  
 of fabrication - See Specifications.

Corrected *Hugh E. Young*  
 Bridge Designing Engineer

Approved *Alfred von I. Babo*  
 Engineer of Bridge Design

Approved *Paul J. ...*  
 Engineer of Bridges and Harbors

Approved *...*  
 City Engineer

Approved *...*  
 Commissioner of Public Works

CITY OF CHICAGO  
 DEPARTMENT OF PUBLIC WORKS  
 BUREAU OF ENGINEERING  
 DIVISION OF BRIDGES AND HARBOR

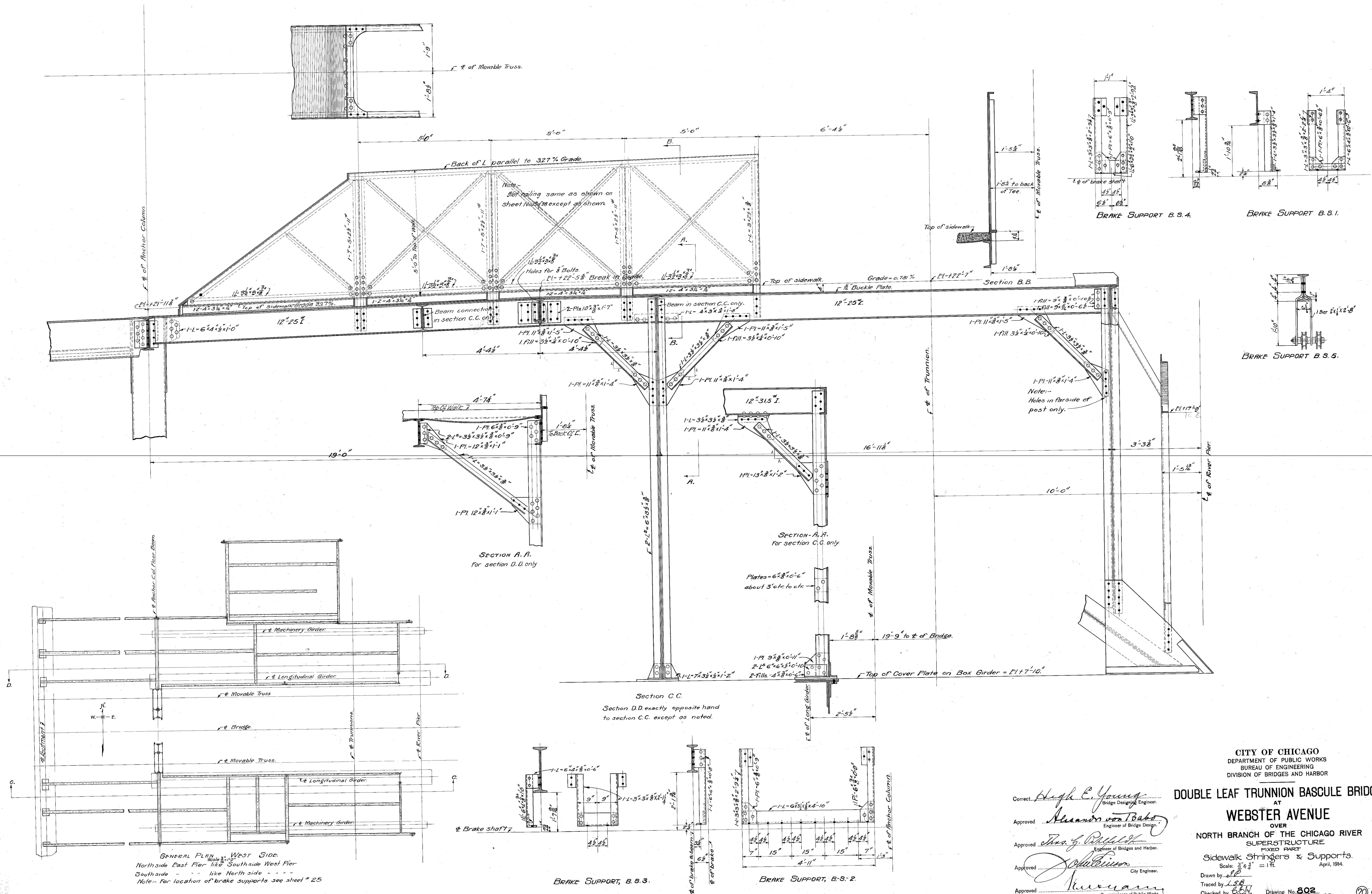
**DOUBLE LEAF TRUNNION BASCULE BRIDGE**  
 AT  
**WEBSTER AVENUE**  
 OVER  
 NORTH BRANCH OF THE CHICAGO RIVER  
 SUPERSTRUCTURE  
 FIXED PART  
 Roadway Stringers.

Scale: 3/8" = 1 ft. April, 1914.

Drawn by *...*  
 Traced by *...*  
 Checked by *...*

Drawing No. **801**  
 FILE No. **11-6A-21**

(19) OF (38)



GENERAL PLAN WEST SIDE.  
 Scale 1/8" = 1'-0"  
 Northside East Pier like Southside West Pier  
 Southside like Northside  
 Note - For location of brake supports see sheet # 25

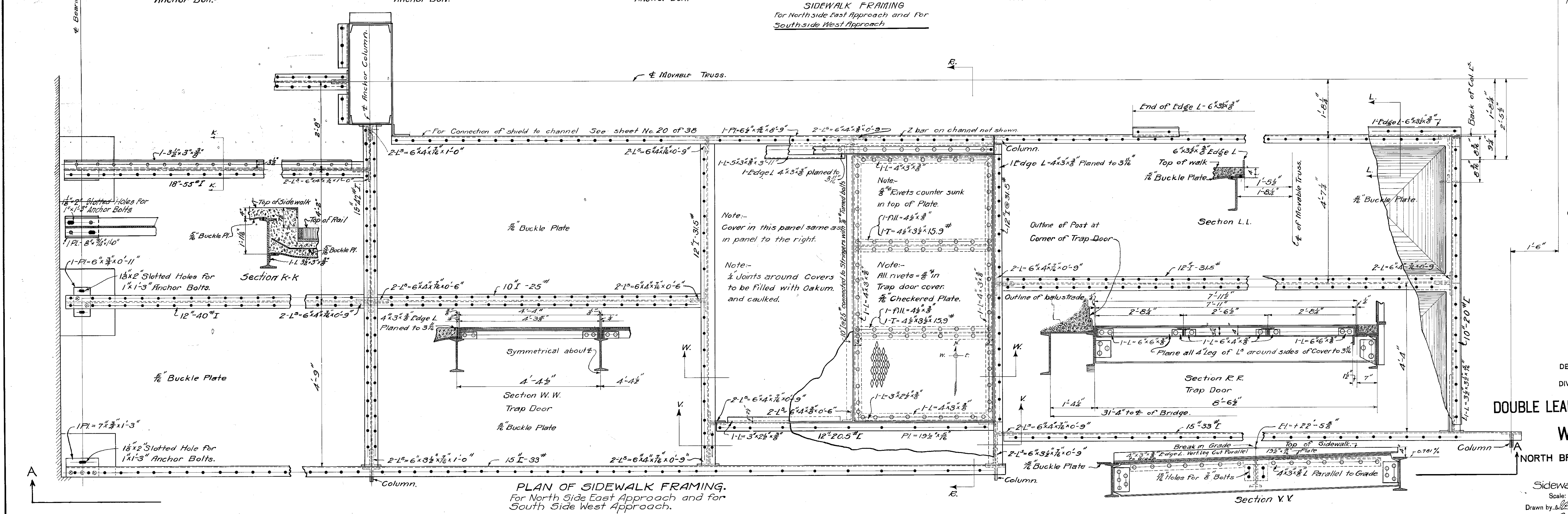
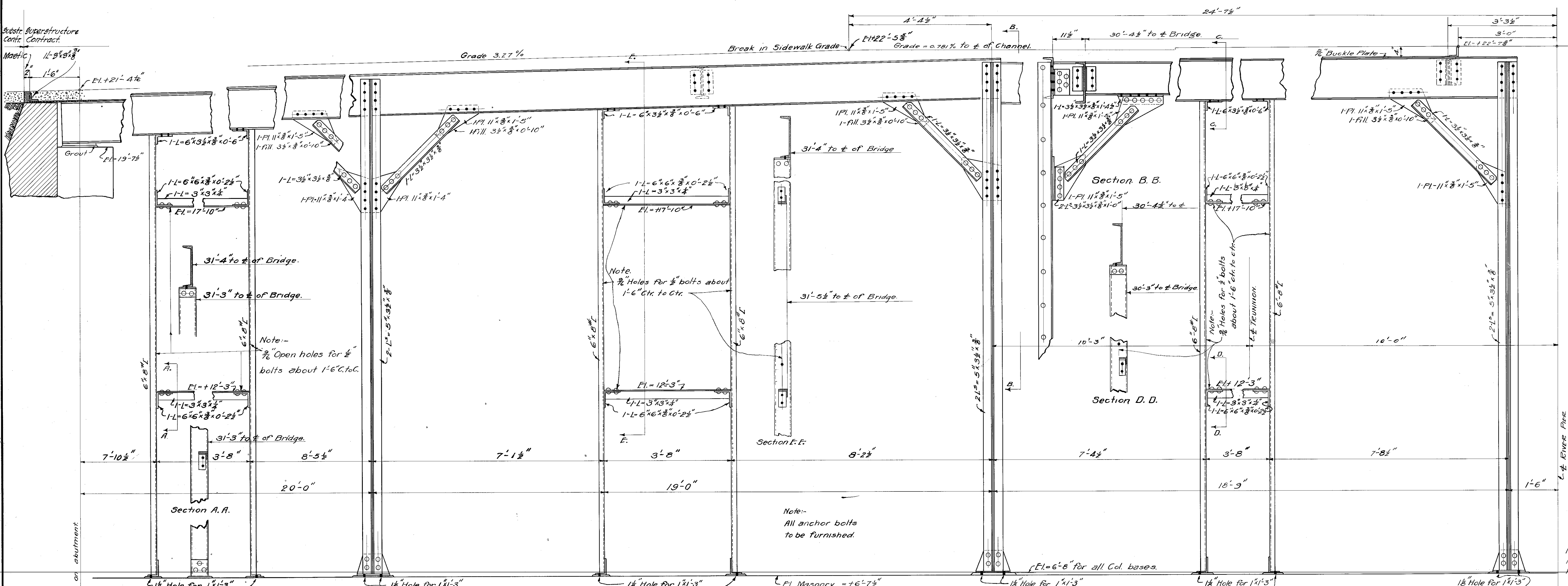
CITY OF CHICAGO  
 DEPARTMENT OF PUBLIC WORKS  
 BUREAU OF ENGINEERING  
 DIVISION OF BRIDGES AND HARBOR

**DOUBLE LEAF TRUNNION BASCULE BRIDGE**  
 AT  
**WEBSTER AVENUE**  
 OVER  
 NORTH BRANCH OF THE CHICAGO RIVER  
 SUPERSTRUCTURE  
 FIXED PART  
 Sidewalk Stringers & Supports.

Scale: 3/8" = 1'-0" April, 1914.  
 Drawn by *W.S.*  
 Traced by *L.S.B.*  
 Checked by *W.S.*

Corrected *High E. Young* Bridge Designing Engineer.  
 Approved *Alexander von Tobo* Engineer of Bridge Design.  
 Approved *Thos. G. Russell* Engineer of Bridges and Harbor.  
 Approved *John A. ...* City Engineer.  
 Approved *William ...* Commissioner of Public Works.

Drawing No. 802  
 FILE No. 11-61-22



NOTE: ~  
 Material: Structural steel  
 Rivets: ½" except as noted and in Plunges of C & I which are ¾"  
 Open holes: ½" except as noted.  
 For punching, reaming and general requirements of Fabrication - See Specifications.

Correct: Hugh C. Young  
 Bridge Design Engineer  
 Approved: Alexander von Tschudi  
 Engineer of Bridge Dept.  
 Approved: John G. ...  
 Engineer of Bridges and Harbor  
 Approved: ...  
 City Engineer  
 Approved: ...  
 Commissioner of Public Works

**CITY OF CHICAGO**  
 DEPARTMENT OF PUBLIC WORKS  
 BUREAU OF ENGINEERING  
 DIVISION OF BRIDGES AND HARBOR

**DOUBLE LEAF TRUNNION BASCULE BRIDGE**  
 AT  
**WEBSTER AVENUE**  
 OVER  
 NORTH BRANCH OF THE CHICAGO RIVER  
 SUPERSTRUCTURE  
 FIXED PART  
 Sidewalk Stringers & Supports.

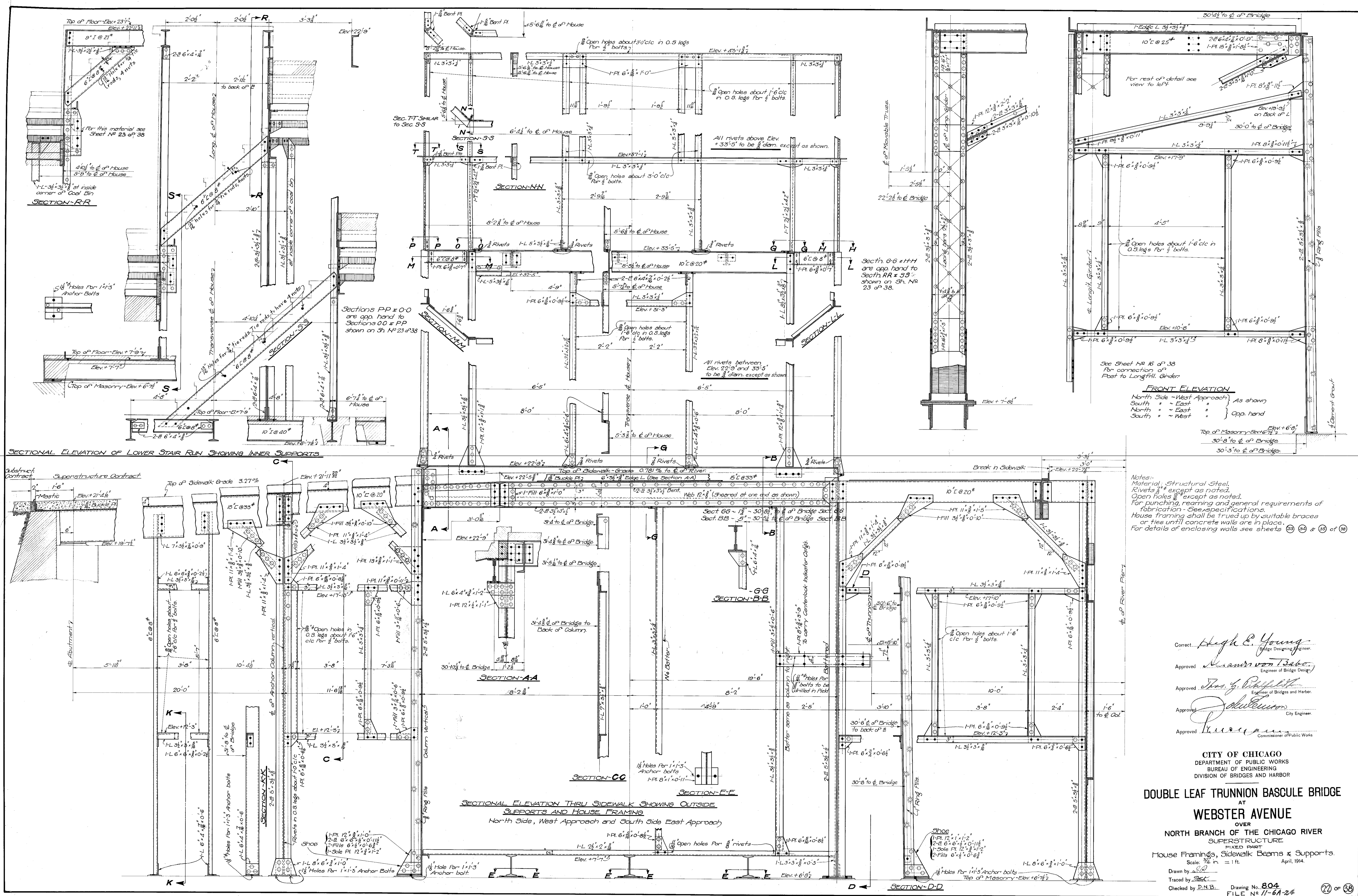
Scale: ¼" = 1 ft.  
 April, 1914.

Drawn by ...  
 Traced by ...  
 Checked by ...

Drawing No. 803  
 FILE N.S. 11-6A-23

1660570024





Notes:-  
 Material, Structural Steel,  
 Rivets  $\frac{3}{4}$ " except as noted.  
 Open holes  $\frac{3}{4}$ " except as noted.  
 For punching, reaming and general requirements of  
 fabrication - See specifications.  
 House framing shall be trued up by suitable braces  
 or ties until concrete walls are in place.  
 For details of enclosing walls see sheets 23, 24 & 25 of 28

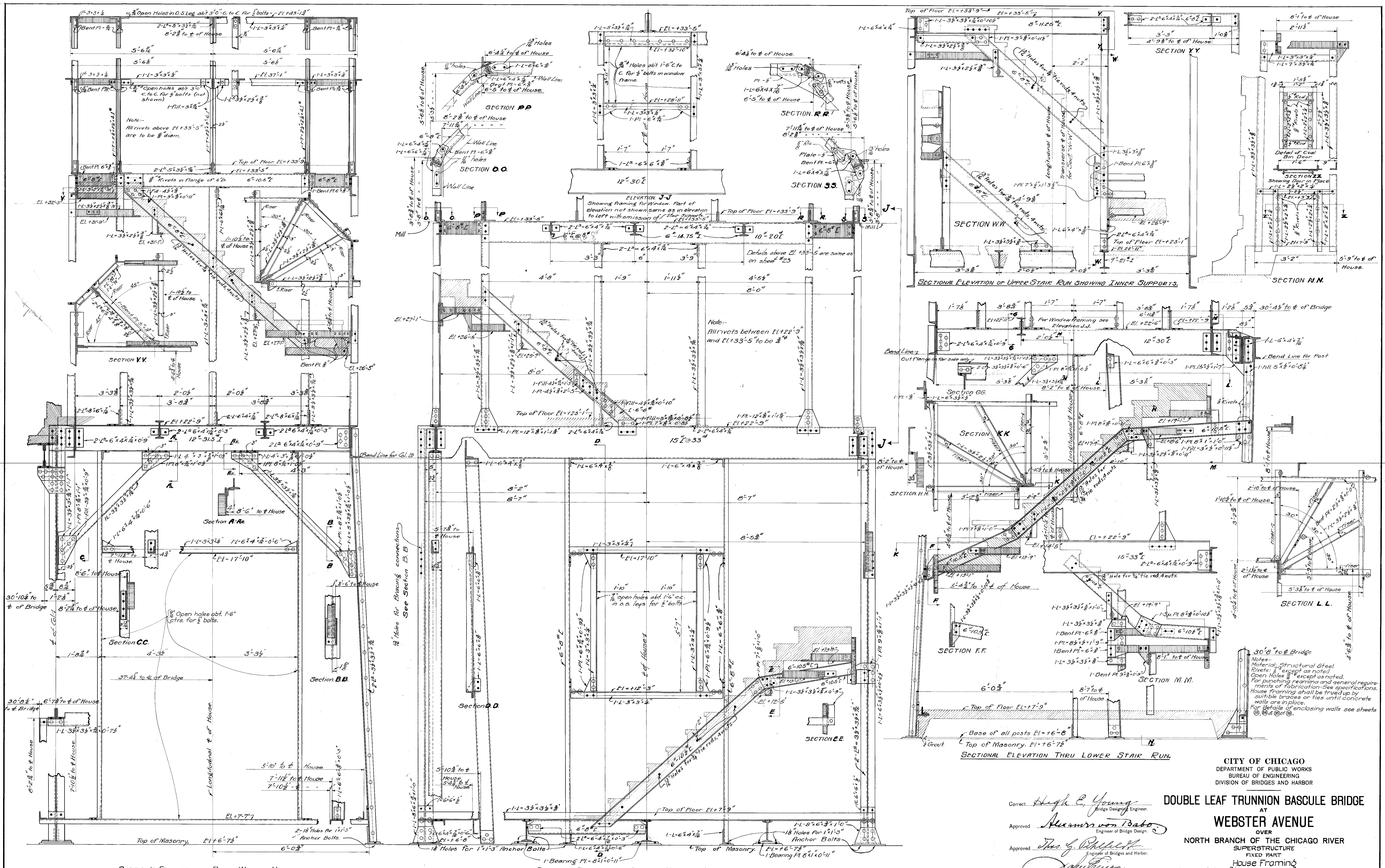
Corrected by *Hugh B. Young*  
 Bridge Designing Engineer.  
 Approved by *W. A. von T. Sabe*  
 Engineer of Bridge Design.  
 Approved by *John G. Ruppel*  
 Engineer of Bridges and Harbor.  
 Approved by *John G. Ruppel*  
 City Engineer.  
 Approved by *W. A. von T. Sabe*  
 Commissioner of Public Works.

**CITY OF CHICAGO**  
 DEPARTMENT OF PUBLIC WORKS  
 BUREAU OF ENGINEERING  
 DIVISION OF BRIDGES AND HARBOR

**DOUBLE LEAF TRUNNION BASCULE BRIDGE**  
 AT  
**WEBSTER AVENUE**  
 OVER  
 NORTH BRANCH OF THE CHICAGO RIVER  
 SUPERSTRUCTURE  
 FIXED PART  
 House Framings, Sidewalk Beams & Supports.  
 Scale:  $\frac{3}{8}$ " = 1 ft. April, 1914.

Drawn by *W. A. von T. Sabe*  
 Traced by *W. A. von T. Sabe*  
 Checked by *W. A. von T. Sabe*

Drawing No. 804  
 FILE No. 11-6A-24



SECTIONAL ELEVATION OF REAR WALL OF HOUSE.

SECTIONAL ELEVATION OF OUTSIDE WALL OF HOUSE.

SECTIONAL ELEVATION THRU LOWER STAIR RUN.

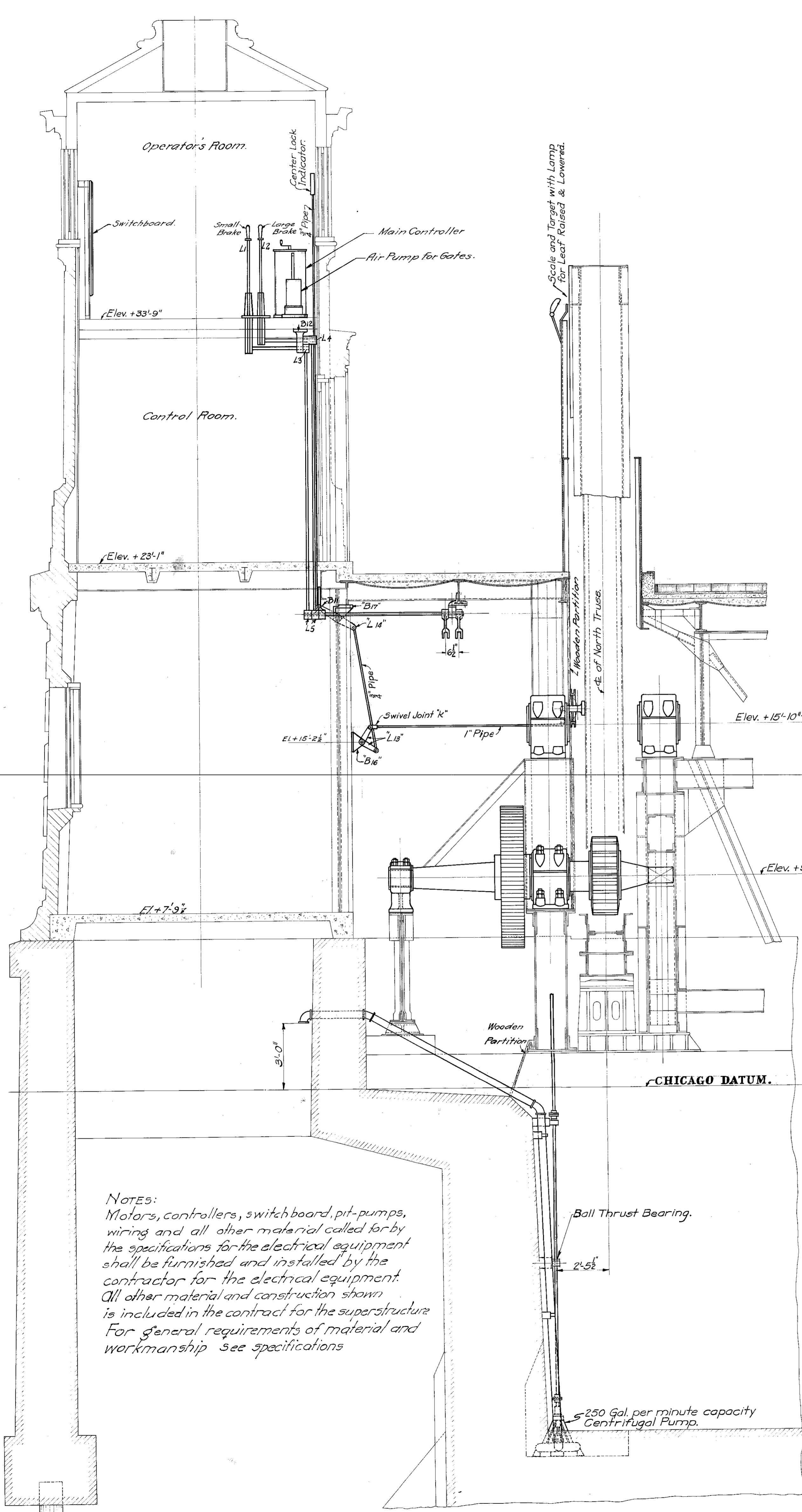
SECTIONAL ELEVATION OF UPPER STAIR RUN SHOWING INNER SUPPORTS.

CITY OF CHICAGO  
DEPARTMENT OF PUBLIC WORKS  
BUREAU OF ENGINEERING  
DIVISION OF BRIDGES AND HARBOR

**DOUBLE LEAF TRUNNION BASCULE BRIDGE**  
AT  
**WEBSTER AVENUE**  
OVER  
NORTH BRANCH OF THE CHICAGO RIVER  
SUPERSTRUCTURE  
FIXED PART  
House Framing

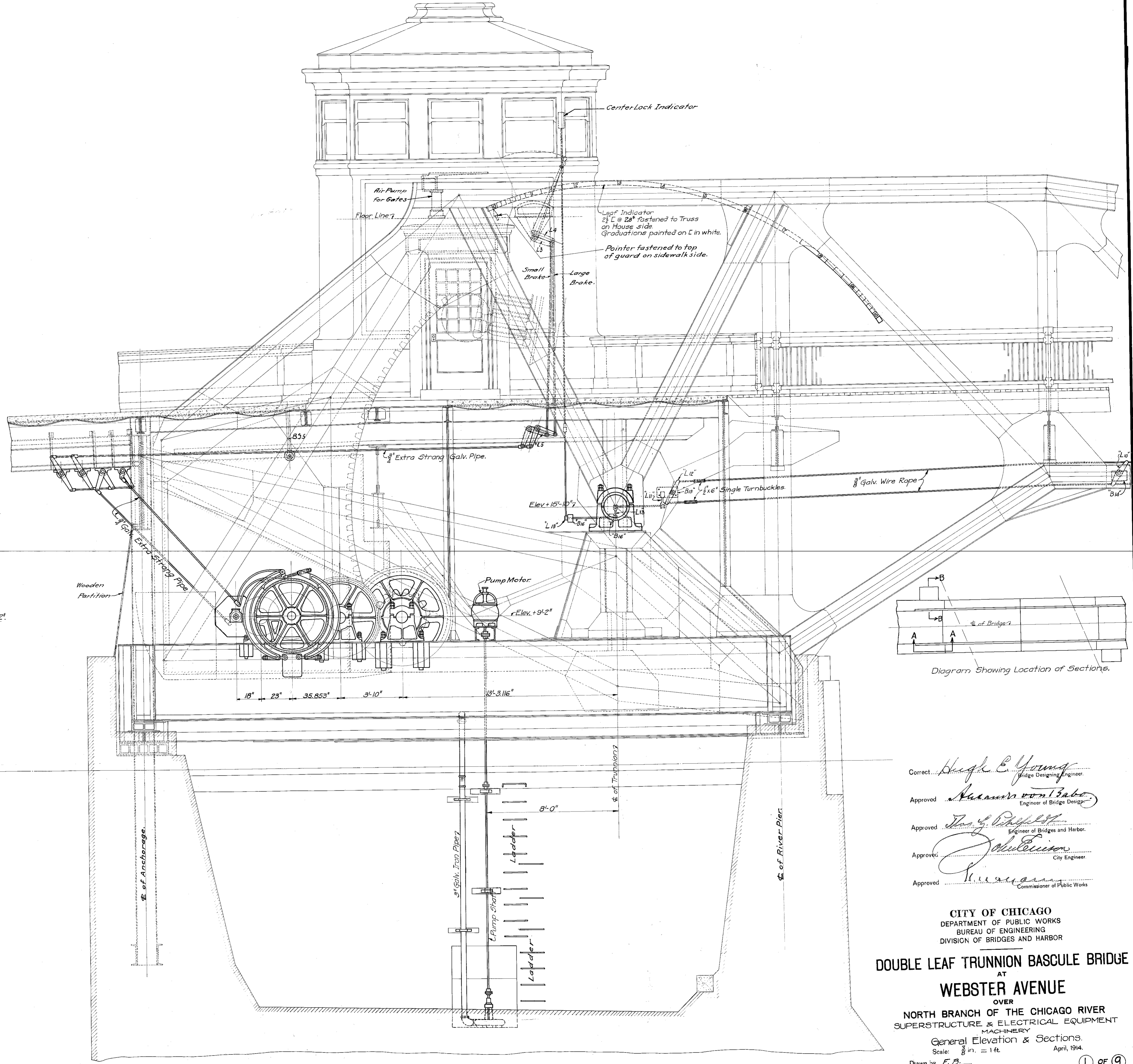
Correct: *High C. Young*  
Bridge Designer, Engineer.  
Approved: *Alexander von Bado*  
Engineer of Bridge Design.  
Approved: *James J. Whelan*  
Engineer of Bridges and Harbor.  
Approved: *John J. Sullivan*  
City Engineer.  
Approved: *James J. Sullivan*  
Commissioner of Public Works.

Scale: 3/4" = 1 ft.  
April, 1914.  
Drawn by *A.R.*  
Traced by *E.D.M.*  
Checked by *D.N.B.*

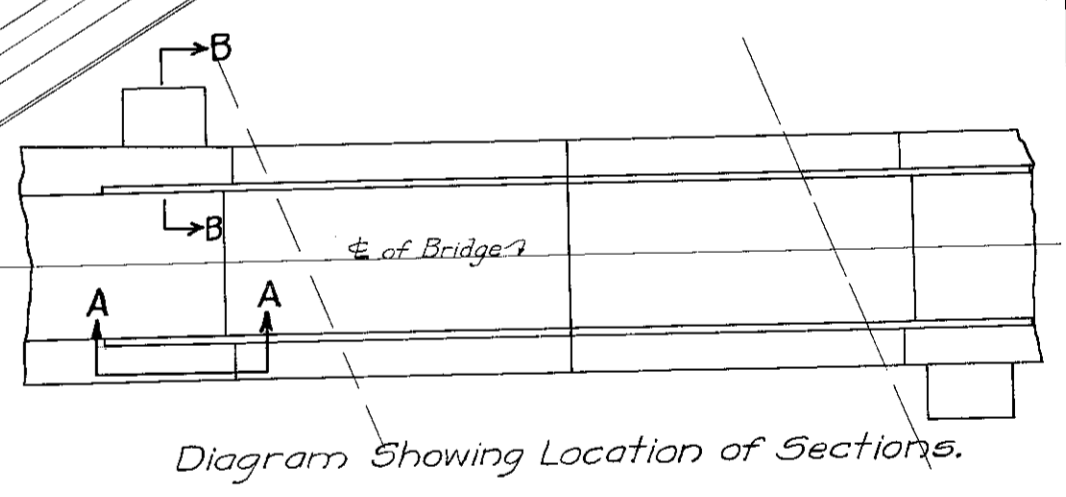


SECTION B-B.

NOTES:  
Motors, controllers, switchboard, pit-pumps, wiring and all other material called for by the specifications for the electrical equipment shall be furnished and installed by the contractor for the electrical equipment. All other material and construction shown is included in the contract for the superstructure. For general requirements of material and workmanship see specifications.



SIDE ELEVATION & SECTION A-A.



Corrected by *Hugh E. Young*  
 Approved by *William von T. Babo*  
 Approved by *Thos. G. Russell*  
 Approved by *John E. ...*  
 Approved by *...*

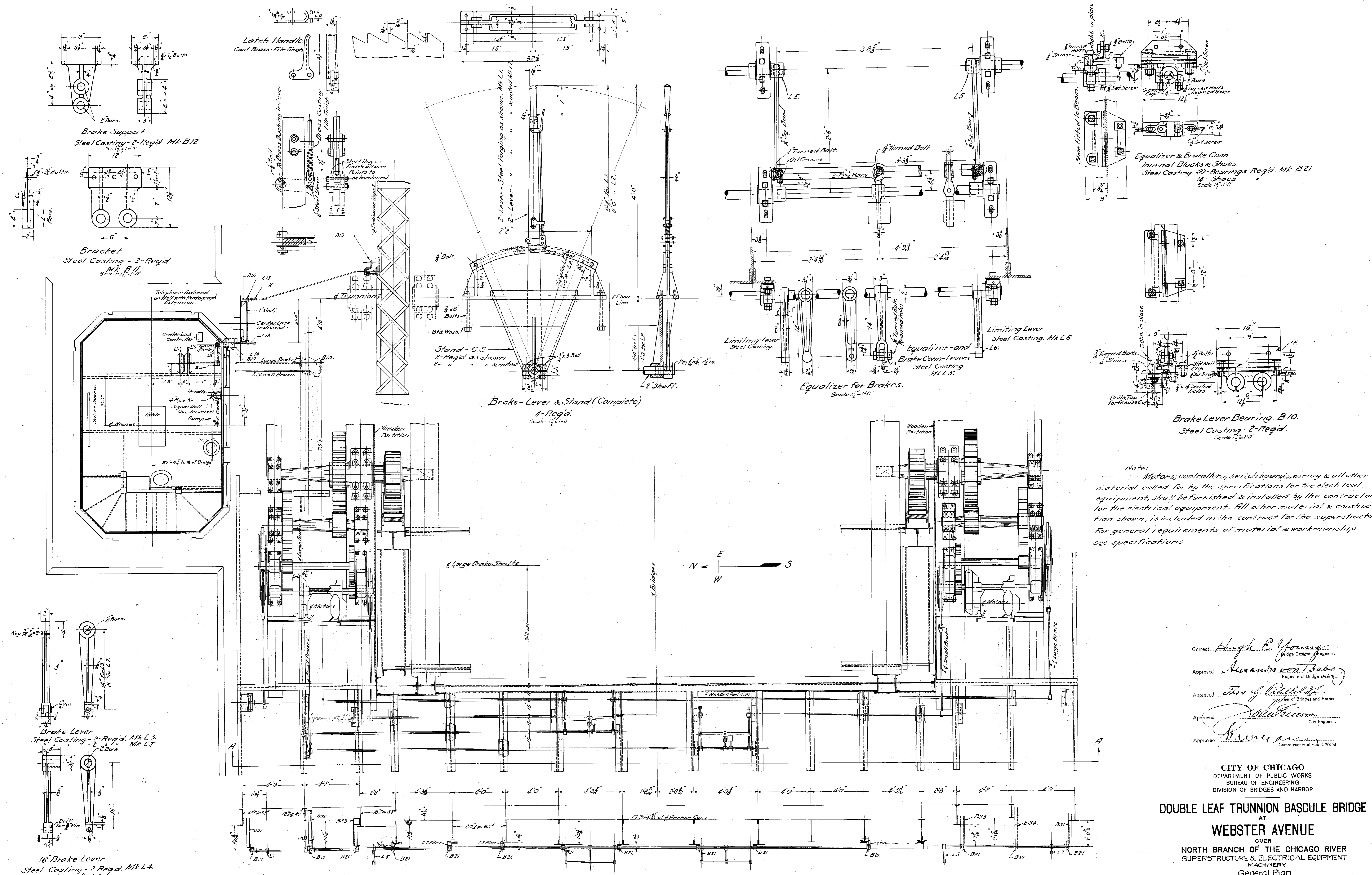
CITY OF CHICAGO  
 DEPARTMENT OF PUBLIC WORKS  
 BUREAU OF ENGINEERING  
 DIVISION OF BRIDGES AND HARBOR

**DOUBLE LEAF TRUNNION BASCULE BRIDGE**  
 AT  
**WEBSTER AVENUE**  
 OVER  
 NORTH BRANCH OF THE CHICAGO RIVER  
 SUPERSTRUCTURE & ELECTRICAL EQUIPMENT  
 MACHINERY  
 General Elevation & Sections  
 Scale: 1/8" = 1 ft. April, 1914.

Drawn by *E.B.*  
 Traced by *B.I.P.*  
 Checked by *...*

Drawing No. 806  
 FILE No. 11-6A-26

1 OF 9  
 24 OF 33



Note:  
Motors, controllers, switch boards, wiring & all other material called for by the specifications for the electrical equipment, shall be furnished & installed by the contractor for the electrical equipment. All other material & construction shown, is included in the contract for the superstructure. For general requirements of material & workmanship see specifications.

Correct: *High C. Young*  
Bridge Designing Engineer.

Approved: *Alexander von T. Sabo*  
Engineer of Bridge Design.

Approved: *Thos. G. Paddock*  
Engineer of Bridges and Harbor.

Approved: *John A. ...*  
City Engineer.

Approved: *Murray ...*  
Commissioner of Public Works.

**CITY OF CHICAGO**  
DEPARTMENT OF PUBLIC WORKS  
BUREAU OF ENGINEERING  
DIVISION OF BRIDGES AND HARBOR

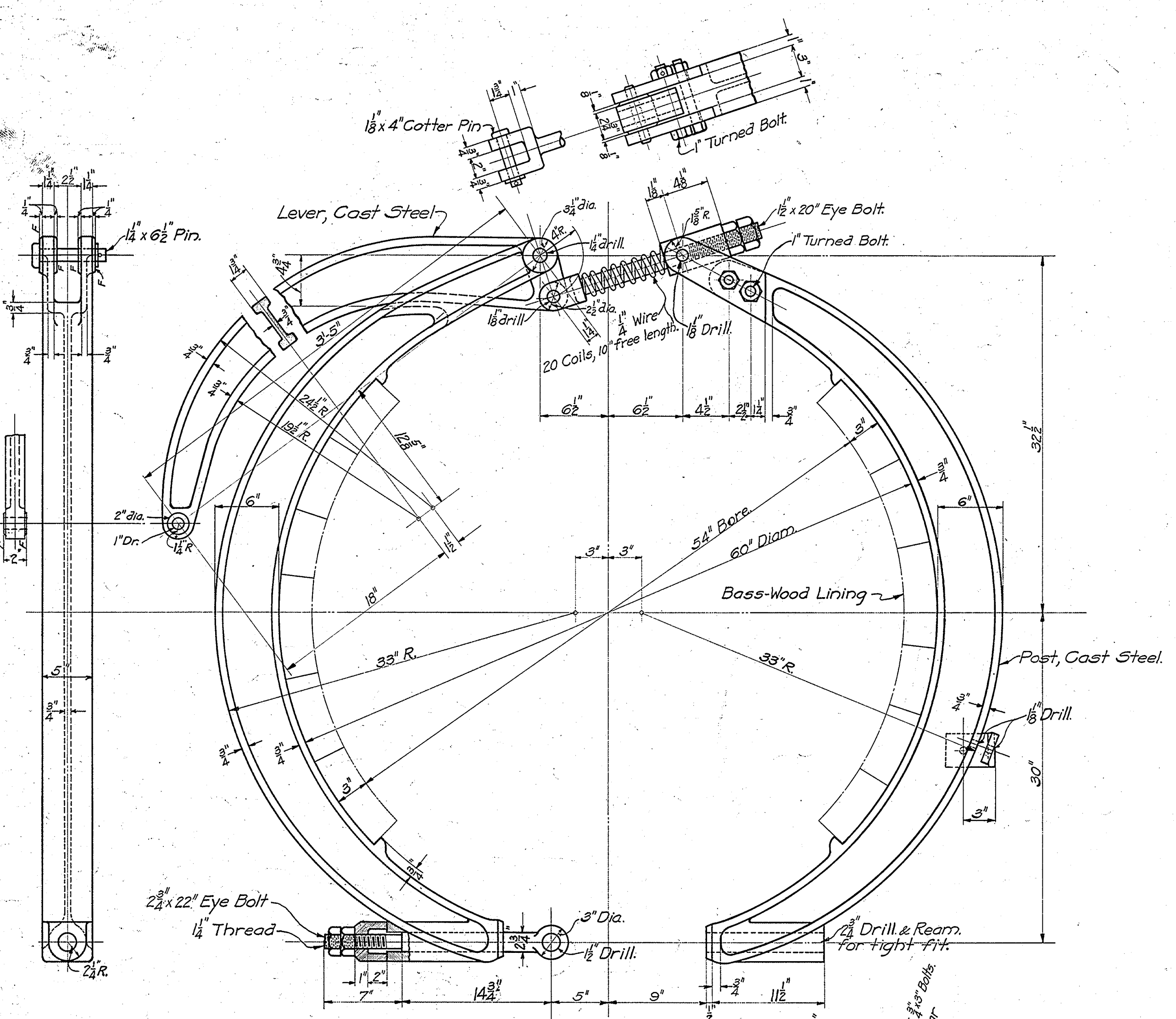
**DOUBLE LEAF TRUNNION BASCULE BRIDGE**  
AT  
**WEBSTER AVENUE**  
OVER  
NORTH BRANCH OF THE CHICAGO RIVER  
SUPERSTRUCTURE & ELECTRICAL EQUIPMENT  
MACHINERY  
General Plan

Scale: 3/8" & 1/2" = 1 ft. April, 1914.

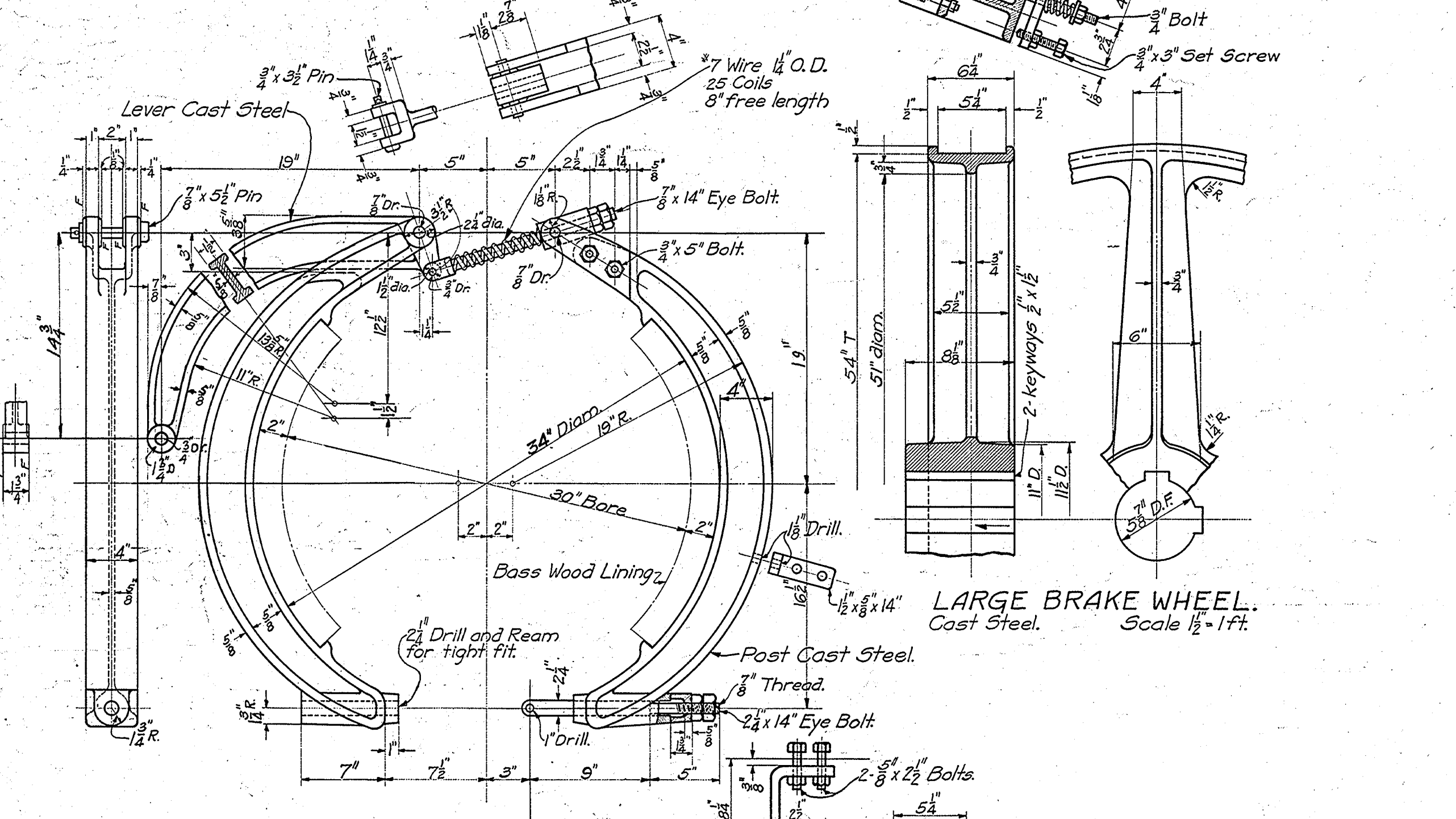
Drawn by *F. B. & A. T.*  
Traced by *A. T.*  
Checked by *...*

2 of 9  
25 of 38

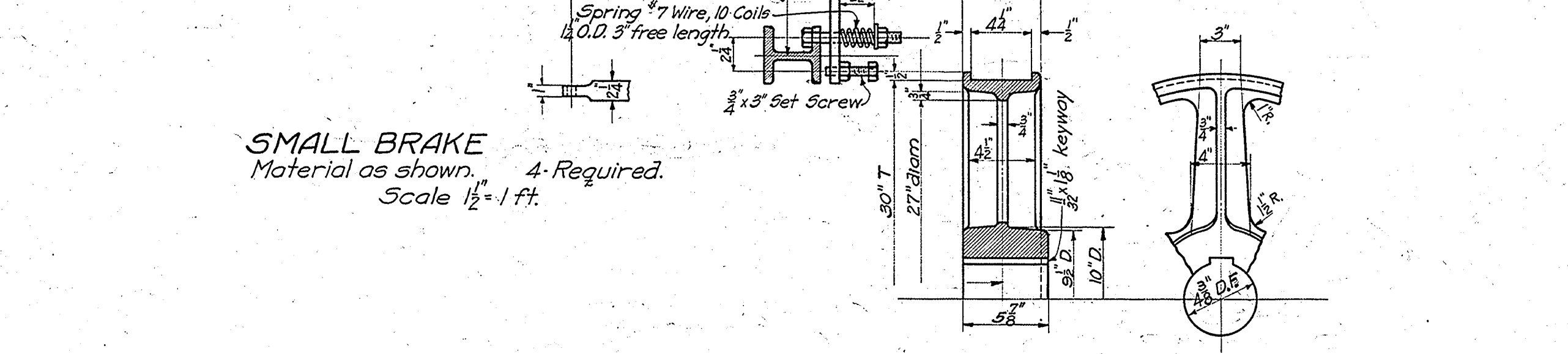
FILE No. 11-6A-27



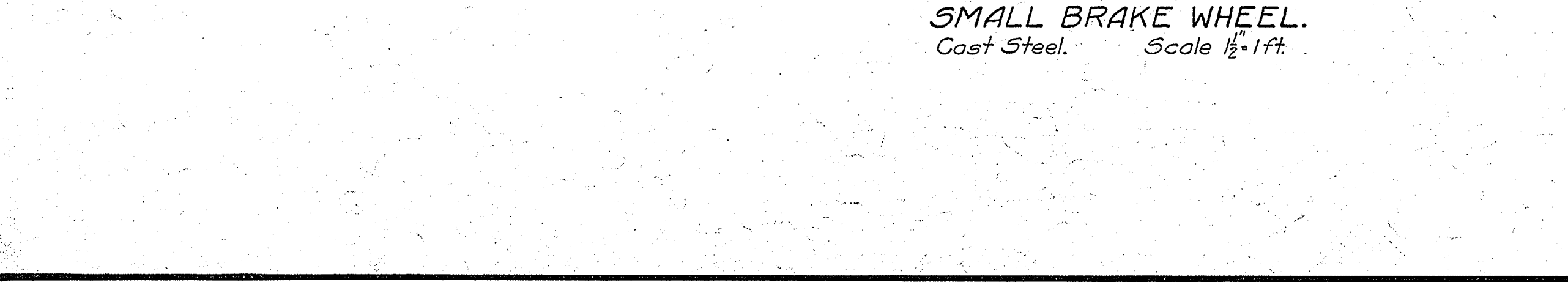
**LARGE BRAKE**  
Material as shown. 4 Required.  
Scale 1/2" = 1 ft.



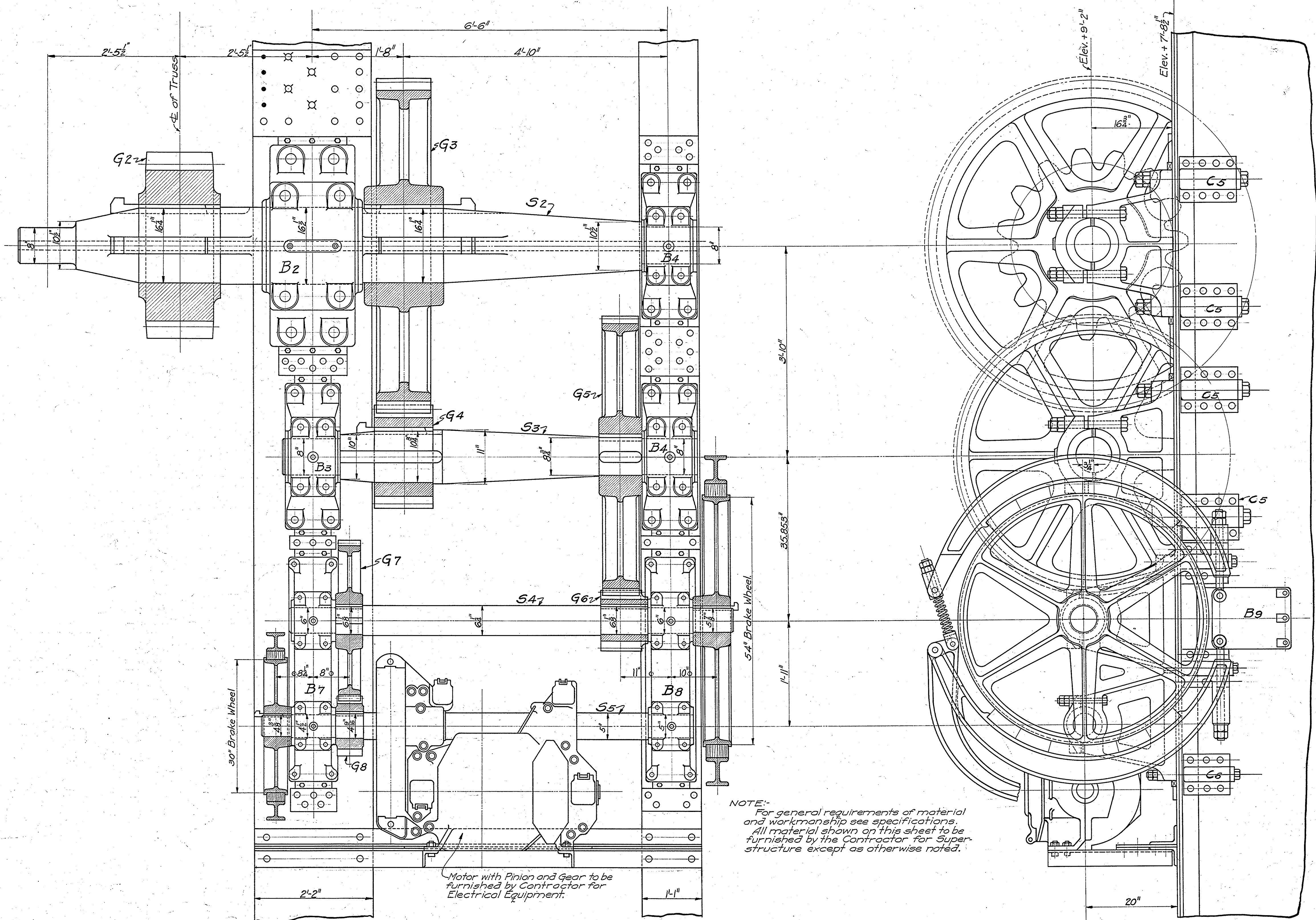
**LARGE BRAKE WHEEL**  
Cast Steel. Scale 1/2" = 1 ft.



**SMALL BRAKE**  
Material as shown. 4 Required.  
Scale 1/2" = 1 ft.

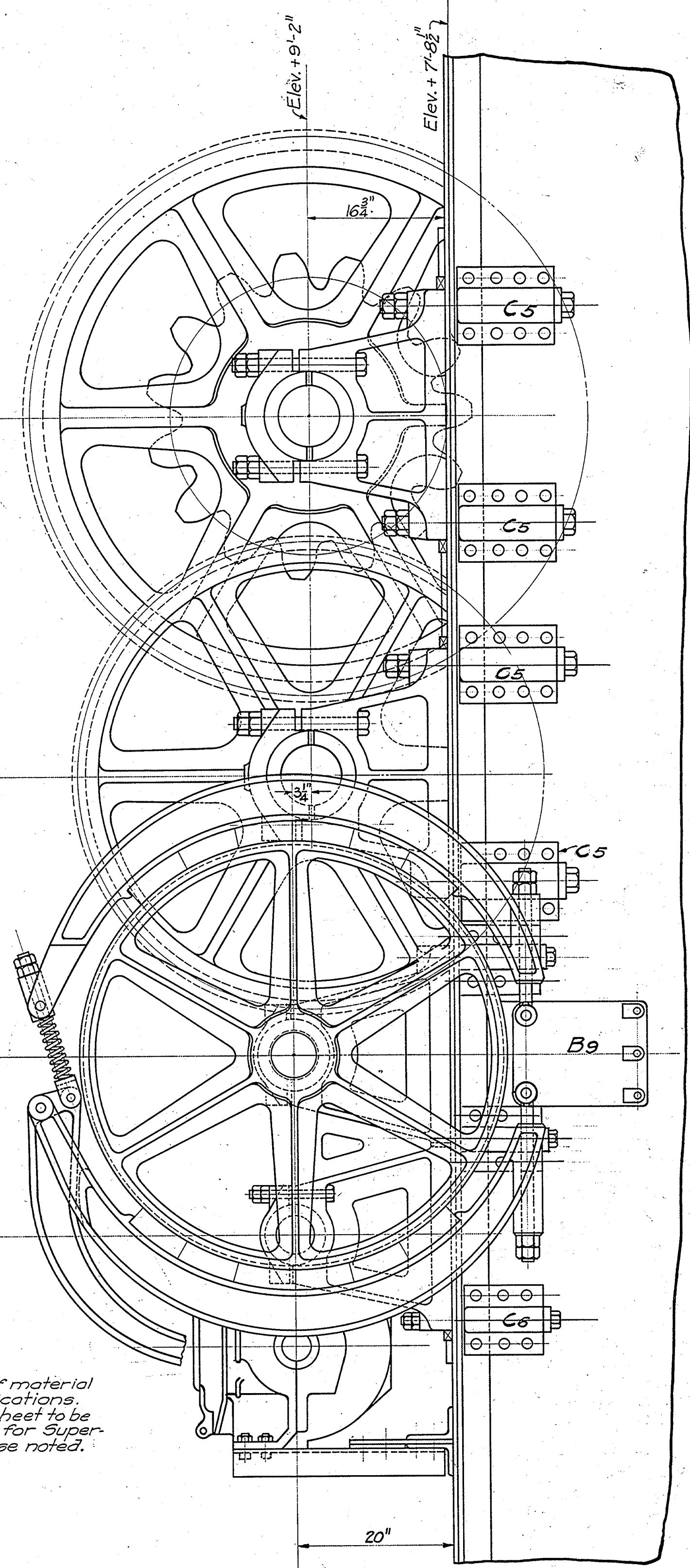


**SMALL BRAKE WHEEL**  
Cast Steel. Scale 1/2" = 1 ft.



**TOP VIEW OF GEAR TRAIN.**  
Right Hand.  
Scale 1" = 1 ft.

NOTE:  
For general requirements of material and workmanship see specifications.  
All material shown on this sheet to be furnished by the Contractor for Superstructure except as otherwise noted.



**SIDE VIEW.**

CITY OF CHICAGO  
DEPARTMENT OF PUBLIC WORKS  
BUREAU OF ENGINEERING  
DIVISION OF BRIDGES AND HARBOR

**DOUBLE LEAF TRUNNION BASCULE BRIDGE**

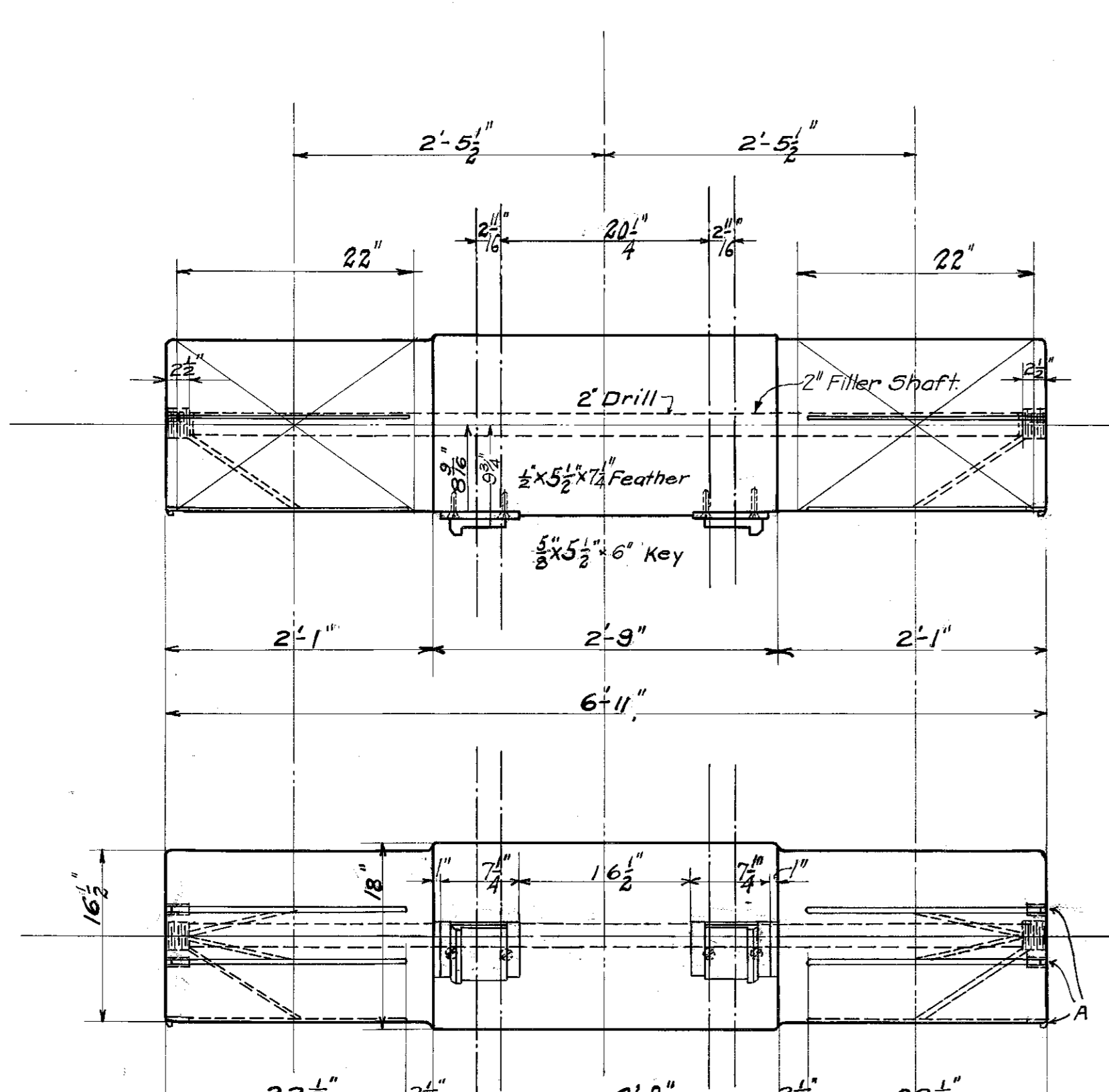
AT  
**WEBSTER AVENUE** (26) or (38) & (3) or (9)  
**BELMONT AVENUE** (3) or (9) & (28) or (41)

OVER  
NORTH BRANCH OF THE CHICAGO RIVER  
SUPERSTRUCTURE & ELECTRICAL EQUIPMENT  
MACHINERY  
Gear Train, Brake Details & Motor  
Scale: 1" & 1/2" = 1 ft. April, 1914.

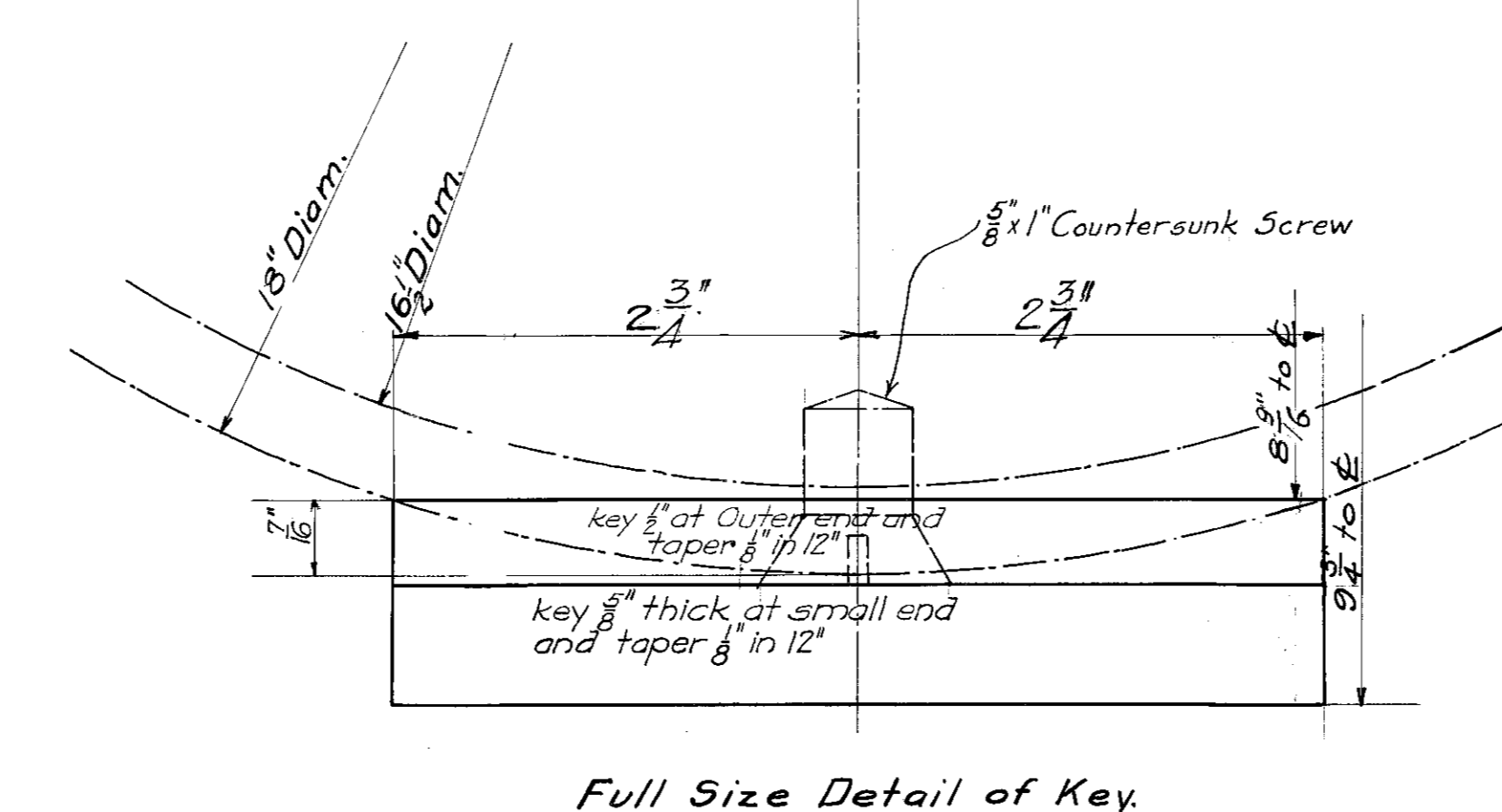
Corrected by *Hugh E. Young*  
Bridge Designing Engineer.  
Approved by *Alexander von T. Sabet*  
Engineer of Bridge Design.  
Approved by *John G. Ruller*  
Engineer of Bridges and Harbors.  
Approved by *John A. Quinn*  
City Engineer.  
Approved by *James W. ...*  
Commissioner of Public Works.

Drawn by *E.B.*  
Traced by *R.J.P.*  
Checked by *Chy*  
Drawing No. 808  
FILE NO. 11-6A-28

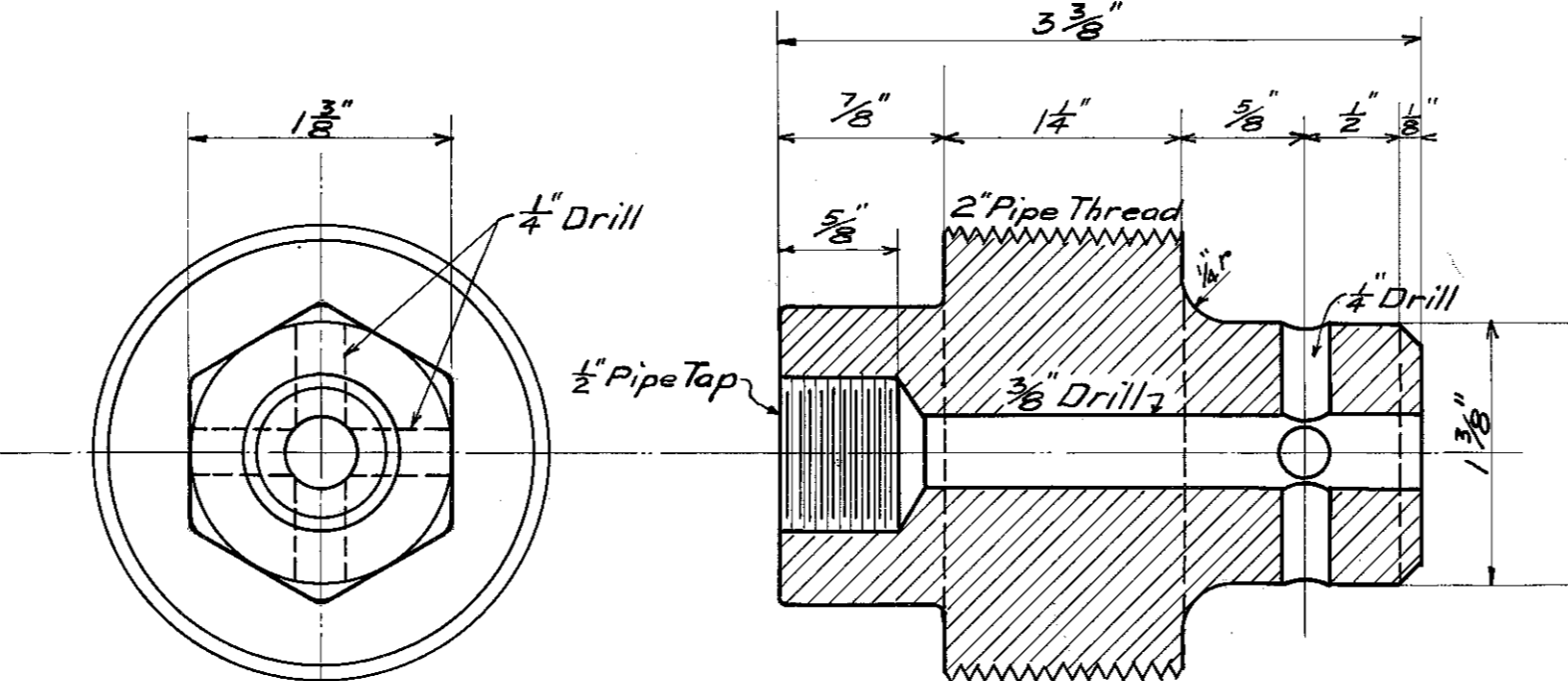




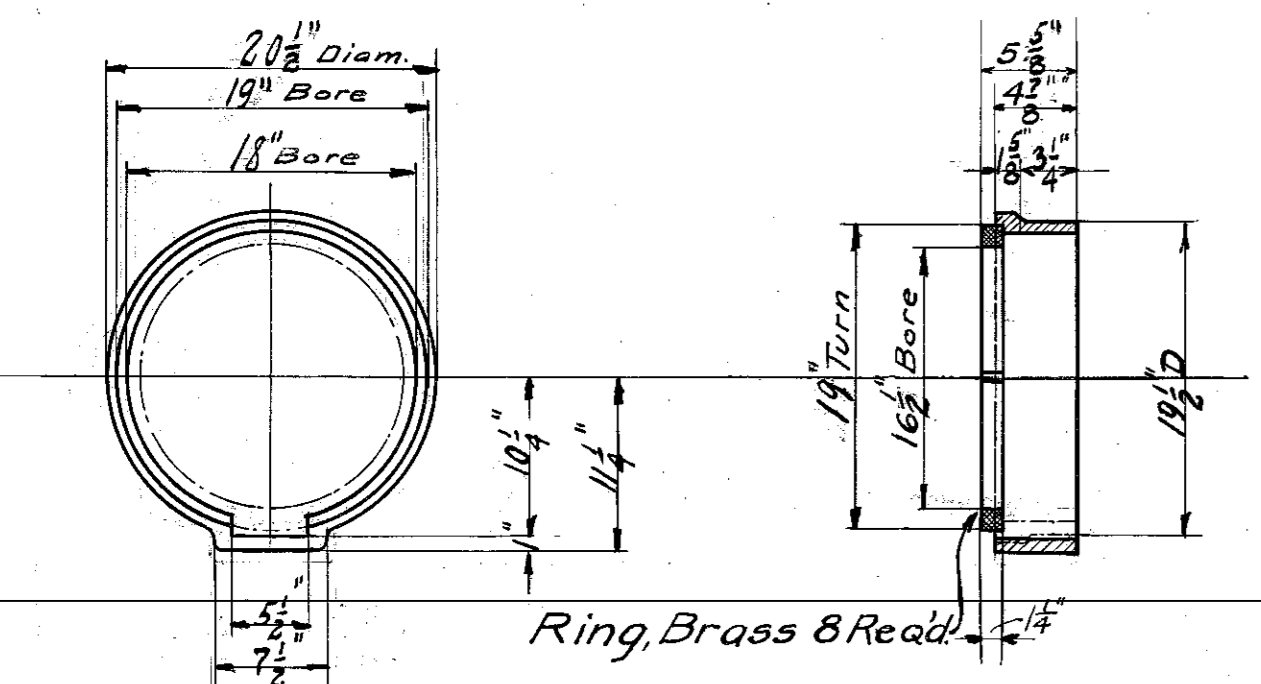
18'-6-11" Trunnion, A.C.S. 4 Required.  
MARK S1.  
Scale: 1"=1'-0"



Full Size Detail of Key

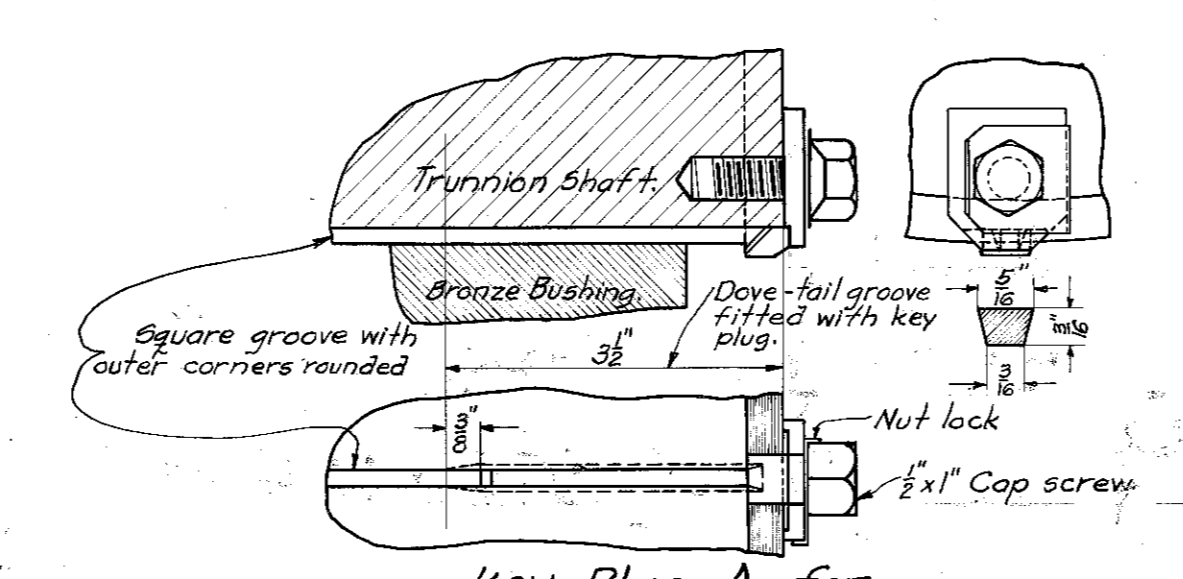


Brass Plug, 8 Required.  
Scale: 1/2"=1'-0"

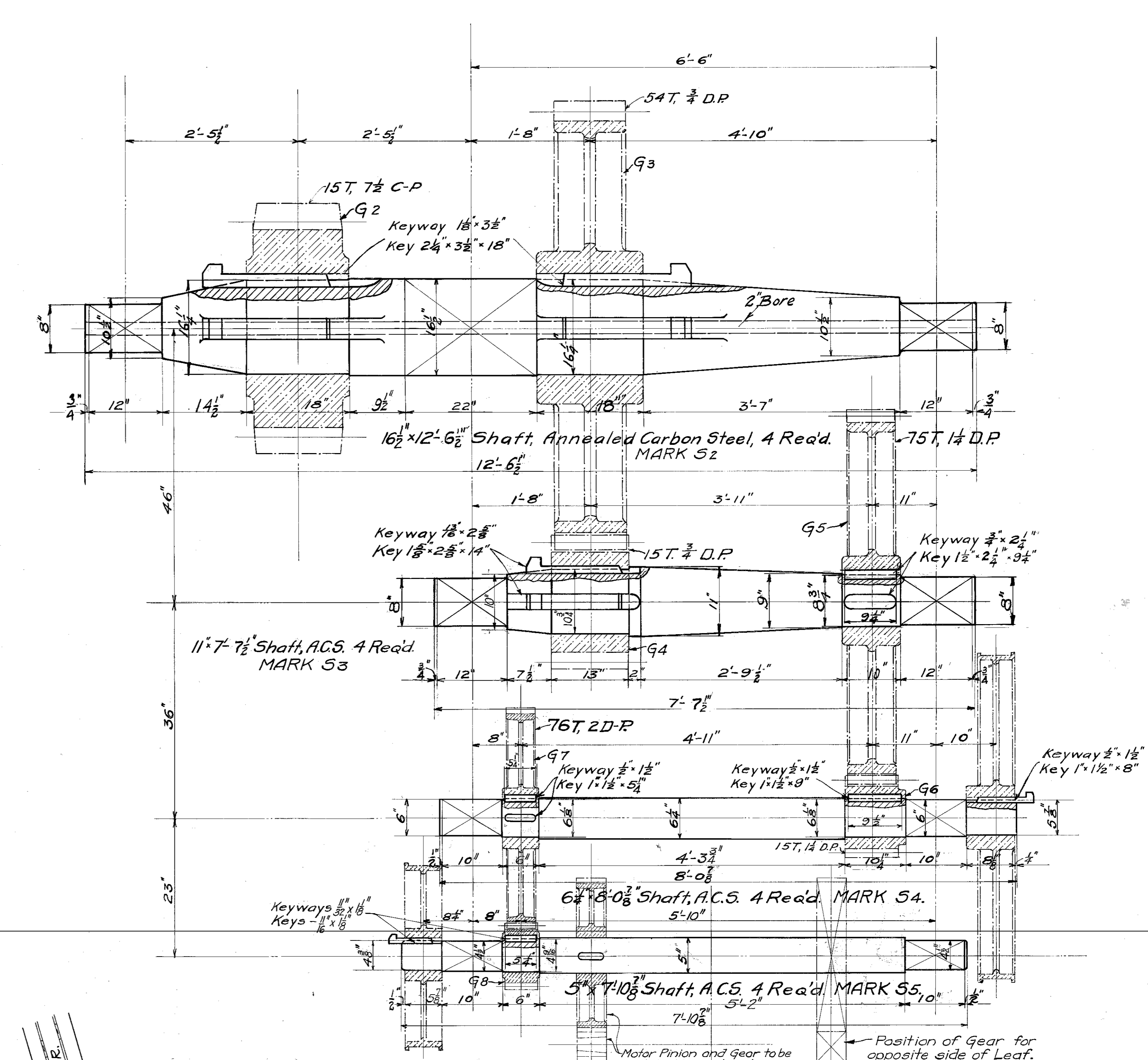


Ring, Brass 8 Required.  
Scale: 1/2"=1'-0"

Collar, C.S. 8 Read.  
Scale: 1/2"=1'-0"



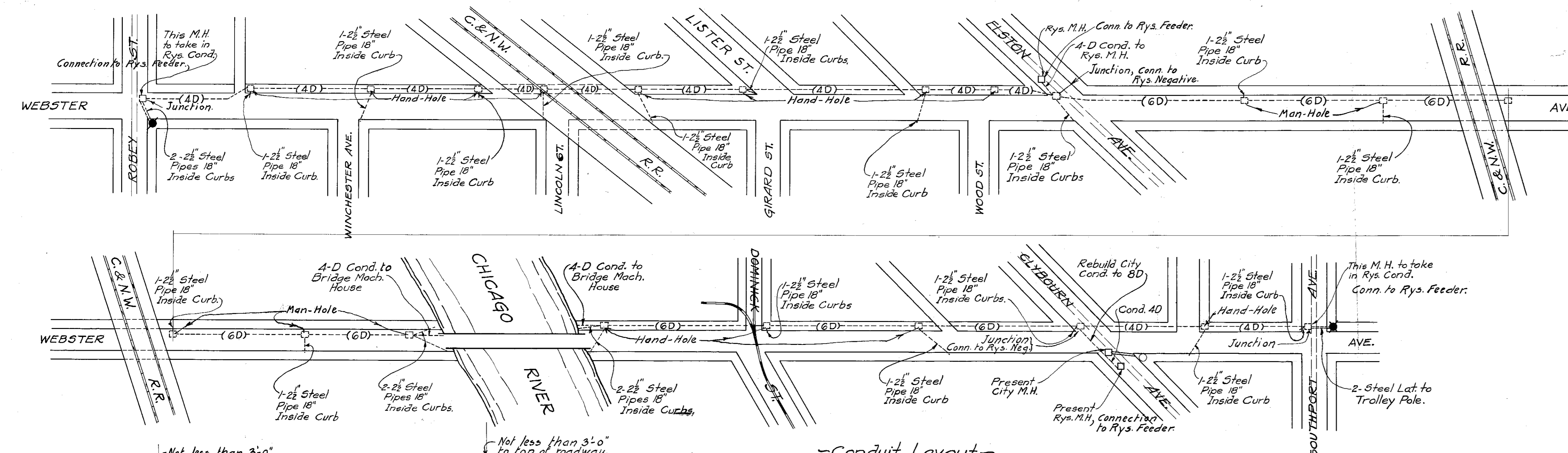
Key Plug A for Lubricating Groove  
Scale: 6"=1'-0"



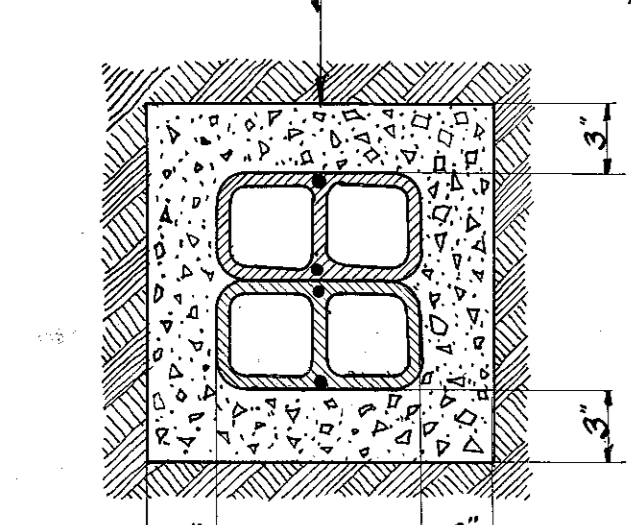
11'-7-7/8" Shaft, A.C.S. 4 Read.  
MARK S3

6 1/2 x 8 0 3/8 Shaft, A.C.S. 4 Read.  
MARK S4.

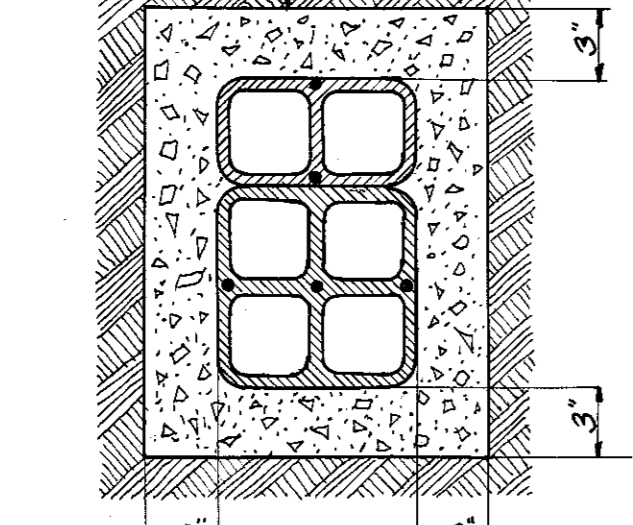
5 x 7 10 3/8 Shaft, A.C.S. 4 Read.  
MARK S5.



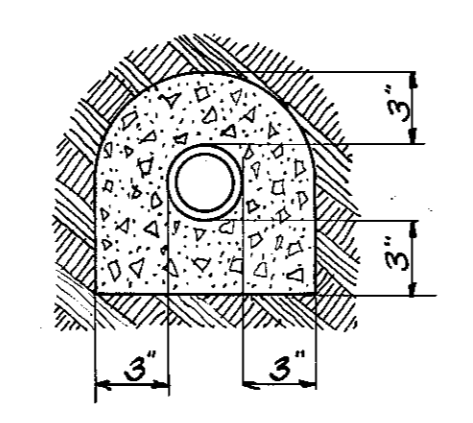
-Conduit Layout-



Section thru Four Duct Conduit



Section thru Six Duct Conduit.



Section thru Lateral.

**NOTES ON UNDERGROUND CONDUITS & CABLES.**  
The Contractor shall furnish, draw into the conduits and connect, ready for operation the following runs of Cable.  
One power supply cable from the point of connection with the Street Railway feeder at Robey Street, to a point inside of the west bridge abutment wall, approximately 2600 ft.  
One power supply cable from the point of connection with the Street Railway feeder at Elston Ave. to a point inside of the west bridge abutment wall, approximately 1200 ft.  
One return cable from a point inside of the west bridge abutment wall to the point of connection with the Street Railway negative cable of Elston Ave. approximately 1200 ft.  
One power supply cable from the point of connection with the Street Railway feeder at Southport Ave. to a point inside of the east bridge abutment wall, approximately 1200 ft.  
One power supply cable from the point of connection with the Street Railway feeder at Clybourn Ave. to a point inside of the east bridge abutment wall, approximately 900 feet.  
One return cable from a point inside of the east bridge abutment wall, to the point of connection with the Street Railway negative cable at Clybourn Ave. approximately 800 feet.  
The above lengths are approximate, and the Contractor shall make his own measurements to determine the actual lengths required.  
For detail requirements of cables, conduits and manholes see specifications.

**NOTES:**  
For general requirements of material and workmanship see specifications.  
All material shown on this sheet to be furnished by the Contractor for Super-structure except the motor pinion and gear, underground conduits, manholes and all material required in connection with same and the electric power cables, which shall be furnished and installed by the Contractor for the Electrical Equipment.

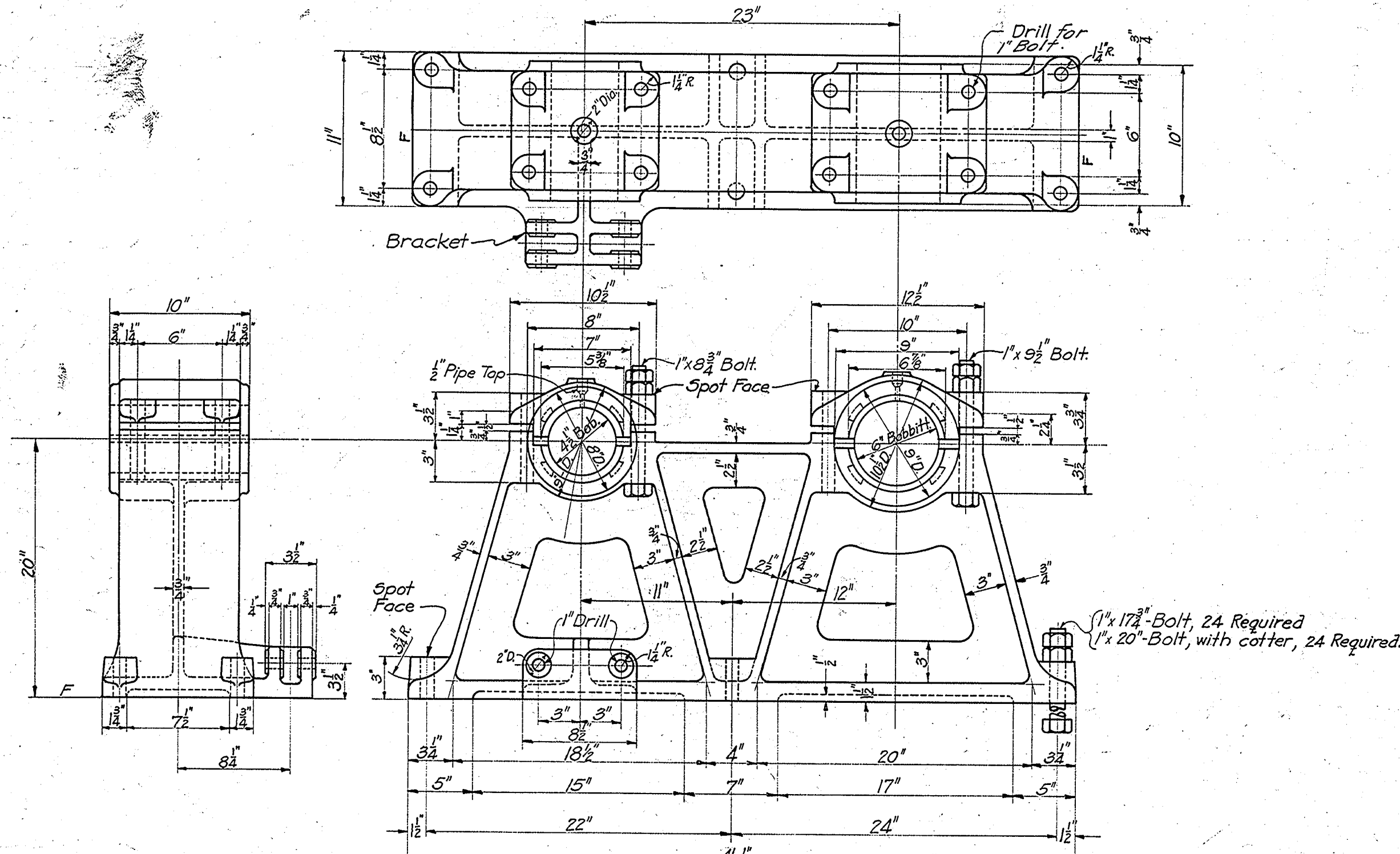
**CITY OF CHICAGO**  
DEPARTMENT OF PUBLIC WORKS  
BUREAU OF ENGINEERING  
DIVISION OF BRIDGES AND HARBOR

**DOUBLE LEAF TRUNNION BASCULE BRIDGE**  
AT  
**WEBSTER AVENUE** (28) of (38), (5) of (9)

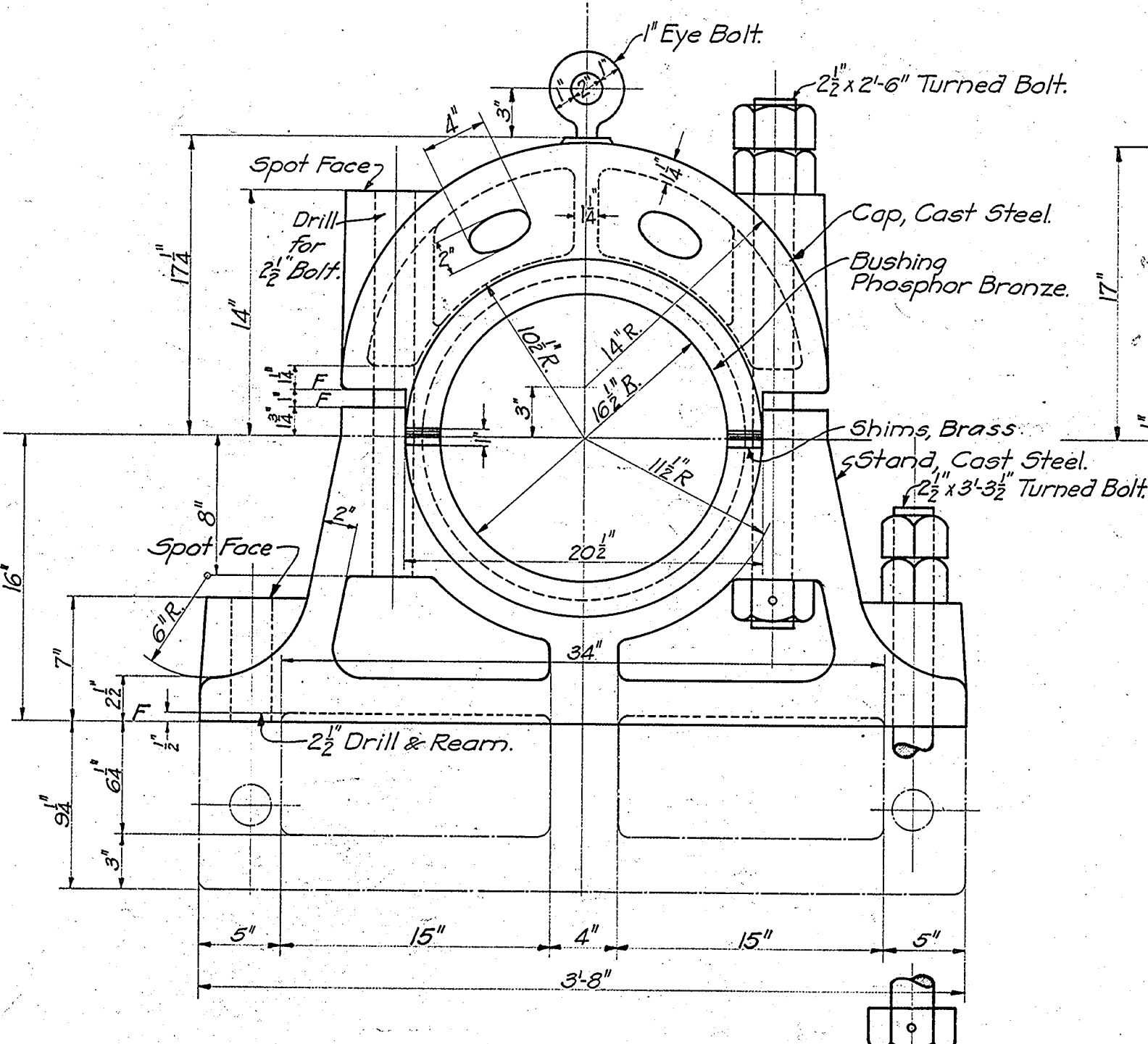
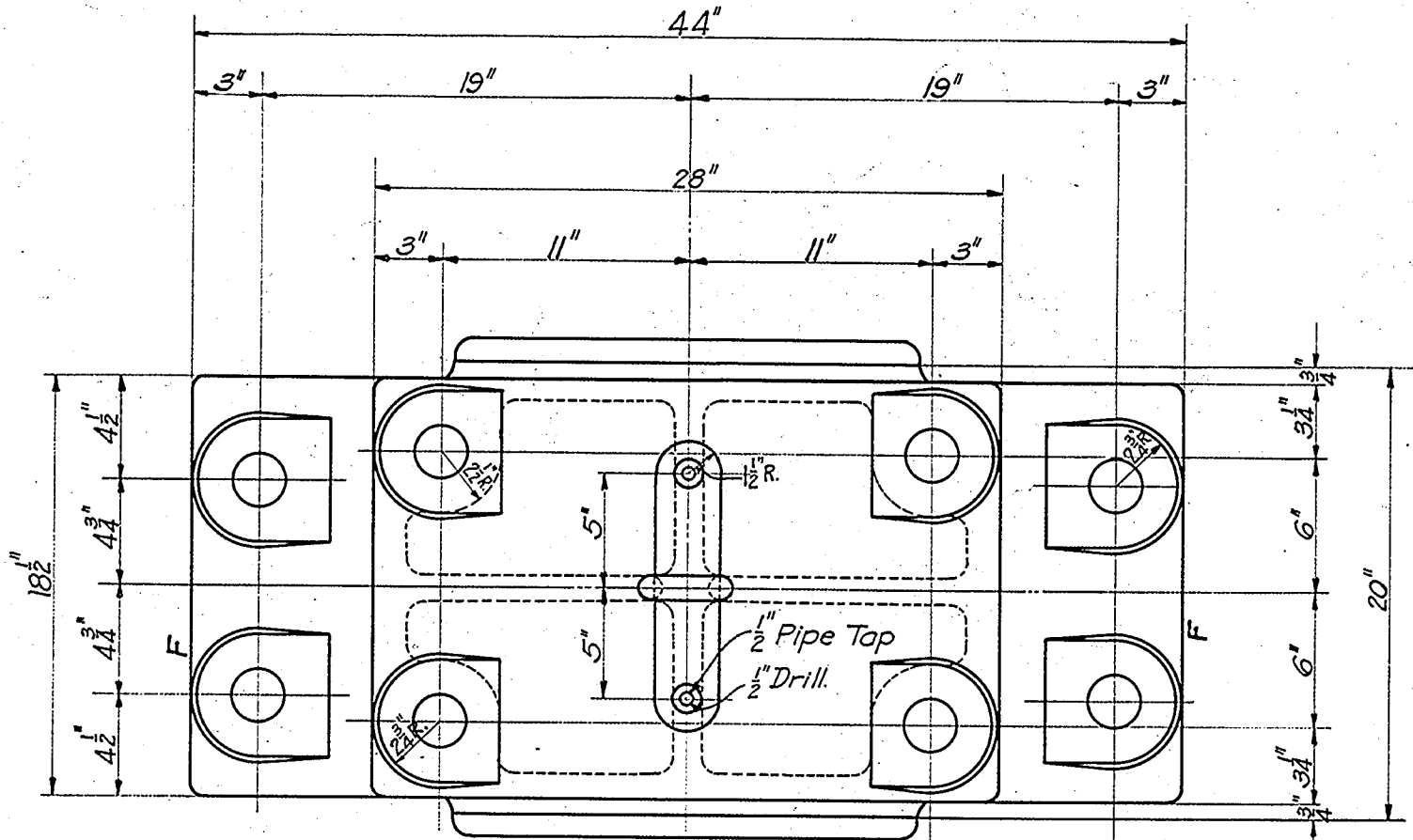
Corrected by *High E. Young*  
Approved by *Alexander von Tobo*  
Approved by *Geo. J. ...*  
Approved by *John ...*  
Approved by *...*

OVER  
**NORTH BRANCH OF THE CHICAGO RIVER**  
SUPERSTRUCTURE AND ELECTRICAL EQUIPMENT  
MACHINERY & CONDUITS  
Trunnions & Shafts

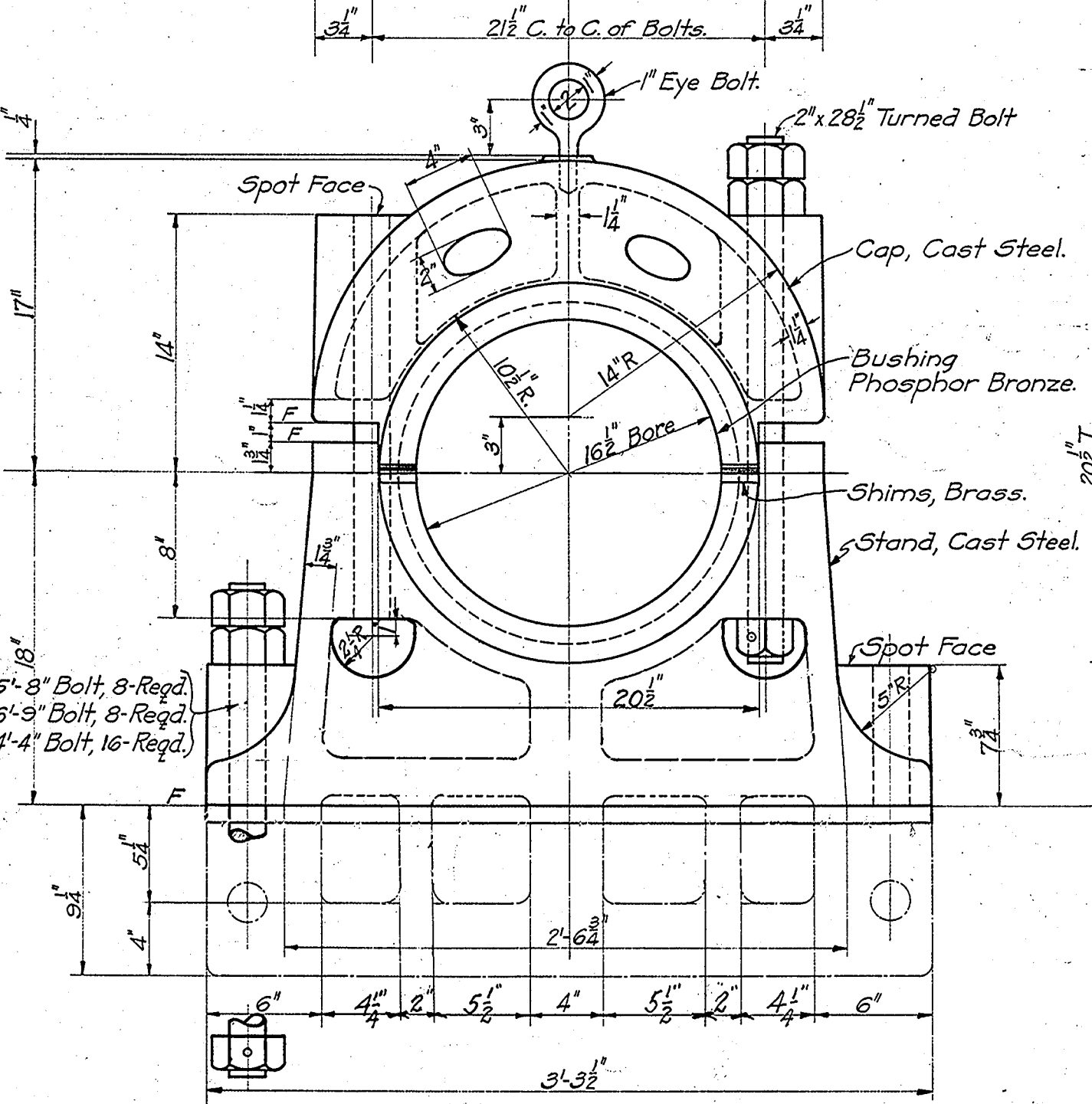
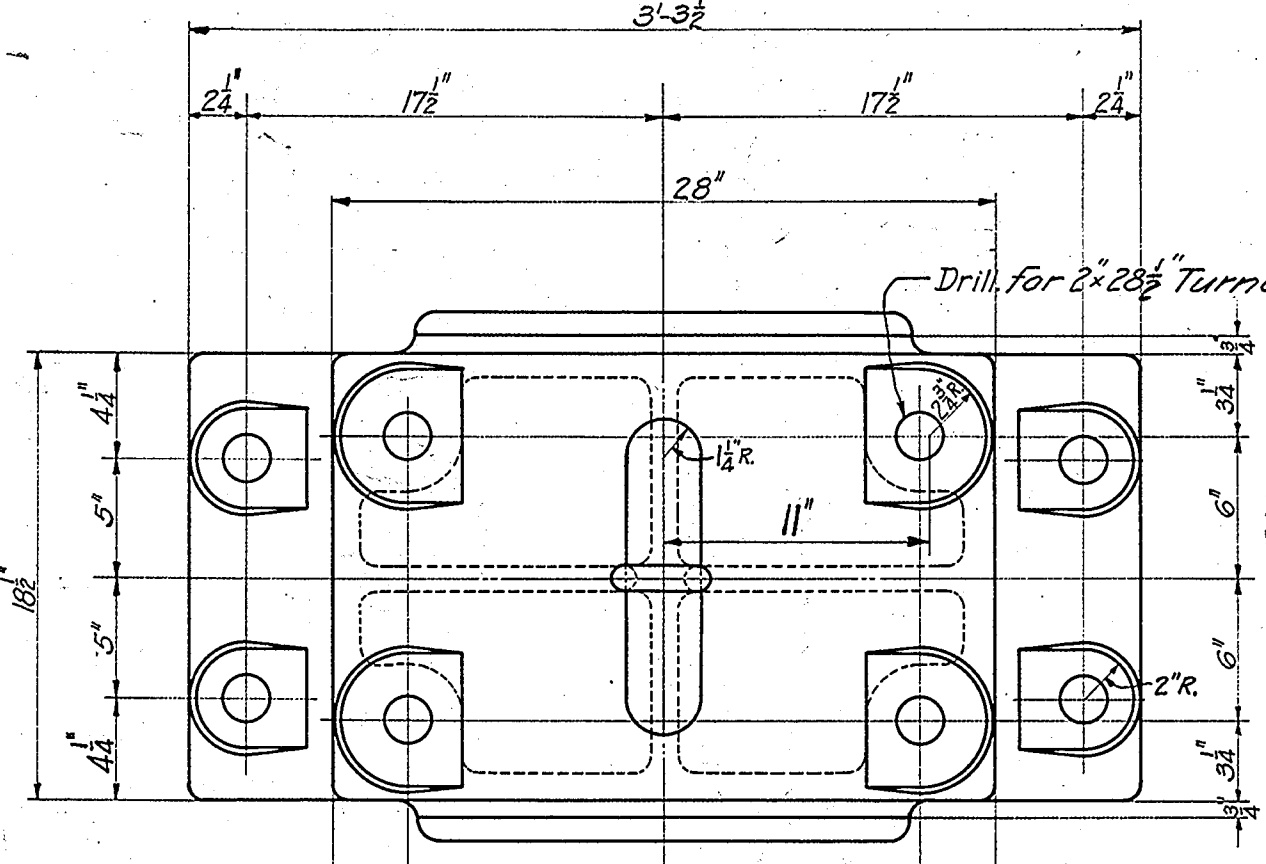
Scale: 1/2"=1' ft. April, 1914.  
Drawn by *F.B.*  
Traced by *C.S.*  
Checked by *...*  
Drawing No. **810**  
FILE No. **11-6A-30**



DOUBLE STAND-AS SHOWN, 2-Required.- MARK B6.  
 DOUBLE STAND-REVERSE, 2-Required.- MARK B7.  
 DOUBLE STAND-WITHOUT BRACKET, 4-Required.- MARK B8.  
 Material- Cast Steel.

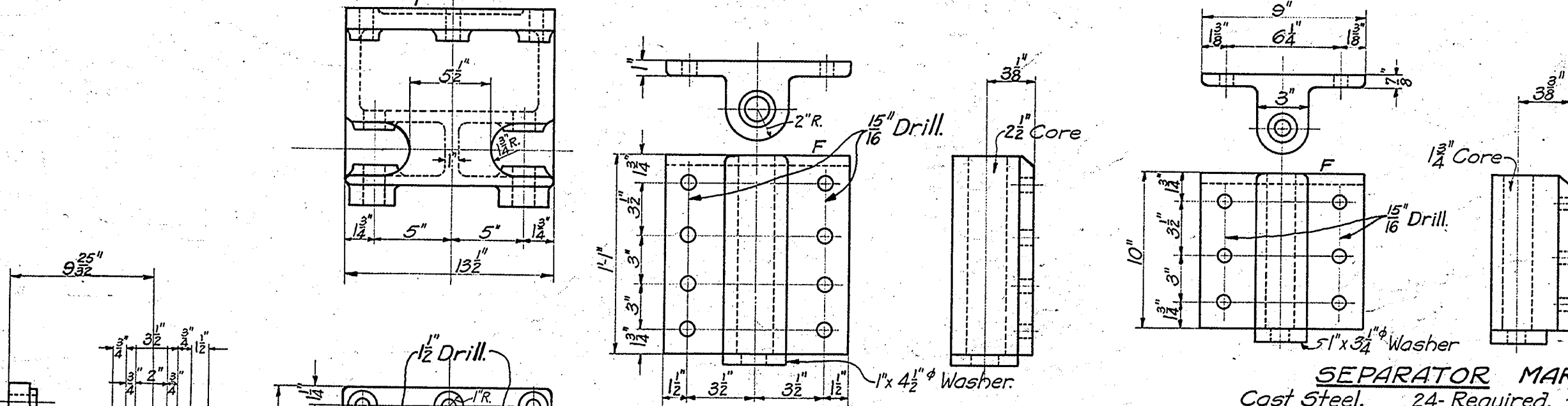


BEARING BLOCK COMPLETE  
 Cast Steel.  
 4-Required.  
 MARK B2.



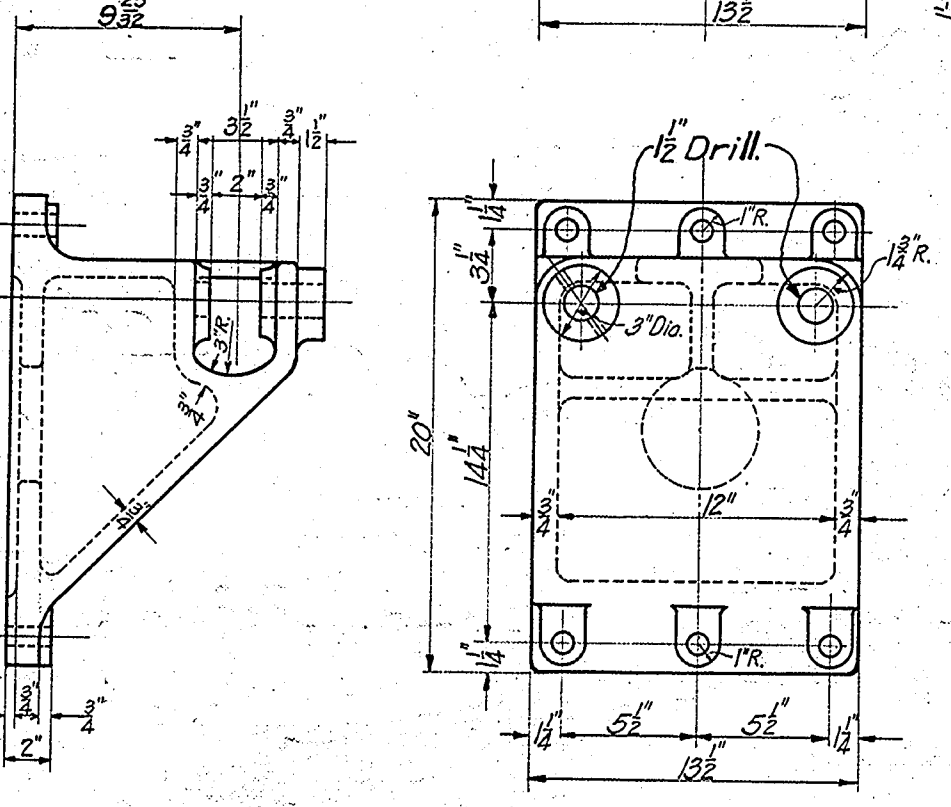
TRUNNION BOX COMPLETE.  
 Cast Steel.  
 8-Required.  
 MARK B1.

NOTE.  
 All Journal Blocks to be provided with 3 oz. Grease Cups unless otherwise noted.  
 For general requirements of material and workmanship see specifications.  
 The Holes for the base bolts in the journal blocks shall be drilled with allowance for reaming and after the entire machinery has been erected and carefully adjusted in the field they shall be reamed to the required size with the castings in their proper places.

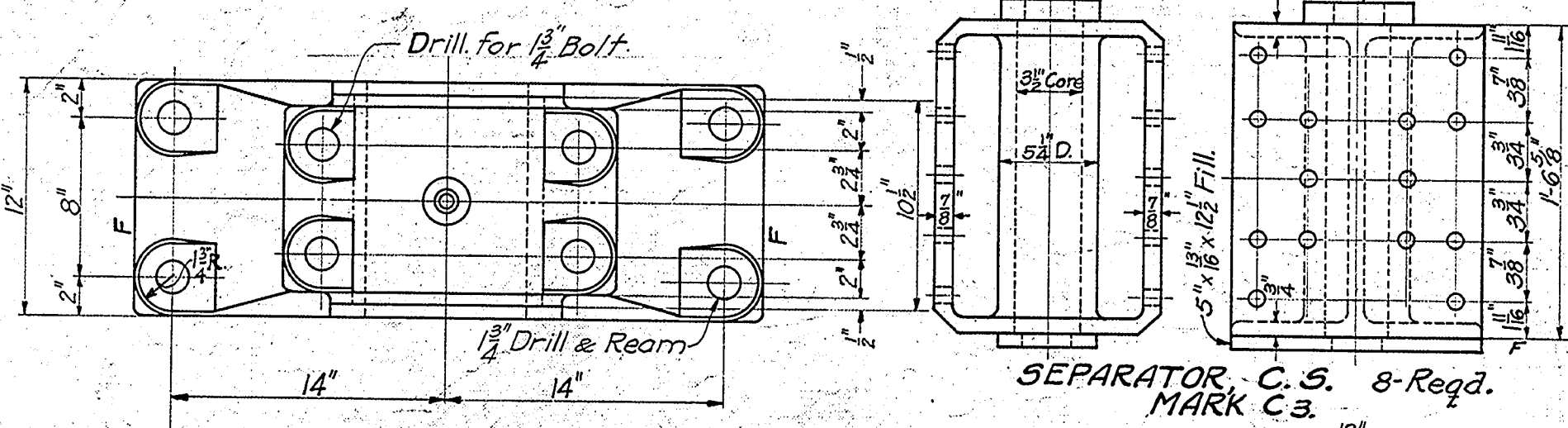


SEPARATOR MARK C5.  
 Cast Steel. 32-Required.

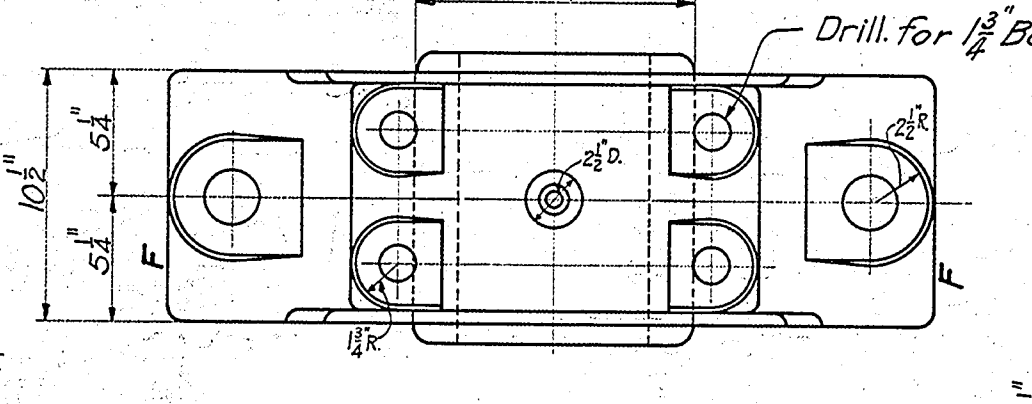
SEPARATOR MARK C6.  
 Cast Steel. 24-Required.



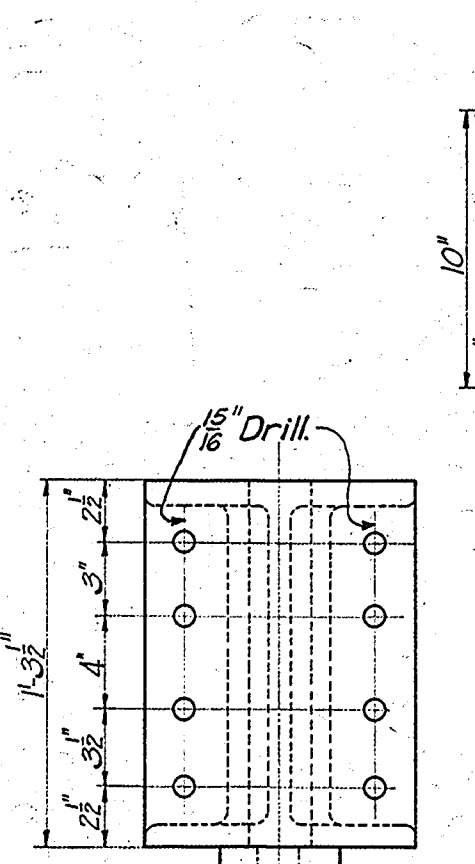
BRAKE BRACKET.  
 Cast Steel. 4-Required.  
 MARK B9.



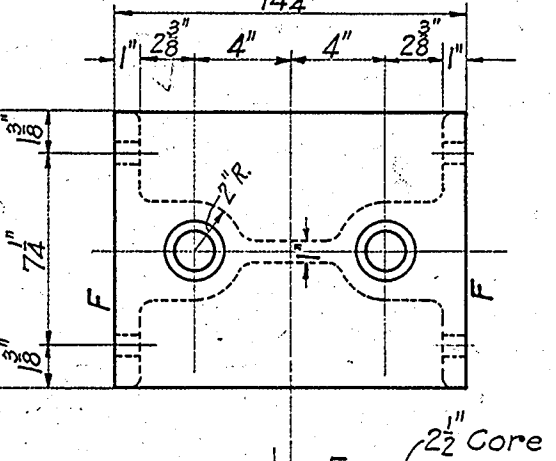
SEPARATOR MARK C3.  
 Cast Steel. 8-Reqd.



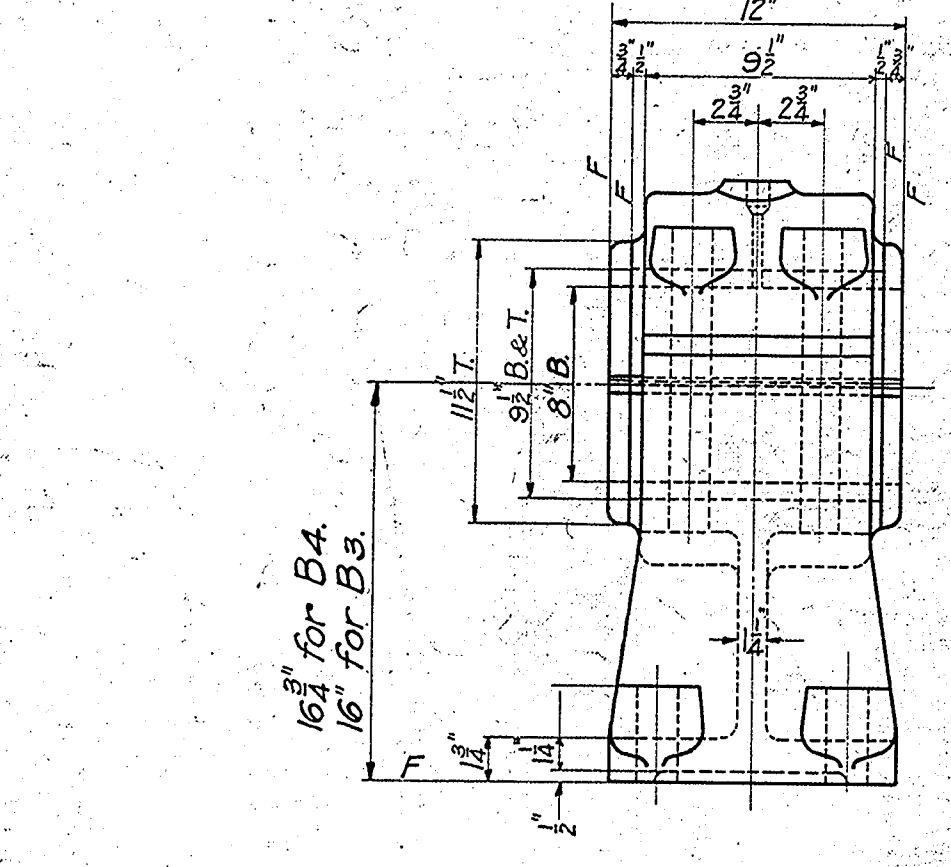
SEPARATOR MARK C1.  
 Cast Steel. 8-Required.



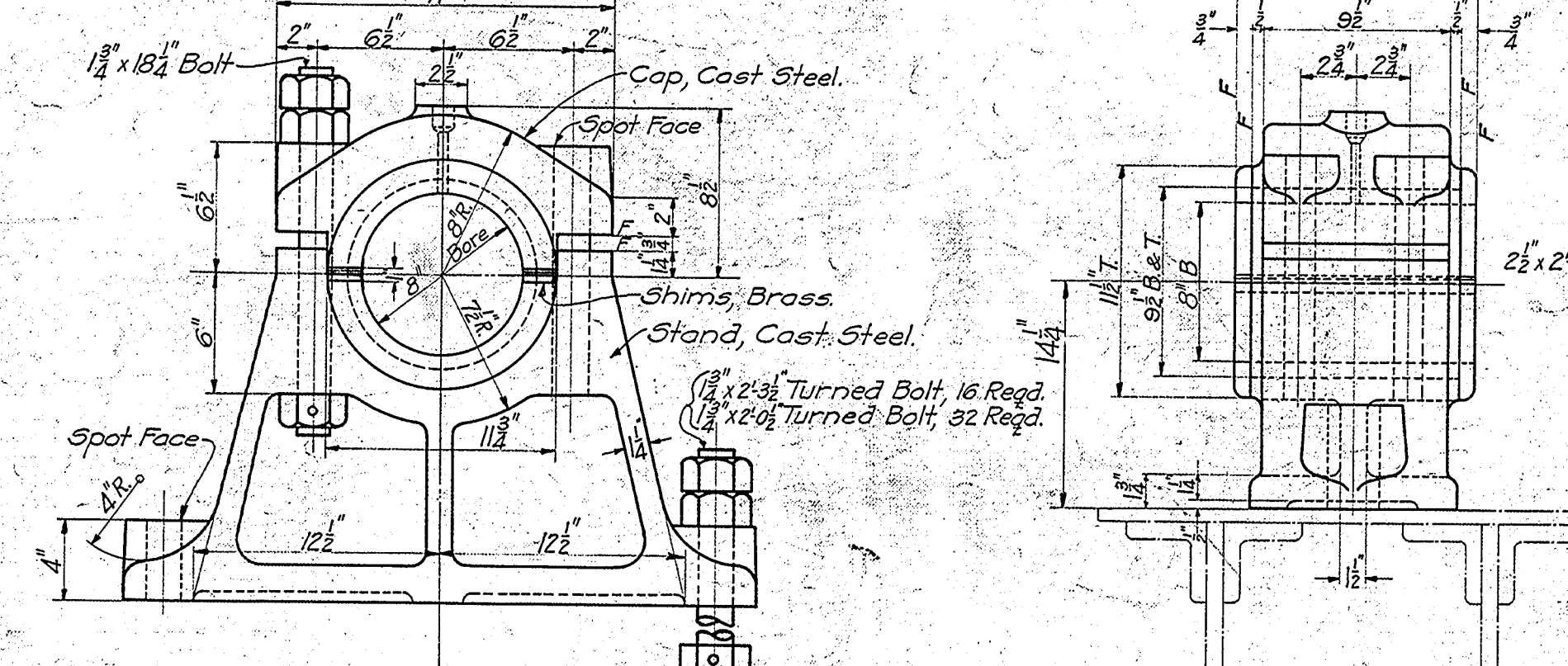
SEPARATOR MARK C2.  
 Cast Steel. 8-Required.



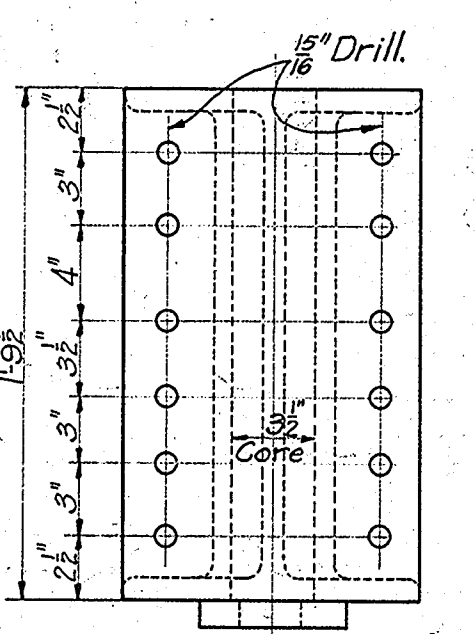
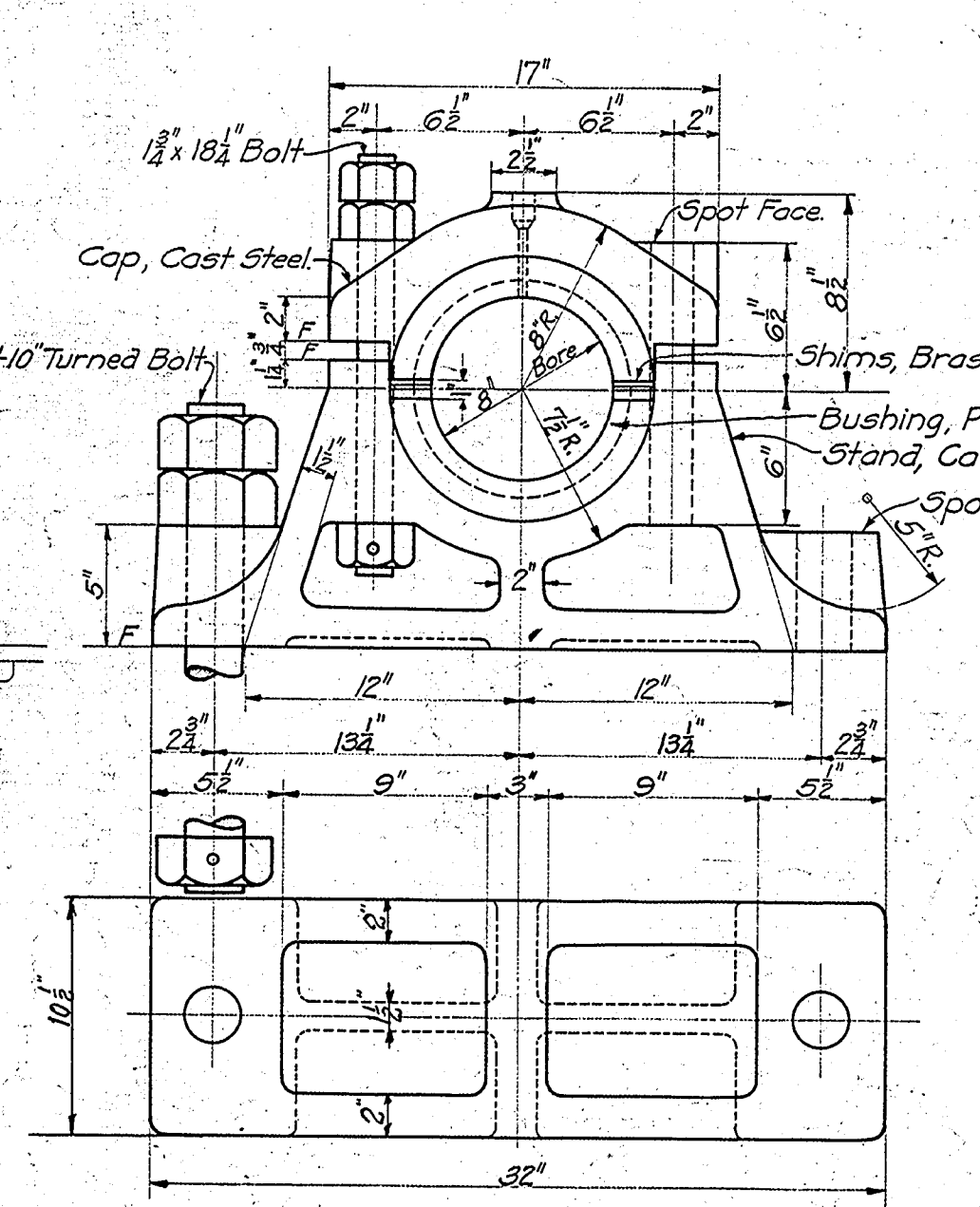
SEPARATOR MARK C4.  
 Cast Steel. 12-Required.



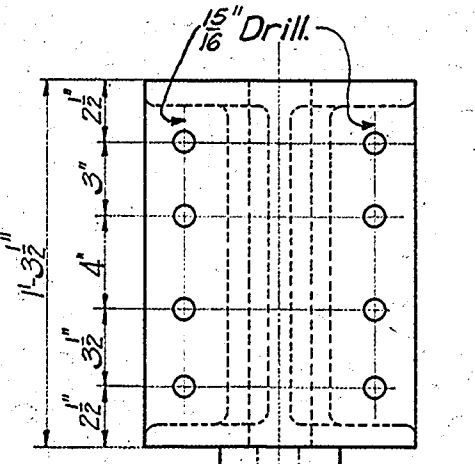
BEARING BLOCK COMPLETE.  
 Cast Steel.  
 4-Required, MARK B3.  
 8-Required, MARK B4.



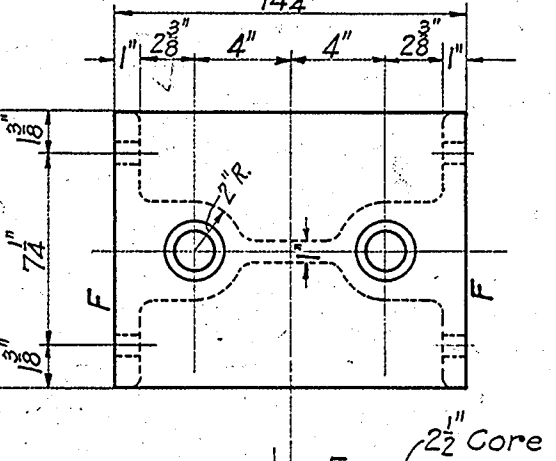
OUT-BOARD BEARING BLOCK COMPLETE.  
 Cast Steel.  
 4-Required.  
 MARK B5.



SEPARATOR MARK C1.  
 Cast Steel. 8-Required.



SEPARATOR MARK C2.  
 Cast Steel. 8-Required.



SEPARATOR MARK C4.  
 Cast Steel. 12-Required.

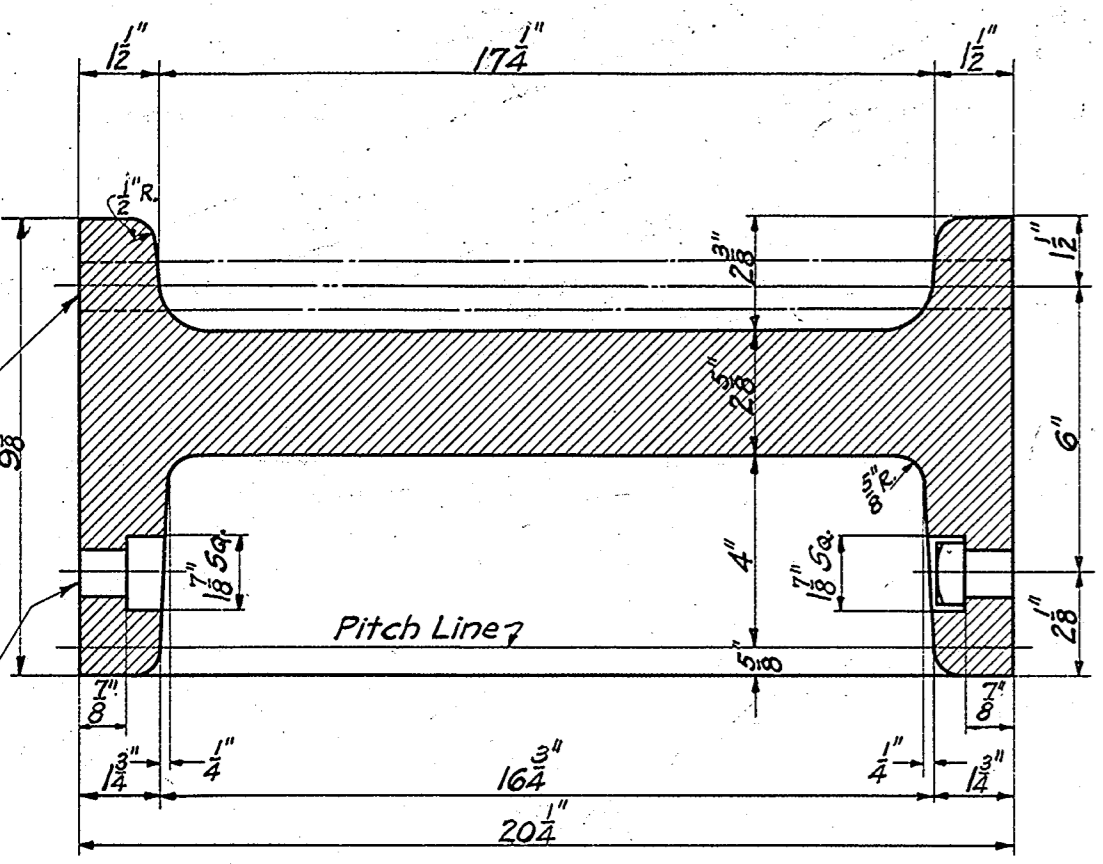
Corrected by *High P. Young*  
 Bridge Designing Engineer.  
 Approved by *Alvanor W. Baker*  
 Engineer of Bridge Design.  
 Approved by *John J. ...*  
 Engineer of Bridges and Harbor.  
 Approved by *John ...*  
 City Engineer.  
 Approved by *...*  
 Commissioner of Public Works.

CITY OF CHICAGO  
 DEPARTMENT OF PUBLIC WORKS  
 BUREAU OF ENGINEERING  
 DIVISION OF BRIDGES AND HARBOR

DOUBLE LEAF TRUNNION BASCULE BRIDGE  
 AT  
 WEBSTER AVENUE 29 OF 38  
 BELMONT AVENUE 31 OF 41  
 OVER  
 NORTH BRANCH OF THE CHICAGO RIVER  
 SUPERSTRUCTURE  
 MACHINERY  
 Bearing Blocks  
 Scale: 1/2" = 1 ft. April, 1914.  
 Drawn by *...*  
 Traced by *...*  
 Checked by *...*  
 Drawing No. 811  
 FILE No. 11-6A-311  
 9960040159 1660570032

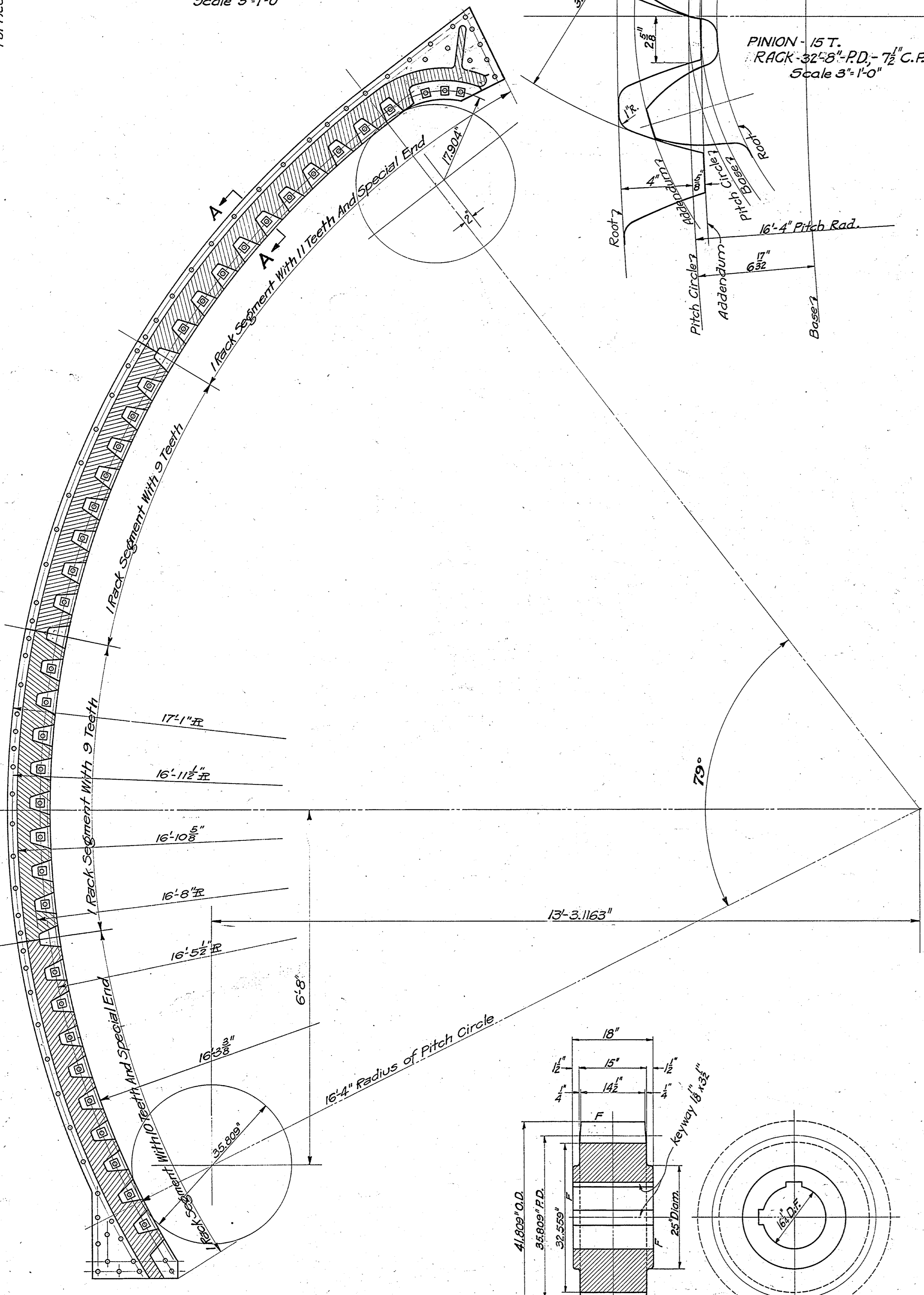


Holes reamed with casting in place for driving fit of turned bolts.



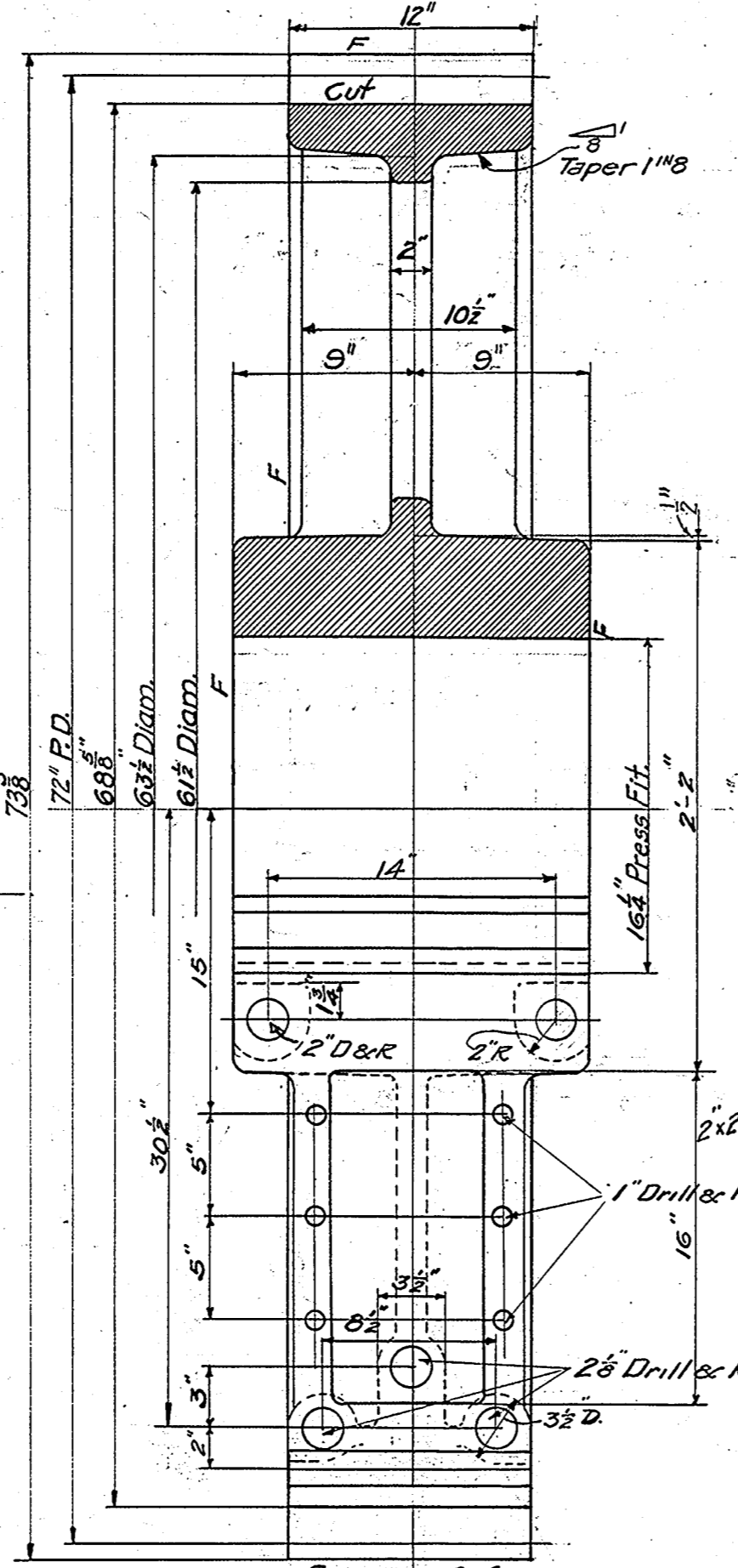
SECTION A-A Scale 3/4"=1'-0"

PINION - 15 T. RACK - 32-5" P.D. - 7 1/2" C.P. Scale 3/4"=1'-0"

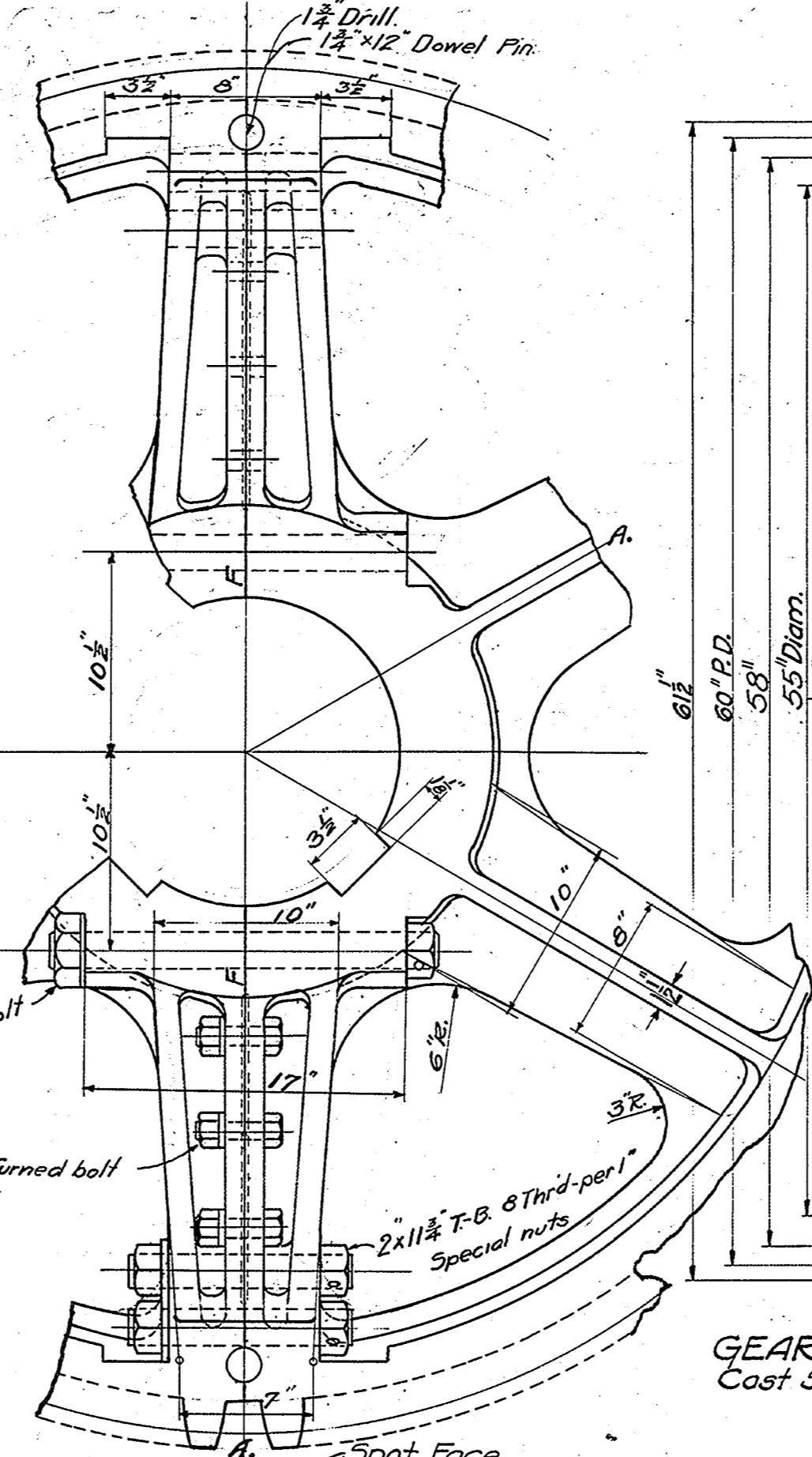


RACK 4 Sections as shown 7 1/2" P. - 32-8" P.D. Cast Steel. 4-Required. Scale 3/4"=1'-0". MARK G 1.

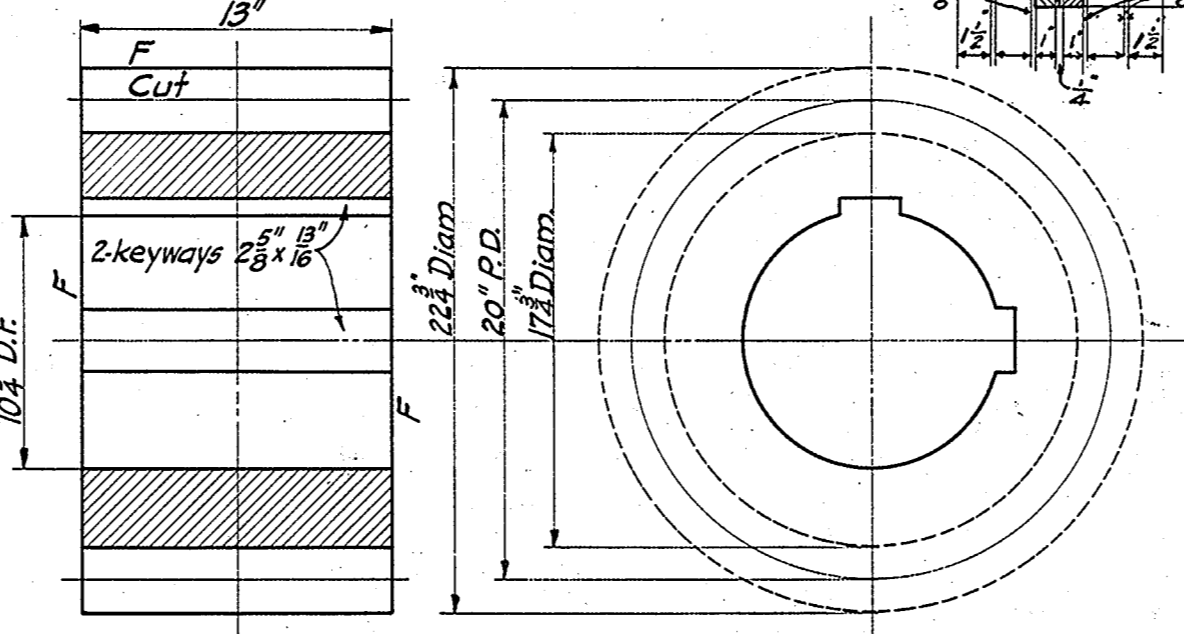
PINION, 15 T - 7 1/2" P. - 35.809" P.D. - 15" F. Cast Steel. 4-Required. Scale 3/4"=1'-0". MARK G 2.



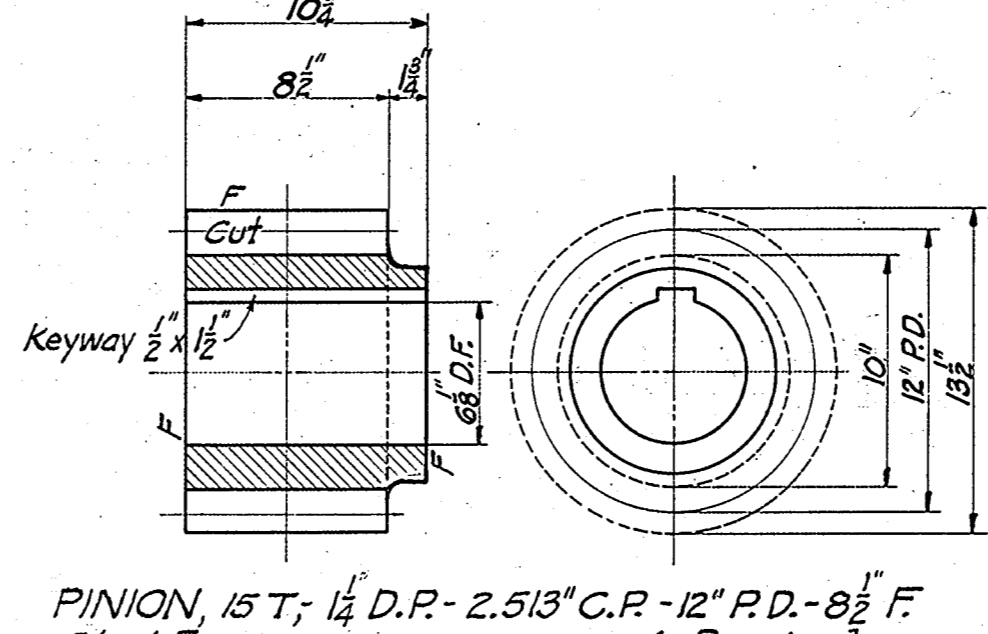
SECTION A-A GEAR, 54 T - 3/4" D.P. - 4.189" C.P. - 72" P.D. - 12" F. Cast Steel. 4-Required. Scale 1 1/2"=1'-0". MARK G 3.



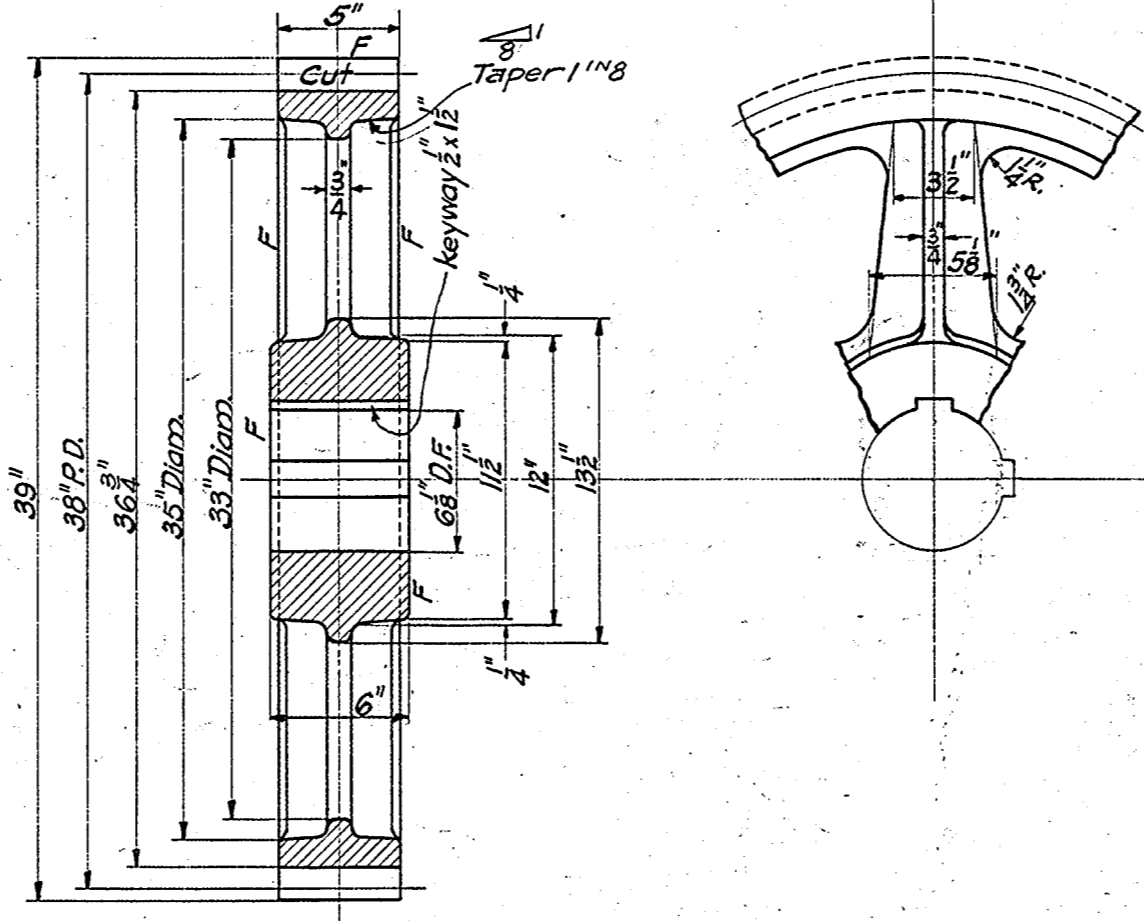
GEAR, 75 T - 1/4" D.P. - 2.513" C.P. - 60" P.D. - 8" F. Cast Steel. 4-Required. Scale 1 1/2"=1'-0". MARK G 5.



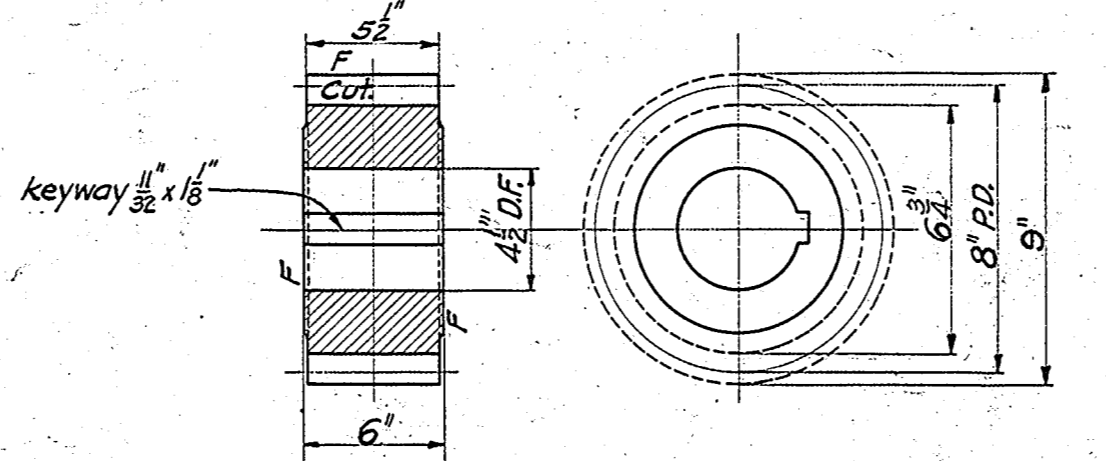
PINION, 15 T - 3/4" D.P. - 4.189" C.P. - 20" P.D. - 13" F. Cast Steel. 4-Required. Scale 1 1/2"=1'-0". MARK G 4.



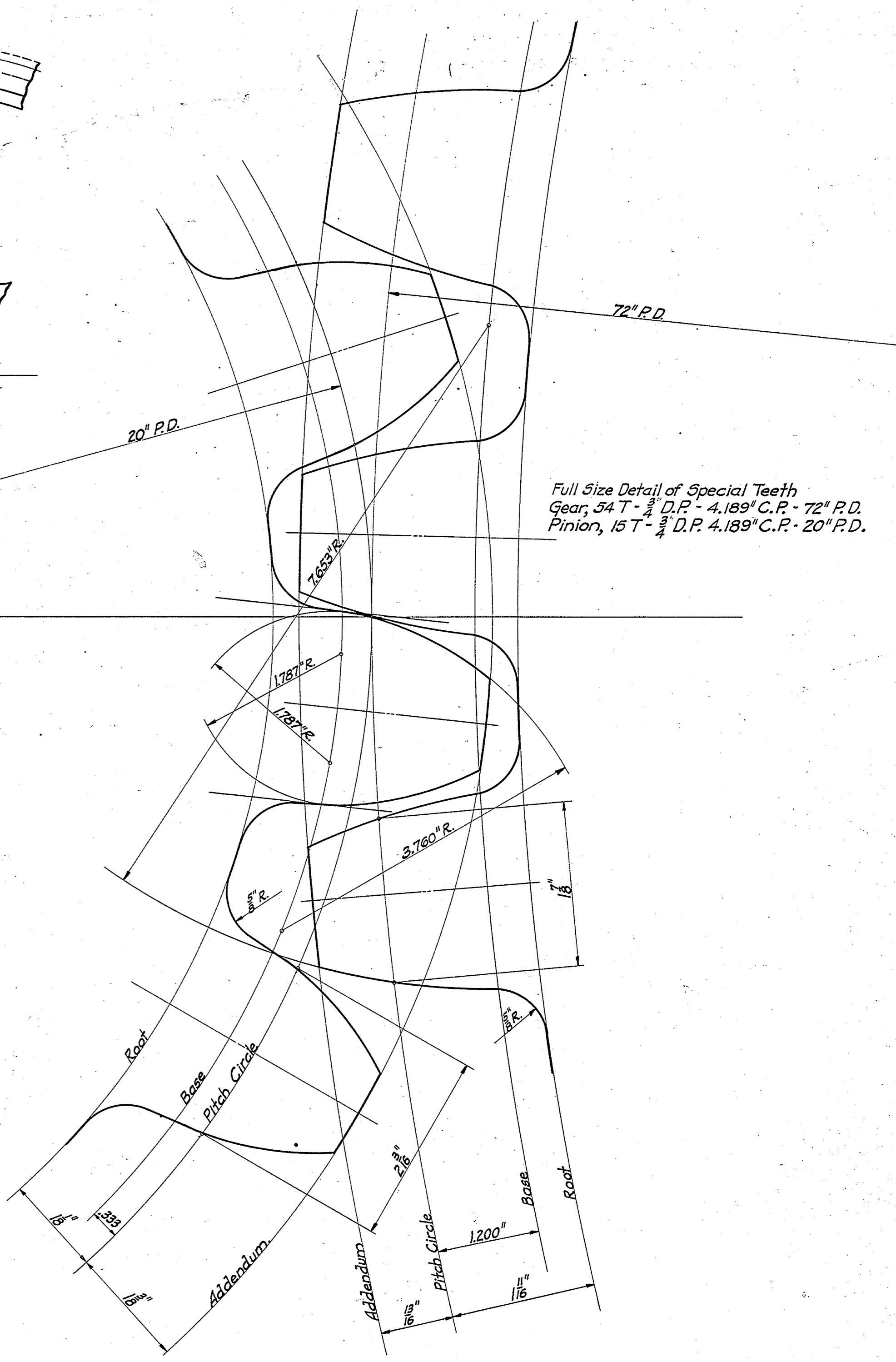
PINION, 15 T - 1/4" D.P. - 2.513" C.P. - 12" P.D. - 8 1/2" F. Steel Forging. 4-Required. Scale 1 1/2"=1'-0". MARK G 6.



GEAR, 76 T - 2 D.P. - 1.571" C.P. - 38" P.D. - 5" F. Cast Steel. 4-Required. Scale 1 1/2"=1'-0". MARK G 7.



PINION, 16 T - 2 D.P. - 1.571" C.P. - 8" P.D. - 5 1/2" F. Steel Forging. 4-Required. Scale 1 1/2"=1'-0". MARK G 8.

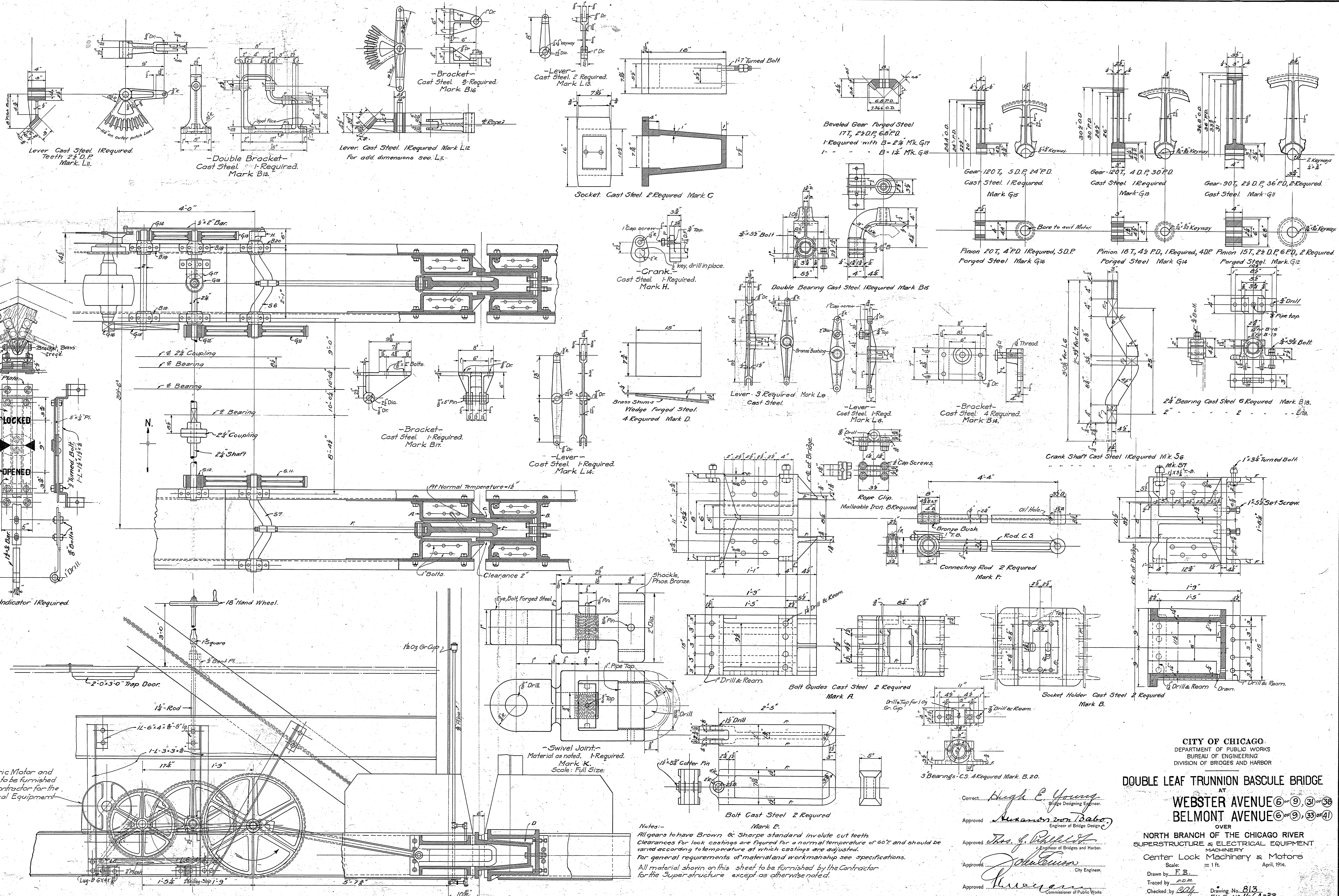


Full Size Detail of Special Teeth Gear, 54 T - 3/4" D.P. - 4.189" C.P. - 72" P.D. Pinion, 15 T - 3/4" D.P. - 4.189" C.P. - 20" P.D.

Note: For general requirements of material and workmanship see specifications.

CITY OF CHICAGO DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING DIVISION OF BRIDGES AND HARBOR DOUBLE LEAF TRUNNION BASCULE BRIDGE AT WEBSTER AVENUE BELMONT AVENUE NORTH BRANCH OF THE CHICAGO RIVER SUPERSTRUCTURE MACHINERY RACK & GEARS Scale: 3/4" = 1'-0" April, 1914. Drawn by F.B. Traced by R.J.P. Checked by [Signature] Drawing No. 812 FILE NO. 11-6A-32 9960040:60 1660570033

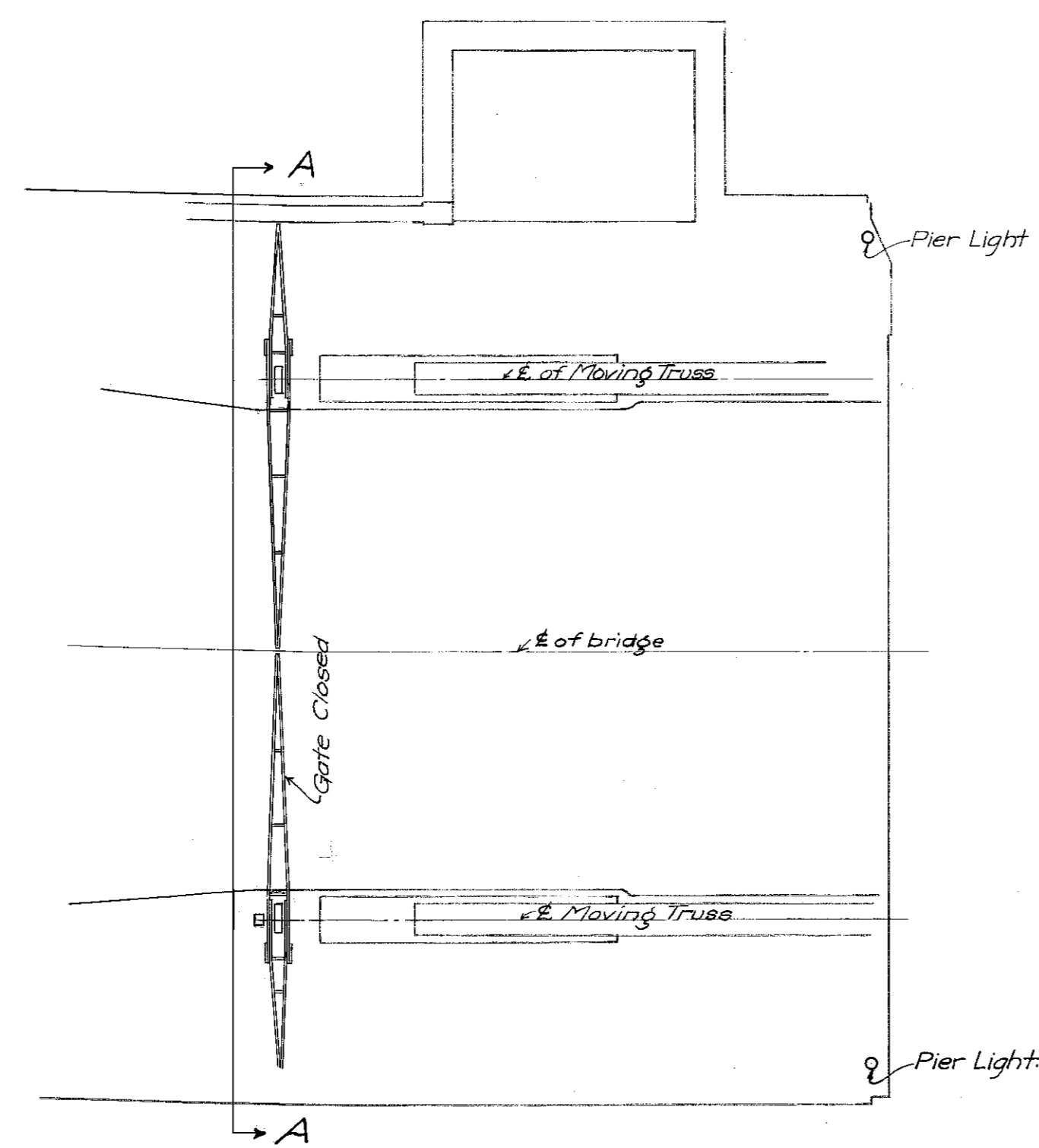
Correct: Hugh C. Young, Chief Designing Engineer. Approved: [Signatures] Engineer of Bridge Design, Engineer of Bridges and Harbor, City Engineer, Commissioner of Public Works.



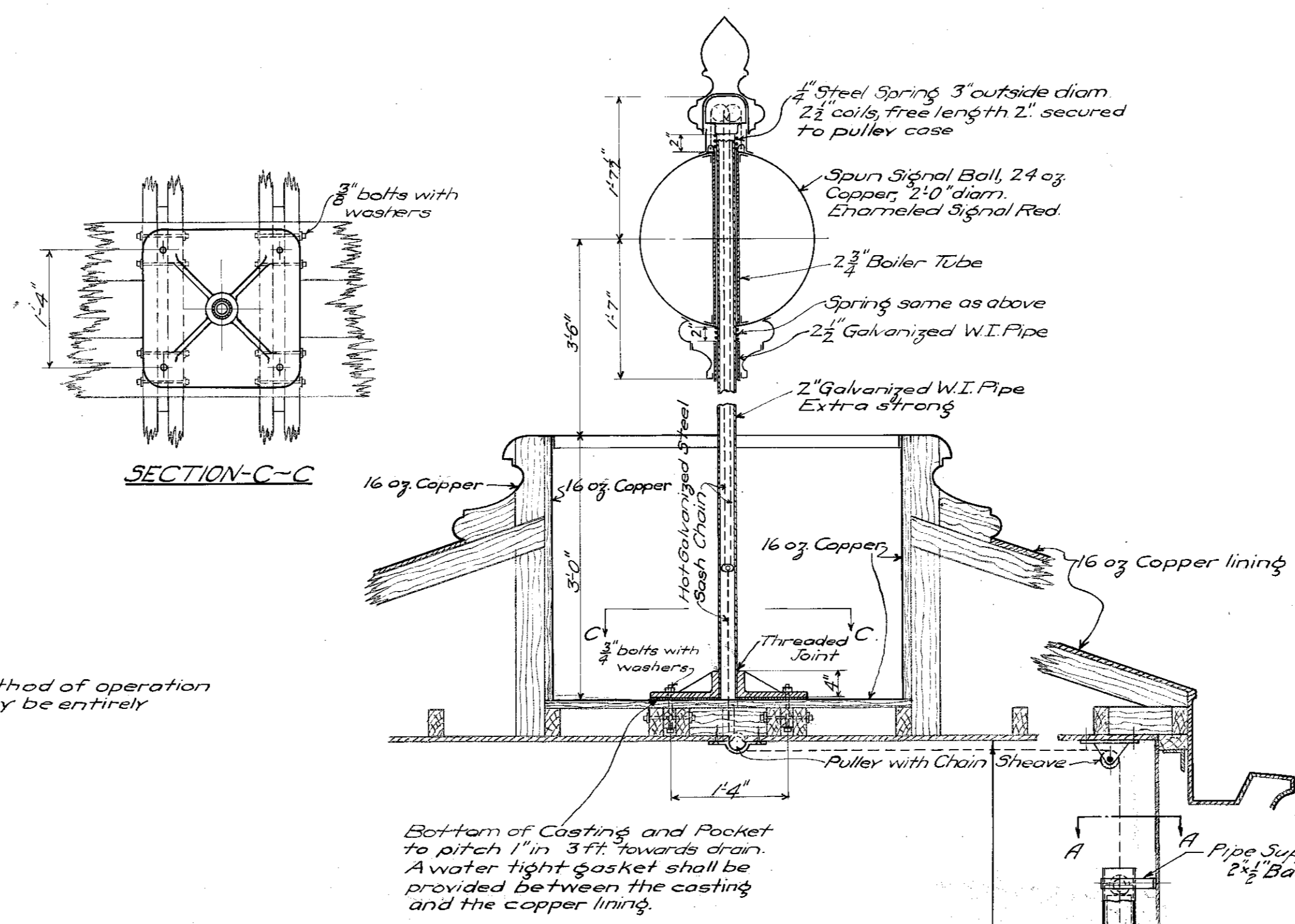
CITY OF CHICAGO  
DEPARTMENT OF PUBLIC WORKS  
BUREAU OF ENGINEERING  
DIVISION OF BRIDGES AND HARBOR

**DOUBLE LEAF TRUNNION BASCULE BRIDGE**  
AT  
**WEBSTER AVENUE (6 OF 9, 31 OF 33)**  
**BELMONT AVENUE (6 OF 9, 33 OF 41)**  
OVER  
NORTH BRANCH OF THE CHICAGO RIVER  
SUPERSTRUCTURE & ELECTRICAL EQUIPMENT  
MACHINERY  
Center Lock Machinery & Motors  
Scale: = 1 ft. April, 1914.  
Drawn by F.S.  
Traced by C.D.M.  
Checked by C.F.  
Drawing No. 813  
FILE No. 7-6A-33  
1660510034 9960040167

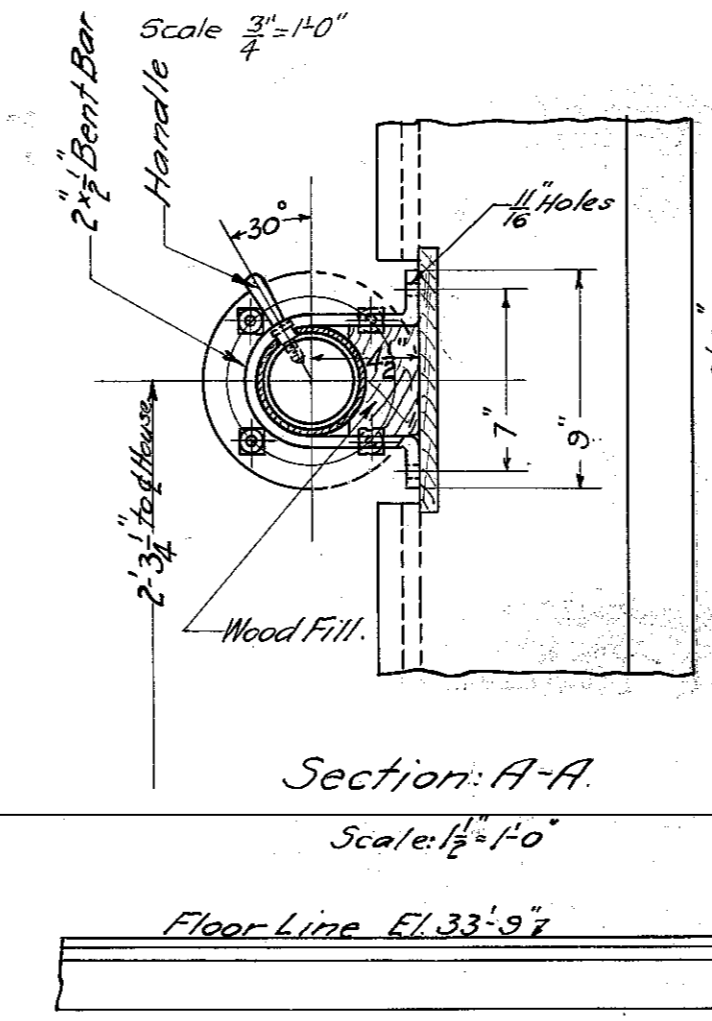
Corrected by *High E. Young*  
Bridge Designing Engineer.  
Approved by *William W. Baber*  
Engineer of Bridge Design.  
Approved by *John J. ...*  
Engineer of Bridges and Harbor.  
Approved by *John ...*  
City Engineer.  
Approved by *...*  
Commissioner of Public Works.



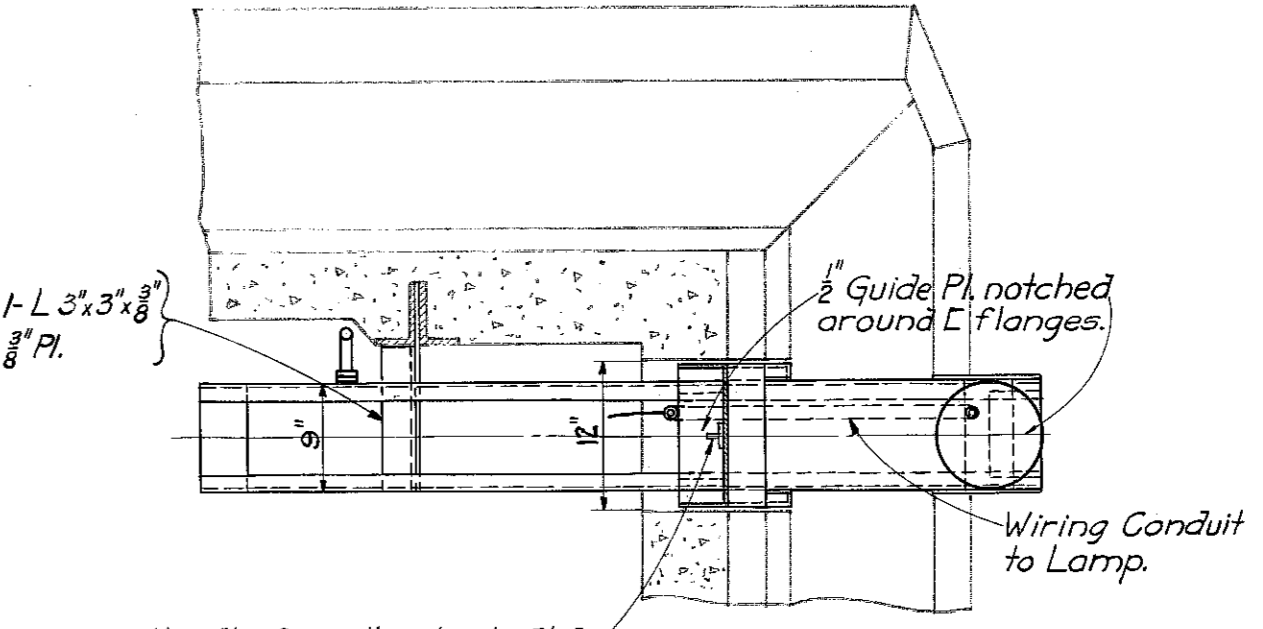
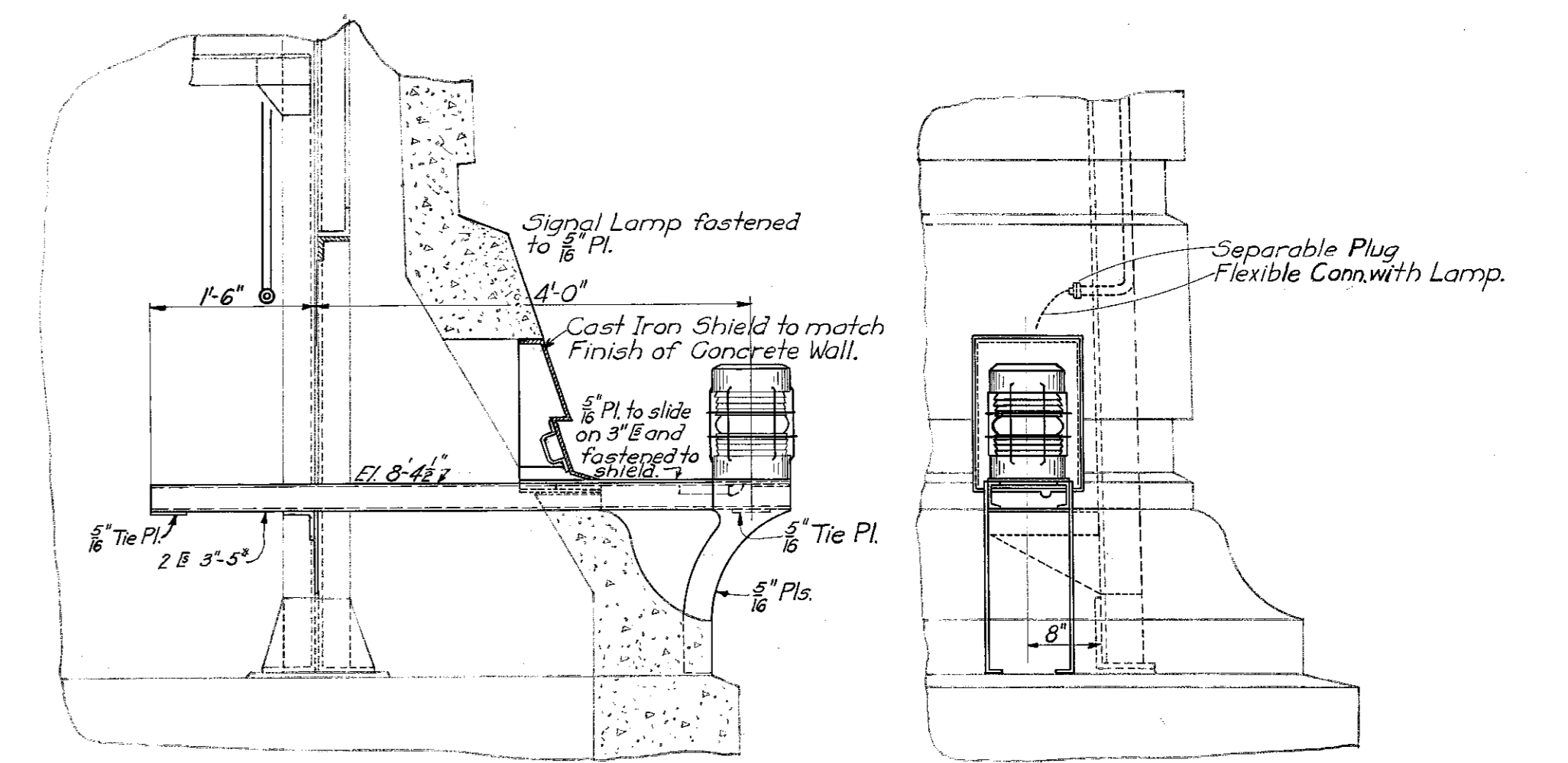
Note:-  
Location and method of operation of Signal Ball may be entirely changed.



OPERATING MECHANISM FOR SIGNAL BALL



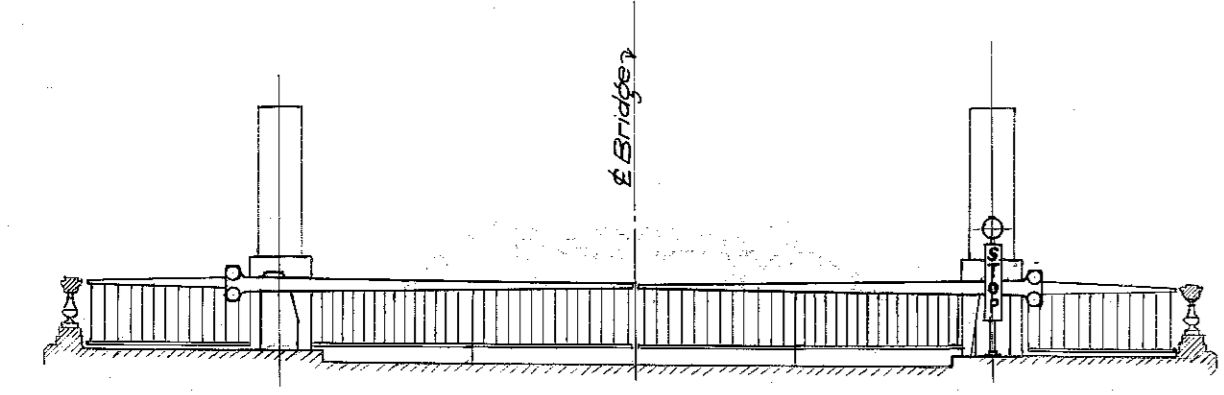
Section A-A  
Scale 1/2" = 1'-0"



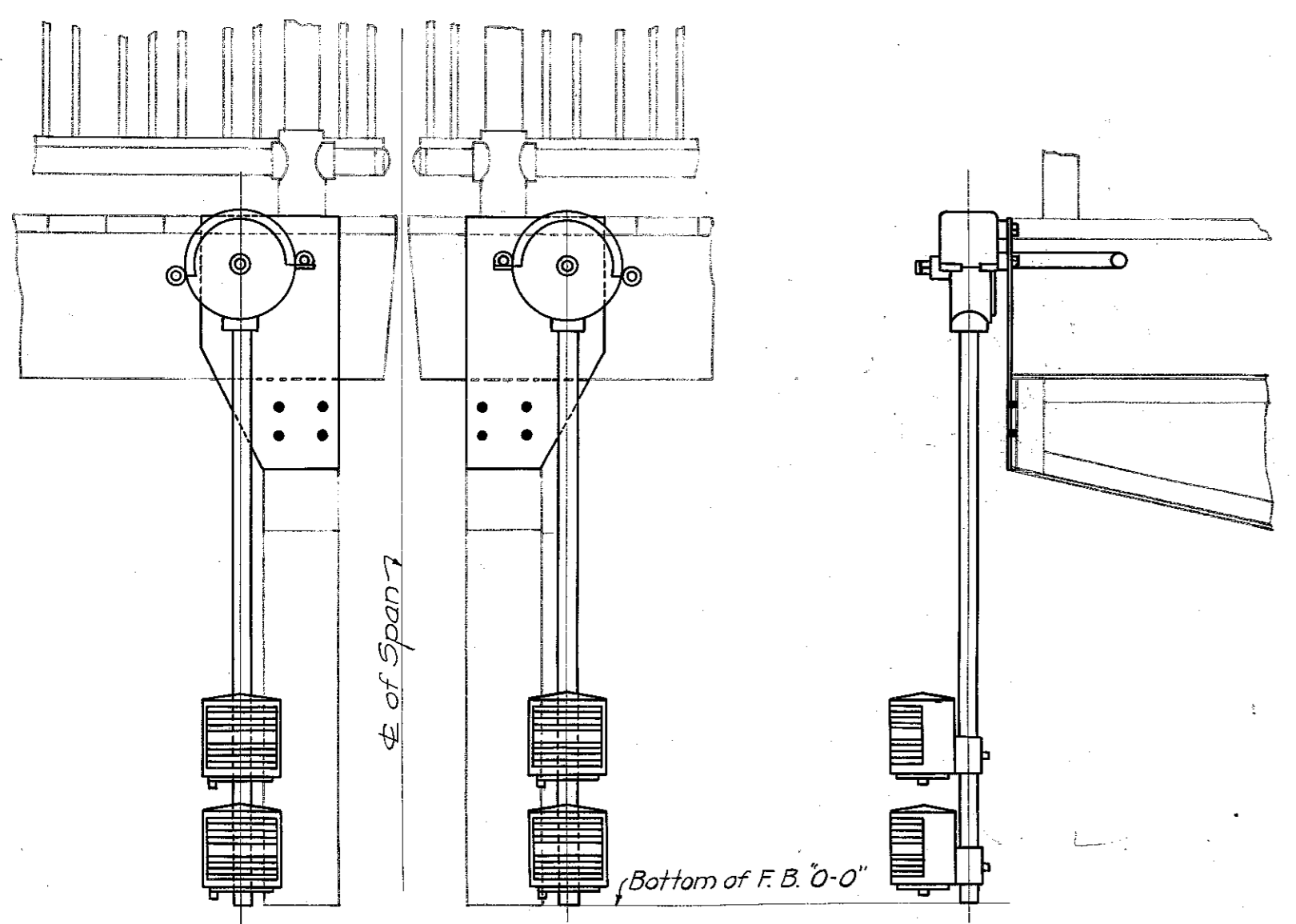
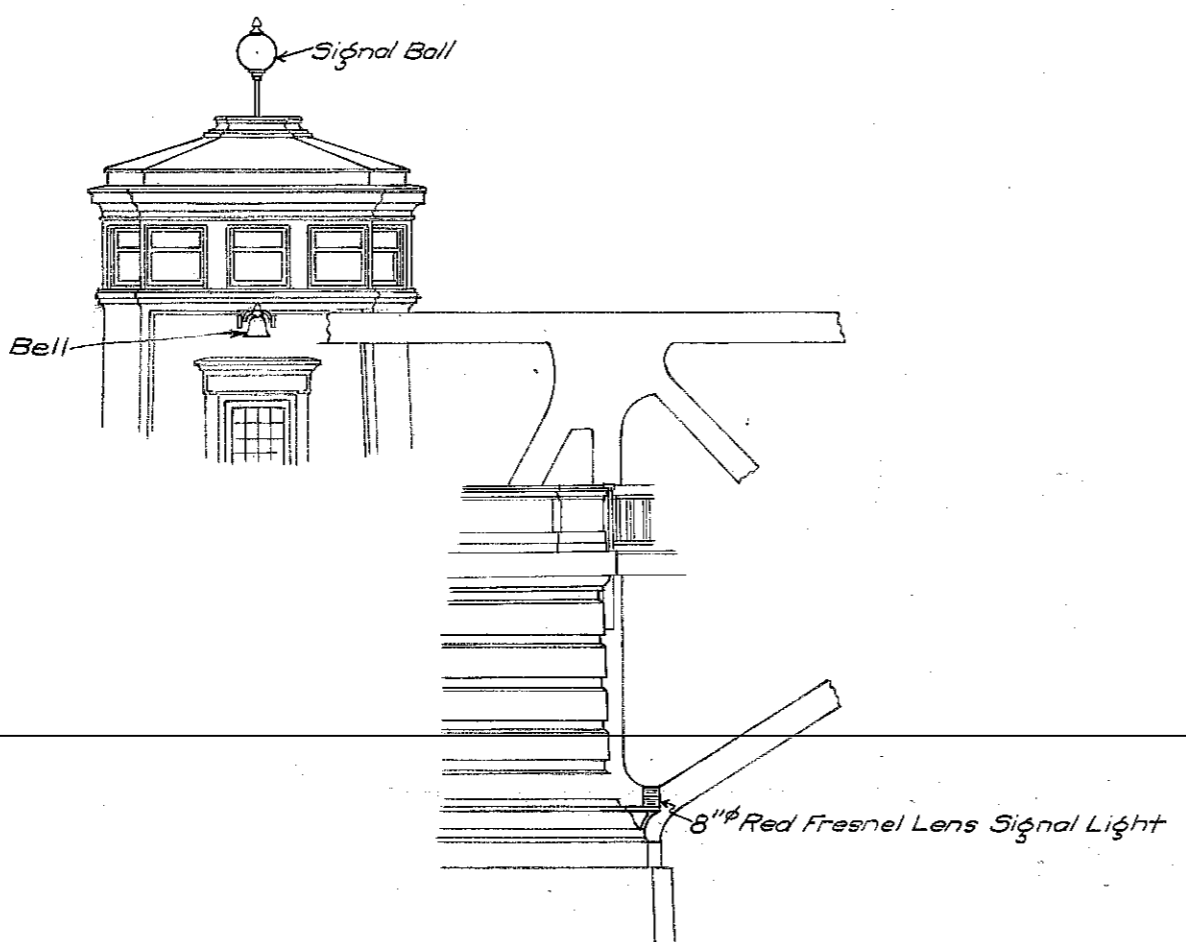
Handle for pulling back Slide. Provide Stop to limit outward movement of Slide, also Lock to secure Slide in normal operating position.

DETAIL OF PIER LAMPS.

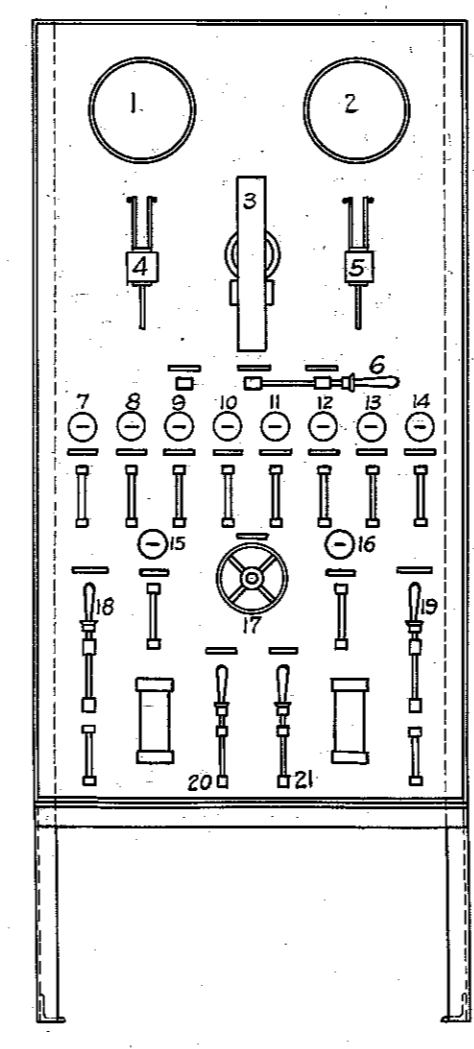
NOTE:- Position of Pier Lamp may be changed.



SECTION A-A



-CHANNEL LIGHTS.-  
See City of Chicago Drawings No 595 & No 629.  
Scale 3/8" = 1'-0"



-SWITCH-BOARD.-  
Scale 3/8" = 1'-0"

- 1- Voltmeter.
- 2- Ammeter.
- 3- Circuit Breaker.
- 4- Overload Relay for North Motor.
- 5- " " South Motor.
- 6- Double-throw Main Switch.
- 7- Light Switch Operator's Room.
- 8- " " Stairways, etc.
- 9- " " Furnace Room, etc.
- 10- " " Main Operating Machinery North 1.
- 11- " " North 2.
- 12- " " South 1.
- 13- " " South 2.
- 14- " " Passage Under Approach.
- 15- Pier Light Switch.
- 16- Channel Light Switch.
- 17- Pump Motor Rheostat.
- 18- " " Switch.
- 19- Center Lock Motor Switch.
- 20- Main Operating Motor Switch North.
- 21- " " South.

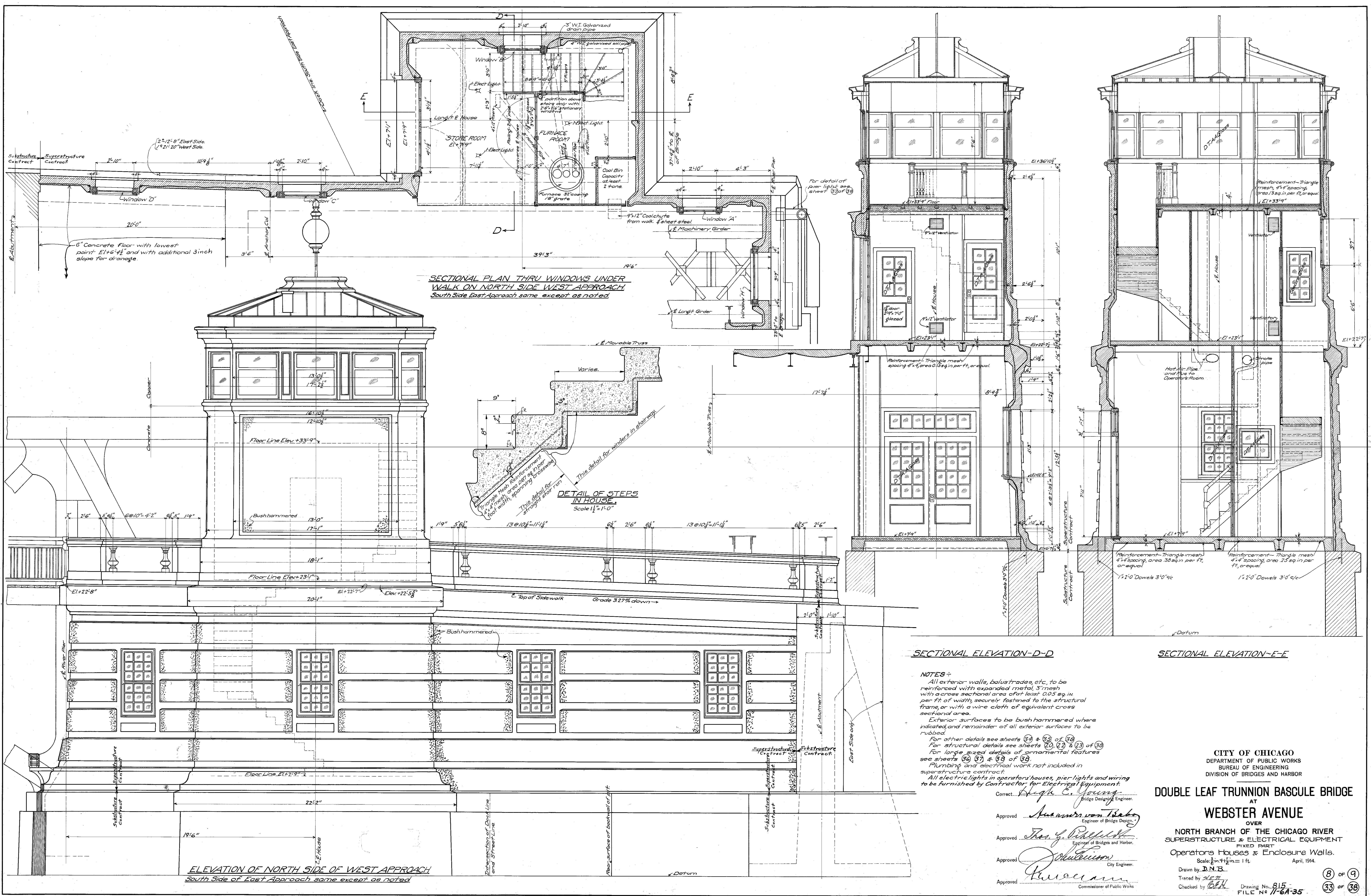
NOTES:-  
All signal lights, switchboards, wiring and all other material called for by the specifications for the electrical equipment shall be furnished and installed by the contractor for the electrical equipment.  
All other material and construction shown is included in the contract for the superstructure.  
For general requirements of material and workmanship see specifications.

Corrected by *Hugh B. Young*  
Bridge Designing Engineer.  
Approved by *Maxwell W. T. Baber*  
Engineer of Bridge Design.  
Approved by *John G. Whelpley*  
Engineer of Bridges and Harbor.  
Approved by *John L. ...*  
City Engineer.  
Approved by *...*  
Commissioner of Public Works.

CITY OF CHICAGO  
DEPARTMENT OF PUBLIC WORKS  
BUREAU OF ENGINEERING  
DIVISION OF BRIDGES AND HARBOR

**DOUBLE LEAF TRUNNION BASCULE BRIDGE**  
AT  
**WEBSTER AVENUE**  
OVER  
NORTH BRANCH OF THE CHICAGO RIVER  
SUPERSTRUCTURE & ELECTRICAL EQUIPMENT.  
Signals, Gates & Switch Boards

Scale: 3/8" = 1 ft. April, 1914.  
Drawn by *M.E.T.*  
Traced by *M.E.T.*  
Checked by *F.B.*  
Drawing No. **814**  
FILE No. **7-6A-34**



**NOTES -**

All exterior walls, balustrades, etc., to be reinforced with expanded metal, 3" mesh with a cross sectional area of at least 0.05 sq. in. per ft. of width, securely fastened to the structural frame, or with a wire cloth of equivalent cross sectional area.

Exterior surfaces to be bush hammered where indicated, and remainder of all exterior surfaces to be rubbed.

For other details see sheets 34 & 35 of 38  
 For structural details see sheets 23, 24 & 25 of 38  
 For large sized details of ornamental features see sheets 36, 37 & 38 of 38.

Plumbing and electrical work not included in superstructure contract.

All electric lights in operators' houses, pier lights and wiring to be furnished by Contractor, for Electrical Equipment.

Correct: *Joseph C. Young* Bridge Designing Engineer.

Approved: *Alexander von Tschudi* Engineer of Bridge Design.

Approved: *Thomas G. Russell* Engineer of Bridges and Harbor.

Approved: *John E. Young* City Engineer.

Approved: *William H. ...* Commissioner of Public Works.

**CITY OF CHICAGO**  
 DEPARTMENT OF PUBLIC WORKS  
 BUREAU OF ENGINEERING  
 DIVISION OF BRIDGES AND HARBOR

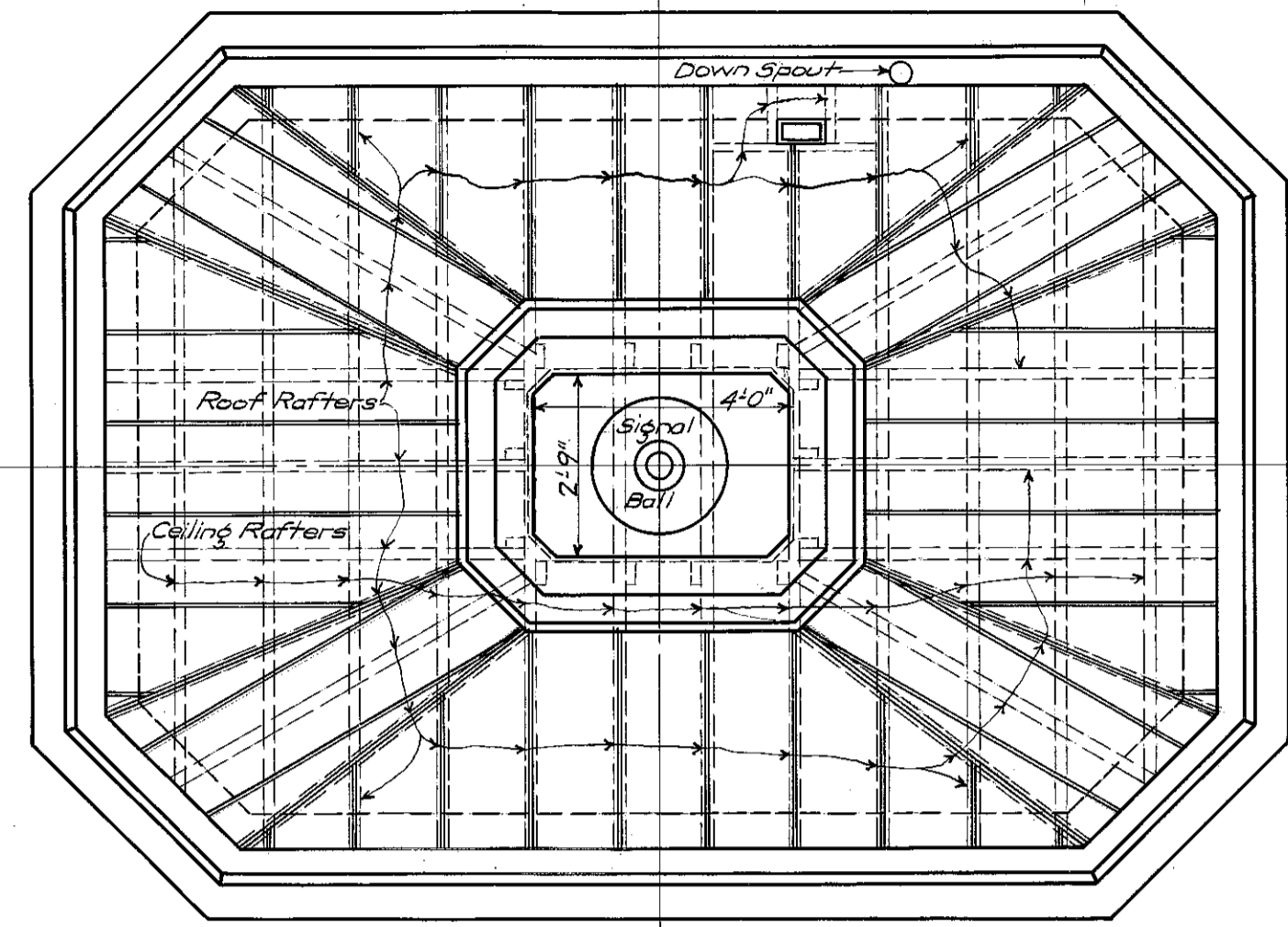
**DOUBLE LEAF TRUNNION BASCULE BRIDGE**  
 AT  
**WEBSTER AVENUE**  
 OVER  
 NORTH BRANCH OF THE CHICAGO RIVER  
 SUPERSTRUCTURE & ELECTRICAL EQUIPMENT  
 FIXED PART  
 Operators Houses & Enclosure Walls.

Scale: 3/8" = 1'-0" April, 1914.

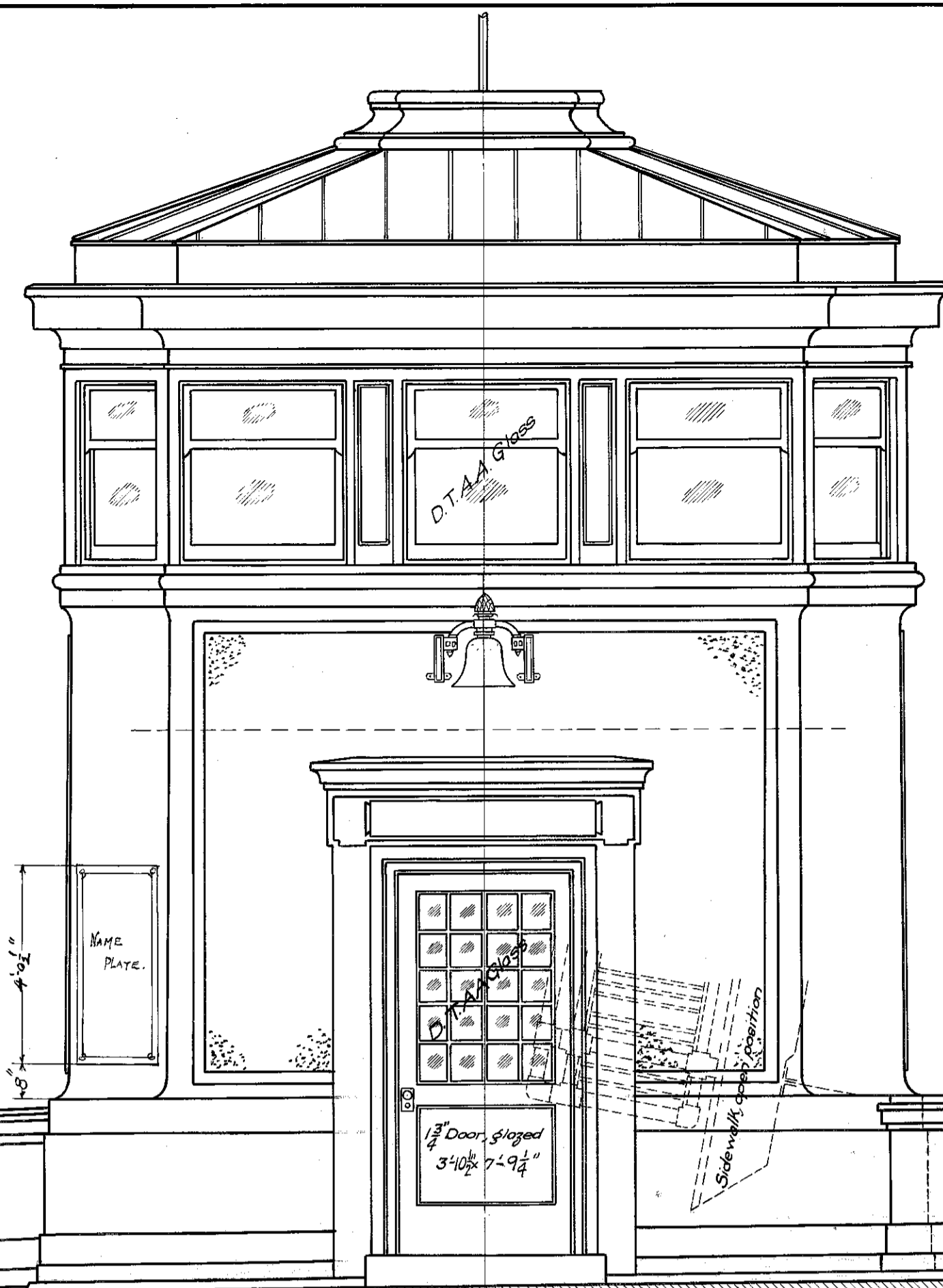
Drawn by: *D.N.B.*  
 Traced by: *M.E.T.*  
 Checked by: *C.H.H.*

Drawing No. 815  
 FILE No. 11-6A-35

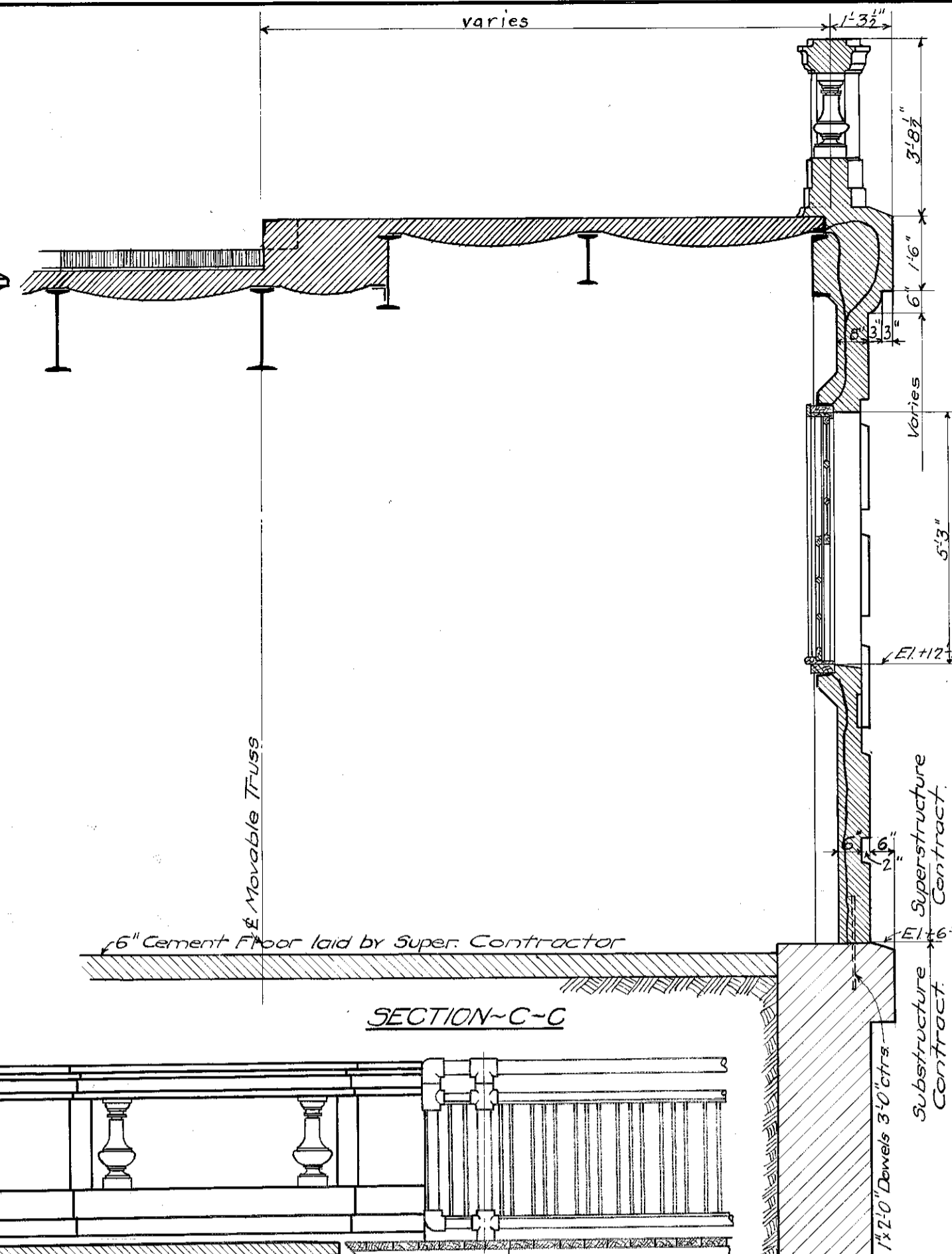
(8) OF (9)  
 (33) OF (38)



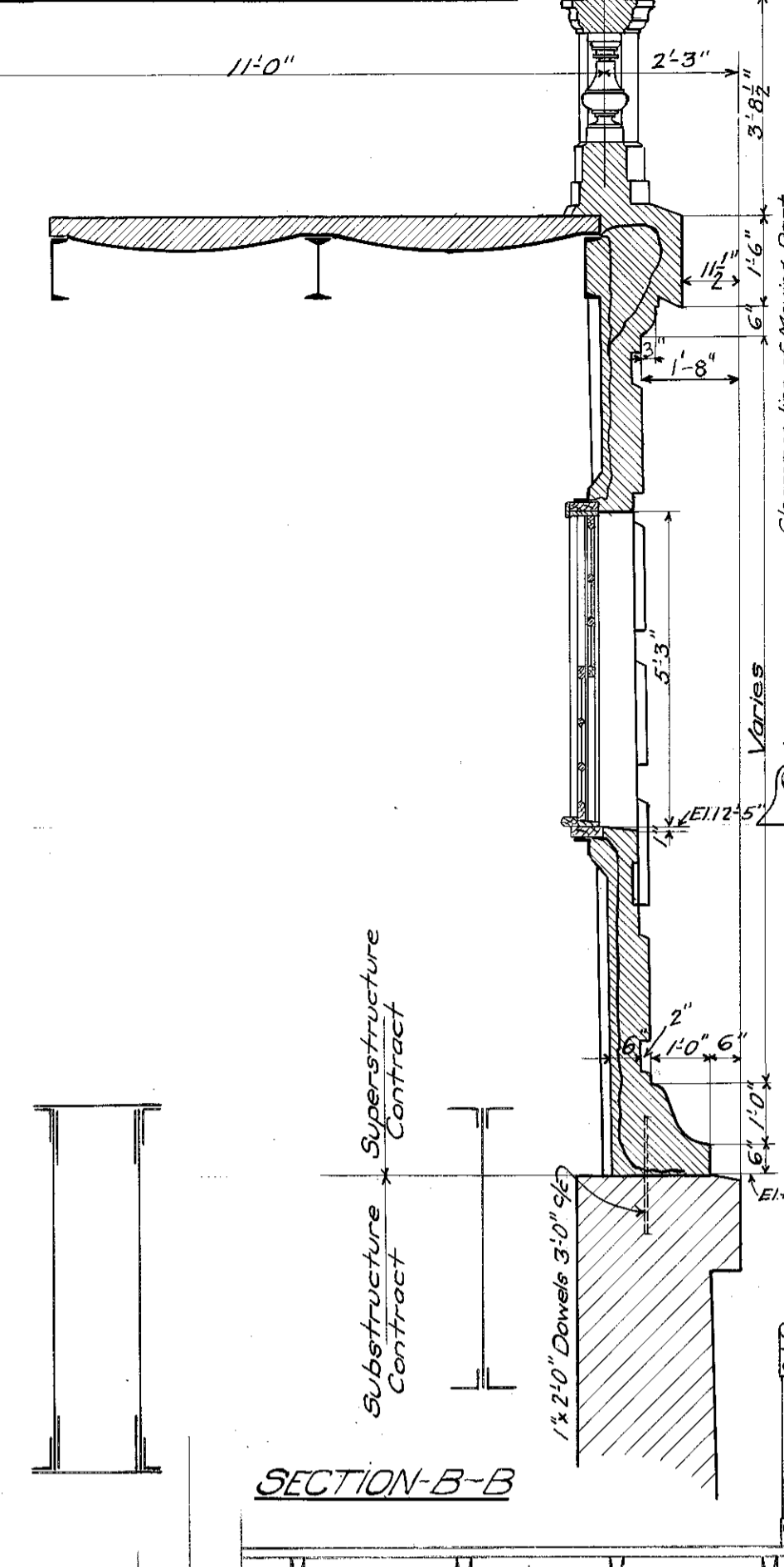
ROOF PLAN



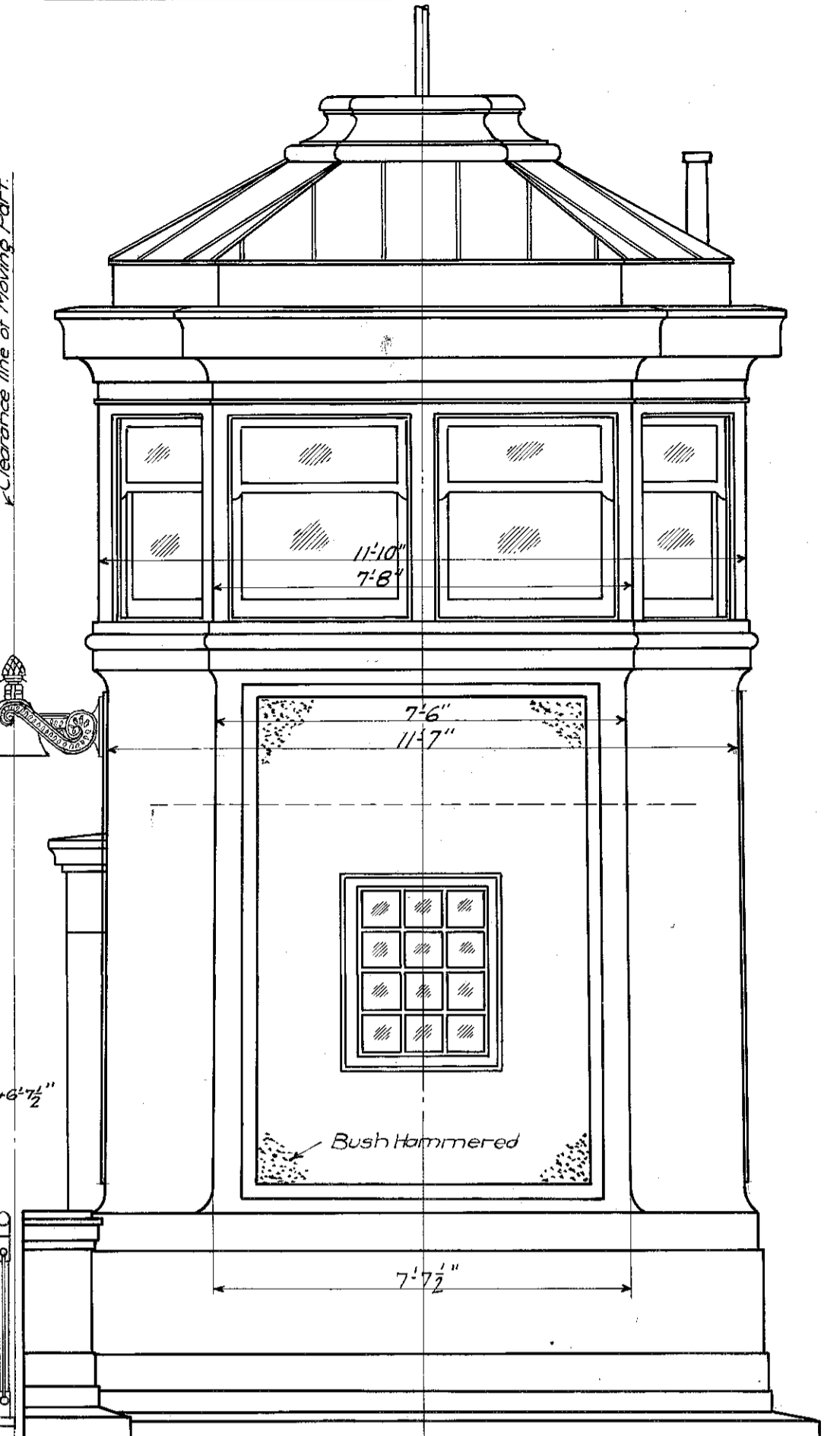
SECTION-A-A



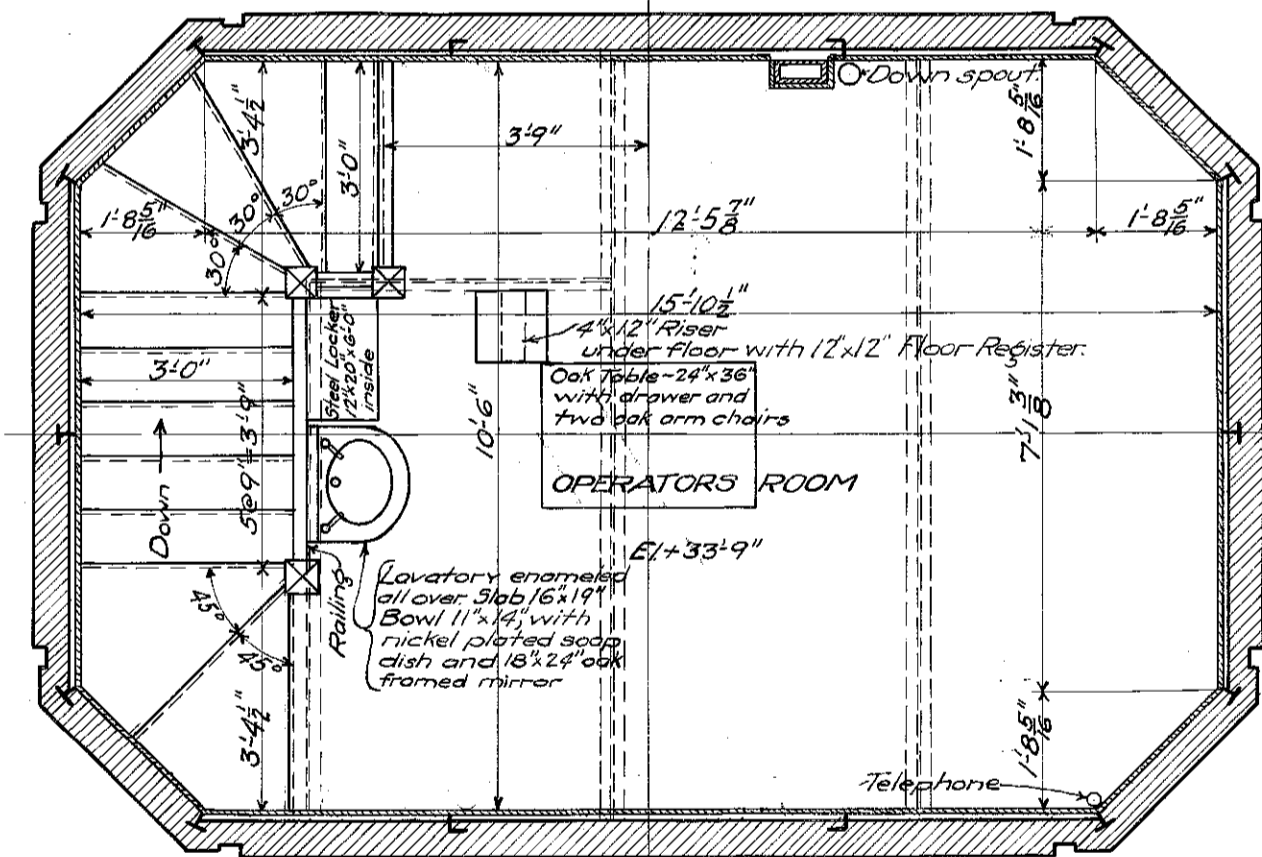
SECTION-C-C



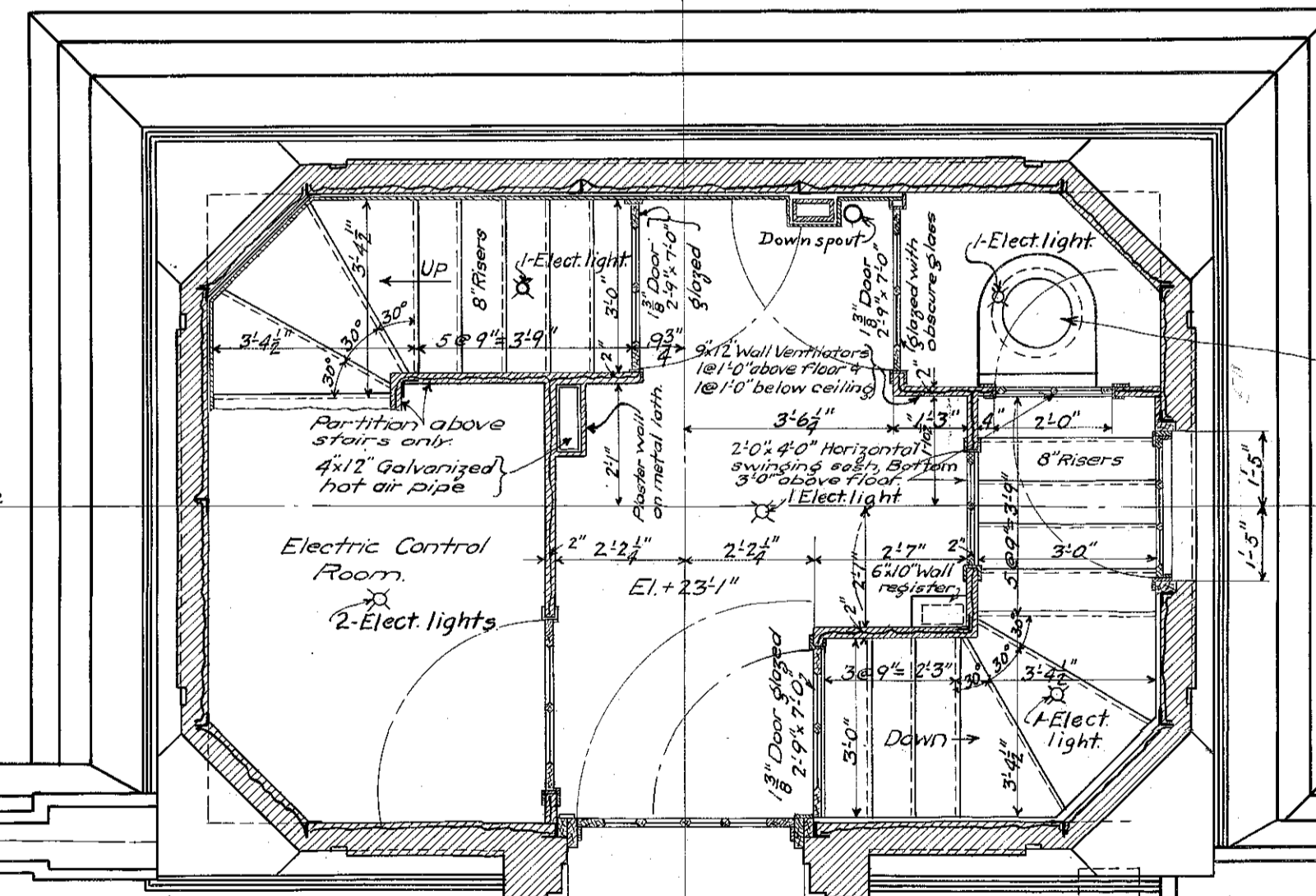
SECTION-B-B



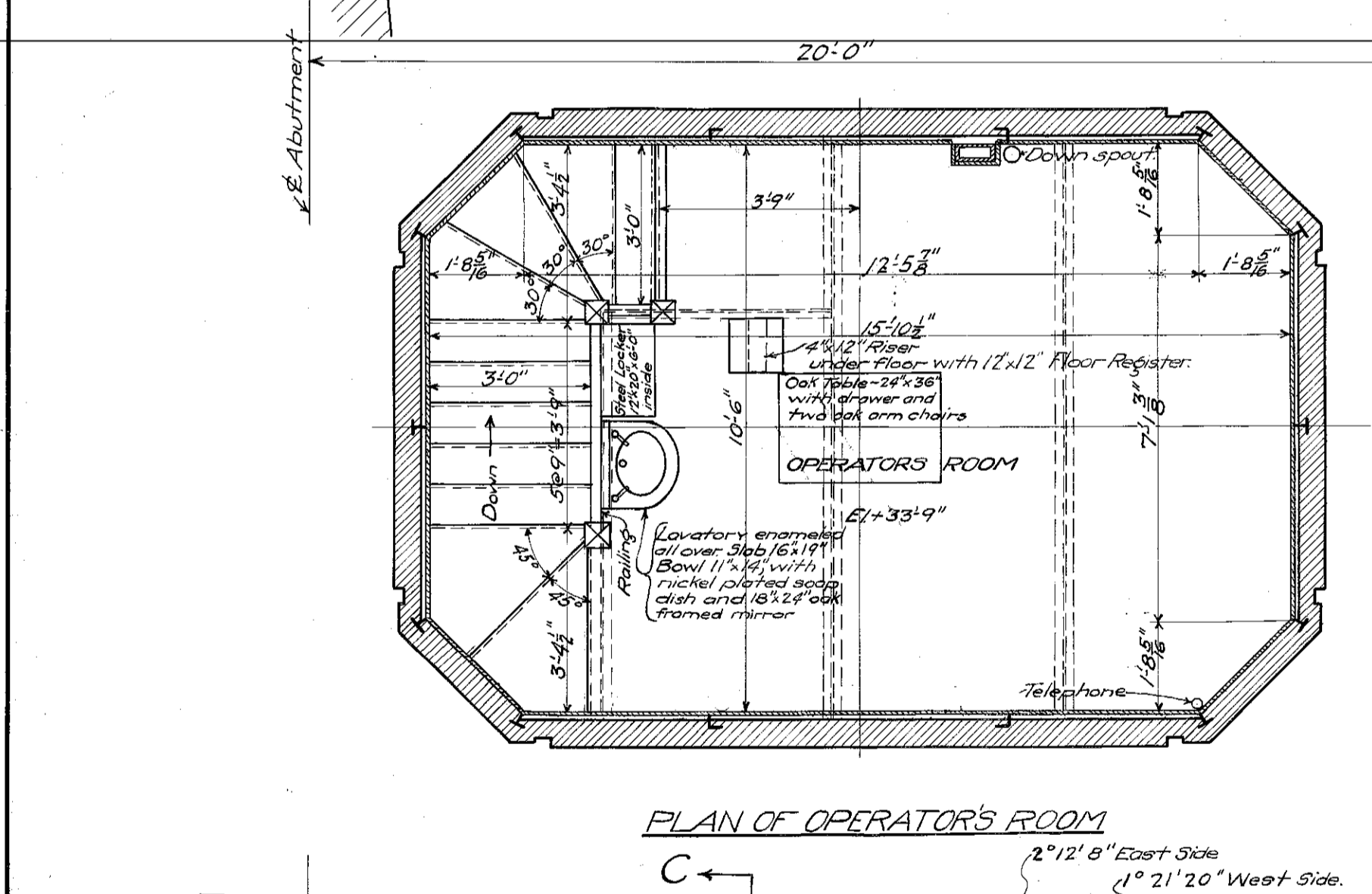
FRONT ELEVATION NW & S.E. SIDES  
S.W. & N.E. SIDES SIMILAR EXCEPT FOR OMISSION OF HOUSE



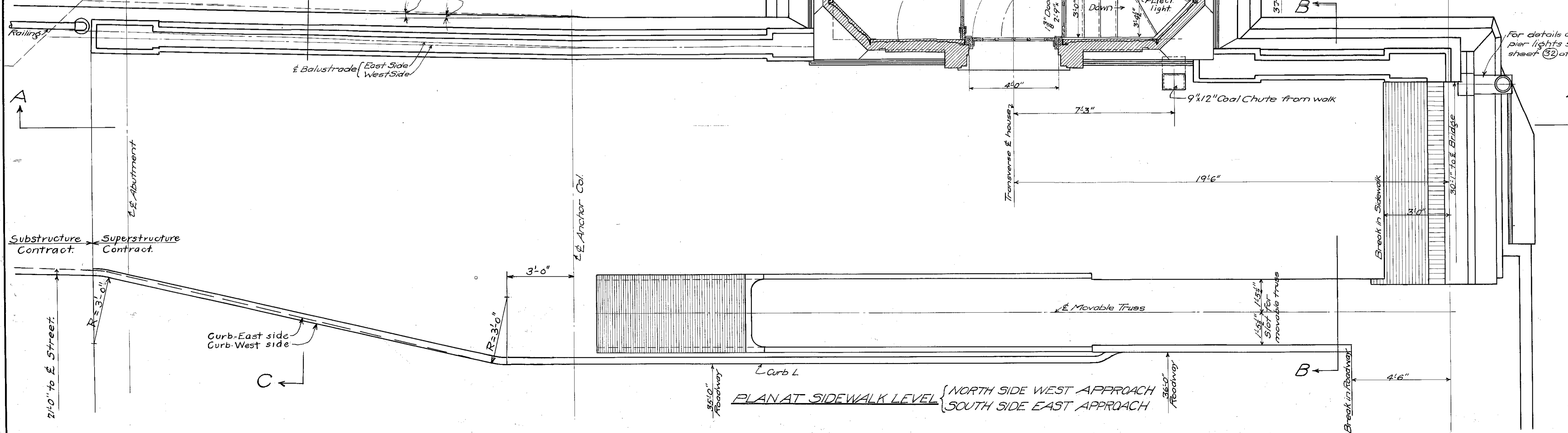
PLAN OF OPERATOR'S ROOM



PLAN AT SIDEWALK LEVEL  
NORTH SIDE WEST APPROACH  
SOUTH SIDE EAST APPROACH



PLAN OF ABUTMENT



PLAN AT STREET LEVEL

**NOTES**—  
 All exterior walls, balustrades, etc. to be reinforced with expanded metal, 3" mesh with a cross sectional area of at least 0.05 sq. in. per ft. of width, securely fastened to the structural frame, or with a wire cloth of equivalent cross sectional area.  
 Exterior surfaces to be bush hammered where indicated and remainder of all exterior surfaces to be rubbed.  
 For other details see sheets 33 & 35 of 36.  
 For structural details see sheets 20, 22, 23, 24, 25 of 30.  
 For large sized details of ornamental features see sheets 36, 37, 38 of 38.  
 Plumbing and electrical work not included in Superstructure Contract.  
 All electric lights in operators house, pier lights and wiring to be furnished by contractor for electrical equipment.

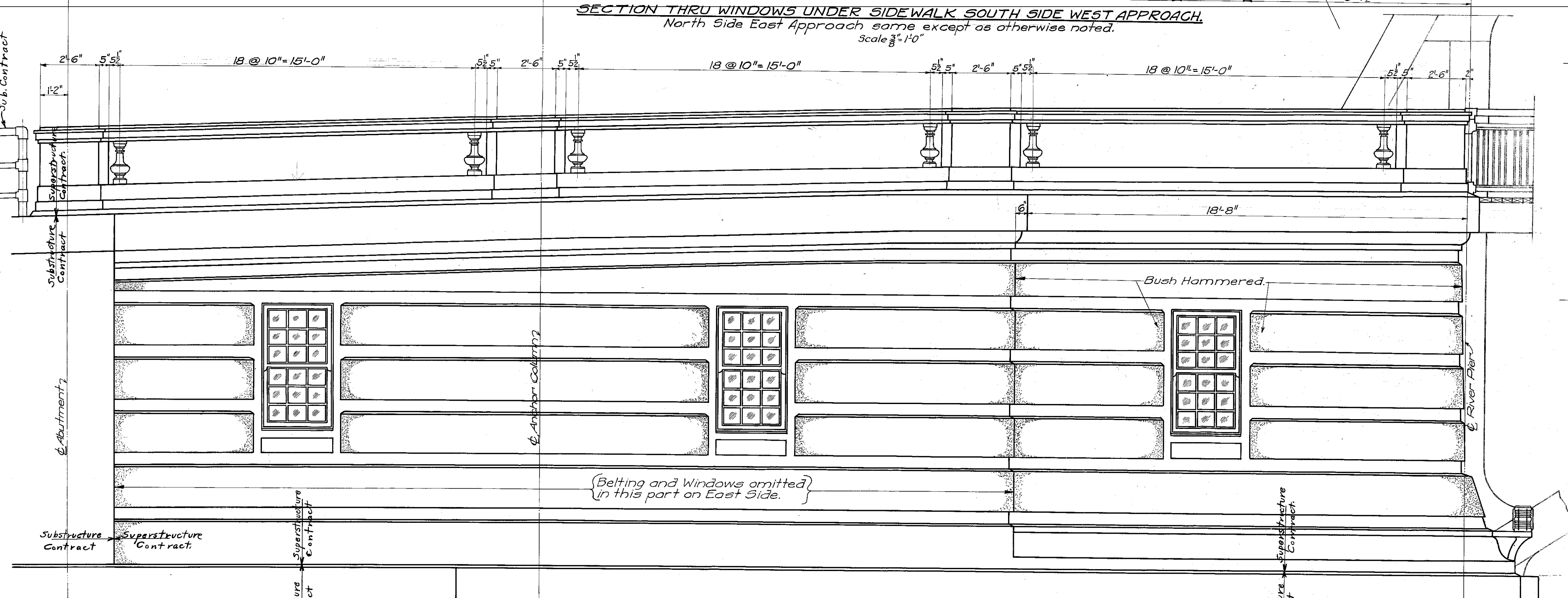
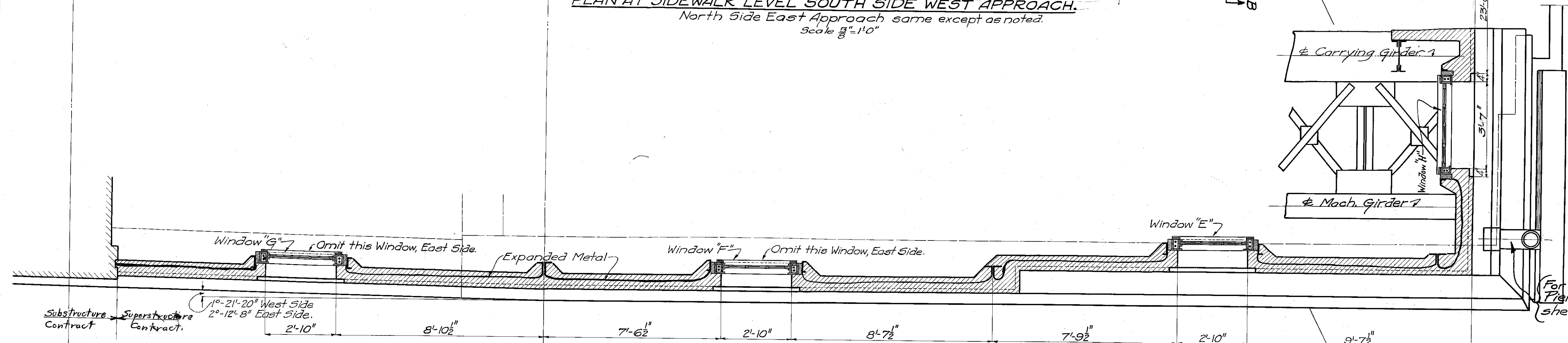
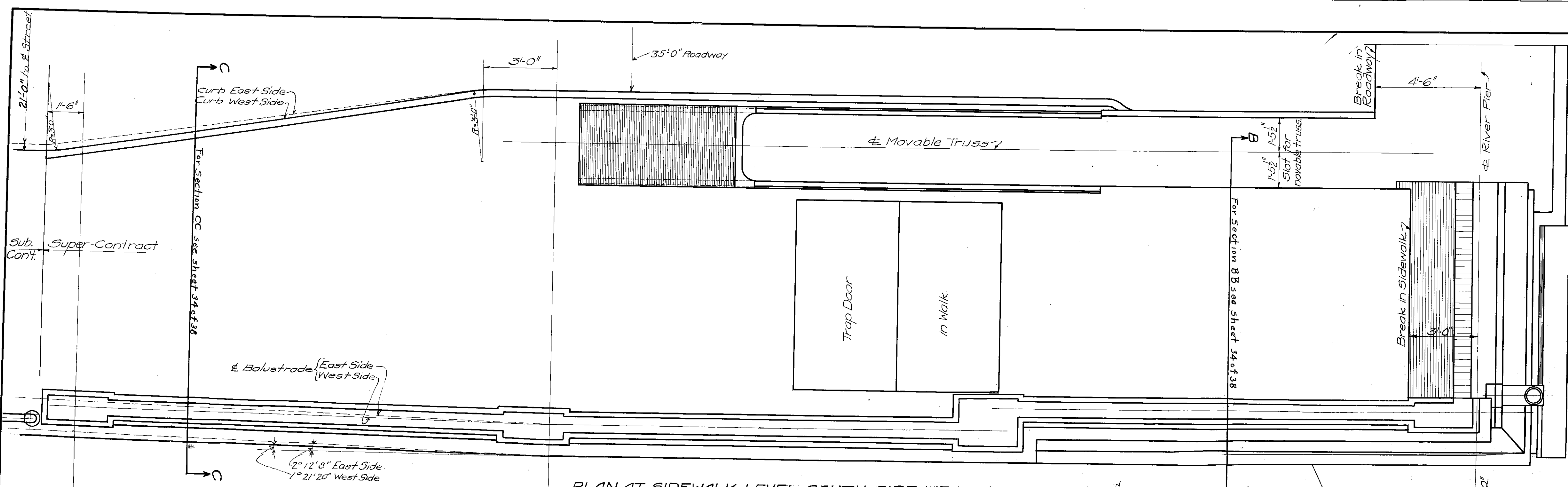
Correct: *High E. Young*  
 Approved: *William von B. Behr*  
 Approved: *Thos. G. Russell*  
 Approved: *Robertson*  
 Approved: *Curran*

**CITY OF CHICAGO**  
 DEPARTMENT OF PUBLIC WORKS  
 BUREAU OF ENGINEERING  
 DIVISION OF BRIDGES AND HARBOR

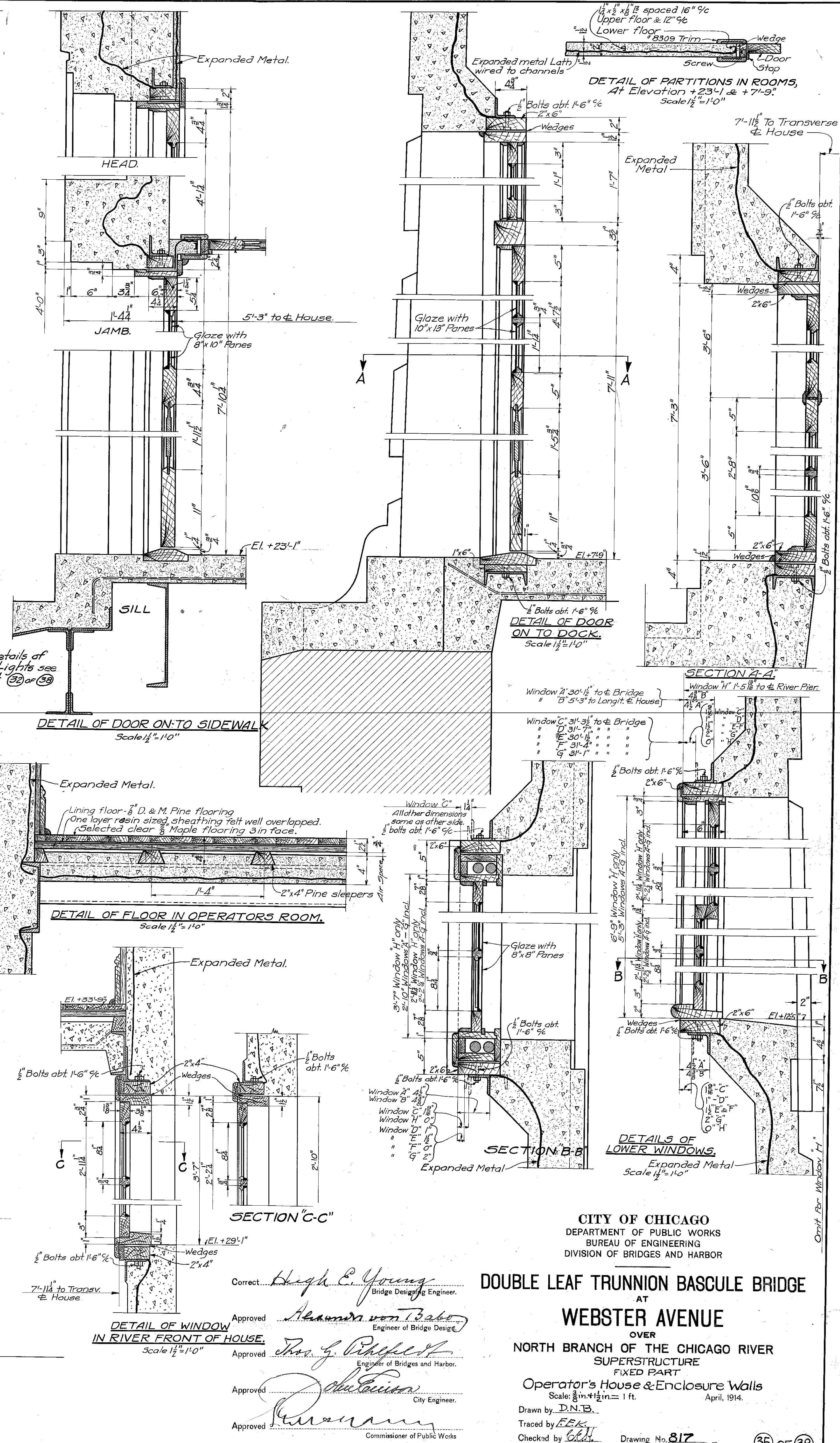
**DOUBLE LEAF TRUNNION BASCULE BRIDGE**  
 AT  
**WEBSTER AVENUE**  
 OVER  
 NORTH BRANCH OF THE CHICAGO RIVER  
 SUPERSTRUCTURE & ELECTRICAL EQUIPMENT  
 FIXED PART  
 Operator's House & Enclosure Walls  
 Scale: 3/8" = 1 ft.  
 April, 1914.

Drawn by *D.N.B.*  
 Traced by *J.E.Z.*  
 Checked by *G.H.*

9 of 9  
 34 of 38



NOTES:-  
All exterior walls, balustrades, etc., to be reinforced with expanded metal, 3 mesh with a cross sectional area of at least 0.03 sq. in. per ft. of width, securely fastened to the structural frame, or with wire cloth of equivalent cross sectional area.  
Exterior surfaces to be bush hammered where indicated and remainder of all exterior surfaces to be rubbed.  
For other details see sheets (23) & (24) of (32).  
For structural details see sheets (25) (26) (27) (28) (29) (30) (31) (32) of (33).  
For large sized details of ornamental features see sheets (36) (37) & (38) of (39).  
Plumbing and electrical work not included in Superstructure Contract.



CITY OF CHICAGO  
DEPARTMENT OF PUBLIC WORKS  
BUREAU OF ENGINEERING  
DIVISION OF BRIDGES AND HARBOR

**DOUBLE LEAF TRUNNION BASCULE BRIDGE**  
AT  
**WEBSTER AVENUE**  
OVER  
NORTH BRANCH OF THE CHICAGO RIVER  
SUPERSTRUCTURE  
FIXED PART  
Operator's House & Enclosure Walls  
Scale:  $\frac{3}{8}''=1'-0''$  in. = 1 ft.  
April, 1914.

Corrected: *Hugh E. Young*  
Bridge Designing Engineer.

Approved: *Shawmut von Bahr*  
Engineer of Bridge Design.

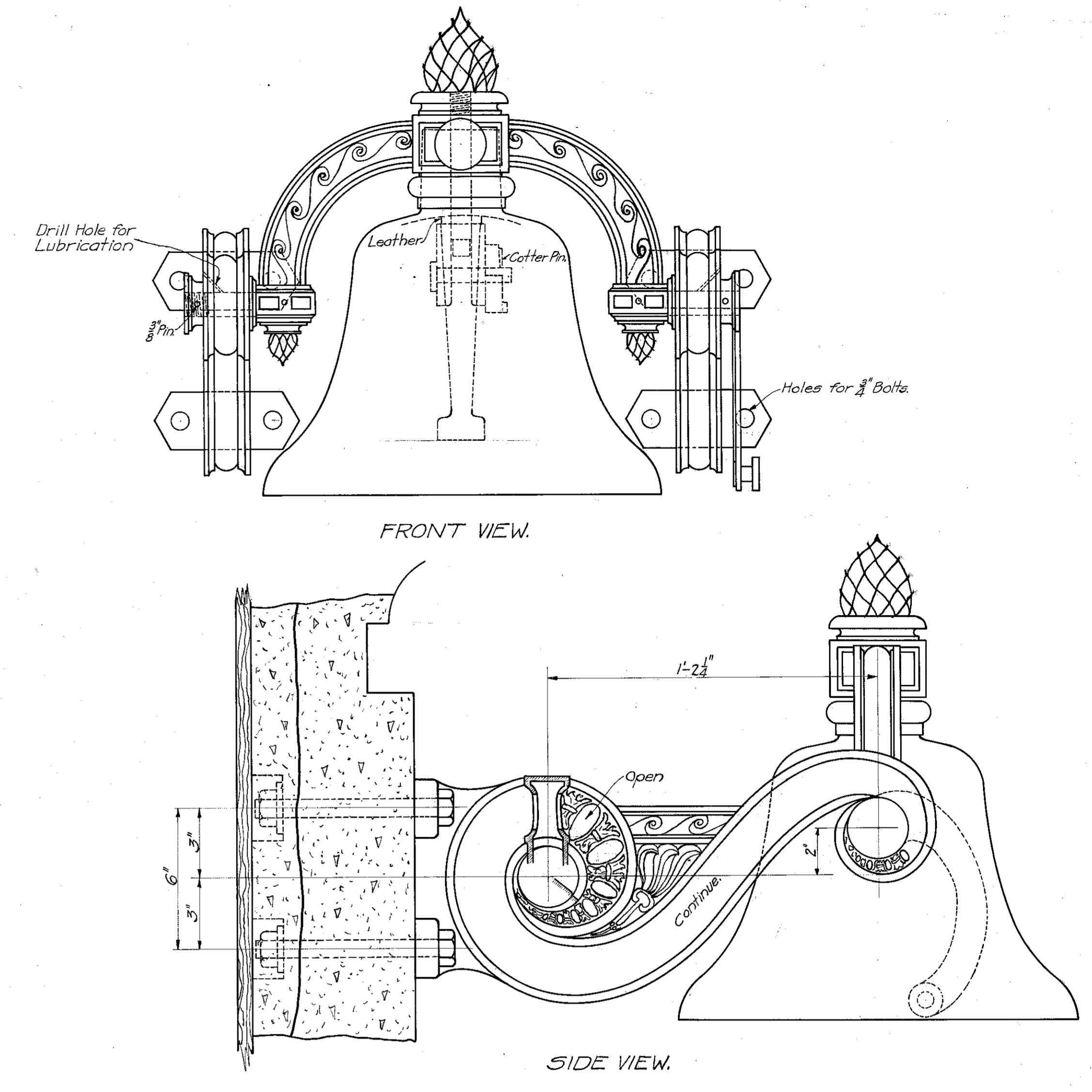
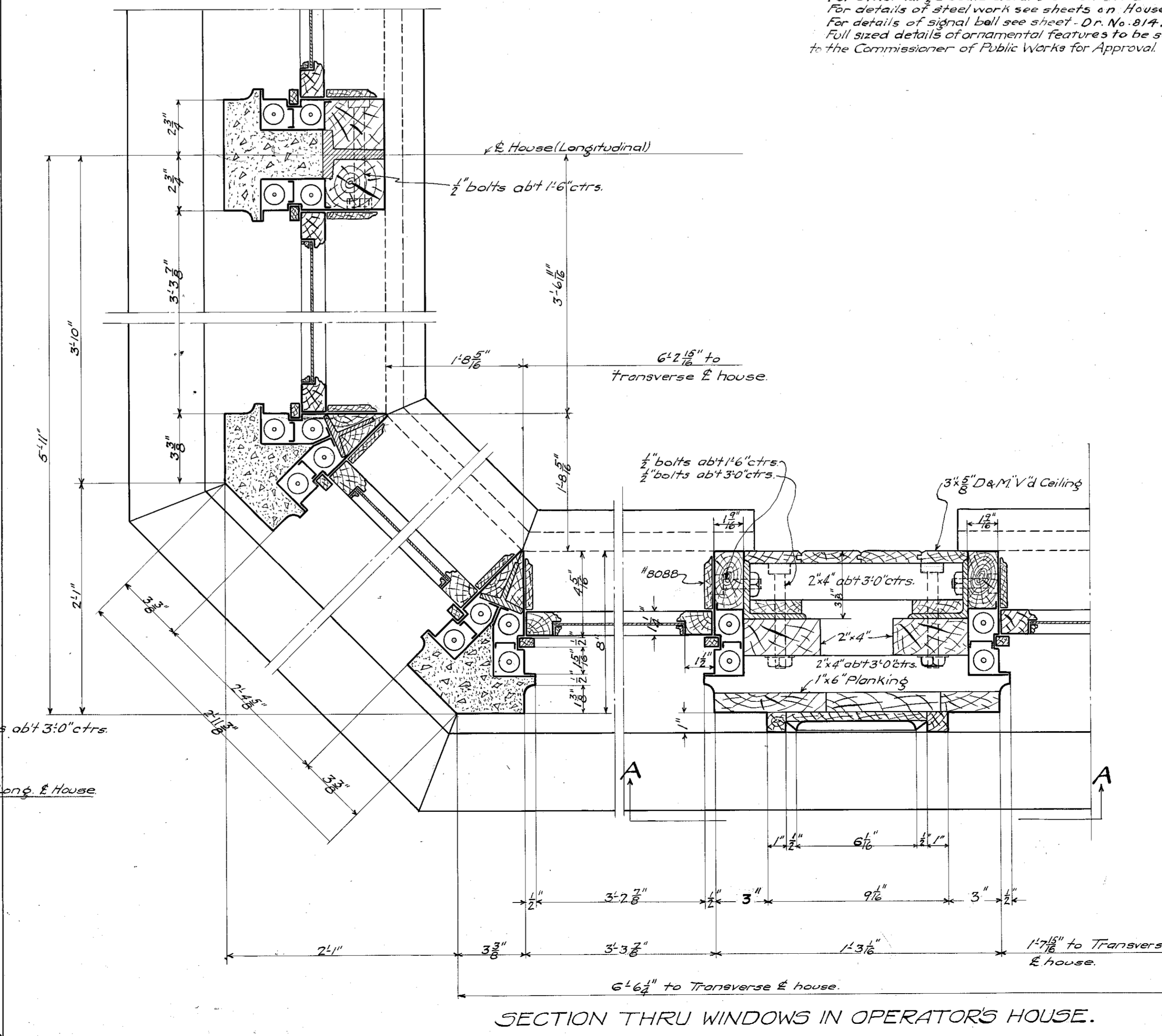
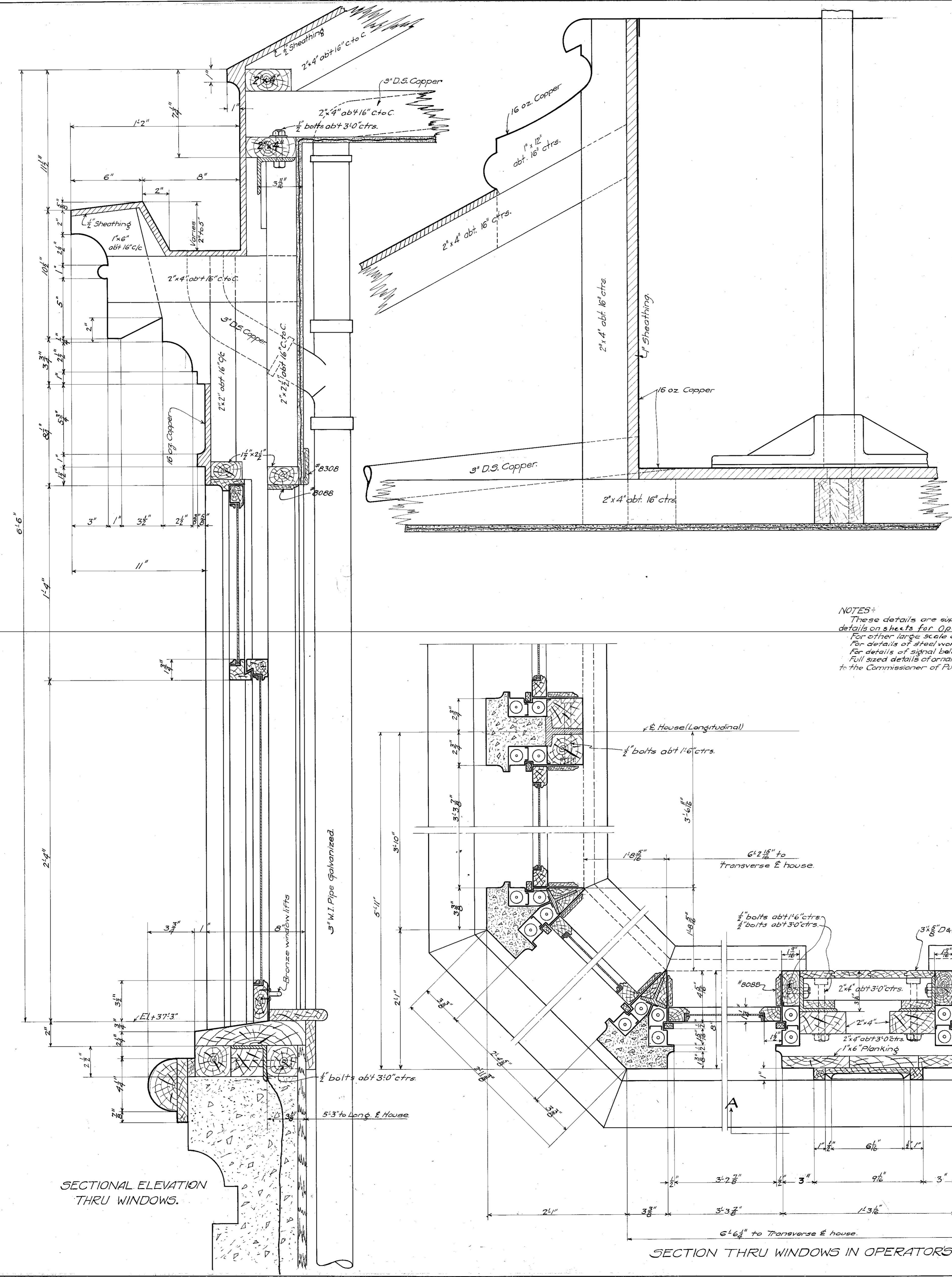
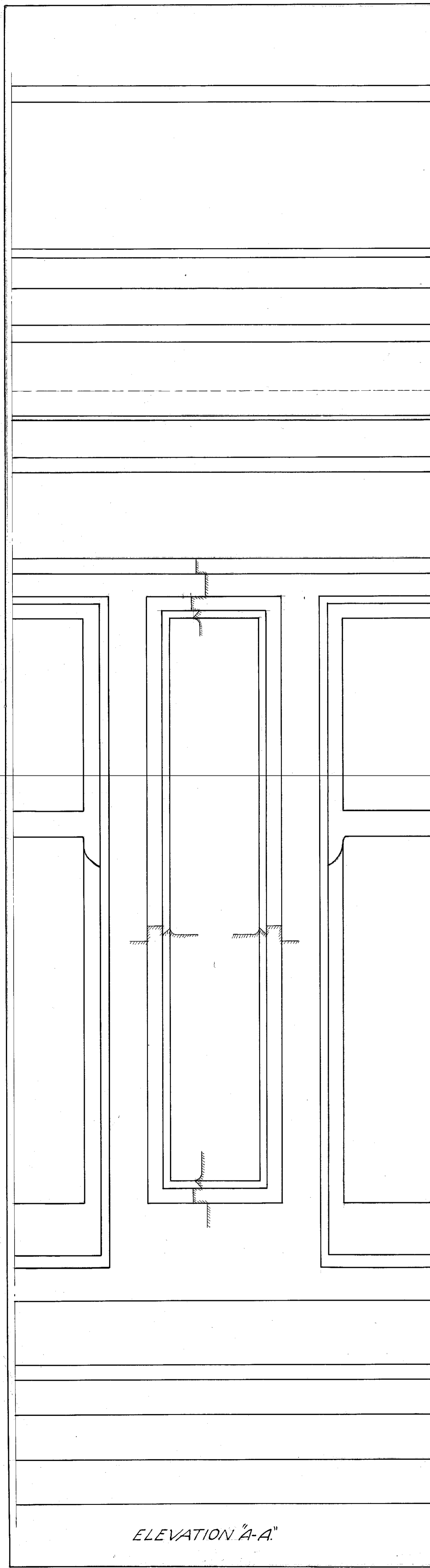
Approved: *Tracy G. Russell*  
Engineer of Bridges and Harbor.

Approved: *[Signature]*  
City Engineer.

Approved: *[Signature]*  
Commissioner of Public Works.

Drawn by: *P.N.B.*  
Traced by: *[Signature]*  
Checked by: *[Signature]*

Drawing No. **817**  
FILE No. **11-6A-37**



NOTES:  
 These details are supplementary to small scale details on sheets for Operator's House.  
 For other large scale details see sheets Dr. No. 818+820.  
 For details of steel work see sheets on House Framing.  
 For details of signal bell see sheet - Dr. No. 819.  
 Full sized details of ornamental features to be submitted to the Commissioner of Public Works for Approval.

BELL & BRACKET.  
 Where bell cord passes through wall of house, pulleys shall be provided to prevent fraying of the rope.

CITY OF CHICAGO  
 DEPARTMENT OF PUBLIC WORKS  
 BUREAU OF ENGINEERING  
 DIVISION OF BRIDGES AND HARBOR

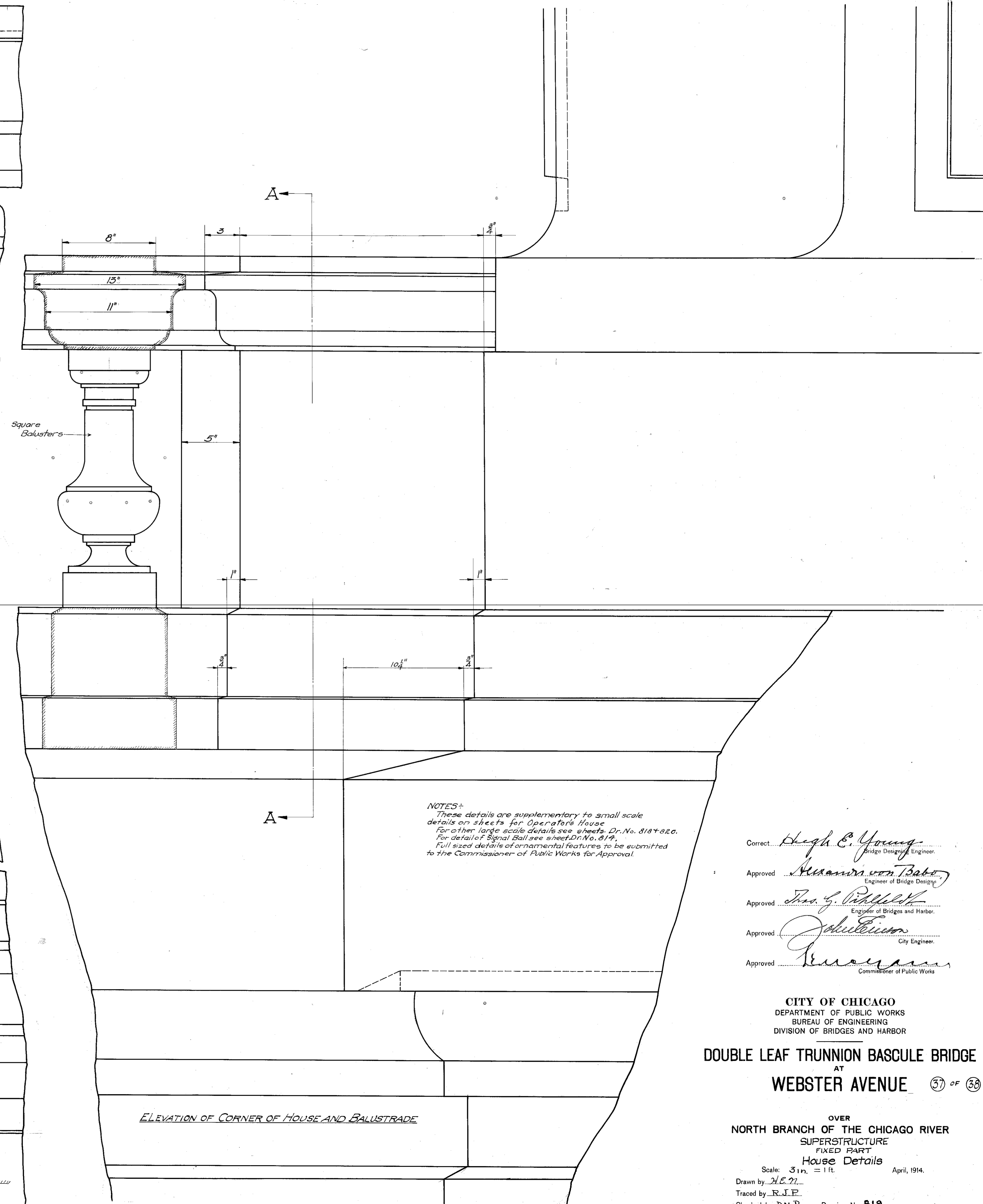
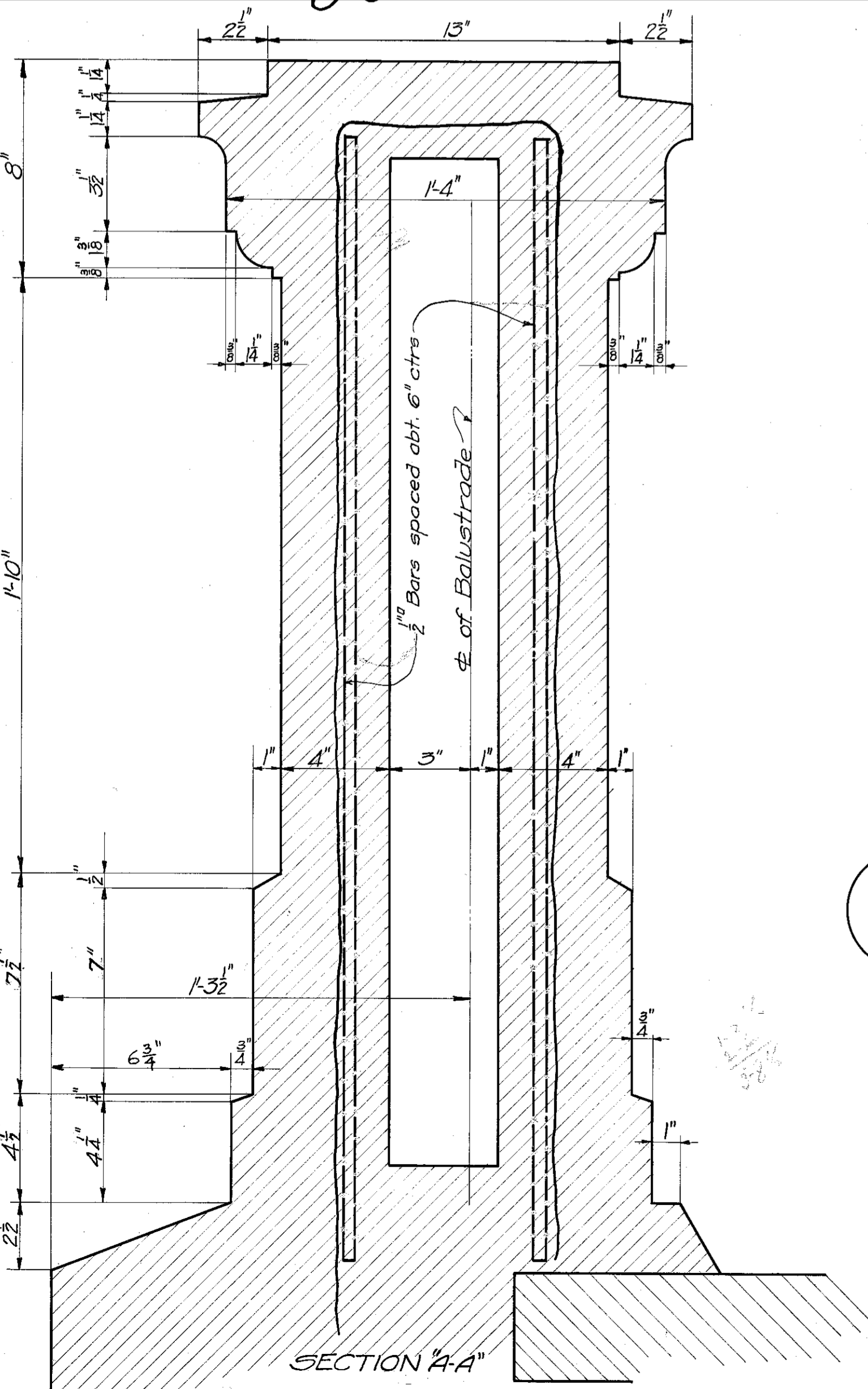
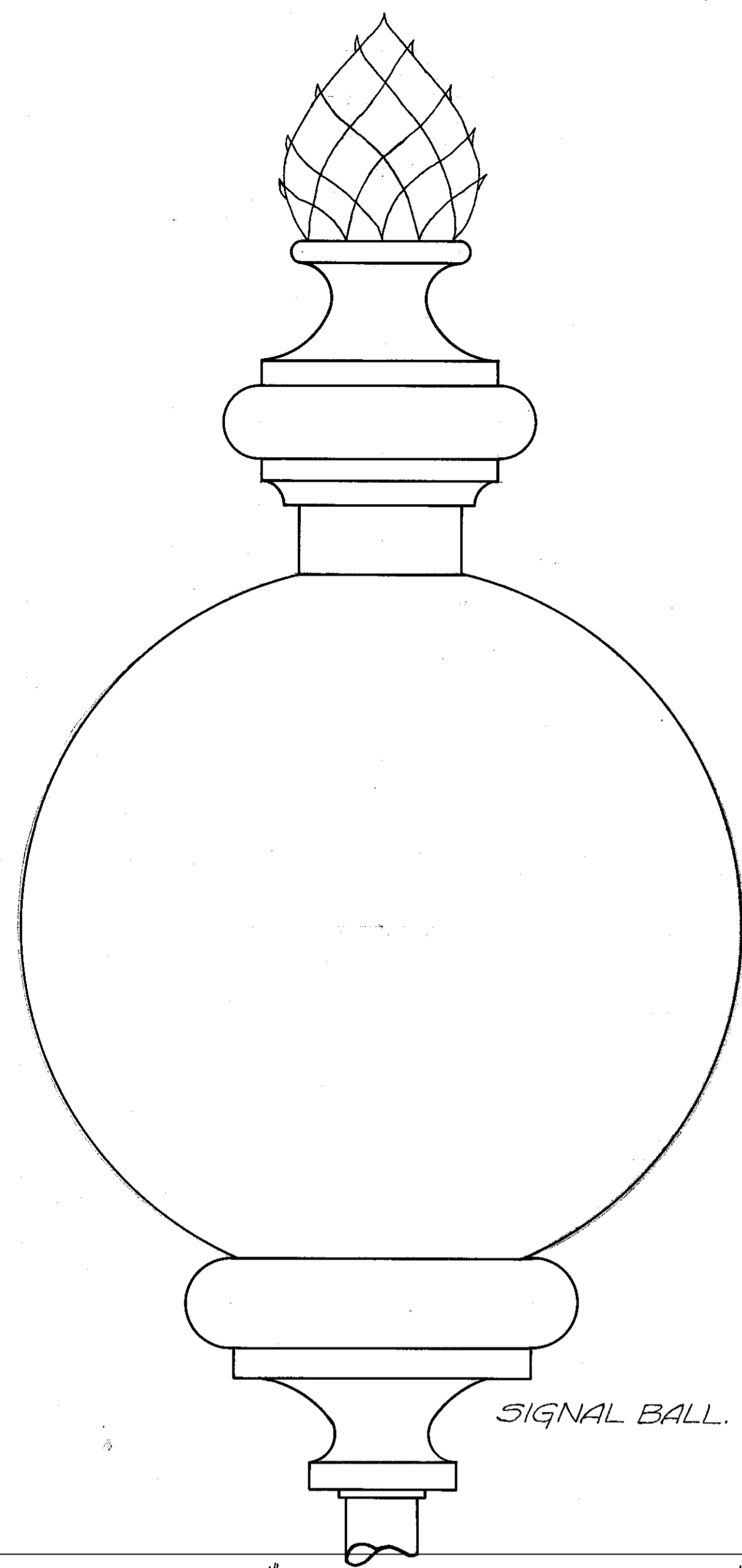
DOUBLE LEAF TRUNNION BASCULE BRIDGE  
 AT  
 WEBSTER AVENUE 36 OF 38

OVER  
 NORTH BRANCH OF THE CHICAGO RIVER  
 SUPERSTRUCTURE  
 FIXED PART

House & Signal Bell Details  
 Scale: 3/16" = 1' ft.  
 April, 1914.

Corrected by *Hugh E. Young*  
 Bridge Designing Engineer.  
 Approved by *Alexander von Bado*  
 Engineer of Bridge Design.  
 Approved by *John G. Wickert*  
 Engineer of Bridges and Harbor.  
 Approved by *John Wilson*  
 City Engineer.  
 Approved by *W. W. ...*  
 Commissioner of Public Works.

Drawn by *H.E.Y.*  
 Traced by *H.E.Y.*  
 Checked by *D.N.B.*  
 Drawing No. 818  
 FILE No. 11-6A-38



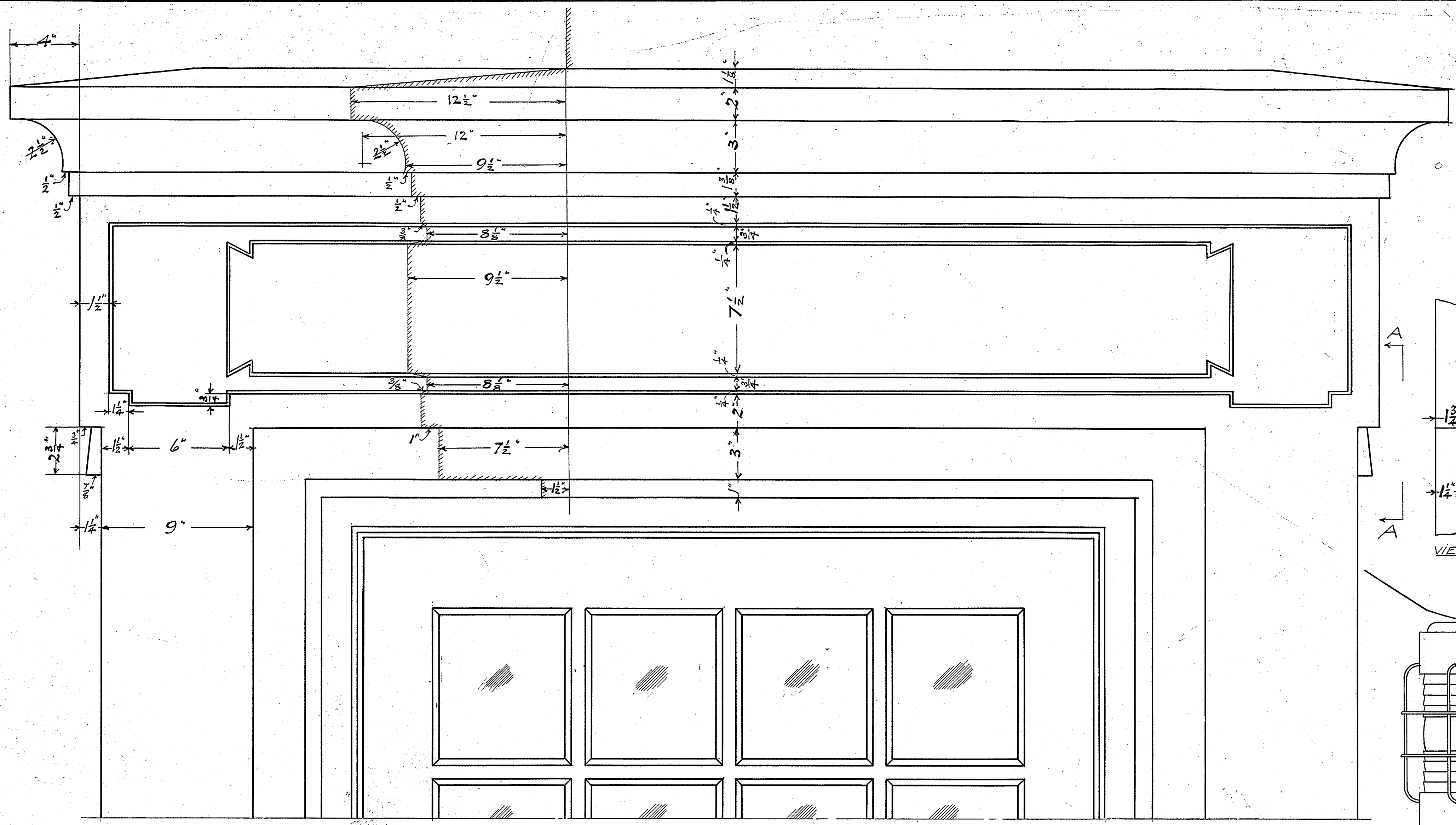
NOTES:  
 These details are supplementary to small scale details on sheets for Operator's House.  
 For other large scale details see sheets Dr. No. 818+820.  
 For detail of Signal Ball see sheet Dr. No. 817.  
 Full sized details of ornamental features to be submitted to the Commissioner of Public Works for Approval.

Corrected *High C. Young*  
 Bridge Designing Engineer  
 Approved *Alexander von Bahr*  
 Engineer of Bridge Design  
 Approved *Geo. G. Russell*  
 Engineer of Bridges and Harbor  
 Approved *John E. ...*  
 City Engineer  
 Approved *Benjamin ...*  
 Commissioner of Public Works

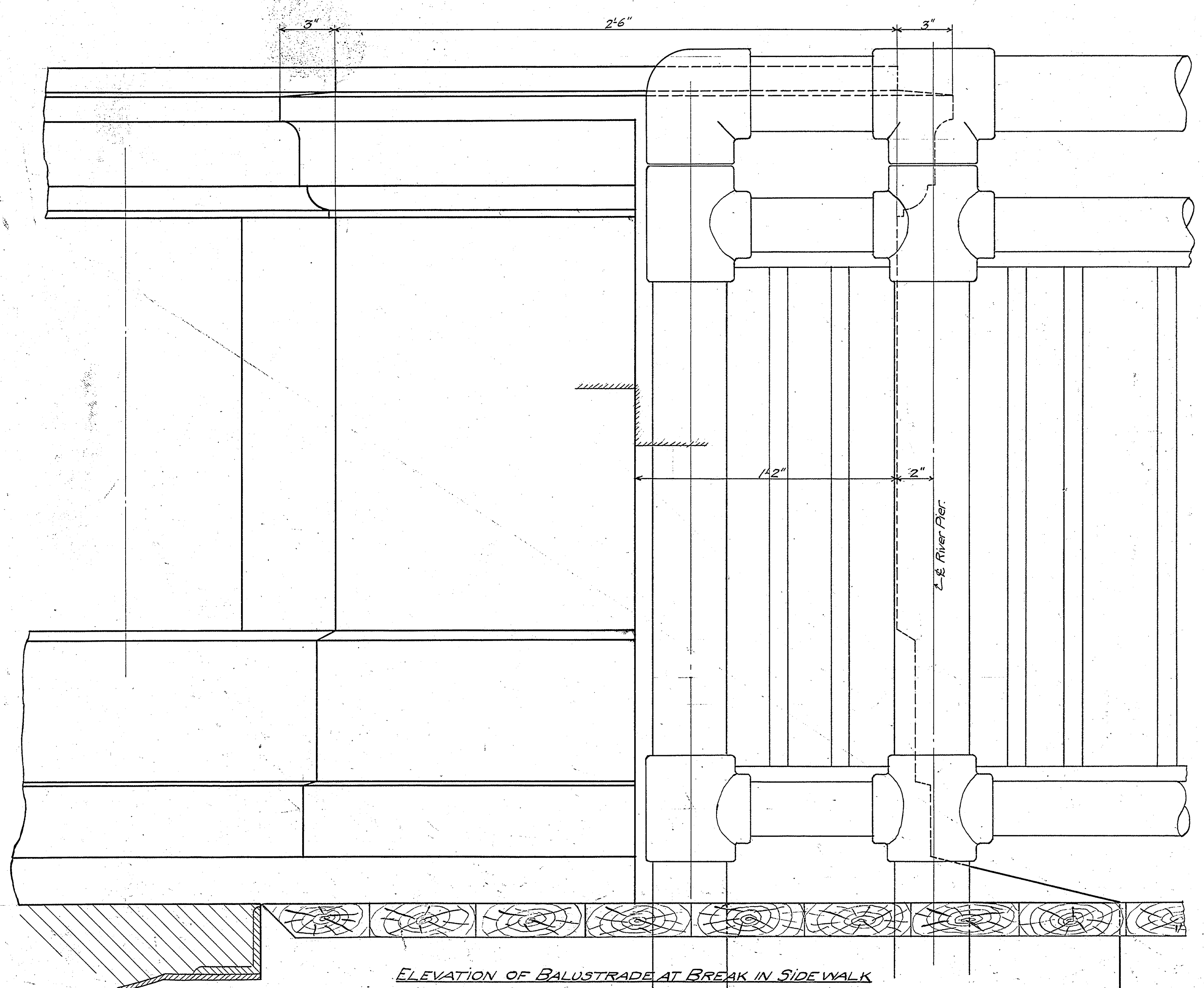
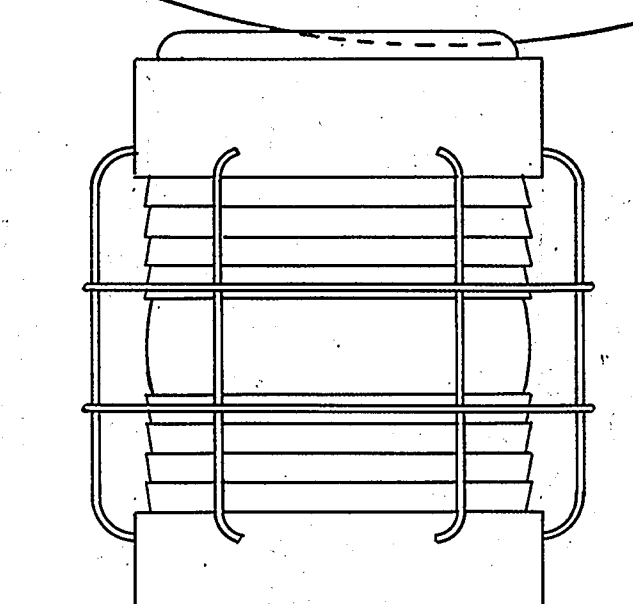
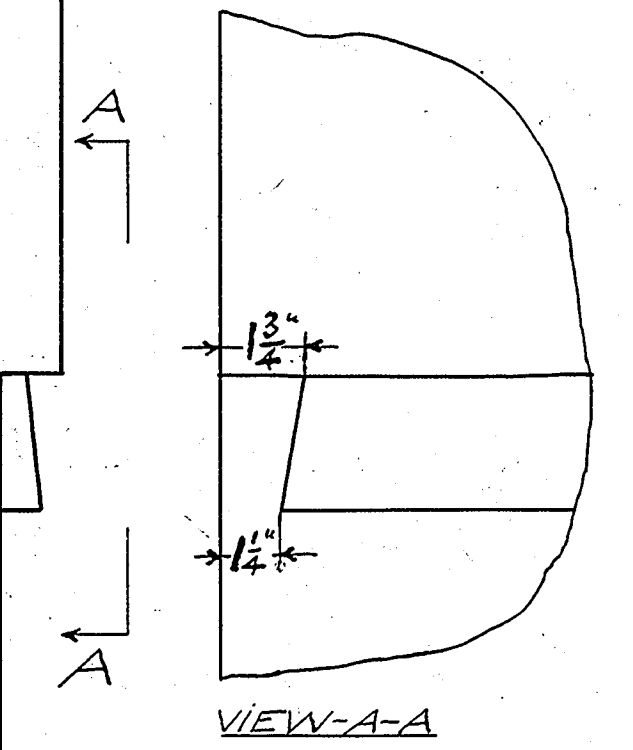
CITY OF CHICAGO  
 DEPARTMENT OF PUBLIC WORKS  
 BUREAU OF ENGINEERING  
 DIVISION OF BRIDGES AND HARBOR  
**DOUBLE LEAF TRUNNION BASCULE BRIDGE**  
 AT  
**WEBSTER AVENUE** (37) OF (38)

OVER  
 NORTH BRANCH OF THE CHICAGO RIVER  
 SUPERSTRUCTURE  
 FIXED PART  
 House Details  
 Scale: 3/16" = 1 ft. April, 1914.  
 Drawn by *H.E. ...*  
 Traced by *R.J.P.*  
 Checked by *D.N.B.* Drawing No. 819  
 FILE No. 17-6A-35





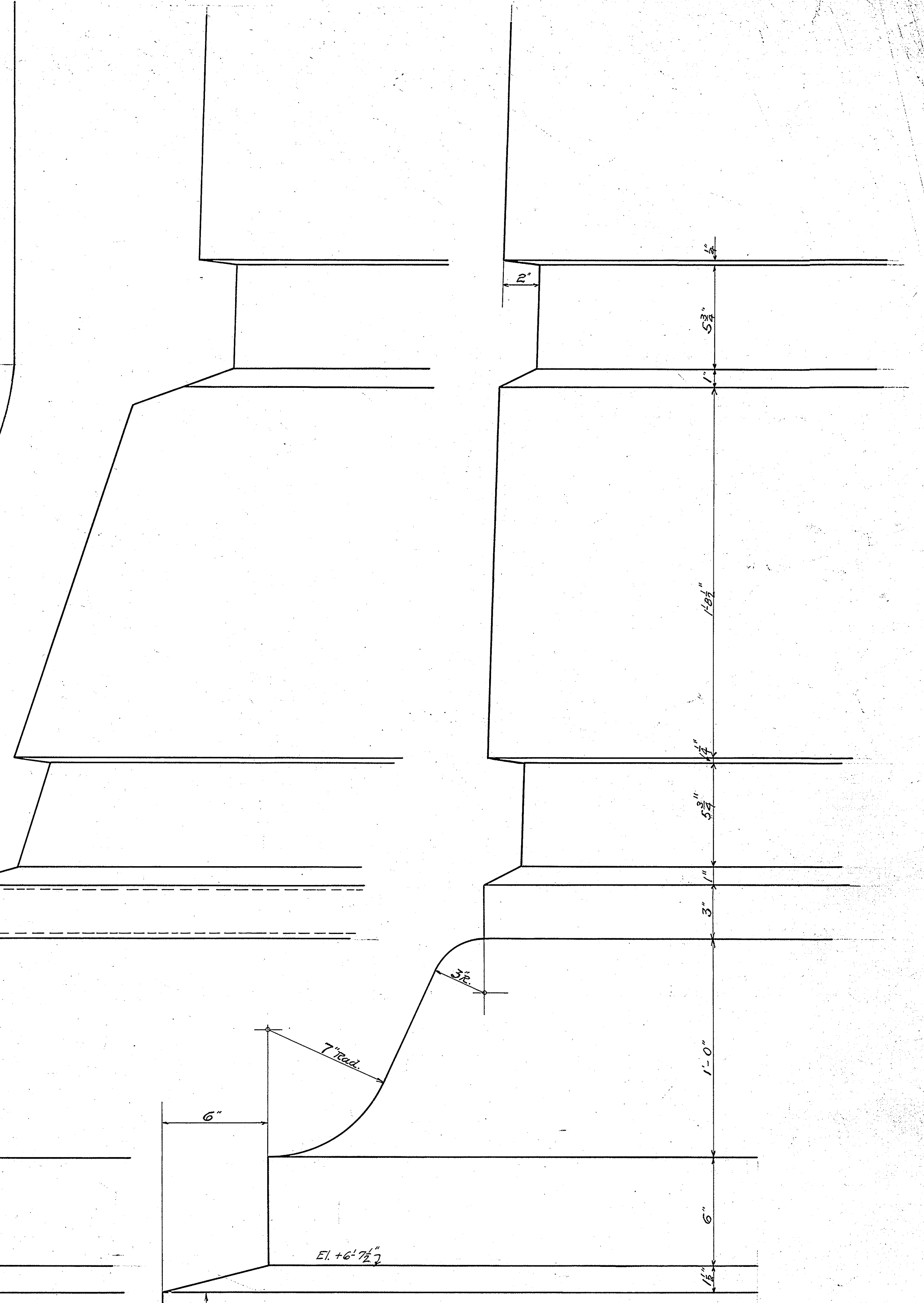
ELEVATION SHOWING UPPER PART OF DOOR UNTO SIDEWALK



ELEVATION OF BALUSTRADE AT BREAK IN SIDEWALK

NOTES:-  
 These details are supplementary to small scale details on sheets for Operator's House.  
 For other large scale details see sheet Dr. No. 818-819.  
 For details of pipe railing see sheet Dr. No. 790.  
 Full sized details of ornamental features to be submitted to the Commissioner of Public Works for approval.

ELEVATION OF LOWER CORNER OF ENCLOSURE WALL AND PIER LAMP

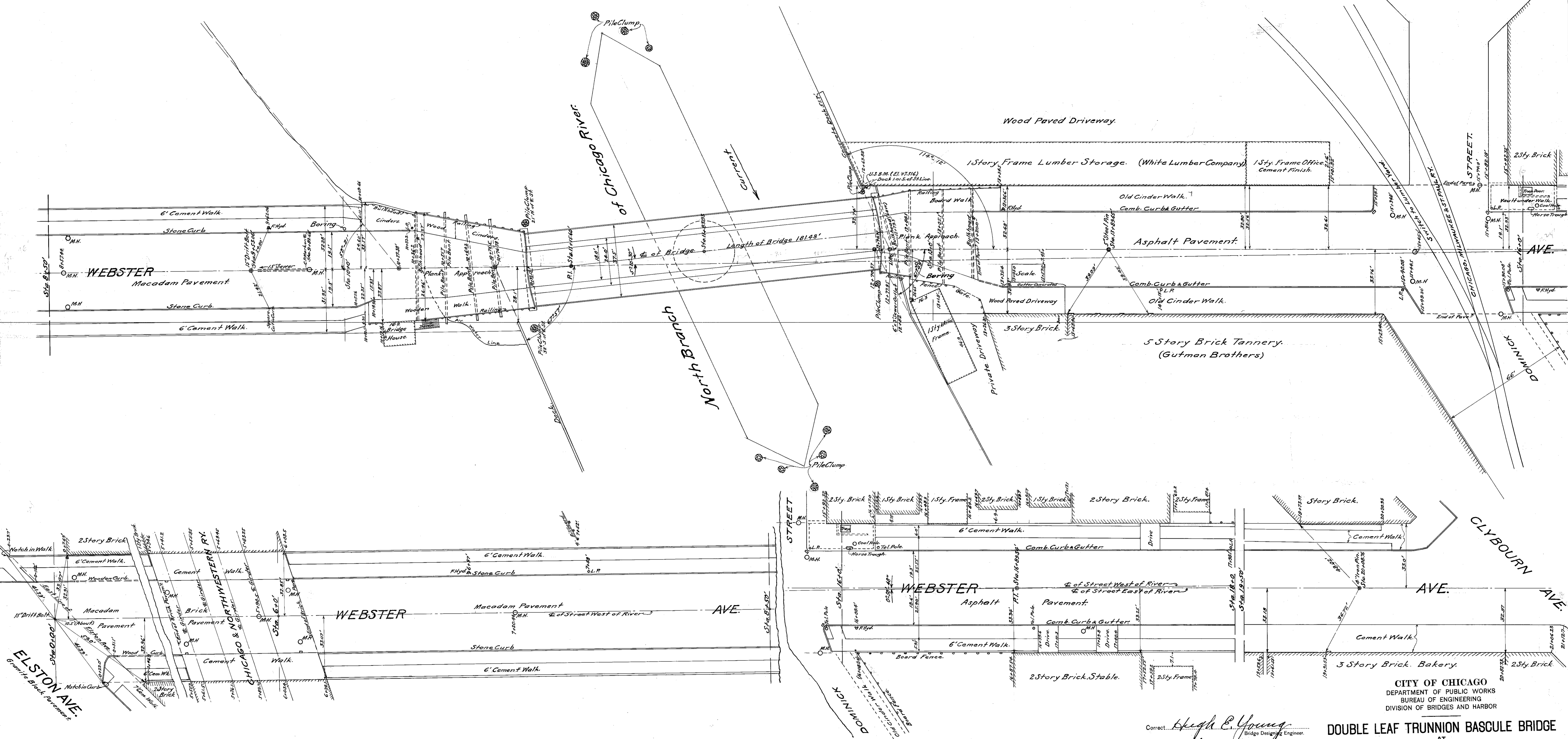
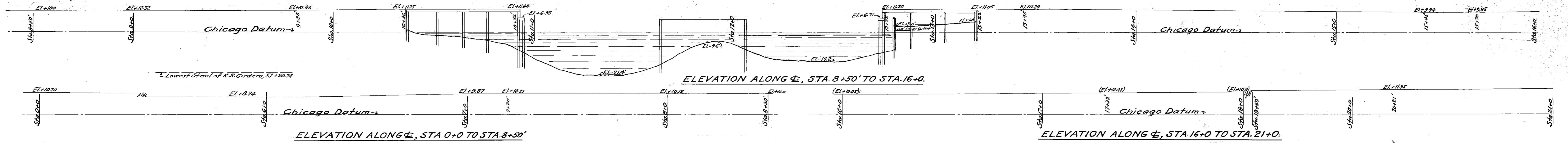


ELEVATION OF LOWER CORNER OF ENCLOSURE WALLS OF HOUSE

Corrected by *Hugh E. Young*  
 Approved by *Harold W. Thayer*  
 Approved by *John J. Cassel*  
 Approved by *John J. Cassel*  
 Approved by *John J. Cassel*

CITY OF CHICAGO  
 DEPARTMENT OF PUBLIC WORKS  
 BUREAU OF ENGINEERING  
 DIVISION OF BRIDGES AND HARBOR

**DOUBLE LEAF TRUNNION BASCULE BRIDGE**  
 AT  
**WEBSTER AVENUE** 39 OF 39  
**BELMONT AVENUE** 41 OF 41  
 OVER  
 NORTH BRANCH OF THE CHICAGO RIVER  
 SUPERSTRUCTURE  
 FIXED PART  
 House Enclosure Walls & Railing Details  
 Scale: 3/16" = 1 ft.  
 Drawn by *W.E.T.*  
 Traced by *W.E.T.*  
 Checked by *D.N.B.*  
 Drawing No. 820  
 FILE No. 11-6A-40



Abbreviations:  
 L.P. Lamp Post  
 F.Hyd. Fire Hydrant  
 M.H. Manhole  
 P.I. Point of Intersection

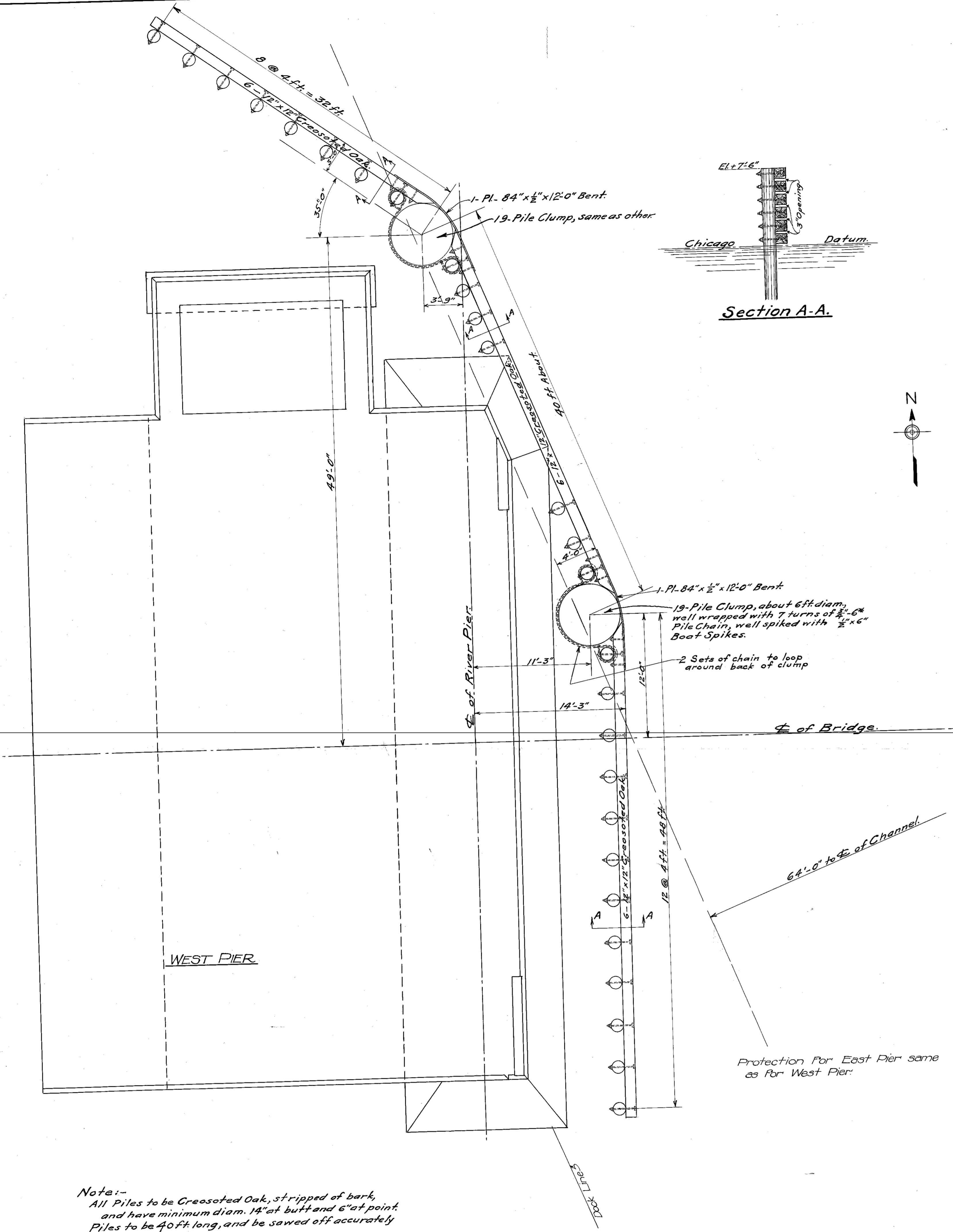
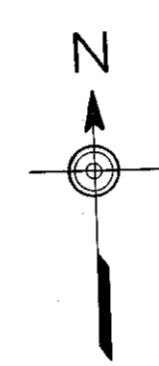
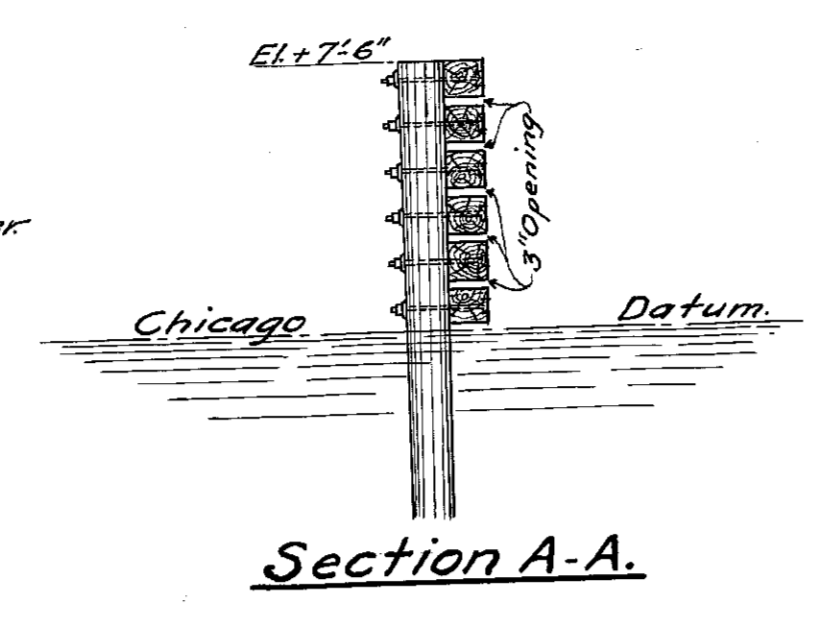
Corrected *High B. Young*  
 Approved *Maximilian von Tobel*  
 Approved *John G. Dickel*  
 Approved *John E. Quinn*  
 Approved *Keenan*

CITY OF CHICAGO  
 DEPARTMENT OF PUBLIC WORKS  
 BUREAU OF ENGINEERING  
 DIVISION OF BRIDGES AND HARBOR

**DOUBLE LEAF TRUNNION BASCULE BRIDGE**  
 AT  
**WEBSTER AVENUE**  
 OVER  
 NORTH BRANCH OF THE CHICAGO RIVER  
 SUBSTRUCTURE  
 Survey Layout

Scale: 20 in. = 1 ft. April, 1914.

Drawn by *G.A.H.*  
 Traced by *G.A.H.*  
 Checked by *G.A.H.*  
 Drawing No. 821  
 FILE No. 11-6A-41



Note:-  
 All Piles to be Creosoted Oak, stripped of bark, and have minimum diam. 14" at butt and 6" at point. Piles to be 40 ft long, and be sawed off accurately at elevations given.  
 All Wales to be 12" x 12" Creosoted Oak, fastened to each Pile with 1 1/2" Bolts, with square head and nut, socket washers on outside and O-G washers on inside.

ESTIMATED QUANTITIES TO BE PAID BY UNIT PRICES-

Item	Quantity	Unit
C Test Piles, furnishing and driving	4	Piles
E General excavation	8000	cu.yds.
F Concrete piers, pits and abutments	4300	cu.yds.
G Waterproofing mortar	260	cu.yds.
H Concrete retaining walls	1100	cu.yds.
I Steel reinforcement (Piers & Abutments - 36000, Retaining Walls - 8000)	175000	lbs.
J Structural steel furnished and erected	13000	lbs.
K Structural steel erected	75000	lbs.
L Creosoted oak piles delivered	6000	lin.ft.
M Foundation piles delivered	48000	lin.ft.
N All piles driven	38000	lin.ft.
O Creosoted timber in place	26000	ft.B.M.
P 4" Diam. Sewer diversion and extension.	35	lin.ft.
Q Filling approaches	8500	cu.yds.
R Paving approaches	3600	sq.yds.
S Curb and gutter combined	1525	lin.ft.
T Gas pipe railing for approaches	970	lin.ft.
U Sidewalks on approaches	9000	sq.ft.

NOTE:-  
 These quantities are approximate only and are given merely for the purpose of canvassing bids, the City of Chicago assuming no responsibility for correctness of same.

Corrected by *High C. Young*  
 Approved by *Alexander von Tschudi*  
 Approved by *John G. Pritchett*  
 Approved by *John Schumann*  
 Approved by *Richard G. ...*

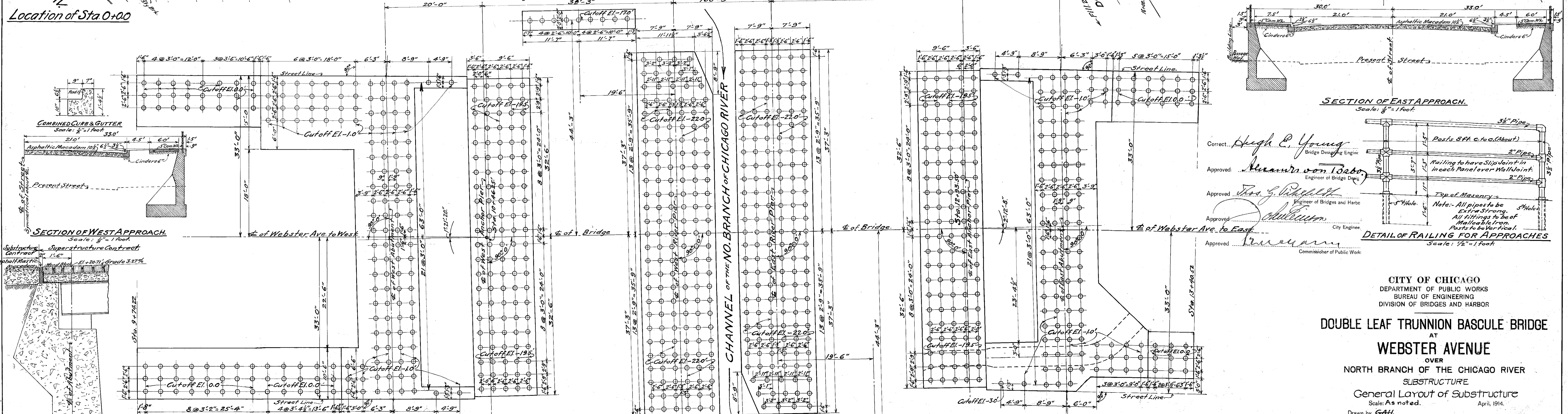
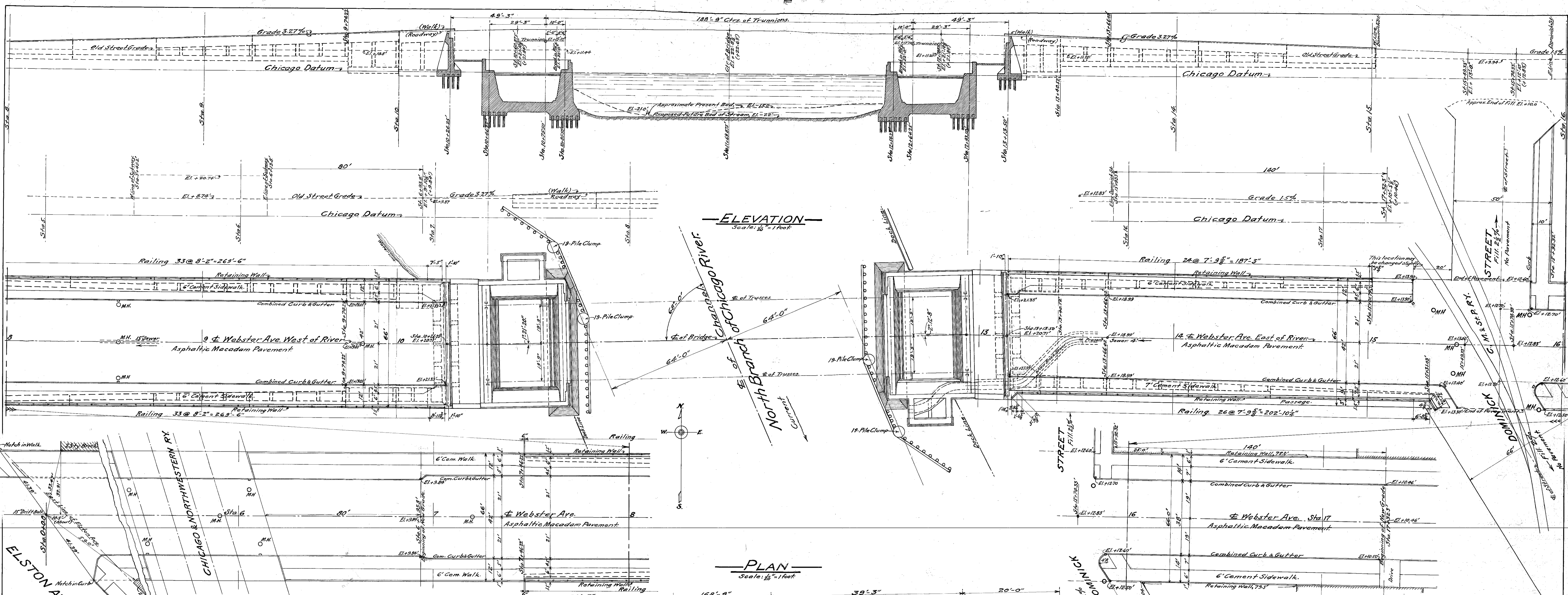
CITY OF CHICAGO  
 DEPARTMENT OF PUBLIC WORKS  
 BUREAU OF ENGINEERING  
 DIVISION OF BRIDGES AND HARBOR

**DOUBLE LEAF TRUNNION BASCULE BRIDGE**  
 AT  
**WEBSTER AVENUE**  
 OVER  
 NORTH BRANCH OF THE CHICAGO RIVER  
 SUBSTRUCTURE

Pier Protection  
 Scale: 1/8" = 1 ft. April, 1914.

Drawn by *G.H.H.*  
 Traced by *G.H.H.*  
 Checked by *R.E.G.* Drawing No. **822** (3) OF (12)

1660570043 FILE NO. 11-6A-42.



Corrected: *Hugh C. Young*  
Bridge Designing Engineer

Approved: *Alexander von Babelo*  
Engineer of Bridge Dept.

Approved: *Thos. G. Rinkhelt*  
Engineer of Bridges and Harbors

Approved: *John L. Sullivan*  
City Engineer

Approved: *Wm. W. ...*  
Commissioner of Public Work

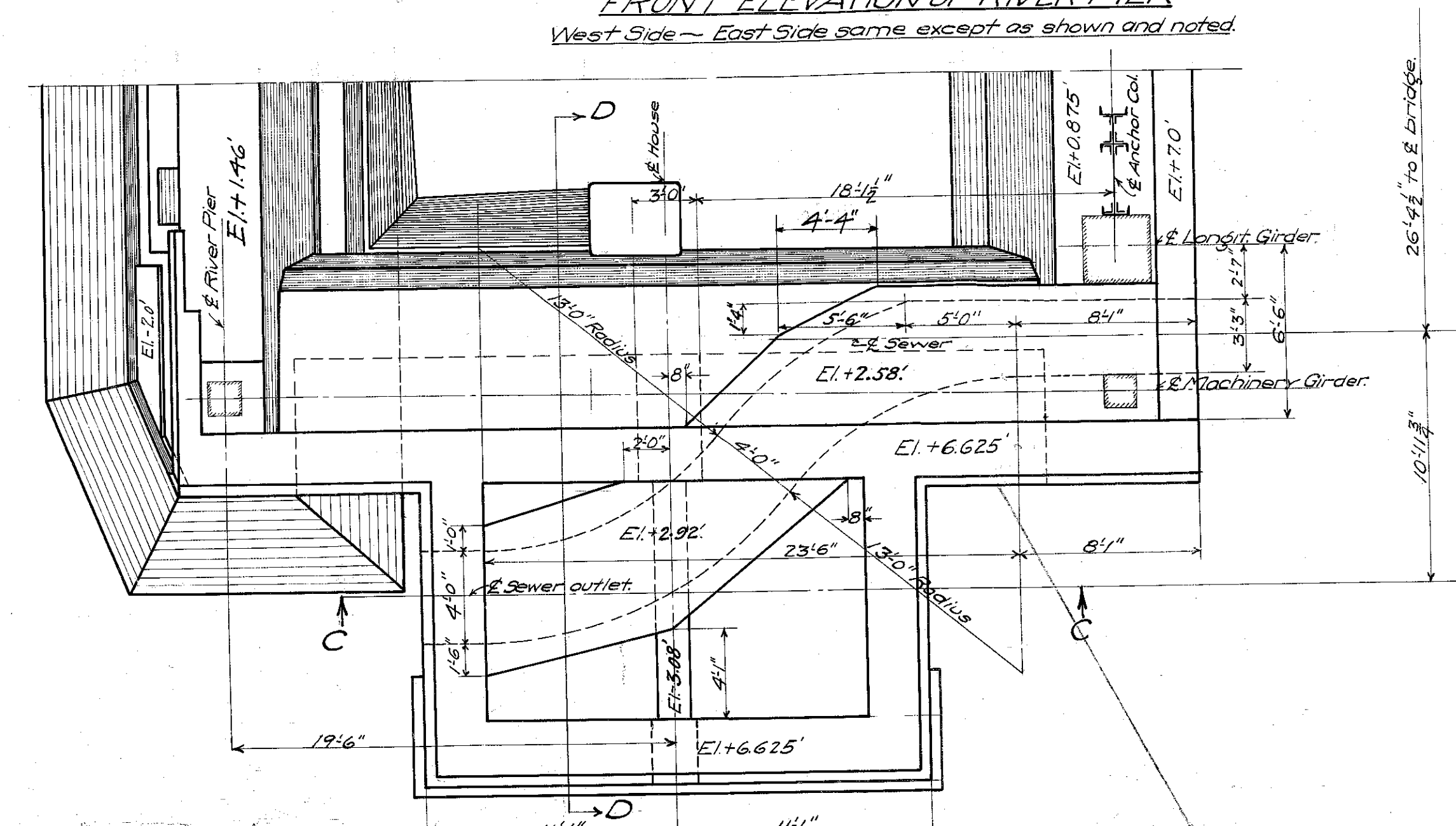
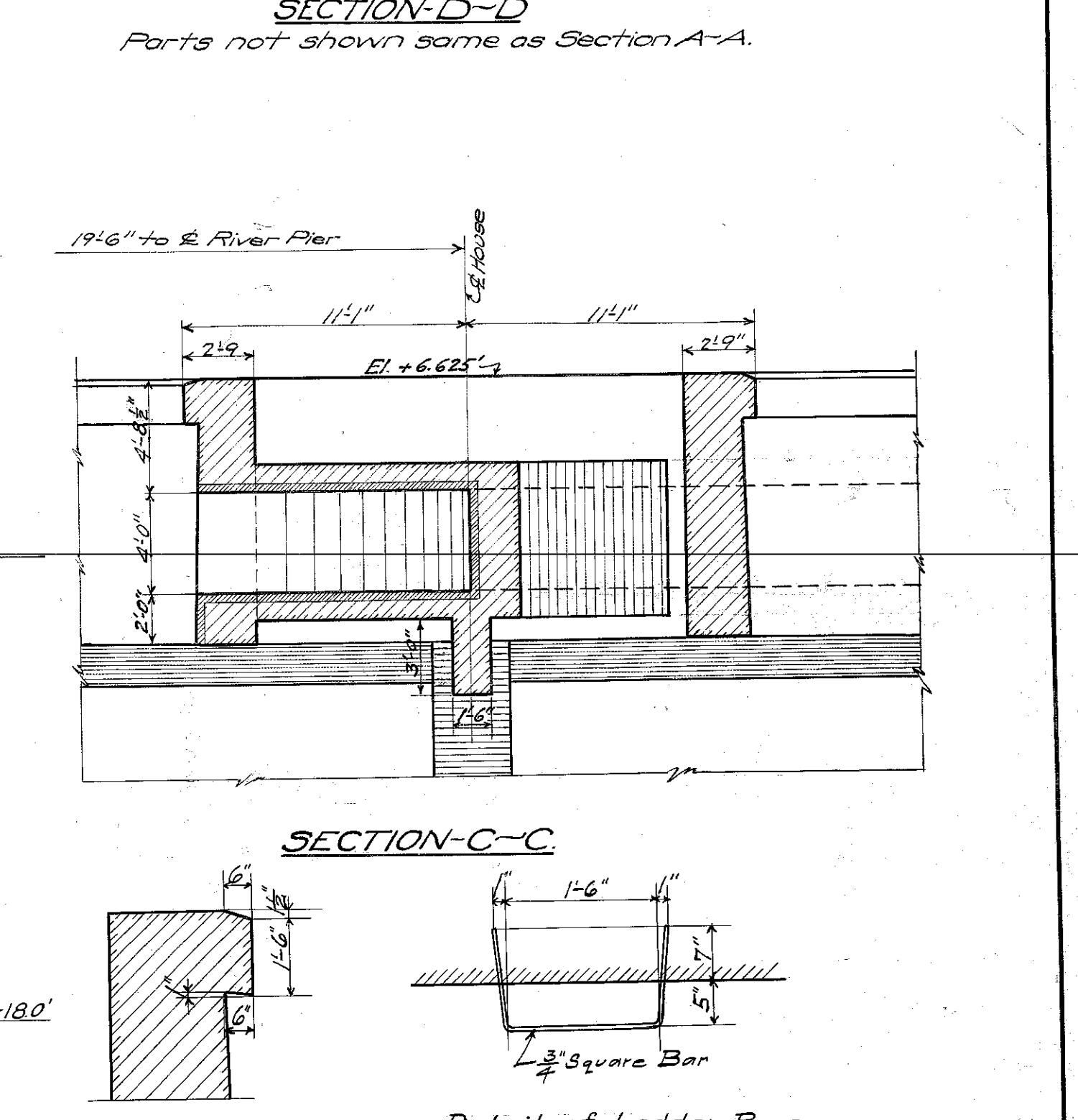
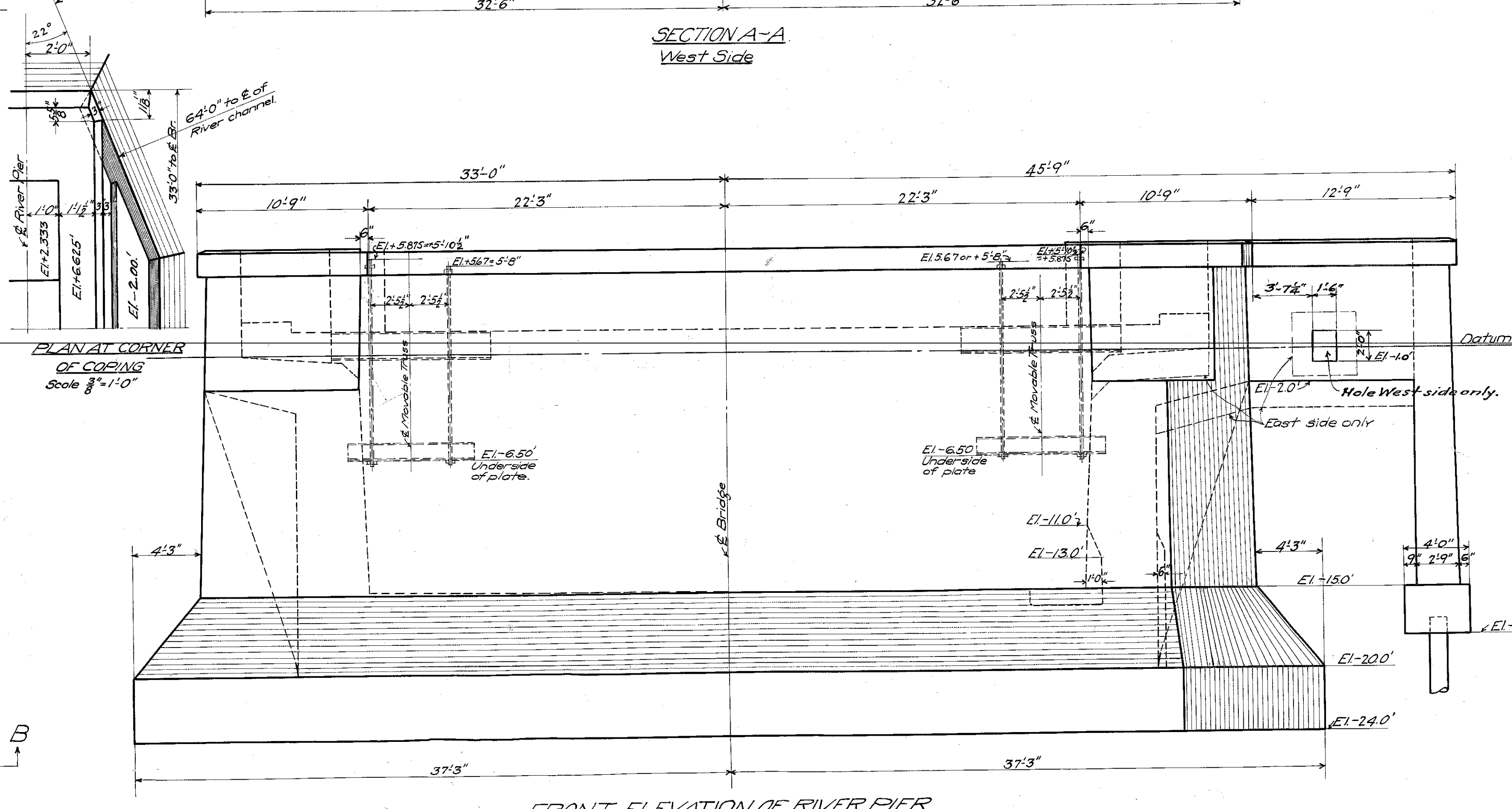
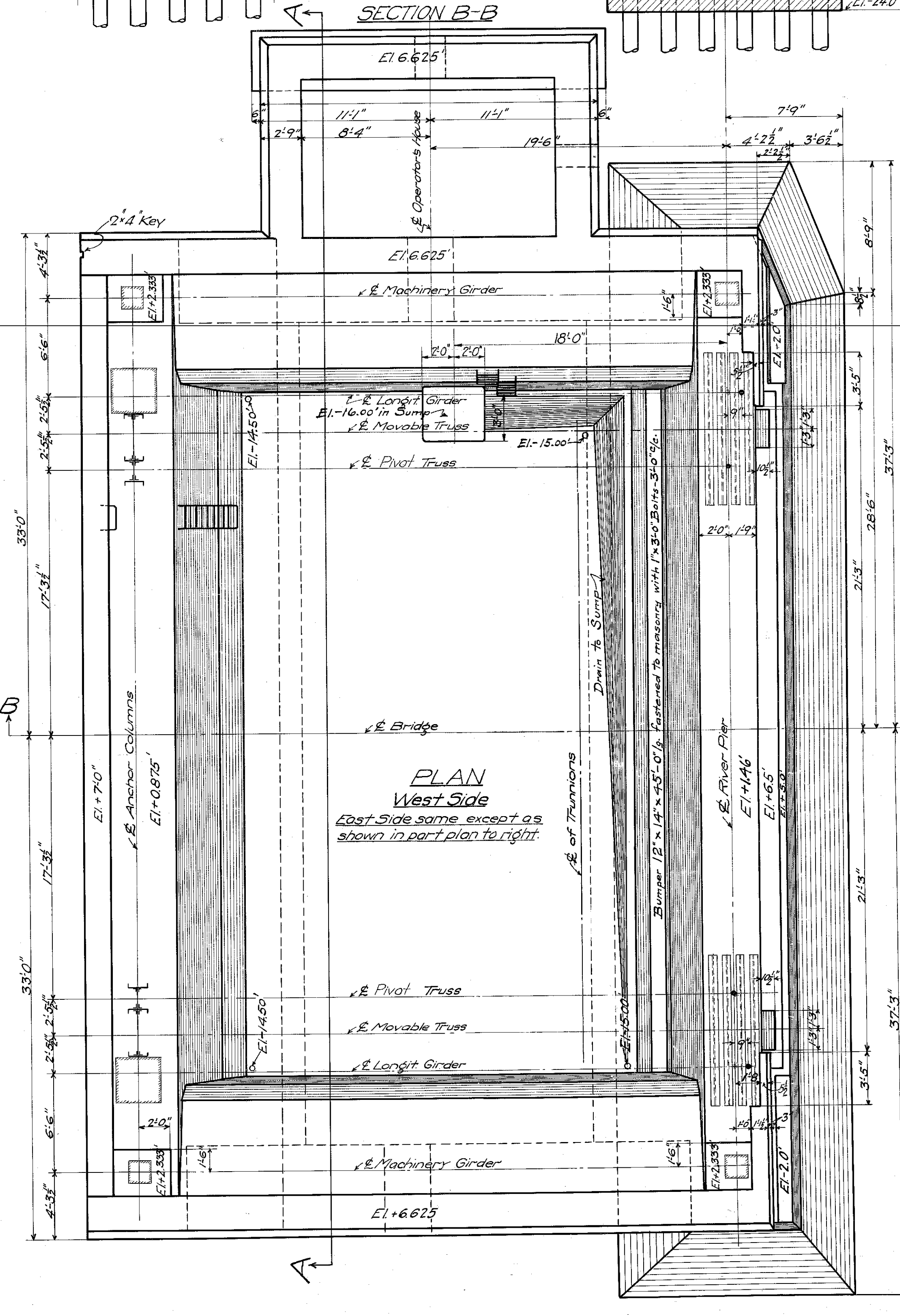
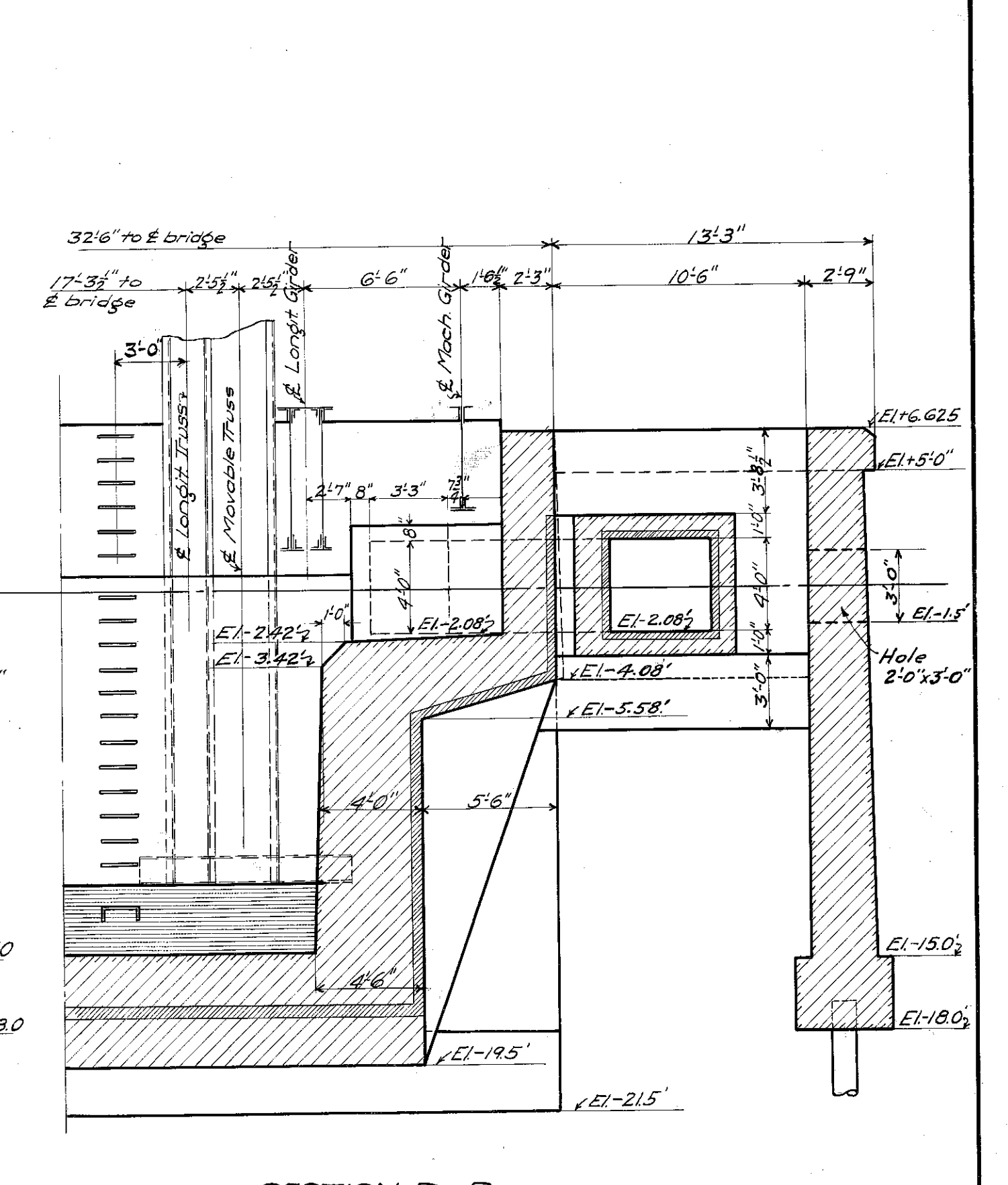
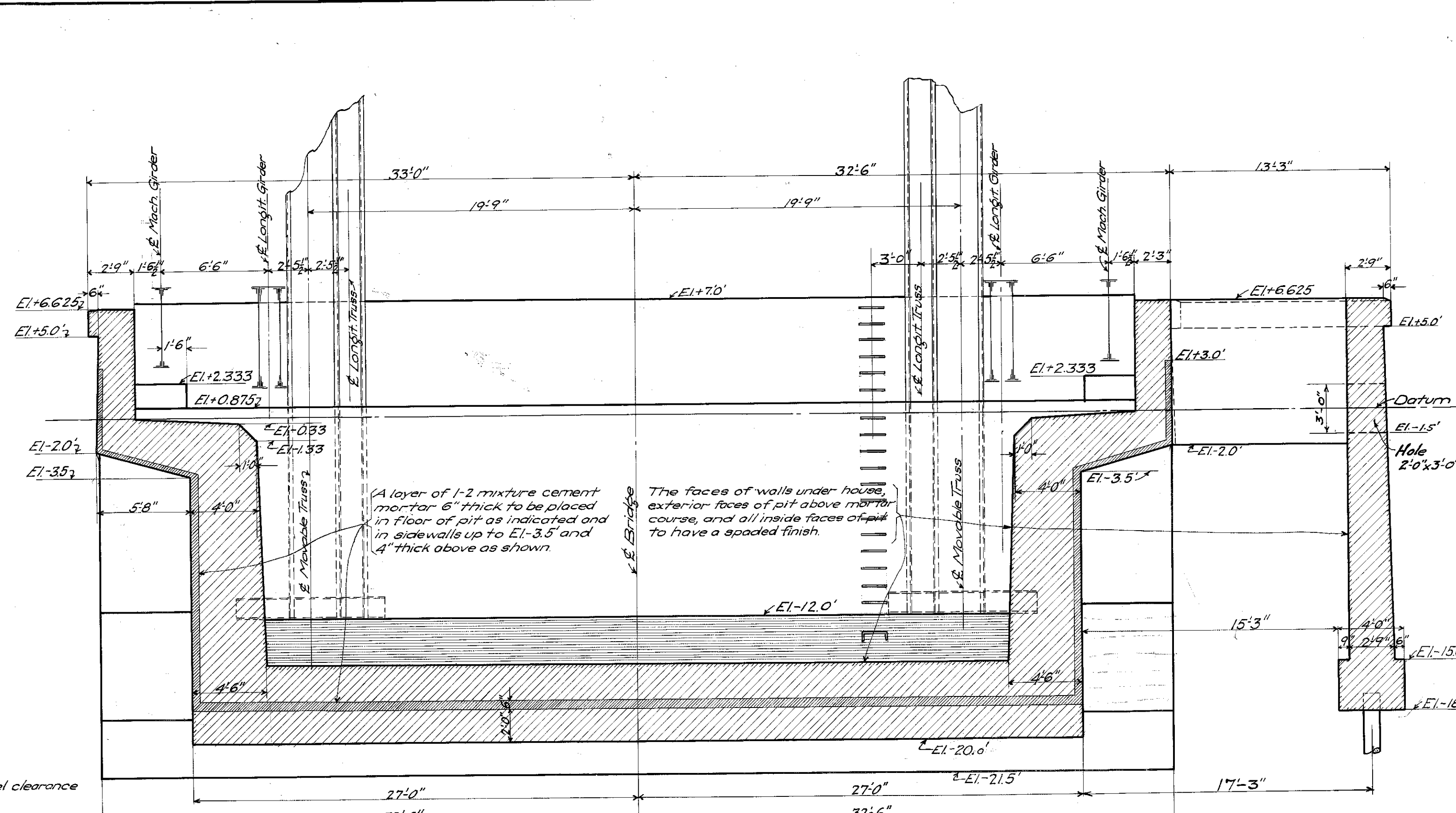
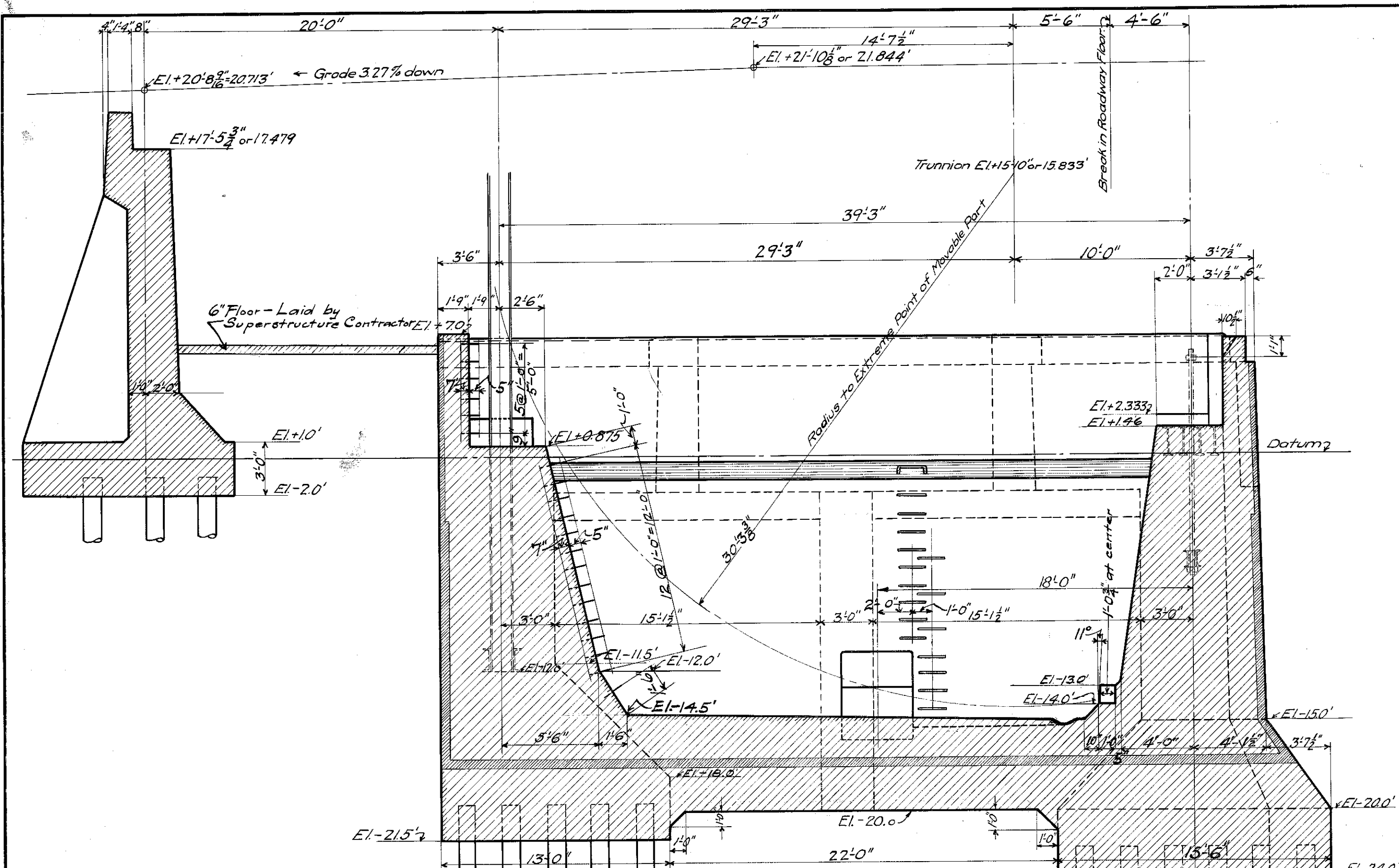
Notes:  
- Posts 8 ft. c. to c. (About)  
- Railing to have Slip Joint in each Panel over Wall Joint.  
- Top of Masonry -  
- Note: All pipes to be Extra Strong.  
- All fittings to be of Malleable Iron.  
- Posts to be Vertical.

**CITY OF CHICAGO**  
DEPARTMENT OF PUBLIC WORKS  
BUREAU OF ENGINEERING  
DIVISION OF BRIDGES AND HARBOR

**DOUBLE LEAF TRUNNION BASCULE BRIDGE**  
AT  
**WEBSTER AVENUE**  
OVER  
NORTH BRANCH OF THE CHICAGO RIVER  
SUBSTRUCTURE

General Layout of Substructure  
Scale: As noted. April, 1914.

Drawn by *G.A.H.*  
Traced by *G.A.H.*  
Checked by *J.N.B.* Drawing No. **823**  
FILE NO. **11-6A-43**

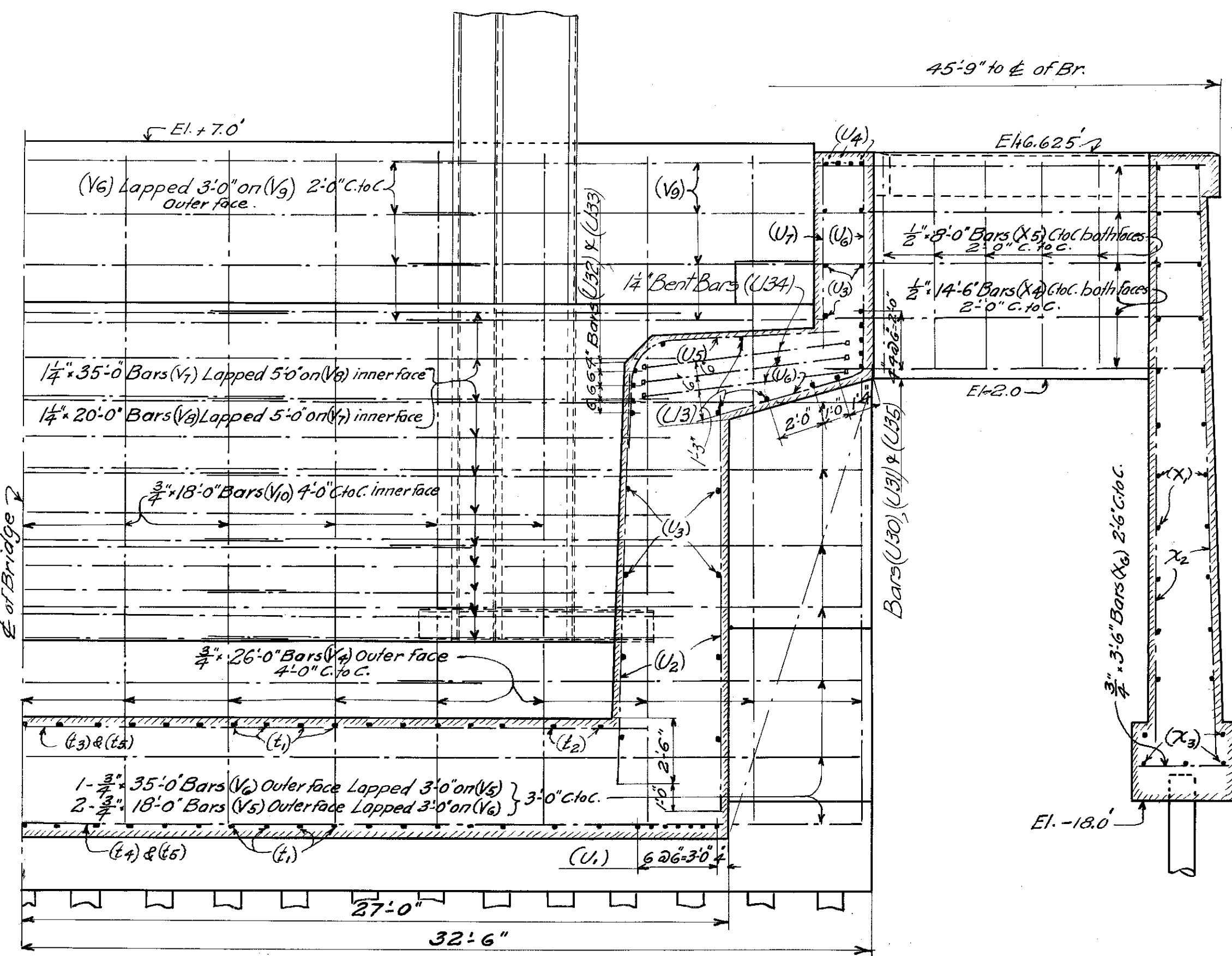


Notes -  
For material workmanship and other requirements see specifications.  
For reinforcement see sheets (6) and (7) of (12).  
For details of anchor columns, bolsters, bolts etc. furnished by the superstructure contractor and placed by substructure contractor see sheet (2) of (12).  
For details of abutments see sheets (8) and (9) of (12).

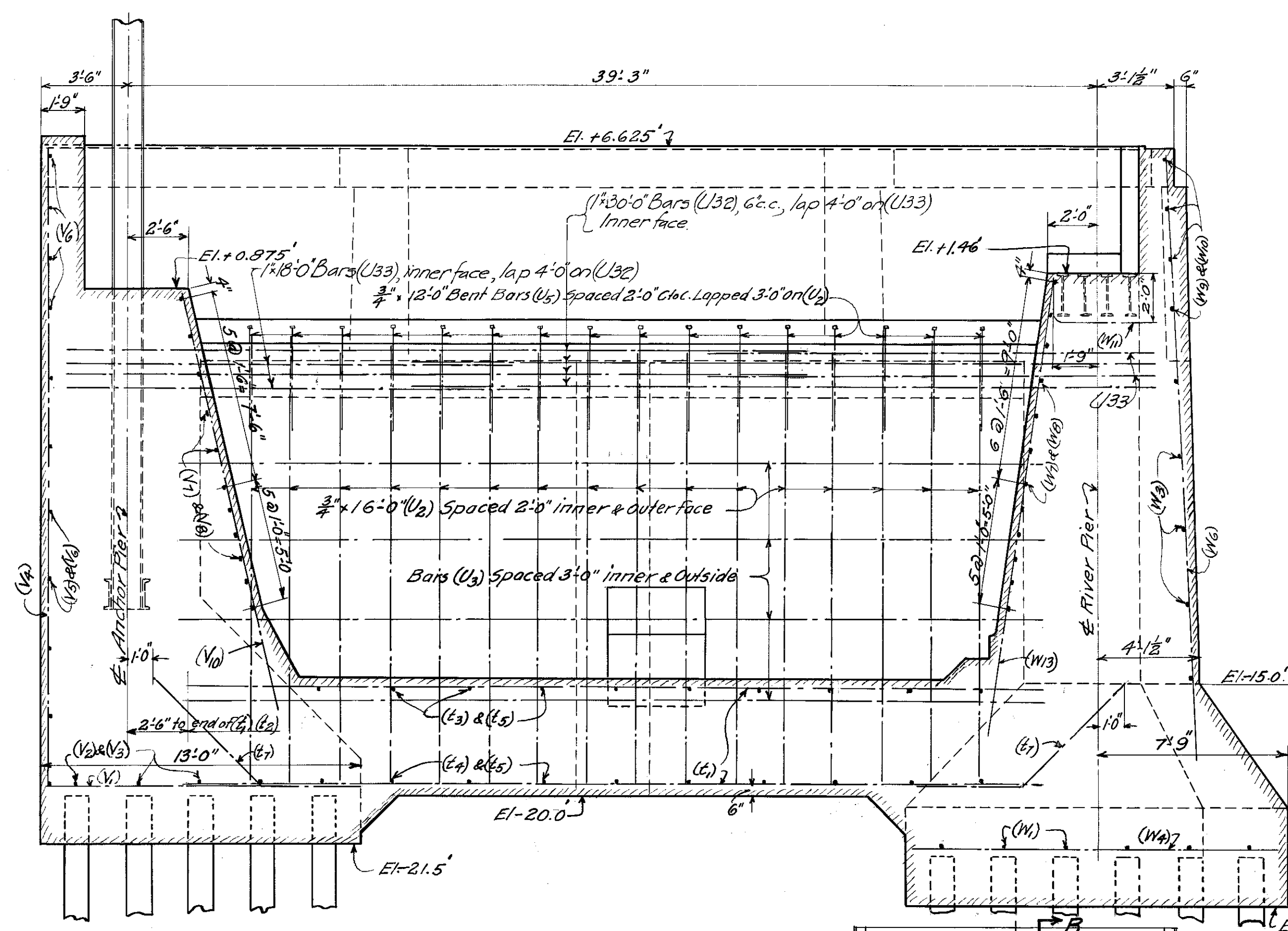
Correct: *Hugh E. Young*  
Bridge Designing Engineer.  
Approved: *Arthur W. B. B.*  
Engineer of Bridge Design.  
Approved: *Thos. G. Puller*  
Engineer of Bridges and Harbors.  
Approved: *John E. ...*  
City Engineer.  
Approved: *...*  
Commissioner of Public Works.

CITY OF CHICAGO  
DEPARTMENT OF PUBLIC WORKS  
BUREAU OF ENGINEERING  
DIVISION OF BRIDGES AND HARBOR  
**DOUBLE LEAF TRUNNION BASCULE BRIDGE**  
AT  
**WEBSTER AVENUE**  
OVER  
NORTH BRANCH OF THE CHICAGO RIVER  
SUBSTRUCTURE  
Main Piers  
Scale: 1/8" = 1'-0" April, 1914.  
Drawn by *D.N.B.*  
Traced by *A.E.T.*  
Checked by *B.T.B.* Drawing No. **824** FILE No. **11-6A-44** (5) OF (12)

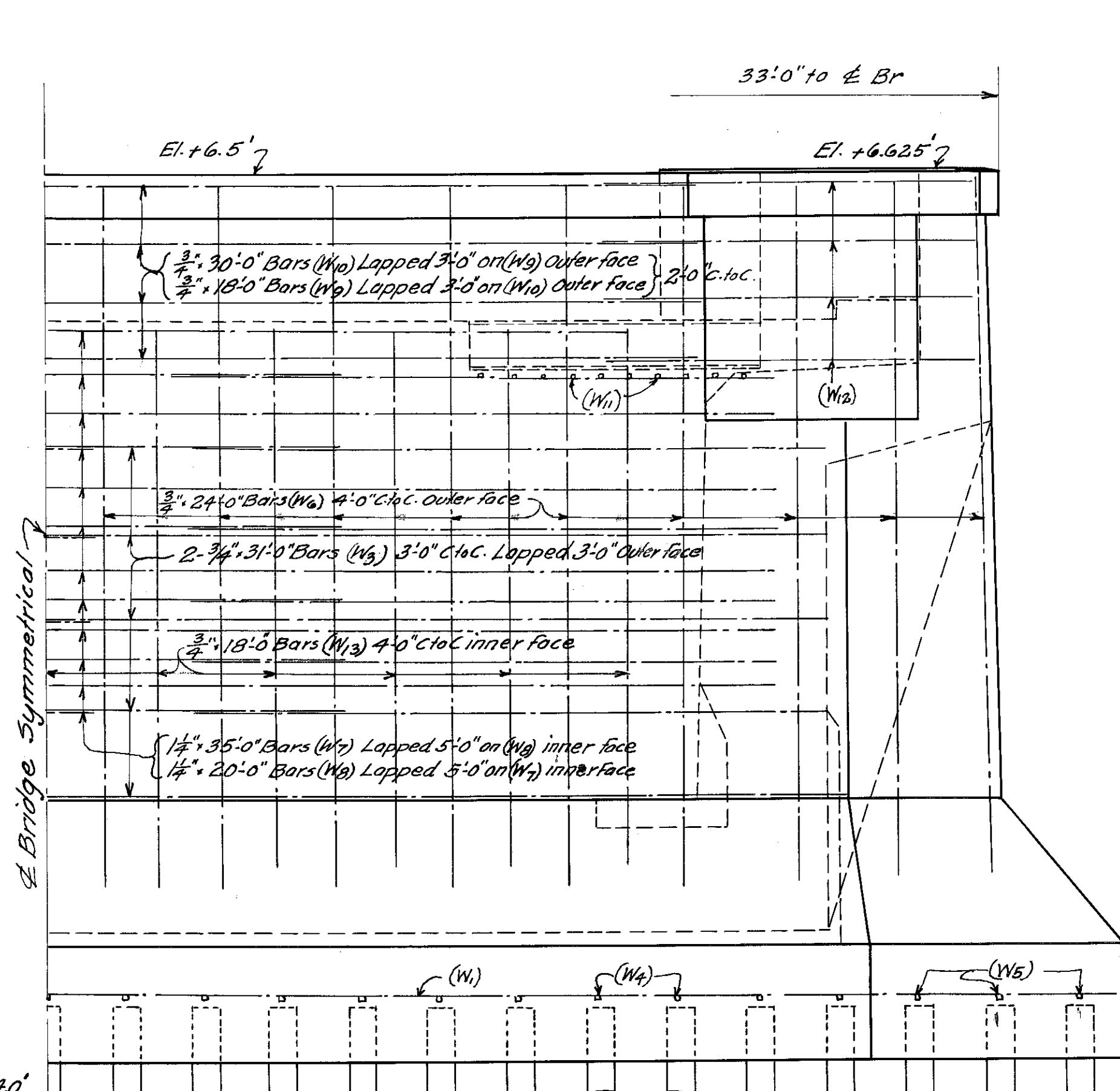
1660570045



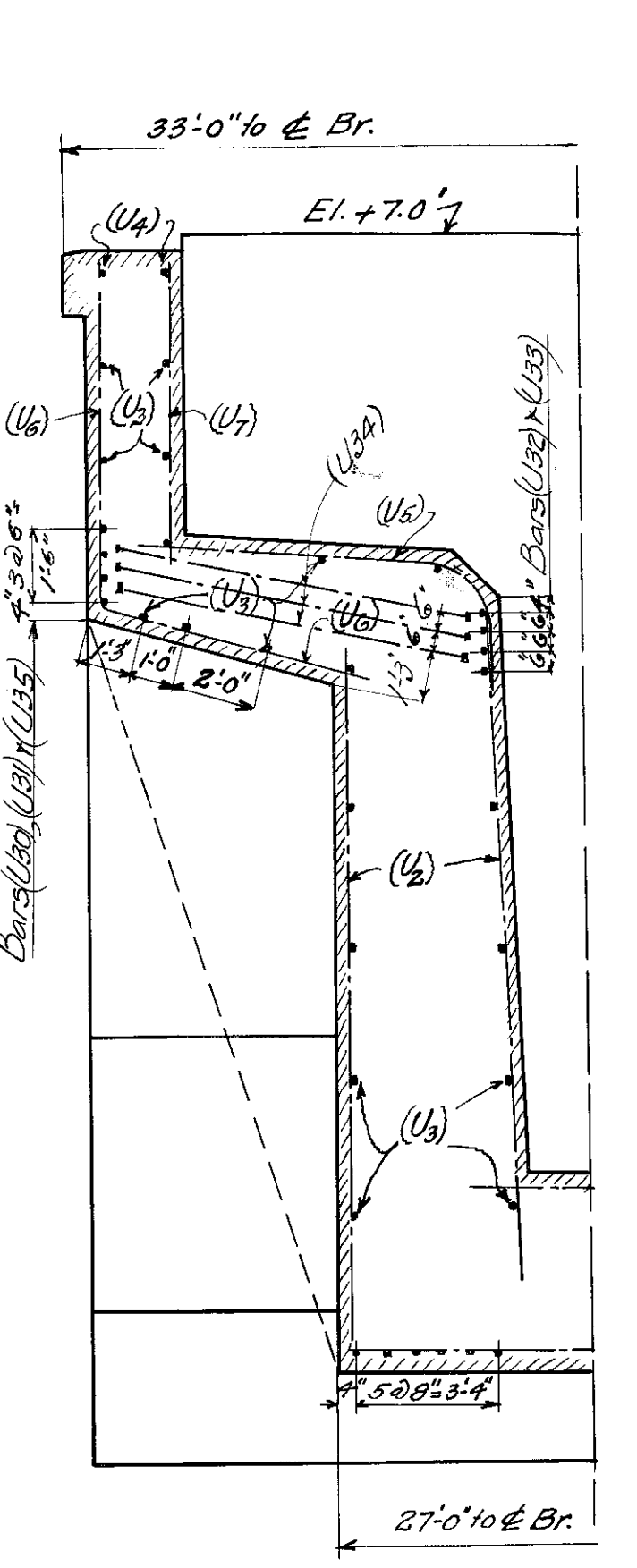
SECTION A-A



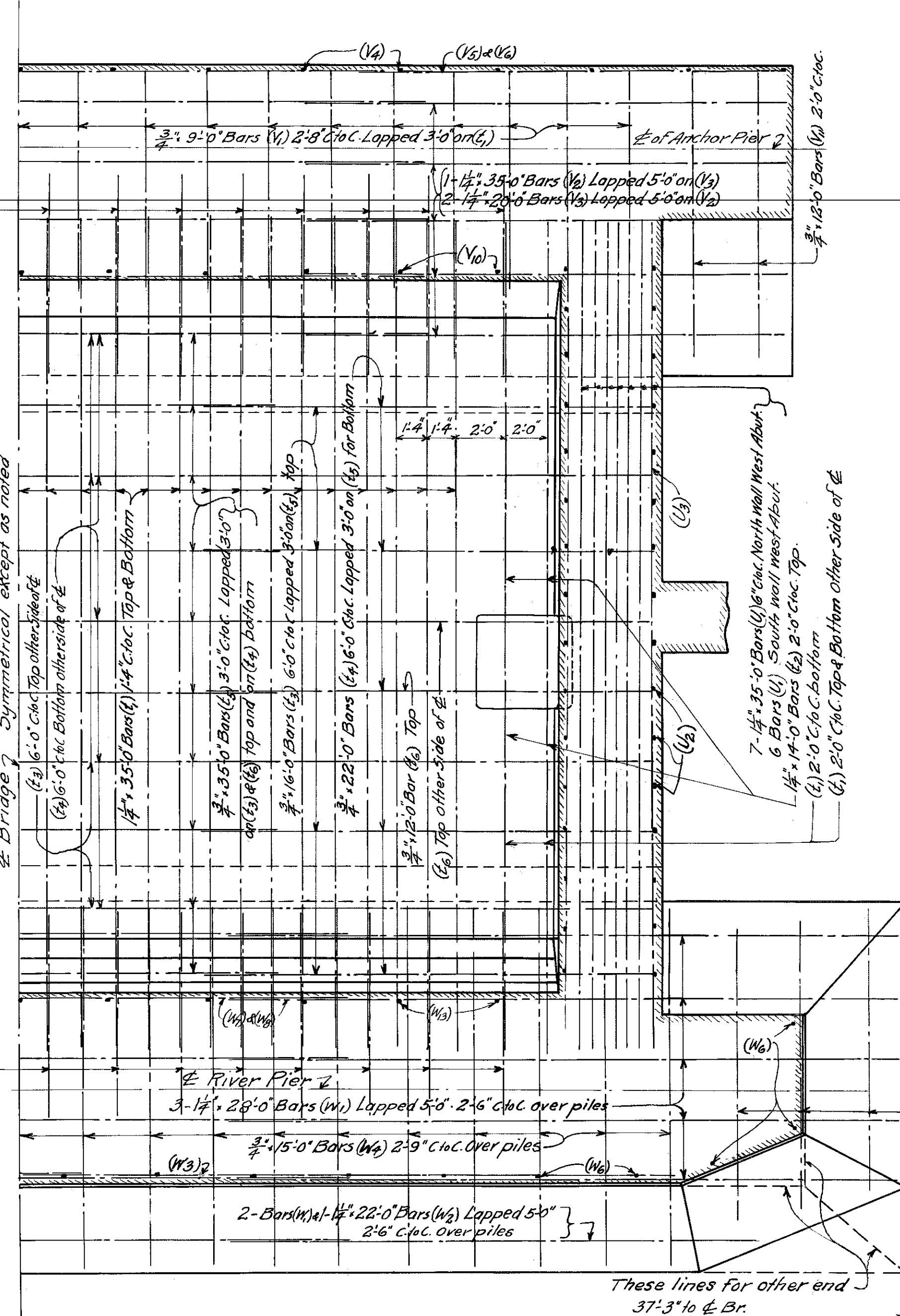
SECTION B-B



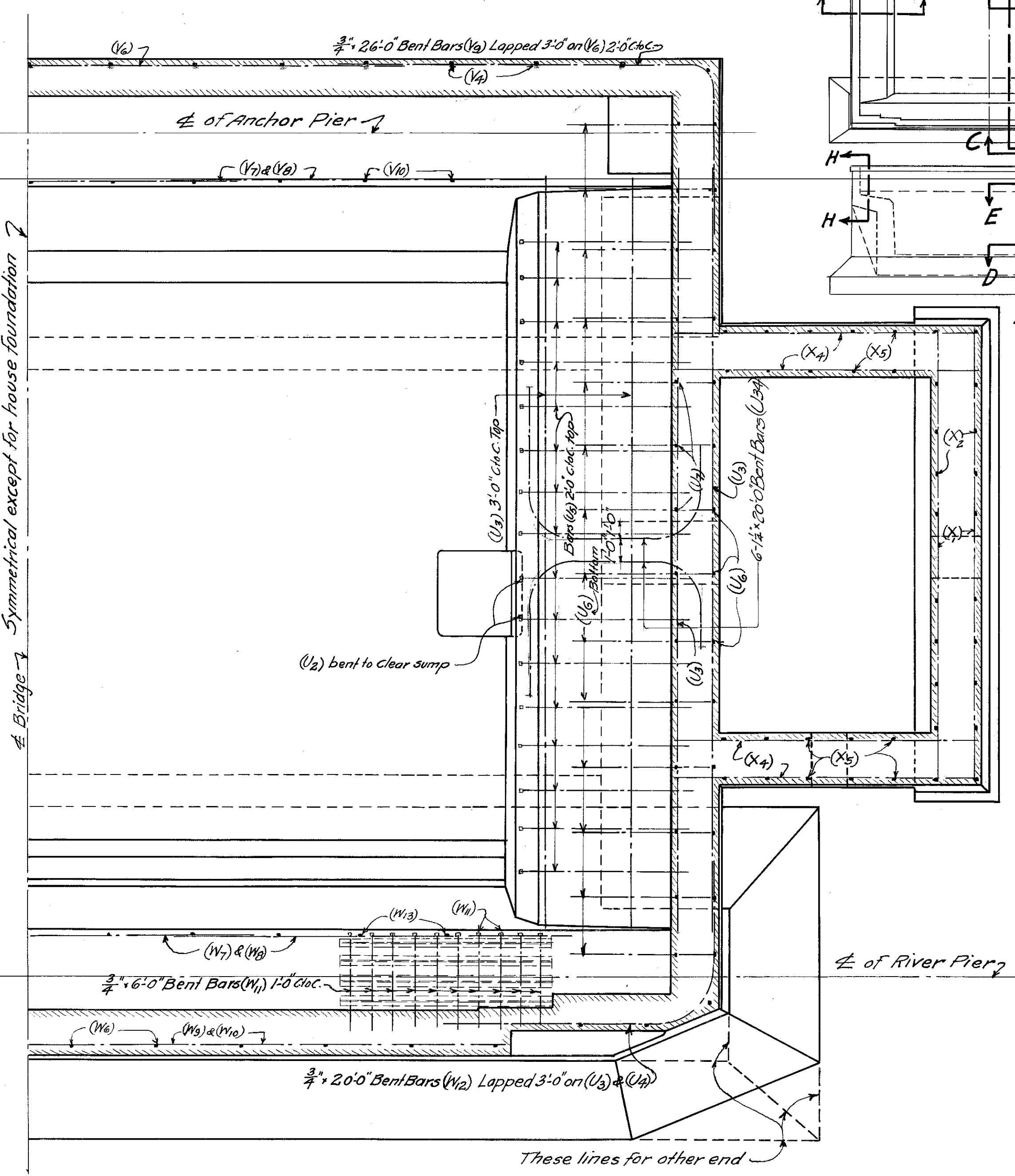
ELEVATION C-C



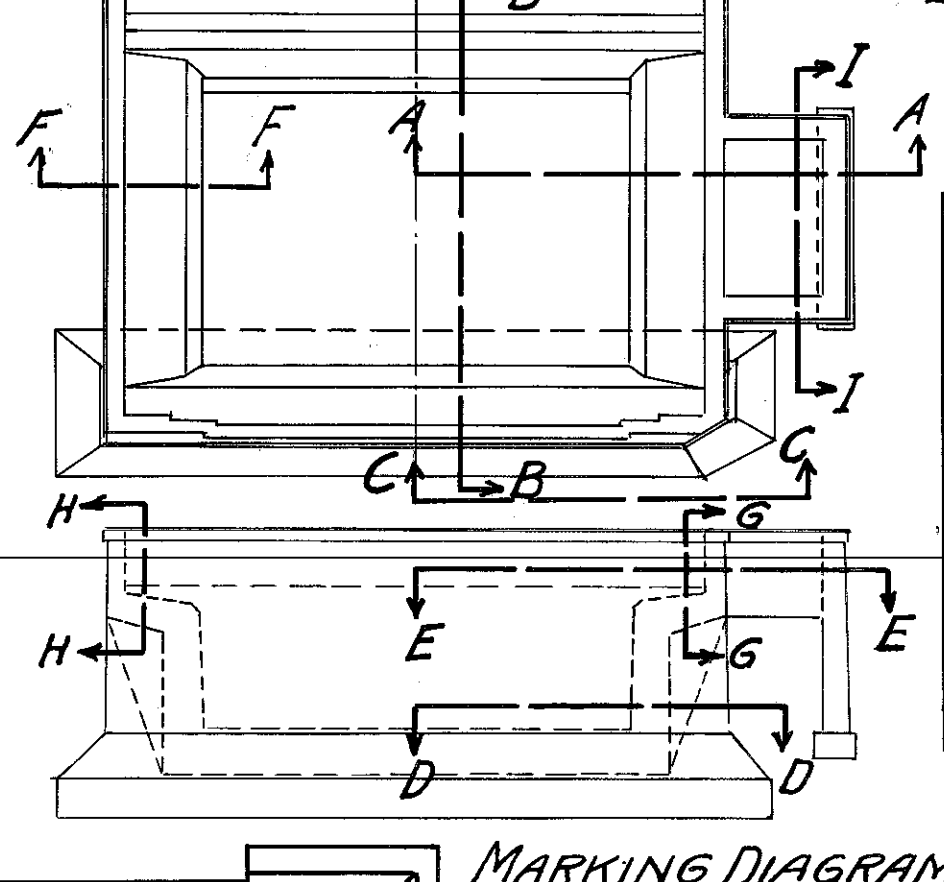
SECTION F-F



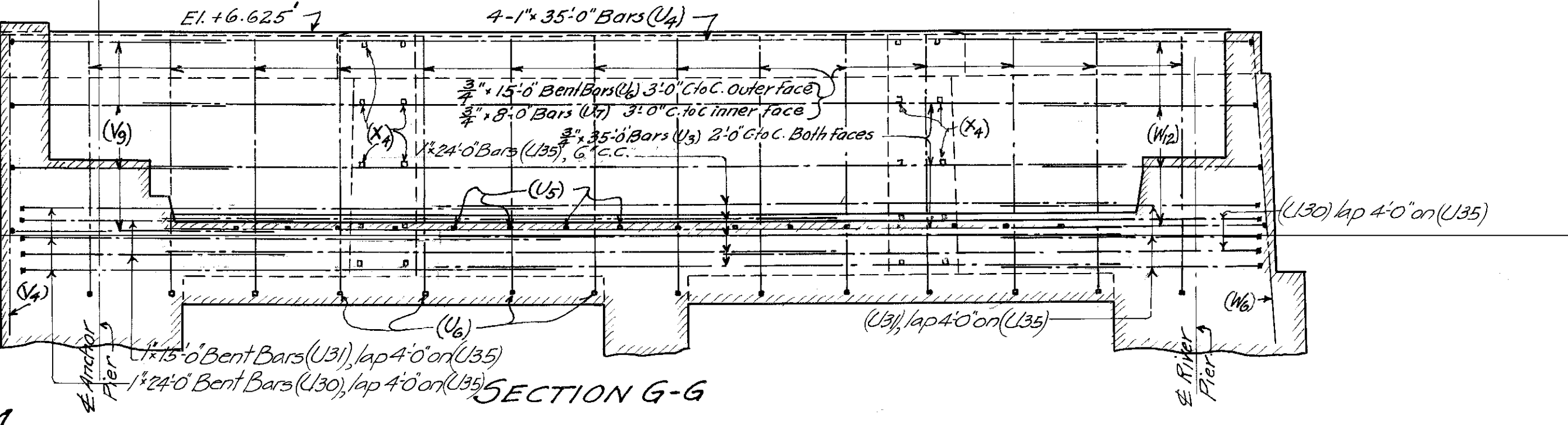
SECTION D-D



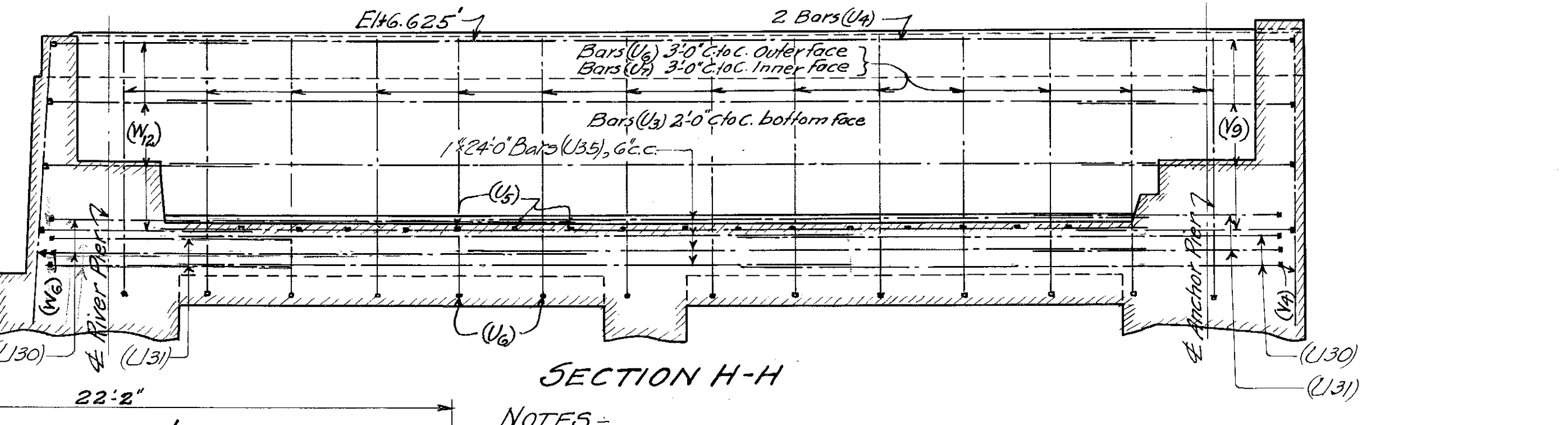
SECTION E-E



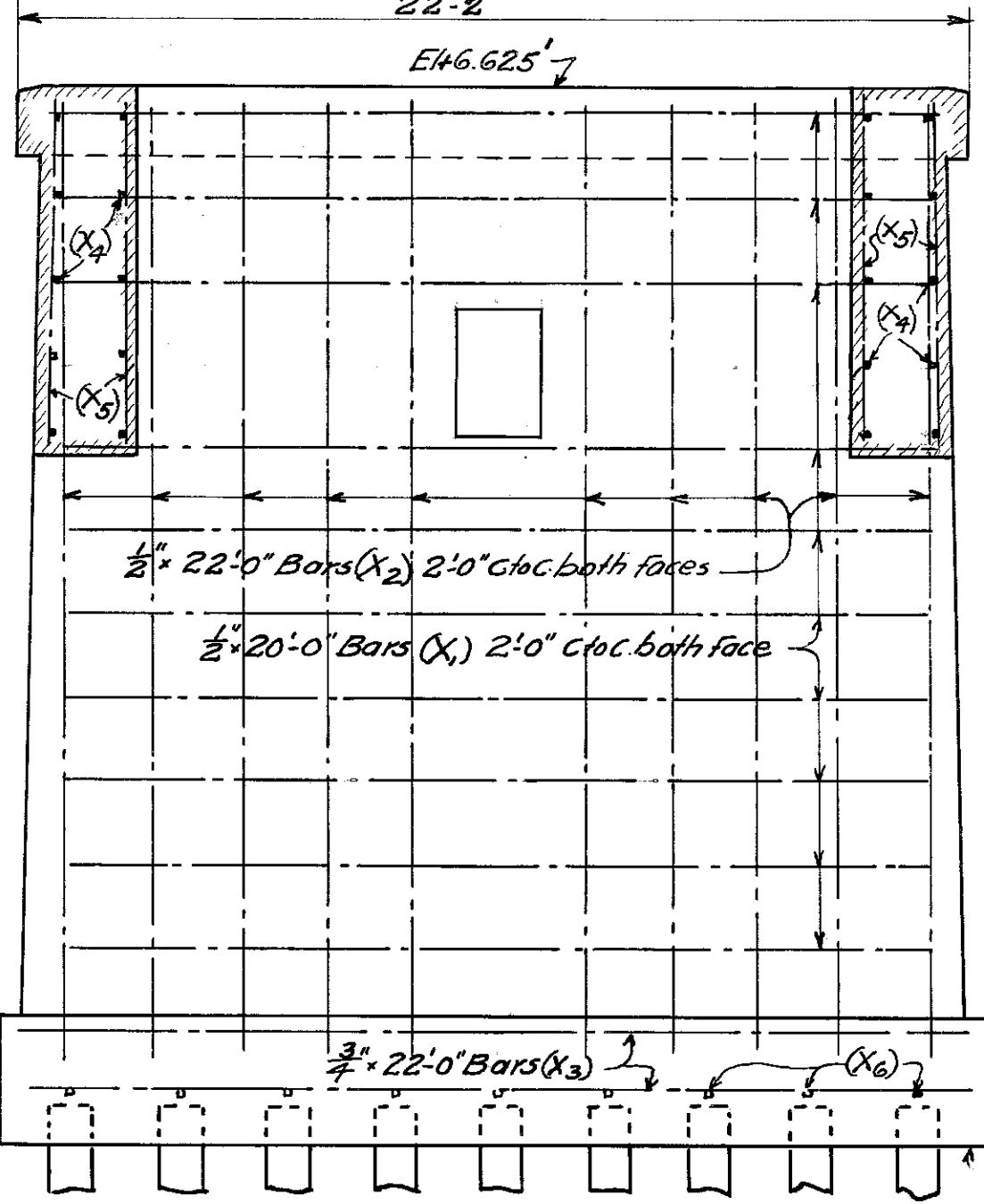
MARKING DIAGRAM



SECTION G-G



SECTION H-H



SECTION I-I

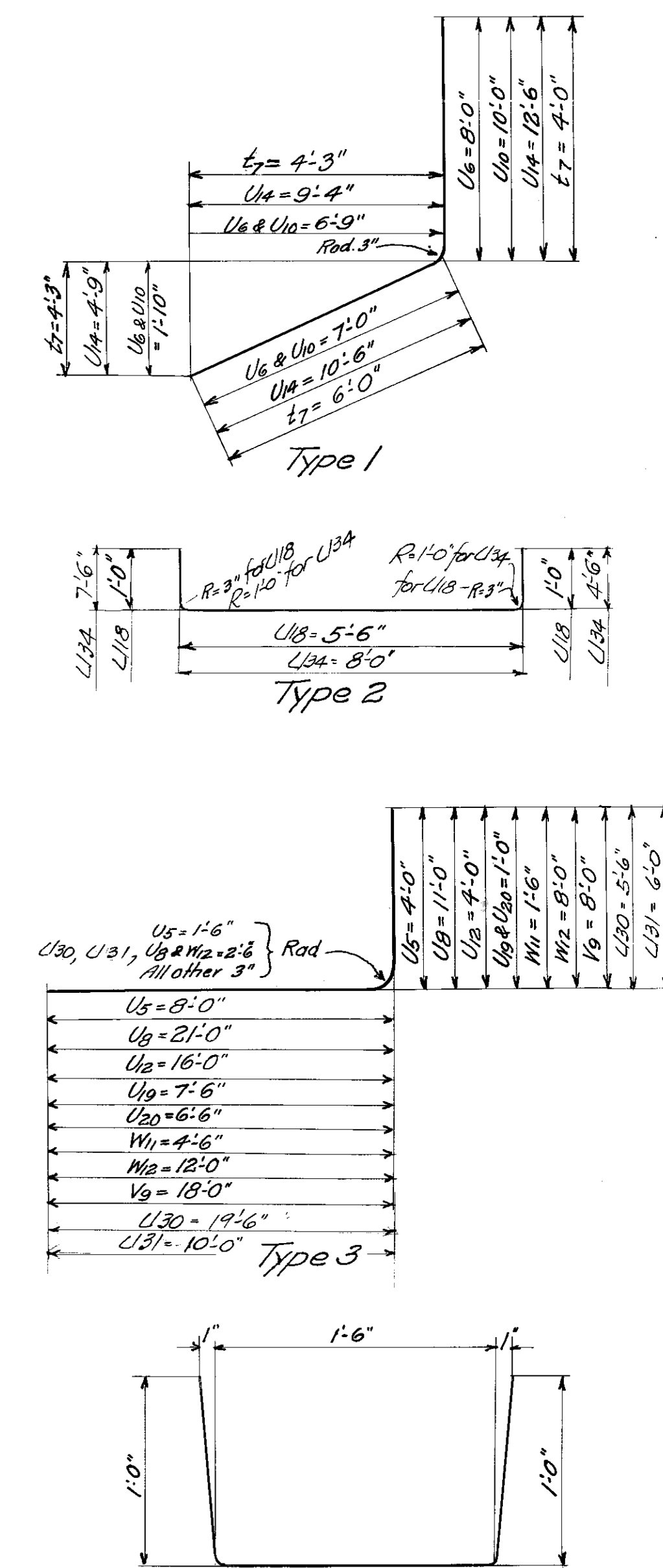
NOTES -  
 Bars shall not be placed closer to surface than 3" to the center of bar, except where shown.  
 All splices to be securely wired for bill of reinforcing. See sheet drawing No. 7 of 12 for other information see Specification.  
 All reinforcing Bars shown on this sheet to be plain Square Bars.

Corrected *Dwight E. Young* Bridge Design Engineer  
 Approved *Harold von I. Luster* Engineer of Bridge Design  
 Approved *John S. ...* Engineer of Bridges and Harbor  
 Approved *...* City Engineer  
 Approved *...* Commissioner of Public Works

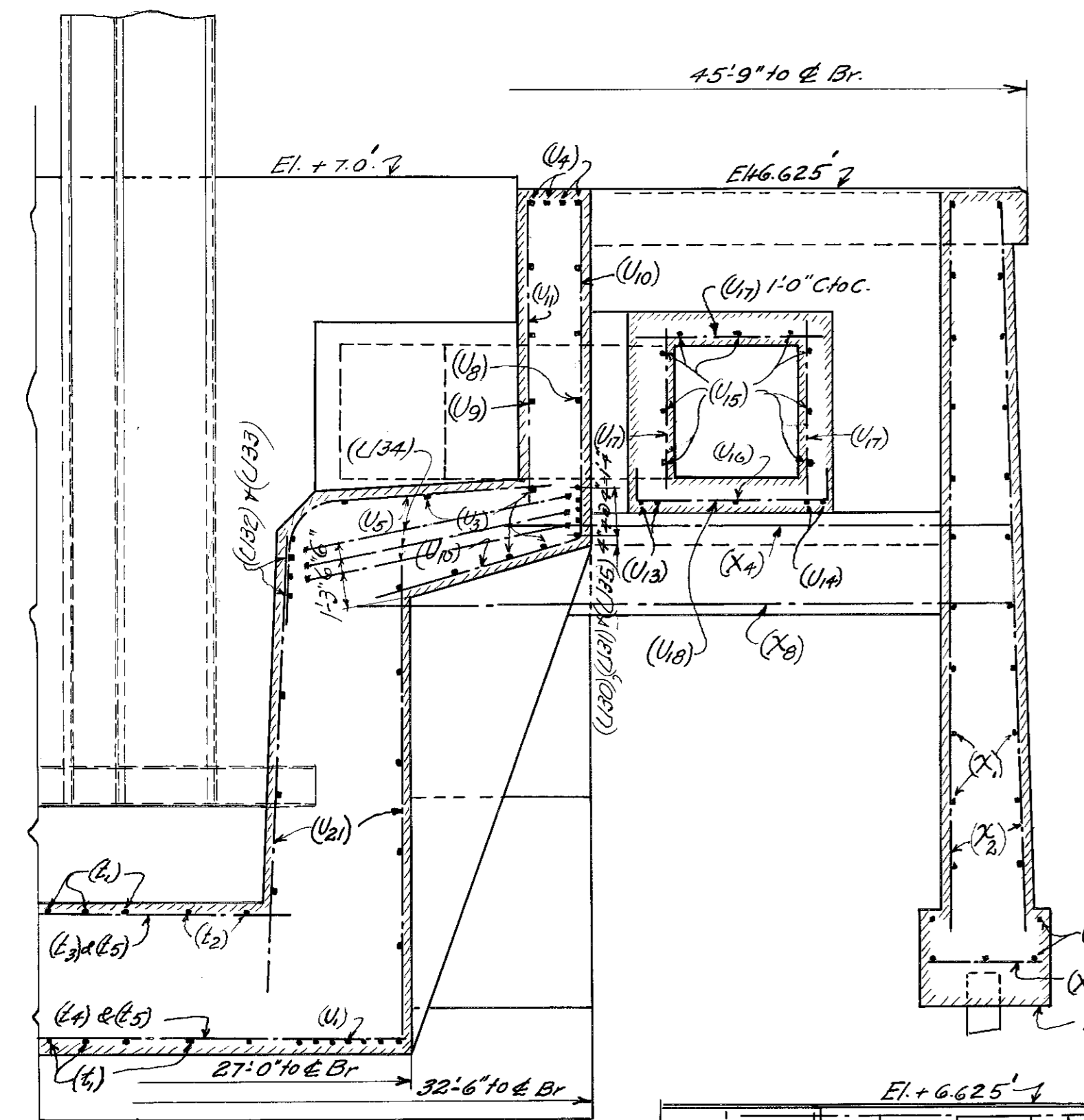
CITY OF CHICAGO  
 DEPARTMENT OF PUBLIC WORKS  
 BUREAU OF ENGINEERING  
 DIVISION OF BRIDGES AND HARBOR  
**DOUBLE LEAF TRUNNION BASCULE BRIDGE**  
 AT  
**WEBSTER AVENUE**  
 OVER  
 NORTH BRANCH OF THE CHICAGO RIVER  
 SUBSTRUCTURE  
 WEST PIERS  
 Reinforcement Bars  
 Scale: 1/4" = 1 ft.  
 April, 1914.  
 Drawing No. 825  
 Checked by *...*

BILL OF REINFORCING BARS FOR SHEETS 6 & 7 of 12

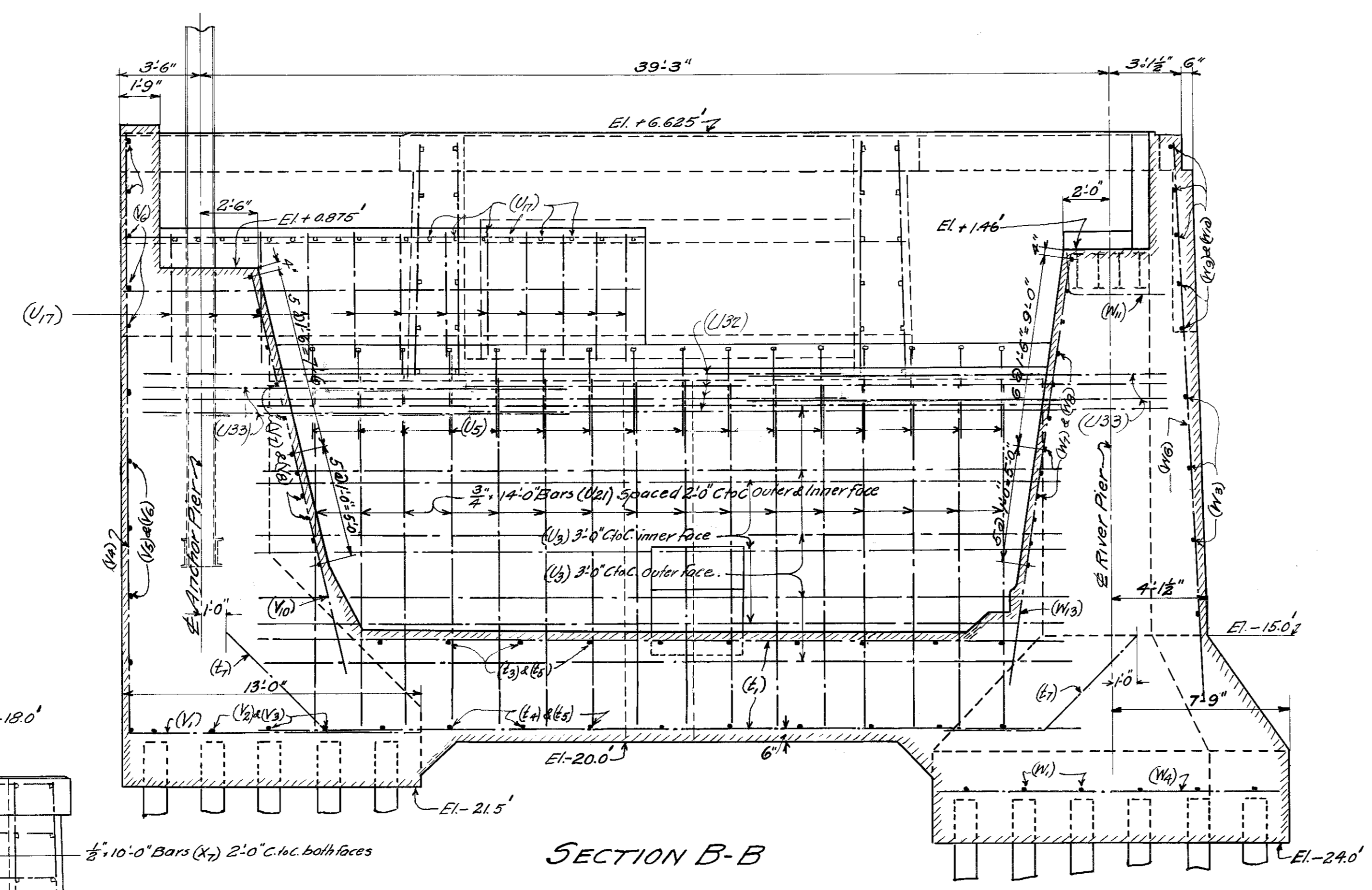
Mark	Number	Location	Size	Length	Bent/Straight	Type
L1	64	Floor Slab Horiz. Top & Bottom	1 1/2"	35'-0"	Str.	
L2	4	"	1 1/2"	14'-0"	Str.	
L3	8	"	3/4"	16'-0"	Str.	
L4	10	"	3/4"	22'-0"	Str.	
L5	20	"	3/4"	35'-0"	Str.	
L6	2	"	3/4"	12'-0"	Str.	
L7	32	"	1 1/2"	10'-0"	Bent	1
UB0	7	Side Walls, Horiz. Girders	1	24'-0"	Bent	3
UB1	9	"	1	15'-0"	Str.	3
UB2	8	"	1	30'-0"	Str.	
U1	13	Side walls of PI Horiz. Bottom	1 1/2"	35'-0"	Str.	
U2	32	"	3/4"	16'-0"	Str.	
U3	37	"	3/4"	35'-0"	Str.	
U4	6	"	1"	35'-0"	Str.	
U5	32	"	3/4"	12'-0"	Bent	3
U6	14	"	3/4"	15'-0"	Bent	1
U7	14	"	3/4"	7'-0"	Str.	
U8	1	"	3/4"	32'-0"	Bent	3
U9	12	"	3/4"	22'-0"	Str.	
U10	12	"	3/4"	17'-0"	Bent	1
U11	12	"	3/4"	9'-0"	Str.	
U12	1	"	3/4"	20'-0"	Bent	3
U13	2	"	3/4"	16'-0"	Str.	
U14	2	"	3/4"	23'-0"	Bent	1
U15	18	"	3/4"	20'-0"	Bent	Benfield
U16	1	"	3/4"	14'-0"	Str.	
U17	72	Horiz. & Vert. in Sides & Top	1/2"	5'-6"	Str.	
U18	8	"	1/2"	7'-6"	Bent	2
U19	2	"	1/2"	8'-6"	Bent	3
U20	4	"	1/2"	7'-6"	Bent	3
U21	32	Vert. in Sidewall	3/4"	14'-0"	Str.	
U22	9	Dowels for Sewer Connection	1/2"	5'-0"	Str.	
UB3	8	Side Walls, Horiz. Girders	1	18'-0"	Str.	
UB4	12	Side Wall Bracket, Top	1 1/2"	14'-0"	Bent	2
UB5	9	Side Walls, Horiz. Girders	1	24'-0"	Str.	
V1	21	Anchor Pier Horiz. Bottom Over Piles	3/4"	9'-0"	Str.	
V2	5	"	1 1/2"	35'-0"	Str.	
V3	10	"	1 1/2"	20'-0"	Str.	
V4	17	"	3/4"	26'-0"	Str.	
V5	14	"	3/4"	18'-0"	Str.	
V6	11	"	3/4"	35'-0"	Str.	
V7	11	"	1 1/2"	35'-0"	Str.	
V8	11	"	1 1/2"	20'-0"	Str.	
V9	8	"	3/4"	26'-0"	Bent	3
V10	11	"	3/4"	18'-0"	Str.	
W1	17	River Pier Horiz. Bottom Over Piles	1 1/2"	28'-0"	Str.	
W2	1	"	1 1/2"	22'-0"	Str.	
W3	10	"	3/4"	31'-0"	Str.	
W4	24	"	3/4"	15'-0"	Str.	
W5	3	"	3/4"	12'-0"	Str.	
W6	20	"	3/4"	24'-0"	Str.	
W7	12	"	1 1/2"	35'-0"	Str.	
W8	12	"	1 1/2"	20'-0"	Str.	
W9	4	"	3/4"	18'-0"	Str.	
W10	4	"	3/4"	30'-0"	Str.	
W11	20	"	3/4"	6'-0"	Bent	3
W12	8	"	3/4"	20'-0"	Bent	3
W13	11	"	3/4"	18'-0"	Str.	
X1	20	House Wall Horiz. Outer/Inner Face	1/2"	20'-0"	Str.	
X2	20	"	1/2"	22'-0"	Str.	
X3	5	"	3/4"	22'-0"	Str.	
X4	22	"	1/2"	14'-6"	Str.	
X5	20	"	1/2"	8'-0"	Str.	
X6	9	"	3/4"	3'-6"	Str.	
X7	18	"	1/2"	10'-0"	Str.	
X8	4	"	3/4"	20'-0"	Str.	
X9	2	"	3/4"	16'-0"	Str.	
X10	6	"	1/2"	4'-6"	Str.	
37	37	Ladder Rungs	3/4"	3'-6"	Bent	See Detail



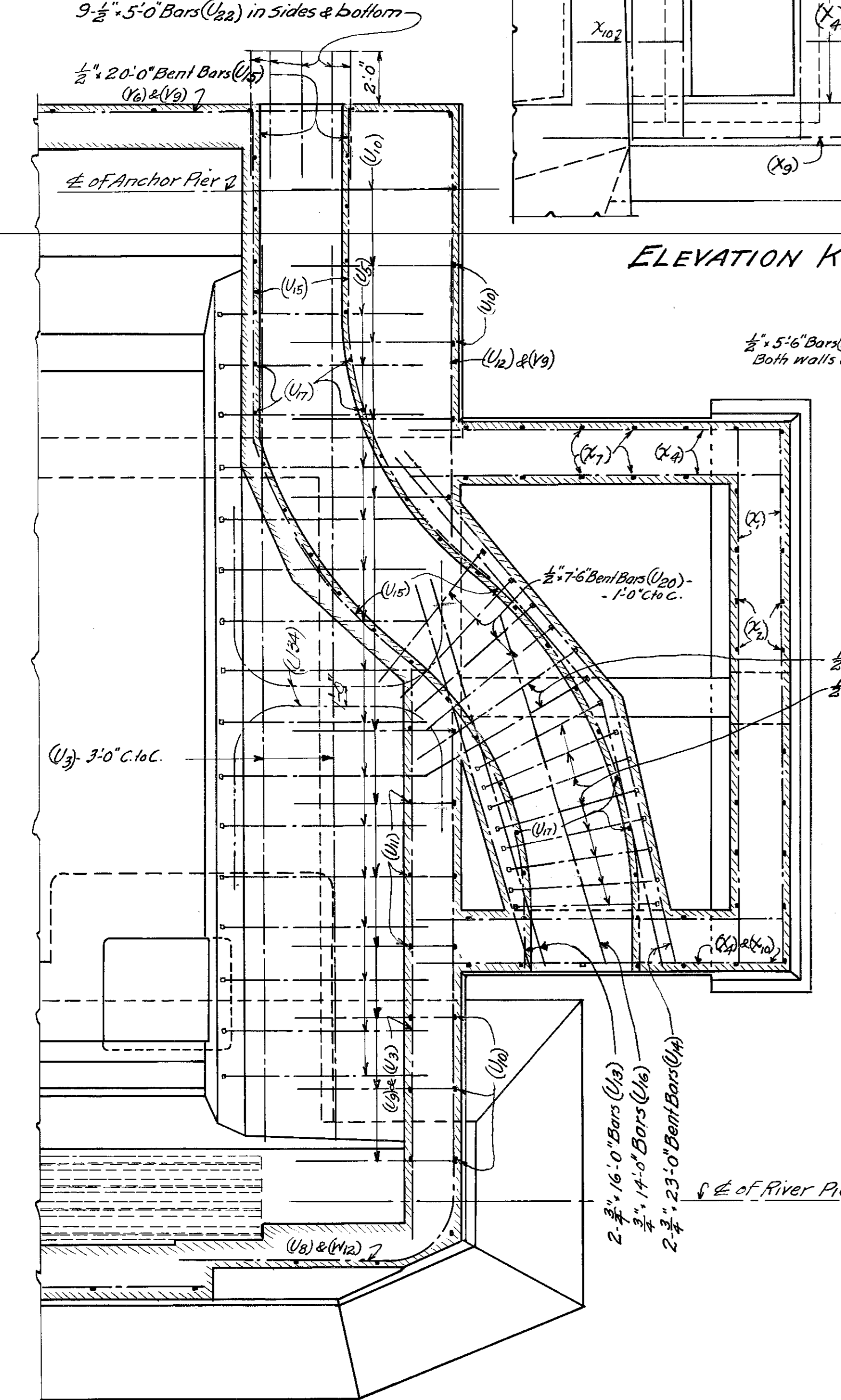
Ladder Rungs



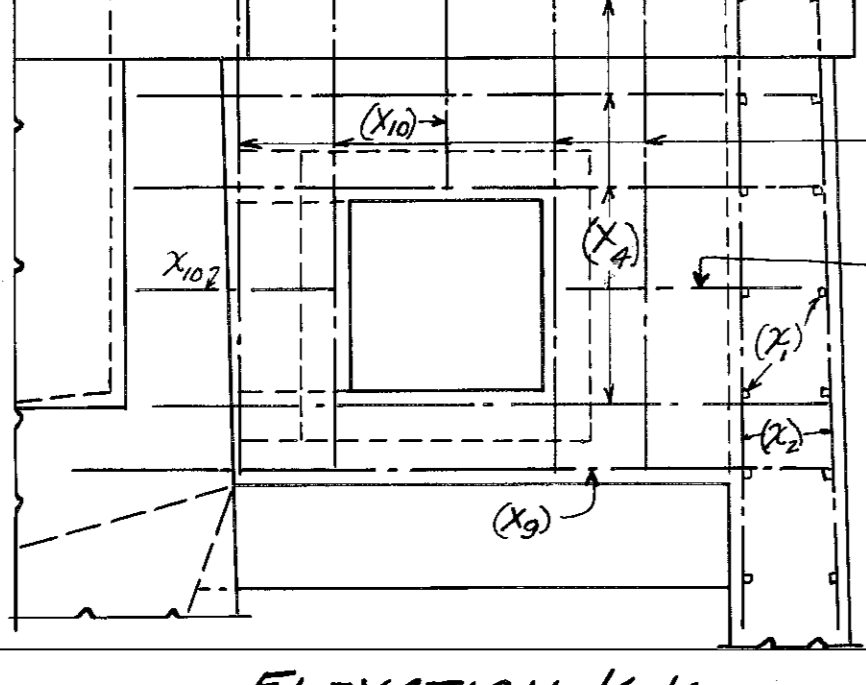
SECTION J-J  
Details not shown Same as for West Pier



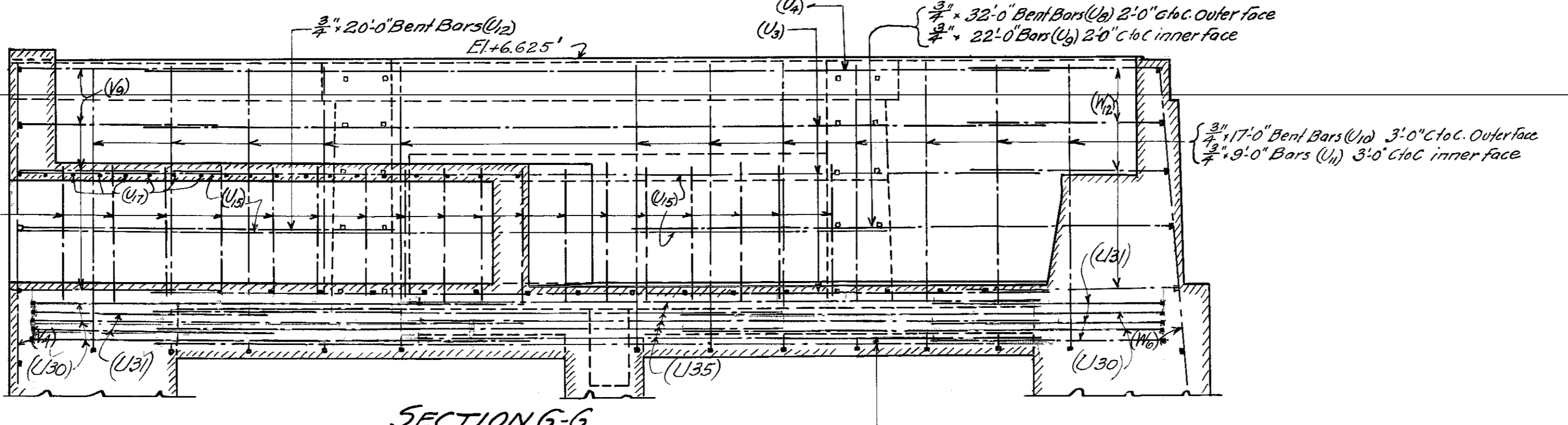
SECTION B-B



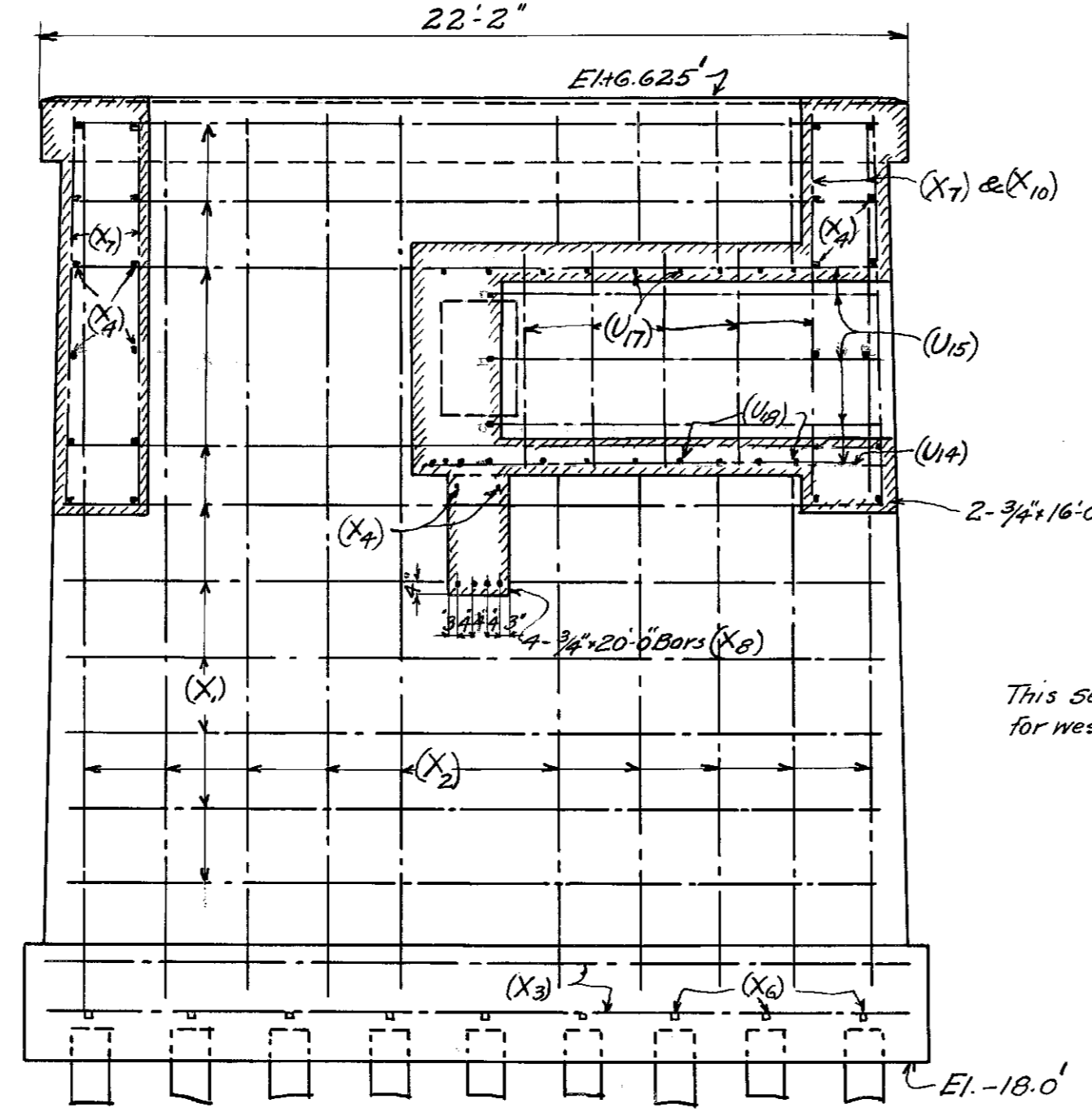
SECTION E-E  
Details not shown Same as for West Pier



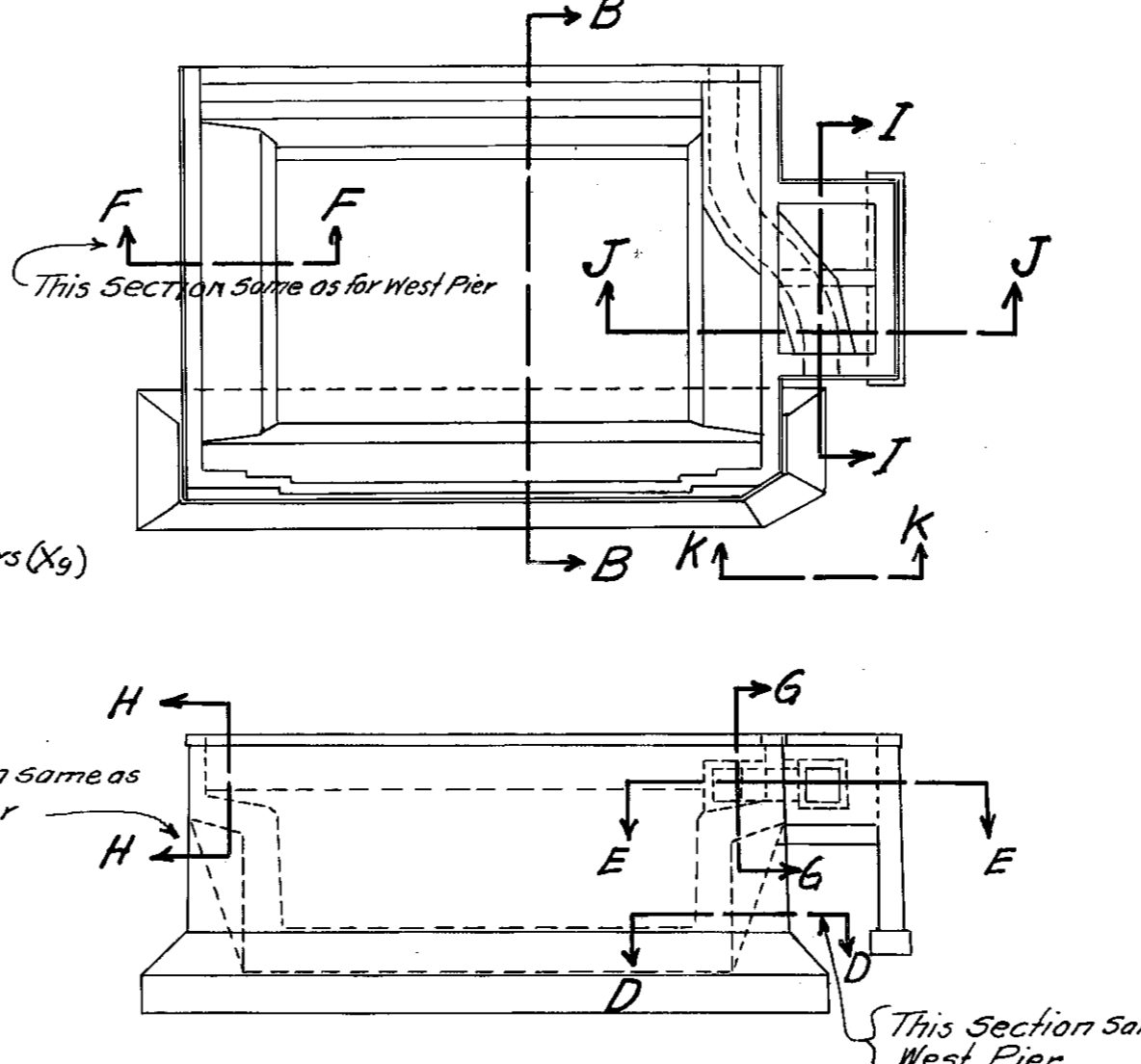
ELEVATION K-K



SECTION G-G



SECTION I-I



MARKING DIAGRAM

NOTES

Bars shall not be placed closer to surface than 3" to the center of bar except where shown.  
All splices to be securely wired.  
For other information see specification.  
All reinforcing bars shown on this sheet to be plain square bars.

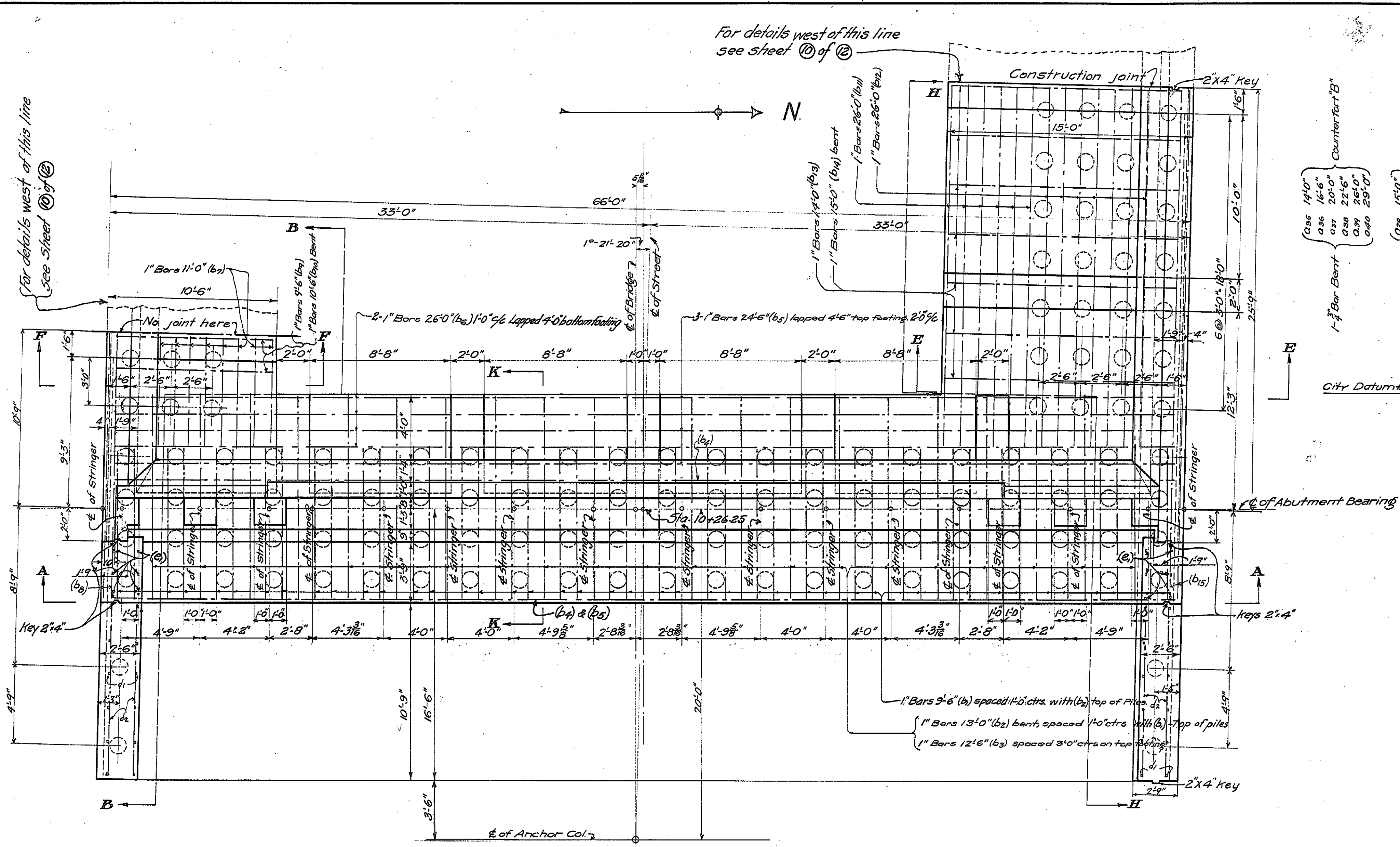
Corrected: Hugh B. Young  
Approved: Alexander von Bauer  
Approved: John G. P...  
Approved: ...

CITY OF CHICAGO  
DEPARTMENT OF PUBLIC WORKS  
BUREAU OF ENGINEERING  
DIVISION OF BRIDGES AND HARBOR

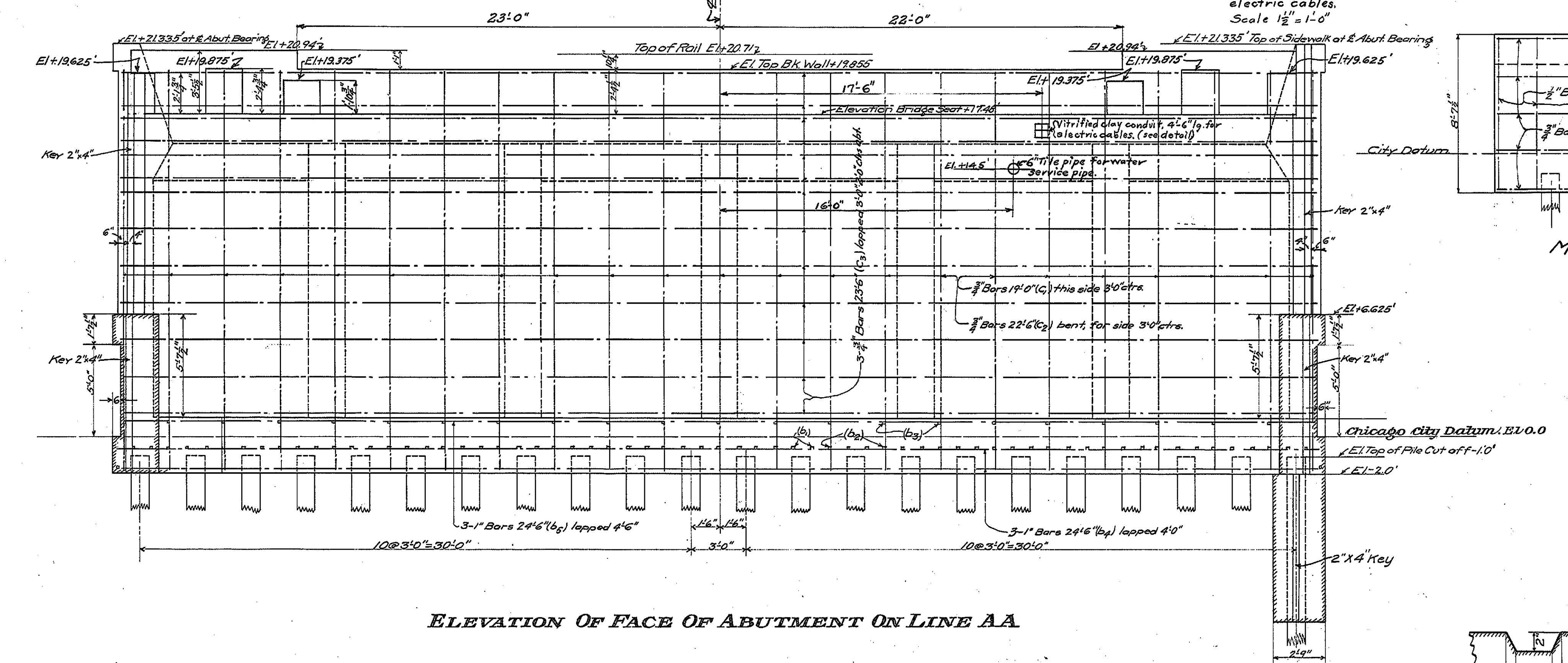
**DOUBLE LEAF TRUNNION BASCULE BRIDGE**  
AT  
**WEBSTER AVENUE**  
OVER  
NORTH BRANCH OF THE CHICAGO RIVER  
SUBSTRUCTURE  
EAST PIERS

Reinforcement Bars & Bar Tables  
Scale: 1/4" = 1 ft. April, 1914.

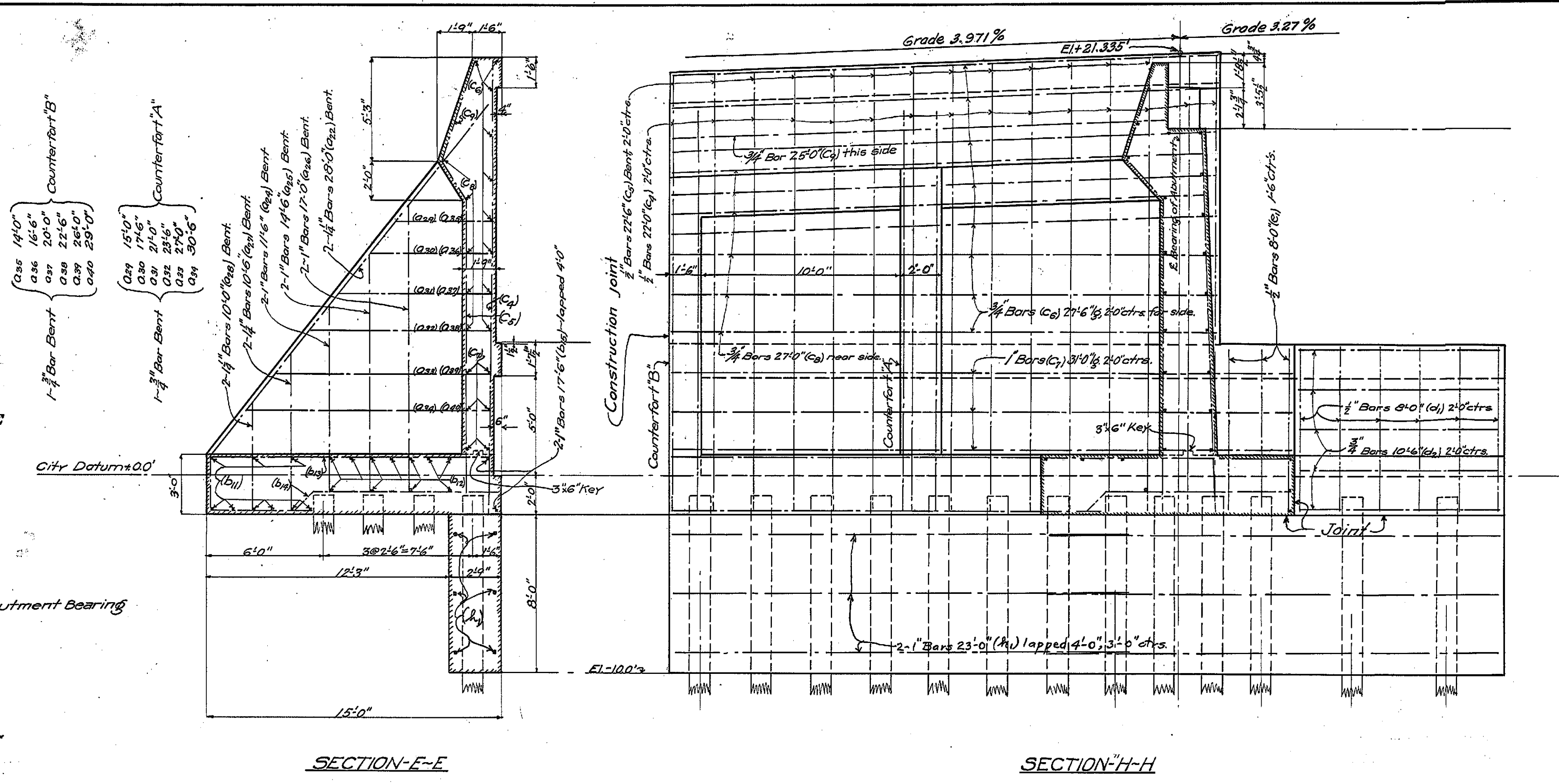
Drawn by M.A.D.  
Traced by M.A.D.  
Checked by G.M.N.  
Drawing No. 826  
FILE No. 11-6A-46



PLAN OF WEST ABUTMENT.

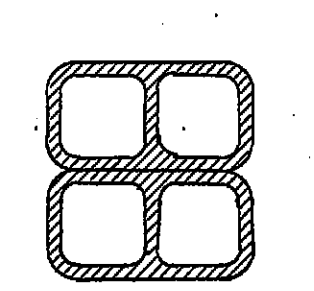


ELEVATION OF FACE OF ABUTMENT ON LINE AA.

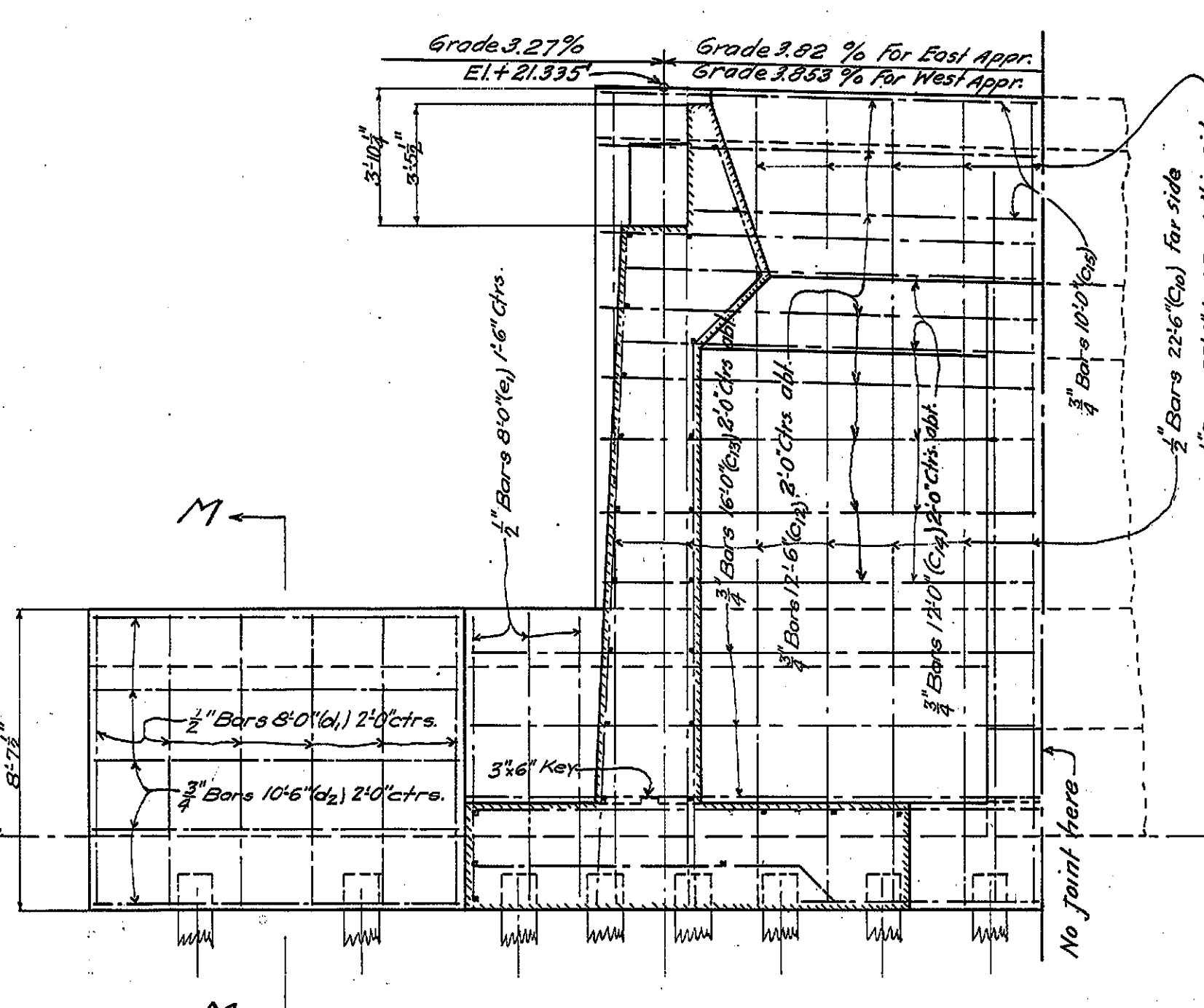


SECTION E-E

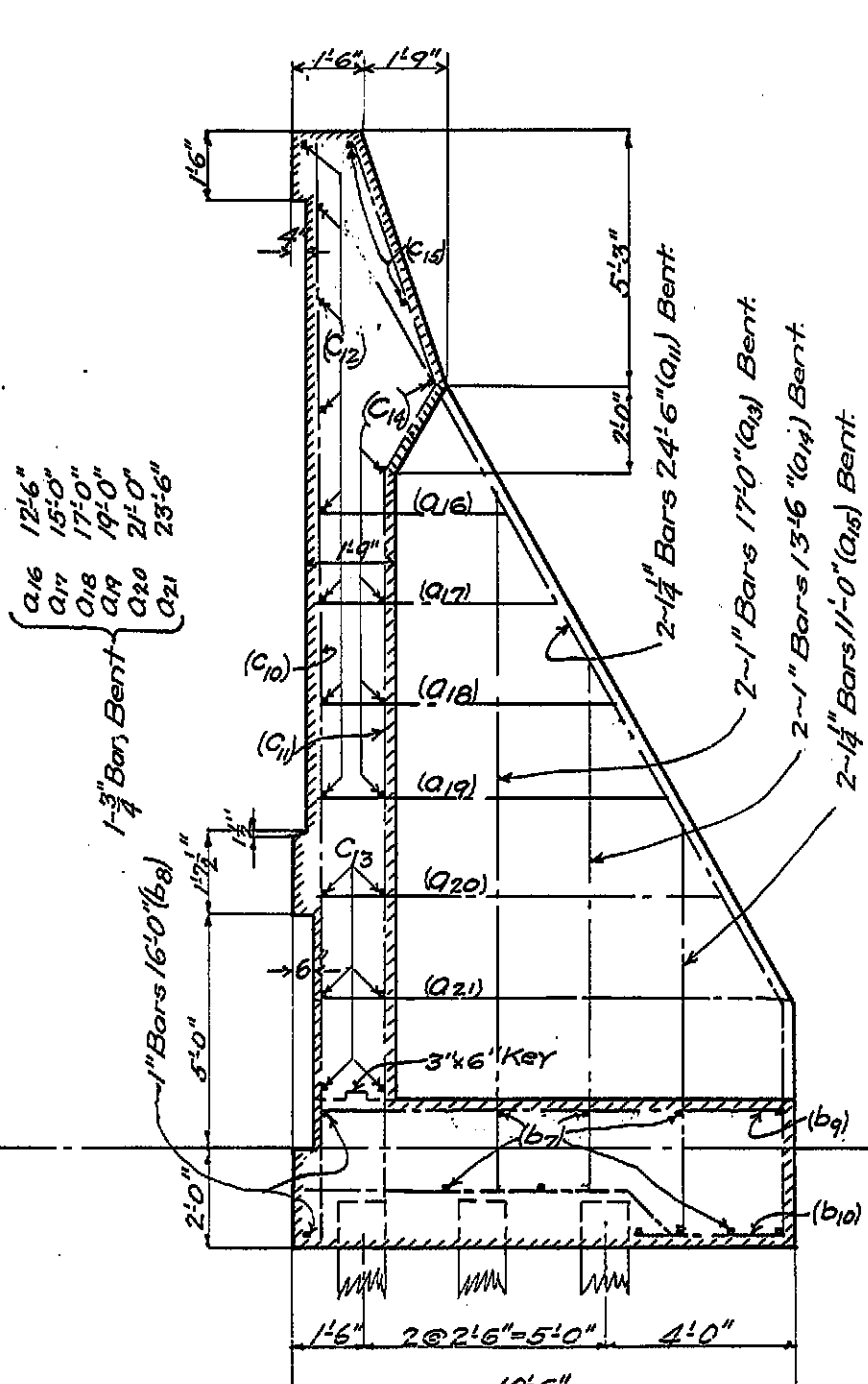
SECTION H-H



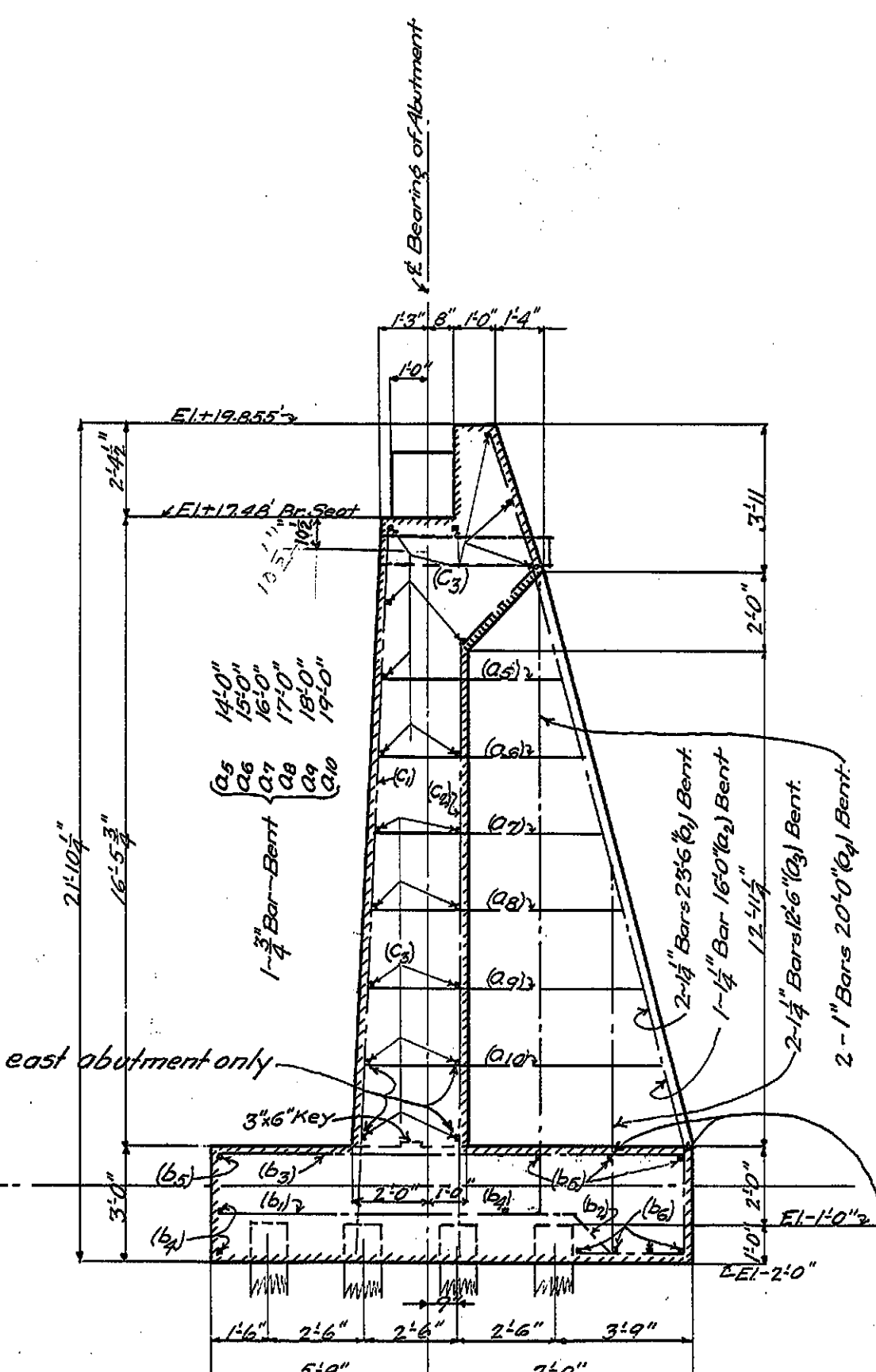
Detail of conduit for electric cables. Scale 1/2" = 1'-0"



SECTION B-B



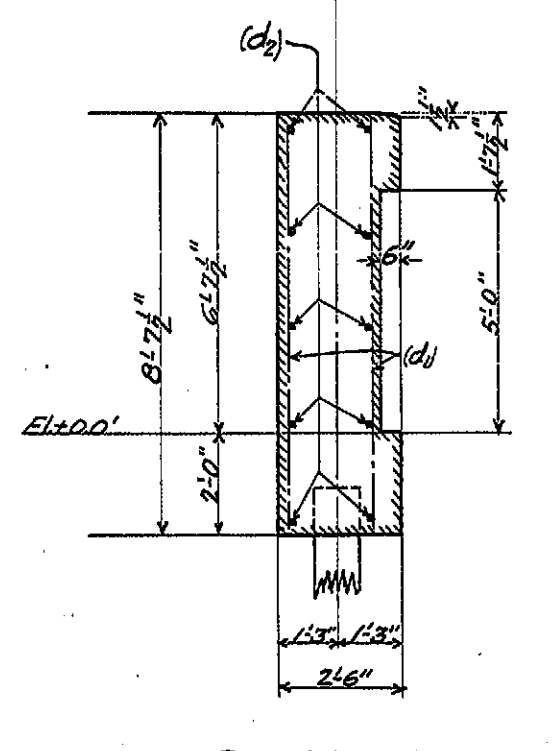
SECTION F-F



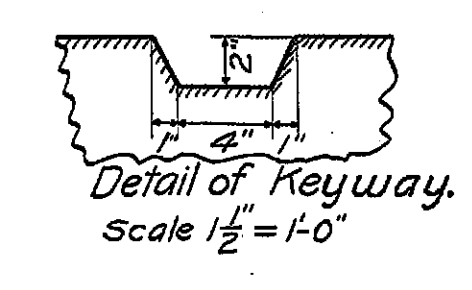
SECTION K-K (East abutment only)

Notes

For material, workmanship, etc., see specifications. No joints will be allowed in abutment, and all walls shall be constructed monolithic therewith back to Sta. 9+93.72. Portion of south tail wall not shown on this sheet will be found on sheet (2) of (2). All bars to be plain square bars. Sections BB, FF, KK and MM are for east and west abutments. All other views and sections are for west abutment only. For bill of material see sheet (3) of (2).



SECTION M-M



Detail of Keyway. Scale 1/2" = 1'-0"

Corrected by *Hugh C. Young*  
 Approved by *James J. Baker*  
 Approved by *John J. ...*  
 Approved by *...*

CITY OF CHICAGO  
 DEPARTMENT OF PUBLIC WORKS  
 BUREAU OF ENGINEERING  
 DIVISION OF BRIDGES AND HARBOR

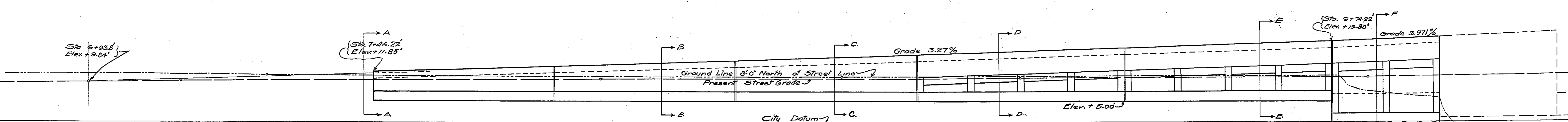
**DOUBLE LEAF TRUNNION BASCULE BRIDGE**  
 AT  
**WEBSTER AVENUE**  
 OVER  
 NORTH BRANCH OF THE CHICAGO RIVER  
 SUBSTRUCTURE  
 WEST ABUTMENT  
 Masonry & Reinforcement Bars  
 Scale: 1/8" = 1'-0" April, 1914.

Drawn by *...*  
 Traced by *...*  
 Checked by *...*

Drawing No. **827**  
 FILE NO. **11-6A-47** (8) OF (12)

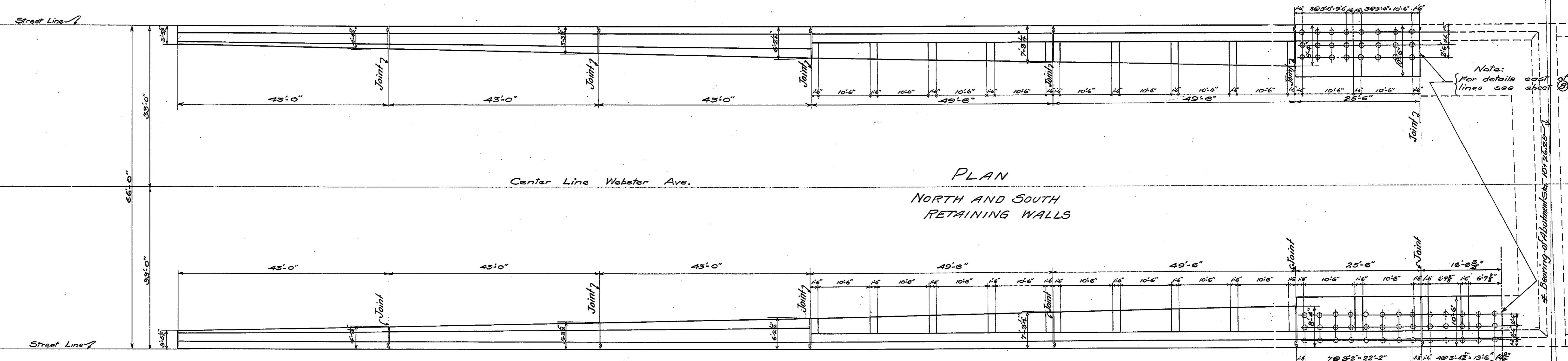
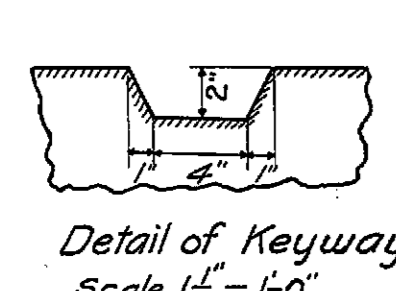






Note  
North and south retaining walls are  
Symmetrical about  $\pm$  of Street between  
Sta. 9+74.22 and Low end.

ELEVATION NORTH RETAINING WALL

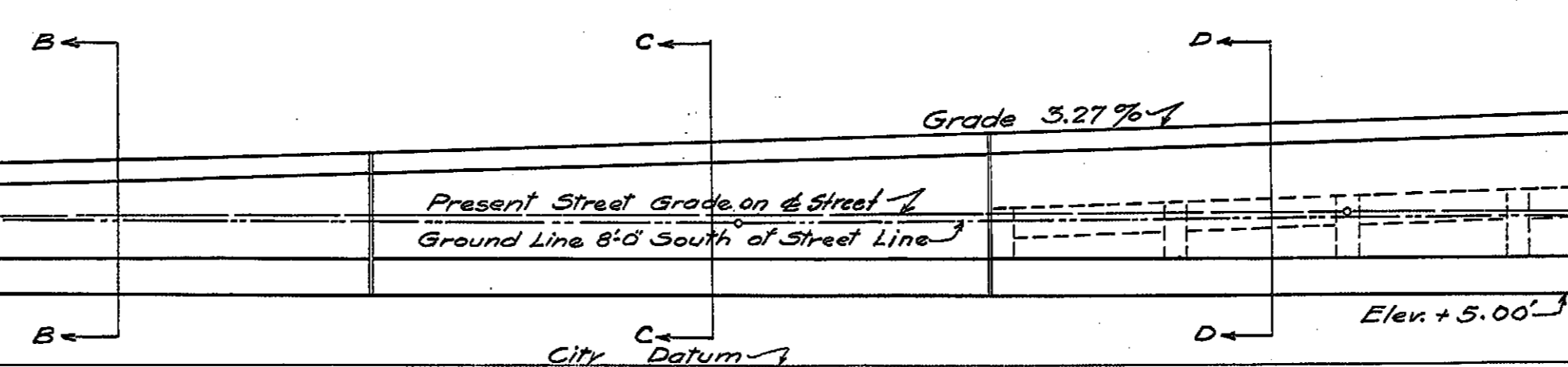


Lowest Point of R.R. Girders El. +20.74'  
Subway C. & N.W.Ry.

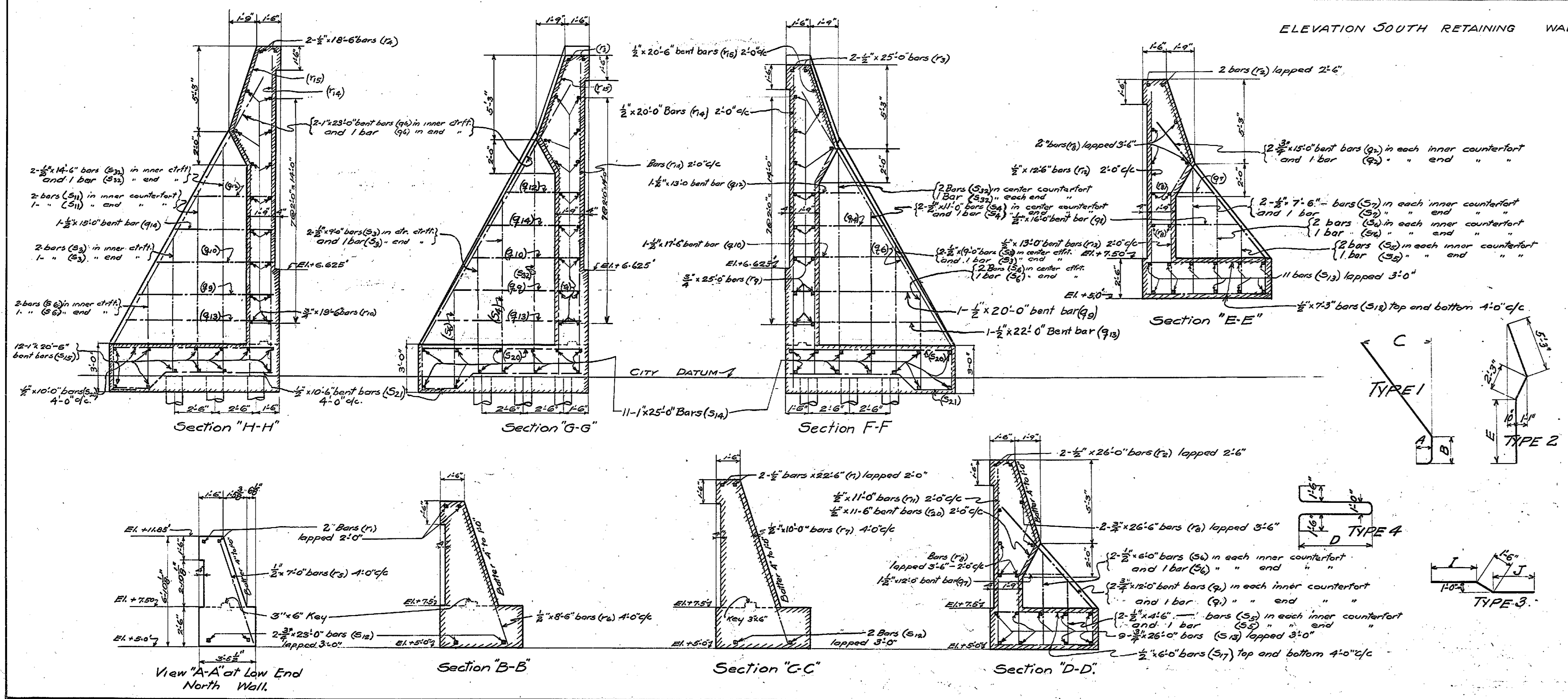
Sta. 6+93.8  
Elev. +9.84'

Sta. 7+46.22  
Elev. +11.85'

Sta. 9+74.22  
Elev. +19.30'



ELEVATION SOUTH RETAINING WALL



Counterfort	Number	Mark	Size	Length	LOCATION		Type	Dimension of Bent Bars
					North Wall	South Wall		
16	9	24	12-0"					A-19" B-21" C-21 1/2"
16	12	24	15-0"					A-19" B-21" C-21 1/2"
8	8 1/2	13-0"						D-5 1/2"
8	10 1/2	13-0"						D-5 1/2"
17	12 1/2	22-0"						A-19" B-21" C-21 1/2"
20	21	12-0"						D-5 1/2"
10	24	16-0"						D-5 1/2"
8	24	22-0"						D-5 1/2"
8	30	17-6"						D-6 1/2"
24	1	24	22-18"					E-5 1/2"
16	12	24	24-0"					E-5 1/2"
4	13	25-0"						E-5 1/2"
2	14	28-0"						E-5 1/2"
22	16	20-0"						E-5 1/2"
22	17	20-0"						E-5 1/2"
36	18	24-6"						E-5 1/2"
31	18	24-0"						E-5 1/2"
11	19	24-0"						E-5 1/2"
40	19	11-0"						E-5 1/2"
30	19	12-6"						E-5 1/2"
30	19	12-6"						E-5 1/2"
32	19	24-0"						E-5 1/2"
35	19	20-6"						E-5 1/2"
50	50	11-6"						E-4-0"
11	32	12	31-0"					I-16" J-2-6"
11	32	12	11-0"					I-16" J-2-6"
32	32	12	4-6"					I-16" J-2-6"
43	32	12	6-0"					I-16" J-2-6"
16	32	12	14-6"					I-16" J-2-6"
3	32	12	12-6"					I-16" J-2-6"
22	32	12	23-0"					I-16" J-2-6"
20	32	12	25-0"					I-16" J-2-6"
32	32	12	25-0"					I-16" J-2-6"
12	32	12	20-6"					I-16" J-2-6"
32	32	12	6-0"					I-16" J-2-6"
32	32	12	7-9"					I-16" J-2-6"
32	32	12	9-0"					I-16" J-2-6"
19	32	12	10-6"					I-16" J-2-6"

Notes:  
For material Workmanship, etc., see specifications.  
Joints to be made where indicated by pouring the wall in alternate sections and placing paper against the face of the joints before placing the concrete in the intermediate sections. Sections between adjacent joints shall be poured continuously without a stop.  
All bars to be plain square bars.  
Reinforcement shown in the various cross sections is for that portion of the wall between the joints adjacent to the section.

Approved: *[Signature]*  
Approved: *[Signature]*  
Approved: *[Signature]*  
Approved: *[Signature]*

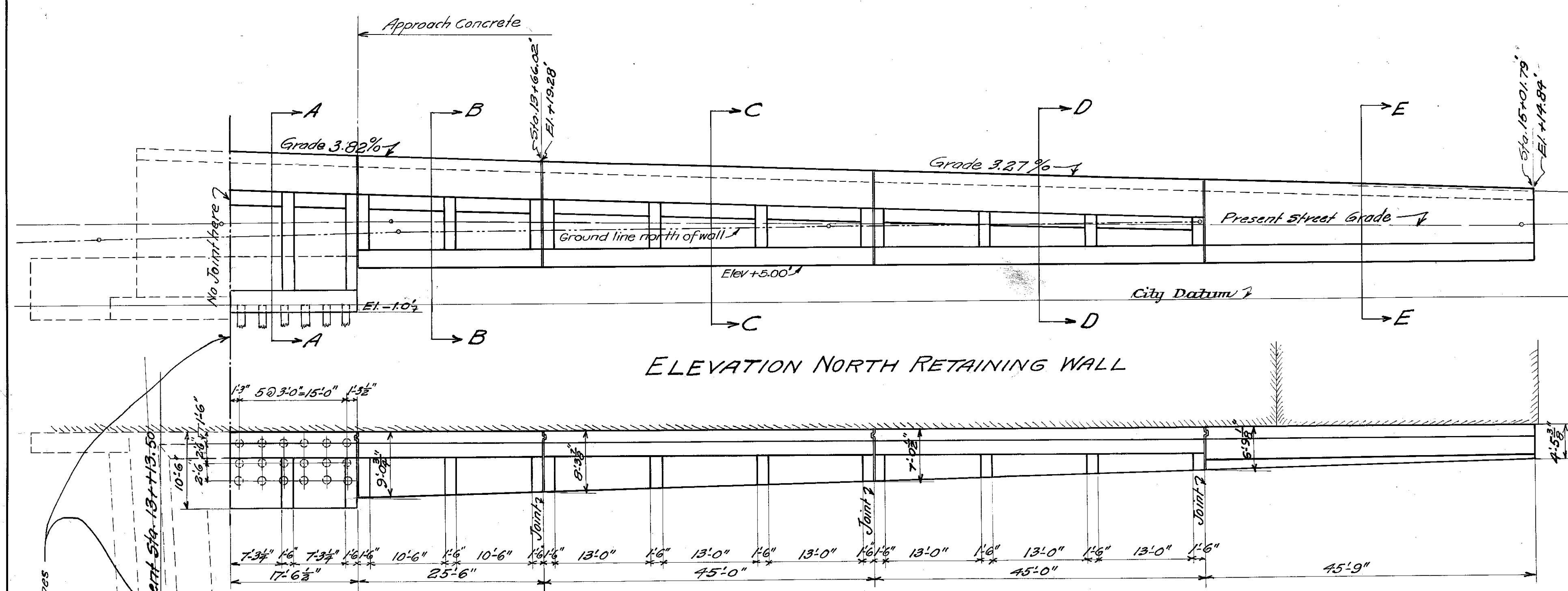
CITY OF CHICAGO  
DEPARTMENT OF PUBLIC WORKS  
BUREAU OF ENGINEERING  
DIVISION OF BRIDGES AND HARBOR

**DOUBLE LEAF TRUNNION BASCULE BRIDGE  
AT  
WEBSTER AVENUE  
OVER  
NORTH BRANCH OF THE CHICAGO RIVER  
SUBSTRUCTURE  
WEST APPROACH  
Retaining Wall Details & Reinforcement Bars**

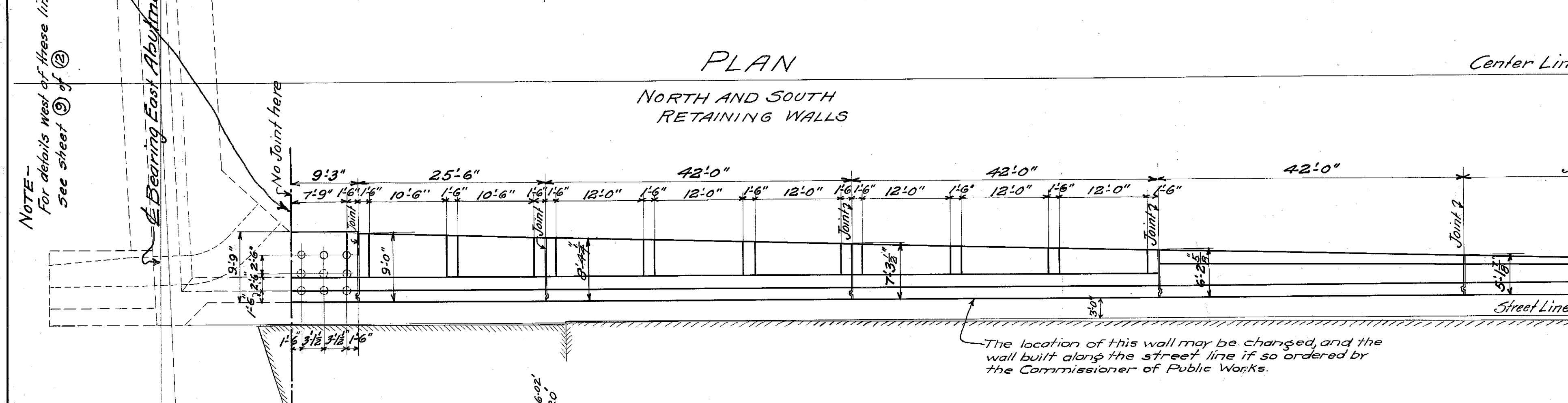
Scale:  $\frac{1}{4}'' = 1'$   
April, 1914.

Drawn by R.E.S.  
Traced by M.K.R.  
Checked by J.N.E.  
Drawing No. 829

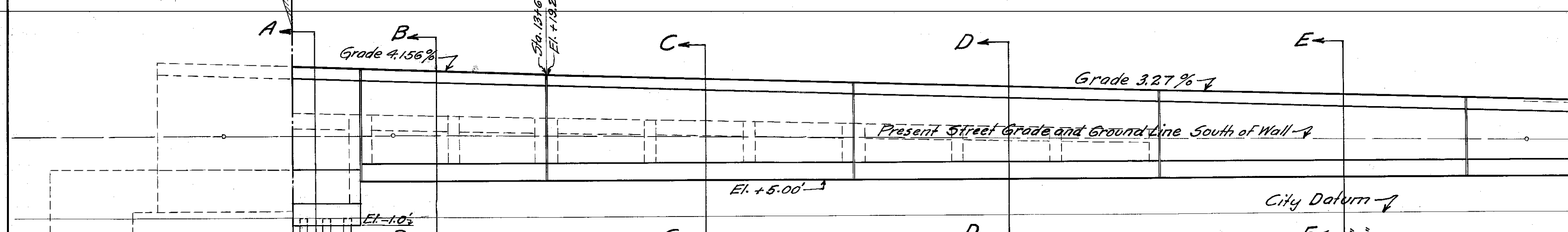
1660570050 FILE NO. 11-6A-89



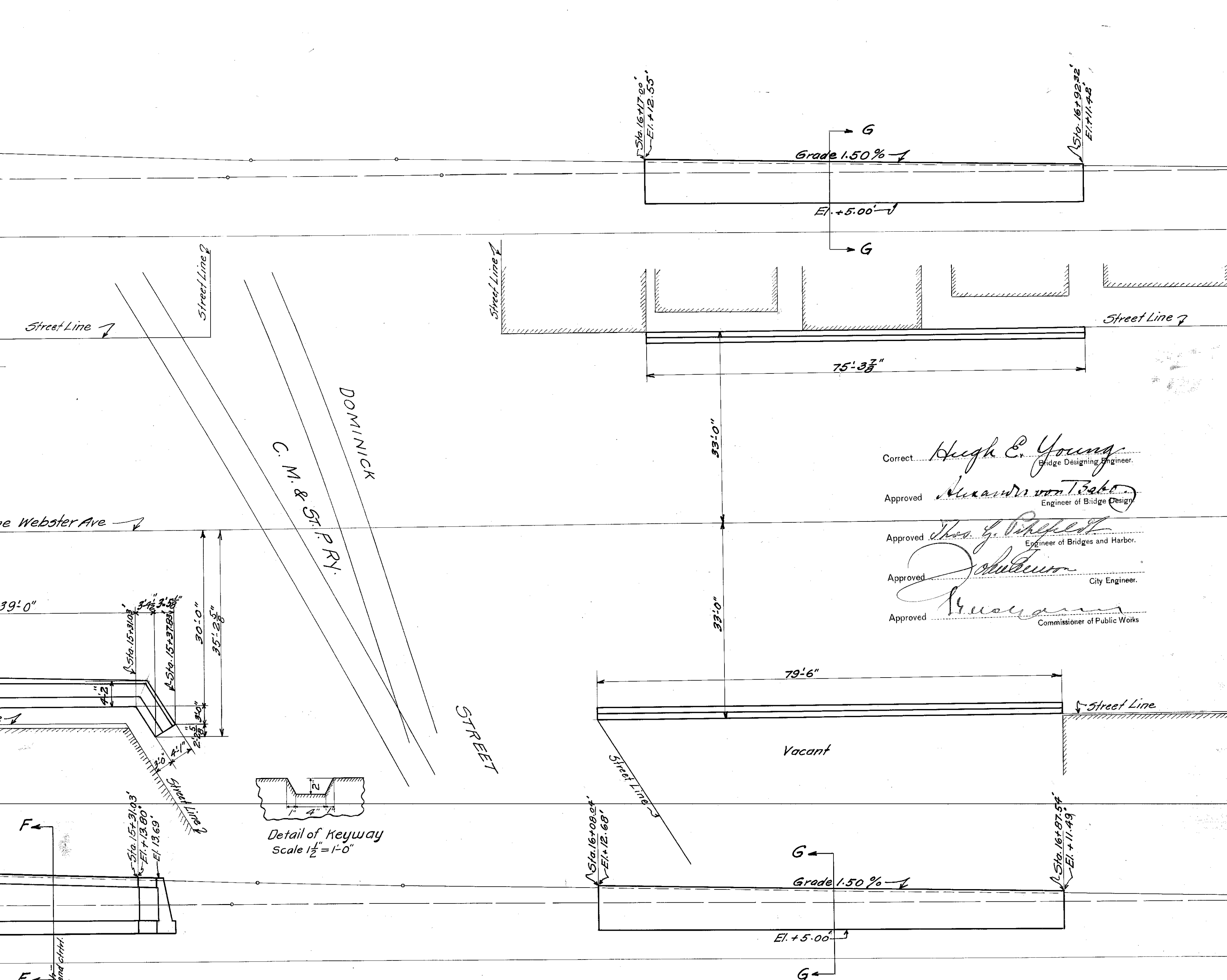
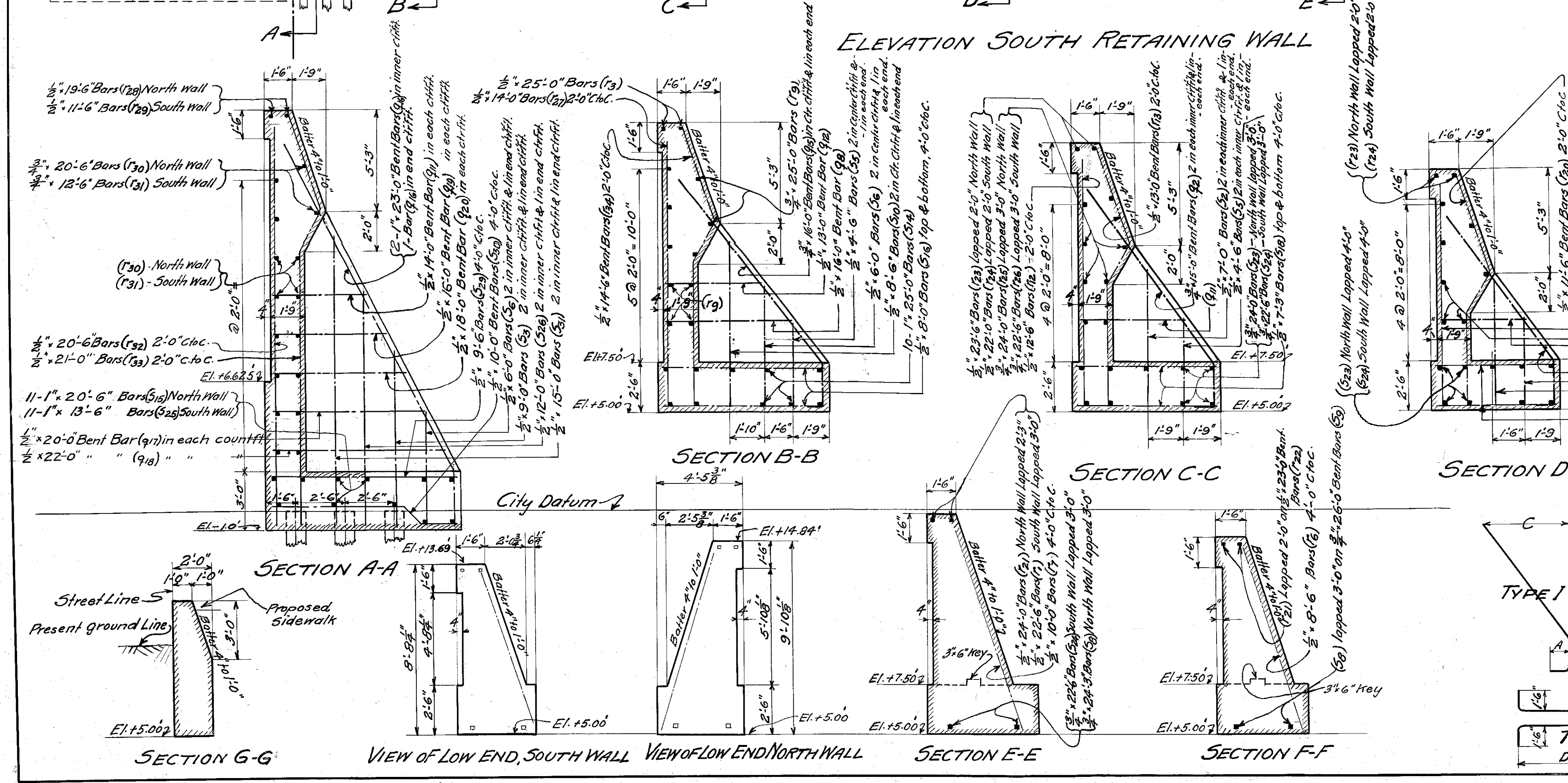
ELEVATION NORTH RETAINING WALL



PLAN  
NORTH AND SOUTH  
RETAINING WALLS



ELEVATION SOUTH RETAINING WALL



Corrected *Hugh C. Young*  
 Approved *Alexander T. Bako*  
 Approved *Wm. J. Vesper*  
 Approved *John A. ...*  
 Approved *A. ...*

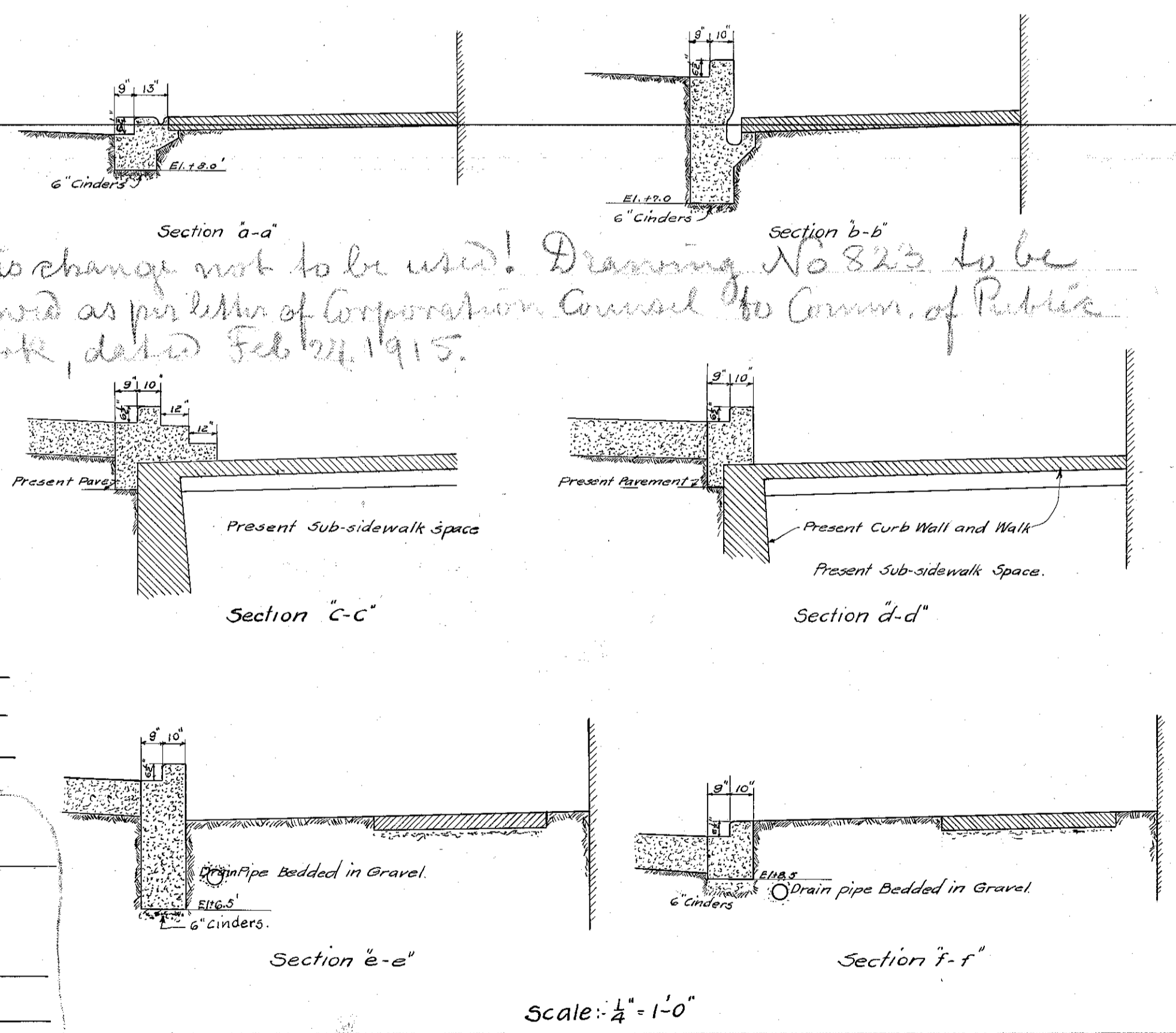
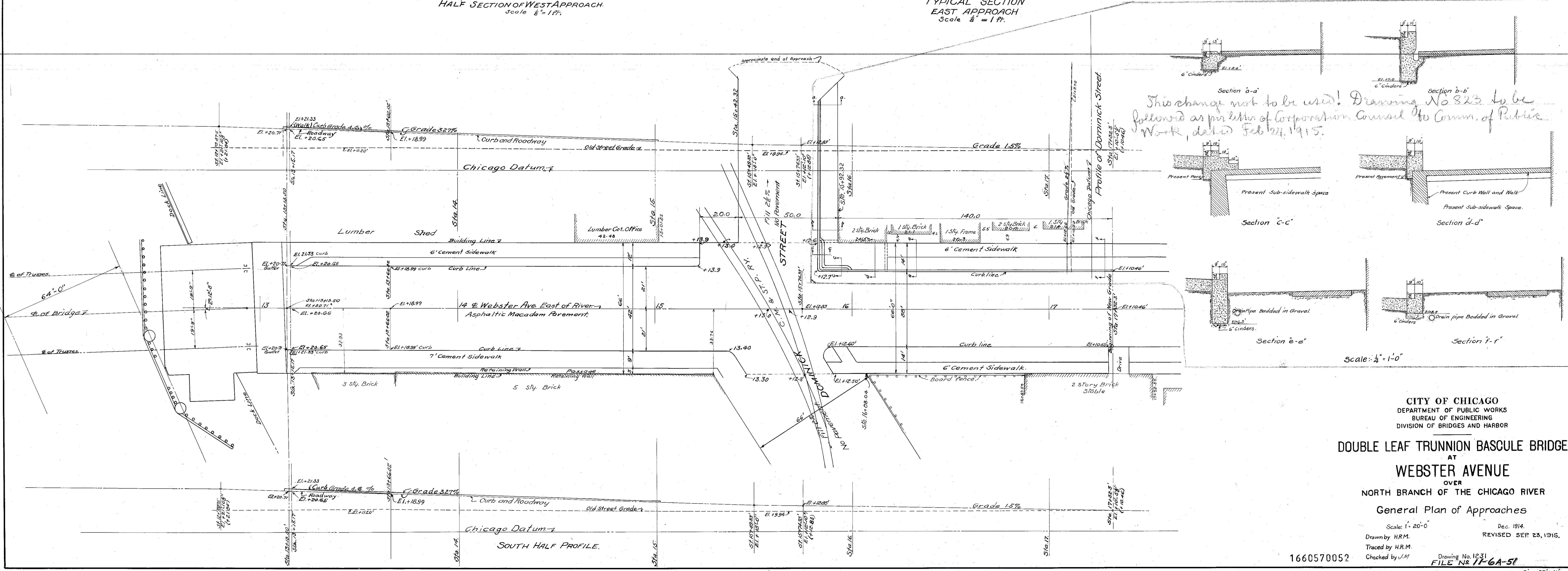
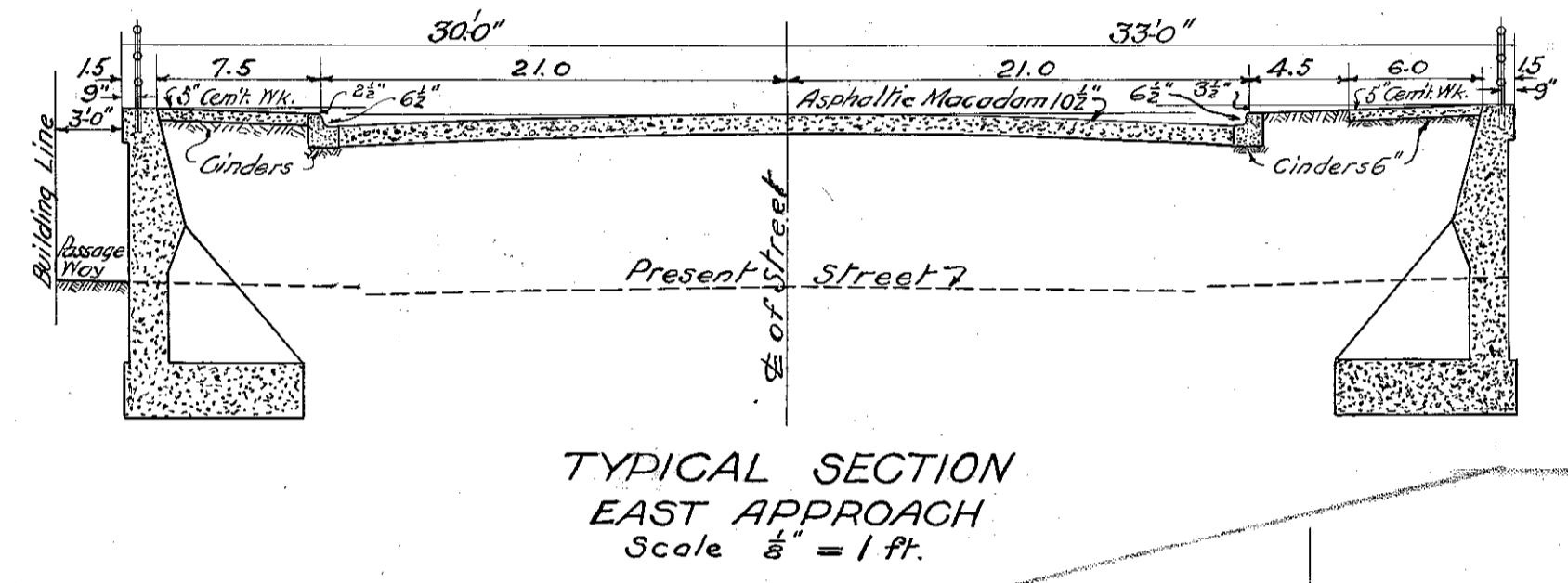
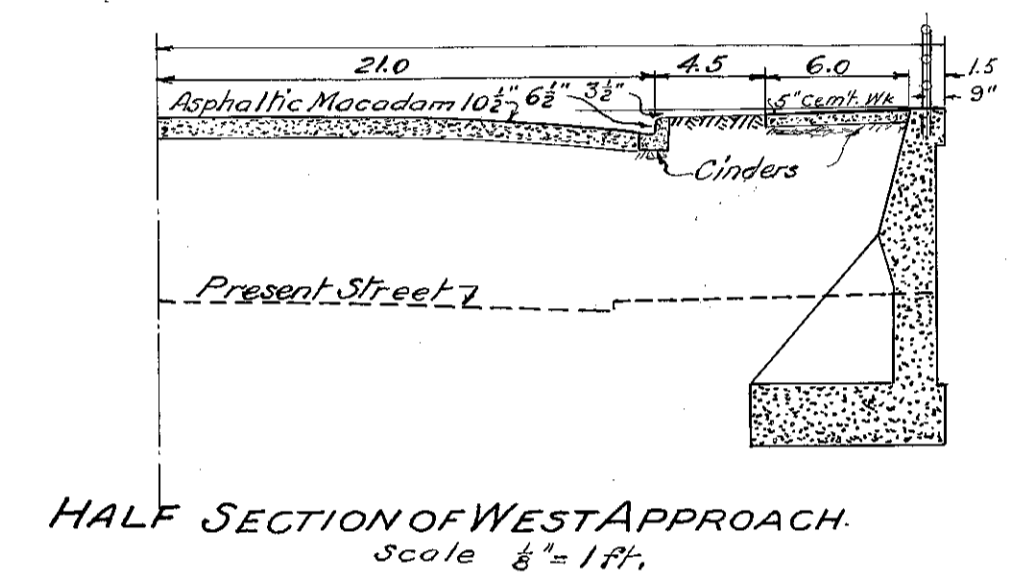
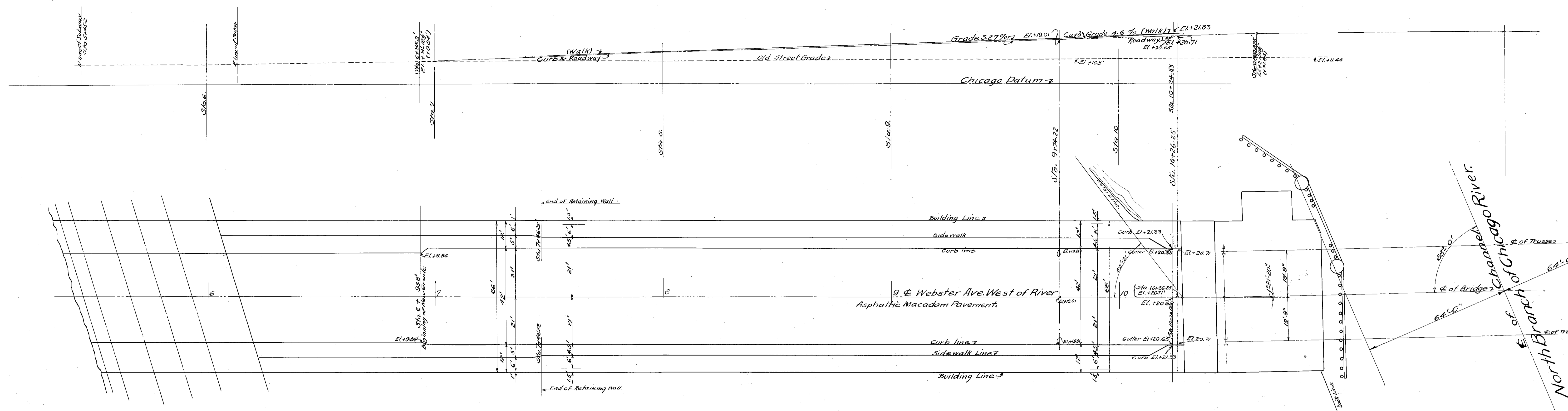
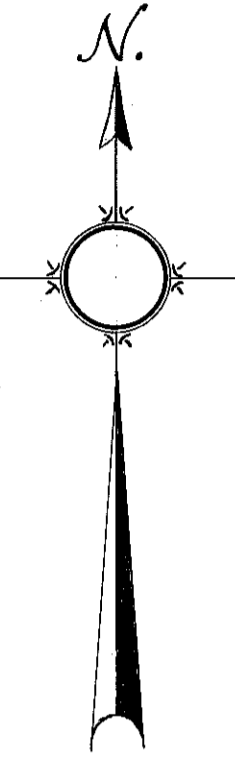
BILL OF REINFORCING BARS														
Number	Mark	Size	Length	Location		Dimensions of Bent Bars	Number	Mark	Size	Length	Location		Dimensions of Bent Bars	
				North Wall	South Wall						North Wall	South Wall		
12	91	3/4"	12'-0"	6	A	A-13"	12	100	3/4"	11'-6"	6	A	A-13"	
12	92	3/4"	15'-0"	6	A	A-13"	12	100	3/4"	20'-6"	6	A	A-13"	
8	97	1/2"	12'-0"	4	A	D=4'-0"	14	120	1/2"	20'-6"	9	B	E=13'-6"	
3	98	1/2"	16'-0"	3	A	D=6'-0"	14	120	1/2"	21'-0"	9	B	E=7'-0"	
3	99	1/2"	18'-0"	2	A	D=7'-0"	26	124	1/2"	14'-6"	10	B	E=7'-0"	
11	91	1/2"	18'-0"	3	A	D=5'-0"	8	91	1/2"	17'-9"	3	A	D=4'-6"	
6	92	1/2"	19'-0"	3	A	D=4'-6"	4	53	1/2"	9'-0"	3	A	D=3'-0"	
8	95	3/4"	16'-0"	4	A	A-13"	28	52	3/4"	7'-0"	6	B	E=13'-6"	
4	96	1"	23'-0"	2	A	D=8'-0"	4	53	1/2"	15'-0"	3	A	D=3'-0"	
3	97	1/2"	20'-0"	2	A	D=9'-0"	32	55	1/2"	4'-6"	4	B	E=7'-0"	
3	98	1/2"	22'-0"	2	A	D=9'-0"	12	56	1/2"	6'-0"	3	A	D=3'-0"	
4	1	1/2"	22'-6"	4	A	D=9'-0"	6	58	3/4"	24'-3"	4	A	D=9'-0"	
4	13	1/2"	25'-0"	2	A	D=9'-0"	2	59	3/4"	26'-0"	2	A	D=9'-0"	
12	16	1/2"	8'-6"	2	A	D=9'-0"	8	59	1/2"	9'-6"	4	A	D=9'-0"	
23	17	1/2"	10'-0"	10	A	D=9'-0"	20	514	1/2"	25'-0"	10	A	D=9'-0"	
20	19	1/2"	25'-0"	10	A	D=9'-0"	11	515	1/2"	20'-6"	11	A	D=9'-0"	
44	11	1/2"	11'-0"	23	A	D=9'-0"	44	516	1/2"	6'-0"	22	A	D=9'-0"	
44	12	1/2"	12'-6"	23	A	D=9'-0"	44	517	1/2"	6'-0"	22	A	D=9'-0"	
44	13	1/2"	13'-6"	23	A	D=9'-0"	44	518	1/2"	6'-0"	22	A	D=9'-0"	
44	14	1/2"	11'-6"	23	A	D=9'-0"	8	59	1/2"	9'-6"	4	A	D=9'-0"	
6	121	1/2"	24'-0"	4	A	D=9'-0"	8	59	1/2"	10'-0"	5	A	D=9'-0"	
2	122	1/2"	23'-0"	4	A	D=9'-0"	6	170	1/2"	6'-6"	4	A	D=9'-0"	
8	123	1/2"	23'-0"	4	A	D=9'-0"	36	523	3/4"	24'-0"	5	B	E=13'-6"	
8	124	1/2"	23'-0"	4	A	D=9'-0"	40	524	3/4"	22'-6"	5	B	E=13'-6"	
30	125	3/4"	27'-0"	16	A	D=9'-0"	11	525	1/2"	13'-6"	3	A	D=9'-0"	
26	126	3/4"	19'-0"	14	A	D=9'-0"	4	526	1/2"	12'-0"	3	A	D=9'-0"	
2	128	1/2"	19'-6"	2	A	D=9'-0"								

Notes:  
 For material, workmanship, etc., see specifications.  
 Joints to be made where indicated, by pouring the wall in alternate sections and placing the concrete against the face of the joints before placing the concrete in the intermediate sections. Sections between adjacent joints shall be poured continuously without a stop.  
 All bars to be plain square bars.  
 Reinforcement shown in the various cross sections is for that portion of the wall between the joints adjacent to the section.  
 Sections A-A are to be poured monolithic with abutment. Location of walls shown on this sheet may be altered by order of the Commissioner of Public Works.

CITY OF CHICAGO  
 DEPARTMENT OF PUBLIC WORKS  
 BUREAU OF ENGINEERING  
 DIVISION OF BRIDGES AND HARBOR

**DOUBLE LEAF TRUNNION BASCULE BRIDGE**  
 AT  
**WEBSTER AVENUE**  
 OVER  
 NORTH BRANCH OF THE CHICAGO RIVER  
 SUBSTRUCTURE  
 EAST APPROACH  
 Retaining Wall Details & Reinforcement Bars  
 Scale: 1/4" = 1 ft.  
 Drawn by R.E.S.  
 Traced by M.H.D.  
 Checked by D.N.B.  
 Drawing No. 630  
 April, 1914.

1660570051 FILE NO. 11-6A-50



CITY OF CHICAGO  
DEPARTMENT OF PUBLIC WORKS  
BUREAU OF ENGINEERING  
DIVISION OF BRIDGES AND HARBOR

**DOUBLE LEAF TRUNNION BASCULE BRIDGE  
AT  
WEBSTER AVENUE  
OVER  
NORTH BRANCH OF THE CHICAGO RIVER**

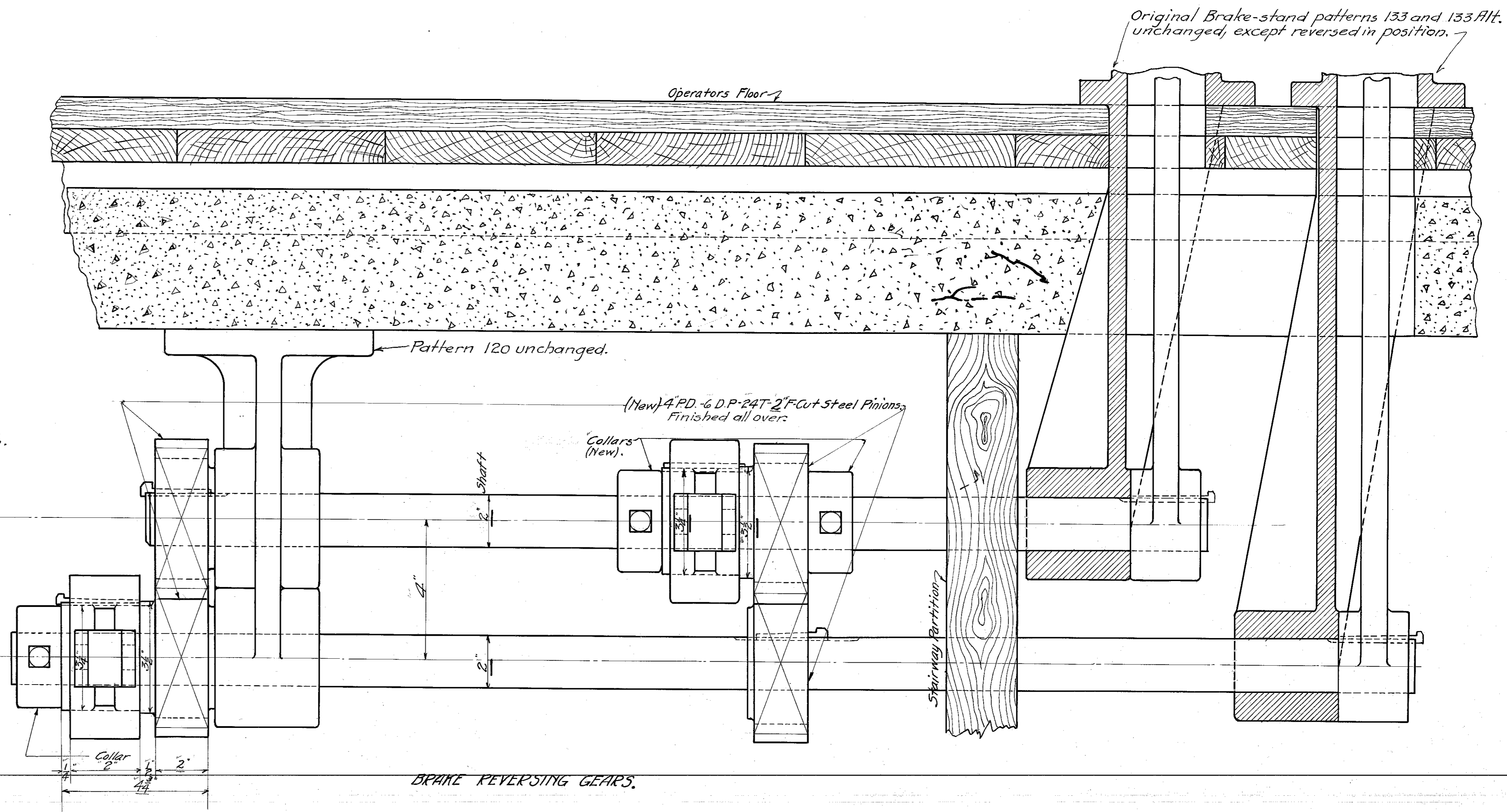
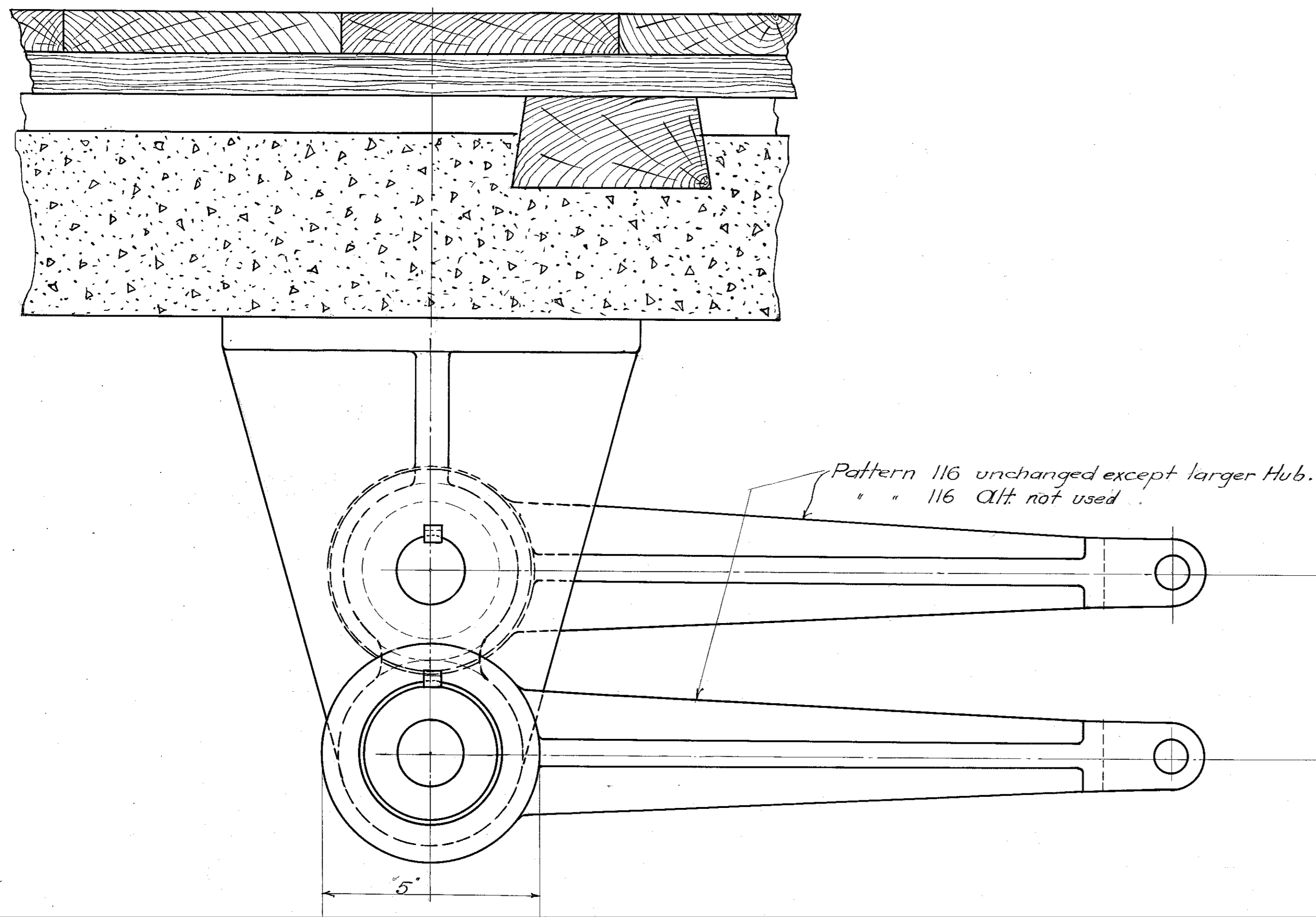
General Plan of Approaches

Scale: 1" = 20'-0"  
Drawn by H.R.M.  
Traced by H.R.M.  
Checked by J.M.

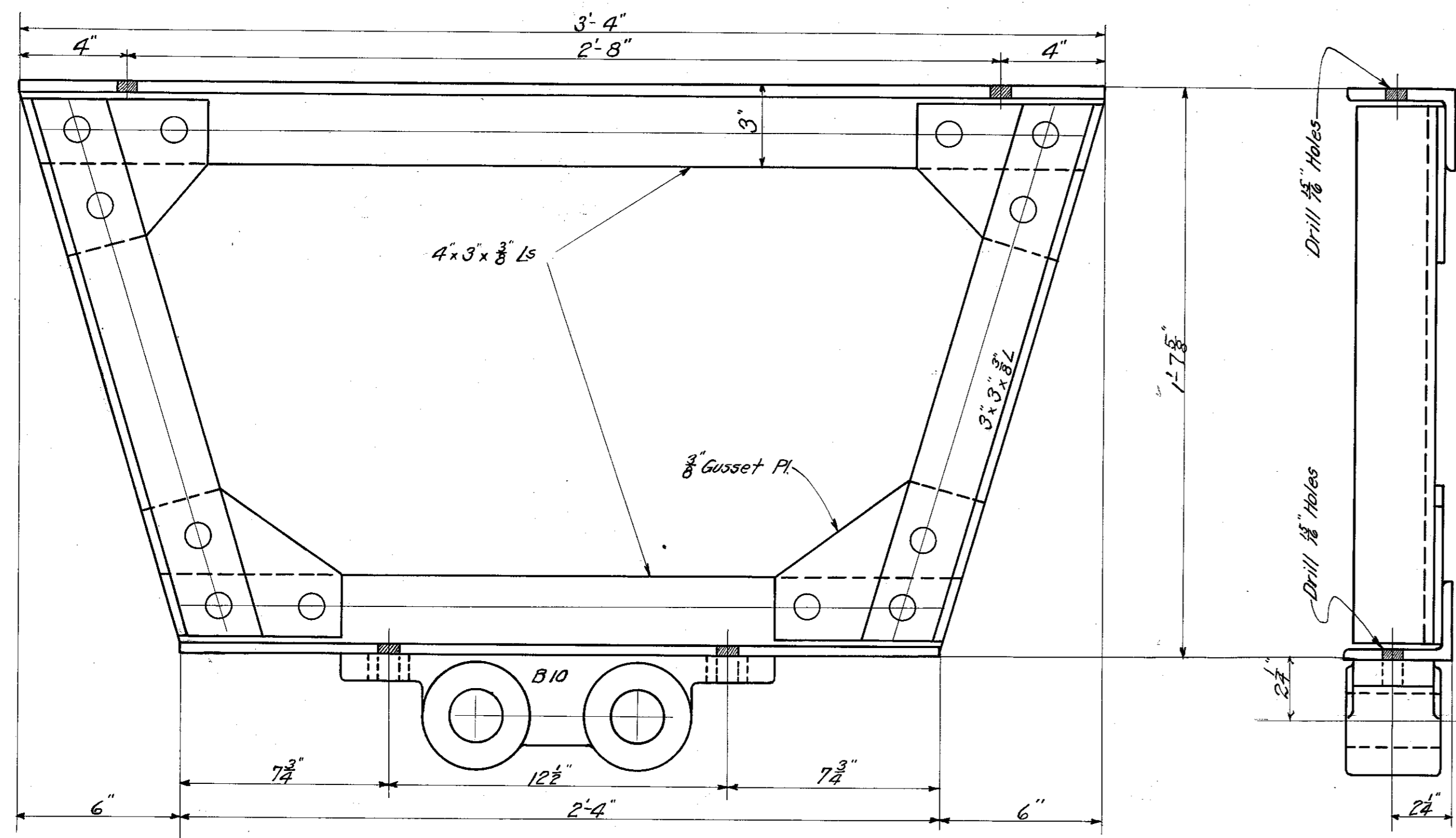
Dec. 1914.  
REVISED SEP. 23, 1915.

Drawing No. 1231  
FILE No. 17-6A-51

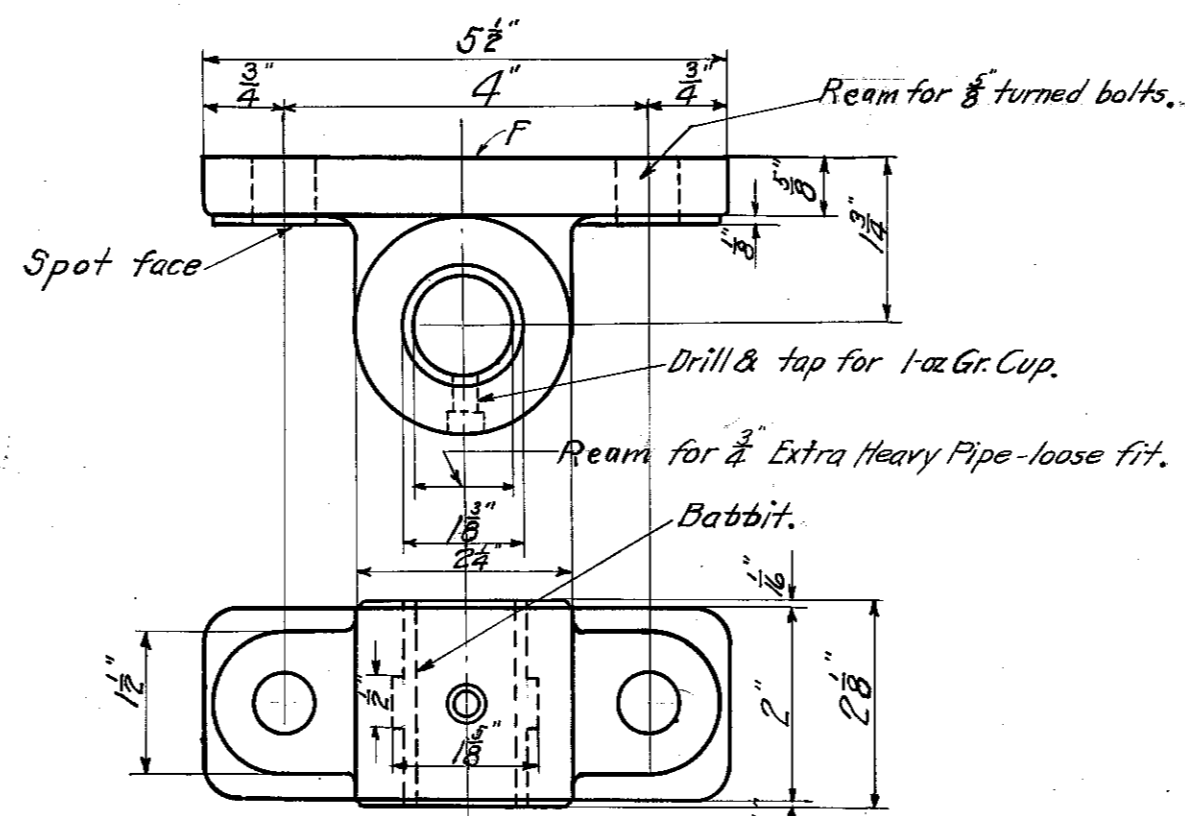
1660570052



BRAKE REVERSING GEARS.



STRUCTURAL STEEL SUPPORT FOR  
BRAKE CONNECTION SHAFT BEARINGS.  
Scale 3"=1'-0" 2 Required.  
(New, except bearing.)



GUIDE FOR ROD OF CENTER-LOCK INDICATOR.  
STEEL CASTING.  
Scale 6"=1'-0" (New) 1-Required.

MATERIAL FOR NEW PARTS  
(ESTIMATED WEIGHT)  
CHANGE IN BRAKE CONNECTIONS

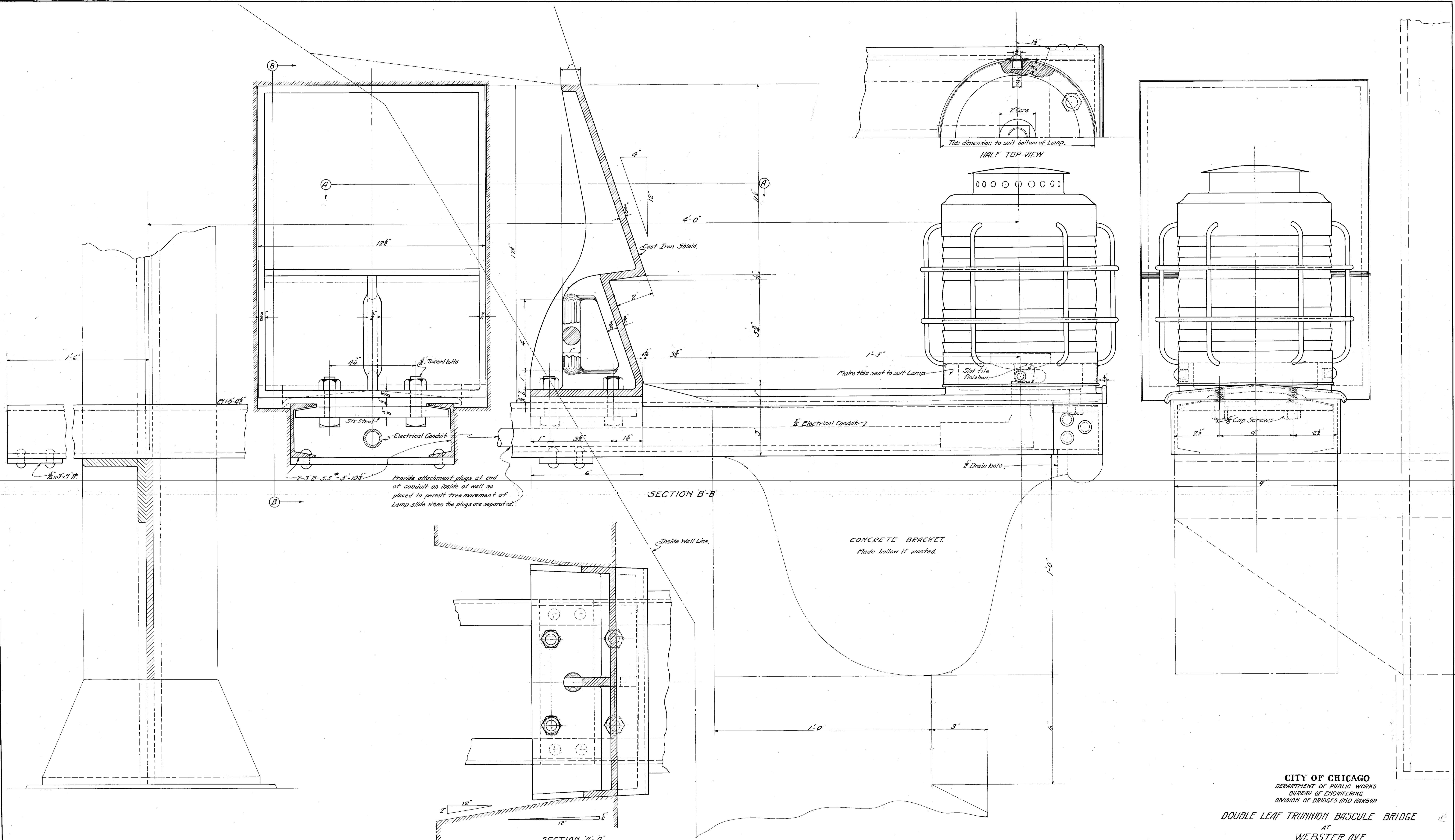
Steel Castings	130*
Structural Steel for Brackets	400*
One Center Lock Guide, Steel Casting	8*

NOTE: The material of the new parts shown on this sheet to be paid for at unit prices named in the Contract for materials not shown on City's Drawings.

Corrected *Alexander von Batsch*  
Engineer of Bridge Design  
Approved *John G. Russell*  
Engineer of Bridges and Harbor  
Approved *John C. ...*  
City Engineer  
Approved *H. W. ...*  
Commissioner of Public Works

CITY OF CHICAGO  
DEPARTMENT OF PUBLIC WORKS  
BUREAU OF ENGINEERING  
DIVISION OF BRIDGES & HARBOR  
Change in Brake Connections  
for  
Webster Ave. Bridge.  
Scale: 6"=1'-0" Mar. 25, 1915

Drawn By *...*  
Traced: *...*  
Checked: *...*



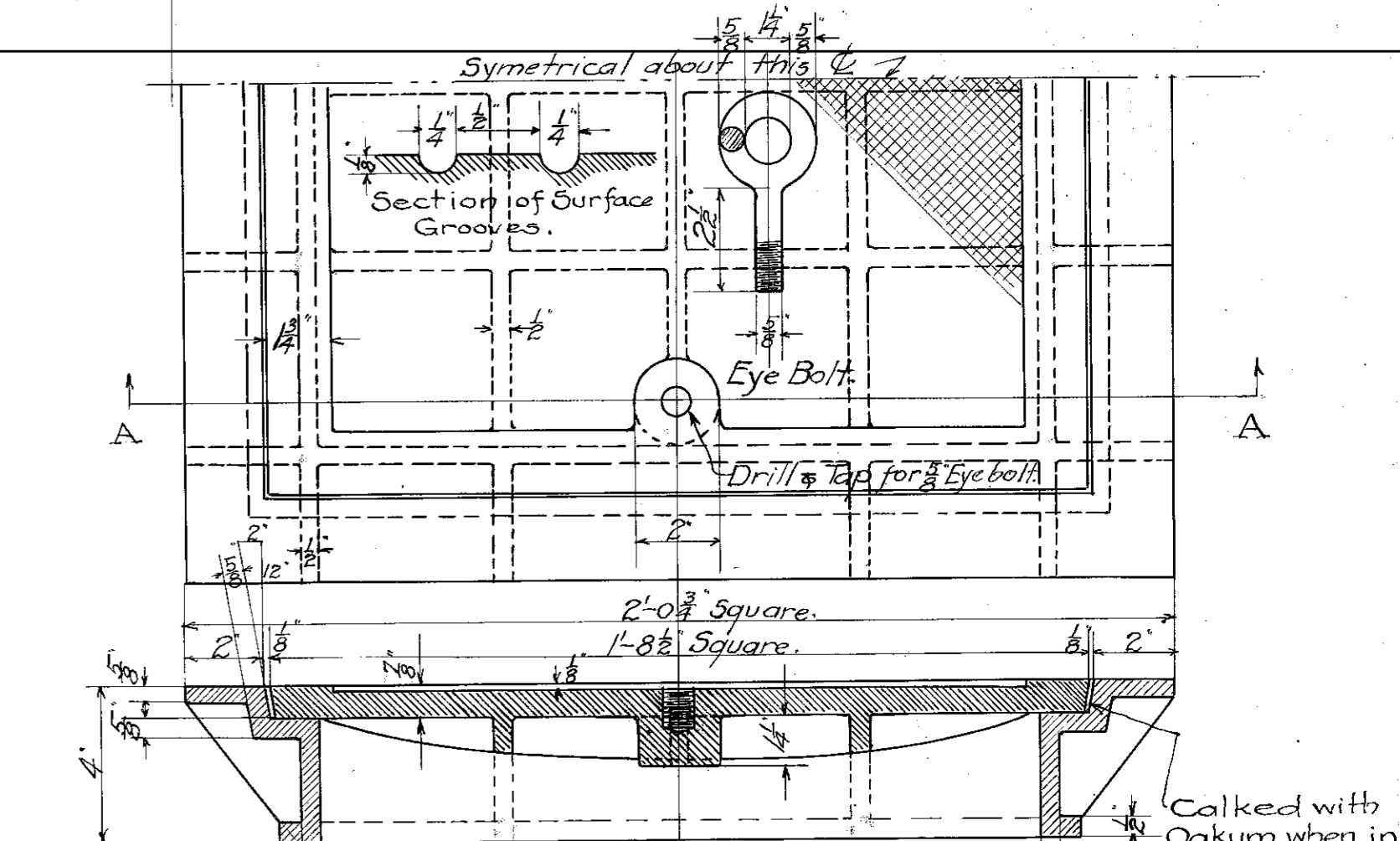
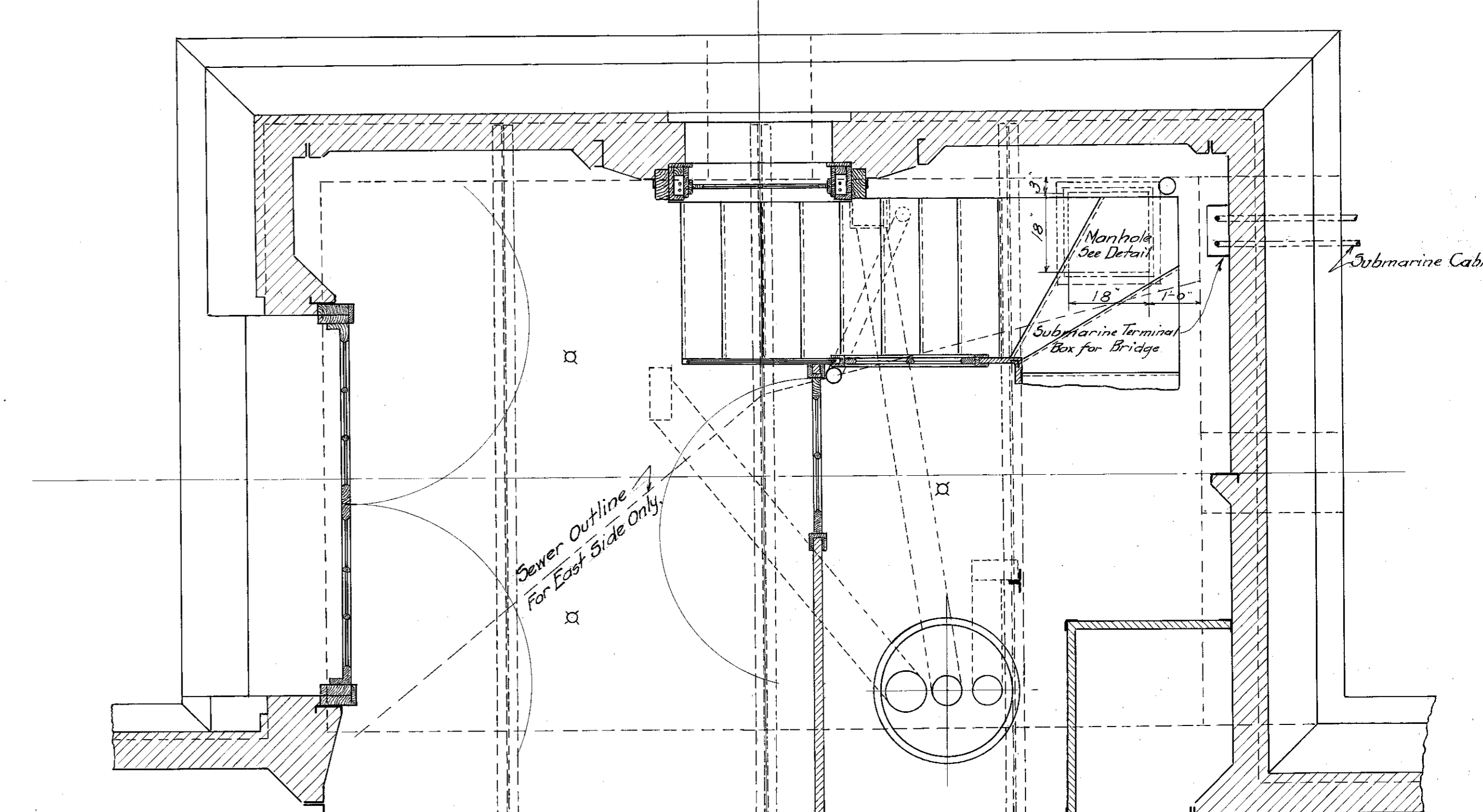
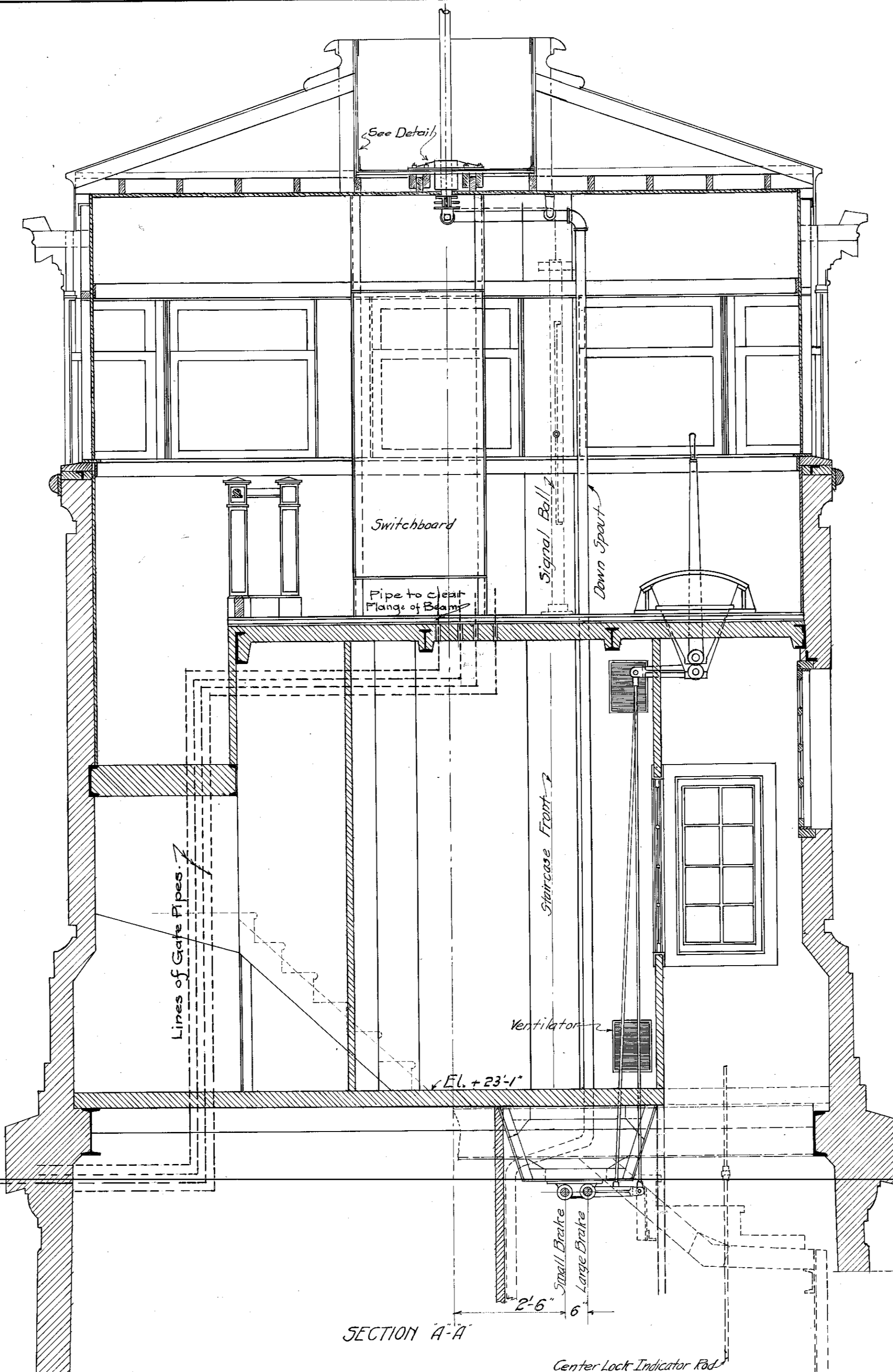
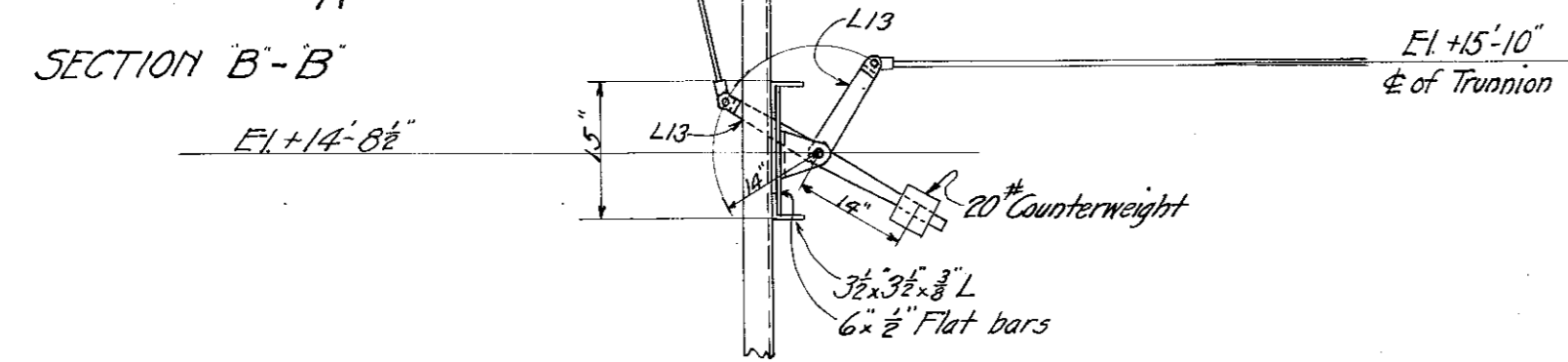
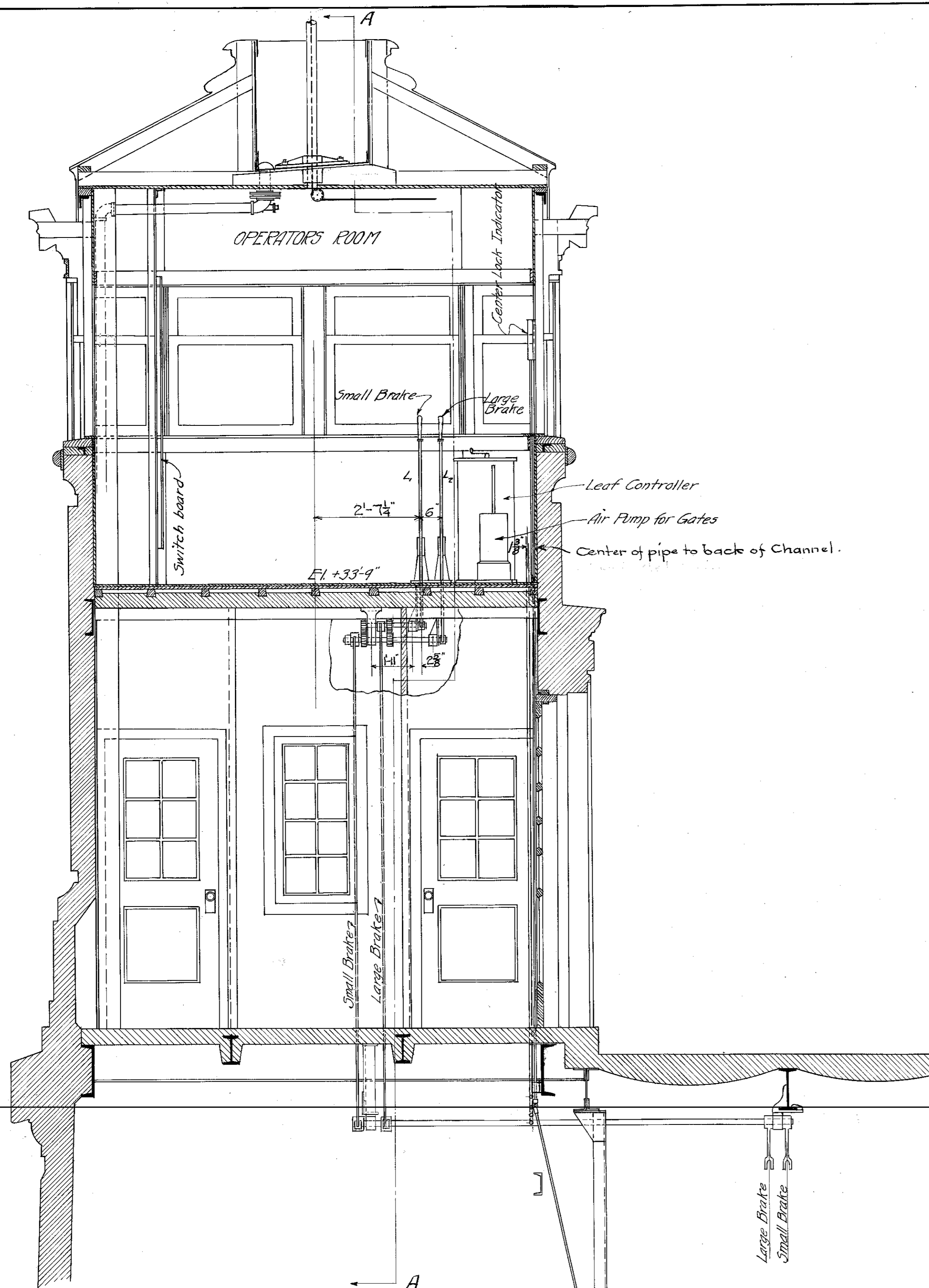
**CITY OF CHICAGO**  
 DEPARTMENT OF PUBLIC WORKS  
 BUREAU OF ENGINEERING  
 DIVISION OF BRIDGES AND HARBOR  
**DOUBLE LEAF TRUNNION BASCULE BRIDGE**  
 AT  
**WEBSTER AVE**  
 OVER  
 NORTH BRANCH OF THE CHICAGO RIVER  
**PROPOSED PIER LAMP SLIDE**

Correct.....  
 Approved.....  
 Approved.....  
 Approved.....

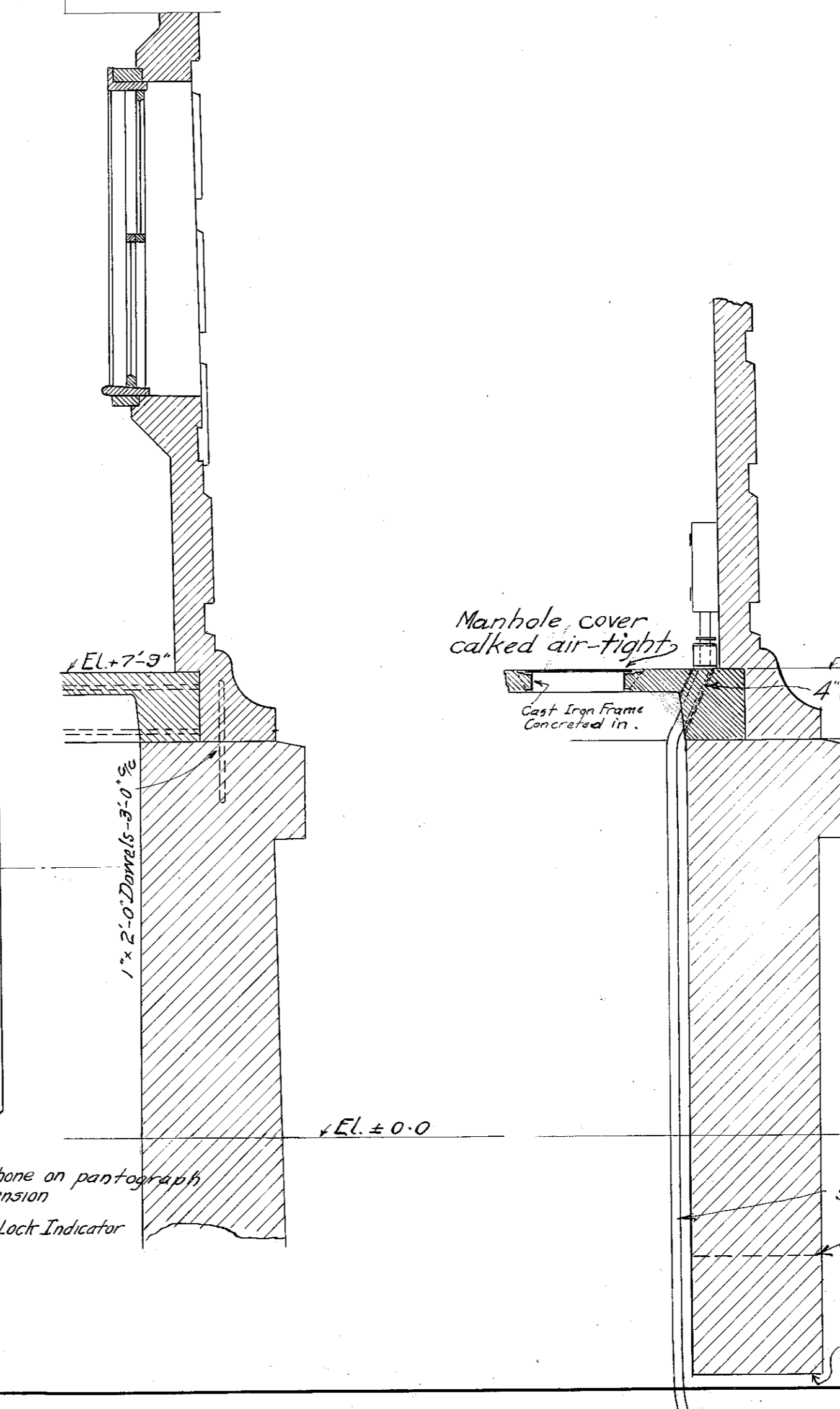
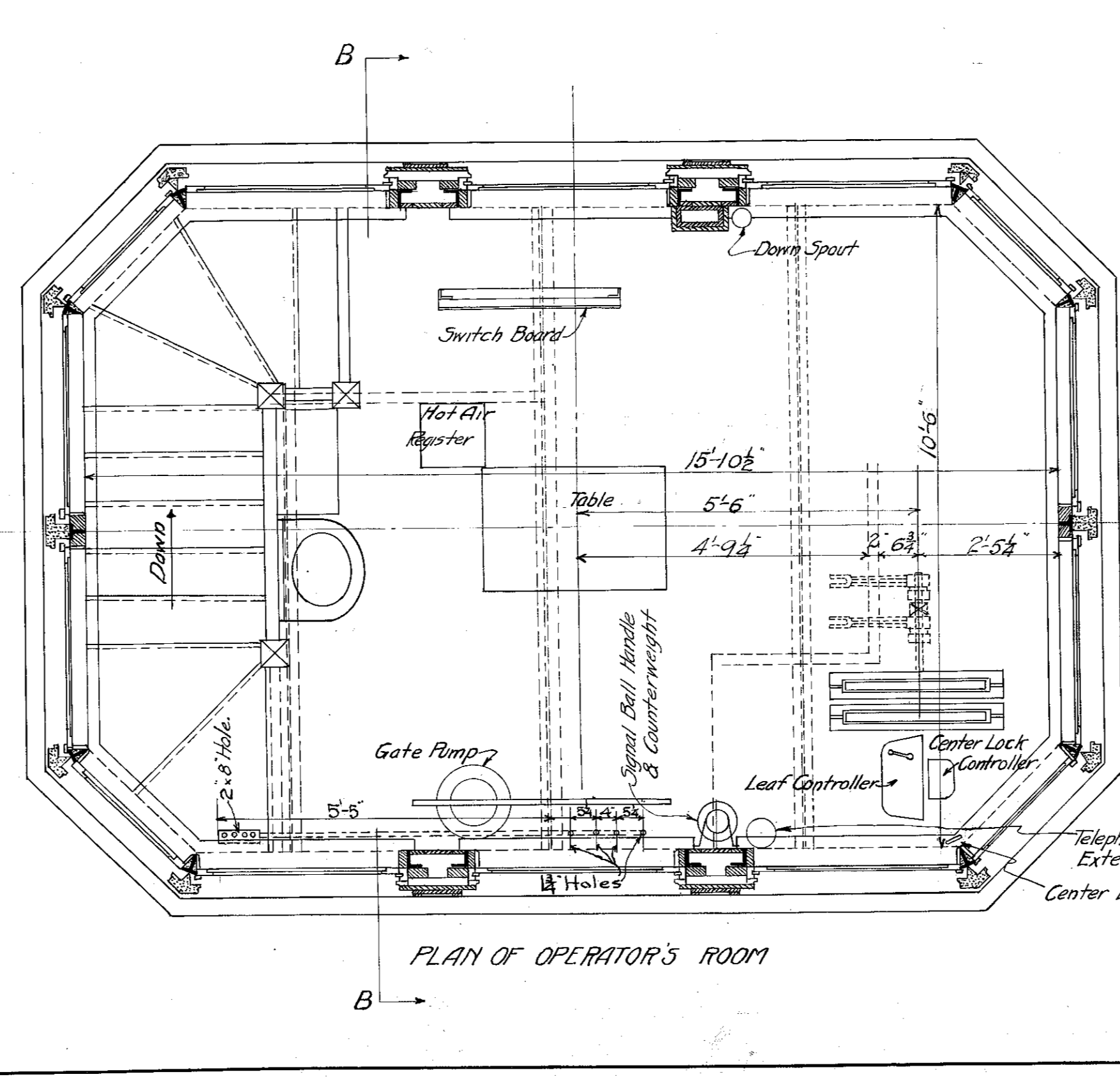
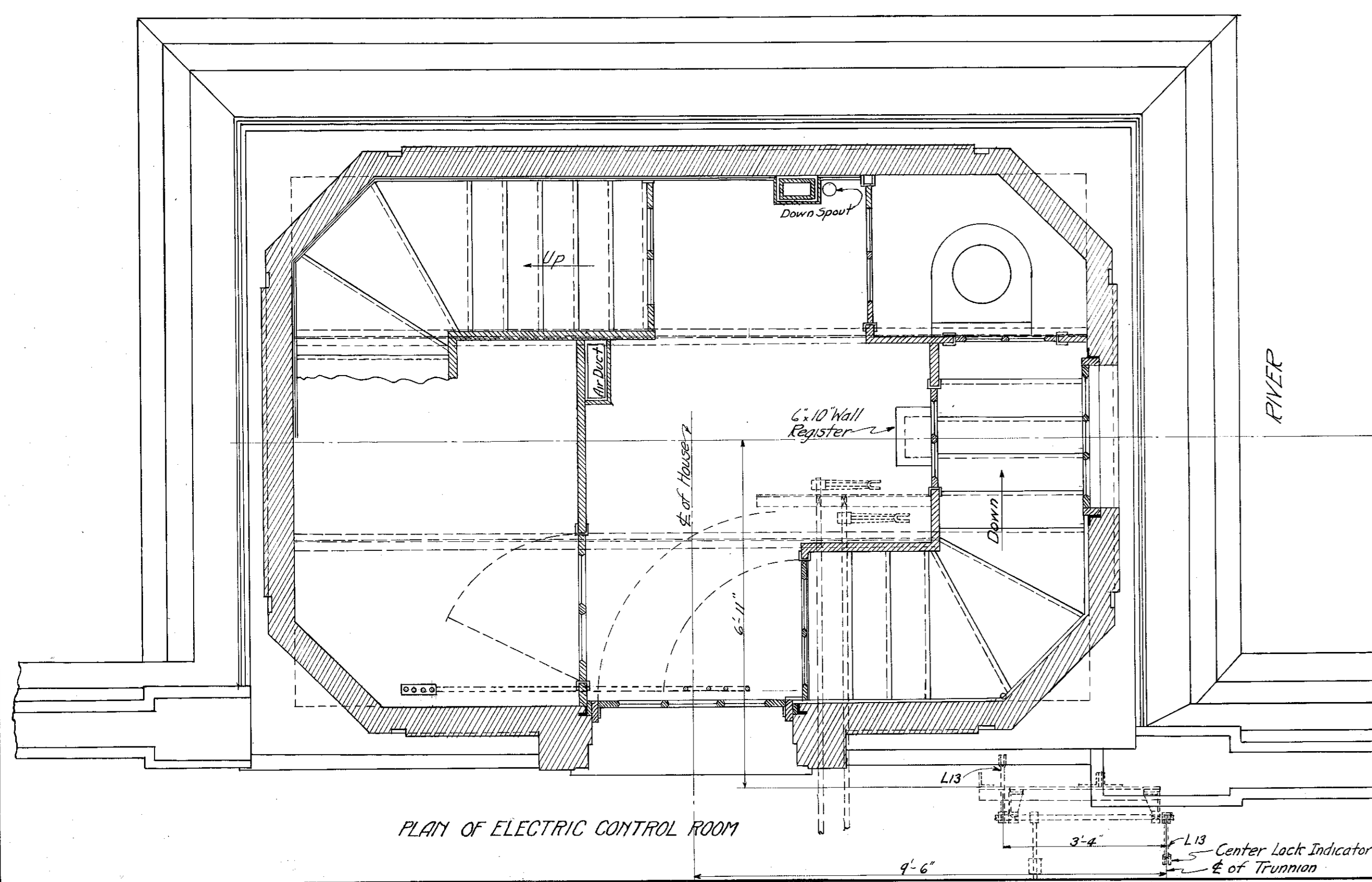
Engineer of Bridge Design  
 Engineer of Bridges & Harbor  
 City Engineer  
 Commissioner of Public Works  
 Scale: 6" = 1'-0"  
 Drawn by  
 Traced by  
 Checked by  
 Apr. 1915  
 DRAWING NO. 1612  
 FILE NO. 11-6A-53

1660570054

RTA-1



Estimated Weights of  
Manhole Cover 94"  
Frame 110"  
**CAST IRON MANHOLE.**  
2-REQ.  
SCALE 3/4" to 1 ft.  
8-21-15  
The labor and material for above parts,  
to be paid for at unit prices named in  
the Contract for materials not shown  
on City's Drawings.



**CITY OF CHICAGO**  
DEPARTMENT OF PUBLIC WORKS  
BUREAU OF ENGINEERING  
DIVISION OF BRIDGES AND HARBOR  
**DOUBLE LEAF TRUNNION BASCULE BRIDGE**  
AT  
**WEBSTER AVE**  
OVER  
NORTH BRANCH OF THE CHICAGO RIVER  
**OPERATOR'S HOUSES AND APPARATUS**  
Scale 3/4" = 1'-0"  
Traced by J.L.S.  
Checked by J.L.S.  
Revised 8-21-15.  
DRAWING NO 1743  
FILE NO. 11-6A-54  
1660570055  
Mar 1915

WILLIAM HALE THOMPSON

MAYOR

WM.R. MOORHOUSE

COMMISSIONER OF PUBLIC WORKS

WM. BURKHARDT

DEPUTY COMMISSIONER OF PUBLIC WORKS

JOHN ERICSON

CITY ENGINEER

THOS.G. PIHLFELDT

ENGINEER OF BRIDGES AND HARBOR

ALEX. VON BABO

ENGINEER OF BRIDGE DESIGN

SUBSTRUCTURE BUILT BY

GREAT LAKES DREDGE AND DOCK CO.

CHICAGO, ILL.

SUPERSTRUCTURE BUILT BY

THE KETLER-ELLIOTT ERECTION CO.

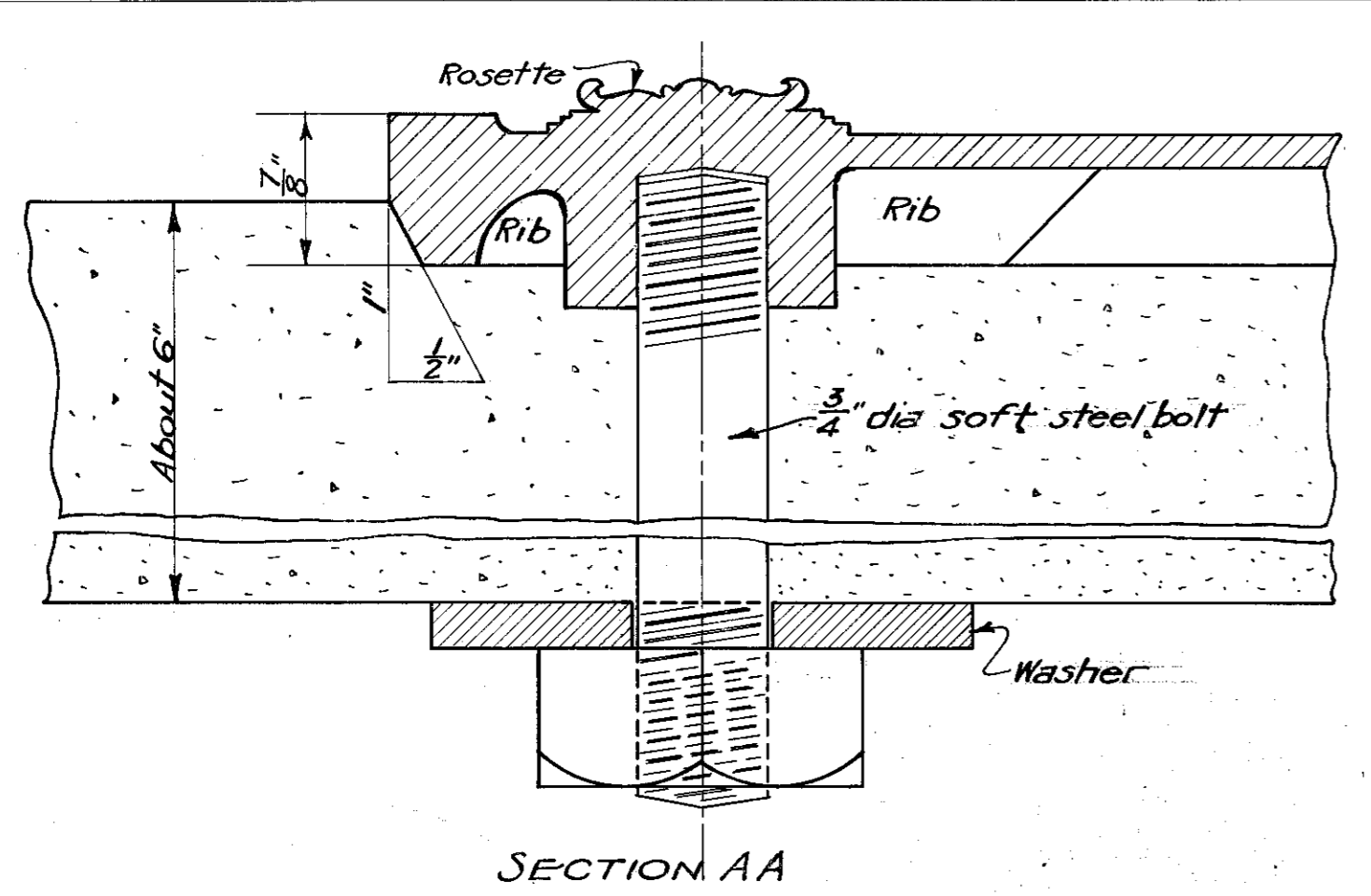
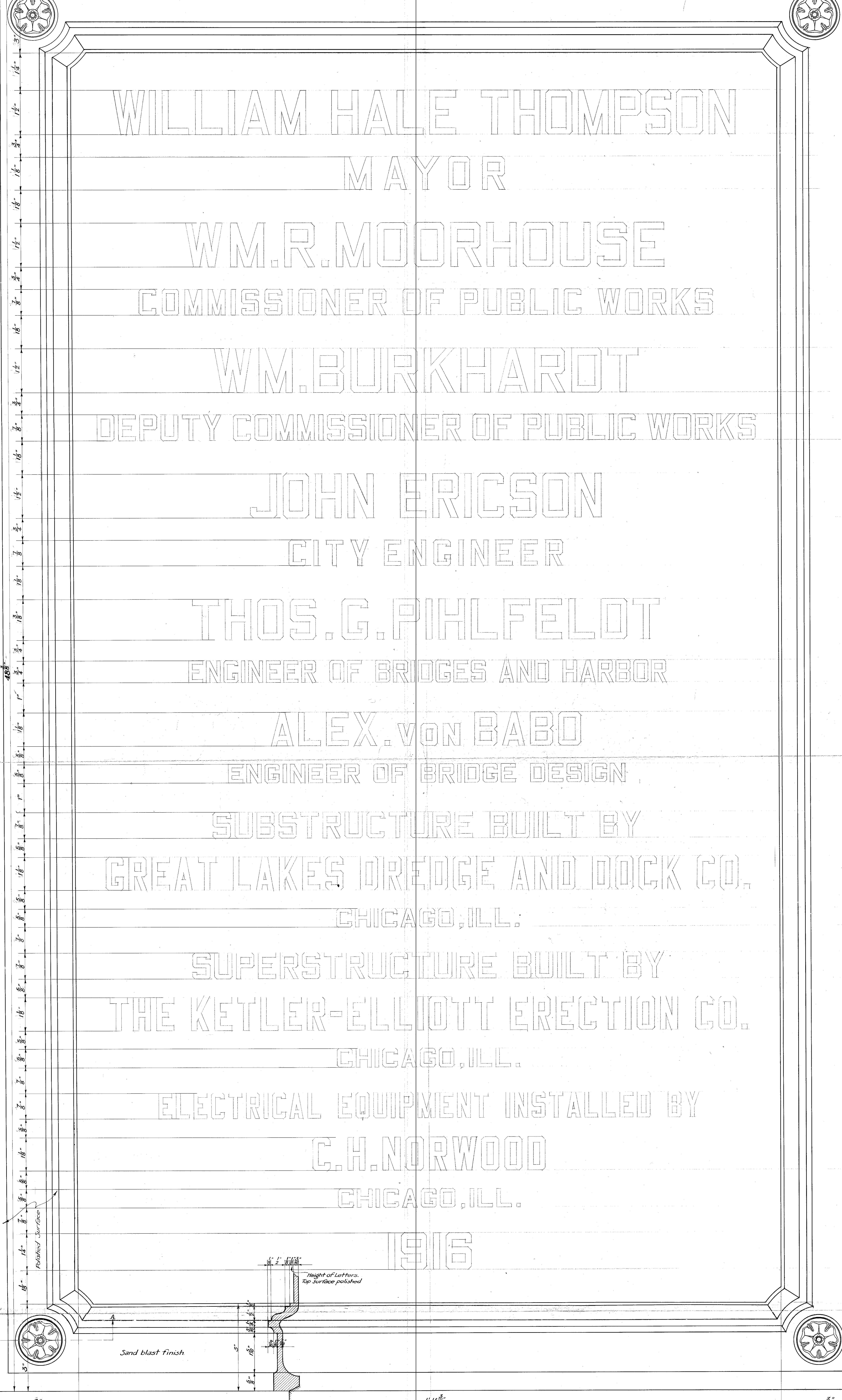
CHICAGO, ILL.

ELECTRICAL EQUIPMENT INSTALLED BY

C.H. NORWOOD

CHICAGO, ILL.

1916

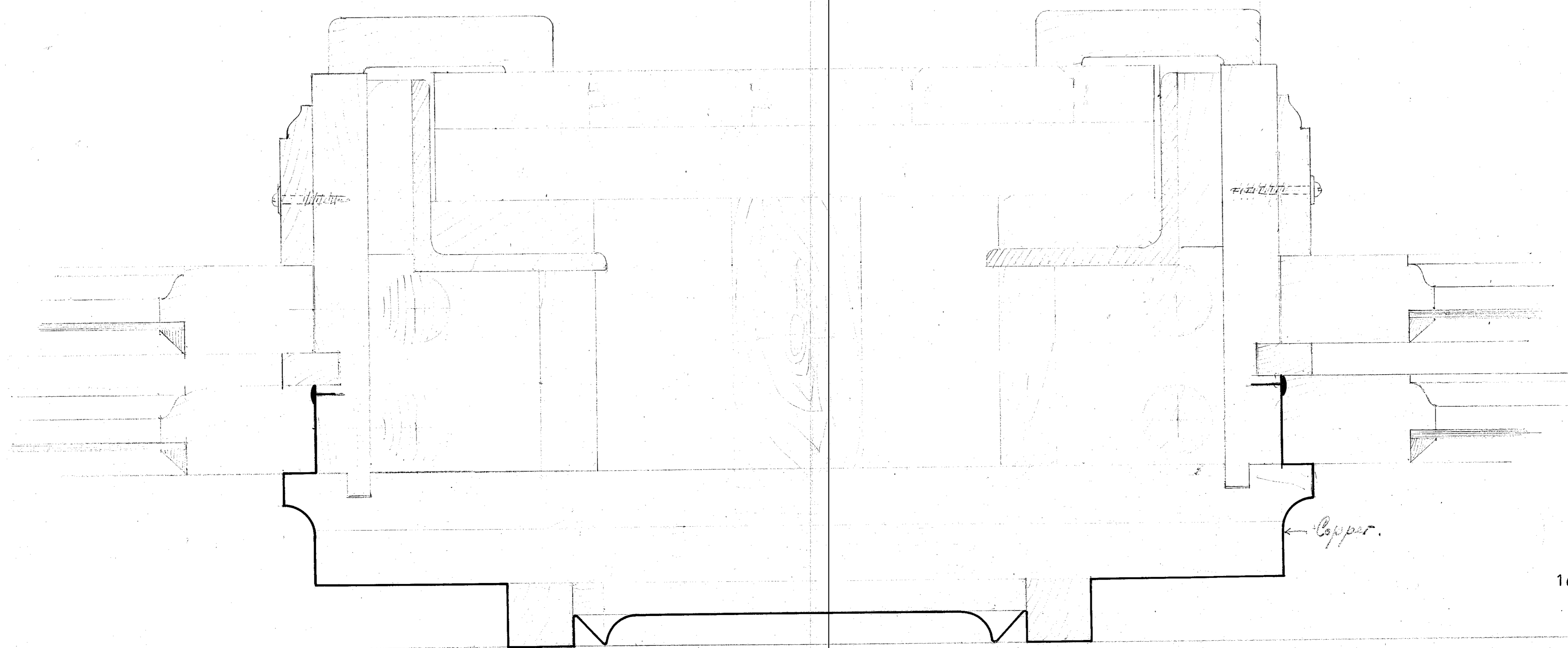
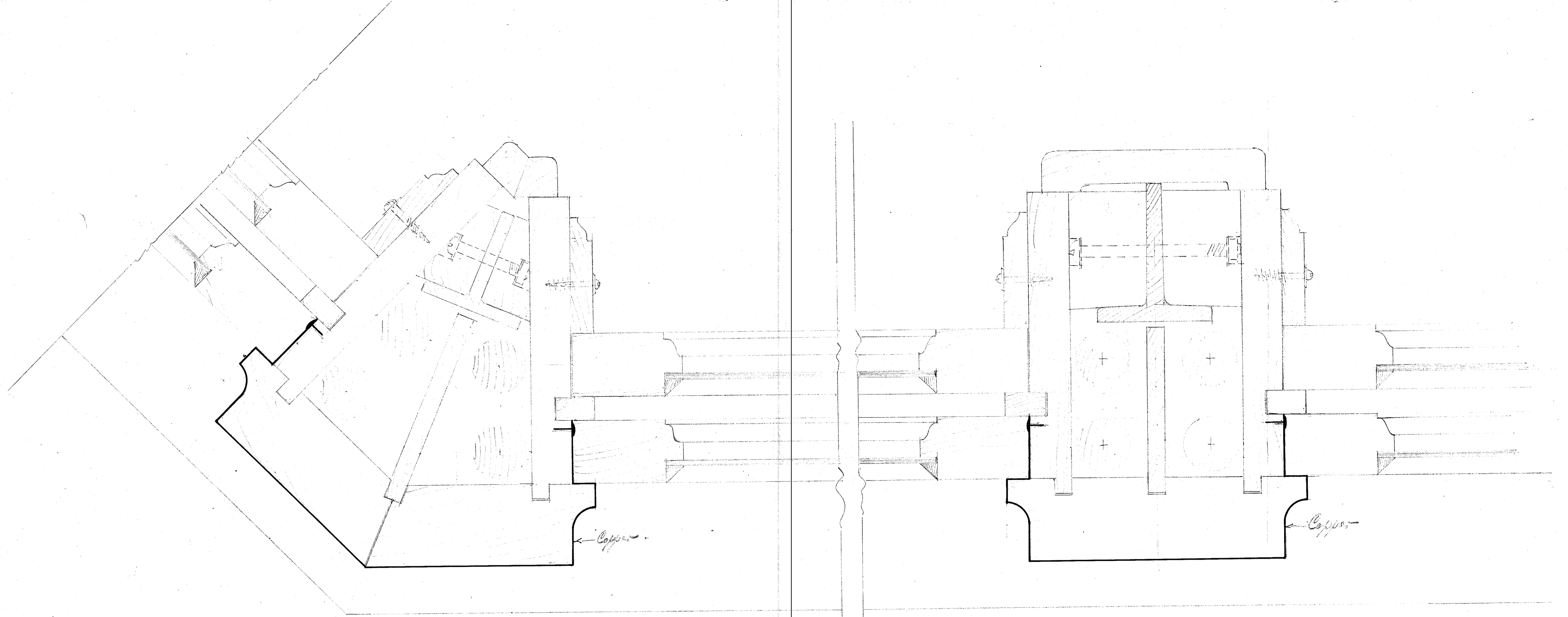


NOTES: 2 Name Plates Required. Material: The metal to be used for these plates shall be strongite (alloy of nickel) or a metal equally as good. Workmanship: The straight surfaces of the frame or border shall be polished unless otherwise noted. The letters shall be raised one-eighth (1/8) of an inch and their upper surface shall be polished. The surfaces of the visible parts of the name plate shall be neatly treated. The thickness of the metal shall not in any case be less than three-sixteenths (3/16) of an inch thick.

Correct Alexander von Babo Engineer of Bridge Design. Approved [Signature] Engineer of Bridges and Harbor. Approved [Signature] City Engineer. Approved [Signature] Commissioner of Public Works.

CITY OF CHICAGO DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING DIVISION OF BRIDGES AND HARBOR WEBSTER AVE. BRIDGE NAME PLATE Scale: Full Size Nov 8-1915 Drawing No. 1726 FILE NO. 35-6A-36 1660570057 3155





Webster Ave. Bridge.  
Full size details of Window frames  
for  
Operators room -

Oct 28<sup>th</sup> 1915  
J. Agnew

1660570058

Drawing No 2035.  
FILE No 35-6A-57  
size 36" x 25"

36x25

Upper Head Piece

7/8" casing

Lower Head Piece

Copper covered

Copper covered

Concrete wall

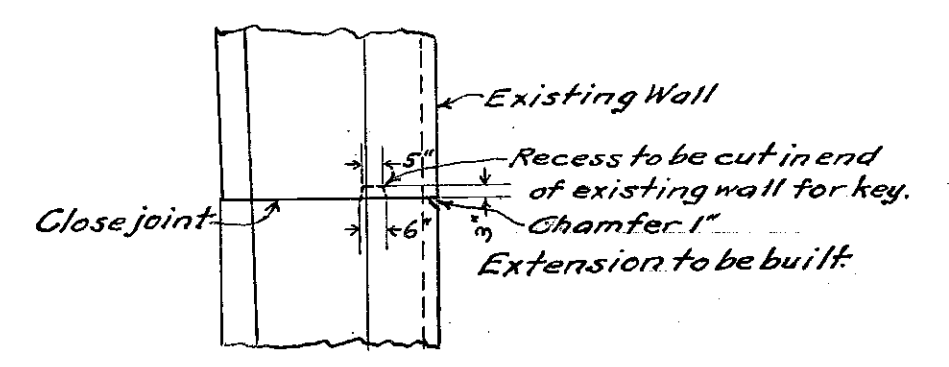
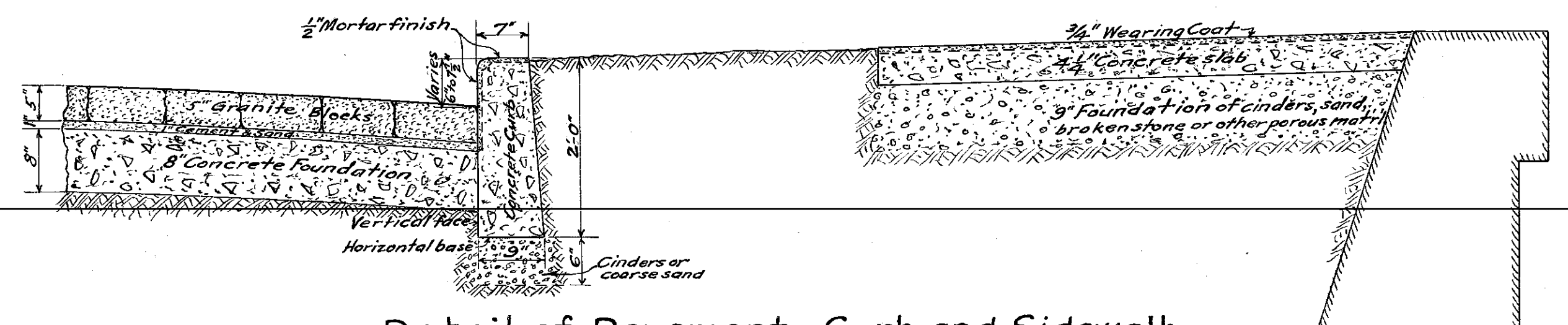
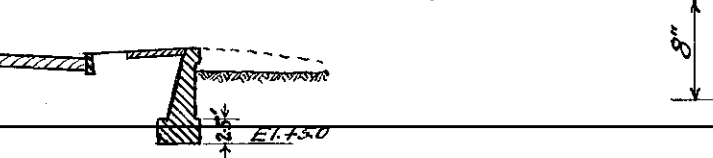
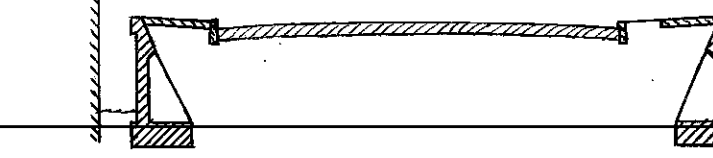
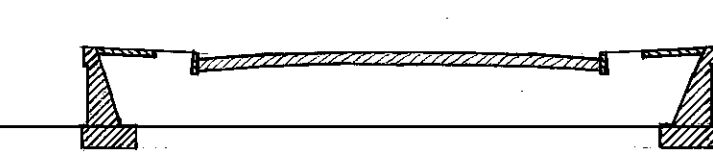
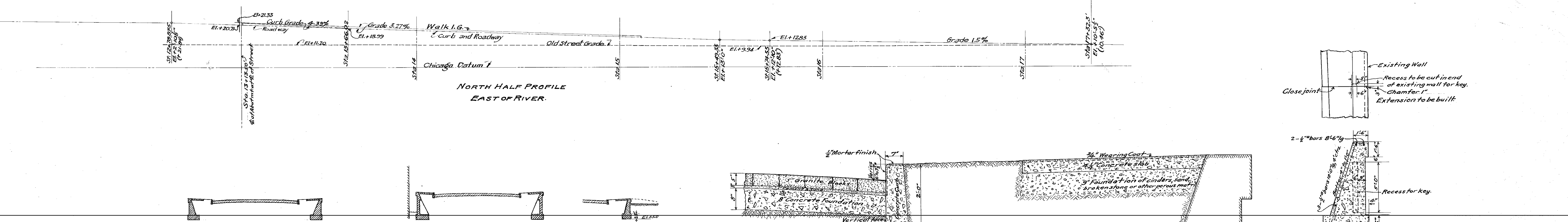
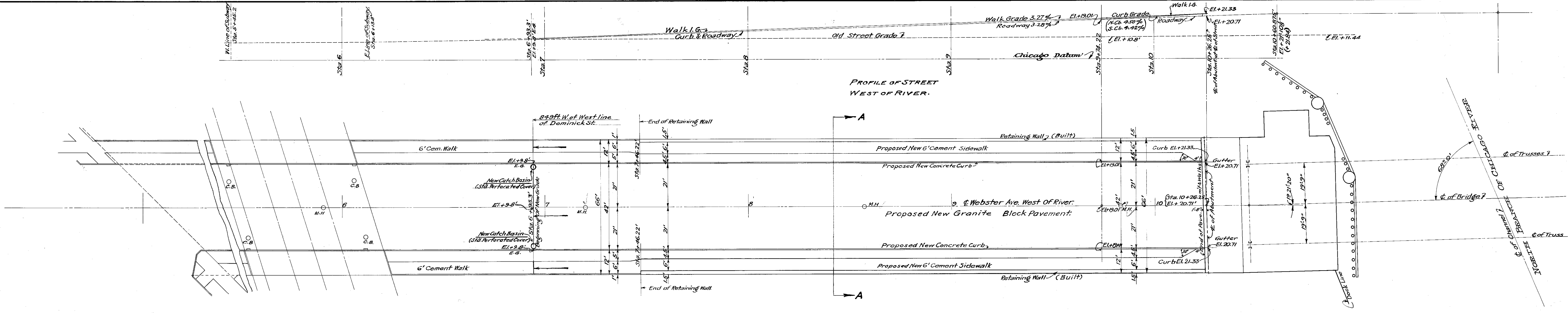
Webster Ave. Bridge.  
Full size details of Window frames.  
for  
Operators room.

Drawing No. 2036.  
FILE No. 35-6A-58

Oct. 29<sup>th</sup> 1915  
J. August

1660570059

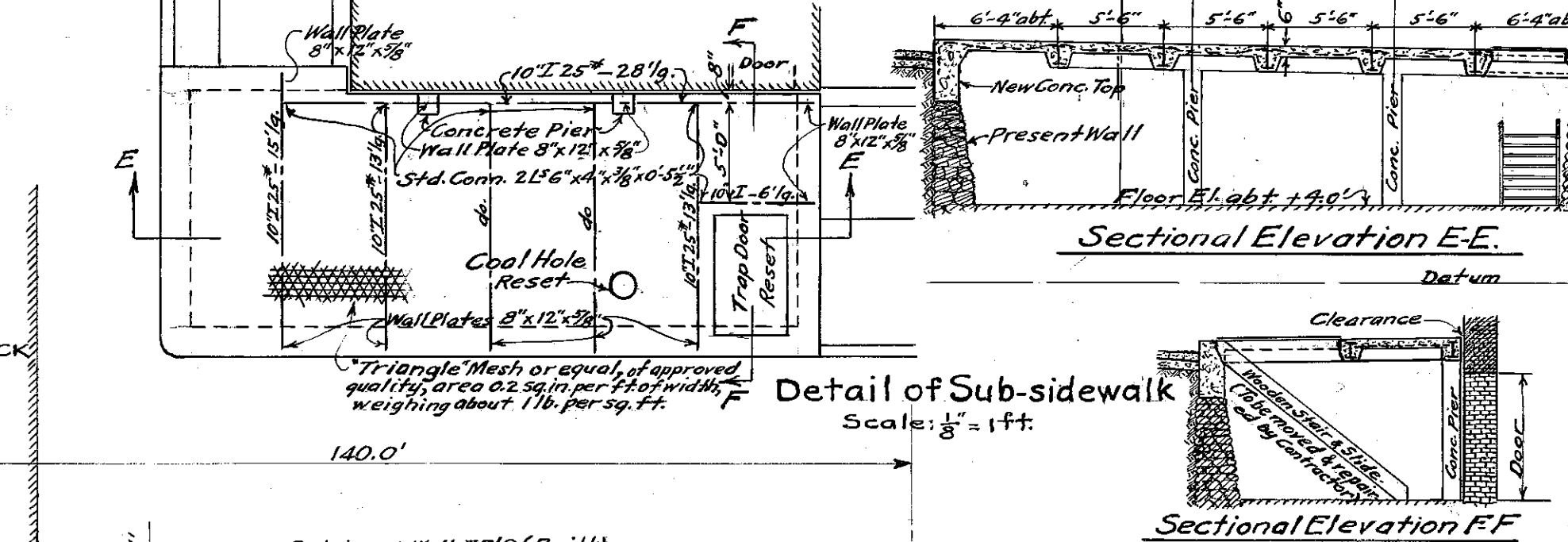
size 36" x 25"  
36x25



**Detail of Pavement, Curb and Sidewalk.**  
 Scale: 1/4" = 1 ft.

**Detail of Wall.**  
 (At Section C-C)  
 Scale: 1/4" = 1 ft.

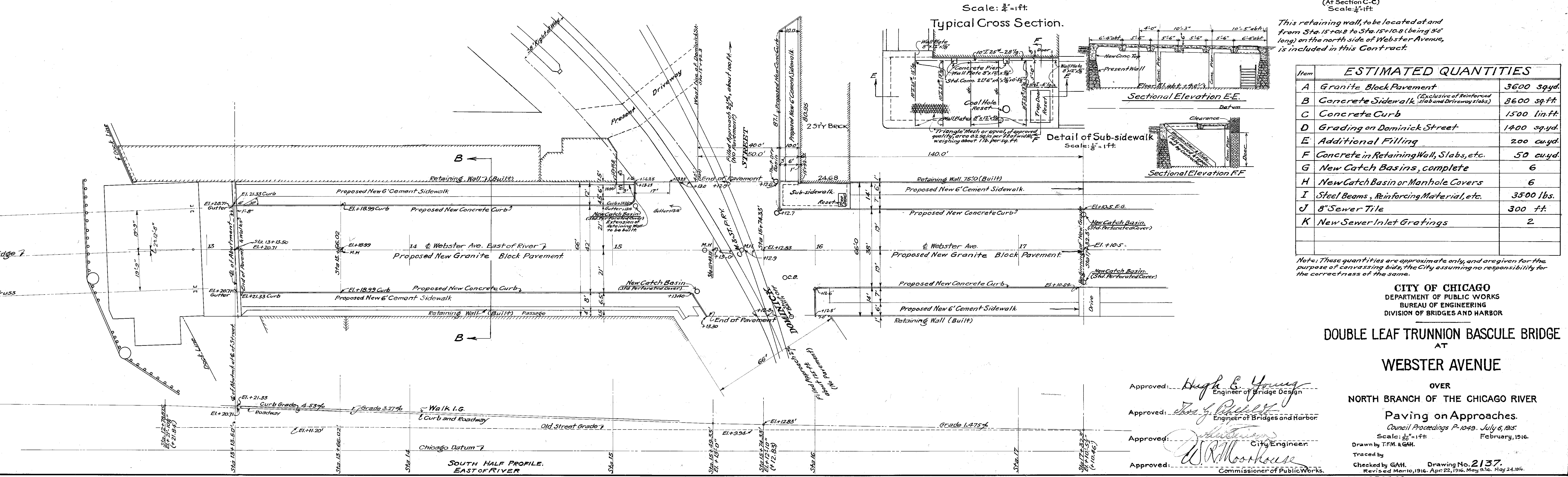
**Typical Cross Section.**  
 Scale: 1/4" = 1 ft.



This retaining wall, to be located at and from Sta. 15+28.8 to Sta. 15+108.8 (being 90' long) on the north side of Webster Avenue, is included in this Contract.

ESTIMATED QUANTITIES		
A	Granite Block Pavement	3600 sq. ft.
B	Concrete Sidewalk (Slab and Driveway Slabs)	8600 sq. ft.
C	Concrete Curb	1500 lin. ft.
D	Grading on Dominick Street	1400 sq. yd.
E	Additional Filling	200 cu. yd.
F	Concrete in Retaining Wall, Slabs, etc.	50 cu. yd.
G	New Catch Basins, complete	6
H	New Catch Basin or Manhole Covers	6
I	Steel Beams, Reinforcing Material, etc.	3500 lbs.
J	8" Sewer Tile	300 ft.
K	New Sewer Inlet Gratings	2

Note: These quantities are approximate only, and are given for the purpose of canvassing bids, the City assuming no responsibility for the correctness of the same.



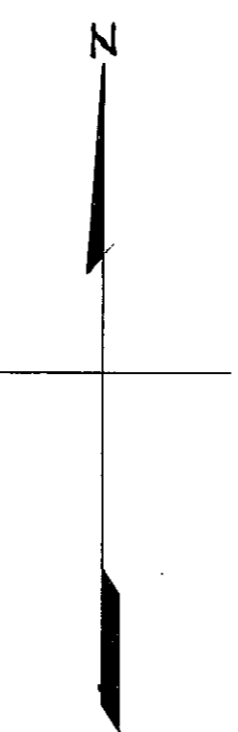
**CITY OF CHICAGO**  
 DEPARTMENT OF PUBLIC WORKS  
 BUREAU OF ENGINEERING  
 DIVISION OF BRIDGES AND HARBOR

**DOUBLE LEAF TRUNNION BASCULE BRIDGE AT WEBSTER AVENUE**

OVER NORTH BRANCH OF THE CHICAGO RIVER  
 Paving on Approaches.  
 Council Proceedings P-1049. July 6, 1915.  
 Scale: 1/4" = 1 ft. February, 1916.

Approved: *Dugh E. Young*  
 Engineer of Bridge Design  
 Approved: *John J. ...*  
 Engineer of Bridges and Harbor  
 Approved: *...*  
 City Engineer  
 Approved: *...*  
 Commissioner of Public Works.

Checked by G.H.H. Drawing No. 2137.  
 Revised March, 1916. Apr. 22, 1916. May 9, 16. May 24, 16.  
 1660570060 FILE No. 11-6A-59  
 9A Per 3



WHITE LUMBER CO.

FREDERICK FURST  
STONE Co.

PROPERTY OF WHITE LUMBER CO.

Lumber Piles.

Driveway.

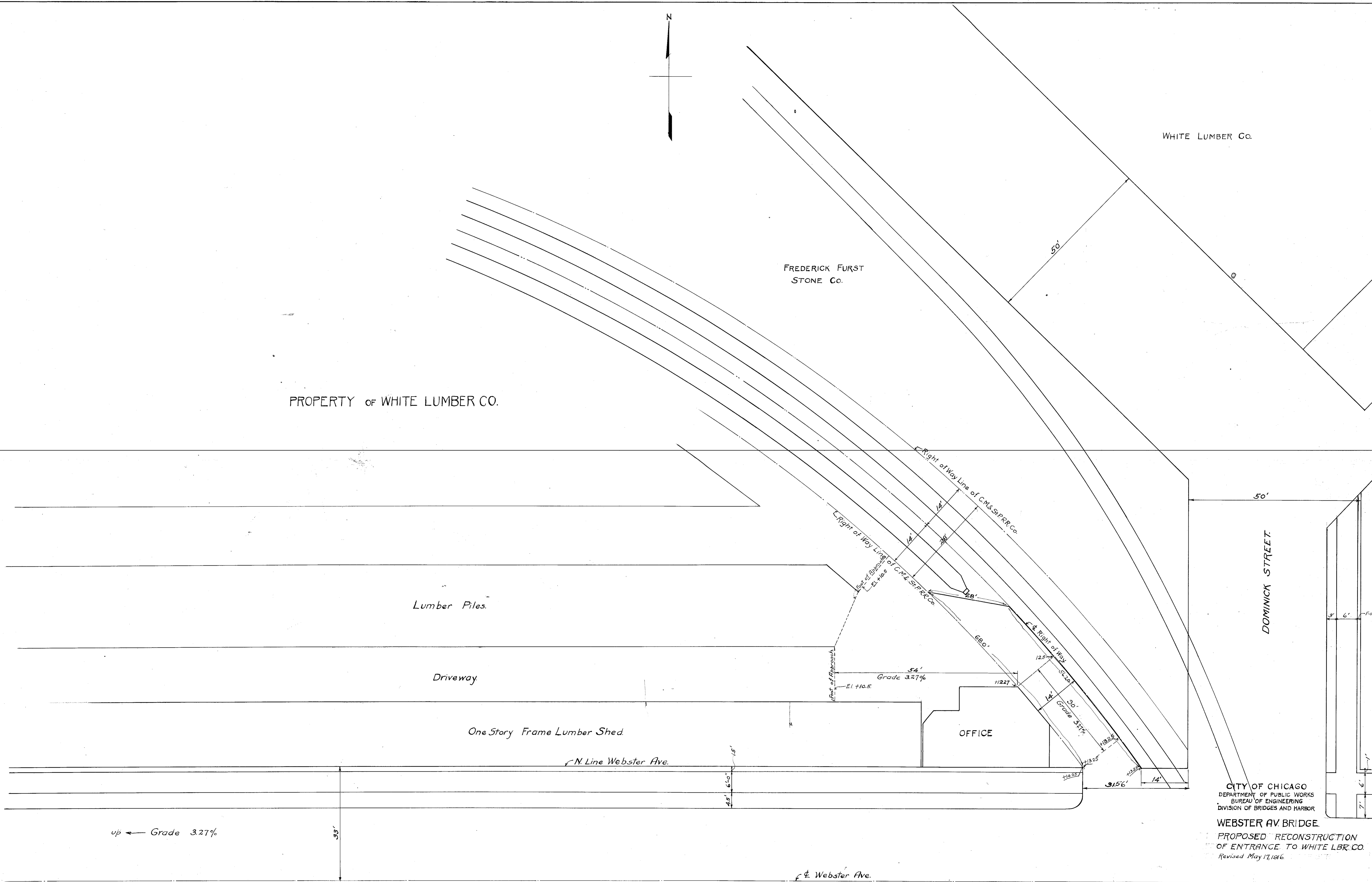
One Story Frame Lumber Shed.

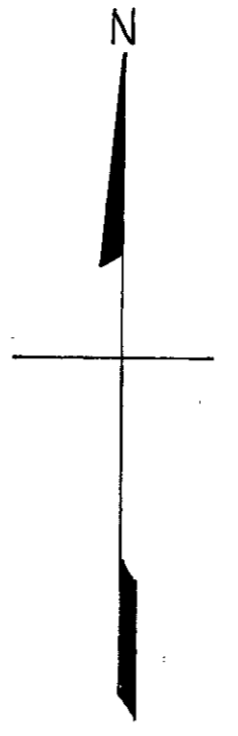
OFFICE

DOMINICK STREET.

CITY OF CHICAGO  
DEPARTMENT OF PUBLIC WORKS  
BUREAU OF ENGINEERING  
DIVISION OF BRIDGES AND HARBOR

WEBSTER AV. BRIDGE  
PROPOSED RECONSTRUCTION  
OF ENTRANCE TO WHITE LBR. CO.  
Revised May 17, 1916





WHITE LUMBER Co.

FREDERICK FURST  
STONE Co.

PROPERTY OF WHITE LUMBER CO.

Lumber Piles

Lumber Piles

Driveway

One Story Frame Lumber Shed

Center Line Webster Ave.

Cement Sidewalk

Curb

OFFICE  
Moved to this position  
to give 20' Driveway

Right of Way Line of CM & ST. P. RR Co.

Right of Way Line of CM & ST. P. RR Co.

Right of Way

DOMINICK STREET

CITY OF CHICAGO  
DEPARTMENT OF PUBLIC WORKS  
BUREAU OF ENGINEERING  
DIVISION OF BRIDGES AND HARBOR

WEBSTER AV. BRIDGE  
PROPOSED RECONSTRUCTION  
OF ENTRANCE TO WHITE LUMBER CO  
SCALE 10" = 1" May 4, 1916.

DRG No 2695  
FILE No 11-6A-61 I.L.S.

1660570062 Scheme #2

27x41'

53'

Webster Ave.

50'

50'

1'0"

3' 6"

1'0"

3' 6"

1'0"

3' 6"

1'0"

3' 6"

1'0"

3' 6"

1'0"

3' 6"

1'0"

3' 6"

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3' 6"

1'0"

3' 6"

1'0"

3' 6"

1'0"

3' 6"

1'0"

3' 6"

1'0"

3' 6"

1'0"

3' 6"

1'0"

3' 6"

1'0"

3' 6"

1'0"

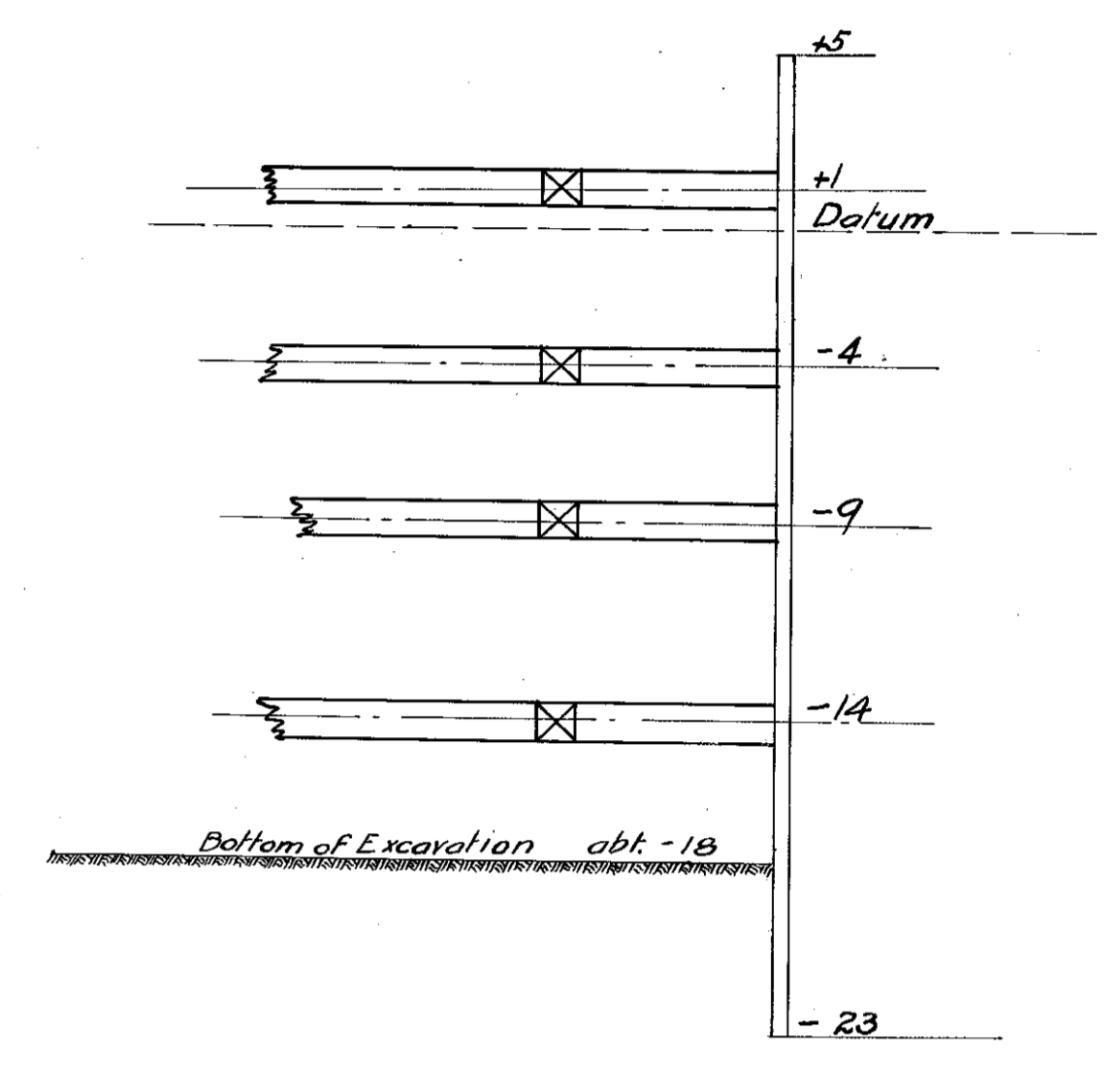
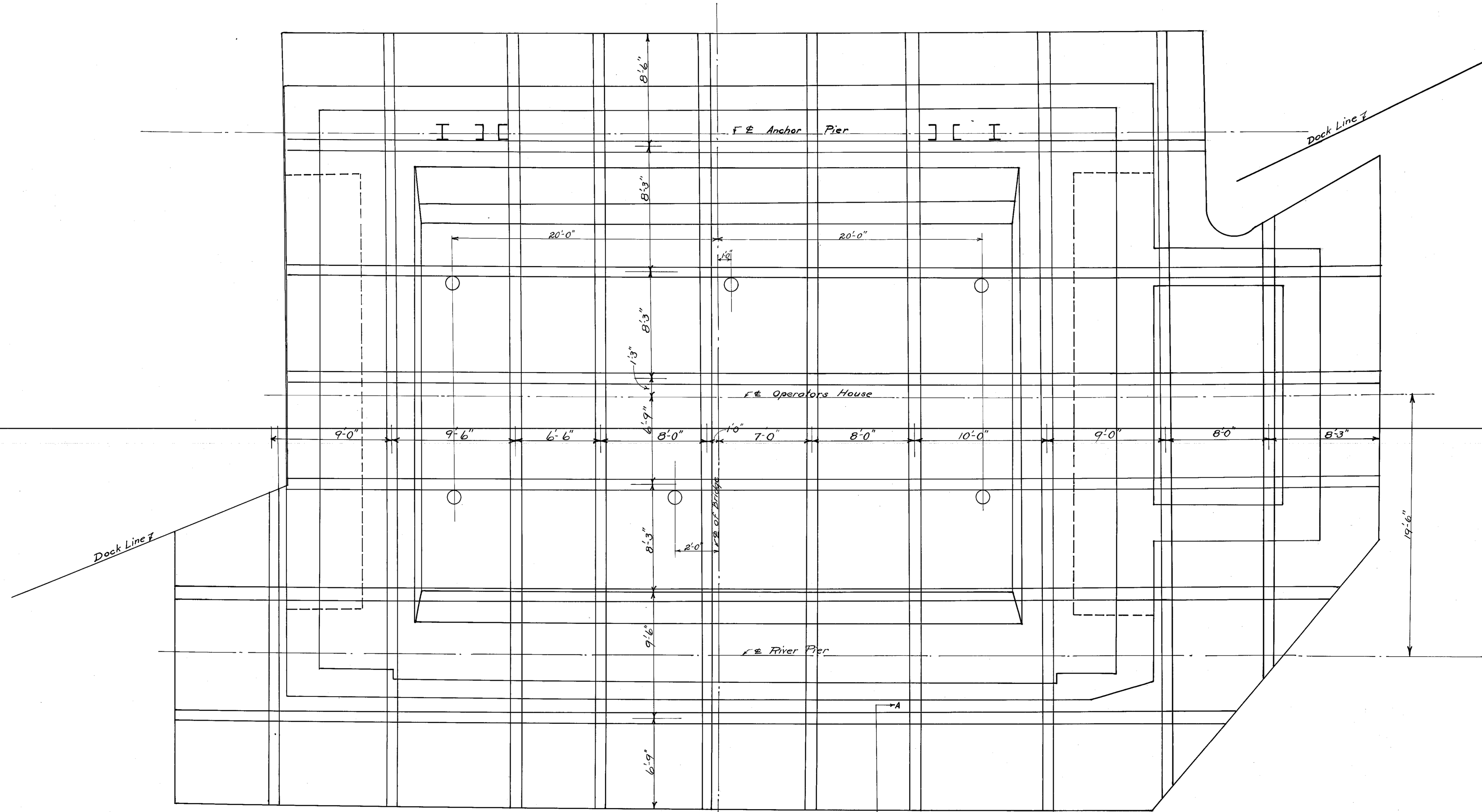
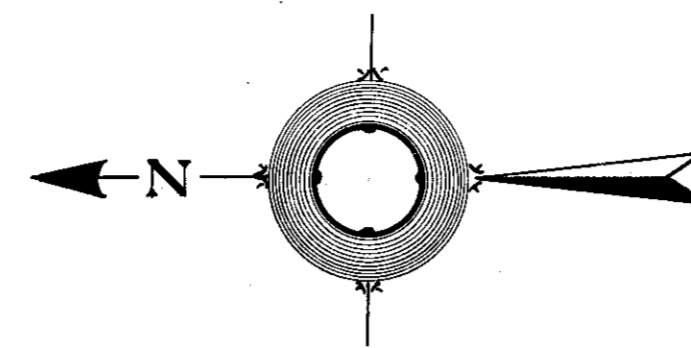
3' 6"

1'0"

3' 6"

1'0"

3' 6"



Section A-A.  
Scale 3/8" = 1 Ft.

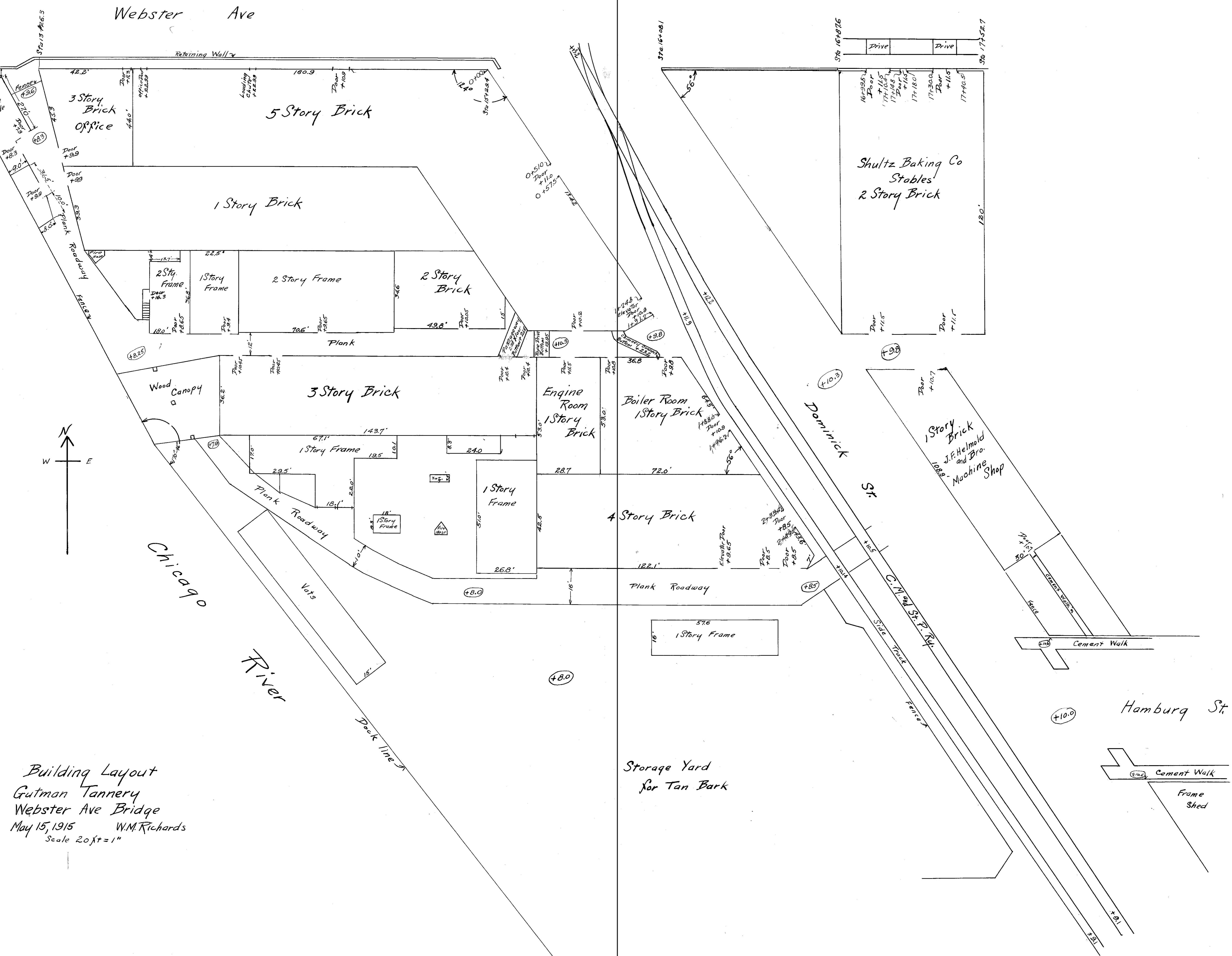
Approved: \_\_\_\_\_  
Engineer of Bridge Design

Approved: \_\_\_\_\_  
Engineer of Bridges and Harbor

Approved: \_\_\_\_\_  
City Engineer

Approved: \_\_\_\_\_  
Commissioner of Public Works

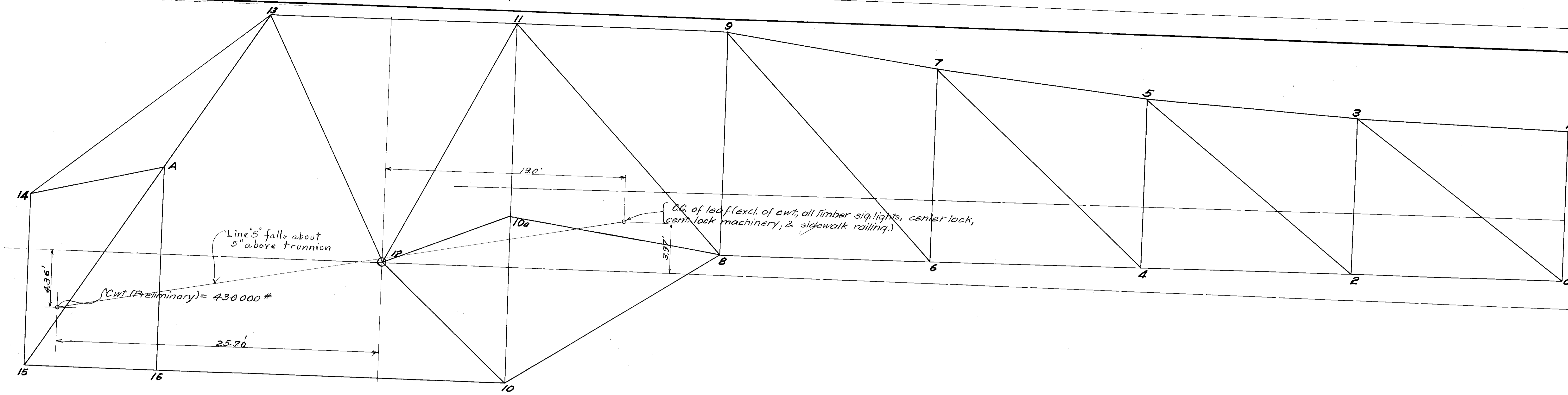
DOUBLE LEAF TRUNNION BASCULE BRIDGE  
AT  
WEBSTER AVE.  
Suggestion for East Cofferdam layout  
Scale 1/4" = 1 Ft. March 2 - 1915  
Great Lakes Dredge & Dock Company  
Monroe Building, Chicago  
1660570063 DRAWING NO 3831  
FILE NO 11-6A-62



Building Layout  
 Gutman Tannery  
 Webster Ave Bridge  
 May 15, 1915 W.M. Richards  
 Scale 20 ft = 1"





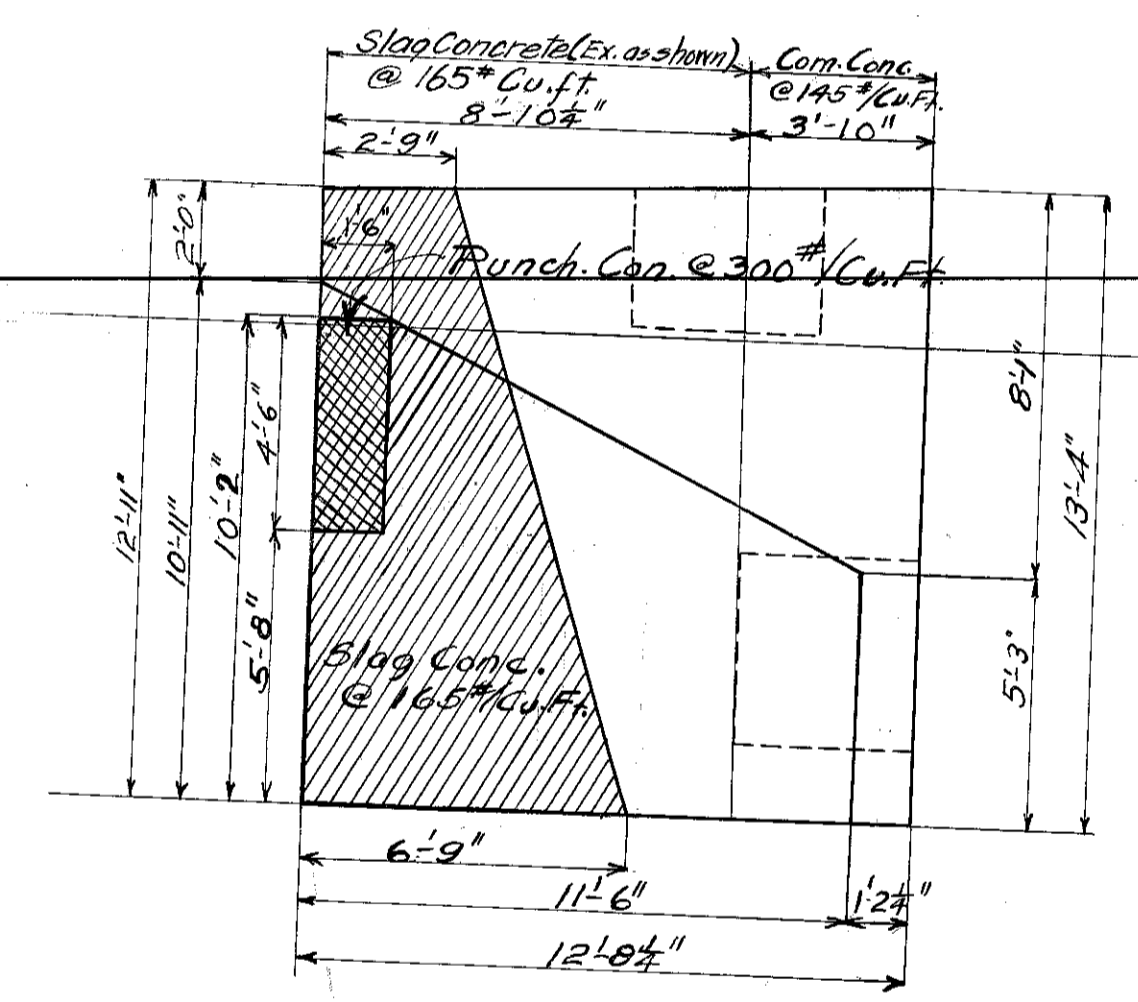


Item	Weight	X ft.	Moment (ft lbs)		Y in.	Moment (inch lbs)	
			+	-		+	-
Floor Beams	10600	19349	990904		4175	506150	
" " 2-2	10573	16384	811901		44619	488367	
" " 4-4	10573	16024	635332		44663	471873	
" " 6-6	10573	14334	458868		44307	455379	
" " 8-8	10645	12684	284222		44151	441874	
" " 10-10	12420	1100	124200		375		
Horizontal Gir.	9235	973	89857		5500	346313	465750
Lattice Strut	6200	484	30008				
Sidewalk Brackets	9880	4575	510255		5775	569415	323950
" Laterals	1400	4575	72450		685	95900	
Roadway Laterals	8450	600	507000		2362	199583	
Center Struts	3885	600	233100		2362	97764	
Laterals 8-10a	2490	1385	45692		13474	86392	
Strut 8-10	1510	1685	27708		4556	66796	
Laterals 8-10	2430	489	118600				
Stringers (Rays)	70804	4991	3533828		620	4389848	110717
Bracing Structures	165	733	1209		1820	13530	
Roadway Coatings	8945	666	59573		620	554590	
Trusses & Plates	1321620		6071138	1922404			
Cwt Box	69295	-226		1566067	-500	30899910	7203380
Totals	581679	14531935	3488471		39311054	11637337	

$$x = \frac{14531935 - 3488471}{581679} = 19.0$$

$$y = \frac{39311054 - 11637337}{581679 \times 12} = 3.97$$

$$\text{Cwt Req} = \frac{14531935 - 3488471}{2600} = 442,000 \#$$

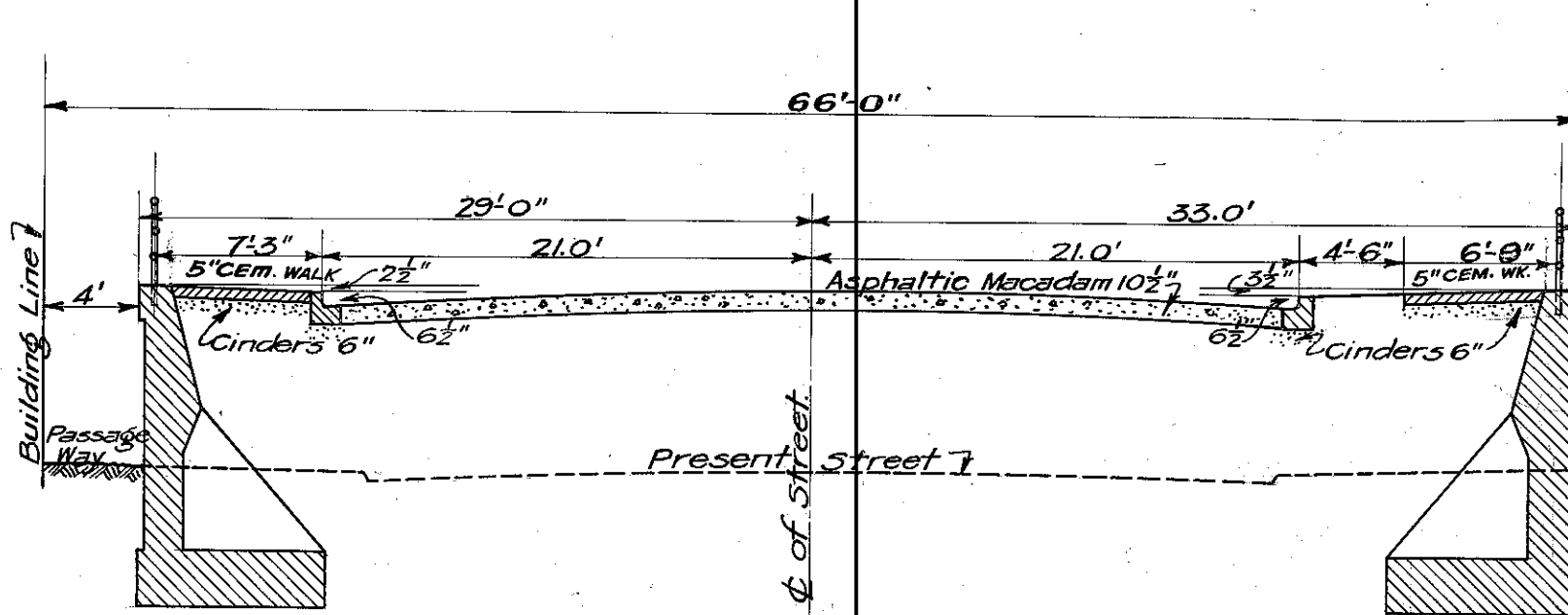


**CROSS SECTION OF CWT**  
 Part of Cwt. shown shaded necessary to balance bridge exclusive of all timber, signal lights center lock, center lock machinery & sidewalk railing.  
 Material { 2120 Cu ft. Slag conc @ 165 # = 350000 #  
 265 " Punch " @ 300 # = 80000 #  
 Total 430000 #

CITY OF CHICAGO  
 DEPARTMENT OF PUBLIC WORKS  
 BUREAU OF ENGINEERING  
 DIVISION OF BRIDGES AND HARBOR

**DOUBLE LEAF TRUNNION BASCULE BRIDGE**  
 AT  
**WEBSTER AVENUE**  
 OVER  
 NORTH BRANCH OF THE CHICAGO RIVER  
 SUPERSTRUCTURE  
 MOVABLE PART  
 Preliminary Counterweight  
 Scale

Drawn by J.P.  
 Traced by R.L.H.



Section of East Approach.

Scale  $\frac{1}{8}'' = 1\text{-Ft.}$

WEBSTER AVE. BRIDGE.

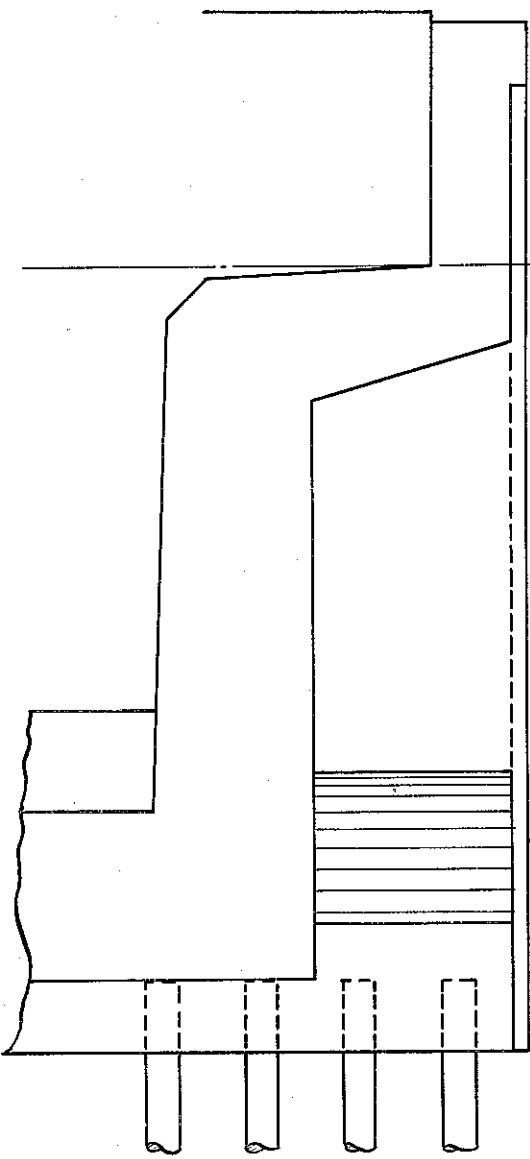
DWG No 944

FILE No 34-DI-505

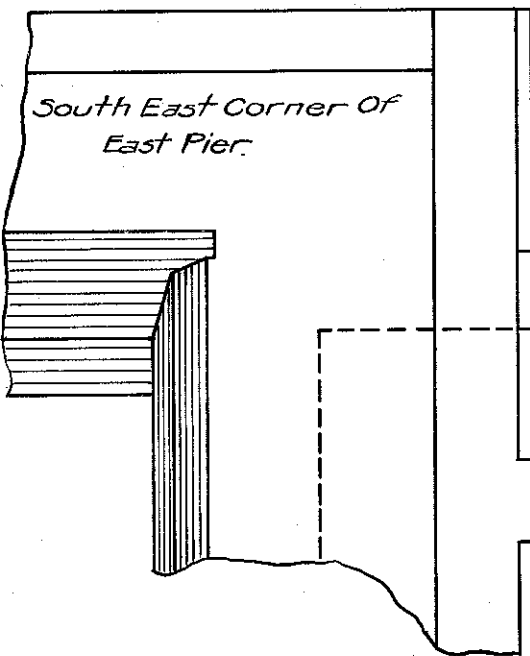
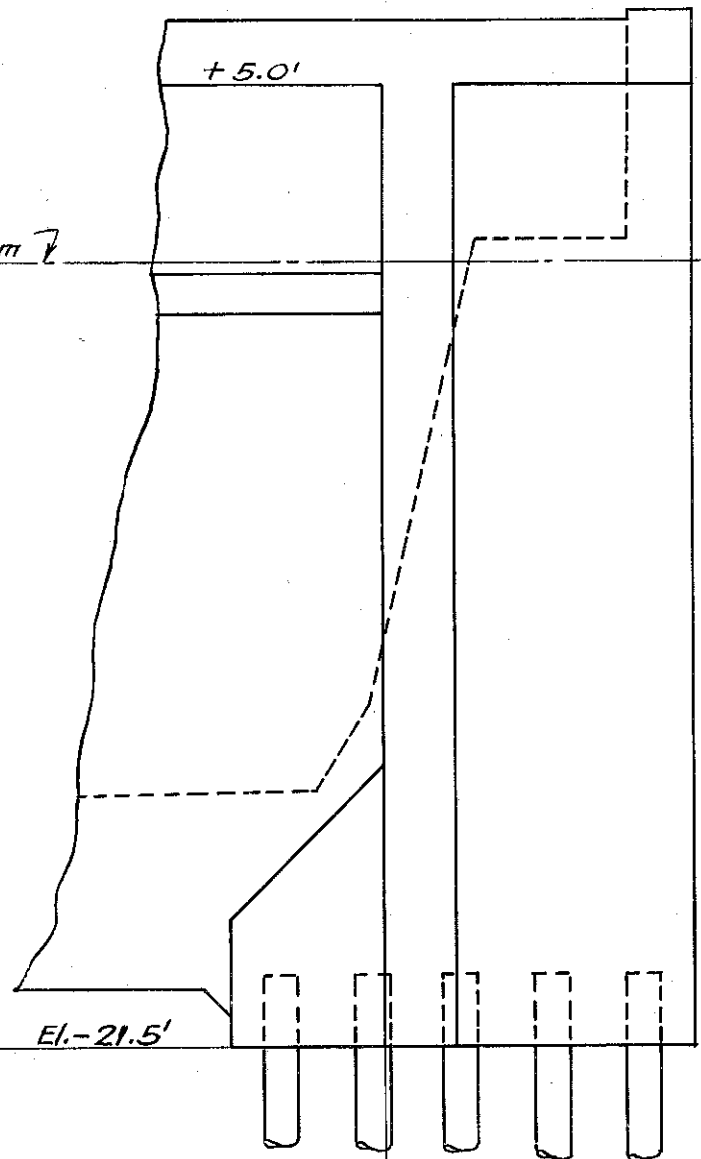
7-16-14

$8\frac{1}{2}'' \times 11''$

1660570068



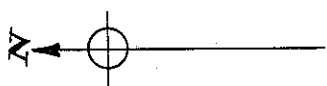
Datum 7



Dock Line 7

current

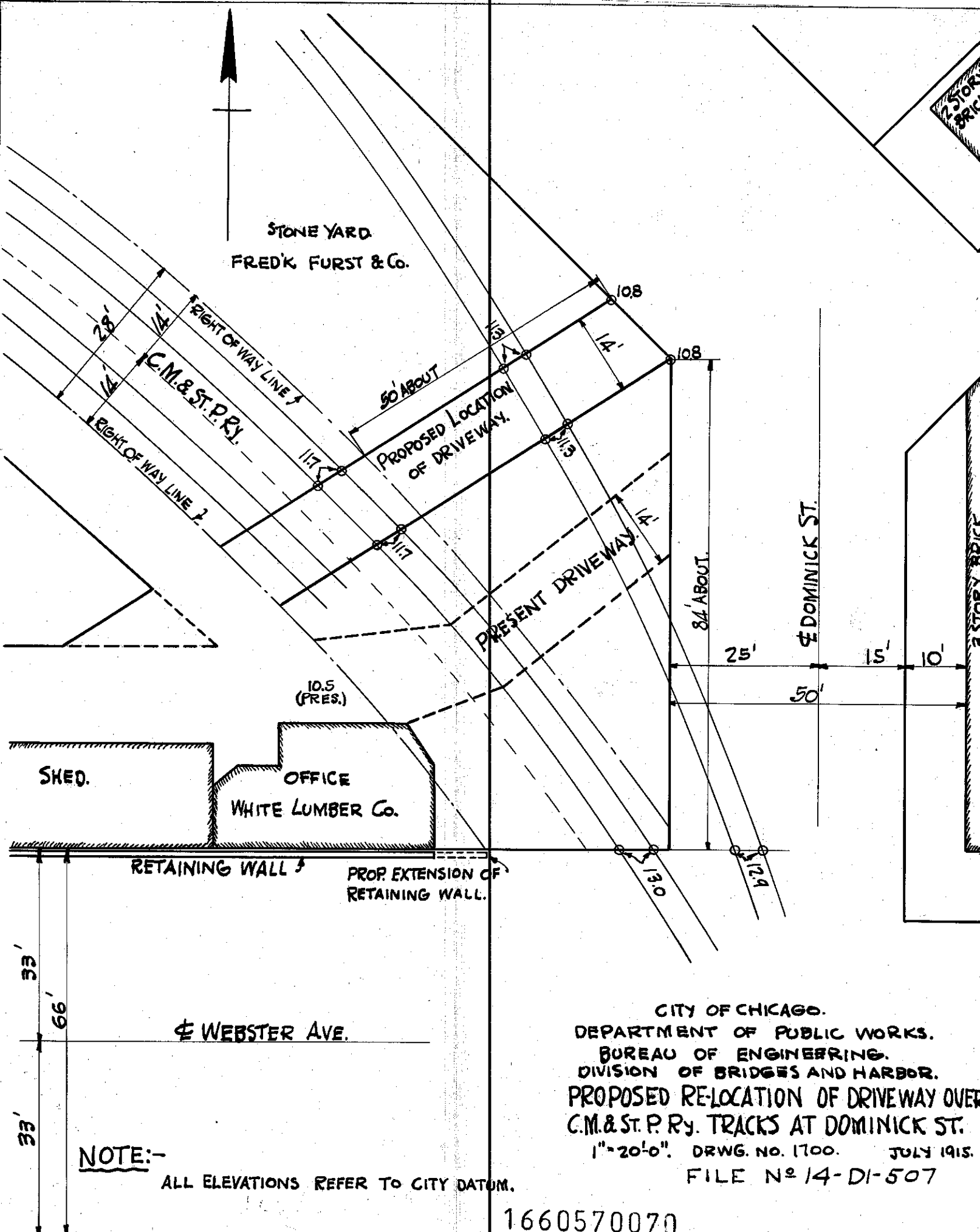
Dock Line 7



CITY OF CHICAGO  
 DEPARTMENT OF PUBLIC WORKS  
 BUREAU OF ENGINEERING  
 DIVISION OF BRIDGES & HARBOR  
**WEBSTER AVE. BRIDGE**  
 Modification of South End Of  
 Anchor Pier  
 To Suit Dock Construction.  
 Scale  $\frac{5}{16}'' = 1'-0''$  Feb. 15-1915

1660570069

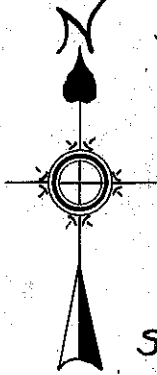
Drawing No 1339  
 FILE No 14-D-506



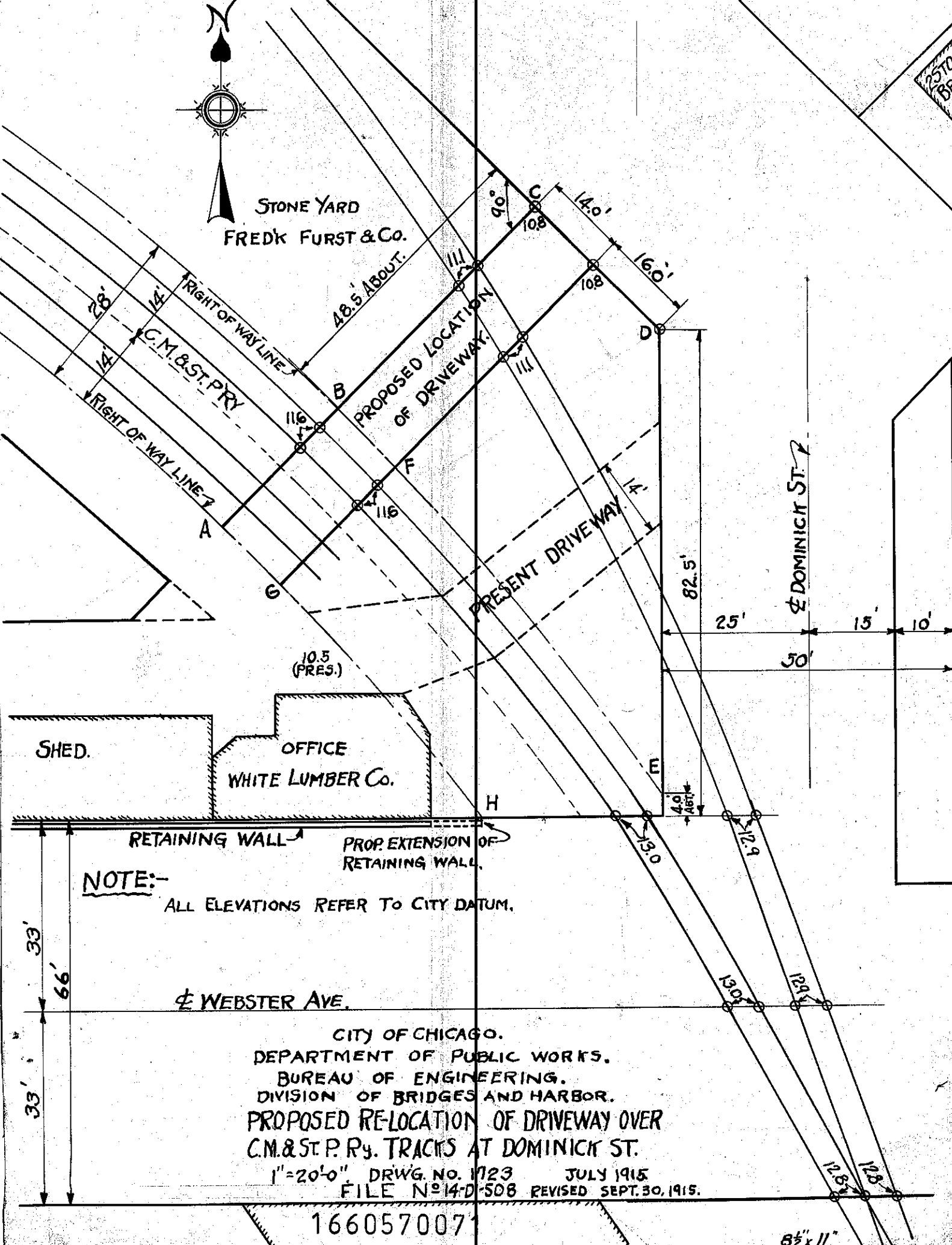
**NOTE:-**  
ALL ELEVATIONS REFER TO CITY DATUM.

CITY OF CHICAGO.  
DEPARTMENT OF PUBLIC WORKS.  
BUREAU OF ENGINEERING.  
DIVISION OF BRIDGES AND HARBOR.  
PROPOSED RELOCATION OF DRIVEWAY OVER  
C.M. & ST. P. RY. TRACKS AT DOMINICK ST.  
1" = 20'-0". DRWG. NO. 1700. JULY 1915.  
FILE NO 14-DI-507

1660570070



STONE YARD  
FREDK FURST & CO.



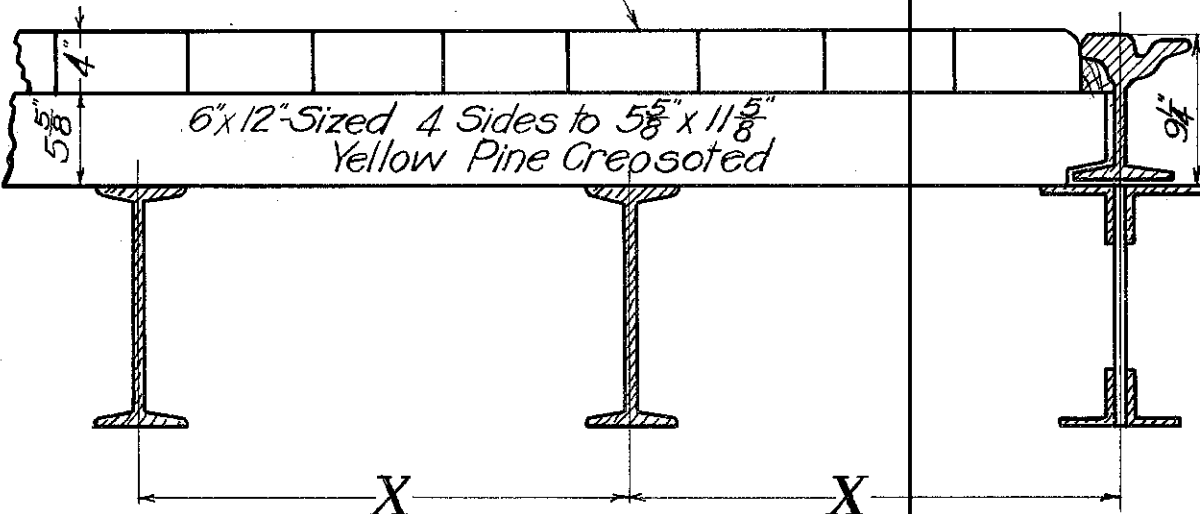
**NOTE:-**  
ALL ELEVATIONS REFER TO CITY DATUM.

CITY OF CHICAGO.  
DEPARTMENT OF PUBLIC WORKS.  
BUREAU OF ENGINEERING.  
DIVISION OF BRIDGES AND HARBOR.  
**PROPOSED RELOCATION OF DRIVEWAY OVER  
C.M. & ST. P. RY. TRACKS AT DOMINICK ST.**  
1"=20'-0" DRWG. NO. 1723 JULY 1915  
FILE N° 14-D-508 REVISED SEPT. 30, 1915.

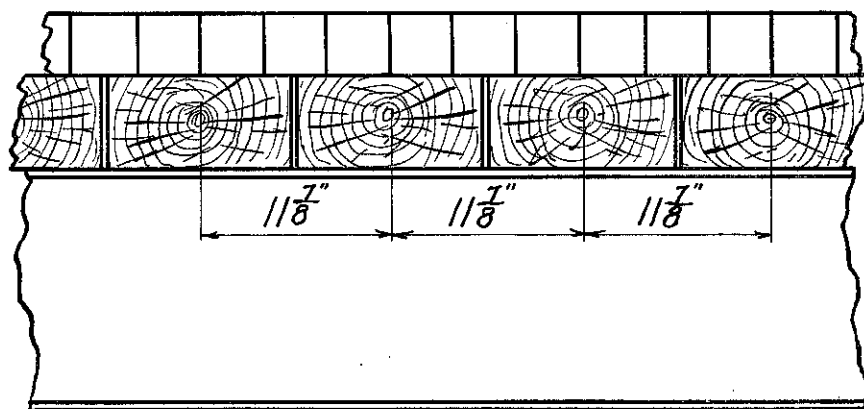
1660570071

8 1/2 x 11"

4" Paving Blocks, creosoted



CROSS SECTION



LONGITUDINAL SECTION.

"X" (Centers of stringers) varies from 2'-4 13/16" to 2'-8 3/16"

Correct *Augustus Vent Sabo*  
Engr. of Bridge Design

Approved *Thos. G. Cappelletti*  
Engr. of Bridges & Harbor

Approved *[Signature]*  
City Engineer

CITY OF CHICAGO  
DEPARTMENT OF PUBLIC WORKS  
BUREAU OF ENGINEERING  
DIVISION OF BRIDGES & HARBOR.

WEBSTER AVE. BRIDGE.

SOLID SUB-PLANKING

1660570072 UNDER PAVEMENT ON MOVABLE PART.

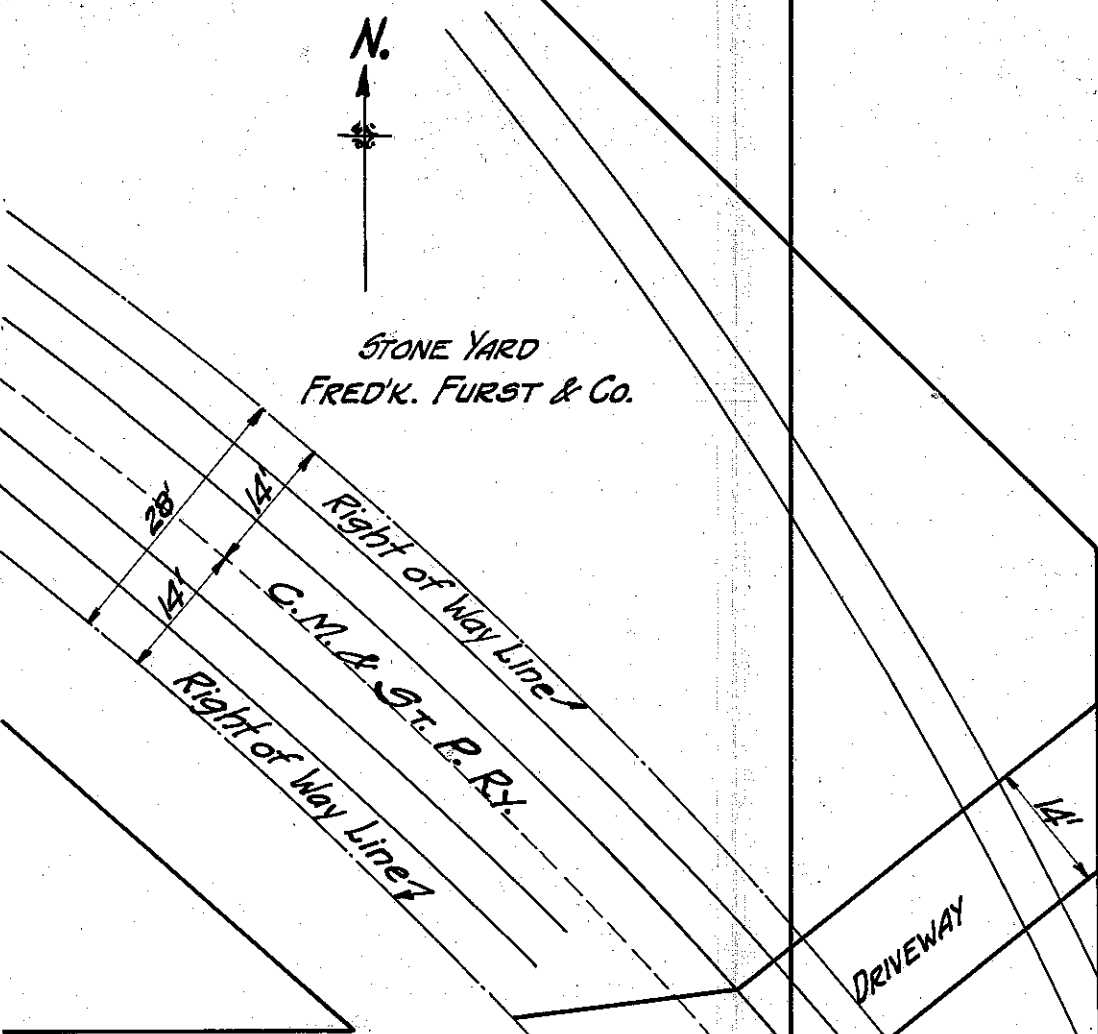
Scale 1"=1'-0"

Aug. 6, 1915

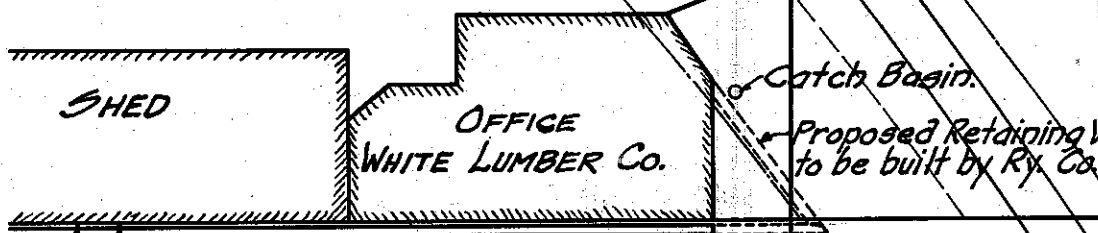
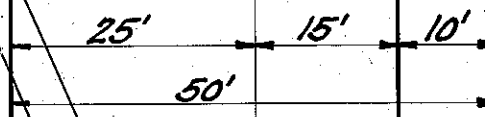
*v.f.a.*  
DRAWING No. 1734  
FILE No. 14-DI-509 8 1/2" x 11"



STONE YARD  
FRED'K. FURST & Co.

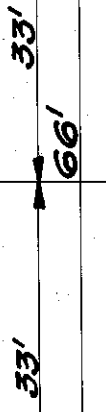


DOMINICK ST.



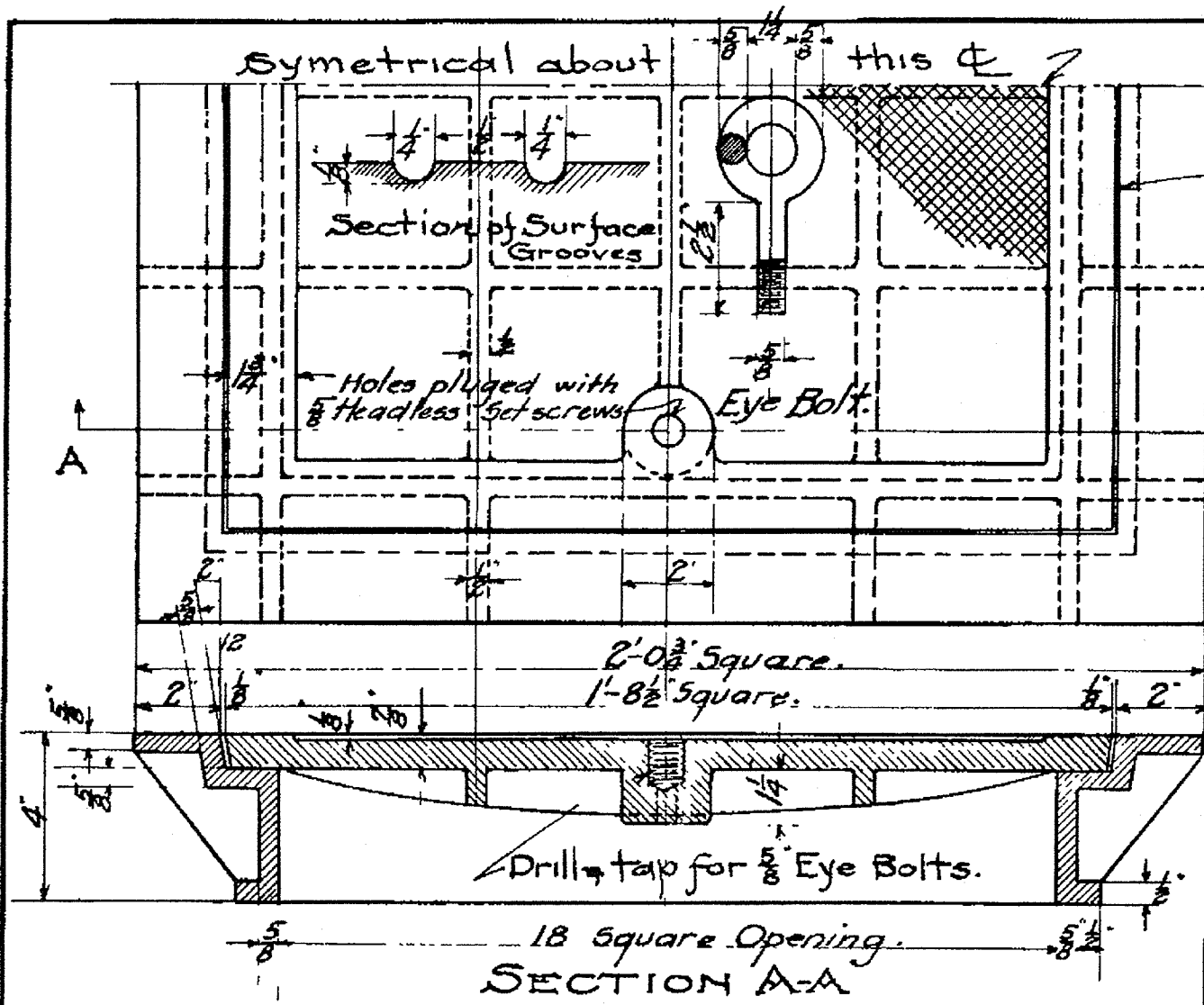
RETAINING WALL  
Proposed extension of Retaining Wall to be built by City of Chicago

WEBSTER AVE



CITY OF CHICAGO.  
DEPARTMENT OF PUBLIC WORKS  
BUREAU OF ENGINEERING  
DIVISION OF BRIDGES AND HARBOR.  
SKETCH OF SITUATION ON  
WEBSTER AVE. AT DOMINICK ST  
1" = 20' DRWG. NO 1738 Aug. 1915  
FILE NO. 14-DI-510

1660570073



Calked with Oateum when in place.

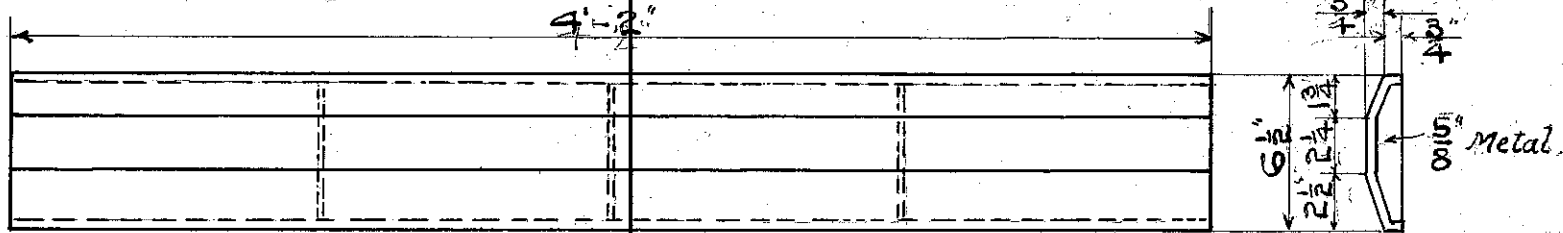
<b>CITY OF CHICAGO</b>	
DIVISION OF BRIDGES AND HARBOR	
STANDARD SUBMARINE MANHOLE AND COVER	
Scale: 3" = 1 ft. ...	Drawn by: <i>M</i> ...
Date: Sept. 1, 15 ..	Checked by: .....
DRAWING No 1749.	

Webster Av. + Lake St.

1660570074 1660290208

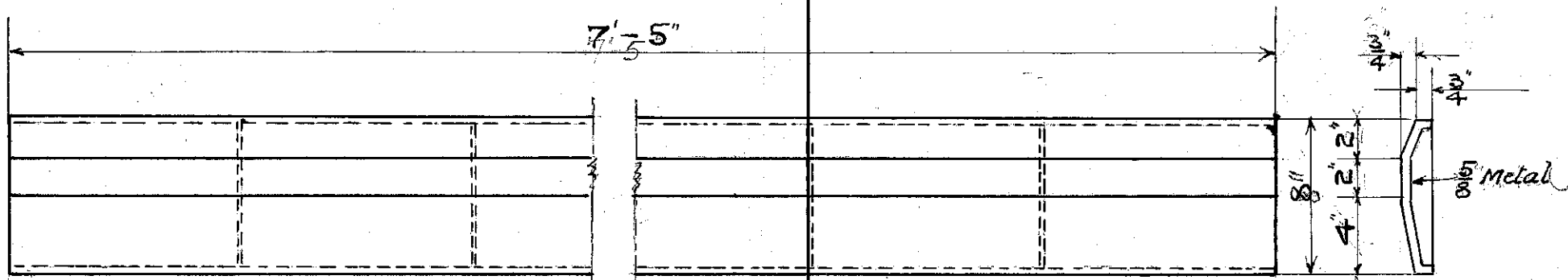
FILE No 14-DI-511  
Size 8 1/2 x 11 1/2





CAST IRON THRESHOLD FOR MAIN ENTRANCE DOOR SIDEWALK LEVEL

Z REQUIRED



CAST IRON THRESHOLD FOR ENTRANCE DOOR - DOCK LEVEL

Z REQUIRED

CITY OF CHICAGO  
 DEPARTMENT OF PUBLIC WORKS  
 BUREAU OF ENGINEERING  
 DIVISION OF BRIDGES AND HARBOR

WEBSTER AVE. BRIDGE

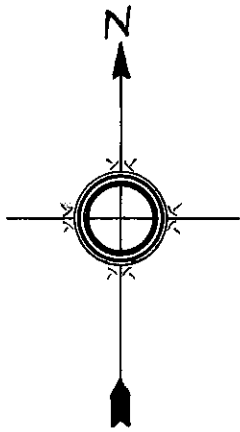
1660570075

CAST IRON THRESHOLDS FOR OPERATORS HOUSES.

SCALE 1 1/2" = 1 FT.

SEP 14, '15

FILE NO 34-DI-5/2 DRAWING No 1758.



White Lumber Co.

Stone Yard

Frederick Furst & Co.

C.M. & ST. P.R.

Right of Way

Present Driveway

Dominick Street

3 Story Brick  
Will Gruninger

1480

Louis Stadler

1/2 Story Brick

1474

Uas. Newman

1472

Mrs. K. Mertz.

1470

Frame Lumber Shed

White Lumber Co.

Office

I.G. New +15.0  
I.G. Old +11.0

I.G. New +13.1  
I.G. Old +10.4

I.G. New +12.0  
I.G. Old +10.6

WEBSTER AVE

66'

I.G. New +21.0  
I.G. Old +11.8

I.G. New +13.6  
I.G. Old +10.5

3 Story  
Brick  
Office

5-Story Brick Bldg.

GUTMAN TANNERY.

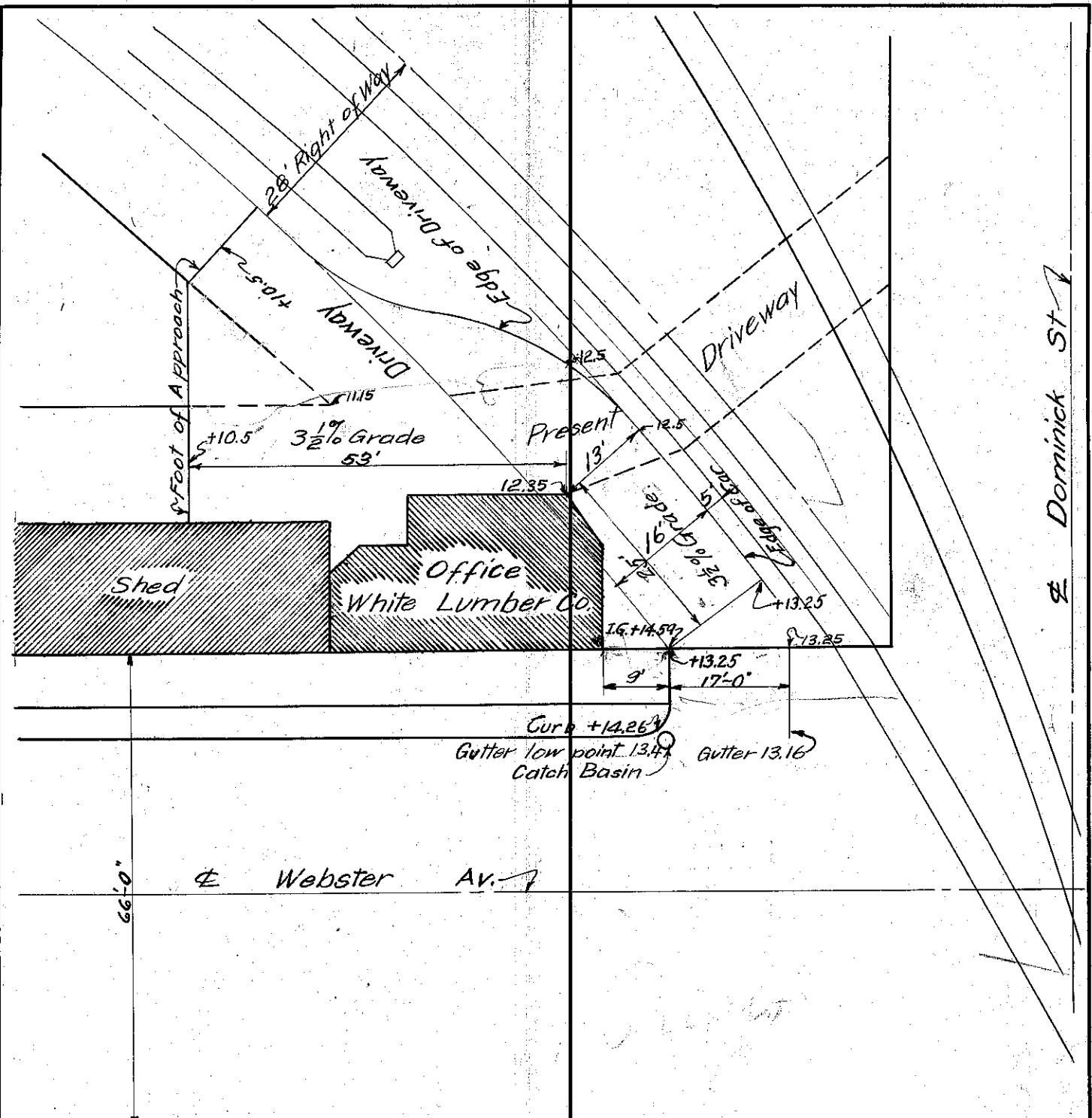
CITY OF CHICAGO  
DEPARTMENT OF PUBLIC WORKS  
BUREAU OF ENGINEERING  
DIVISION OF BRIDGES & HARBOR  
SHOWING PROPERTY OWNERSHIPS  
AT WEBSTER AVE. & DRIVEWAY FOR  
WHITE LUMBER CO.

Dominick Street

Schulze  
Baking  
(Vacant)

Schulze Baking Co.  
2-Story Brick Stables

1660570076



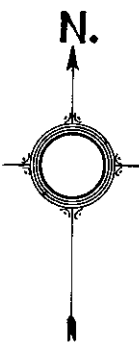
CITY OF CHICAGO  
 DEPARTMENT OF PUBLIC WORKS  
 BUREAU OF ENGINEERING  
 DIVISION OF BRIDGES AND HARBOR

SKETCH SHOWING PROPOSED ENTRANCE  
 TO WHITE LUMBER CO'S PROPERTY.  
 WEBSTER AVE. BRIDGE.

1660570077

Scale: 1 ft = 20 ft. Feb. 1916  
 DRAWING NO. 2112

FILE N<sup>o</sup> 14-DI-514 Size 8 1/2" x 11"



①

White Lumber Co.

Stone Yard  
Frederick Furst & Co.

C.M. & ST. PBY. Right of Way

Private Driveway

DOMINICK STREET.

Sta. 15+92.32  
3-Story Brick  
Will Gruninger ②

Raise 1.9°  
(Entire Block)

Louis Stadler  
1/2 Story Brick ③

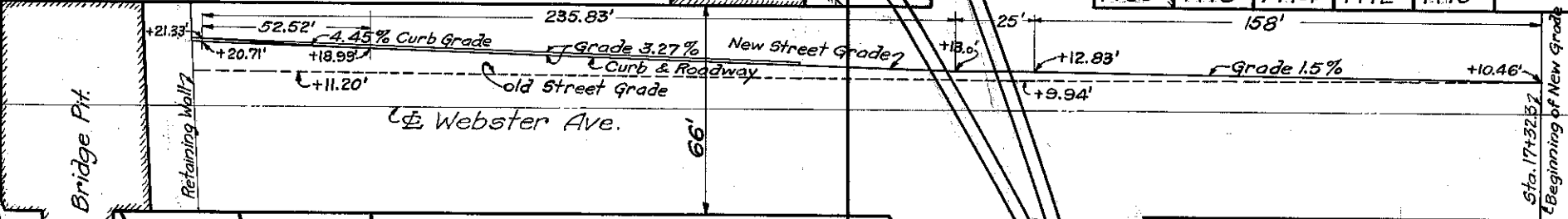
Jas. Newman  
1-Story Frame. ④

Mrs. K. Mertz  
2-Story Brick ⑤

Jas. Newman  
1-Story Brick. ⑥

White Lumber Co.  
Frame Lumber Shed.

Office



Webster Ave.

3-Story  
Brick  
Office

5-Story Brick Building.

Gutman Tannery  
1-Story Brick ⑧

CITY OF CHICAGO  
DEPARTMENT OF PUBLIC WORKS  
BUREAU OF ENGINEERING  
DIVISION OF BRIDGES AND HARBOR  
SHOWING PROPERTY OWNERSHIPS  
AT WEBSTER AVE. & DRIVEWAY FOR  
WHITE LUMBER CO.

7660570078

DOMINICK STREET

Schulze Baking Co.  
(Vacant)

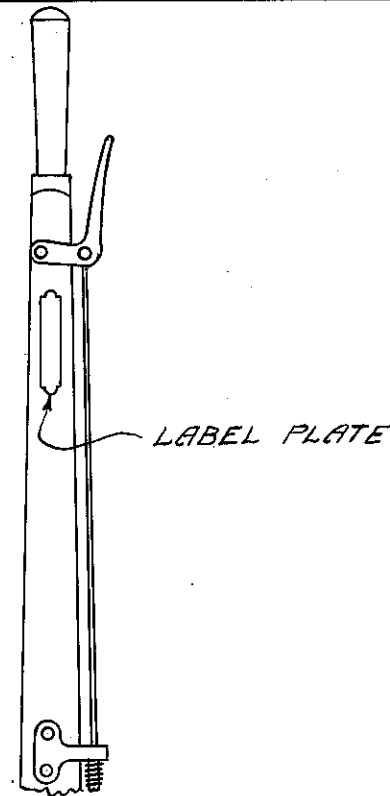
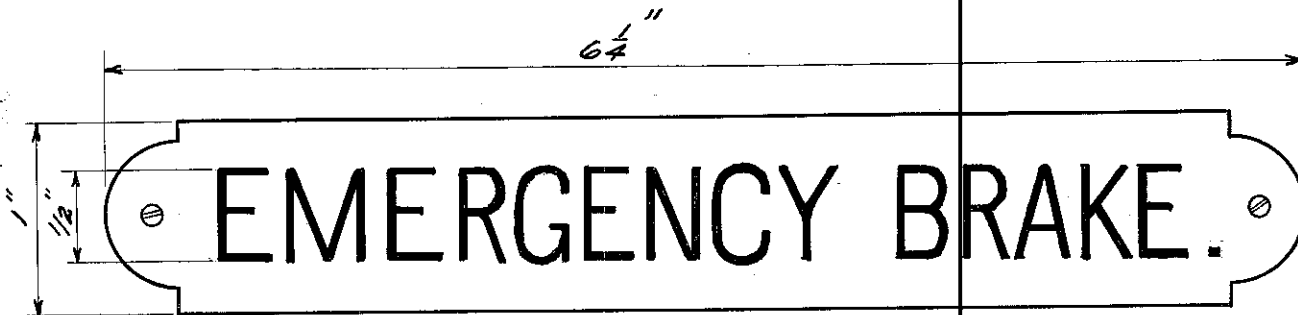
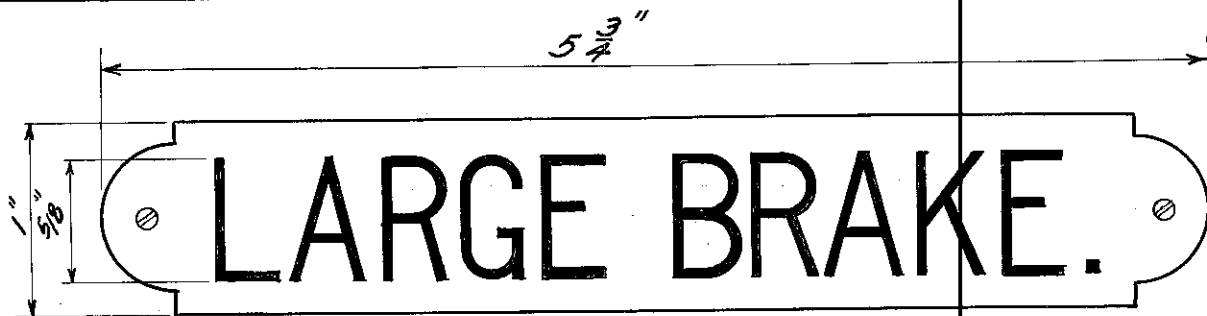
Schulze Baking Co.  
2-Story Brick Stables. ⑦

CHICAGO RIVER  
Dock Line

Numbers shown  
thus O correspond  
to report numbers.

Jan. 8, 1916. 1"=50' Drwg. No 2124

FILE No 14-DI-515



NOTE-

MAKE OF BRASS  $\frac{1}{16}$ " TO  $\frac{1}{8}$ " THICK  
 2 OF EACH REQUIRED  
 USE #10 R.H. BRASS MACHINE SCREWS 5/16" long.

Correct *[Signature]*  
 Engineer of Bridge Design.

Approved *[Signature]*  
 Engineer of Bridges.

1660570079

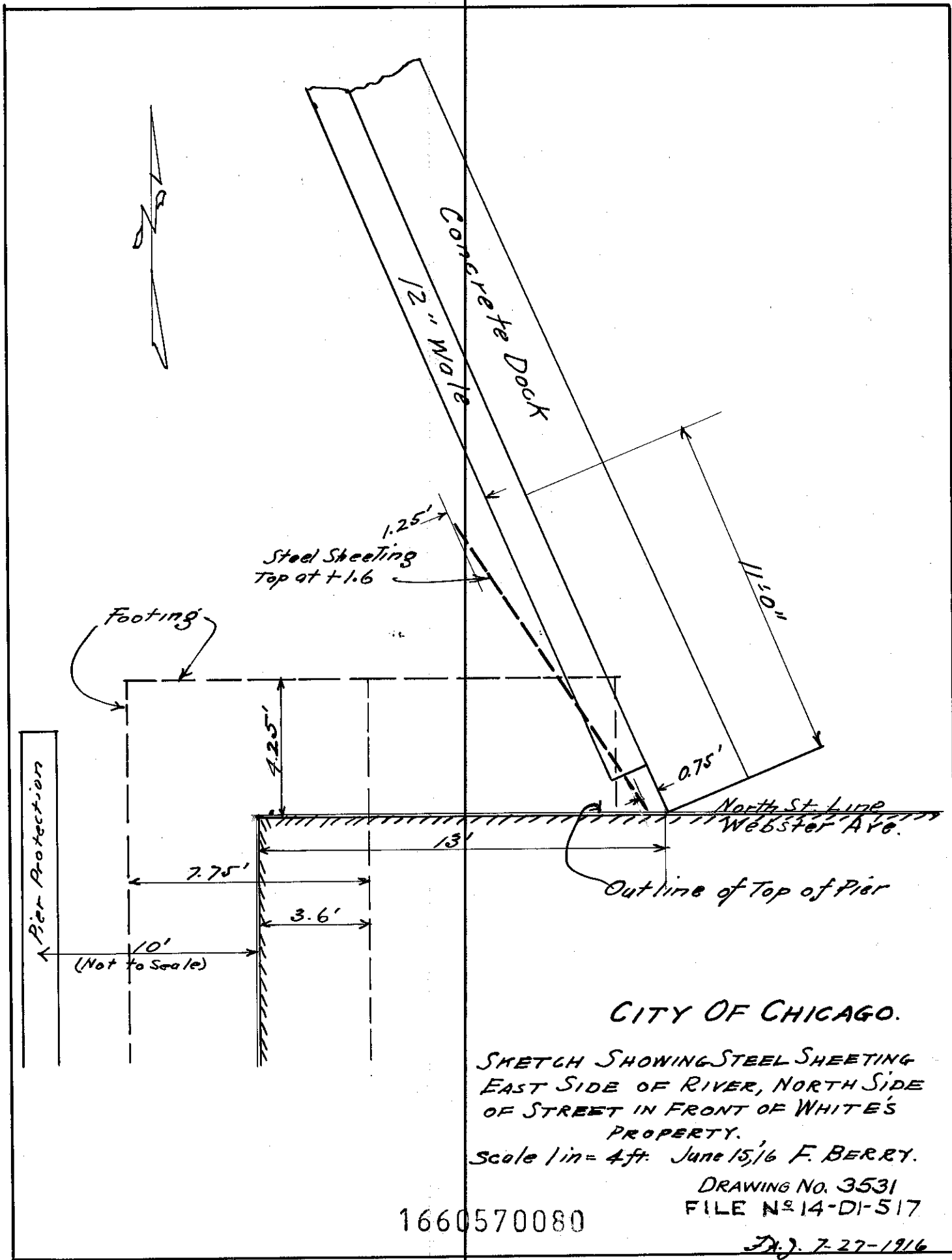
CITY OF CHICAGO  
 Department of Public Works  
 Bureau of Engineering  
 Division of Bridges

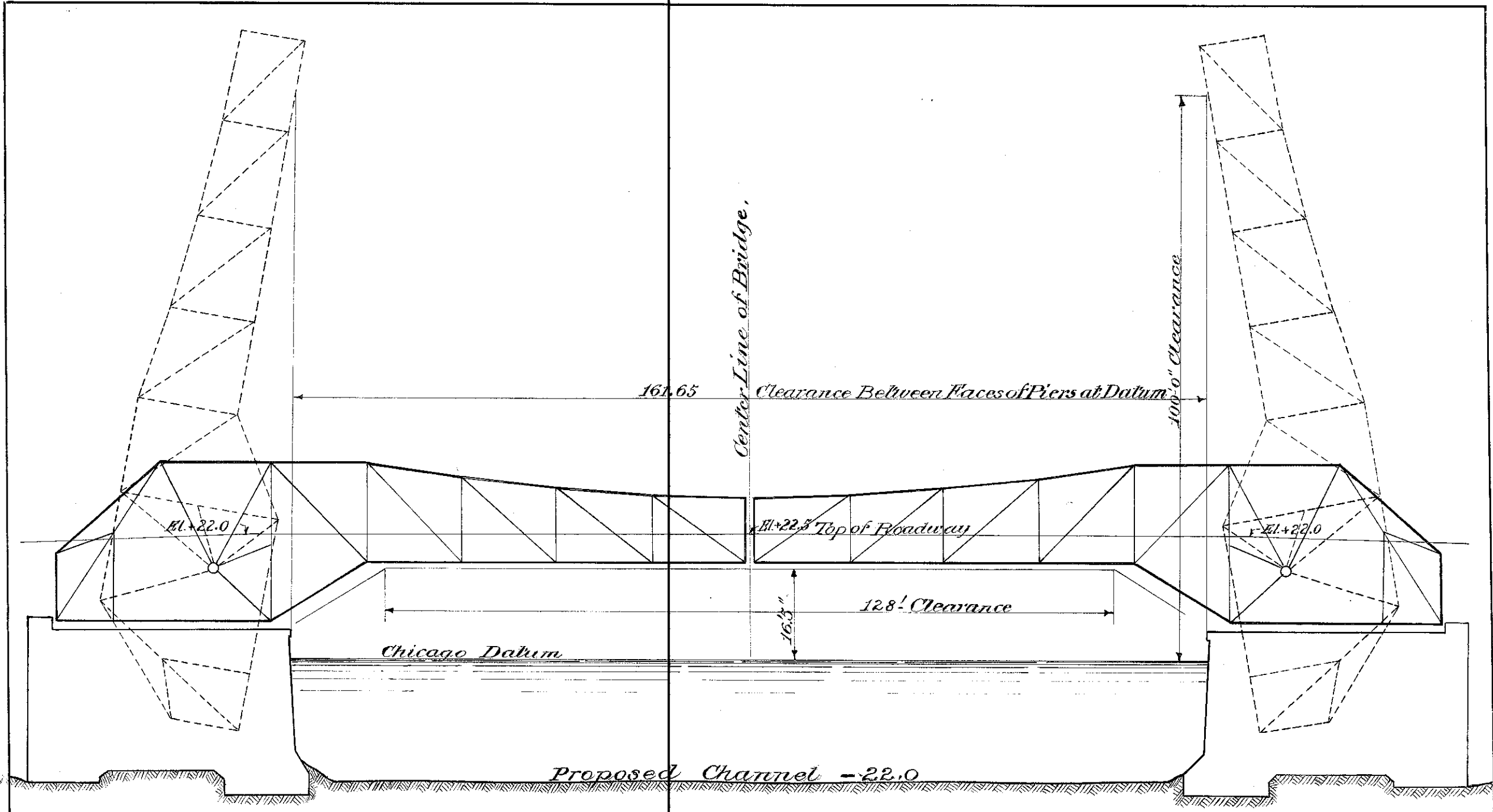
PROPOSED LABEL PLATES  
 FOR WEBSTER AVE. BRIDGE.

Drawn by J.G.B. & F.W.F. Date-July, 1916  
 Traced by F.W.F. & J.G.B. Scale-Full size.  
 checked by *[Signature]* DWG. NO. 3526

FILE NO 14-DI-516

9 PER 201  
 8 1/2" x 11"



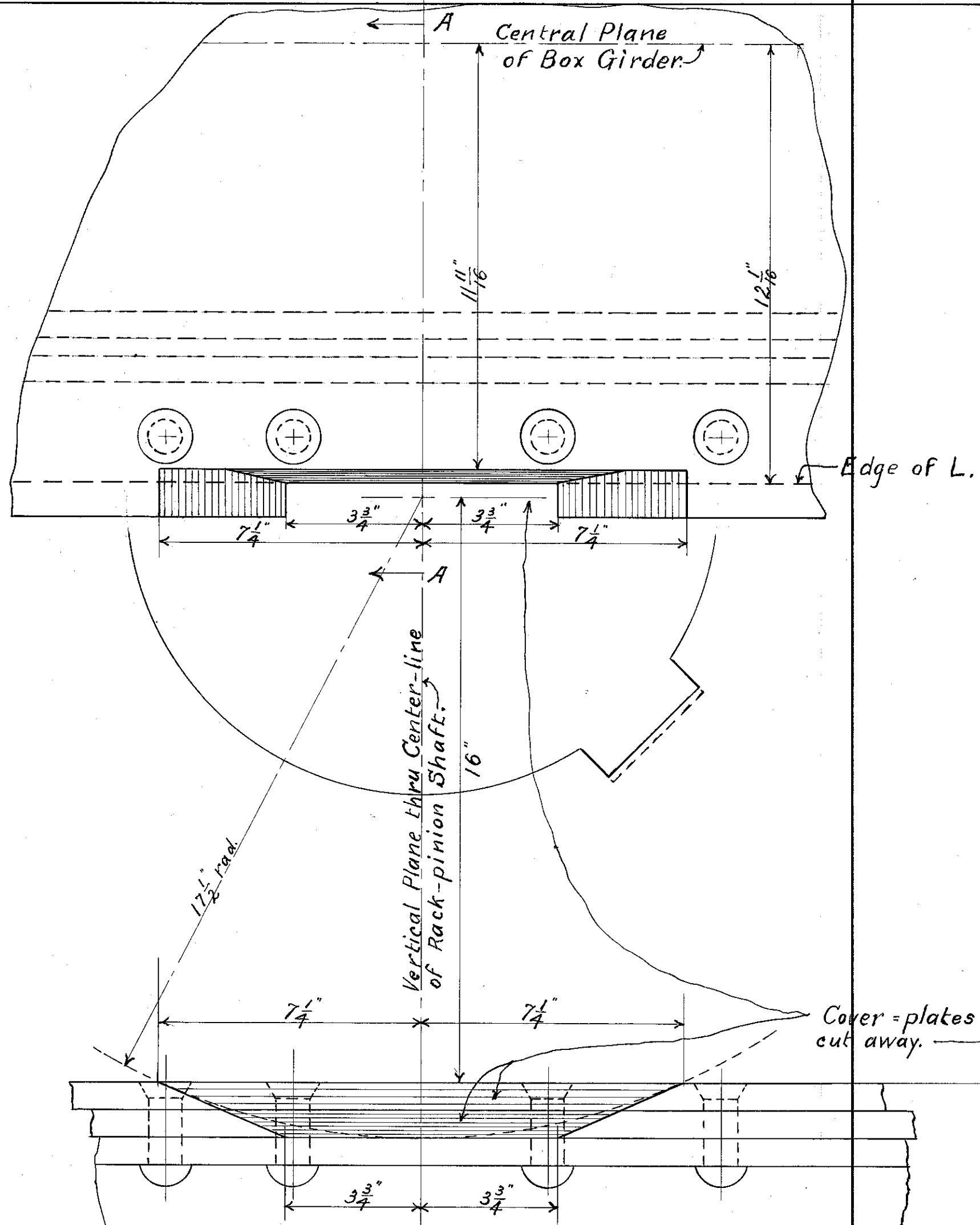


WEBSTER AVE. BRIDGE

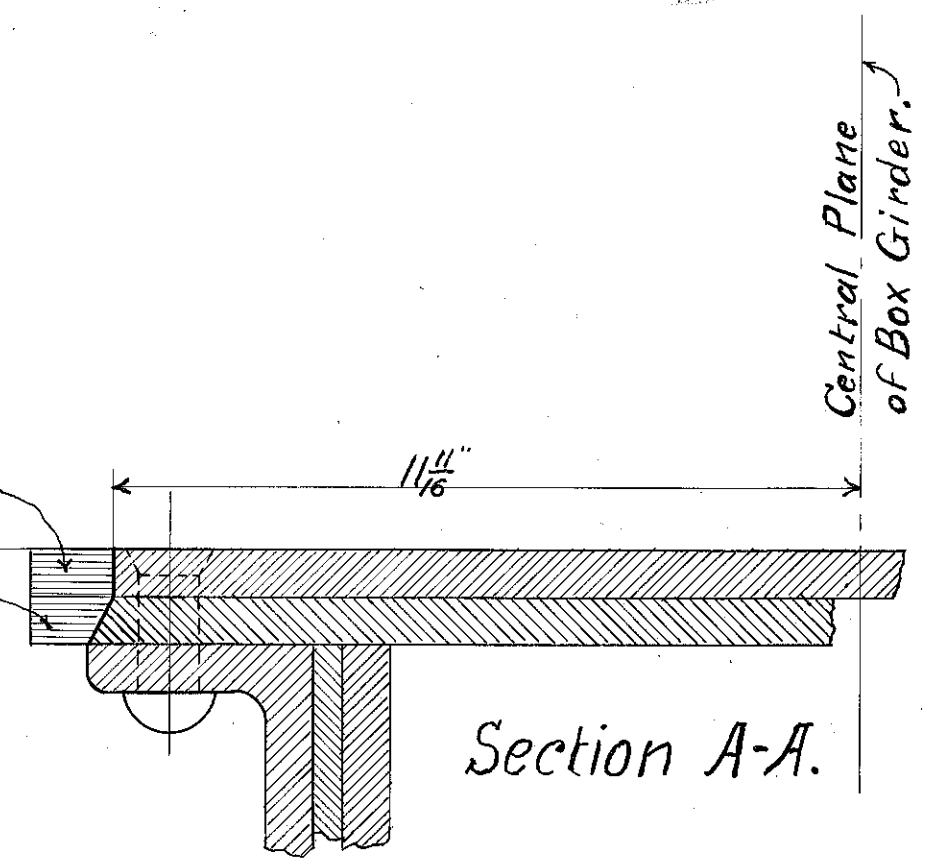
1660570081

DRAWING N<sup>o</sup> 445 Sept. 15<sup>th</sup> 1913,

FILE N<sup>o</sup> 15-DI-1420 8 1/2" x 14"



Side View.



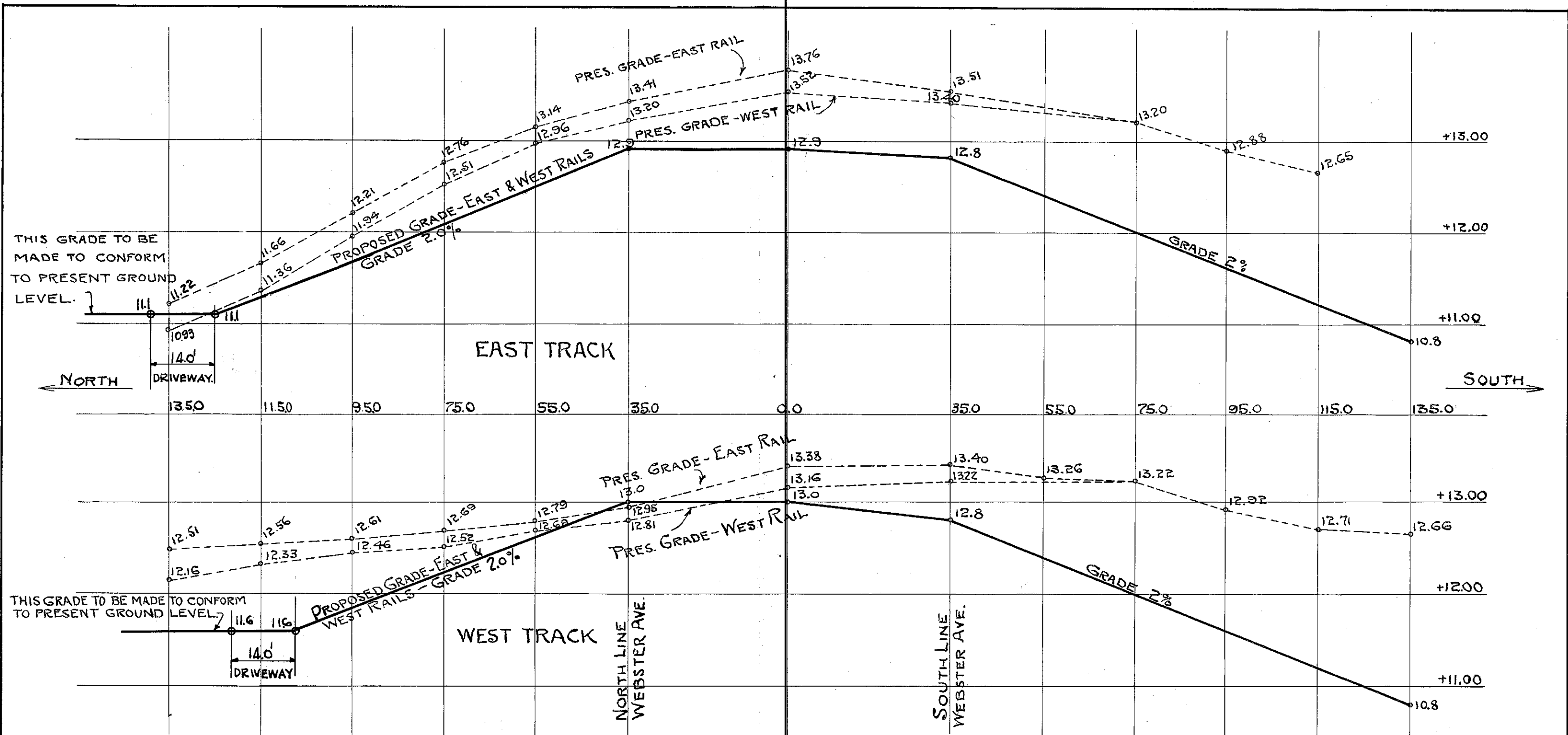
Correction of Interference of  
 Split-Gear Hub-bolts with Box Girder,  
 Webster Avenue Bridge.

1660570083

Scale 4" to 1 FT. Aug. 20-1915.

Drawing No. 1741.  
 FILE No. 15-DI-1622 Size 14" x 18"





CITY OF CHICAGO  
 DEPARTMENT OF PUBLIC WORKS  
 BUREAU OF ENGINEERING  
 DIVISION OF BRIDGES AND HARBOR

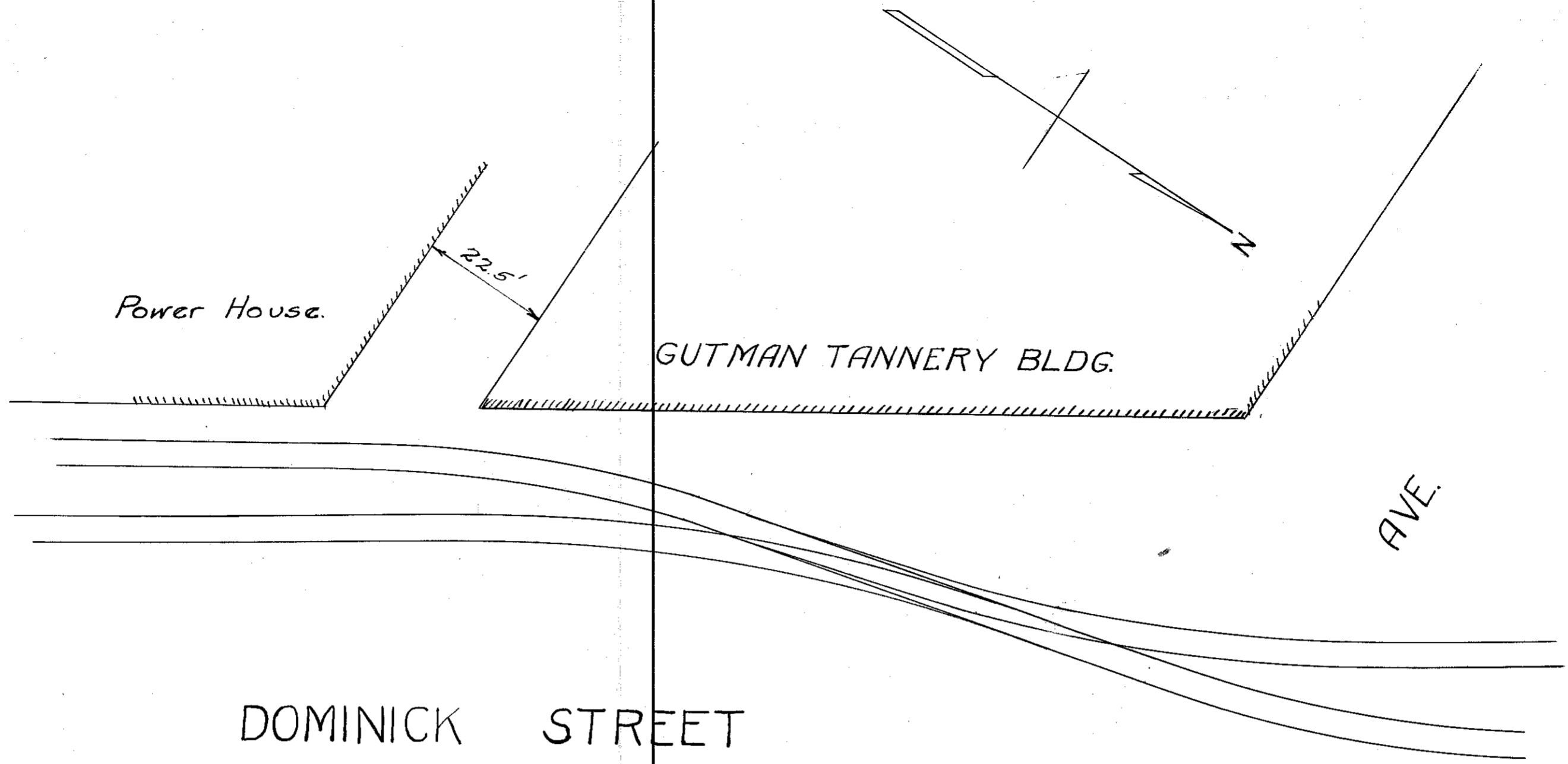
PRESENT & PROPOSED PROFILES OF  
 C.M.&ST.P. RY. TRACKS AT WEBSTER AVENUE &  
 DOMINICK STREET.

1660570084

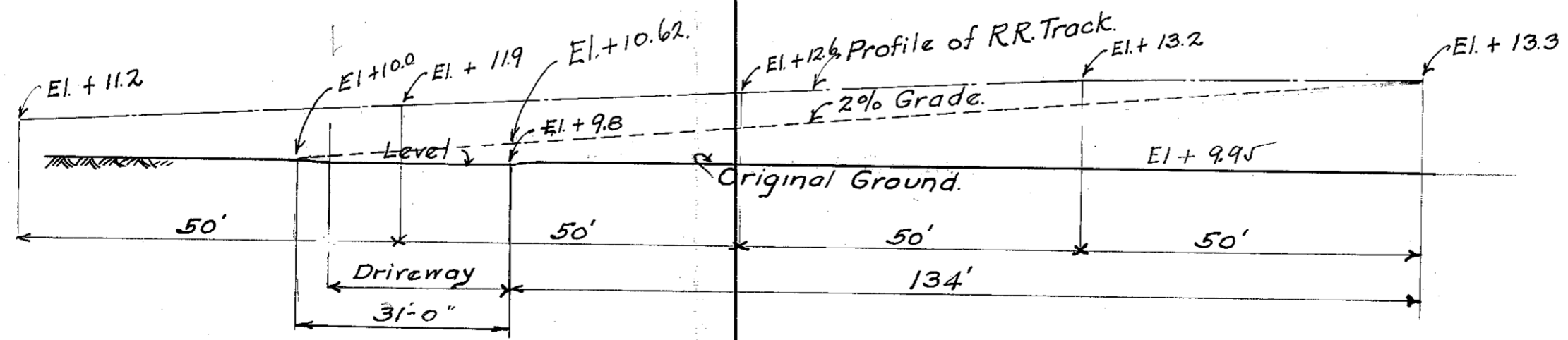
SCALES HOR. 1" = 20'-0"  
 VERT. 1" = 1'-0"

SEPT. 25, 1915.  
 DRWG. No. 1766. REVISED SEPT. 30, 1915. J.H.R.

FILE N° 15-D2-126 12" x 18"



PLAN & PROFILE  
 AT GUTMAN'S TANNERY.  
 Scale Hor. 20' = 1"  
 Vert 5" = 1" March 1915.

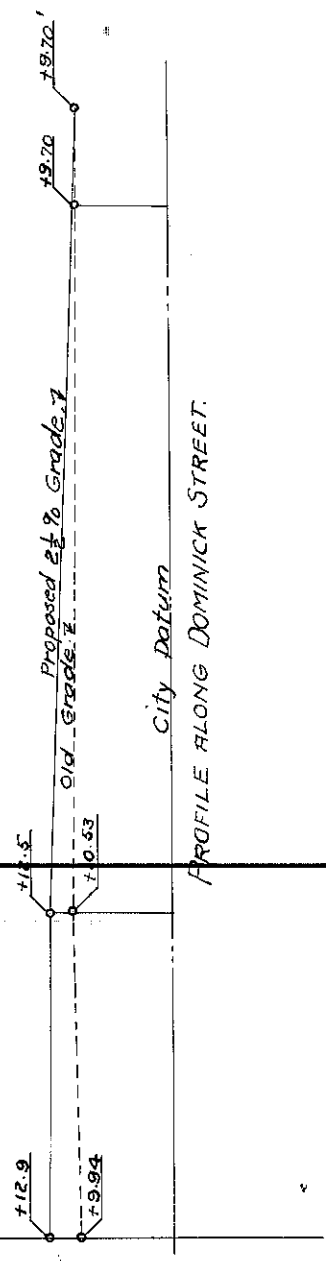
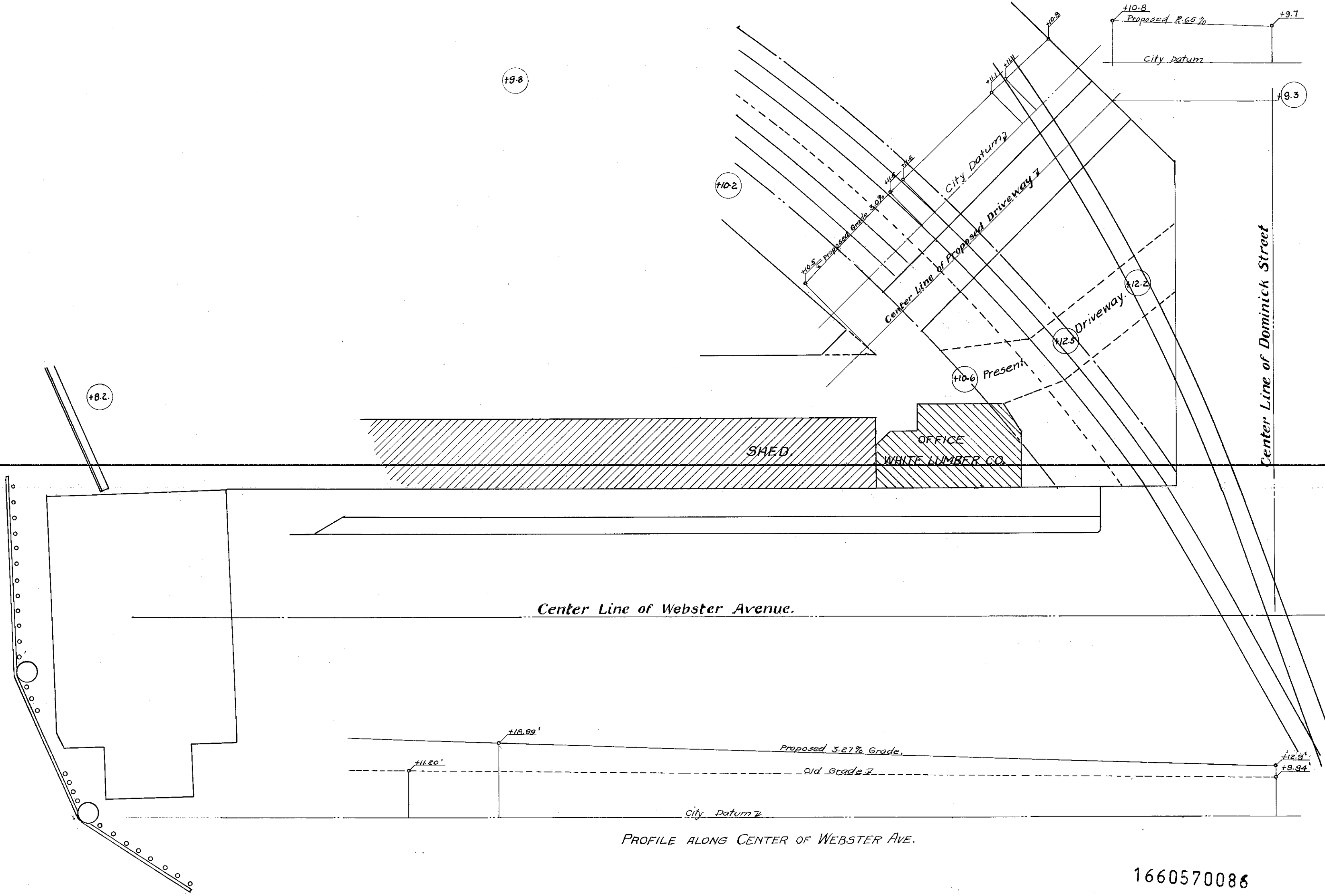


DRAWING No 3834.  
 FILE No 15-DI-1623.

Chicago Datum

1660570085

Chicago River



Note:-  
 ○ Shows present Elevation:-

PROFILE ALONG CENTER OF WEBSTER AVE.

CITY OF CHICAGO  
 DEPARTMENT OF PUBLIC WORKS  
 BUREAU OF ENGINEERING  
 DIVISION OF BRIDGES AND HARBOR

SKETCH SHOWING PLANS AND PROFILES  
 OF ENTRANCES TO THE WHITE LUMBER CO.

Scale. 1" = 20.0'  
 Drawn by H.R.M.

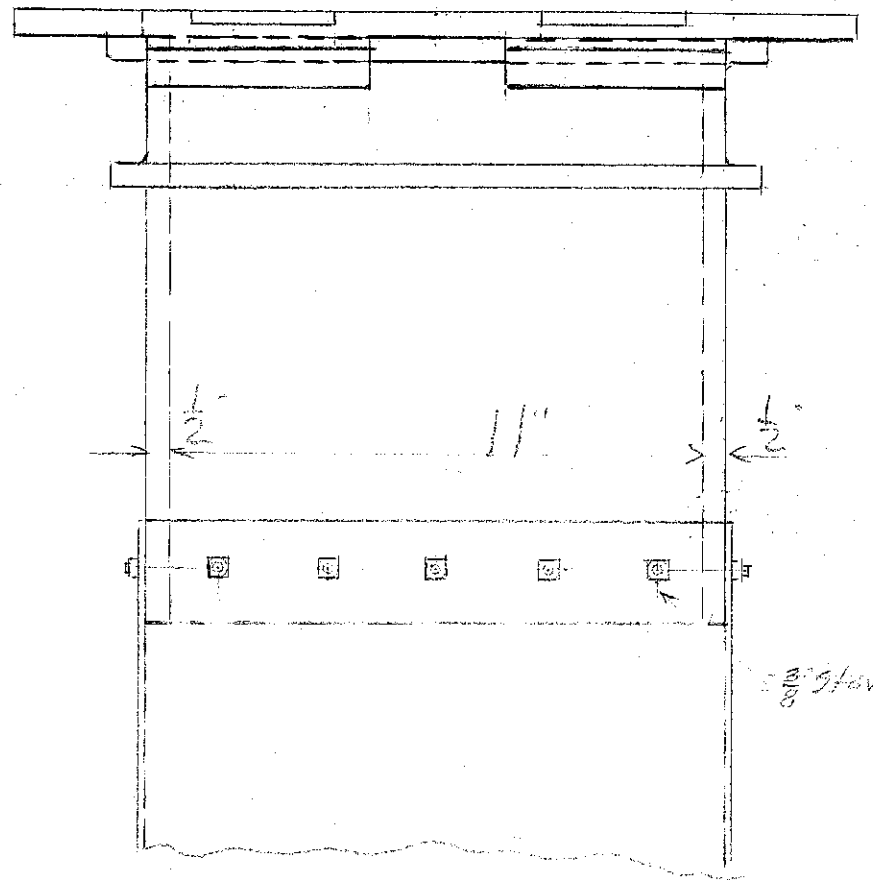
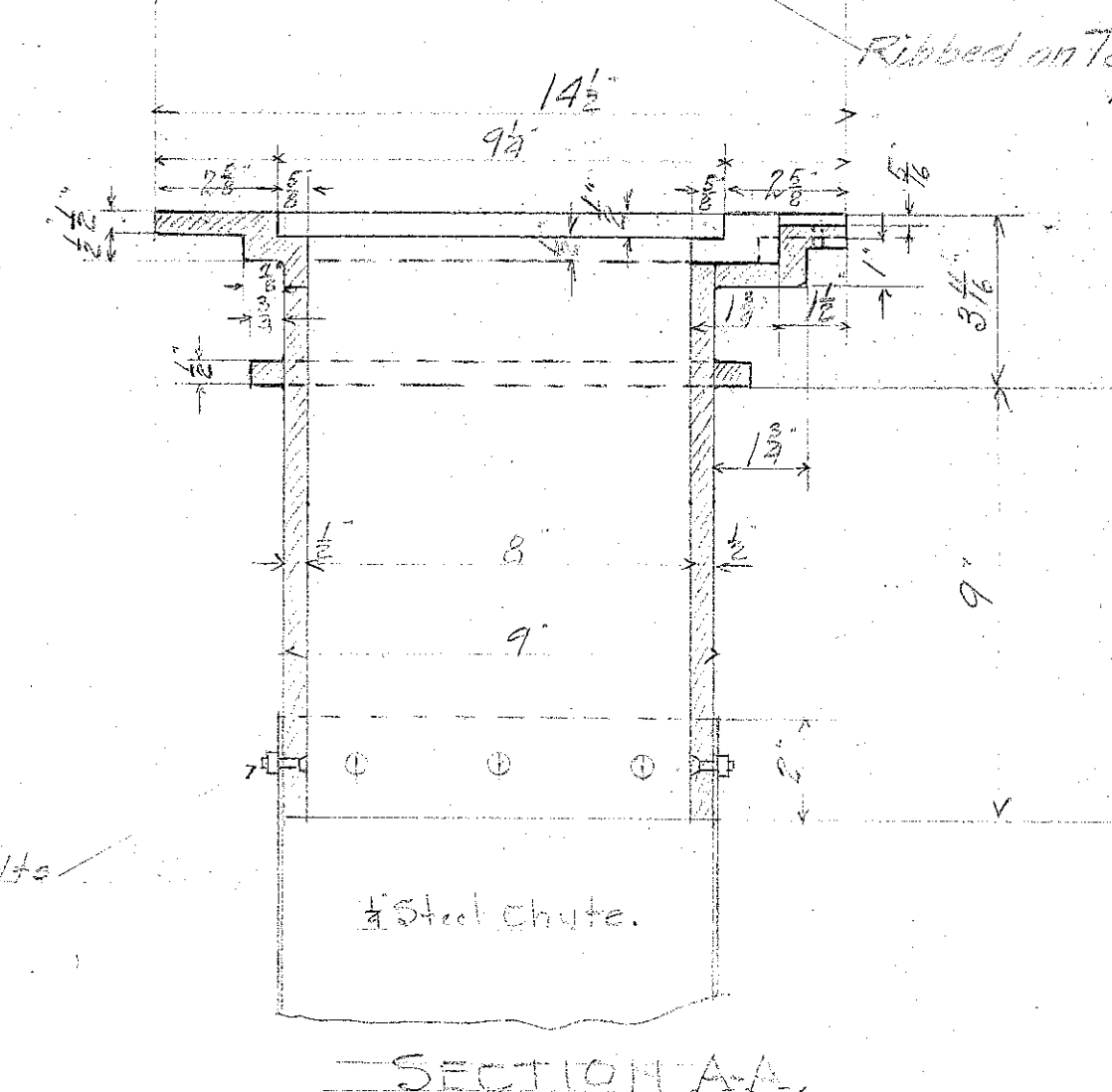
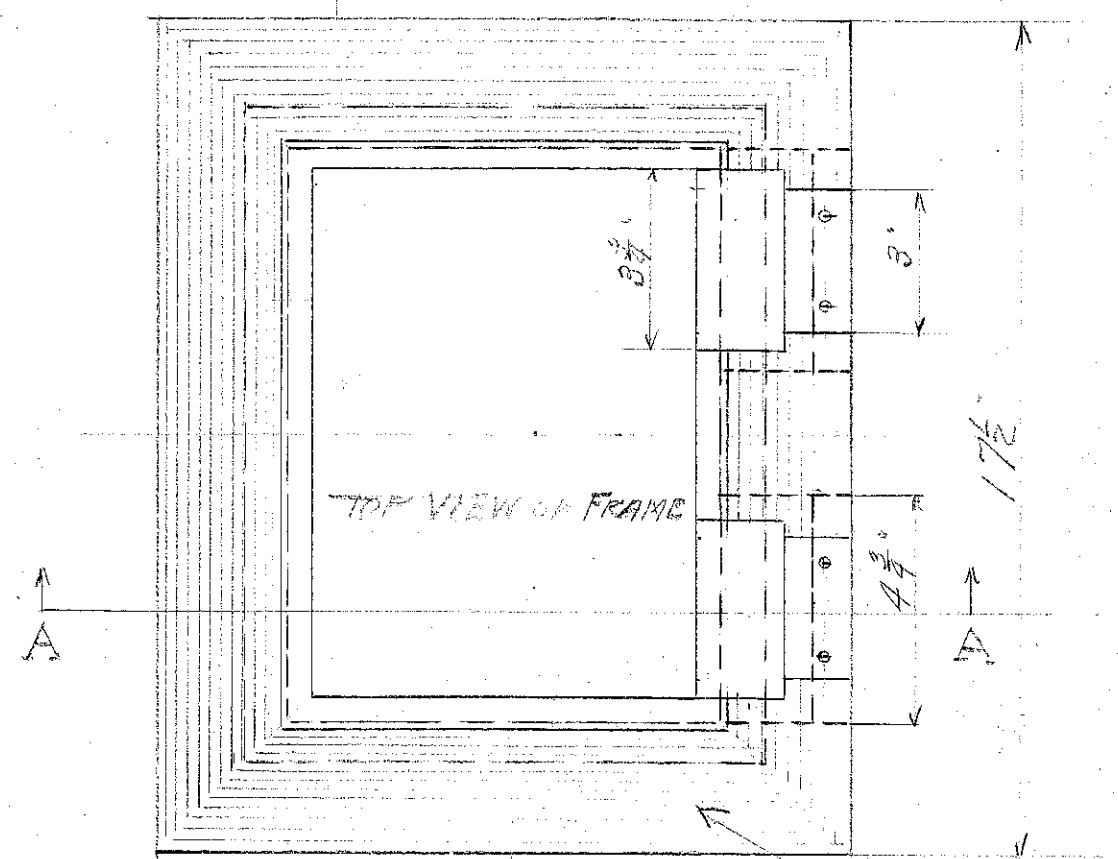
Nov. 1915

1660570086

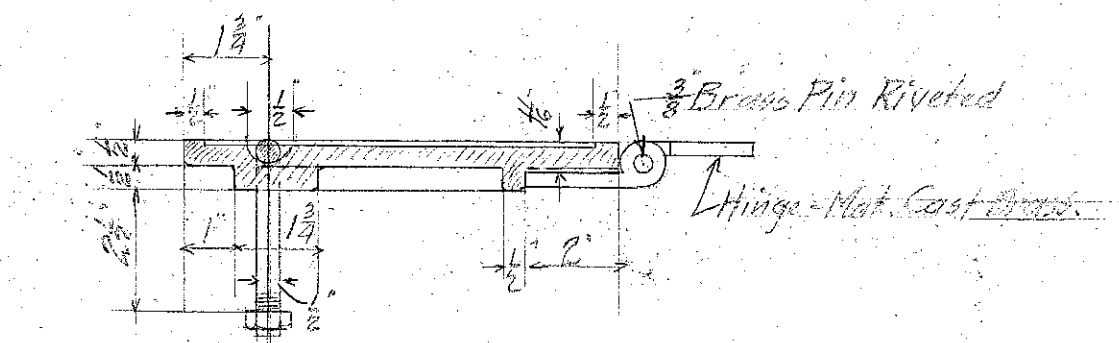
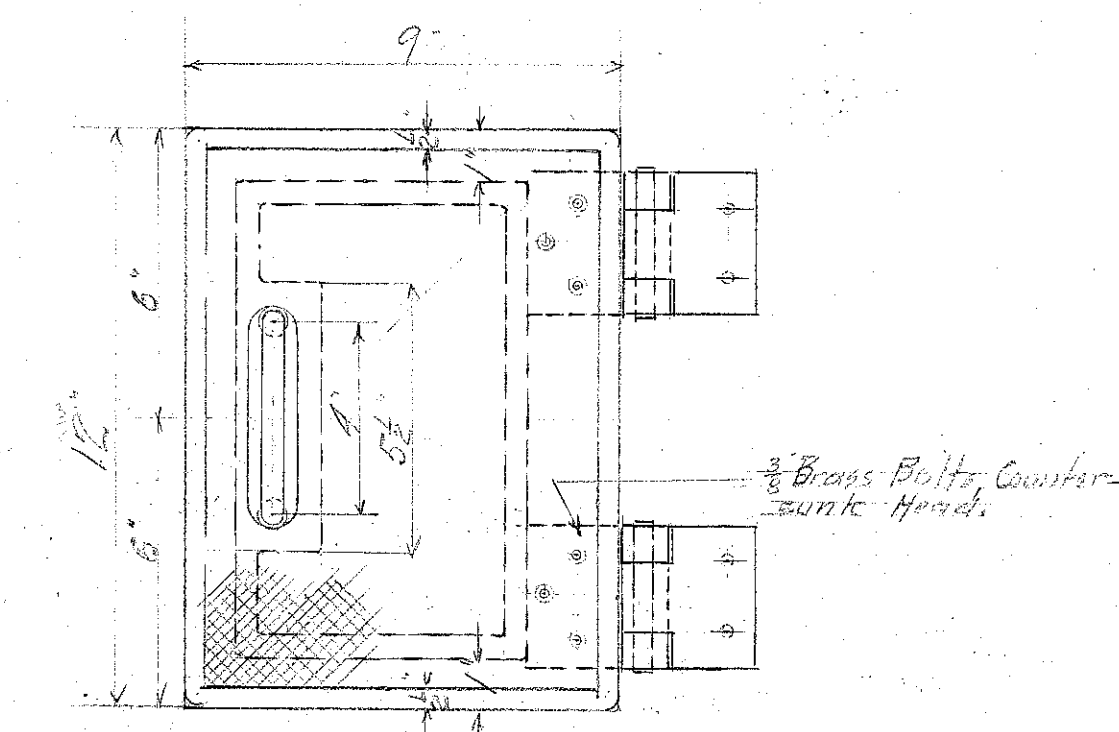
FILE N° 15-D2-594

Drawing No. 2051

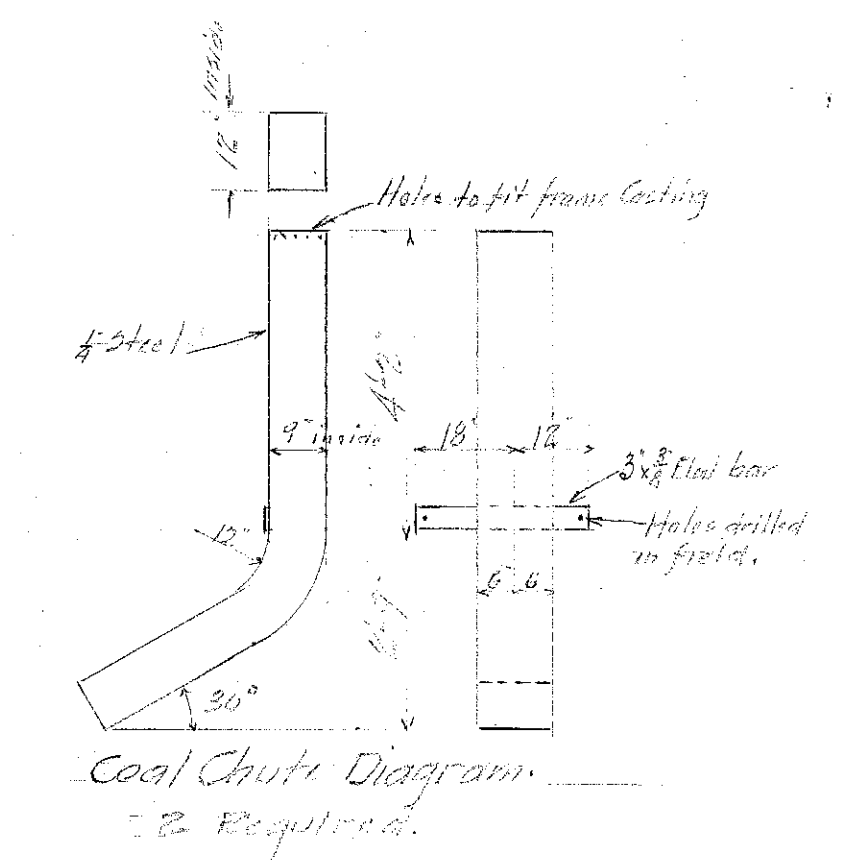
Size 12"x24"



CAST IRON FRAME  
Scale 2" to 1ft. 2 Required.



CAST IRON COVER  
Scale 3" to 1ft. 2 Required.

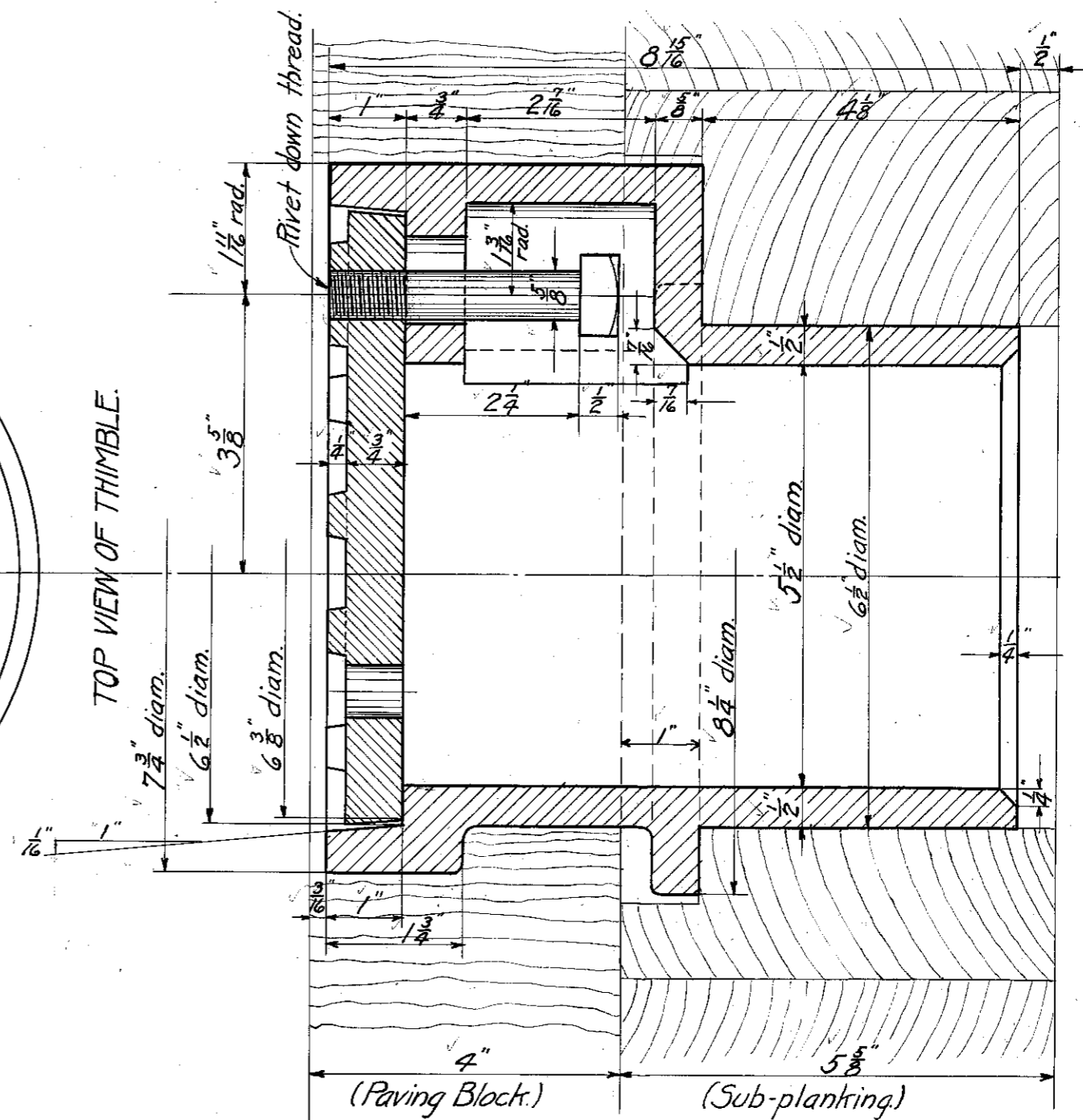
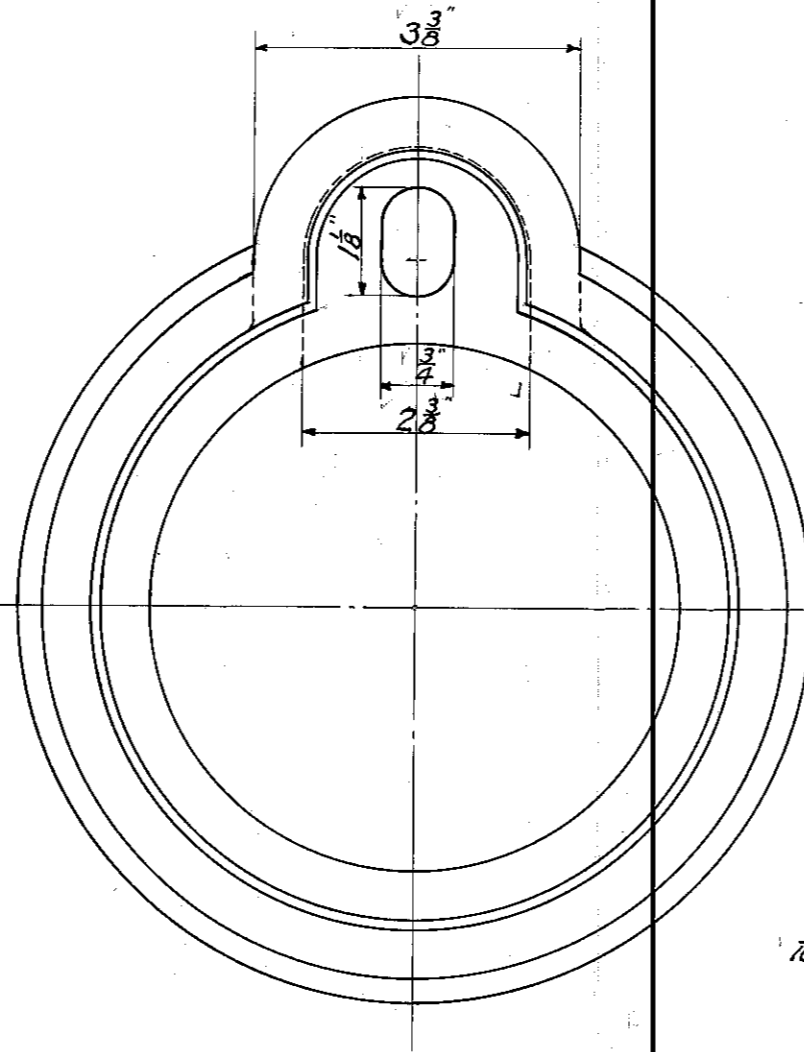
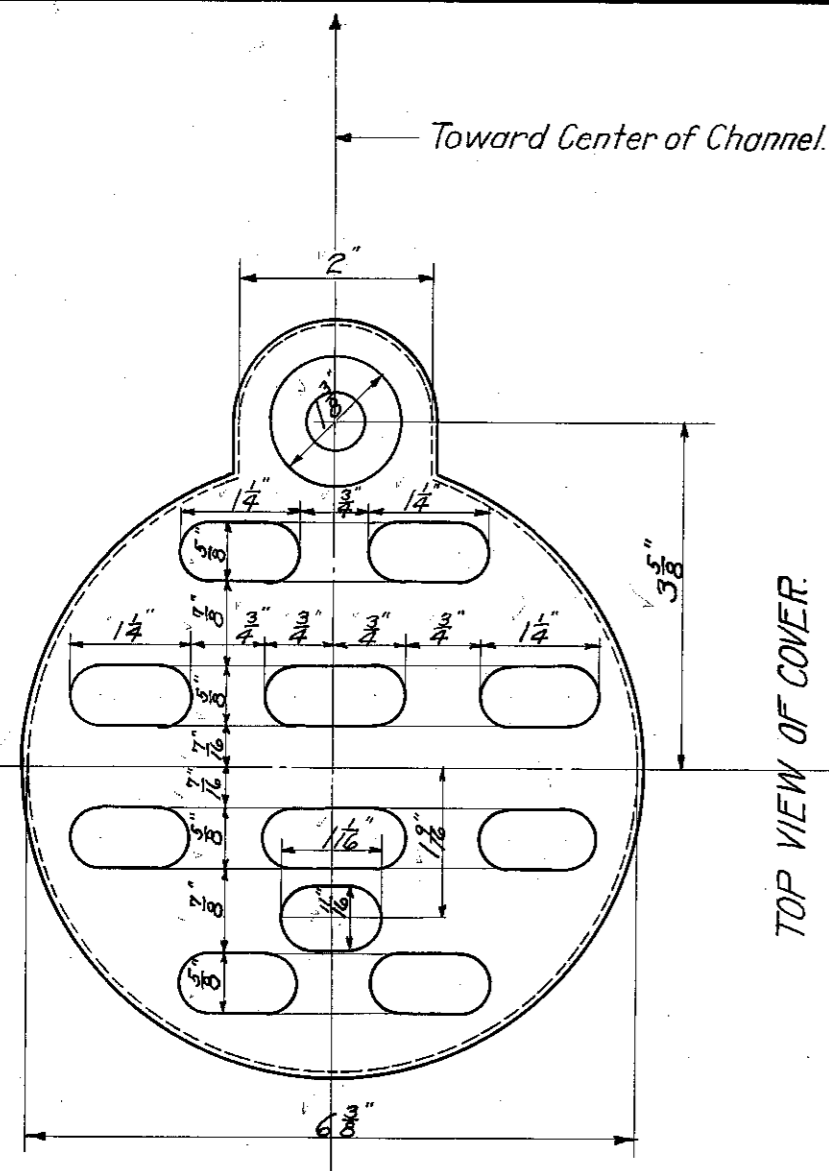


CITY OF CHICAGO  
DIVISION OF BRIDGES & HARBOUR.  
COAL CHUTE-FRAME & COVER,  
WEBSTER AVE BRIDGE.  
Scale 3 3/8" to 1ft. Draw. by J.H. September 3-1915.

Drawing No 1753.  
FILE No 35-D2-595

1660570087

SIZE 12x24"



Material, Cast Iron.  
 3 Required for Webster Ave. Bridge.  
 3 Required for Belmont Ave. Bridge.

To be paid for at the price per pound stated in the Contract for materials erected in place in addition to that required by the City's Drawings.  
 Estimated weight of 3 = 120 pounds.

Correct *Arundel W. S. Sibley*  
 Engineer of Bridge Design.

Approved *Thos. G. Cahill*  
 Engineer of Bridges and Harbor.

Approved *John E. ...*  
 City Engineer.

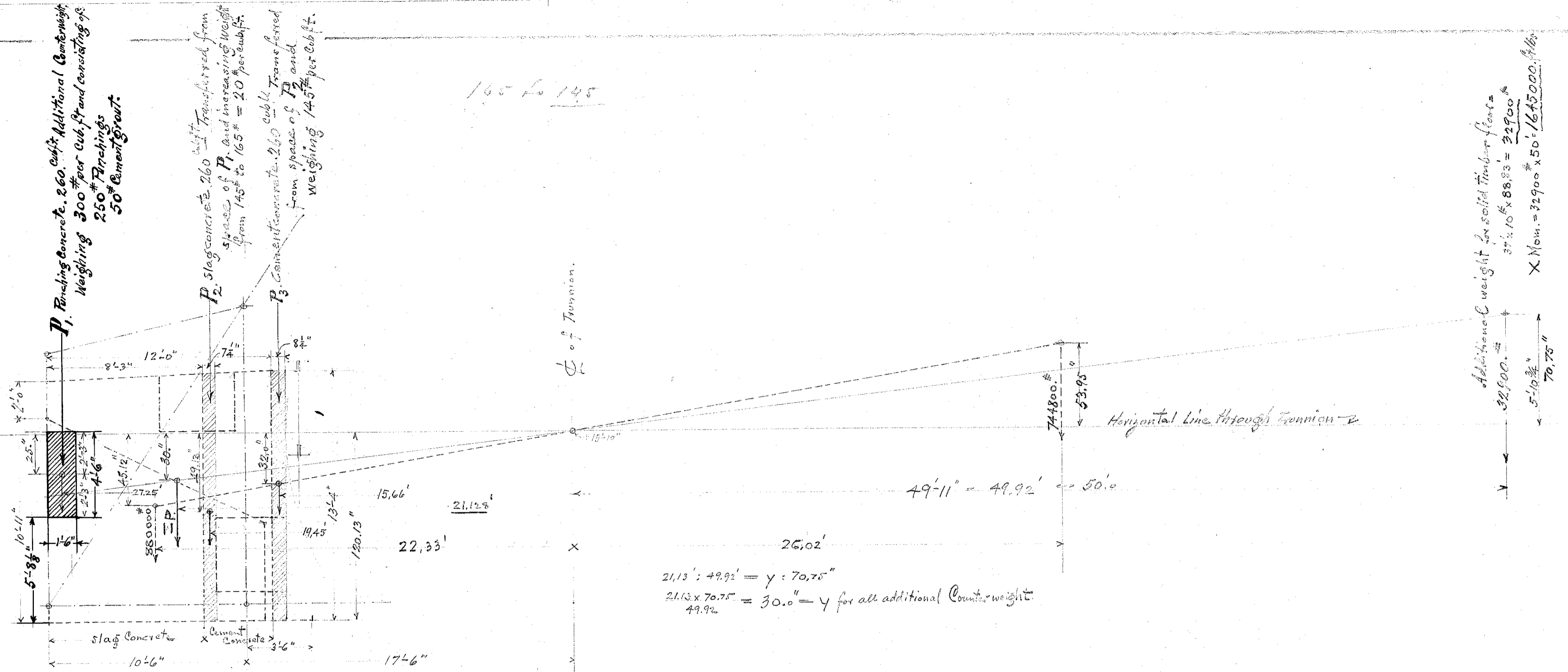
Approved *W. R. Moorhouse*  
 Commissioner of Public Works.

**CITY OF CHICAGO,**  
 DEPARTMENT OF PUBLIC WORKS,  
 BUREAU OF ENGINEERING,  
 DIVISION OF BRIDGES AND HARBOR.

Webster Ave and Belmont Ave Bridges,  
 Hand-hole Thimble and Cover  
 For Center-lock Cross-shaft.

Scale 6" to 1 ft. Jan. 1916  
 Drawn by: J. G. B. Traced by: *...* Checked by: J. G. B.  
 DRAWING NO. 2106.

165 to 145



Item	Counterweight	Volume Cub. Feet	Weight per cu. ft.	Total Weight	X	X Mom.	Y	Y Mom.
P <sub>1</sub>	Finishing Concrete	260	135 <sup>#</sup>	35100	27.25	956475	25.0	877500
P <sub>2</sub>	Slag Concrete	260	20 <sup>#</sup>	5200	19.45	101140	49.13	255476
P <sub>3</sub>	Cement Concrete	260	145 <sup>#</sup>	37700	15.66	590382	32.0	1206400
				78000		1647997		2339376
					X =	1647997 / 78000	Y =	2339376 / 78000
					X =	21.128'	Y =	30.0

Finchings required:  
 net Metal 260x250<sup>#</sup> = 65000 lbs. per leaf  
 Grout 260x50<sup>#</sup> = 13000 " " "  
 Total = 78000<sup>#</sup>

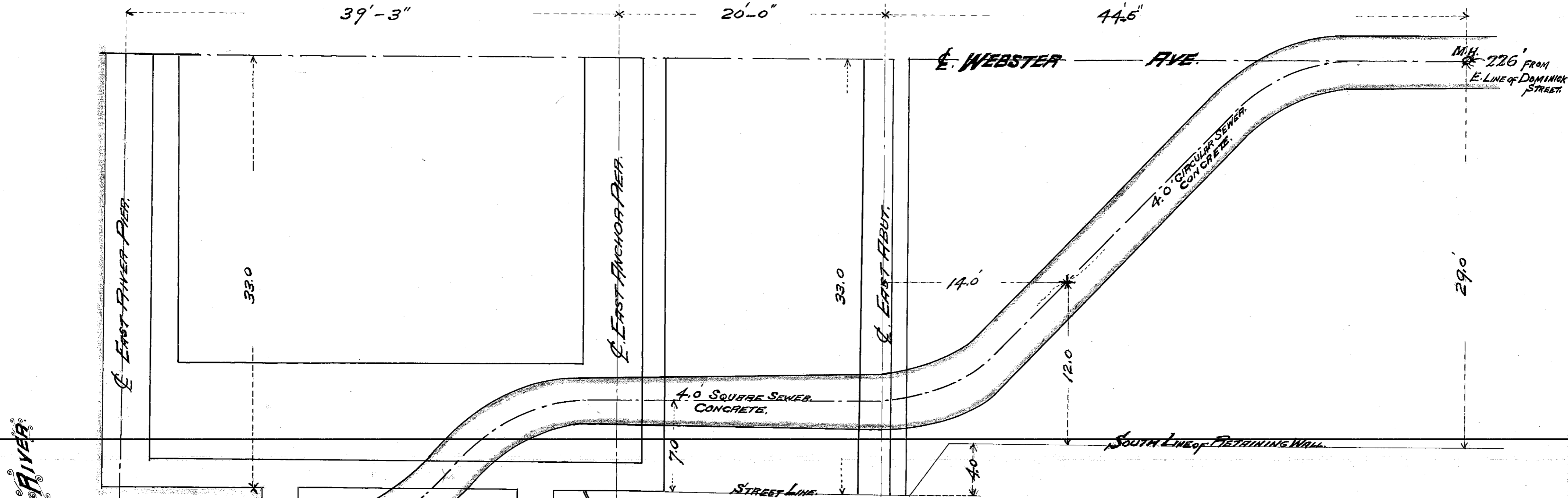
Additional weight for solid timber floor =  
 $37.10 \times 88.83 = 32900<sup>#</sup>$   
 X Mom. =  $32900 \times 50 = 1645000<sup>#</sup> ft. lbs.$

Webster Avenue Bridge

Diagram showing  
 the Location and Amount of additional Counterweight  
 necessary for solid timber floors  
 on movable leaves.

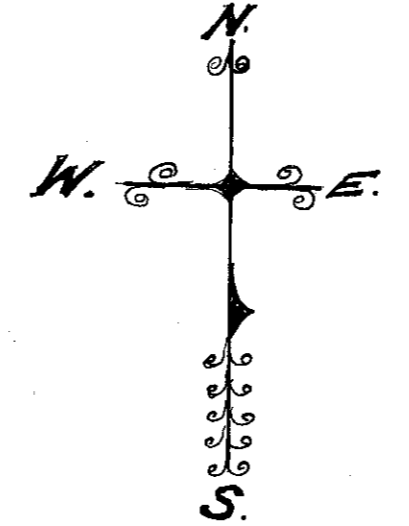
Scale  $\frac{1}{4}$  inch = One foot

July, 1915.  
 J. Agness.



RIVER

CHICAGO



SKETCH SHOWING  
SEWER - EAST SIDE OF RIVER

WEBSTER AVE. BRIDGE

DEC. 16, 1915.

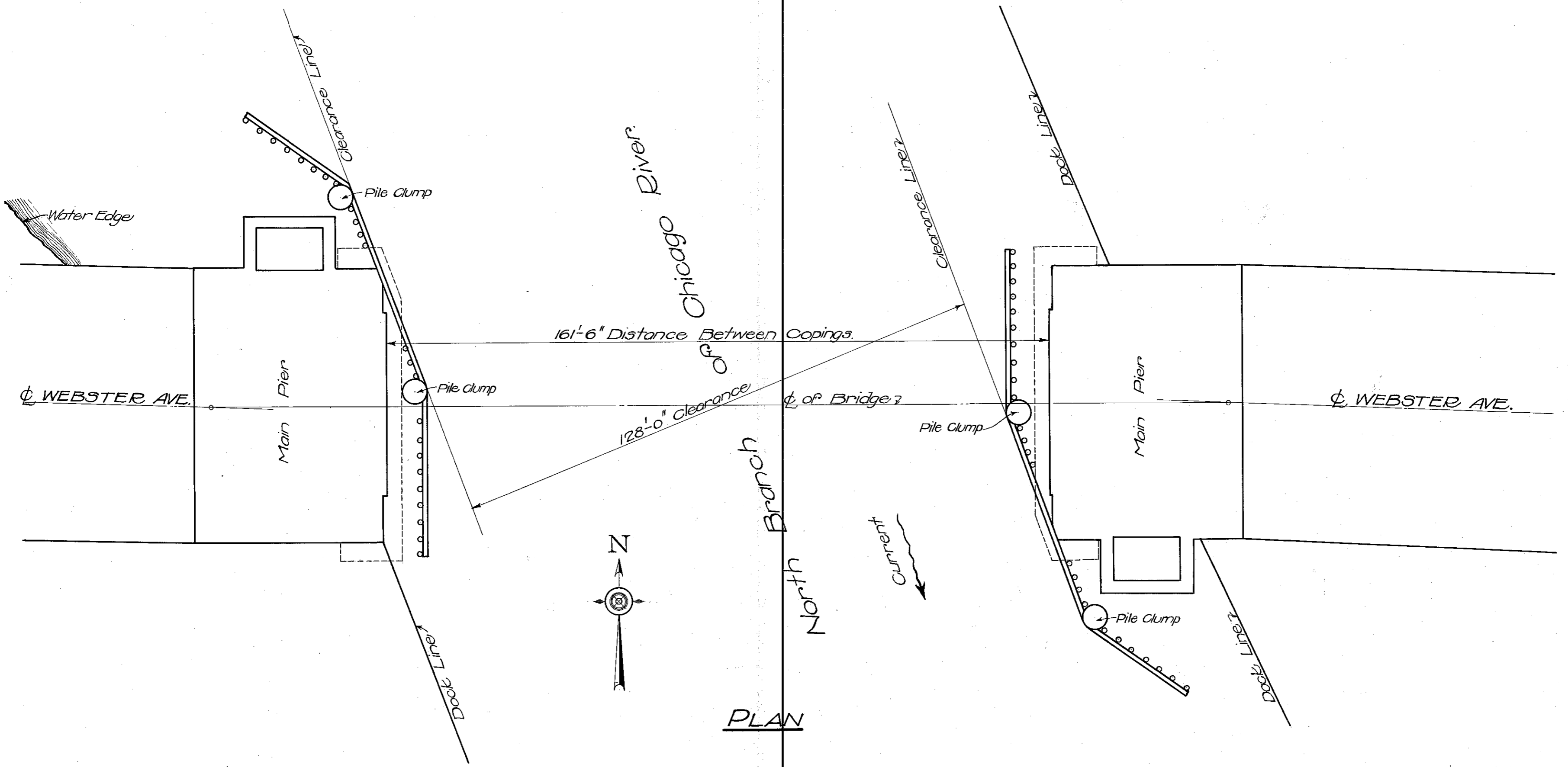
SCALE 3/16" = 1'-0"

F.A. BERRY, ASST. ENGR.

DRAWING No. 3002

1660570090

FILE No. 15-D2-597



Correct: *Hugh E. Young*  
 Bridge Designing Engineer.

Approved: *Alexander von Bahr*  
 Engineer of Bridge Design.

Approved: *Thos. G. W. ...*  
 Engineer of Bridges and Harbor.

Approved: *...*  
 City Engineer.

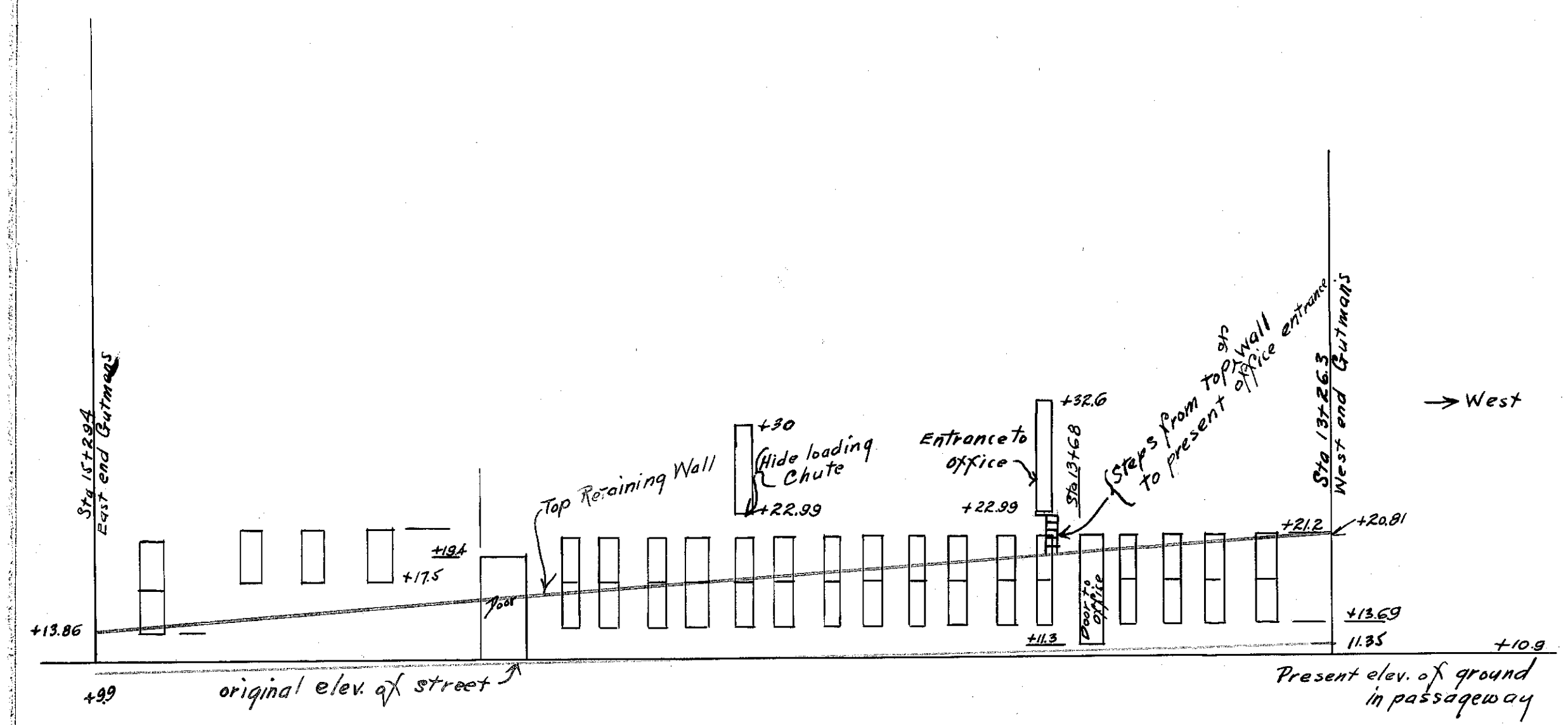
Approved: *...*  
 Commissioner of Public Works.

CITY OF CHICAGO  
 DEPARTMENT OF PUBLIC WORKS  
 BUREAU OF ENGINEERING  
 DIVISION OF BRIDGES AND HARBOR.

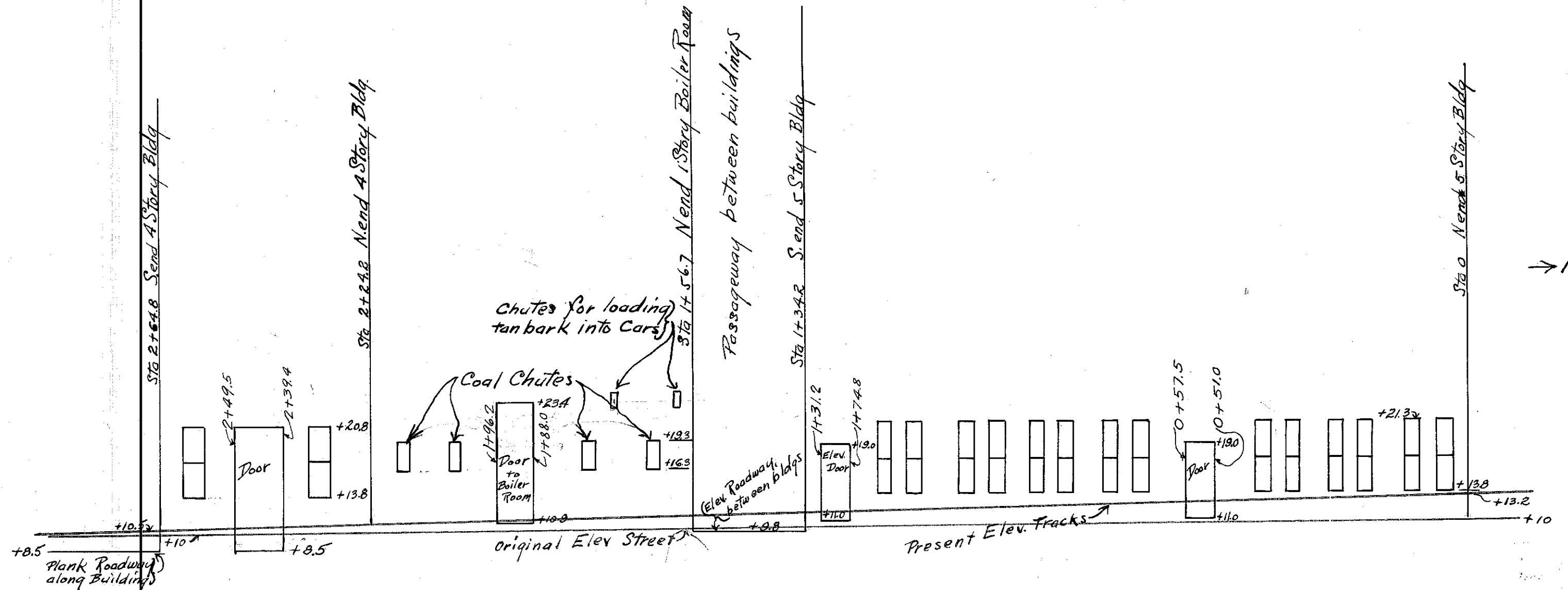
DOUBLE LEAF TRUNNION BASCULE BRIDGE  
 AT  
 WEBSTER AVENUE  
 OVER  
 North Branch of the Chicago River  
 SUBSTRUCTURE

Layout of Pier Protection Showing 128'-0" Channel Clearance.  
 Scale: 1/20" = 1'-0"  
 Date Nov. 12, 1914.  
 Drawing No. 1184





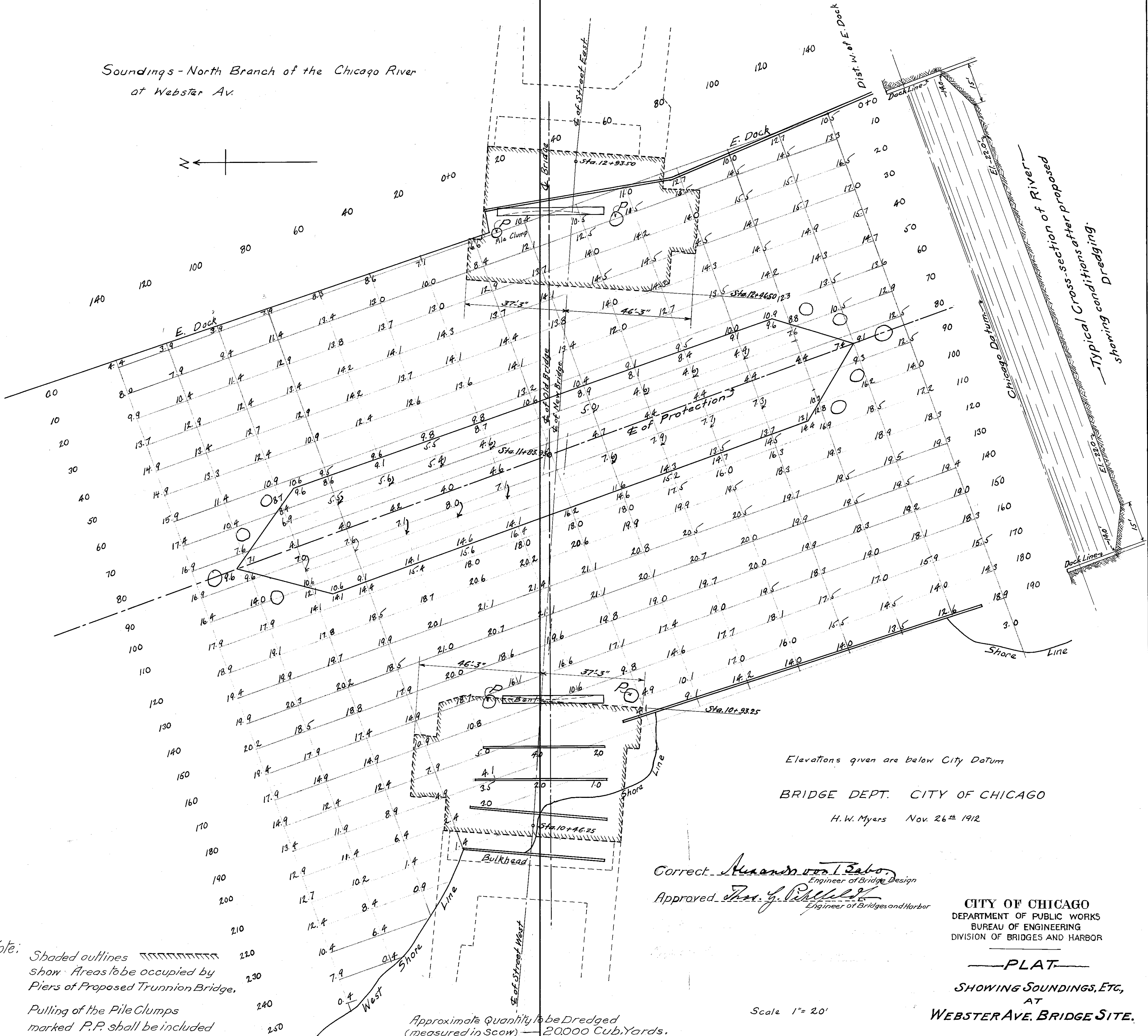
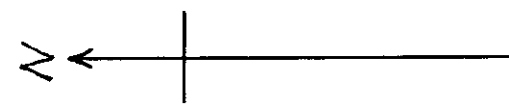
Front Elevation Gutman Tannery  
 facing on Webster Ave  
 Webster Ave Bridge May 18, 1915  
 Horizontal Scale 20 feet = 1"  
 Vertical " 10 " = 1" W.M.R.



Front Elevation Gutman Tannery Buildings  
 facing on Dominick St.  
 Webster Ave Bridge May 18, 1915  
 Horizontal Scale 20 Feet = 1"  
 Vertical " 10 " = 1" W.M.R.

DRAWING No 3835  
 FILE No 15-D3-635  
 1660570092

Soundings - North Branch of the Chicago River  
at Webster Av.



Note: Shaded outlines show Areas to be occupied by Piers at Proposed Trunnion Bridge. Pulling of the Pile Clumps marked P.P. shall be included in item 'A' of Contract.

Approximate Quantity to be Dredged (measured in Scow) — 20000 Cub. Yards. This Quantity is approximate only and is given merely for the purpose of canvassing bids. The City of Chicago assumes no responsibility for the correctness of the same.

Elevations given are below City Datum  
BRIDGE DEPT. CITY OF CHICAGO  
H. W. Myers Nov. 26<sup>th</sup> 1912

Correct *Alexander von I. Babo*  
Engineer of Bridge Design  
Approved *John G. Dickel*  
Engineer of Bridges and Harbor

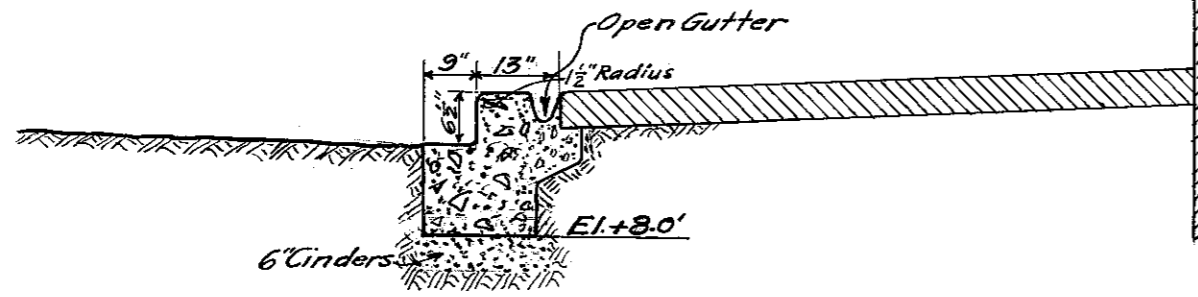
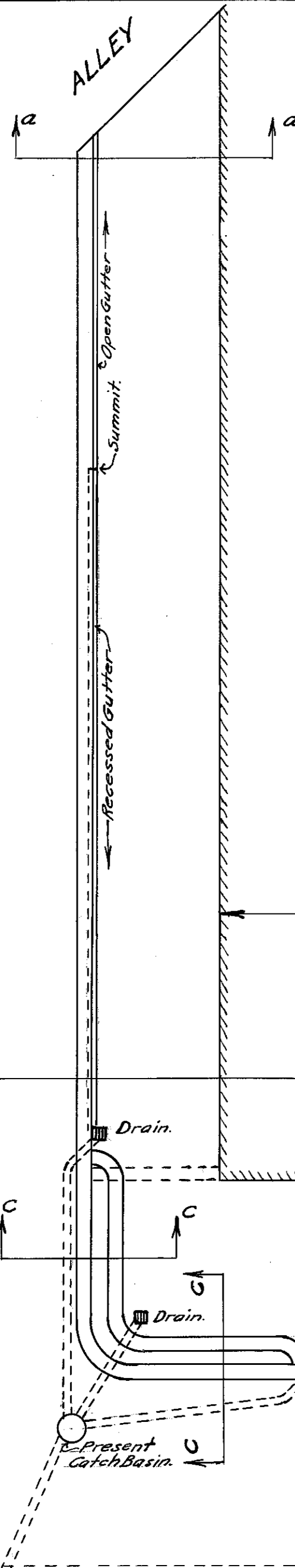
CITY OF CHICAGO  
DEPARTMENT OF PUBLIC WORKS  
BUREAU OF ENGINEERING  
DIVISION OF BRIDGES AND HARBOR

PLAT  
SHOWING SOUNDINGS, ETC.,  
AT  
WEBSTER AVE. BRIDGE SITE.

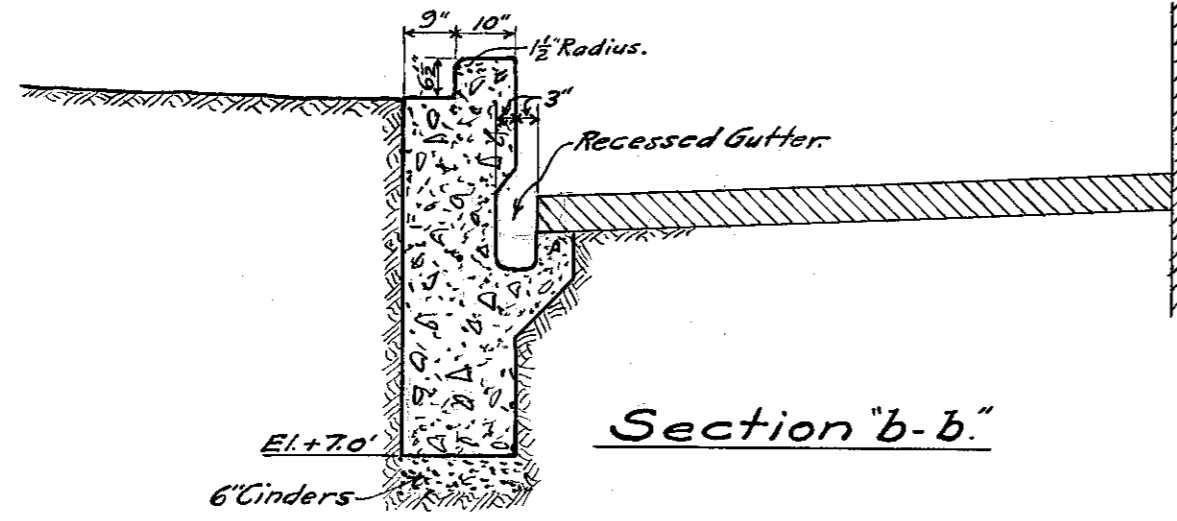
Scale 1" = 20'

Revised in reference to outlines of foundations of proposed trunnion bascule bridge, Apr. 3, 1914.

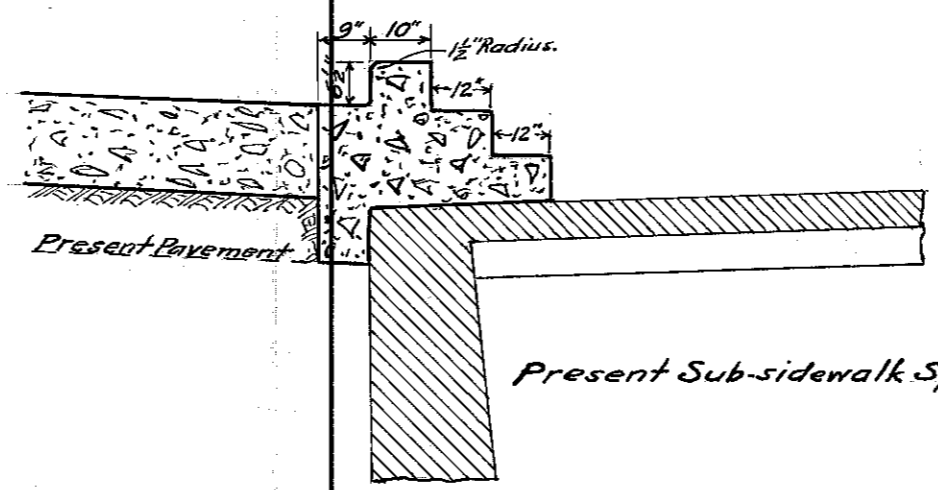
DOMINICK ST.



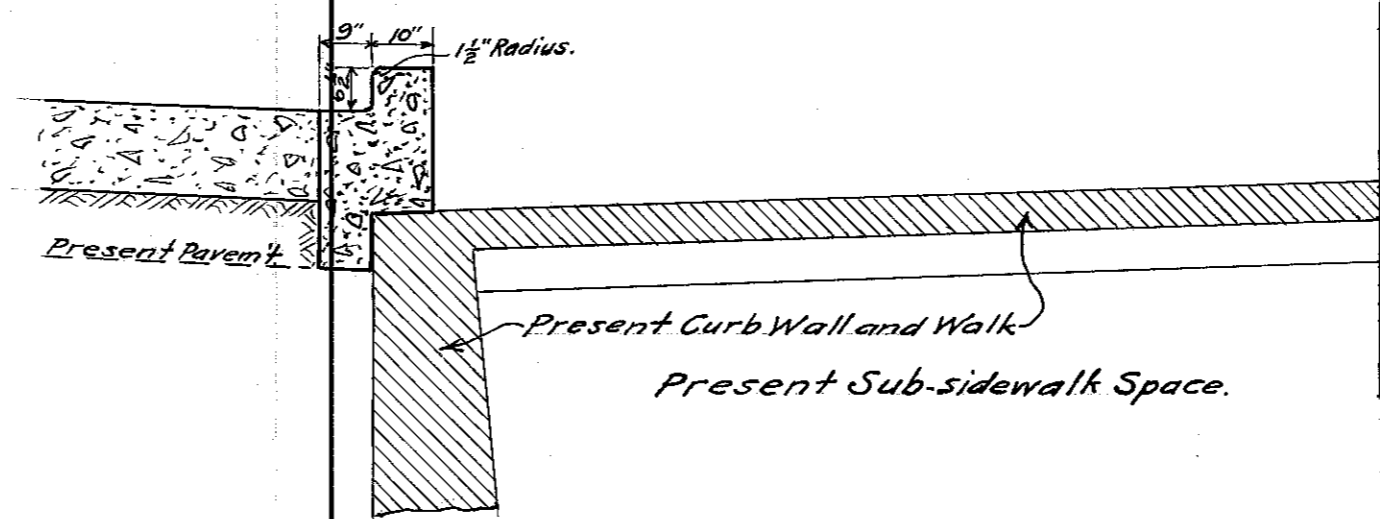
Section "a-a."



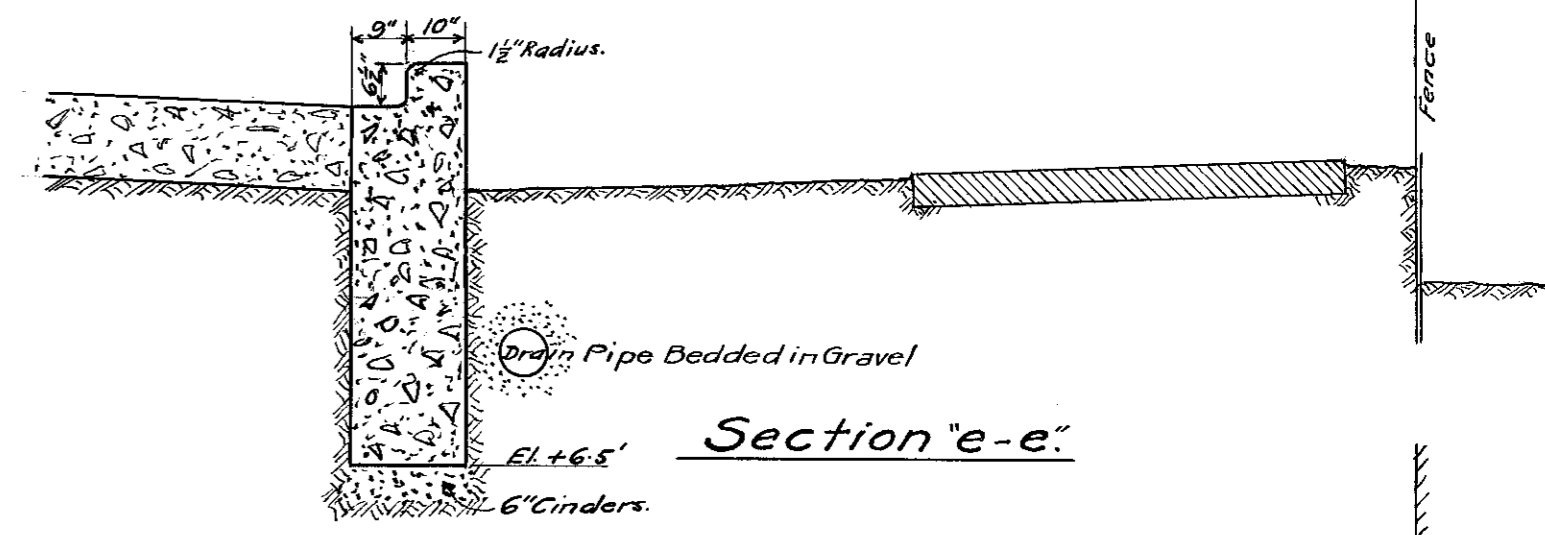
Section "b-b."



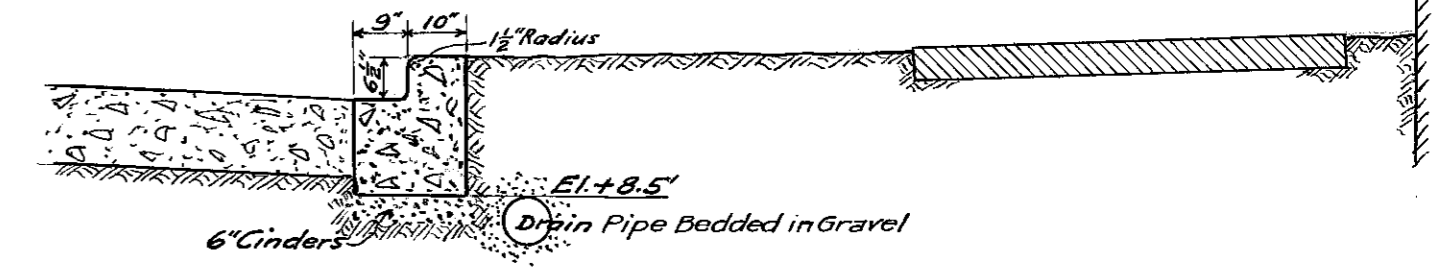
Section "c-c."



Section "d-d."



Section "e-e."



Section "f-f."

Correct: *Hugh E. Young*  
 Bridge Designing Engineer

Approved: *Murray W. Y. Sa. Co.*  
 Engineer of Bridge Design

Approved: *Thos. J. ...*  
 Engineer of Bridges & Harbor

Approved: *J. ...*  
 City Engineer

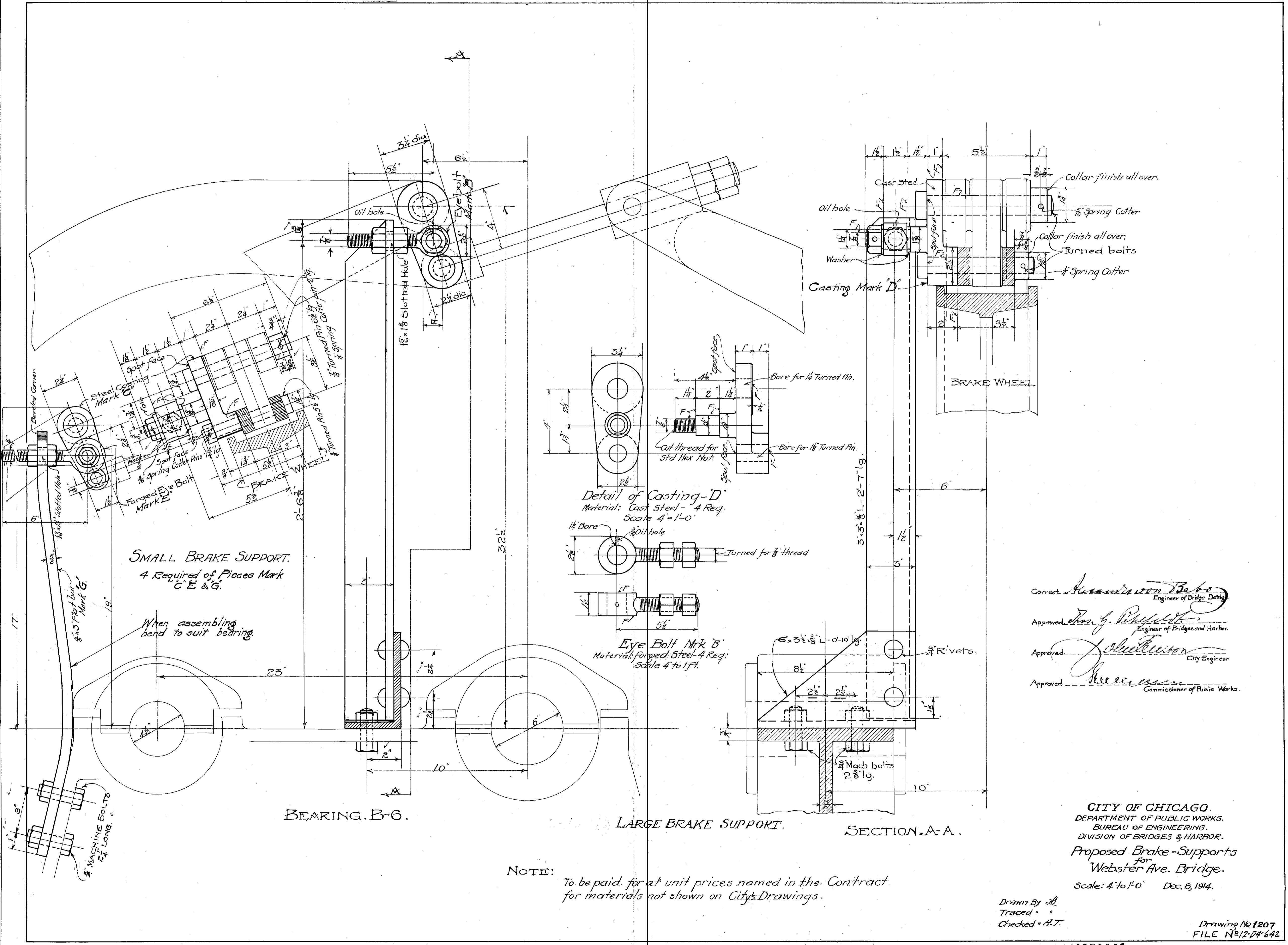
Approved: *...*  
 Commissioner of Public Works.

CITY OF CHICAGO  
 DEPARTMENT OF PUBLIC WORKS  
 BUREAU OF ENGINEERING  
 DIVISION OF BRIDGES AND HARBOR

DOUBLE LEAF TRUNNION BASCULE BRIDGE  
 AT  
 WEBSTER AVENUE  
 OVER  
 NORTH BRANCH OF THE CHICAGO RIVER.  
 SUBSTRUCTURE  
 Details of Curb and Walk at N.E. corner Dominick St.  
 Scale: 1/8" & 3/8" = 1 foot  
 November, 1914.

Made by: G.A.H.  
 Traced by: G.A.H.  
 Checked by: T.P.B.

Drawing No. 1185  
 1660570094  
 FILE No. 5-D4-641



SMALL BRAKE SUPPORT.  
4 Required of Pieces Mark  
"C", "E" & "G".

Detail of Casting-"D"  
Material: Cast Steel-4 Req.  
Scale 4"=1'-0"

Eye Bolt Mark "B"  
Material: Forged Steel-4 Req.  
Scale 4"=1'-0"

Correct: *Alvan van Rabe*  
Engineer of Bridge Design  
Approved: *Wm. J. Russell*  
Engineer of Bridges and Harbor  
Approved: *J. Hutchinson*  
City Engineer  
Approved: *Wm. C. ...*  
Commissioner of Public Works.

CITY OF CHICAGO.  
DEPARTMENT OF PUBLIC WORKS.  
BUREAU OF ENGINEERING.  
DIVISION OF BRIDGES & HARBOR.  
Proposed Brake-Supports  
for  
Webster Ave. Bridge.  
Scale: 4"=1'-0" Dec. 8, 1914.

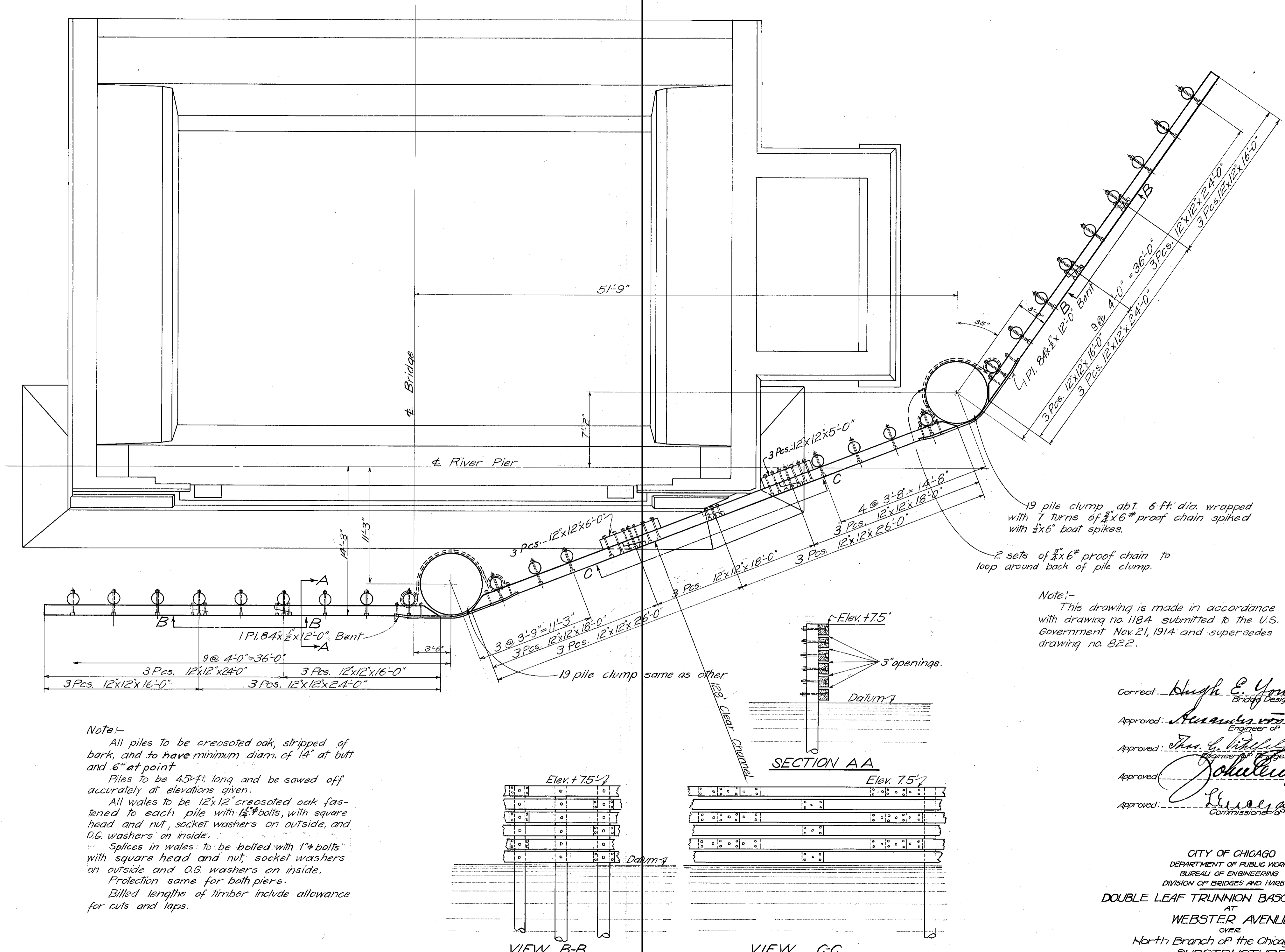
NOTE:  
To be paid for at unit prices named in the Contract  
for materials not shown on City's Drawings.

Drawn By *Al*  
Traced " " *"*  
Checked " *A.T.*

Drawing No 1207  
FILE No 12-D4-642

1660570095

Size 20x27



19 pile clump abt 6 ft. dia. wrapped with 7 turns of  $\frac{3}{4}$ " x 6# proof chain spiked with  $\frac{3}{4}$ " x 6" boat spikes.

2 sets of  $\frac{3}{4}$ " x 6# proof chain to loop around back of pile clump.

Note:-  
This drawing is made in accordance with drawing no. 1184 submitted to the U.S. Government. Nov. 21, 1914 and supersedes drawing no. 822.

Note:-  
All piles to be creosoted oak, stripped of bark, and to have minimum diam. of 14" at butt and 6" at point  
Piles to be 45-ft. long and be sawed off accurately at elevations given.  
All wales to be 12x12" creosoted oak fastened to each pile with  $1\frac{1}{2}$ " bolts, with square head and nut, socket washers on outside, and O.G. washers on inside.  
Splices in wales to be bolted with 1" bolts with square head and nut, socket washers with outside and O.G. washers on inside.  
Protection same for both piers.  
Billed lengths of timber include allowance for cuts and laps.

Correct: *Hugh E. Young*  
Bridge Designing Engineer

Approved: *Arthur W. Rebo*  
Engineer of Bridge Design

Approved: *Geo. C. Williams*  
Engineer of Bridges and Harbor

Approved: *John C. ...*  
City Engineer

Approved: *...*  
Commissioner of Public Works

CITY OF CHICAGO  
DEPARTMENT OF PUBLIC WORKS  
BUREAU OF ENGINEERING  
DIVISION OF BRIDGES AND HARBOR

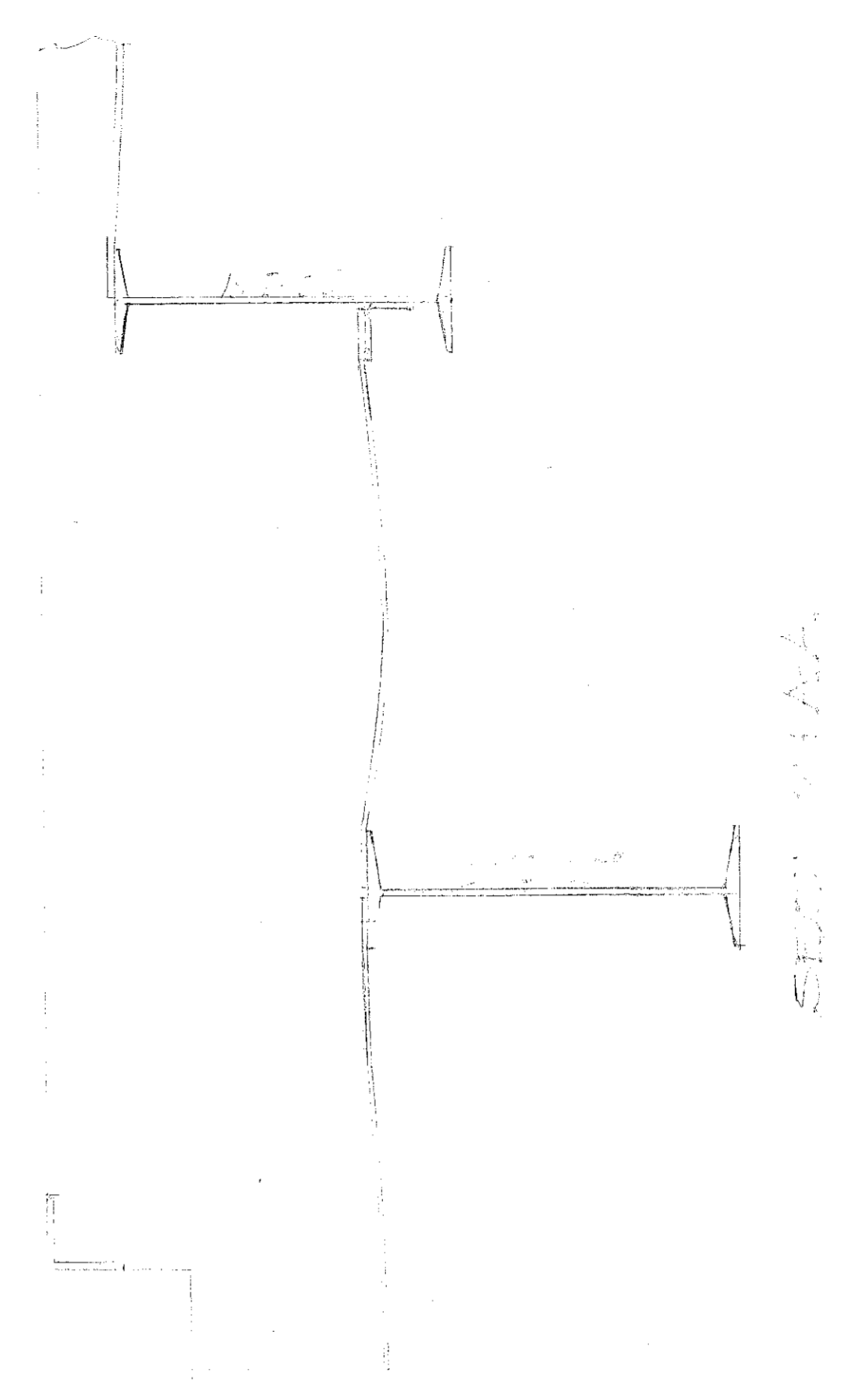
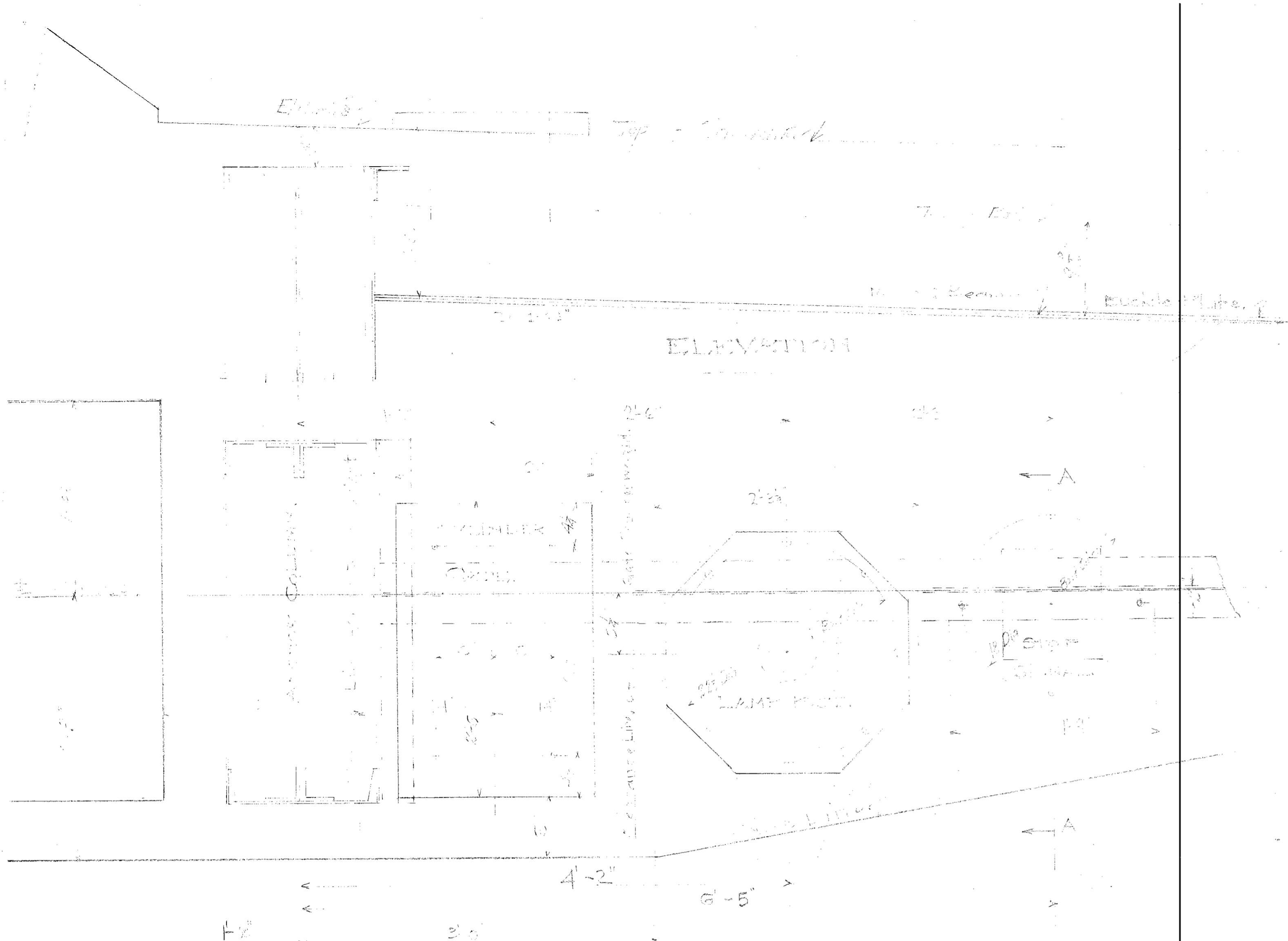
**DOUBLE LEAF TRUNNION BASCULE BRIDGE**  
AT  
**WEBSTER AVENUE**  
OVER  
North Branch of the Chicago River  
SUBSTRUCTURE  
Pier Protection

Scale:  $\frac{3}{16}$ " = 1'-0"  
Date Dec. 1914  
Made by D.N.B.  
Checked by G.H.H.

Drawing No. 1210  
FILE No. 12-04-643

1660570096

Size 20 1/2 x 27"

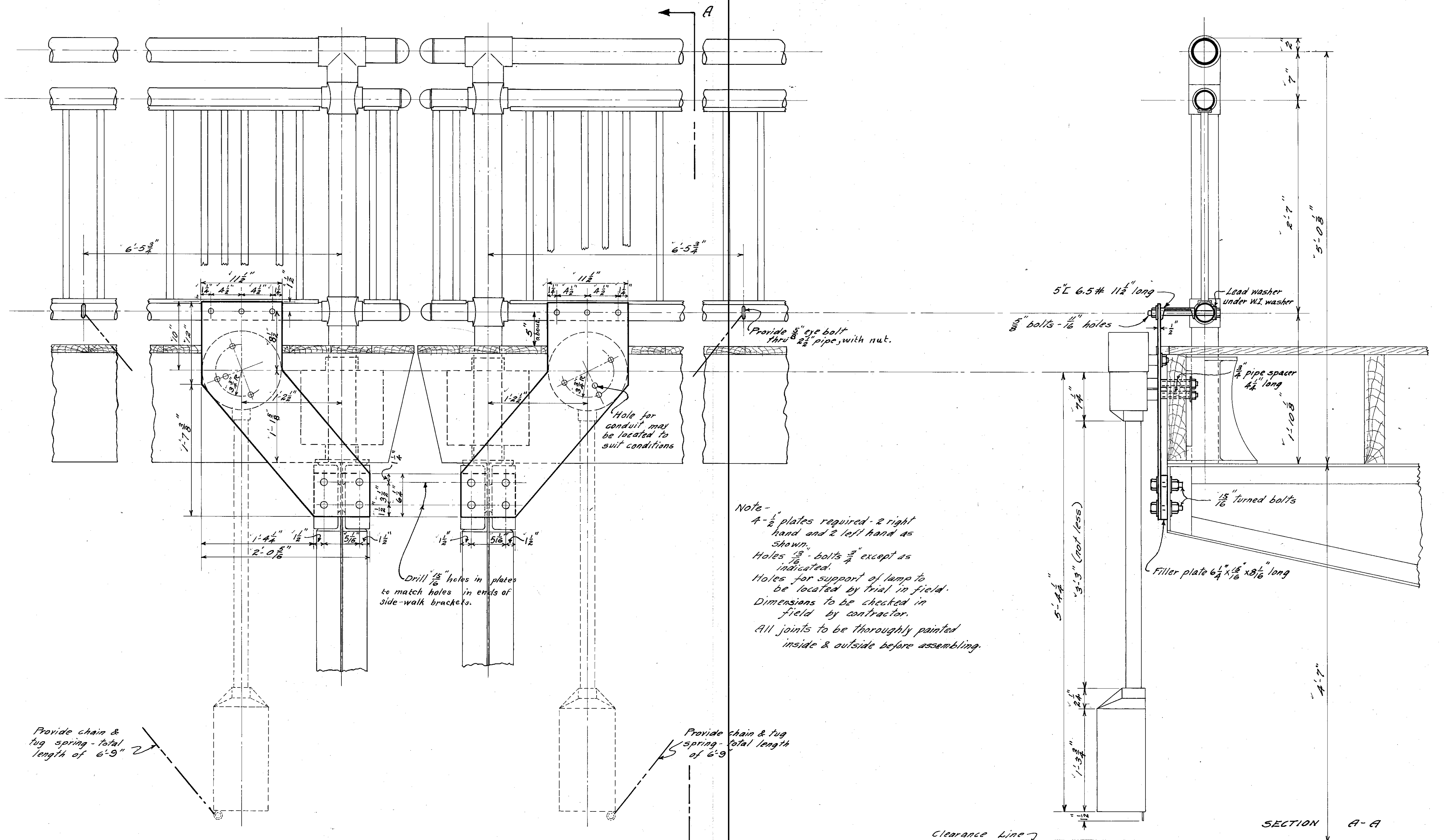


SECTION A-A

CITY OF CHICAGO  
 DIVISION OF BRIDGES & HARBOUR  
 LAYOUT  
 OF  
 RAILWAY GATE, LAMP POST & STOP-SIGNAL,  
 WEBSTER AVE BRIDGE  
 Scale 1/8" = 1'-0"  
 September 1-1915  
 Drawing No 1750  
 FILE No 35-D4-644

1660570097

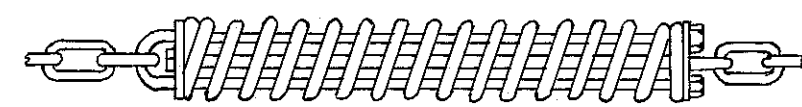
Size 19x30



Note -  
 4 - 1/2" plates required - 2 right hand and 2 left hand as shown.  
 Holes 3/8" - bolts 3/4" except as indicated.  
 Holes for support of lamp to be located by trial in field.  
 Dimensions to be checked in field by contractor.  
 All joints to be thoroughly painted inside & outside before assembling.

Provide chain & tug spring - total length of 6'-9"

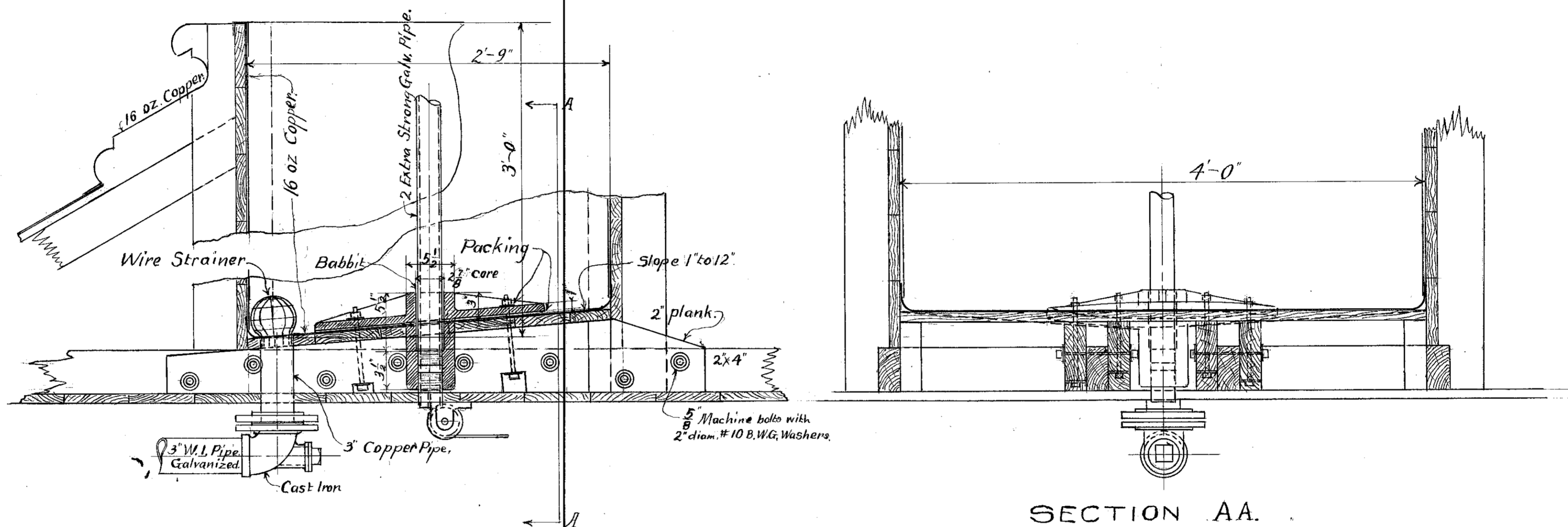
Provide chain & tug spring - total length of 6'-9"



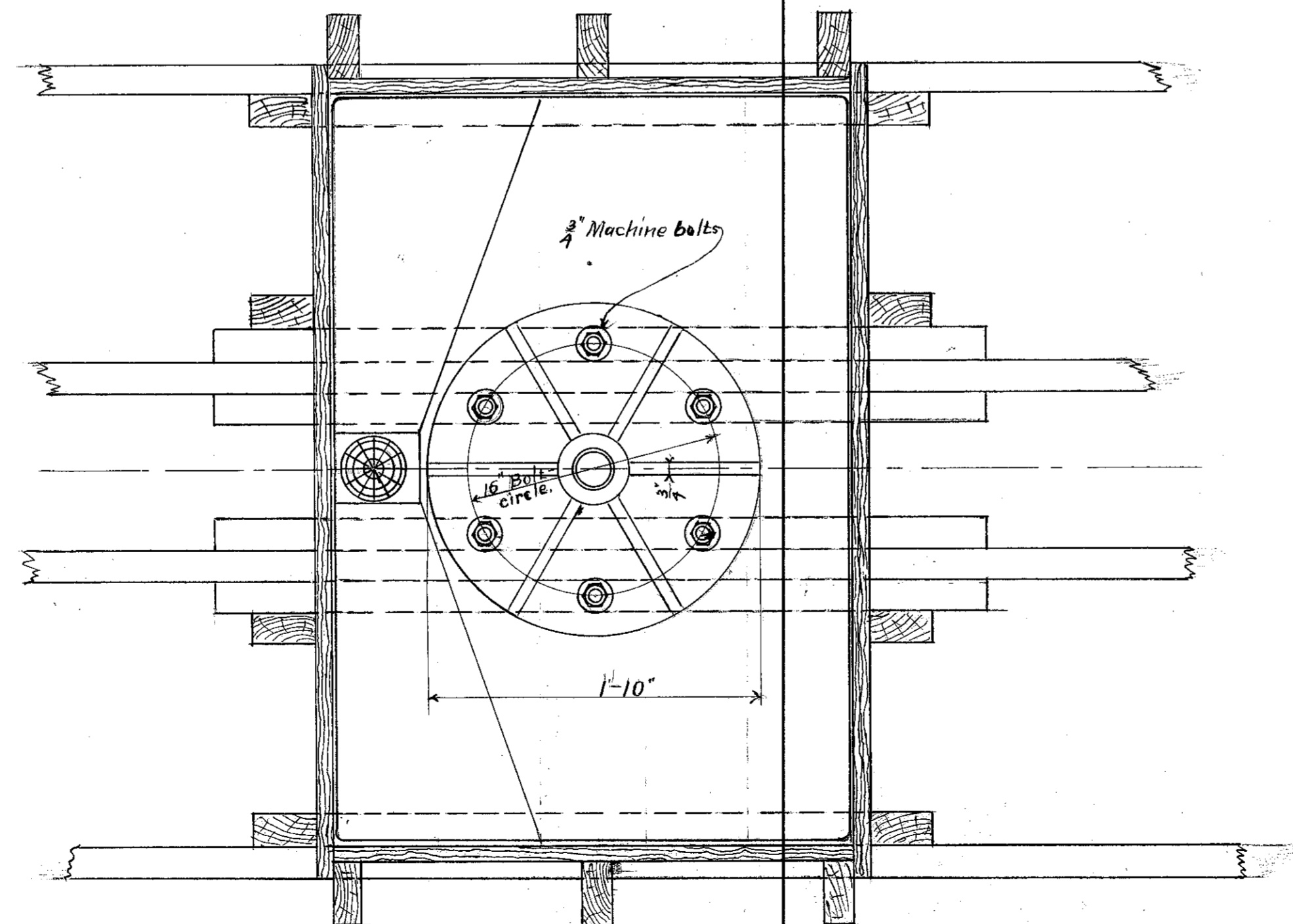
Tug Spring

Correct - *Hugh C. Young* Engineer of Bridge Design  
 Approved - *W. G. ...* Engineer of Bridges & Harbor  
 Approved - *John ...* City Engineer  
 approved - *W. R. Moorhouse* Commissioner of Pub. Works

CITY OF CHICAGO.  
 Department of Public Works,  
 Bureau of Engineering,  
 Division of Bridges & Harbor.  
**PROPOSED ARRANGEMENT OF  
 CHANNEL LIGHT SUPPORTS FOR  
 BELMONT & WEBSTER AVE. BRIDGES.**  
 Drawn by - F.W.F. Date - Mar-1916  
 Traced by - F.W.F. Scale - 1 1/2" = 1'-0"  
 Checked by - J.C.B. DRG. NO. 2235



SECTION AA.



City of Chicago,  
 Division of Bridges and Harbor.  
 Suggestion for Details of  
 Signal Ball Support  
 For  
 Webster Ave. Bridge.

Drawn by H.A., Aug. 11-15. Inked Dec-17-15 J.C.B.  
 Scale 1 1/2\"/>

DRAWING No 3836  
 FILE No 35-D4-647.

1660570100



G.L. CLAUSEN  
CONSULTING ENGINEER.

F.J. GERAGHTY

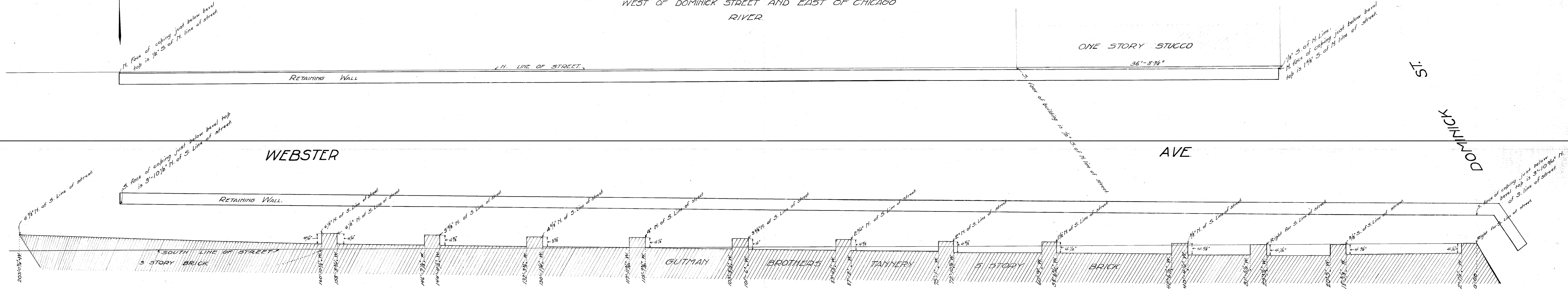
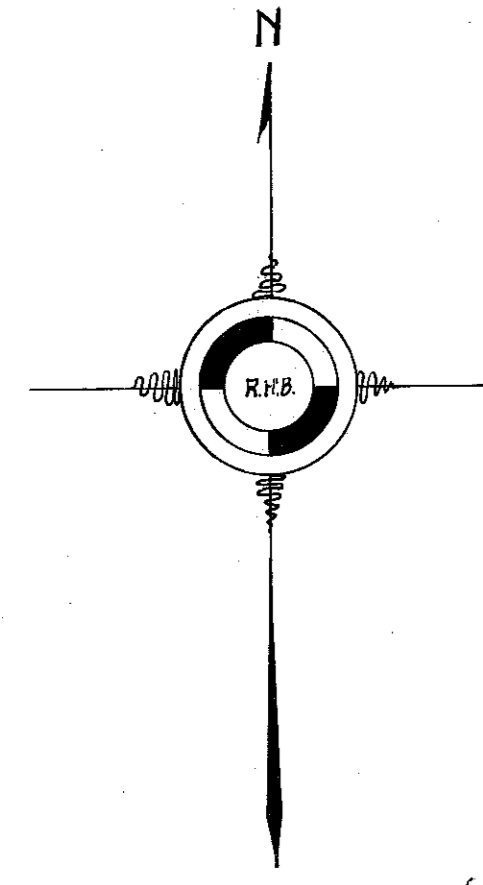
TEL. RANDOLPH 5216

# CLAUSEN & GERAGHTY SURVEYORS

CITY HALL SQUARE BLDG. 139 N. CLARK ST.

## PLAT OF SURVEY OF

NORTH AND SOUTH LINE OF WEBSTER AVE.,  
WEST OF DOMINICK STREET AND EAST OF CHICAGO  
RIVER.



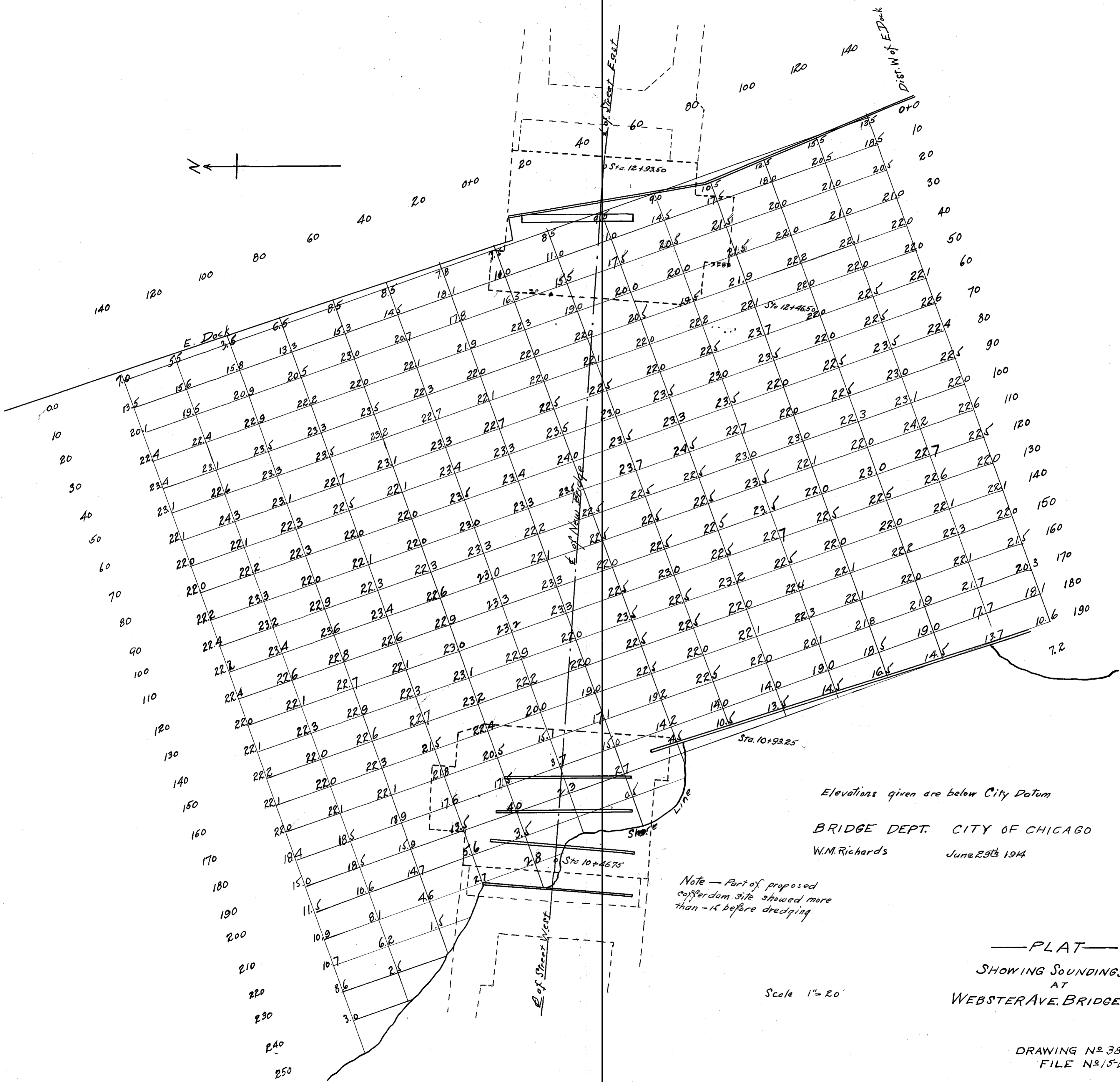
For City of Chicago  
 -Bridge Division-  
 ORDER NO. 5869.  
 REQUISITION NO. E. 4193.  
 NOT TO SCALE.  
 BOOK 186-P. 2.  
 ORDER # 3152.

STATE OF ILLINOIS } S.S.  
 COUNTY OF COOK }

We, CLAUSEN & GERAGHTY, do hereby  
 certify that we have surveyed the property described  
 above and that the plat hereon drawn is a correct  
 representation of said survey.

Chicago, March 16<sup>th</sup> A.D. 1915  
 Clausen & Geraghty  
 Surveyors.

DRAWING N<sup>o</sup> 3837  
 FILE N<sup>o</sup> 15-04-648 1660570101



Elevations given are below City Datum

BRIDGE DEPT. CITY OF CHICAGO  
W.M. Richards June 29th 1914

Note - Part of proposed  
cofferdam site showed more  
than -15 before dredging

— PLAT —  
SHOWING SOUNDINGS  
AT  
WEBSTER AVE. BRIDGE SITE.

Scale 1" = 20'

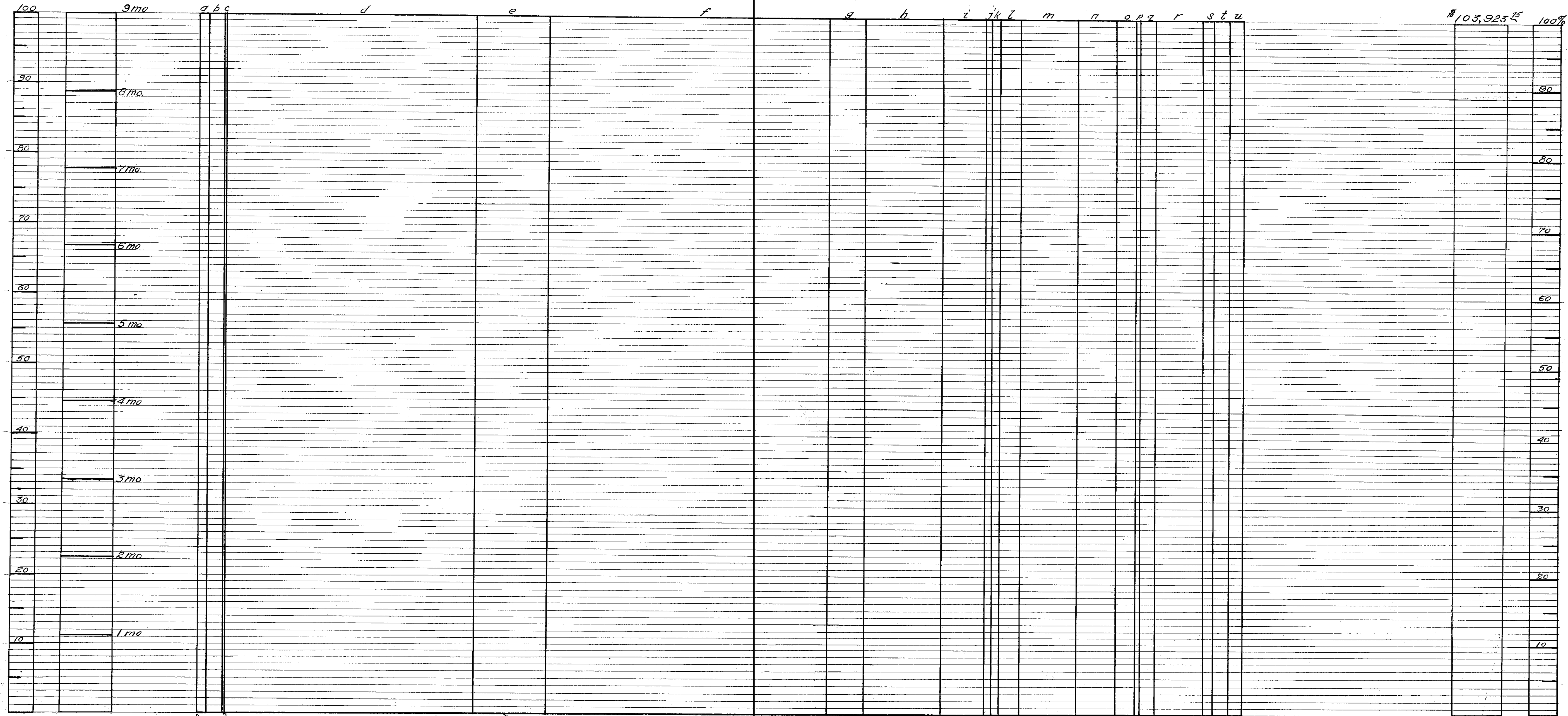
DRAWING No 3838  
FILE No 15-D4-649

# WEBSTER AV. BRIDGE SUBSTRUCTURE PROGRESS DIAGRAM.

Bids opened

Contract signed

Notified to begin work



%

Time  
9 Mo.

Removal \$900.00  
Miscellaneous  
\$160.00  
4 Test Piles @ \$40.00 ea

Cofferdams  
\$24,950.00

Excavation  
8000 Cu. Yds @ 90¢  
\$7200.00

Concrete (piers)  
4300 Cu. Yds @ \$1.50  
\$6450.00

Mortar  
260 Cu. Yds @ \$1.40  
\$364.00

Concrete  
Retaining Walls  
1100 Cu. Yds @ \$6.80  
\$7480.00

Reinforcing Bars  
175000 lbs @ 2 1/4¢  
\$4375.00  
Steel Shelving 2000 lbs @ 2 1/4¢  
\$500.00  
Miscellaneous 1000 lbs @ 1 1/4¢  
\$1125.00  
Crested Oak Piles  
6000 @ 3.125 = \$18750.00

Fine Fines deliv  
4800 @ 1.125 = \$5400.00

Driving Piles  
38,000 @ 1.10¢  
\$4180.00

Crested Oak Timber  
26000 B.M. @ 1.10¢ = \$28600.00  
Piercing Power 31 @ \$1.10 = \$34.10  
Filling Approaches  
8500 Cu. Yds @ 2.00 = \$17000.00

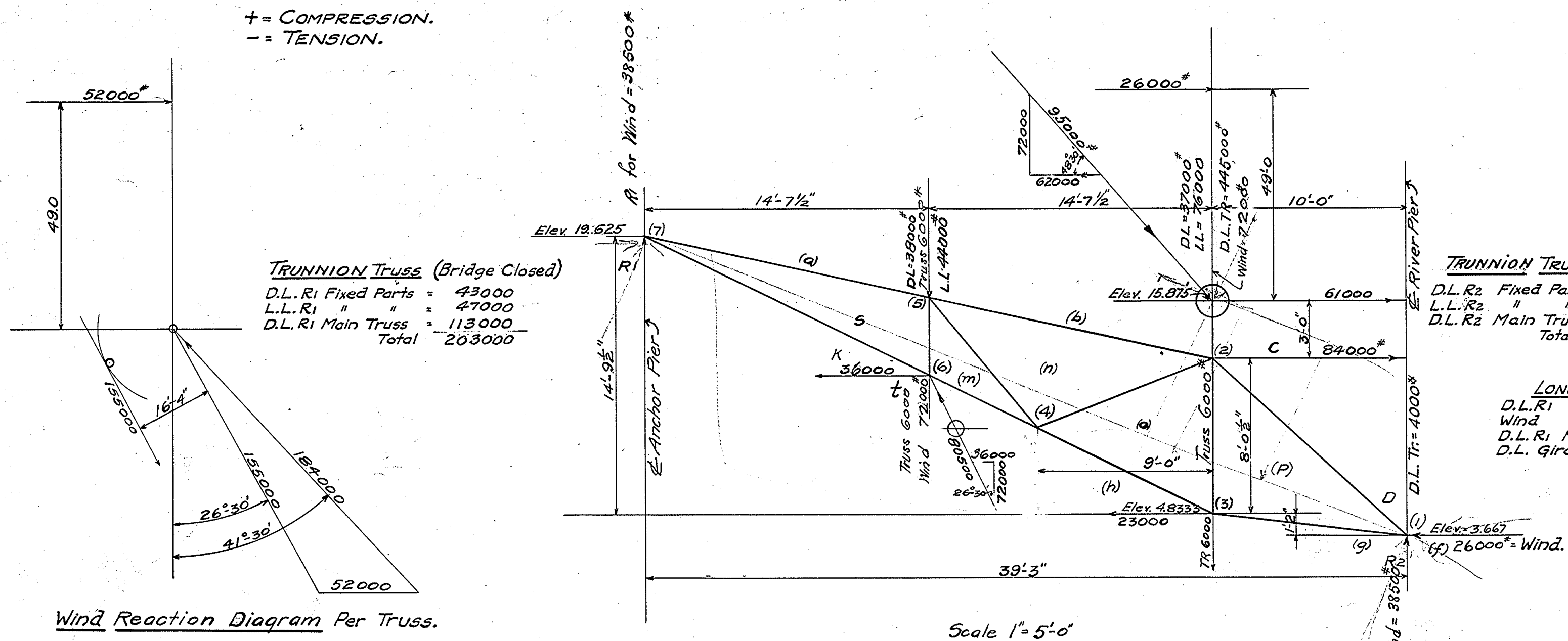
Paving (Asph. Mac)  
3600 Sq. Yds @ \$1.20  
\$4320.00  
Culvert 6000 lbs @ 1.20 = \$720.00  
Box Pipe 10000 @ 1.10 = \$1100.00  
Concrete Sidewalks 7000 Sq. Yds @ 1.10 = \$7700.00

1660570103

Total  
Contract

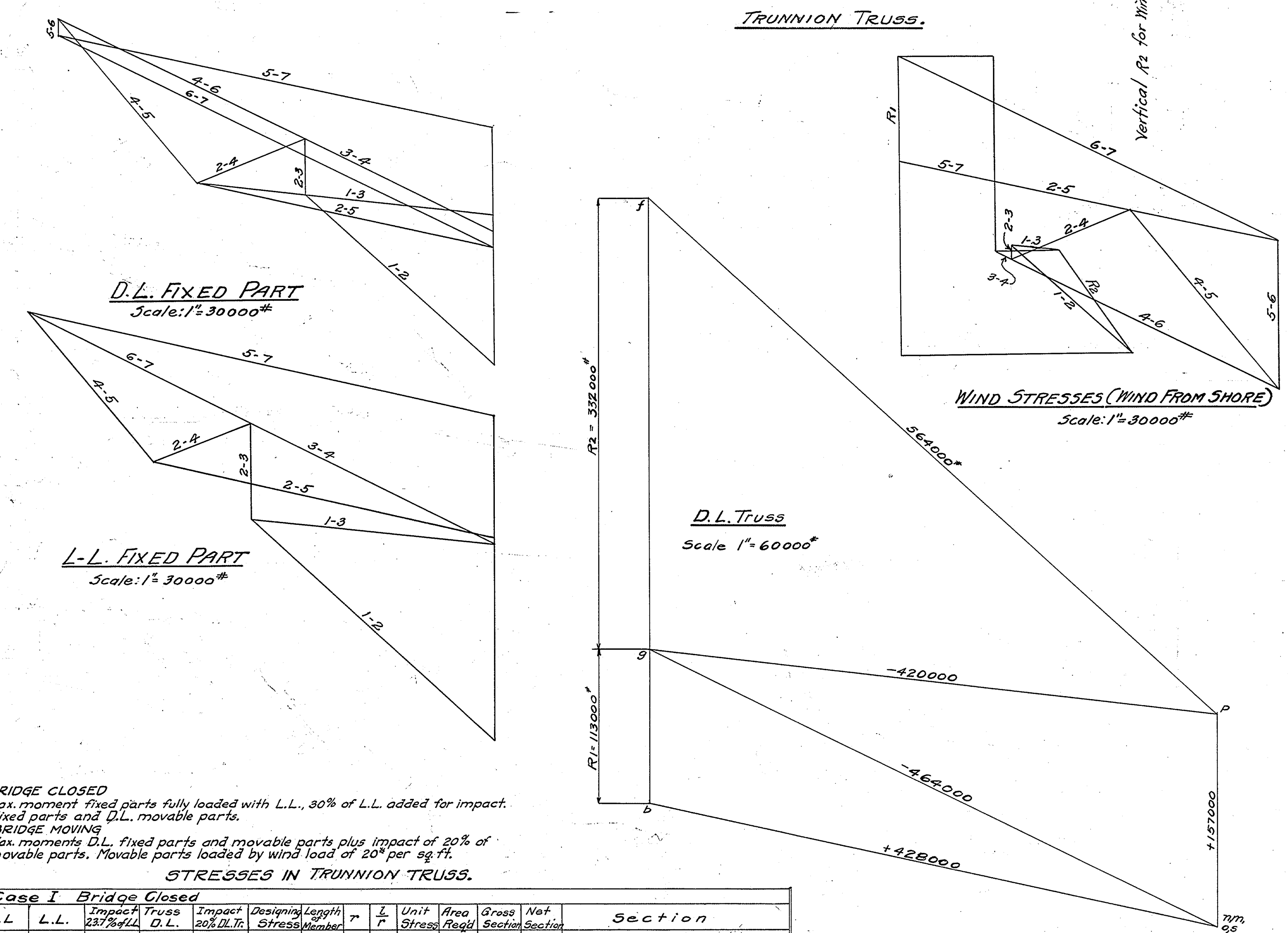
%

+ = COMPRESSION.  
- = TENSION.



Wind Reaction Diagram Per Truss.

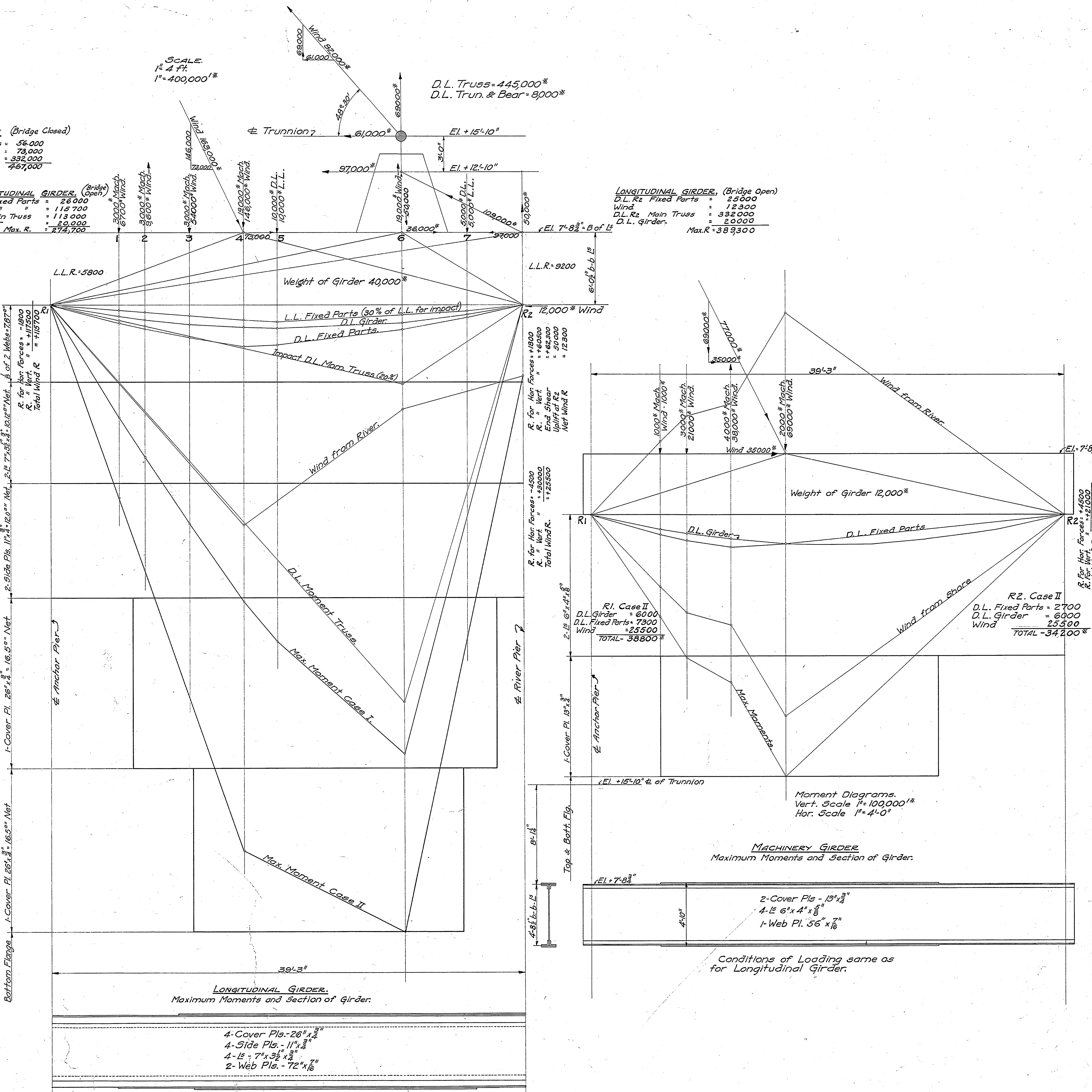
Scale 1" = 5'-0"  
TRUNNION TRUSS.



**CASE I BRIDGE CLOSED**  
 For Max. moment fixed parts fully loaded with L.L., 30% of L.L. added for impact.  
 D.L. fixed parts and D.L. movable parts.  
**CASE II BRIDGE MOVING**  
 For Max. moments D.L. fixed parts and movable parts plus impact of 30% of  
 D.L. movable parts. Movable parts loaded by wind load of 20' per sq. ft.

**STRESSES IN TRUNNION TRUSS.**

Member	D.L.	L.L.	Impact	Designing	Length	r	L	Unit	Area	Gross	Net	Section	
			30% D.L.	Stress	Member			Stress	Reqd.	Section	Section		
1-2	+95000	+124000	30000	567000	213000								
2-5	+110000	+139000	33000	628000	210000								
5-7	+163000	+178000	40000	628000	809000								
1-3	-70000	-95000	23000	420000	602000								
3-4	-79500	-104000	25000	467000	673000								
4-6	-175000	-192000	46000	467000	877000								
6-7	-175000	-192000	46000	467000	877000								
2-3	+270000	+340000	80000	157000	256000								
5-6	0.0	0.0		0.0									
2-4	-44000	-39000	9000	32000									
4-5	+80000	+70000	17000	167000									
<b>Case II Bridge Moving</b>													
1-2	+95000	+60000	+54000	+112800	+891000	13.6	5.8	28	14000	61.0	64.08	2-Webs-18" 2-B-4"x4"x1/2" 1-Cov. Pl. 25" 2-Web Pls. 18" 1-Cov. Pl. 25" 2-Web Pls. 18"	
2-5	+110000	+87000	+428000	+85600	+710600	18.0	7	25.5	14000	52.5	53.04	2-Webs-18" 2-B-4"x4"x1/2" 1-Cov. Pl. 25" 2-Web Pls. 18" 1-Cov. Pl. 25" 2-Web Pls. 18"	
5-7	+163000	+142000	+428000	+85600	+818600	15.0	7	25.5	14000	59.8	63.04	2-Webs-18" 2-B-4"x4"x1/2" 1-Cov. Pl. 25" 2-Web Pls. 18" 1-Cov. Pl. 25" 2-Web Pls. 18"	
1-3	-70000	-175000	-420000	-84000	-591500	10.1			18000	38.2	50.0	44.25	2-Webs-18" 2-B-4"x4"x1/2" 1-Cov. Pl. 25" 2-Web Pls. 18"
3-4	-79500	-65000	-464000	-92800	-642900	10.0			18000	41.4	55.86	42.86	2-Webs-18" 2-B-4"x4"x1/2" 1-Cov. Pl. 25" 2-Web Pls. 18"
4-6	-175000	-115000	-464000	-92800	-846000	6.3			18000	54.4	75.36	57.49	2-Webs-18" 2-B-4"x4"x1/2" 1-Cov. Pl. 25" 2-Web Pls. 18"
6-7	-175000	-115000	-464000	-92800	-846000	16.3			18000	54.4	75.36	57.49	2-Webs-18" 2-B-4"x4"x1/2" 1-Cov. Pl. 25" 2-Web Pls. 18"
2-3	+270000	+50000	+157000	+31400	+229400	8.9	6.5	14.7	14000	15.8	18.44		4-B-4"x4"x1/2"
5-6	0.0	0.0	0.0	0.0	0.0	4.0			16000	2.87	3.8	7.05	2-L-7"x3 1/2"x1/2"
2-4	-44000	-747000	0.0	0.0	-91000	3.7			16000	6.0	9.92	6.92	4-B-3 1/2"x3 1/2"x1/2"
4-5	+80000	+82000	0.0	0.0	+165000	8.8	17	64	17000	12.0	13.0		4-L-3 1/2"x3 1/2"x1/2"



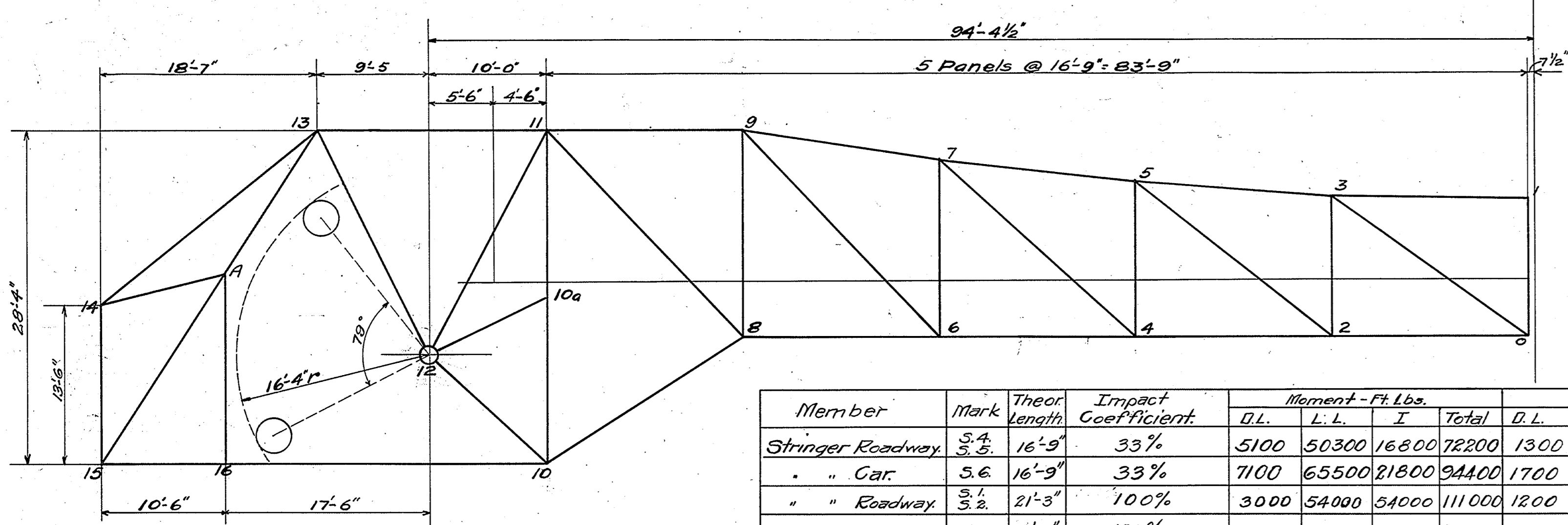
**CASE I BRIDGE CLOSED.**  
 For max. moments: Fixed parts fully loaded with L.L., 30% of L.L. added for impact, D.L. fixed parts & D.L. movable parts.

**CASE II BRIDGE MOVING.**  
 For max. moments: D.L. fixed parts, and movable parts plus impact of 20% of D.L. of movable parts. Movable parts loaded by Wind Load (20' per sq. ft.)

**BELMONT AVENUE BRIDGE AND WEBSTER AVENUE BRIDGE. STRESSES**

For CARRYING TRUSS, LONGITUDINAL GIRDER, AND MACHINERY GIRDER.  
 Made By L.L.E.Y. Date August 1913.  
 Checked By A.B.L.

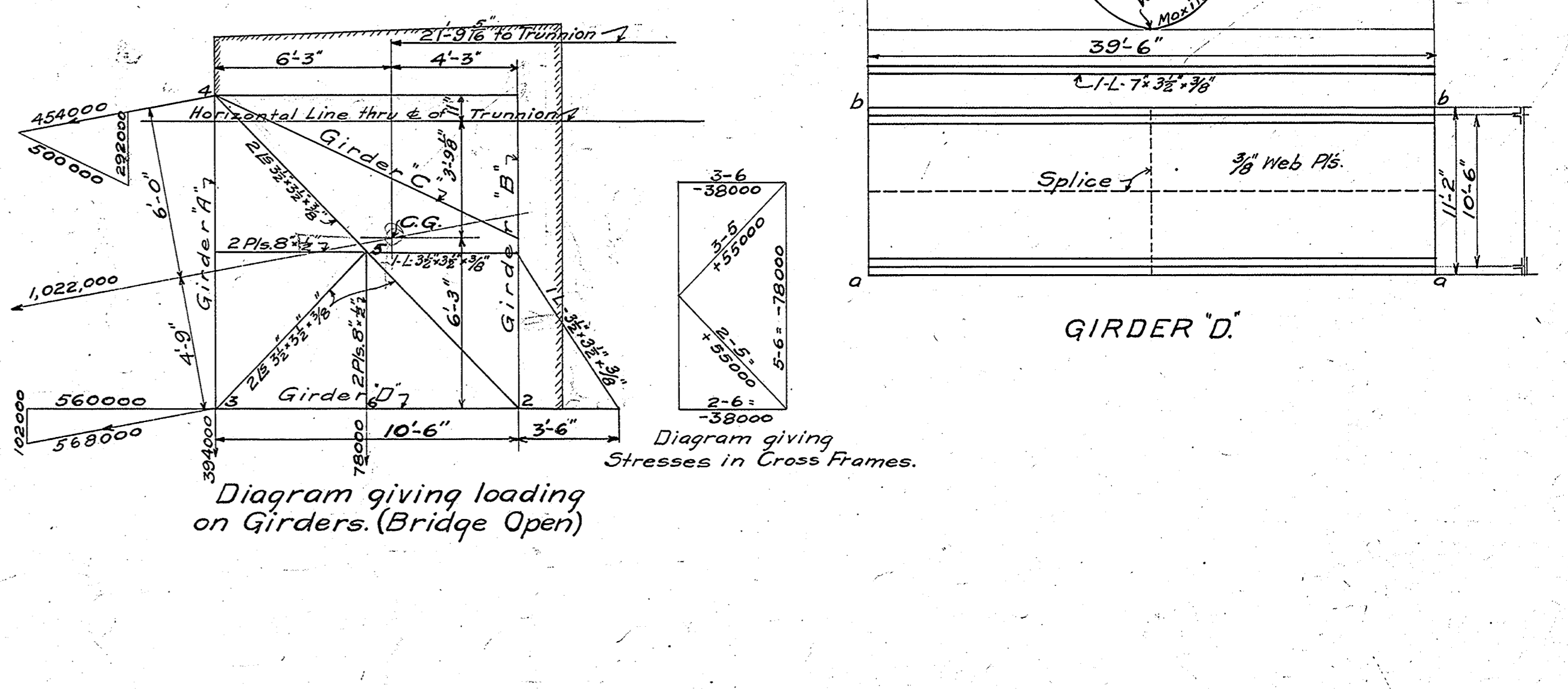
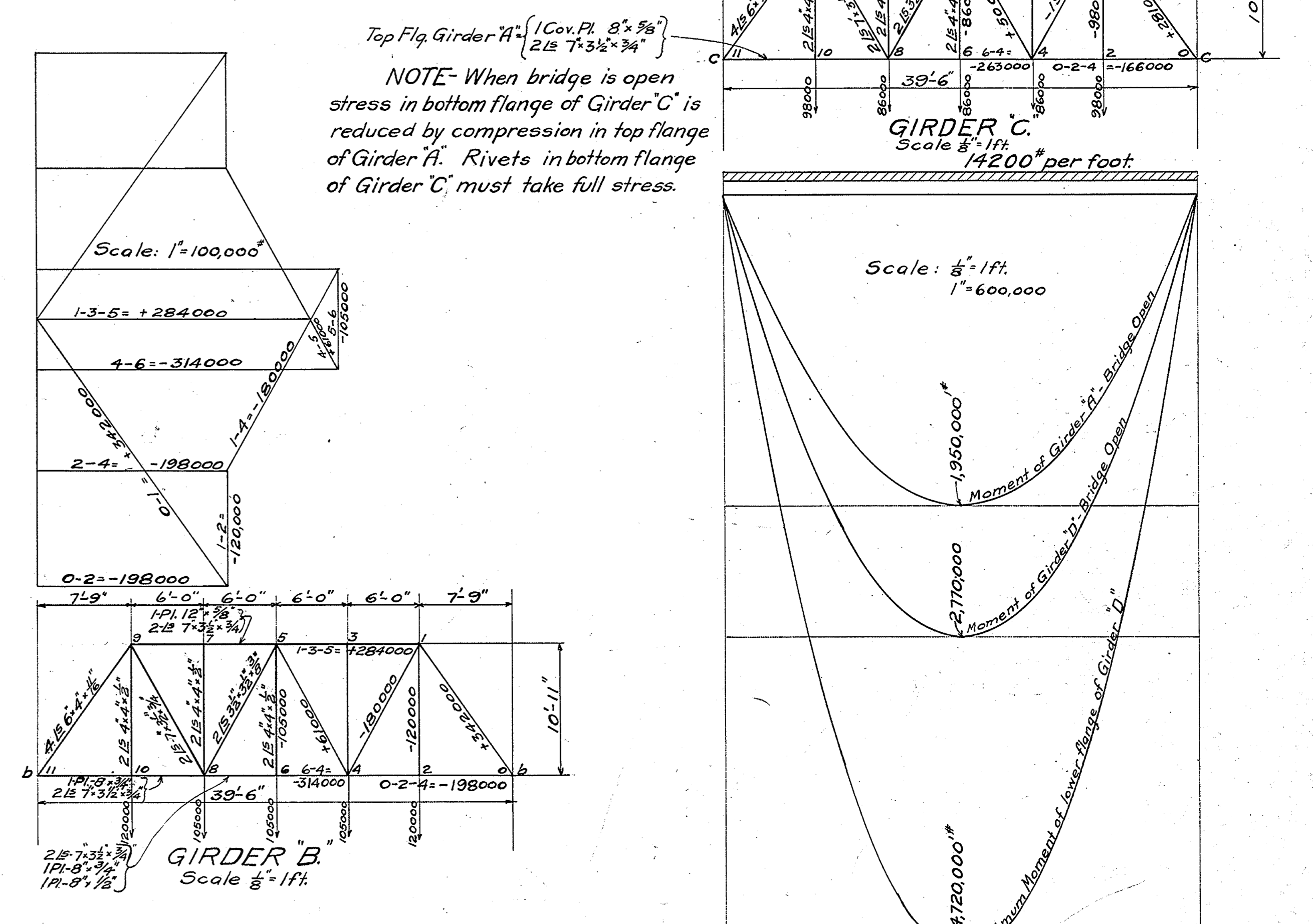
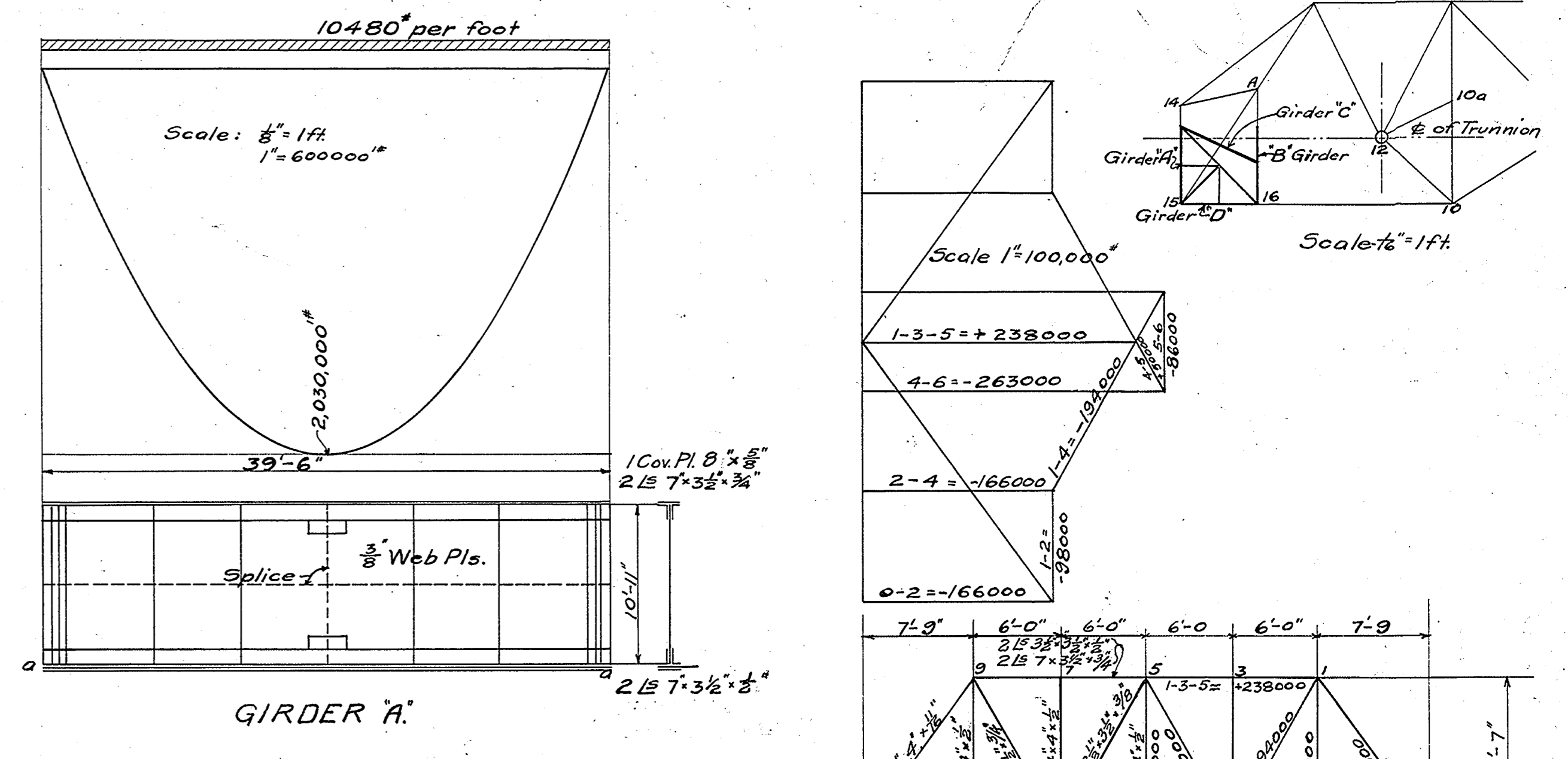
DRAWING No 439.  
 FILE No 11-6E-65



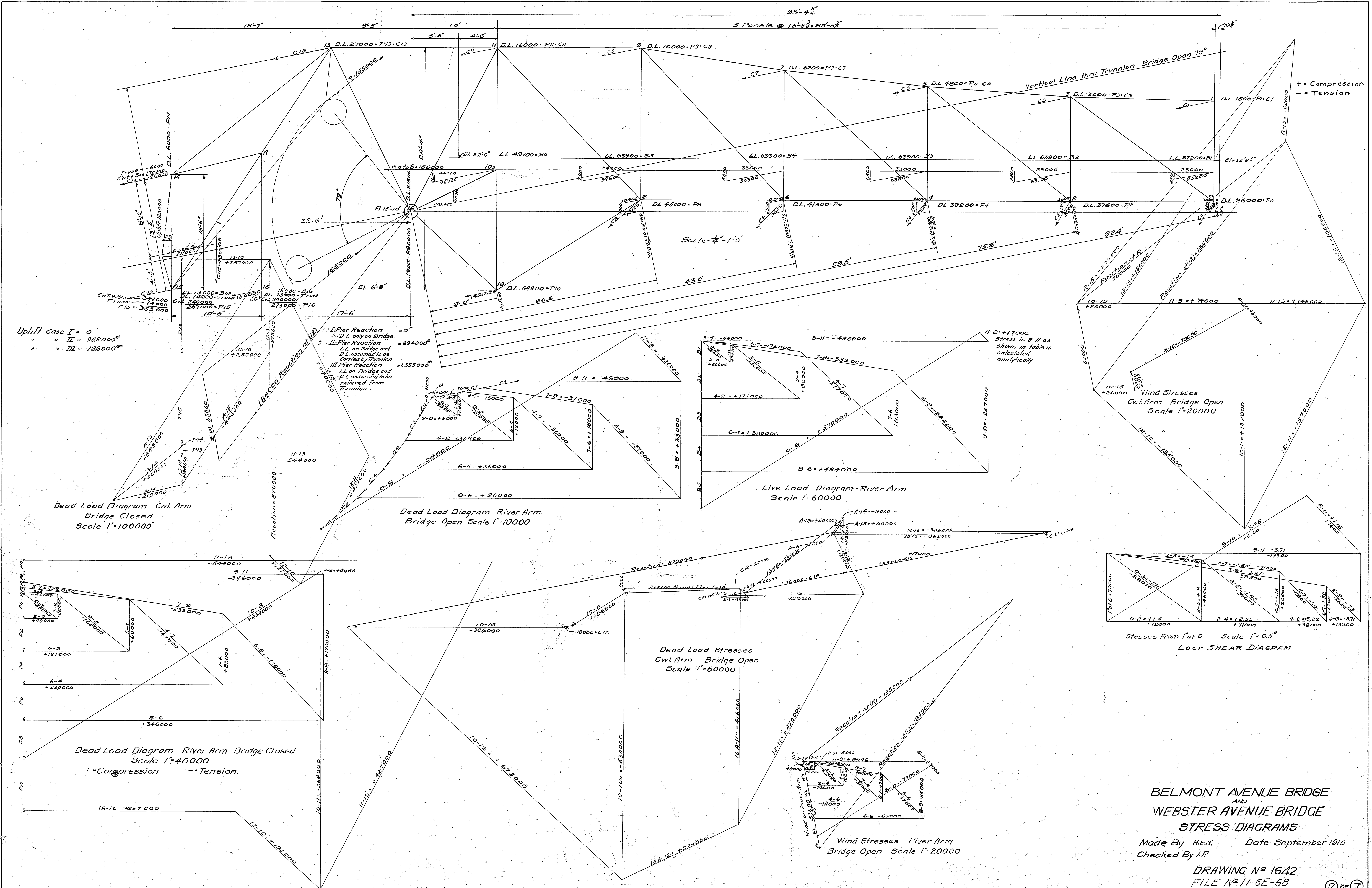
Member	Mark	Theor Length	Impact Coefficient	Moment - Ft. Lbs.				Shear Lbs.				Flange Sec. Mod.	Material	Flange Sec. Mod.
				D.L.	L.L.	I	Total	D.L.	L.L.	I	Total			
Stringer Roadway	5.4	16'-9"	33%	5100	50300	16800	72200	1300	17700	5700	24000	54.0	15" @ 42" I Beam	56.9
" " Car	5.6	16'-9"	33%	7100	65500	21800	94400	1700	19800	6600	28100	70.9	22" x 33 1/2" Top Web 12" x 8" 2 1/2" x 3 1/2" Bottom	71.0
" " Roadway	5.1	21'-3"	100%	3000	54000	54000	111000	1200	12000	12000	25200	62.8	15" @ 60" I Beam	61.2
" " Car	5.3	21'-3"	100%	3000	56200	56200	115400	1600	19800	19800	41200	66.2	25" x 33 1/2" Top Web 15" x 8" 2 1/2" x 3 1/2" Bottom	61.5
Floorbeam 0-0	3.9	33'-6"	27%	159000	688000	272000	119000	15300	52000	19200	86500	102.9	41" x 16 1/2" x 1/2"	102.9
" " (8-2)(4-4)	3.9	33'-6"	27%	264000	888000	265000	357000	25100	70500	16200	11800	131	41" x 16 1/2" x 1/2"	131
" " (6-5)(10-0)	3.9	33'-6"	27%	222000	970000	363000	455000	24000	72000	20000	16000	128.8	41" x 16 1/2" x 1/2"	128.8
Sidewalk Stringers	16'-9"	16%	1600	9500	1700	12800	400	2200	400	3000	3.4	3 1/2" Pine Stringers	128.0	
" " Bracket	23'-300	18%	23300	83000	14900	121200	10000	15100	2700	27600	2.84	4 1/2" x 3 1/2" x 3/8" Web 1/2"	2.84	

Member	Bridge Closed					Bridge Opening or Fully Open					Designing Stress	Length of Member	r	L/r	Unit Stress	Area Req'd.	Gross	Net	Sections						
	D.L. Closed	L.L. Closed	Impact to L.L.	Lock Shear	50% Reversal	D.L. Open	Wind	20% Vibration	50% Reversal	Total															
1-3	0.0	0.0	0.0	0.0	0.0	+1500	0.0	0.0	0.0	+1500	+1500	16000	19.62	14.62											
3-5	-40000	-49000	-15000	+72000	23000	+69000	-199000	-3000	± 7000	-600	2000	-11000	-199000	16000	12.4	24.92	18.92								
5-7	-122000	-172000	-43000	-71000	3000	-413000	-15000	± 25000	-3000	5000	-48000	-413000	16000	26.0	34.48	25.98									
7-9	-232000	-333000	-66600	-38000	10000	-680000	-31000	± 50000	-6200	10000	-88000	-680000	16000	42.5	53.14	42.14									
9-11	-346000	-495000	-84200	-13000	14000	-952000	-46000	± 74000	-9200	14000	-130000	-952000	16000	59.4	74.88	59.38									
11-13	-544000	-720000	-176000	0.0	0.0	-1021000	-233000	± 148000	-46600	0.0	-428000	-1021000	16000	64.0	79.88	63.38									
0-2	+40000	+50000	+15000	+72000	23000	+69000	+200000	+9000	± 6000	+1800	0.0	+17000	+200000	201	5.62	36	13500	14.8	19.8						
2-4	+121000	+171000	+42700	+71000	0.0	+406000	+30000	± 22000	+6000	0.0	+58000	+406000	201	4.65	30	13900	23.2	29.0							
4-6	+230000	+330000	+66000	+38000	0.0	+664000	+58000	± 44000	+11600	0.0	+114000	+664000	201	5.3	38	13300	49.8	53.41							
6-8	+346000	+494000	+84000	+13000	0.0	+937000	+90000	± 67000	+18000	0.0	+175000	+937000	201	5.6	38	13500	69.5	71.13							
8-10	+408000	+570000	+85500	0.0	0.0	+1064000	+104000	± 79000	+20800	0.0	+204000	+1064000	239	5.75	42	13100	81.1	80.26							
10-15	+240000	+330000	+66000	+38000	0.0	+715000	+386000	± 26000	-77200	0.0	+715000	+715000	339	5.97	42	12100	164.2	164.2							
0-1	1500	0.0	0.0	0.0	1500	+1000	0.0	+200	1200	+1500	141	2.07	68	11200	9.92										
2-3	+28000	+34000	+10200	+46000	14000	+42000	+6000	± 5000	+1200	12000	+132000	146	2.07	70	11100	10.62	11.48								
4-5	+60000	+82000	+20500	+20000	0.0	+183000	+13000	± 12000	+2600	28000	+183000	160	2.54	63	11600	15.8	16.00								
6-7	+83000	+113000	+22600	+6200	0.0	+225000	+18000	± 17000	+3600	59000	+225000	182	3.15	58	11900	18.90	20.12								
8-9	+170000	+227000	+38600	+3600	1000	+441000	+33000	± 35000	+6600	1000	+75000	+441000	211	3.6	59	11900	37.2	39.24							
10a-11	+12000	+18000	+5400	+18000	18000	+522000	-416000	± 137000	-83000	18000	+474000	+474000	165												
10-10a	+178000	+240000	+60000	+25000	0.0	+642000	+53000	± 137000	+106000	214000	+642000	175													
0-3	-49000	-62000	-18600	+88000	34000	-252000	-9000	± 9000	-1800	20000	-252000	16000	13.6	14.1											
2-5	-105000	-156000	-39000	-39000	1000	-340000	-21000	± 23000	-4200	1000	-48000	-340000	16000	21.4	26.35	21.97									
4-7	-147000	-217000	-43400	-11800	1000	-420000	-30000	± 32000	-6000	1000	-68000	-420000	16000	24.2	31.25	26.12									
6-9	-170000	-242000	-41200	-2600	0.0	-456000	-37000	± 37000	-7400	0.0	-82000	-456000	16000	28.5	35.93	29.80									
8-11	+2000	+108000	+21000	+11000	51000	+20000	± 3000	+4000	+27000	+193000	+193000	292	3.6	81	10300	18.2	20.00								
10-12	+121000	+1660000	+48000	+9000	0.0	+942000	+673000	± 35000	+78400	0.0	+942000	+942000	163	6.0	27	14100	66.9	79.31							
11-12	+427000	+560000	+130000	+19000	0.0	+1386000	+470000	± 57000	+94000	178000	+1386000	260	5.7	46	12800	70.00	78.06								
10a-12	+108000	+148000	+46000	+17000	0.0	+275000	+220000	± 15000	+45800	0.0	+275000	+275000	134	3.5	38	13400	20.03	25.10							
12-13	+640000	+880000	+240000	+17000	0.0	+1,109,000	+126000	± 108000	+473000	0.0	+1,109,000	+1,109,000	256	6.0	43	13000	85.5	85.64							
13-14	+260000	-43000	-6000	0.0	0.0	+260000	-255000	± 18000	-47000	18000	-412000	+260000	285	7.72	57	16000	25.9	42.52							
13-A	-848,000	-988,000	-1,004,000	-53,000	0.0	-1,789,000	+50,000	± 90,000	+10,000	125,000	-1,440,000	16000	88.5	114.35	92.98										
A-15	-446,000	-388,000	-672,000	-53,000	0.0	-887,000	+50,000	± 190,000	+10,000	125,000	-1,012,000	16000	63.3	82.85	67.48										
A-15	+125,000	0.0	0.0	0.0	0.0	+125,000	-112,000	± 25,000	56,000	62,000	+206,000	165	2.5	66	+10,400	+19.8	24.22								
A-16	-273,000	0.0	0.0	0.0	0.0	-273,000	-3,000	± 600	-600	0.0	-273,000	16000	17.5	23.44	18.44										
A-16	-210,000	-34,000	-5,000	0.0	0.0	-249,000	-3,000	± 600	-600	0.0	-249,000	16000	13.4	21.18	15.68										

\* With D.L. removed from trunnion bearings. Stress shown = D.L. + L.L. Stress



BELMONT AVENUE BRIDGE AND WEBSTER AVENUE BRIDGE  
TABLE OF STRESSES FOR MAIN TRUSSES AND DIAGRAMS FOR COUNTERWEIGHT STRESSES.  
SCALE AS NOTED DATE...  
MADE BY H.E.Y. DRAWING NO. 1641  
CHECKED BY J.P. FILE NO. 11-6E-67 1 OF 7  
9960040123 1660570106



Uplift Case I = 0  
 " " II = 352000\*  
 " " III = 126000\*

I. Pier Reaction  
 D.L. only on Bridge.  
 II. Pier Reaction  
 D.L. on Bridge and  
 D.L. assumed to be  
 Carried by Trunnion.  
 III. Pier Reaction  
 D.L. on Bridge and  
 D.L. assumed to be  
 relieved from  
 Trunnion.

Dead Load Diagram Cwt Arm  
 Bridge Closed  
 Scale 1"=100000\*

Dead Load Diagram River Arm  
 Bridge Open Scale 1"=10000

Live Load Diagram - River Arm  
 Scale 1"=60000

Wind Stresses  
 Cwt Arm Bridge Open  
 Scale 1"=20000

Dead Load Stresses  
 Cwt Arm Bridge Open  
 Scale 1"=60000

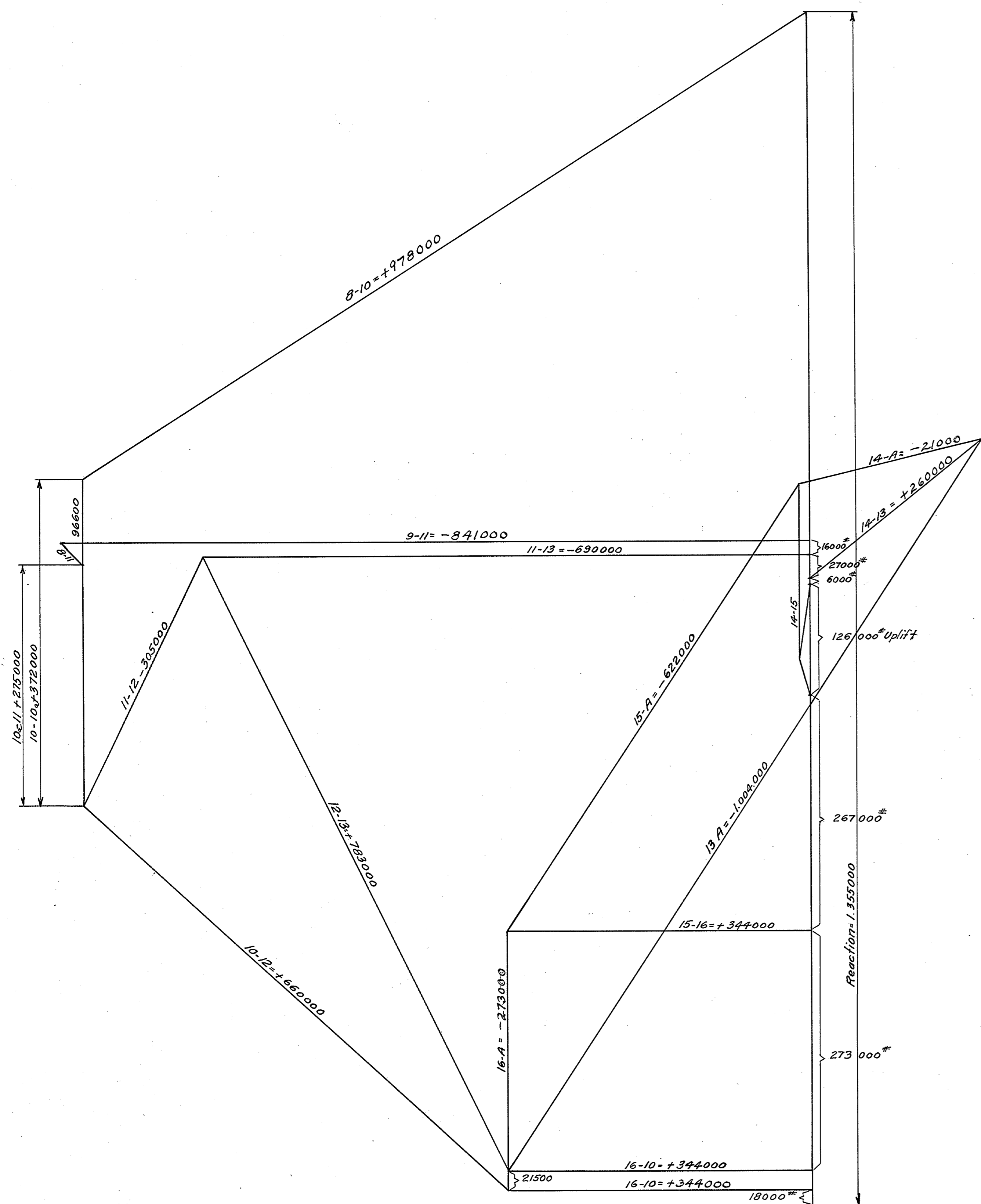
Stresses from 1 at 0 Scale 1"=0.5\*  
 LOCK SHEAR DIAGRAM

Wind Stresses. River Arm  
 Bridge Open Scale 1"=20000

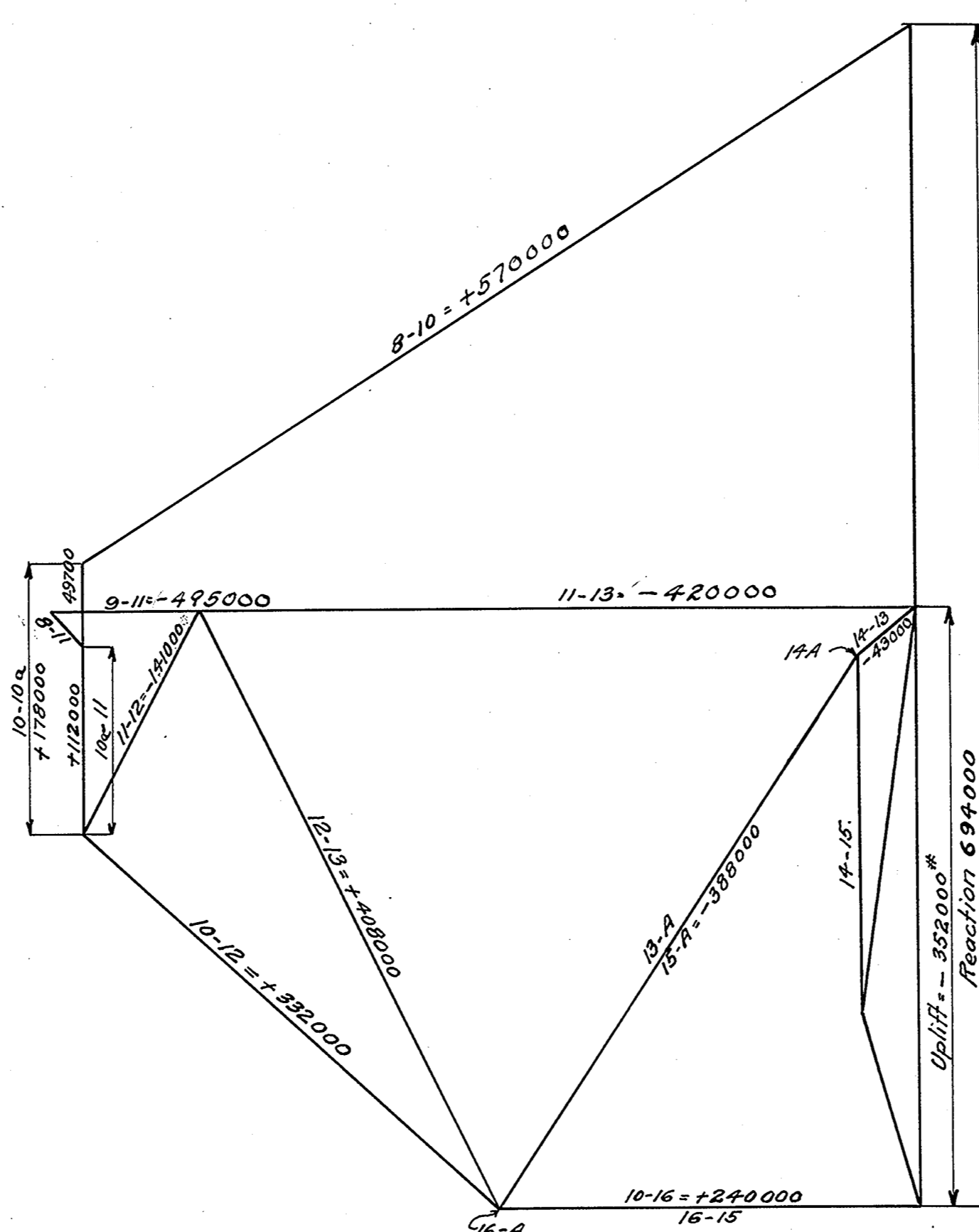
**BELMONT AVENUE BRIDGE  
 AND  
 WEBSTER AVENUE BRIDGE  
 STRESS DIAGRAMS**

Made By H.E.X. Date - September 1913  
 Checked By I.P.

DRAWING N° 1642  
 FILE N° 11-6E-6B



LIVELOAD & DEADLOAD DIAGRAM  
 Dead Load assumed to shift from Support  
 at Trunion to Pier and Anchor Column.  
 Scale - 1" = 80000 #



LIVE LOAD DIAGRAM  
 Civil Arm.  
 Scale - 1" = 80000 #

BELMONT AVENUE BRIDGE  
 AND  
 WEBSTER AVENUE BRIDGE  
 STRESS DIAGRAMS

Made By: J.R. .... Jan. 10th 1914  
 Checked By: .....

DRAWING No. 1643  
 FILE No. 11-6E-69

Member	Load
13-14	1875
A-14	300
15-14	745
Total	2920
X dist.	-28.00
Y dist.	+52.0

Member	Load
13-A	7770
14-A	313
15-A	770
Total	8853
X dist.	-17.50
Y dist.	+82.185

Member	Load
14-13	1900
A-13	3980
12-13	6000
11-13	3425
Total	15305
X dist.	-9.50
Y dist.	+230.0

Member	Load
12-11	3395
13-11	3200
A-11	5460
8-11	980
9-11	2688
Total	15703
X dist.	+10.00
Y dist.	+230.0

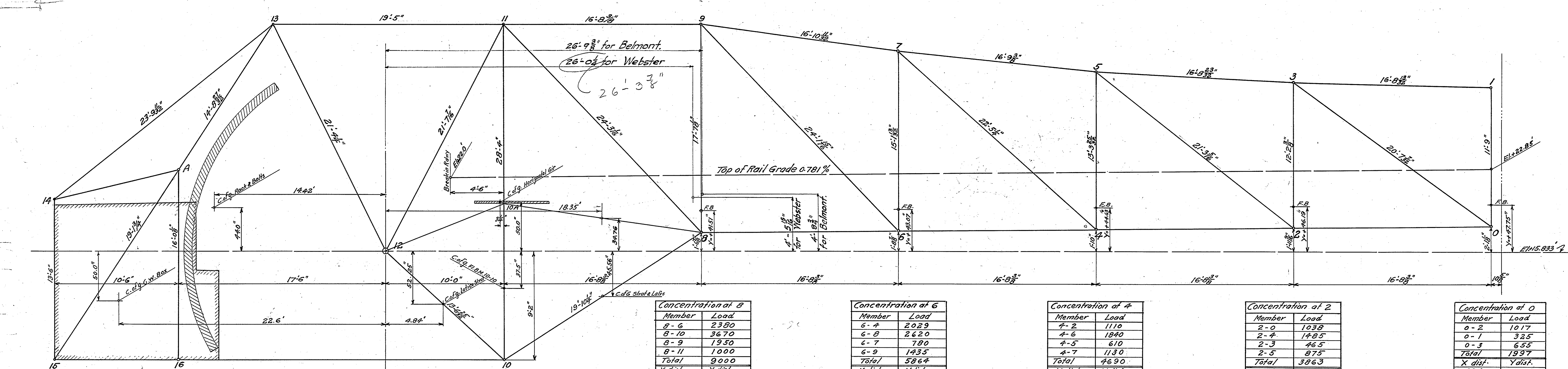
Member	Load
7-9	1940
6-9	1430
8-9	1875
11-9	3182
Total	8327
X dist.	+26.698
Y dist.	+230.0

Member	Load
5-7	1210
4-7	1130
6-7	745
9-7	2310
Total	5395
X dist.	+45.396
Y dist.	+201.644

Member	Load
3-5	1160
2-5	870
4-5	545
7-5	1490
Total	4065
X dist.	+60.094
Y dist.	+181.781

Member	Load
1-3	815
0-3	685
2-3	400
5-3	1060
Total	2960
X dist.	+76.792
Y dist.	+169.938

Member	Load
0-1	320
3-1	975
Total	1295
X dist.	+93.490
Y dist.	+166.125



Member	Load
15-16	2885
15-14	750
16-A	3180
Total	6815
X dist.	-28.0
Y dist.	-110.0

Member	Load
16-10	5650
16-15	1800
Total	7450
X dist.	-17.50
Y dist.	-110.0

Member	Load
10-8	3120
10-15	4565
10-11	6365
10-12	2000
Total	16050
X dist.	+10.00
Y dist.	-110.0

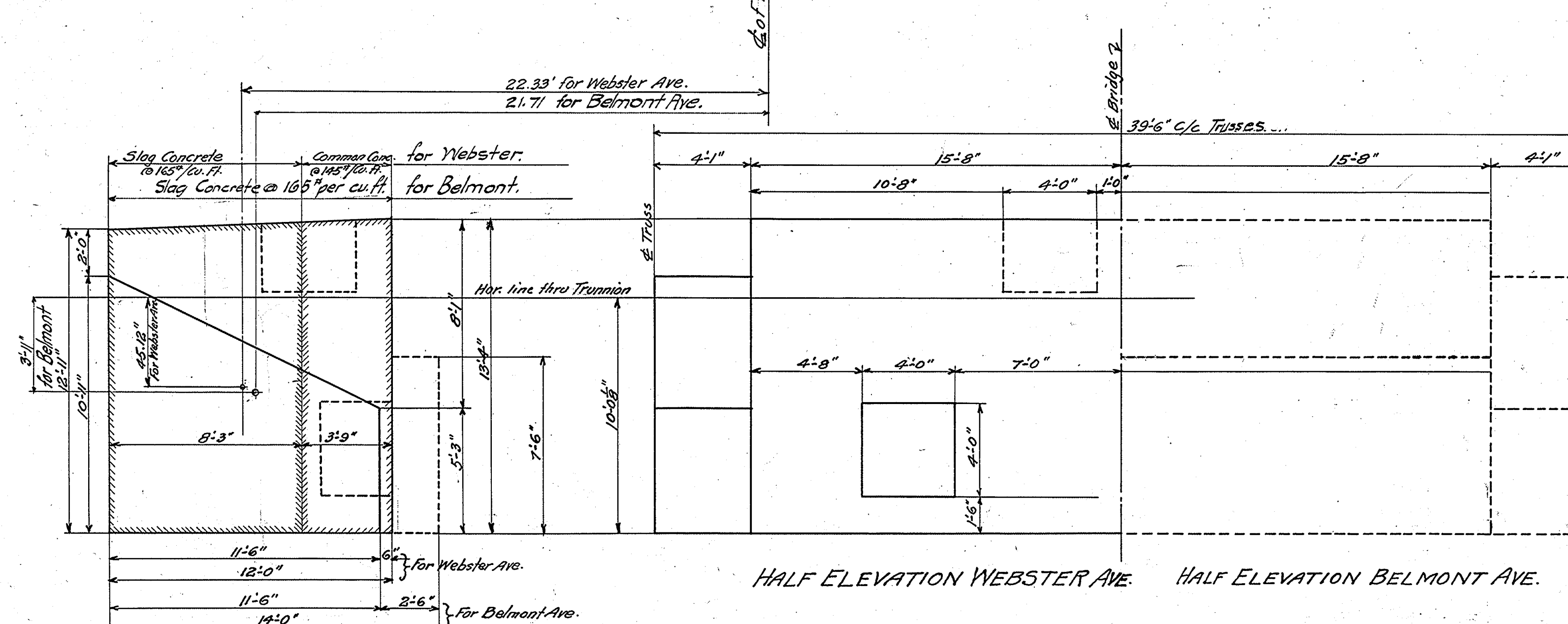
Member	Load
8-6	2390
8-10	3670
8-9	1950
8-11	1000
Total	9000
X dist.	+26.698
Y dist.	+188.75

Member	Load
4-6	2029
6-10	2670
4-7	780
6-9	1435
Total	5894
X dist.	+43.396
Y dist.	+20.438

Member	Load
4-2	1110
4-6	1840
4-5	610
4-7	1130
Total	4690
X dist.	+60.094
Y dist.	+22.0

Member	Load
2-0	1038
2-4	1485
2-3	465
2-5	875
Total	3863
X dist.	+76.792
Y dist.	+23.563

Member	Load
0-2	1017
0-1	325
0-3	655
Total	1997
X dist.	+93.490
Y dist.	+25.125



One Truss Point	Weight	X ft.	Moments	Y in.	Moments
0	1997	+93.49	186700	+25.13	50185
1	1295	+33.49	121070	+64.13	215138
2	3863	+67.79	296640	+23.56	91018
3	2920	+76.79	224995	+18.94	497924
4	4690	+100.00	469000	+22.0	103180
5	4065	+100.00	406500	+18.78	758936
6	5894	+100.00	589400	+20.44	119860
7	5395	+100.00	539500	+20.84	1088927
8	9000	+100.00	900000	+18.87	169830
9	8327	+100.00	832700	+23.0	1915210
10	16050	+100.00	1605000	+10.0	1765500
11	15703	+100.00	1570300	+20.0	3611690
12	11570	0.0	0	0	0
13	15305	-9.5	-145397	+23.00	3520150
14	2920	-28.0	-81760	+52.0	151840
15	6815	-28.0	-190820	+110.0	749650
16	7450	-17.50	-130375	+110.0	819500
A	6530	-17.50	-114125	+120.0	700569
10A	450	+100.0	4500	+50.0	22500
Rock & Ball	12408	-14.42	-178866	+44.0	545776
Total	144623		2628909	883343	13542727
2 Trusses	289246		5257818	-1766686	27085454
					-6669300

One Truss Point	Weight	X ft.	Moments	Y in.	Moments
0	525	+82.0	43000	+37.1	19477
1	0	0	0	0	0
2	525	+164.0	86000	+32.0	16800
3	480	+246.0	118080	+16.0	69680
4	610	+328.0	198080	+32.5	19825
5	685	+410.0	280900	+17.5	115280
6	1225	+492.0	602700	+33.5	89578
7	1795	+574.0	1029300	+19.0	154230
8	1670	+656.0	1095520	+27.9	46533
9	1395	+738.0	1029300	+26.0	301320
10	1865	+820.0	1529700	+36.0	179040
11	1885	+902.0	1702900	+26.0	382130
13	2610	-99.0	-25839	+26.0	527220
14	950	-28.0	-26750	+58.0	55100
15	1000	-26.75	-26750	+80.0	80000
Total	16190		406660	77859	1757228
2 Trusses	32380		813320	-155718	3514456
Total	32380		813320	-155718	3514456
2 Trusses	32380		813320	-155718	3514456
Trusses & Pts.	321626		6071138	-1922404	30399910
					-7203380

Item	Weight	X ft.	Moment (ft-lb)	Y in.	Moment (inch-lb)
Floor Beam 0-0	10200	+93.49	953400	+27.75	506120
" 0-2	10573	+76.79	811901	+46.19	488367
" 0-4	10573	+60.09	635332	+44.63	471873
" 0-6	10573	+43.39	458868	+43.07	455379
" 0-8	10645	+26.69	284222	+41.51	441874
" 0-10	12420	+10.00	124200	+40.95	441874
Horizontal Gir.	9235	+97.3	89827	+50.0	346313
Lattice Strut	6200	+4.84	30000	-52.25	323950
Sidewalk Brackets	9860	+51.75	510255	+57.75	569415
Lateral	1400	+51.75	72450	+68.5	95900
Roadway Lateral	8950	+60.0	507000	+23.62	199589
Center Struts	3825	+60.0	229500	+23.62	91764
Lateral 8-10a	2490	+13.35	33165	+34.76	86552
Strut 8-10	1510	+18.35	27708	-45.56	68796
Lateral 8-10	2430	+18.35	44600	-45.56	110711
Strut (Rail)	70804	+43.91	3083828	+62.0	4389848
Bracket Structure	165	+7.39	1209	+82.0	13530
Roadway Castings	8945	+666	59573	+62.0	534590
Center					
Lock Castings	1220	+93.49	114058	+25.12	30846
Center Lock Gears	2270	+86.76	197045	+34.5	78375
Machinery Motor	250	+83.48	20870	+37.6	9375
Center Lock Stud	445	+88.14	39387	+31.6	13795
Machinery Foundation	180	+88.14	15925	+16.0	2880
Roadway Timber	125290	+429	6253224	+75.02	9399256
Sidewalk Timber	26160	+429	1123304	+82.12	2148260
Rolling	5976	+57.76	342206	+113.5	675175
Paint Castings	1356	+51.75	70173	+83.0	112588
Signal Lights					
Trolley (Coal)	1600	+38.29	150000	+36.60	371000
Wire					
Supports	9	+4.25	38000	+54.0	362000
Rails & Fastenings	16065	+429	689000	+76.02	1203200
Signal Ball Casts	3200	+60.0	192000	+112.0	678400
Lighting Fixtures	4170	+28.3	118000	+23.88	996000
Counterweight Box	62295	-22.6	-1396067	-20.0	-3464750
Trusses & Pts.	321626		6071138	-1922404	30399910
TOTALS	771285		24158107	-3488471	11637337

Note: To be deducted for Webster Ave.

3915 cu. ft. slag conc @ 145 = 646000  
 1620 \* . Com. @ 145 = 235000  
 881000 Total Cwt. for Webster Ave. 1 Leaf  
 5879 cu. ft. slag conc @ 165 = 972000 Total Cwt. for Belmont Ave. 1 Leaf

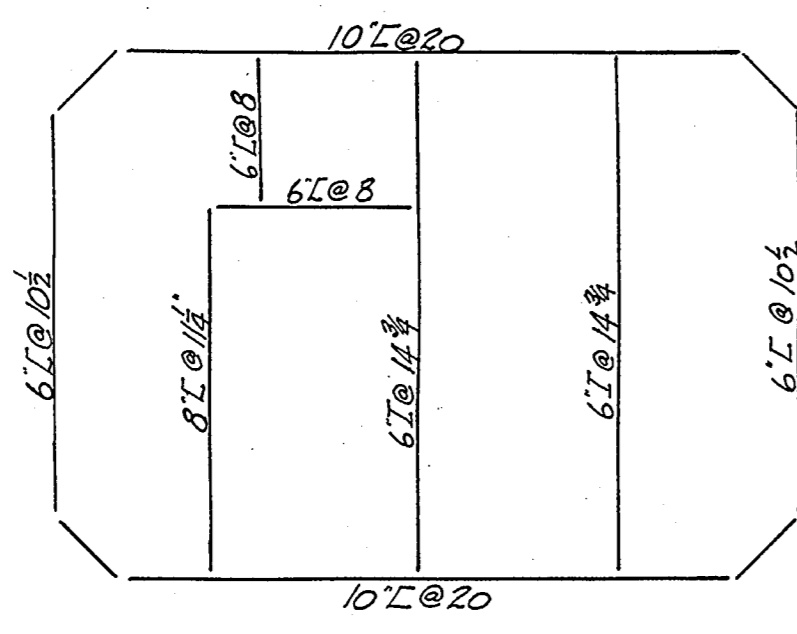
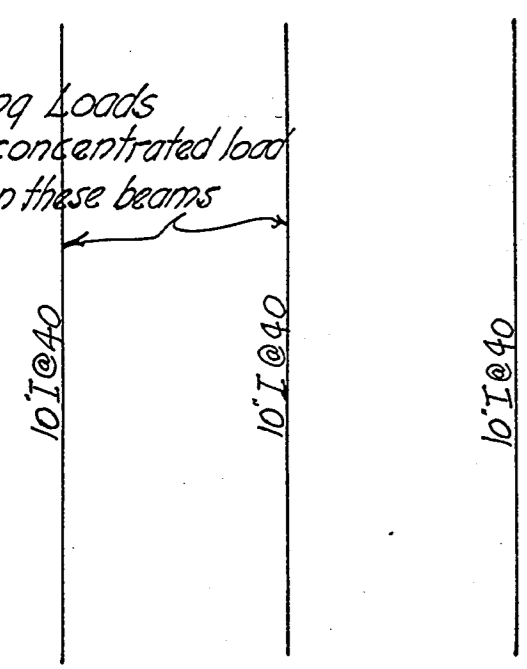
Note: The above Cwt's are figured for an approximate increase of 2% in the weight of the steelwork in the finished bridge.  
 The figures for the coordinates of the center of gravity of bridge, and the counterweight given on drawing No. 861 of Belmont Ave Bridge, which do not agree with corresponding figures given on this drawing, were taken from preliminary calculations and are approximately correct. The results given on this sheet are correct.

**WEBSTER AVENUE BRIDGE  
 AND  
 BELMONT AVENUE BRIDGE  
 COUNTER WEIGHTS CALCULATIONS**

Made By: H.E.Z. June 1914  
 Checked By: A.B.C. Scale: 1/4"=1'-0"



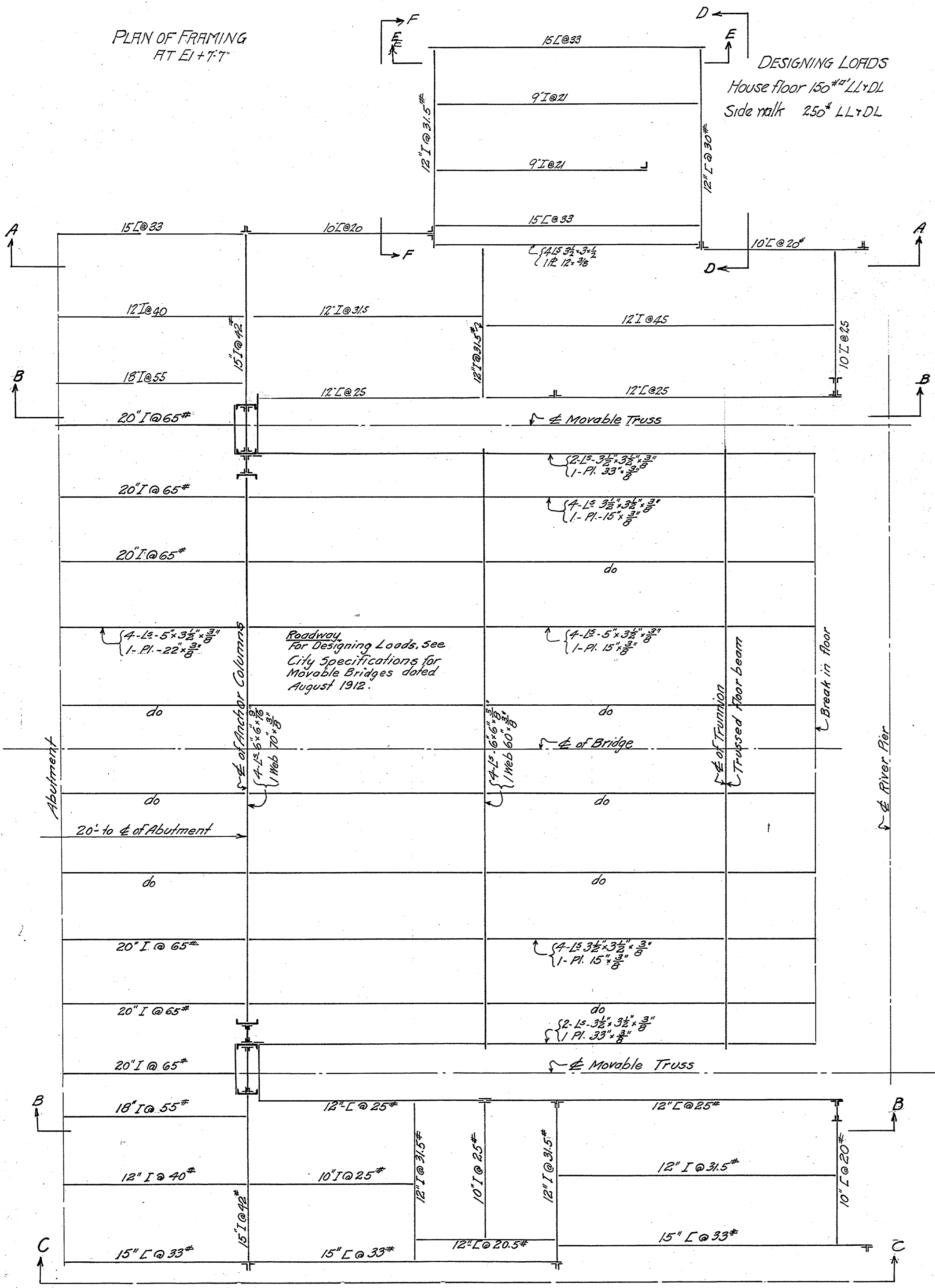
Designing Loads  
450<sup>00</sup> or a concentrated load  
of 10000<sup>00</sup> on these beams



Designing Loads  
160<sup>00</sup> LL+DL

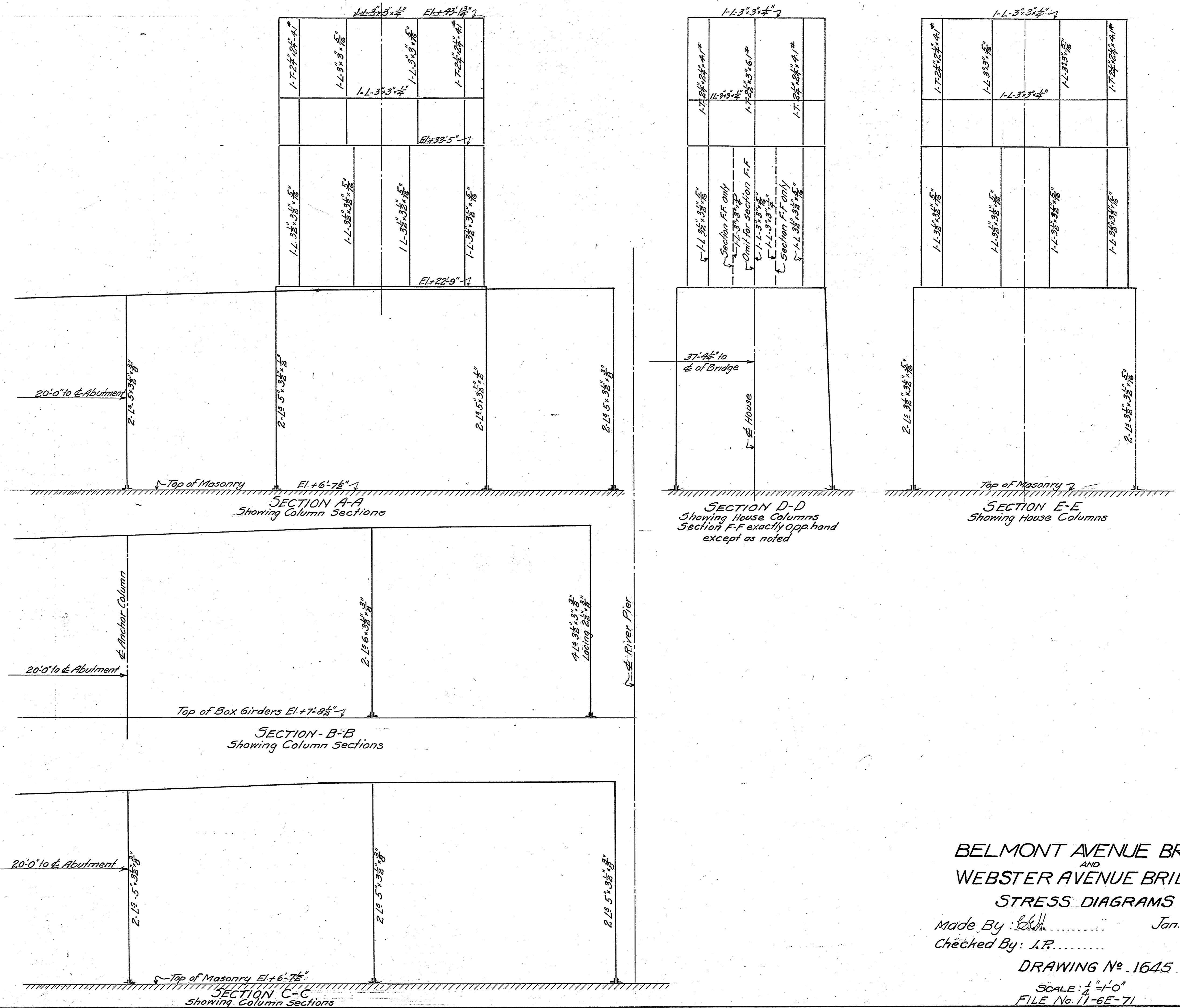
PLAN OF FRAMING  
AT EL. +33'-5"

PLAN OF FRAMING  
AT EL. +7'



STRESSES IN FLOOR SYSTEM - FIXED PART

Member	Mark	Length	Impact Coefficient	Moment in Ft. Lbs.				Shear Lbs.				Fl. Sect. Req'd	Material	Fl. Sect. Provided
				DL.	LL	I	Total	DL	LL	I	Total			
Roadway Stringer		20'-0"	33 1/2%	27000	71000	23600	121600	5400	18500	6100	30000	Sect. Req'd 9/10	20 I @ 65	Sect. Provided 11/10
Street Car		20'-0"	33 1/2%	35500	98500	91000	160000	7100	23800	7700	38800	6.58"	1 web 18 1/2 x 3/8 4 15 3/4 x 3/8	6.43"
Roadway		14'-7 1/2"	33 1/2%	14000	46000	15000	75000	3400	15800	5200	24400	5.0"	1 web 18 1/2 x 3/8 4 15 3/4 x 3/8	4.91"
Street Car		14'-7 1/2"	33 1/2%	16000	52000	17000	85000	4500	19500	6500	30500	5.66"	1 web 18 1/2 x 3/8 4 15 3/4 x 3/8	5.42"
Anchor Col. Floorbeam		35'-3"	$I = \frac{100}{36 \times 34 \times 42 \times 1300} = 2.9 \%$	363000	710000	167000	1240000	44000	73000	17000	134000	140"	1 web 70 x 3/8 4 15 3/4 x 3/8	150"
Floorbeam	F	34'-7"	$I = \frac{100}{36 \times 29 \times 25 \times 300} = 24.7 \%$	314000	644000	158000	1116000	38000	61000	15000	114000	14.75"	1 web 60 x 3/8 4 15 3/4 x 3/8	15.68"
"		12'-12"	$I = \frac{100}{36 \times 20 \times 7300} = 26.9 \%$	316000	943000	320000	1579000	37000	76000	28000	141000		Trussed	



BELMONT AVENUE BRIDGE  
AND  
WEBSTER AVENUE BRIDGE  
STRESS DIAGRAMS

Made By: *W.H.* Jan. 10<sup>th</sup> 1914  
Checked By: *J.R.*

DRAWING No. 1645

SCALE: 1/4" = 1'-0"  
FILE No. 11-6E-71

TABLE OF GEARS.

GEAR.	NO. OF TEETH.	PITCH.	FACE INCHES.	PITCH DIAMETER INCHES.	TOOTH PRESSURE POUNDS.	TORSION INCH LBS.	UNIT STRESS LBS. PER SQ. INCH.	REV. PER OPERATION.	R.P.M.	HEIGHT OF TEETH INCHES.			THICKNESS AT PITCH LINE INCHES.
										ABOVE P.L.	BELOW P.L.	TOTAL.	
G-1	39	7 1/2 C.P.	20	392.000	160000	392.000	160000	2.19	2.92	.625	4.000	4.625	2.625
G-2	15	7 1/2 C.P.	15	35.800	132000	272000	11700	2.40	3.20	3.000	1.625	4.625	4.500
G-3	54	3 D.R.	12	72.000	75600	272000	14100	2.40	3.20	8.15	1.687	2.500	1.875
G-4	15	3 D.R.	13	20.000	71900	719000	13300	8.65	11.5	1.375	1.125	2.500	2.187
G-5	75	1 1/2 D.R.	8	60.000	23900	719000	10400	8.65	11.5	.800	.926	1.726	1.216
G-6	15	1 1/2 D.R.	8 1/2	12.000	22700	136000	13600	43.2	57.6	.800	.926	1.726	1.216
G-7	76	2 D.R.	5	38.000	7190	136000	8000	43.2	57.6	.500	.578	1.078	.760
G-8	16	2 D.R.	5 1/2	8.000	6850	10200	205	273	273	.500	.578	1.078	.760
G-9	69	3 D.R.	5	23.000	2370	27300	3960	205	273	.335	.386	.719	.507
G-10	17	3 D.R.	5	5.667	2250	6400	4280	834	1111	.535	.586	.719	.507

Above table computed for holding against wind pressure of 20 lbs per sq ft with allowance of 5% for friction at each gear reduction.

TABLE OF SHAFTS.

SHAFT.	SECTION.	BEND. MOMENT INCH LBS.	TORSION MOMENT INCH LBS.	COMB. MOMENT INCH LBS.	DIAM. INCHES.	UNIT STRESS LBS. PER SQ. INCH.
S-2	G-2	2800000	2720000	3490000	16 1/2	8300
S-2	B-2	4490000	2720000	4970000	16 1/2	11300
S-2	G-3	4410000	2720000	4889000	16 1/2	11600
S-3	G-4	1140000	719000	1271000	10 3/4	10400
S-3	G-5	420000	719000	684000	8 3/4	10400
S-4	B-8	40000	136000	104000	6	4900
S-4	G-6	220000	136000	245000	6 1/2	10800
S-4	G-7	80000	136000	127000	6 1/2	5700
S-5	B-7	11700	27300	26000	4 1/2	2900
S-5	G-8	51200	27300	55000	4 7/8	6000
S-5	G-9	25500	27300	33000	5	3700

No allowance made for keyways

Above table computed for holding against wind pressure of 20 lbs per sq ft with allowance of 5% for friction at each gear reduction

Motors:  
 2 Motors - G.E. 202 Railway Type - for each leaf.  
 Back gear torsion for 10 ft wind including friction = 17000 in-lbs.  
 Time for operation of leaf at this torsion = 1.3 min.  
 Power required = 55 H.P.  
 For operation in 45 sec. back gear torsion = 4900 ft-lbs.  
 Corresponding wind pressure = 2.9 lbs per sq ft.  
 Power required = 25 H.P.

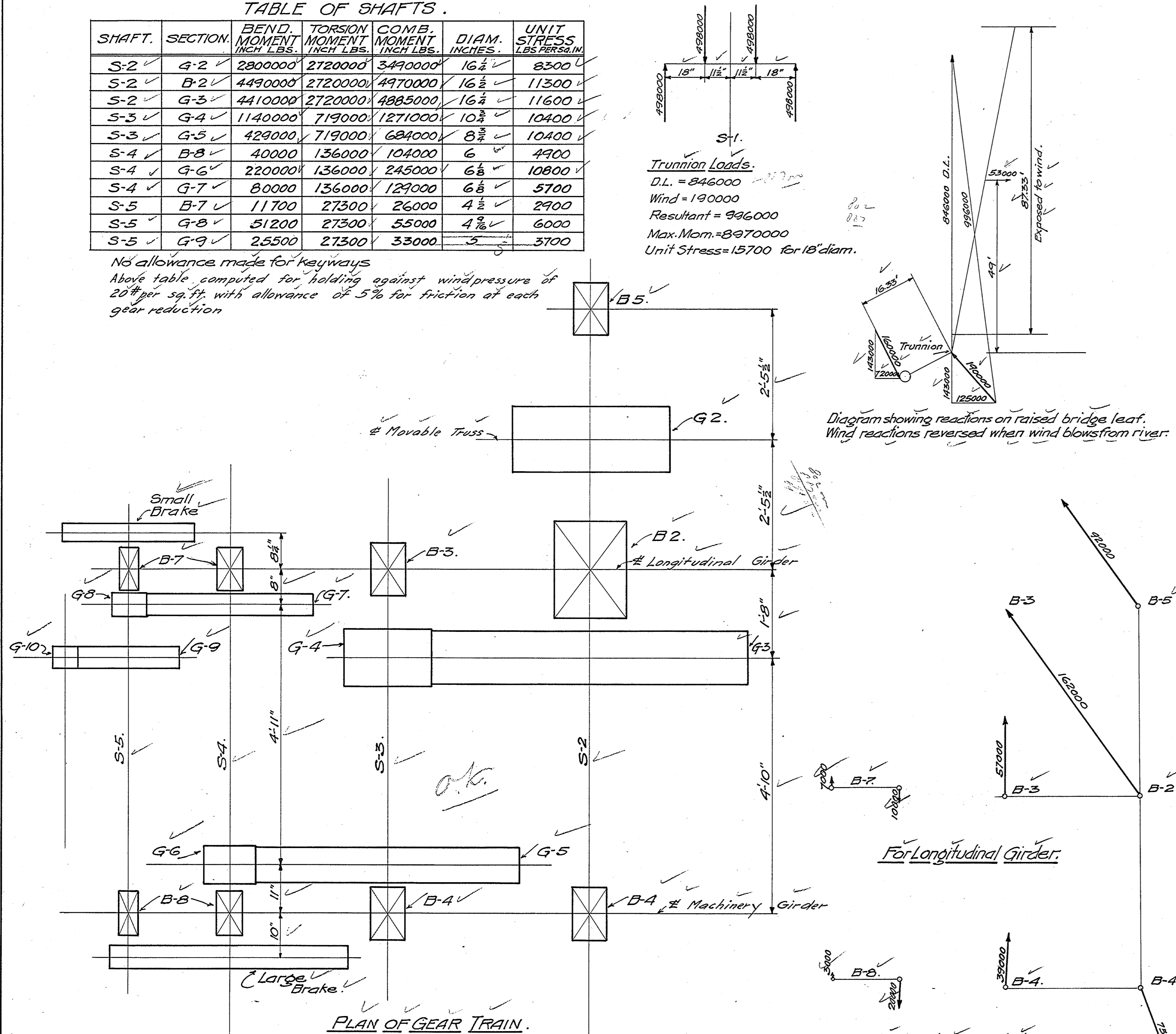
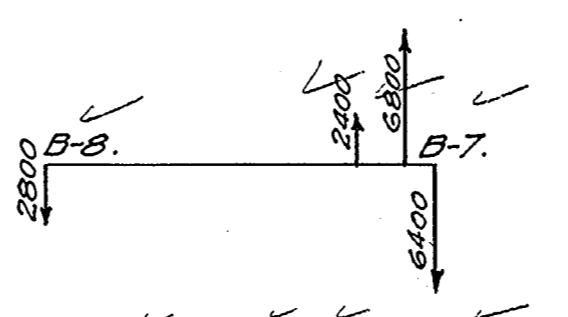
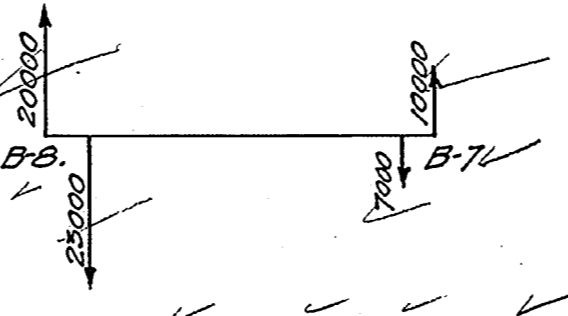
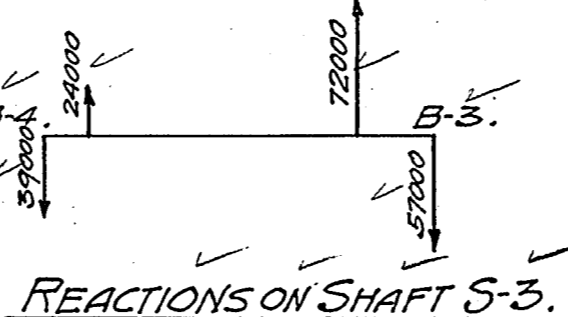
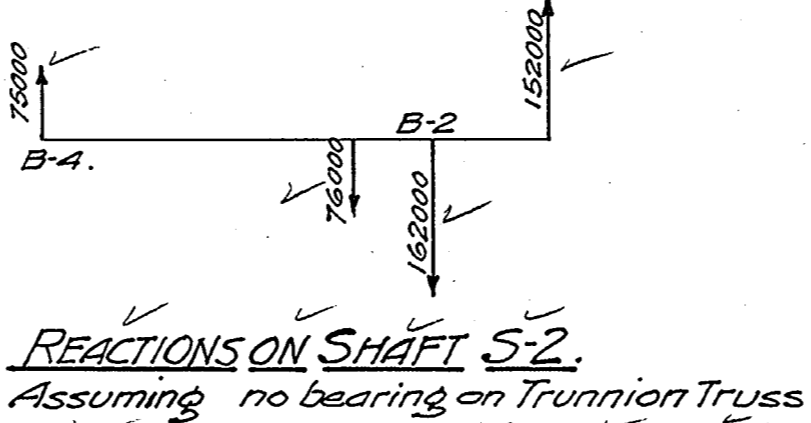
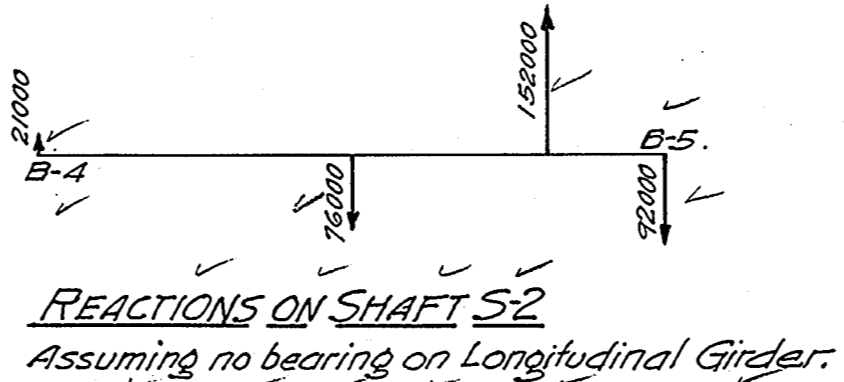
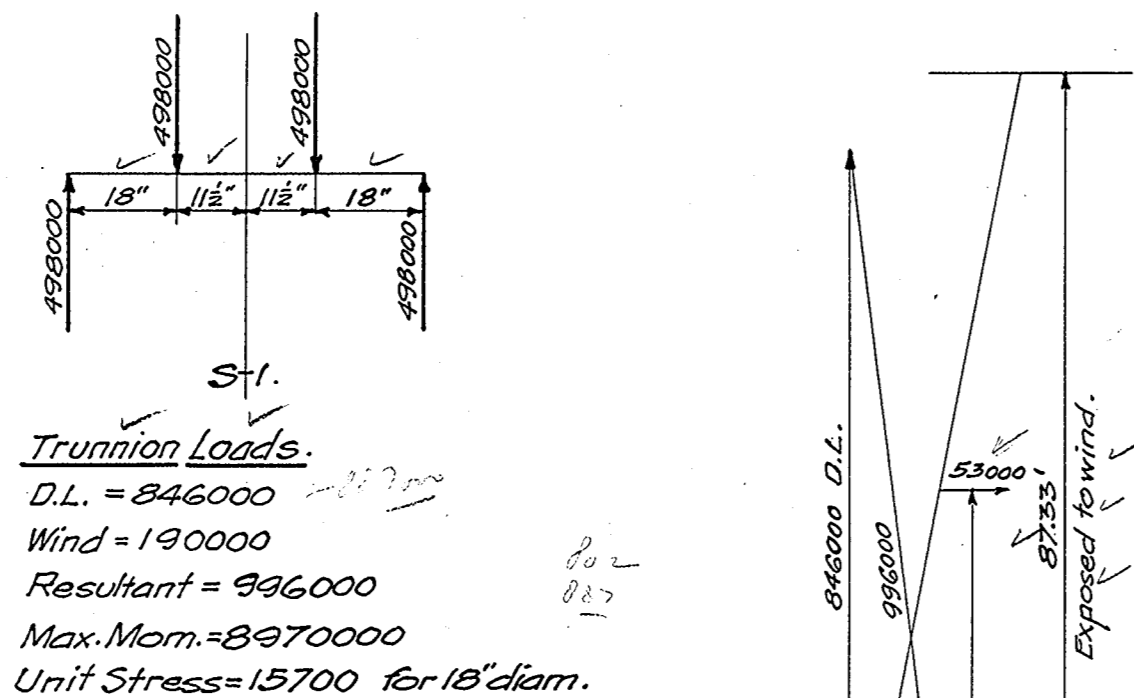
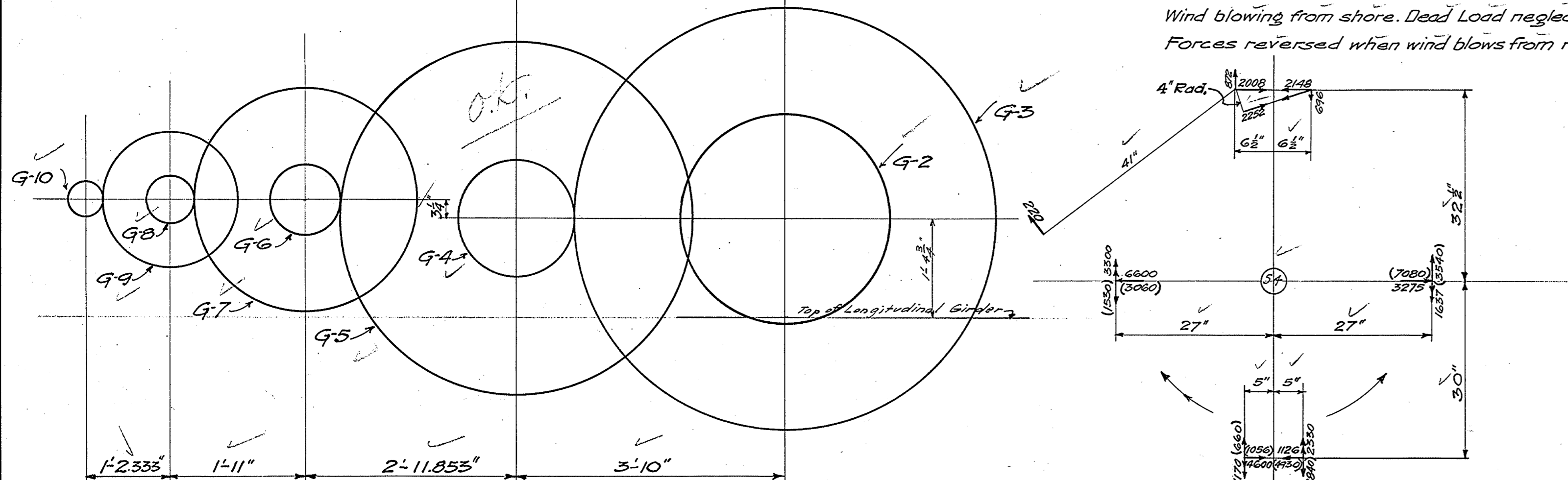


Diagram showing reactions on raised bridge leaf. Wind reactions reversed when wind blows from river.

For Longitudinal Girder.

For Machinery Girder.

Maximum Reactions on Journal Blocks  
 Wind blowing from shore. Dead Load neglected.  
 Forces reversed when wind blows from river.



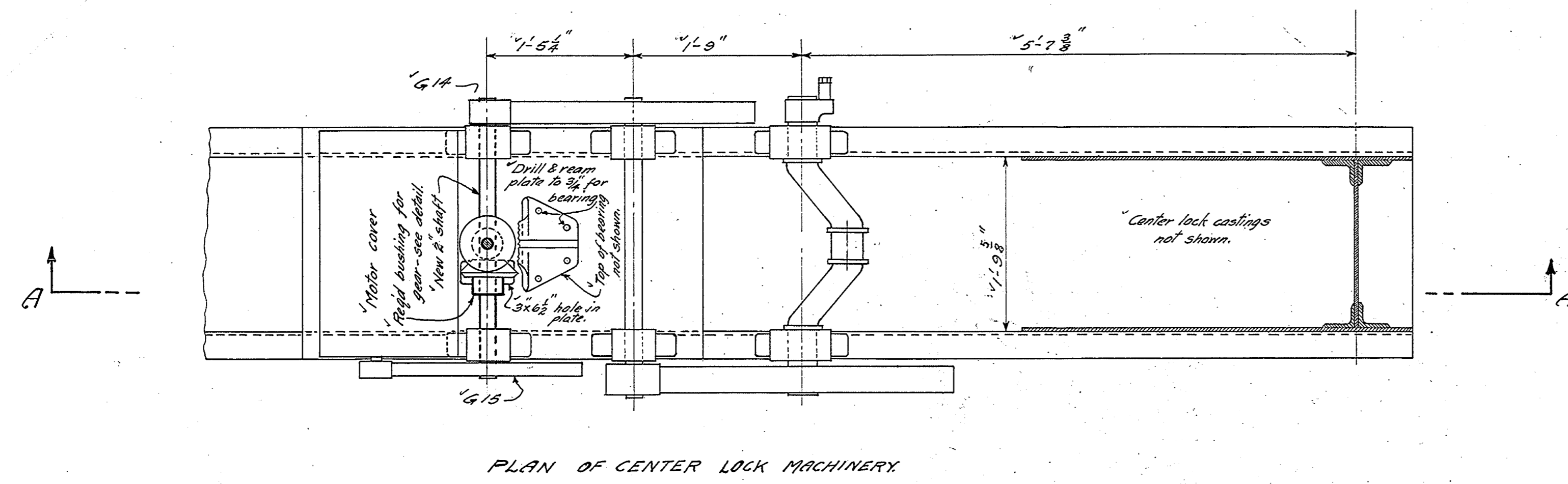
LARGE BRAKE REACTIONS.  
 Coefficient of friction assumed as .05  
 Figures in parentheses ( ), correspond to a counter-clockwise direction of rotation

SMALL BRAKE REACTIONS.  
 Coefficient of friction assumed .05  
 Figures in parentheses ( ), correspond to a counter-clockwise direction of rotation

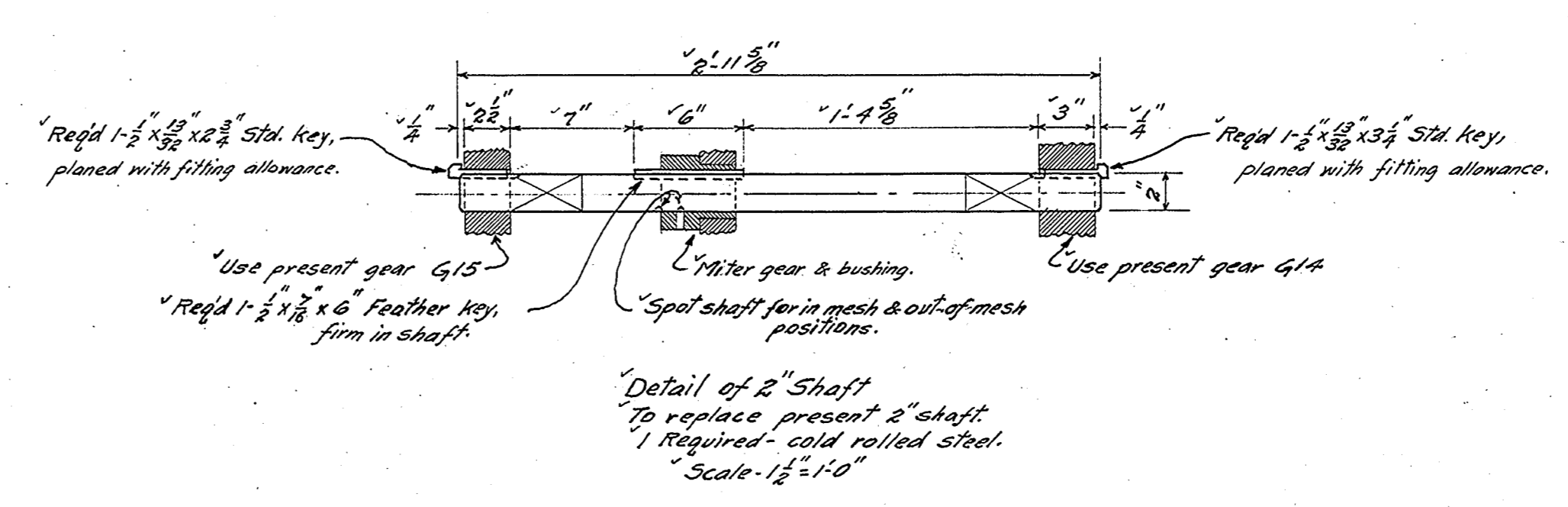
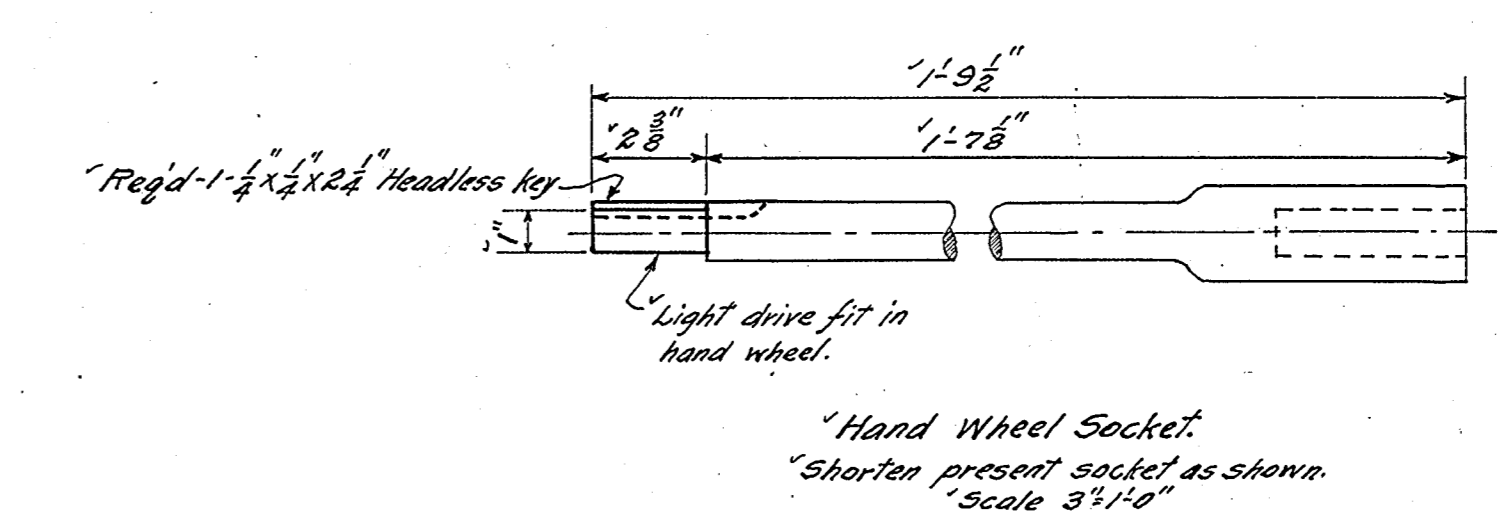
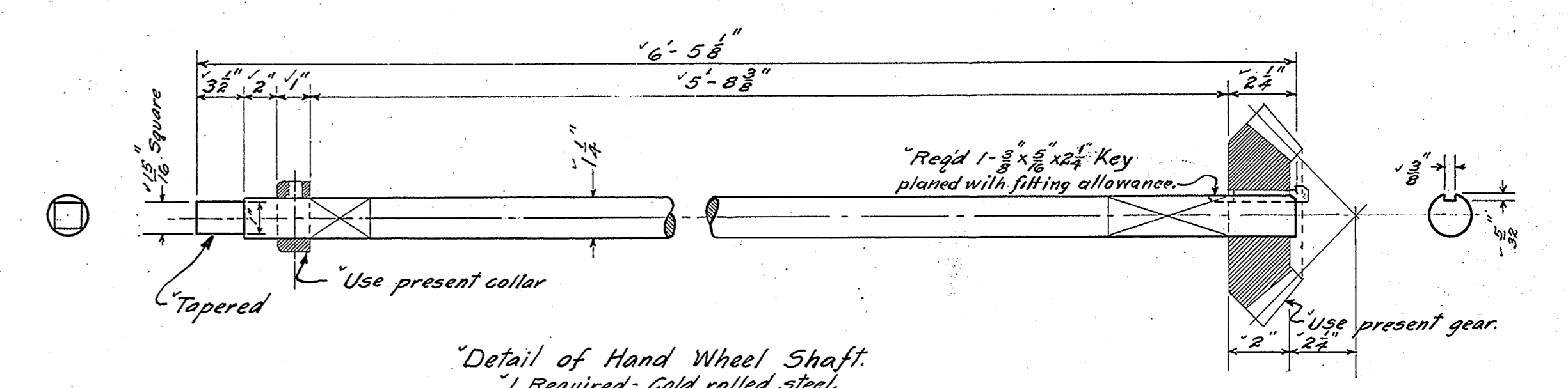
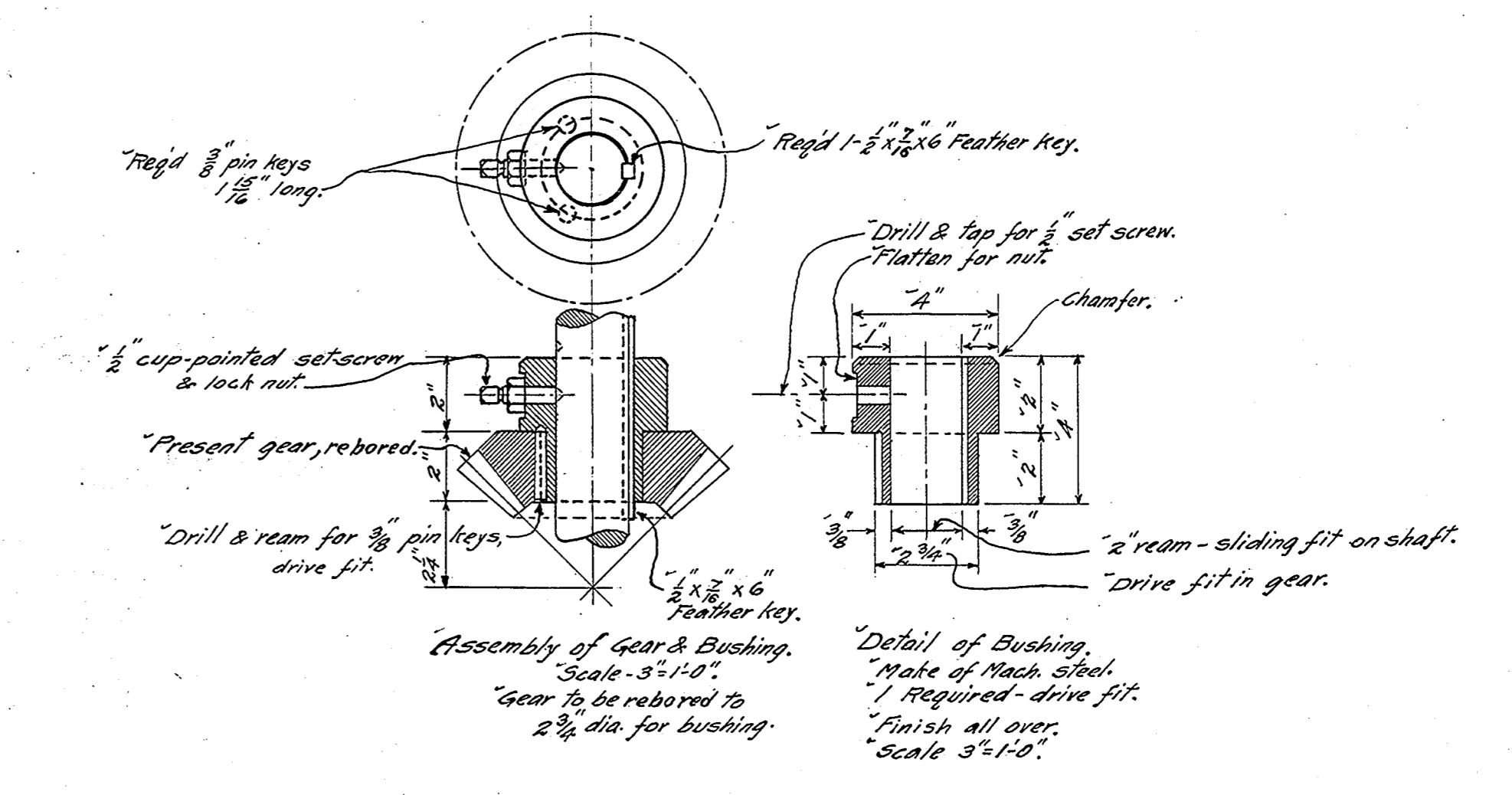
CITY OF CHICAGO  
 DEPARTMENT OF PUBLIC WORKS  
 BUREAU OF ENGINEERING  
 DIVISION OF BRIDGES AND HARBOR  
**Double Leaf Trunnion Bascule Bridge**  
 AT  
**WEBSTER AVE.  
 BELMONT AVE.**  
 OVER  
 SOUTH BRANCH OF THE CHICAGO RIVER  
**STRESSES**  
 SUPERSTRUCTURE — MACHINERY  
 Scale: May, 1914.

Correct.....  
 Approved.....  
 Approved.....  
 Approved.....  
 Approved.....

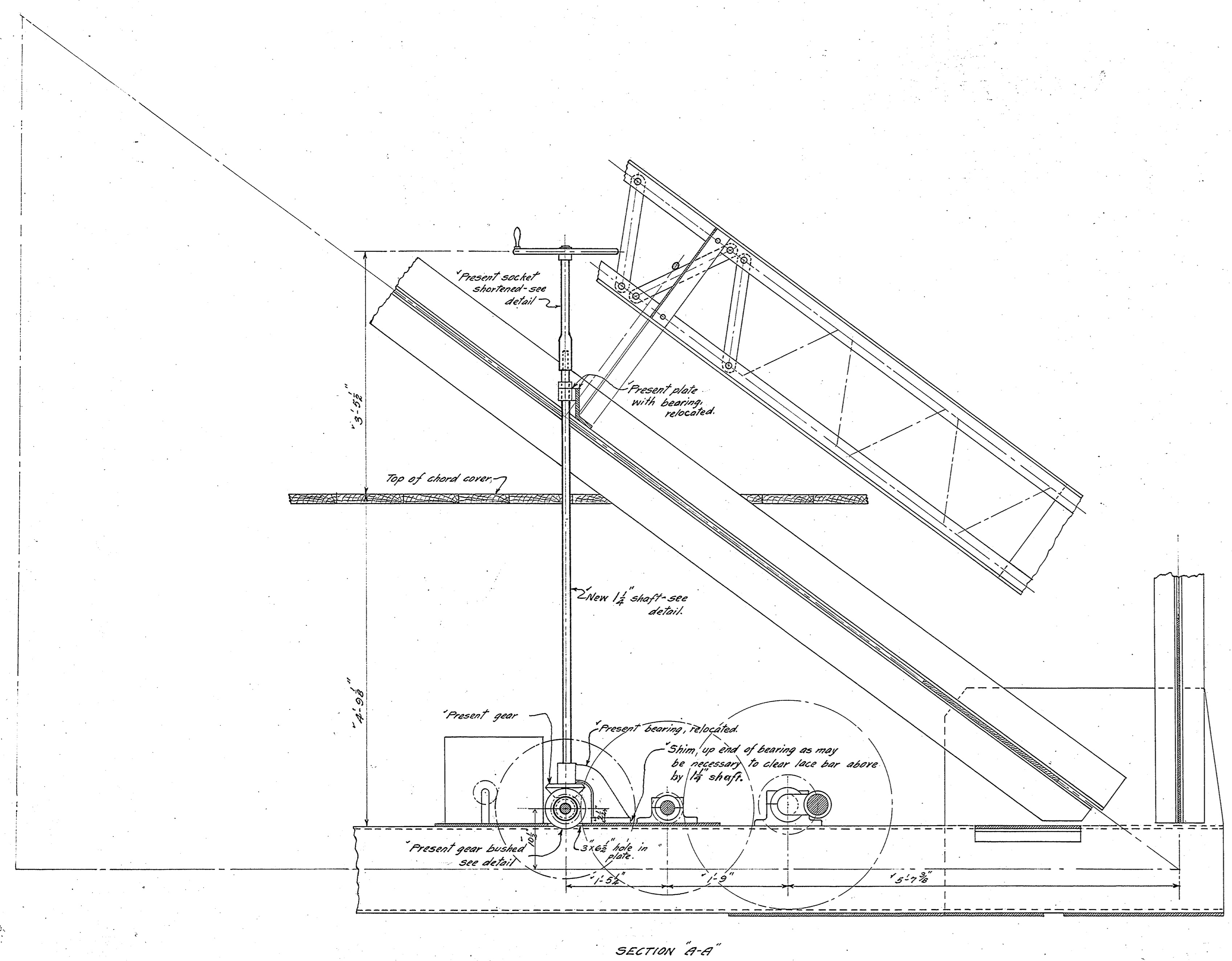
Drawn by.....  
 Traced by.....  
 Checked by.....  
 Drawing No. 3257  
 File No. 11-6E-73



PLAN OF CENTER LOCK MACHINERY



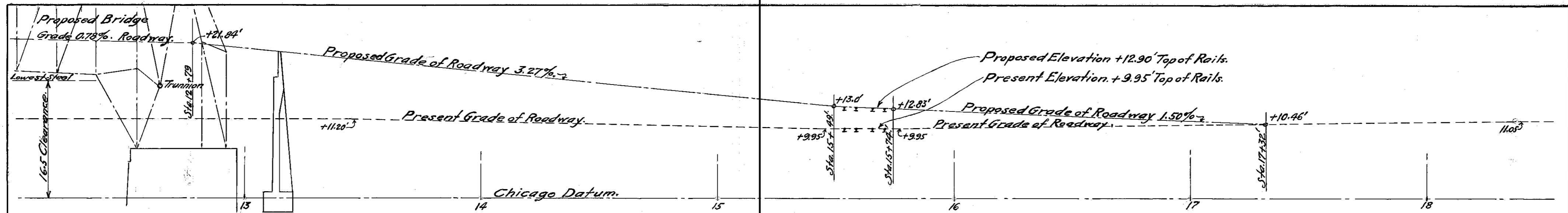
Note.  
One set, as shown, for Belmont Ave. Bridge.  
" " " " Webster Ave. "



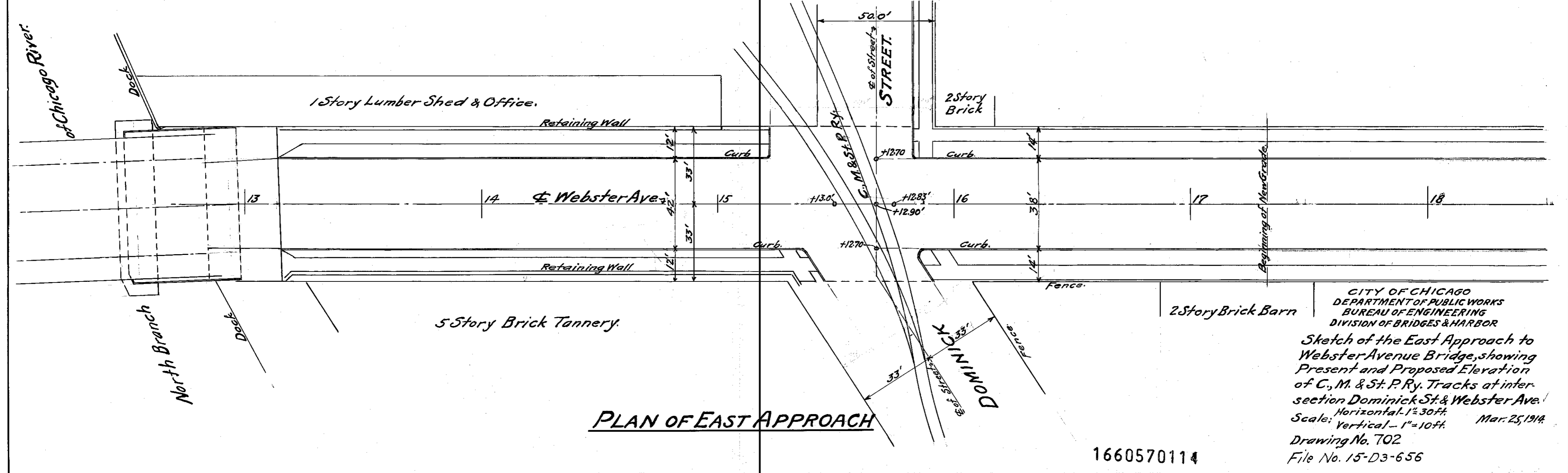
SECTION 'A-A'

Correct - Hugh C. Young, Engineer of Bridge Design.  
Approved - [Signature], Engineer of Bridges.  
Approved - [Signature], City Engineer.

CITY OF CHICAGO,  
Department of Public Works,  
Bureau of Engineering,  
Division of Bridges.  
REARRANGEMENT OF  
HAND POWER MECHANISM FOR  
CENTER LOCKS OF  
BELMONT AVE. AND WEBSTER AVE.  
BRIDGES.  
Date - Dec-1916.  
Scale - 1/2"=1'-0".  
Checked by - J.C.B.



**PROFILE ON  $\phi$  OF WEBSTER AVE.**

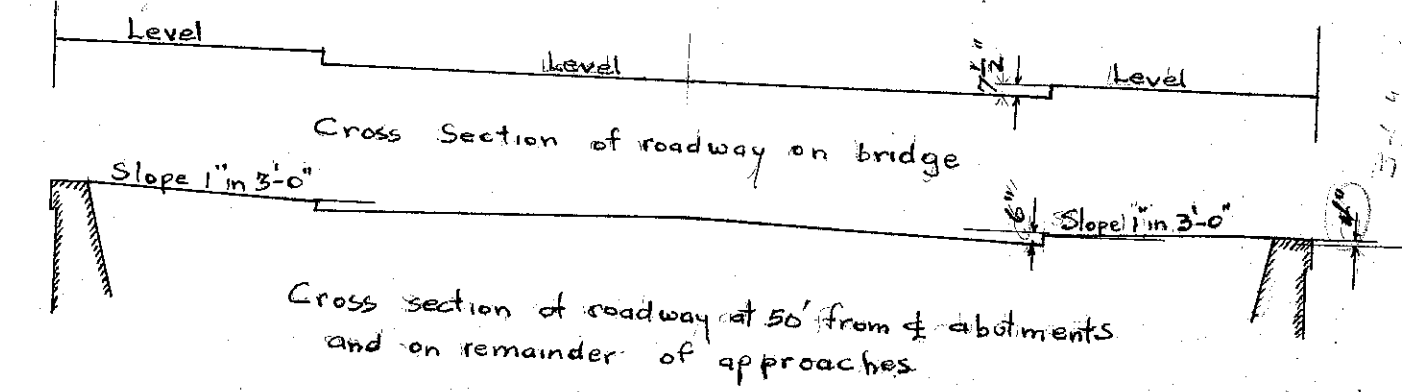
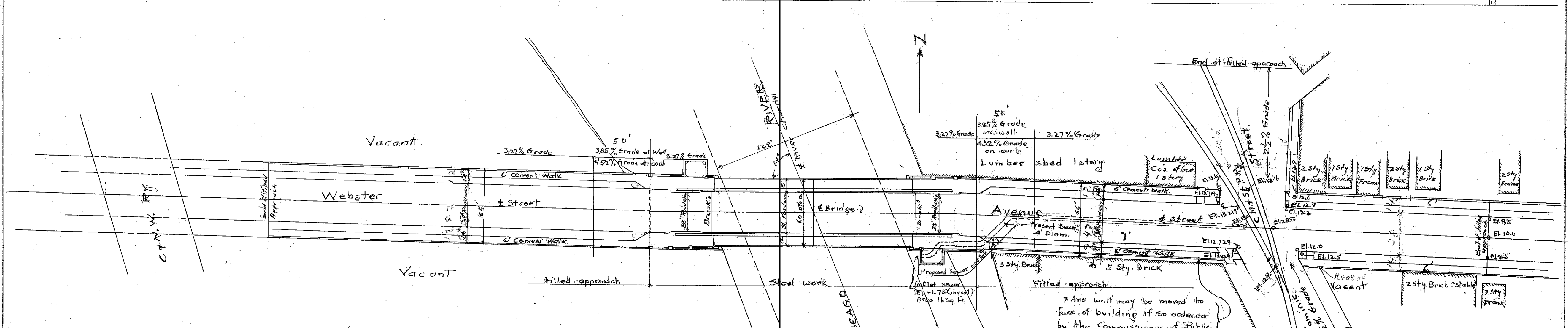
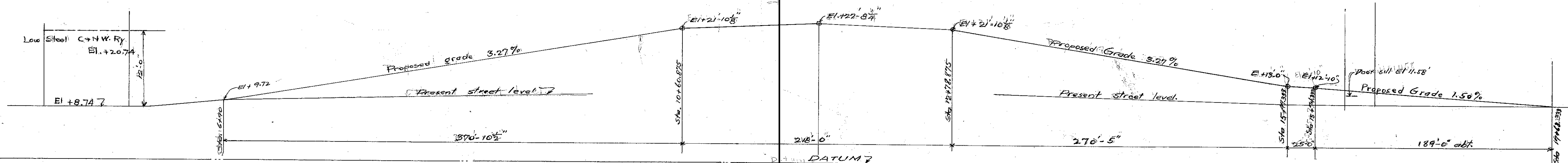


CITY OF CHICAGO  
DEPARTMENT OF PUBLIC WORKS  
BUREAU OF ENGINEERING  
DIVISION OF BRIDGES & HARBOR

Sketch of the East Approach to  
Webster Avenue Bridge, showing  
Present and Proposed Elevation  
of C., M. & St. P. Ry. Tracks at inter-  
section Dominick St. & Webster Ave.  
Scale: Horizontal - 1" = 30 ft.  
Vertical - 1" = 10 ft. Mar. 25, 1914.

Drawing No. 702  
File No. 15-D3-656

1660570114



Proposed Grades and sewer outlets approved by Board of Local Improvements.

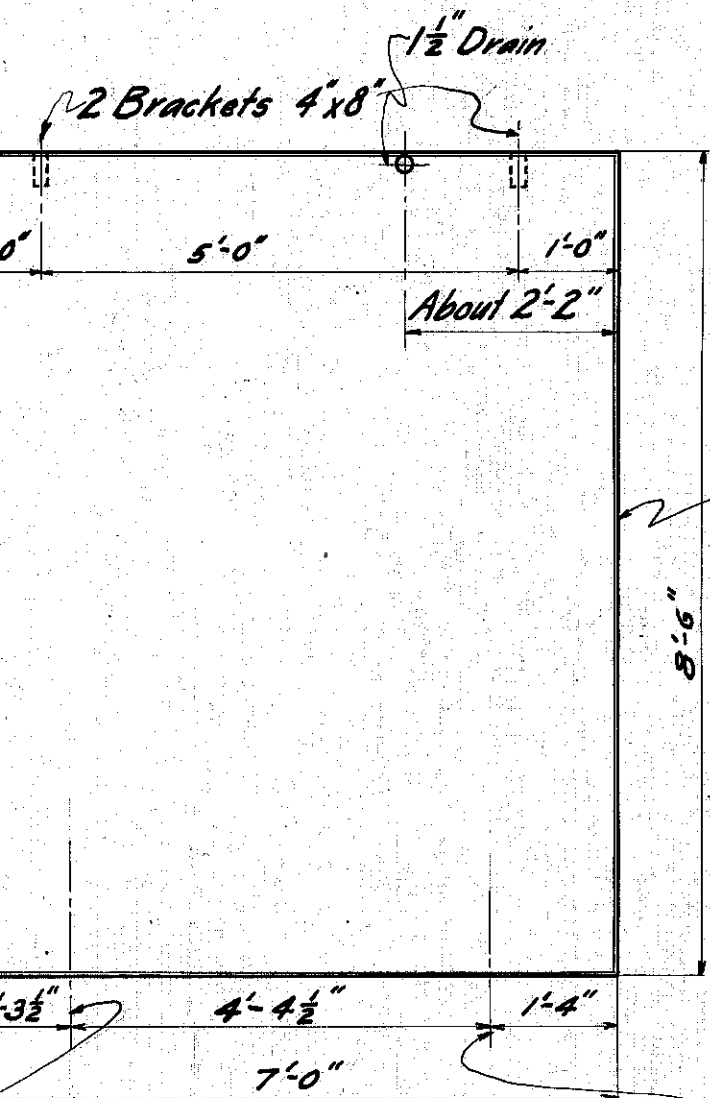
CITY OF CHICAGO  
 DEPT. OF PUBLIC WORKS  
 BUREAU OF ENGINEERING  
 DIV. OF BRIDGES AND HARBORS  
 TRUNNION BASCULE BRIDGE

AT  
**WEBSTER AVE**

PROPOSED LAYOUT AND PROFILE  
 SCALE HORIZ. 50' = 1"  
 SCALE VERT. 10' = 1"  
 SCALE SECTIONS 10' = 1"  
 MARCH-9-1914

1660570115

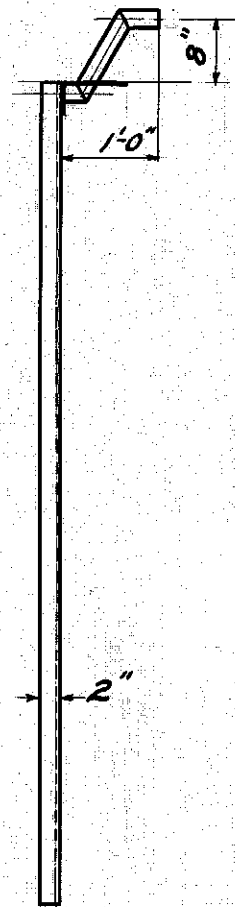
DWG No. 709. 9 Per 214. DM  
 FILE No. 35-03-657



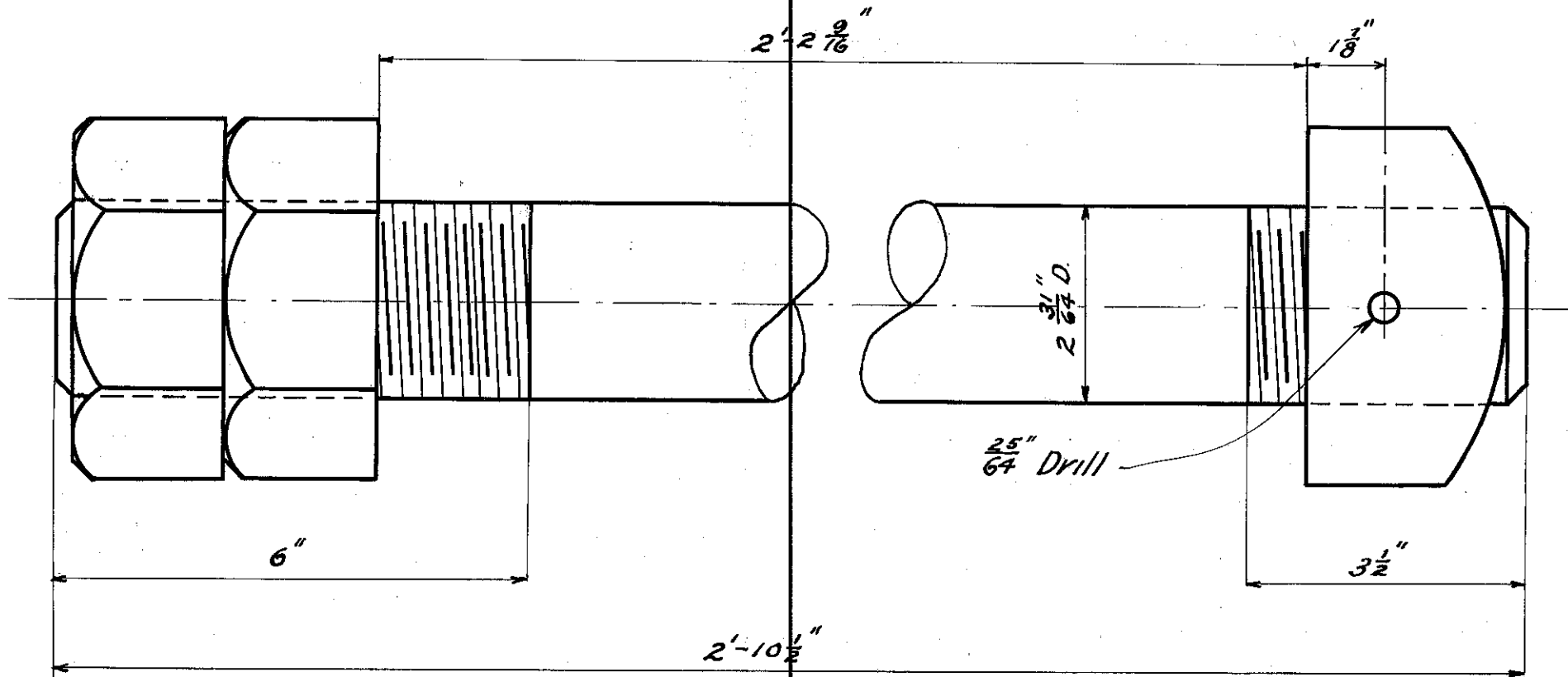
Sheet metal perforated strap about  
long with clamps for 12" I beam

PAN - 1 Required  
18 Gauge sheet iron Scale 1/2" = 1 FT.

Turn up edge  
2" all around



CITY OF CHICAGO DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING DIVISION OF BRIDGES			
WEBSTER AVENUE BRIDGE PAN FOR MACHINERY PRO			
C.S.L.	C.S.L.	DATE: 8/2/21	SCALE: 1/2" = 1 FT.
CORRECT			
ENG. OF BRIDGE CONST. & REP.			
APPROVED			
ENGINEER OF BRIDGES			
DRAWING No. 5790			FILE No.



TURNED BOLT SWEDISH IRON  
 Scale 6"=1FT. 1 Required  
 1 Cotter Pin required  $\frac{3}{8}'' \times 4 \frac{3}{4}''$   
 Estimated weight Bolt & Nuts 76#

CITY OF CHICAGO DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING DIVISION OF BRIDGES			
<b>WEBSTER AVENUE BRIDGE</b> <b>BASE BOLT FOR OUTBOARD BEARING</b>			
C.D.L.	C.D.L.	DATE: 9/27/18	SCALE: 6' = 1 FT.
		CORRECT	APPROVED
		ENG. OF BRIDGE CONST. & REP.	CITY ENGINEER
		APPROVED	APPROVED
		ENGINEER OF BRIDGES	ENGINEER OF BRIDGES
DRAWING No. 4953		FILE No. 14-06-58	

8 1/2" x 11"

11 O'CLOCK AM.  
APRIL 27, 1916

PROPOSALS FOR APPROACHES TO WEBSTER AVE. BRIDGE

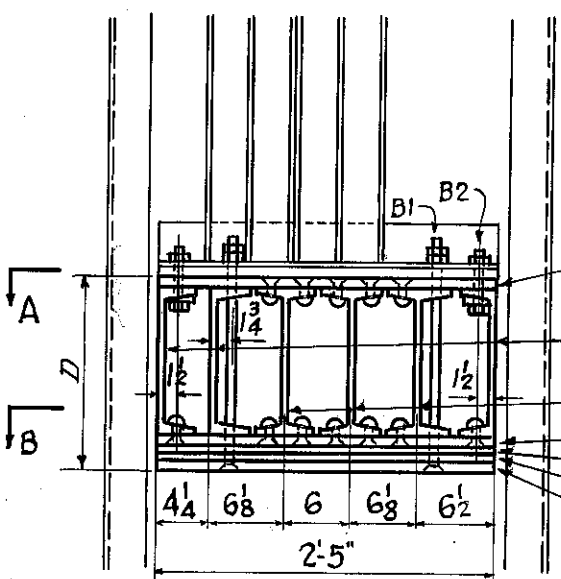
ITEM		APPROXIMATE QUANTITIES	RATE	NASH-DOWDLE	RATE	J.A. SACKLEY	RATE	MARQUETTE CON.	RATE	W.H. KENEFFICK	RATE	J.J. CROAKE CO.
Paving	A	3600 sq. yd.	\$ 335	\$ 12060.00	\$ 340	\$ 12240.00	\$ 363	\$ 13,068.00	\$ 399	14,364.00	\$ 440	\$ 15,840.00
Sidewalks	B	8600 sq. ft.	0.12	1032.00	0.135	1161.00	0.14	1,204.00	0.16	1376.00	0.13	1118.00
Curb	C	1500 ft.	.62	930.00	0.61	915.00	0.55	825.00	0.78	1170.00	0.70	1050.00
Grading	D	1400 sq. yd.	.10	140.00	0.05	70.00	0.10	140.00	0.25	350.00	0.15	210.00
Fill	E	200 cu. yd.	.25	50.00	0.05	10.00	0.01	2.00	0.30	60.00	0.25	50.00
Concrete	F	50 cu. yd.	12.00	600.00	12.00	600.00	8.50	425.00	11.00	550.00	10.50	525.00
Catch Basins	G	6	55.00	330.00	60.00	360.00	57.00	342.00	90.00	540.00	70.00	420.00
Covers	H	6	10.00	60.00	12.00	72.00	11.00	66.00	12.00	72.00	20.00	120.00
Structural Steel	I	3500 lb.	0.05	175.00	0.065	227.50	0.05	175.00	0.075	262.50	0.05	175.00
Tiles	J	300 ft.	0.75	225.00	1.00	300.00	0.85	255.00	1.90	570.00	1.25	375.00
Gratings	K	2	10.00	20.00	13.00	26.00	12.00	24.00	13.00	26.00	15.00	30.00
TOTALS				\$ 15,622.00		\$ 15,981.50		\$ 16,526.00		\$ 19,340.50		\$ 19,913.00

1660570118

DRAWING No 2562.  
FILE No 15-D3-358

7"X23"

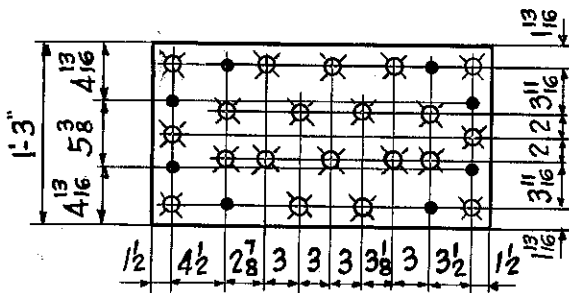




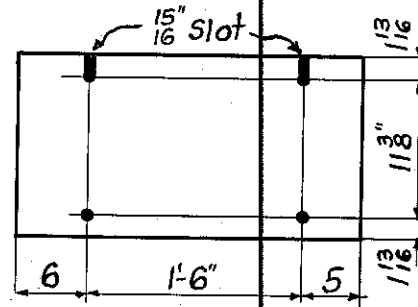
ELEVATION

D { N.E. Corner 1'-5"  
S.E. " 1'-5"  
N.W. " 1'-5 1/4"  
S.W. " 1'-5 1/4"

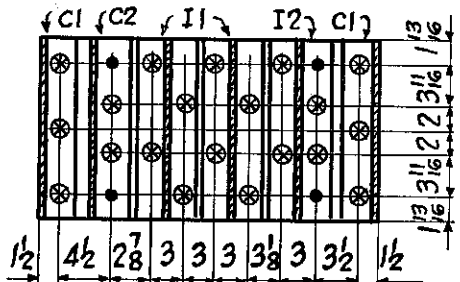
- 1 Pl. 15" x 3/4" x 2'-5" P1
- 12" L-30# x 1'-3" C1 & C2
- 12" I-45# x 1'-3" I1 & I2
- 1 Pl. 15" x 3/4" x 2'-5" P2
- Shims 15" x 2'-5" S
- Rubber Fabric 15" x 2'-5" R1
- 1 Pl. 15" x 1" x 2'-5" P3



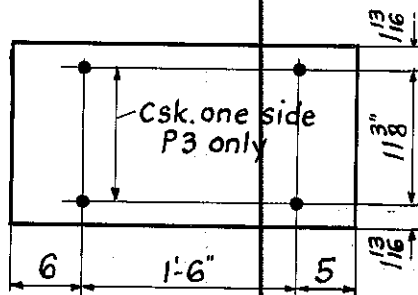
SECTION A-A



SHIMS S



SECTION B-B



RUBBER FABRIC R1 AND PLATE P3

BILL OF MATERIAL  
FOR 1 BUMPER

Pcs.	ITEM	MARK
3	12" I-45# x 1'-3"	I1 & I2
3	12" L-30# x 1'-3"	C1 & C2
1	Pl. 15" x 3/4" x 2'-5"	P1
1	Pl. 15" x 3/4" x 2'-5"	P2
1	Pl. 15" x 1" x 2'-5"	P3
1	Pl. 15" x 3/4" x 2'-5"	S1
1	Pl. 15" x 3/8" x 2'-5"	S2
1	Pl. 15" x 1/4" x 2'-5"	S3
1	Pl. 15" x 1/8" x 2'-5"	S4
2	Pls. 15" x 1/16" x 2'-5"	S5
1	15" x 1/4" x 2'-5" Rubber Fabric	R1
4	Bolts 7/8" φ x 1-9/16" - 4 1/2" Thr. Csk. Hd. 2 Hex. Nut	B1
4	Bolts 7/8" φ x 4 1/4" - 1 3/4" Thr. 1 Hex. Nut	B2
4	Beveled Washers - 15" φ hole.	W1

4 Bumpers Req'd. - Complete  
EST. WT. 3250# STEEL.

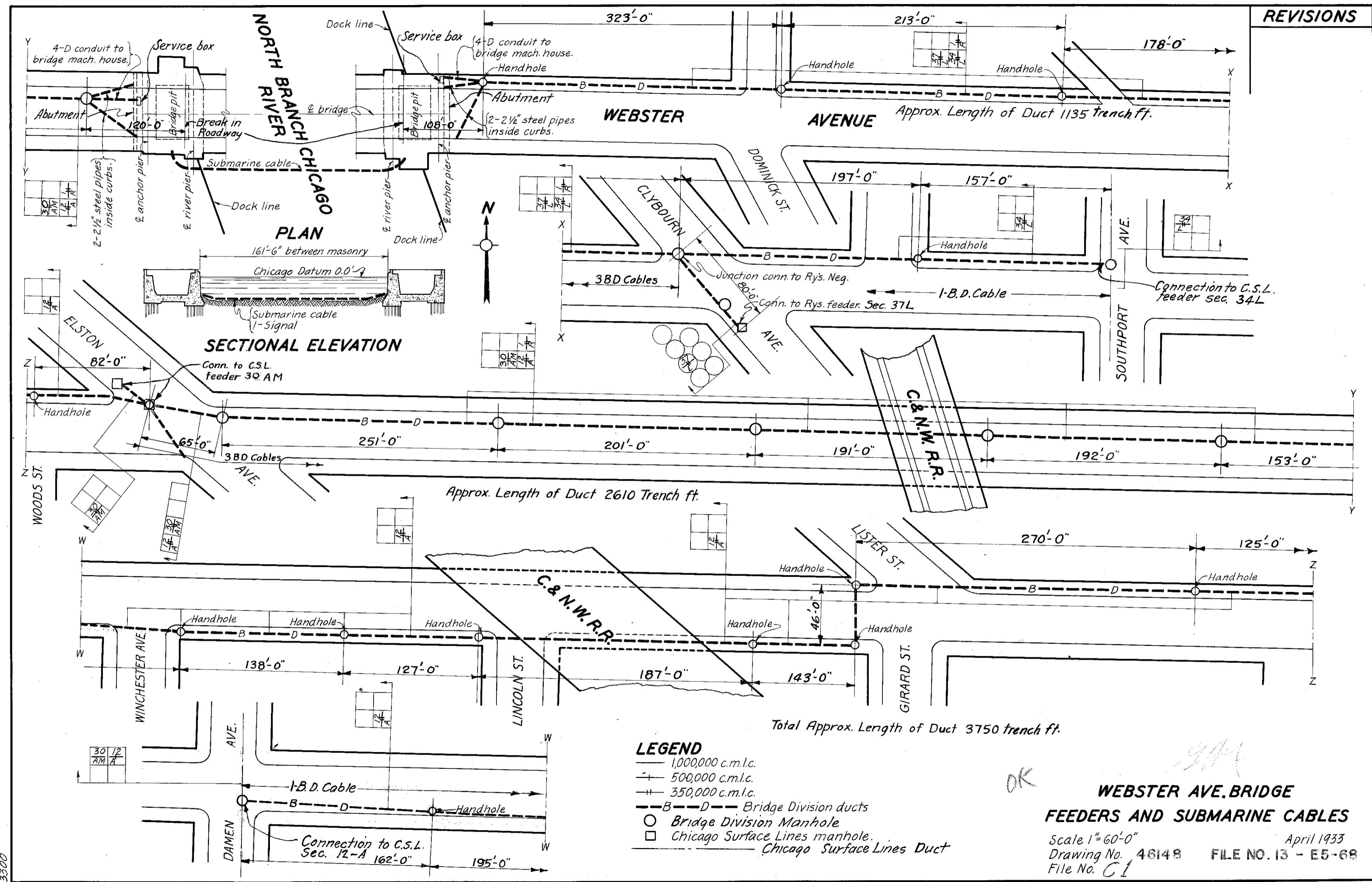
NOTES

- MATERIAL Structural steel, except as noted.
- RIVETS 3" φ
- OPEN HOLES 4 15" φ
- PAINT 1 Shop coat.

CITY OF CHICAGO DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING DIVISION OF BRIDGES		
WEBSTER AVE. BRIDGE STEEL BUMPERS		
204	UC	DATE FEB. 3, 1945 SCALE 3/4" = 1'-0"
CORRECT <i>Out Hansen</i> ENG. OF BRIDGE MAINTENANCE		APPROVED  CITY ENGINEER
APPROVED  ENGINEER OF BRIDGES		
DRAWING No. 16243		FILE No. 14-D1-1593.
31142		



**REVISIONS**



- LEGEND**
- 1,000,000 c.m.l.c.
  - + 500,000 c.m.l.c.
  - + 350,000 c.m.l.c.
  - B-D- Bridge Division ducts
  - Bridge Division Manhole
  - Chicago Surface Lines manhole.
  - Chicago Surface Lines Duct

**WEBSTER AVE. BRIDGE**  
**FEEDERS AND SUBMARINE CABLES**  
 Scale 1"=60'-0"  
 April 1933  
 Drawing No. 46148 FILE NO. 13 - E5-68  
 File No. C1

1660570121

9aa Per1.

Traced by 316

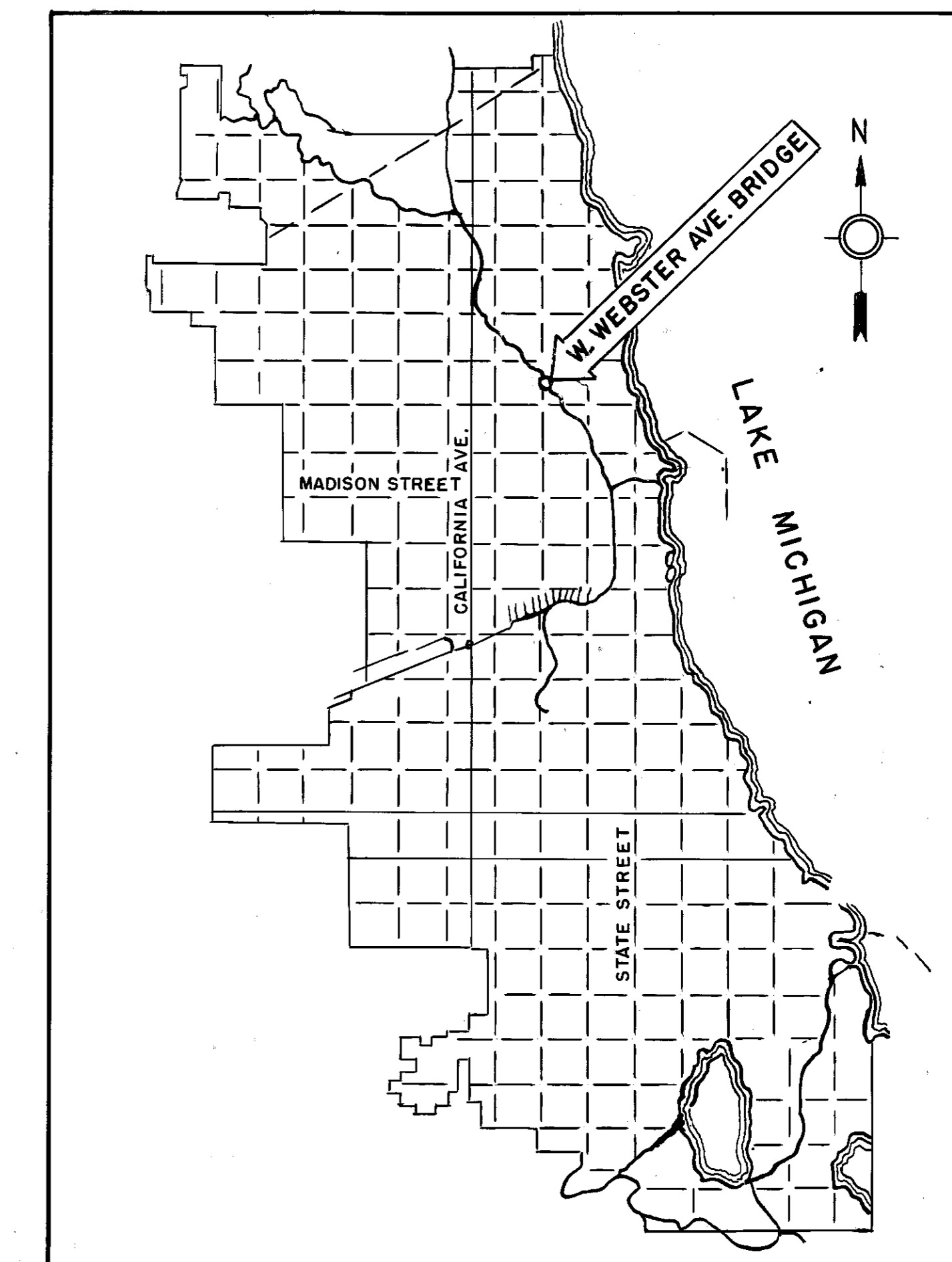
3300

INDEX OF DRAWINGS		
DRAWING NO.	SET NO.	TITLE
30227	II-A59-14	TITLE SHEET
30228	II-A59-15	GENERAL PLAN & ELEVATION
30229	II-A59-16	REHABILITATION PROGRAM AND TRAFFIC PATTERN
30230	II-A59-17	FRAMING AND LOCATION PLAN-MOV. PART
30231	II-A59-18	TRANSVERSE ROADWAY SECTION MOVABLE & FIXED PART
30232	II-A59-19	CENTER BREAK, CURB ASSEMBLY & COVER PLS. BETWEEN TRUSS MEMBERS
30233	II-A59-20	COUNTERWEIGHT BALANCE
30234	II-A59-21	STRUCTURAL REPAIRS, TRUSSES & BRIDGE FLOOR SYSTEM-EAST LEAF
30235	II-A59-22	STRUCTURAL REPAIRS, TRUSSES & BRIDGE FLOOR SYSTEM-WEST LEAF
30236	II-A59-23	STRUCTURAL REPAIRS
30237	II-A59-24	STRUCTURAL WORK IN REHABILITATION OF HORIZONTAL TRUSS-EAST SIDE
30238	II-A59-25	STRUCTURAL WORK IN REHABILITATION OF HORIZONTAL TRUSS- WEST SIDE
30239	II-A59-26	STRUCTURAL REPAIR, FIXED PART

**CITY OF CHICAGO**  
**RICHARD J. DALEY**  
**MAYOR**



**DEPARTMENT OF PUBLIC WORKS**  
**BUREAU OF ENGINEERING**



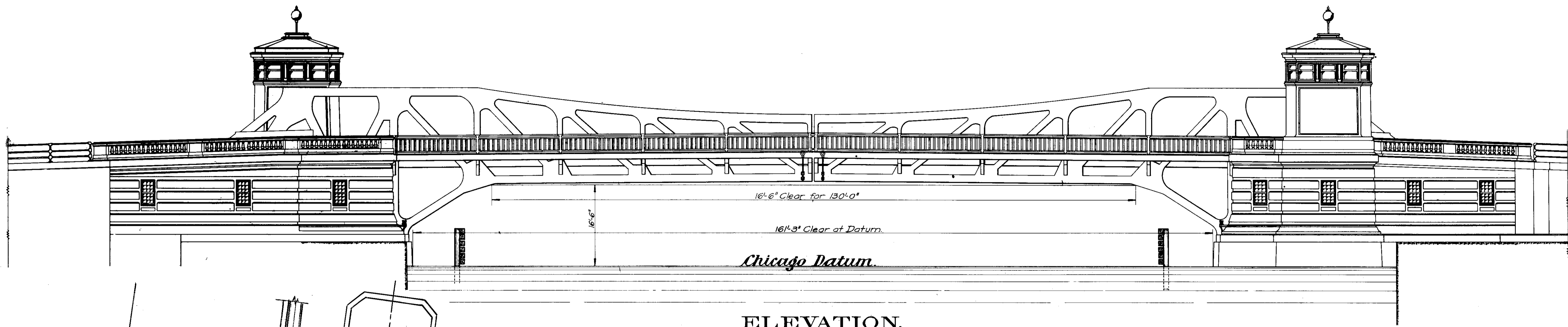
**DOUBLE LEAF BASCULE OVER NORTH BRANCH CHICAGO RIVER**  
**WEST WEBSTER AVENUE BRIDGE**  
**REDECKING AND REPAIRS**

**M.F.T. SECTION: WEBSTER AVE. 0809-C.S.**  
**SPECIFICATION NO. 80.77.67-12**

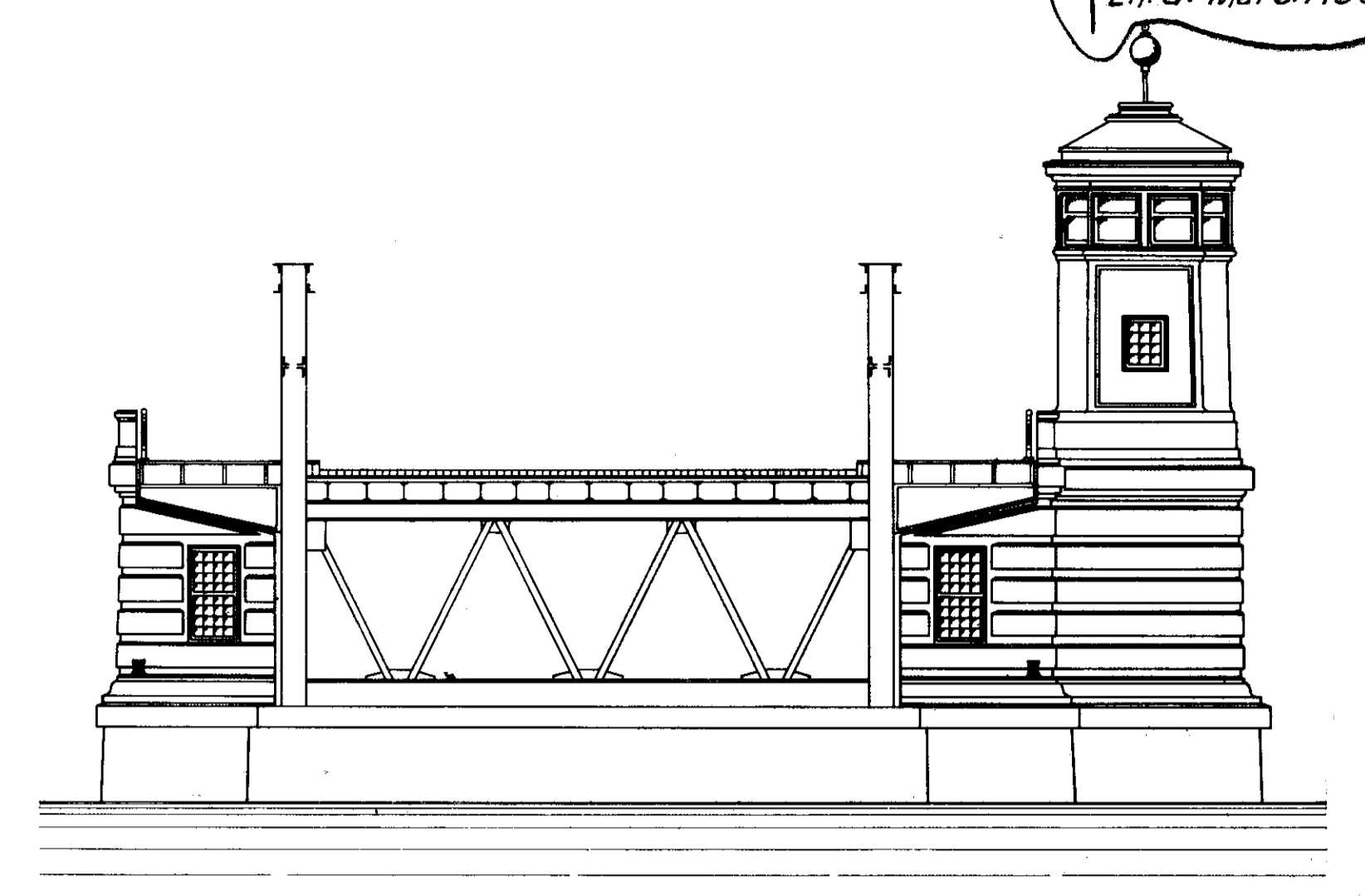
CITY OF CHICAGO DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING	
DATE	.....
APPROVED	<i>A. Bernstein</i> BRIDGE DESIGN ENGINEER
APPROVED	<i>M. D. Krauss</i> CHIEF BRIDGE ENGINEER
APPROVED	<i>Marshall Wilson</i> ASSY CHIEF ENGINEER
APPROVED	<i>D. E. Adams</i> CHIEF ENGINEER
APPROVED	<i>Milton H. Barkley</i> COMMISSIONER

SHEET NO. 1 ..... OF 13 SHEETS  
 DRWG NO. 30227 ... FILE NO. II-A59-14

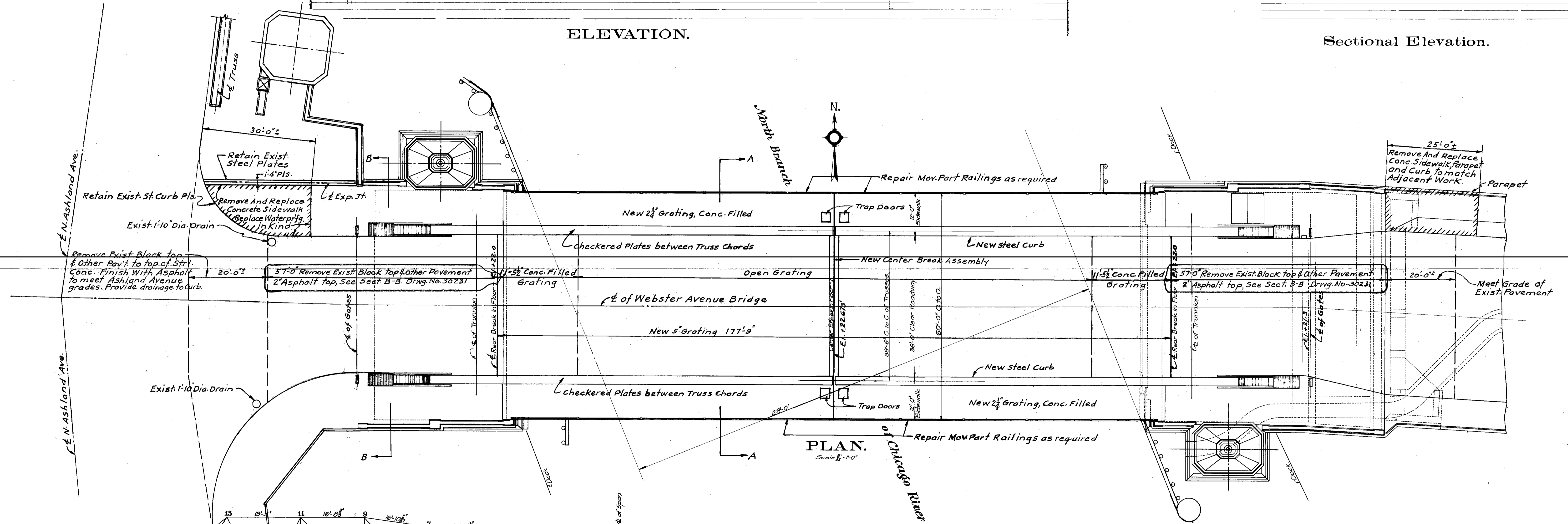
REVISIONS  
Fixed Part Struct.  
Conc. Epoxy Sealant  
and 2" Bitum. Top  
L.Y.G. March 1968



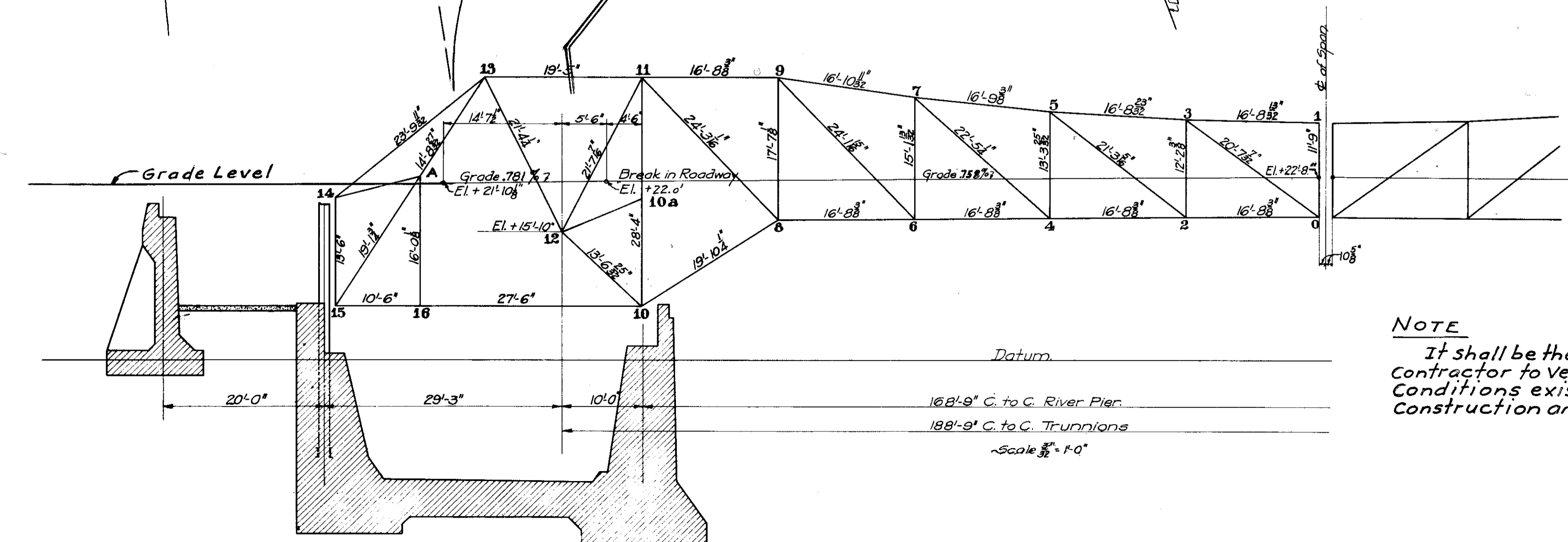
ELEVATION.



Sectional Elevation.



PLAN.  
Scale 1/8" = 1'-0"

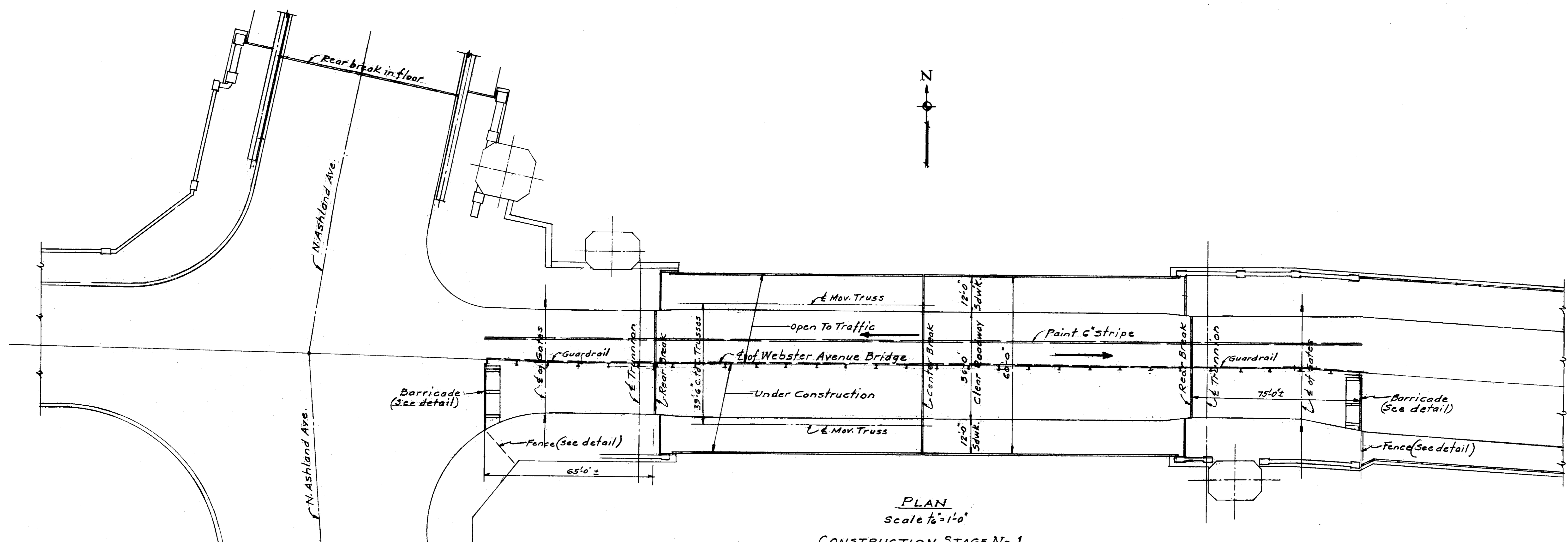


**NOTE**  
It shall be the responsibility of the contractor to verify all dimensions and conditions existing in the field prior to construction and ordering of materials.

BRIDGES & VIADUCTS  
Drawn By L.Y. Goldman  
Checked By S.D.B.  
Corrected [Signature]  
Approved [Signature] IN CHARGE OF DESIGN  
Approved [Signature] BRIDGE DESIGN ENGINEER  
Approved [Signature] CHIEF BRIDGE ENGINEER

CITY OF CHICAGO  
DEPARTMENT OF PUBLIC WORKS  
BUREAU OF ENGINEERING  
**DOUBLE LEAF TRUNNION BASCULE BRIDGE**  
AT  
**WEBSTER AVE.**  
OVER  
NORTH BRANCH OF THE CHICAGO RIVER  
GENERAL PLAN & ELEVATION

SCALE AS NOTED JULY 1967  
SHEET NO. 2 OF 13 SHEETS  
DRWG. NO. 30228 FILE NO. 11-A59-15



PLAN  
Scale 1/2" = 1'-0"  
CONSTRUCTION STAGE No. 1.

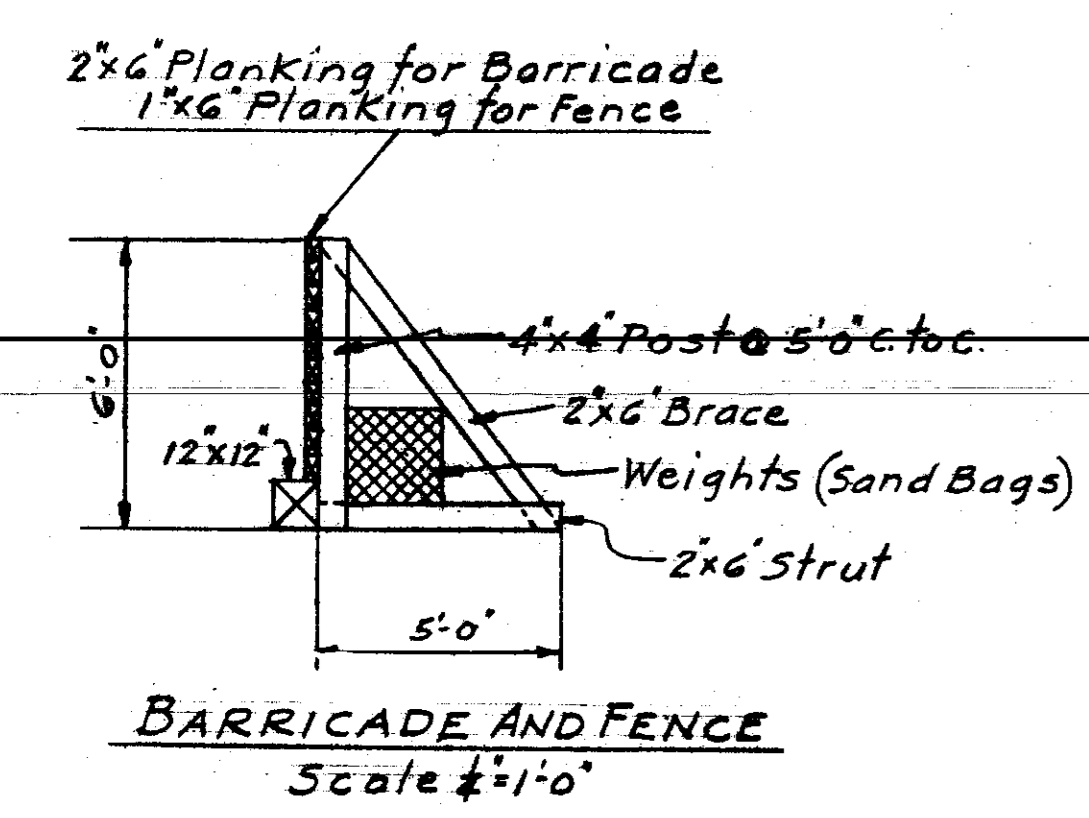
**STAGE I**  
ROUTE TRAFFIC THRU NORTH TWO LANES AND REHABILITATE SOUTH HALF OF BRIDGE.

- Paint 6" stripe divider for north temporary lanes, build barricades, fences and guard rails on south half of bridge.
- Remove roadway and sidewalk timber flooring and parts interfering with new construction. Begin at center break and work back two panels at a time, removing existing flooring, repairing or replacing steel, and placing grating. Finish each section before proceeding with new one, and provide temporary balancing as removal of flooring progresses. Bridge shall be kept in balance at all times.

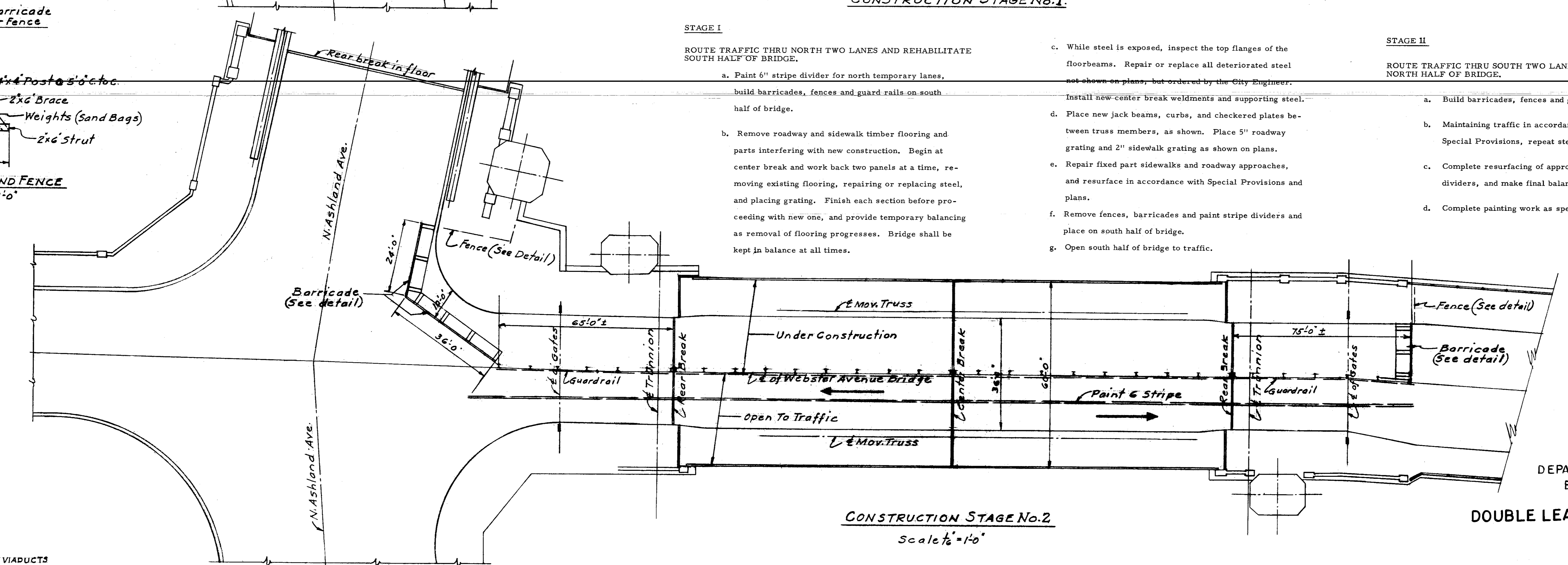
- While steel is exposed, inspect the top flanges of the floorbeams. Repair or replace all deteriorated steel set shown on plans, but ordered by the City Engineer.
- Install new center break weldments and supporting steel.
- Place new jack beams, curbs, and checkered plates between truss members, as shown. Place 5" roadway grating and 2" sidewalk grating as shown on plans.
- Repair fixed part sidewalks and roadway approaches, and resurface in accordance with Special Provisions and plans.
- Remove fences, barricades and paint stripe dividers and place on south half of bridge.
- Open south half of bridge to traffic.

**STAGE II**  
ROUTE TRAFFIC THRU SOUTH TWO LANES AND REHABILITATE NORTH HALF OF BRIDGE.

- Build barricades, fences and guard rails.
- Maintaining traffic in accordance with the plans and Special Provisions, repeat steps b to f.
- Complete resurfacing of approaches, remove stripe dividers, and make final balancing of bridge.
- Complete painting work as specified.



BARRICADE AND FENCE  
Scale 1/2" = 1'-0"



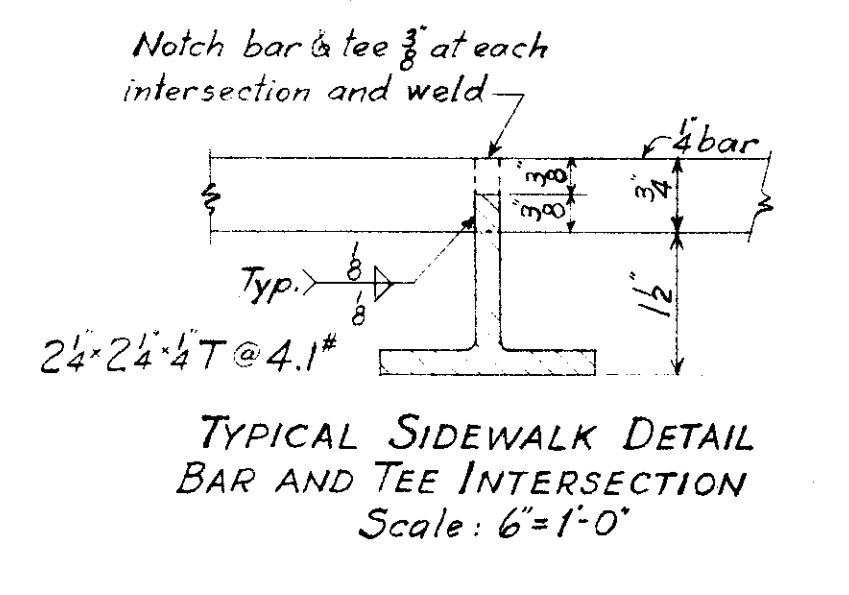
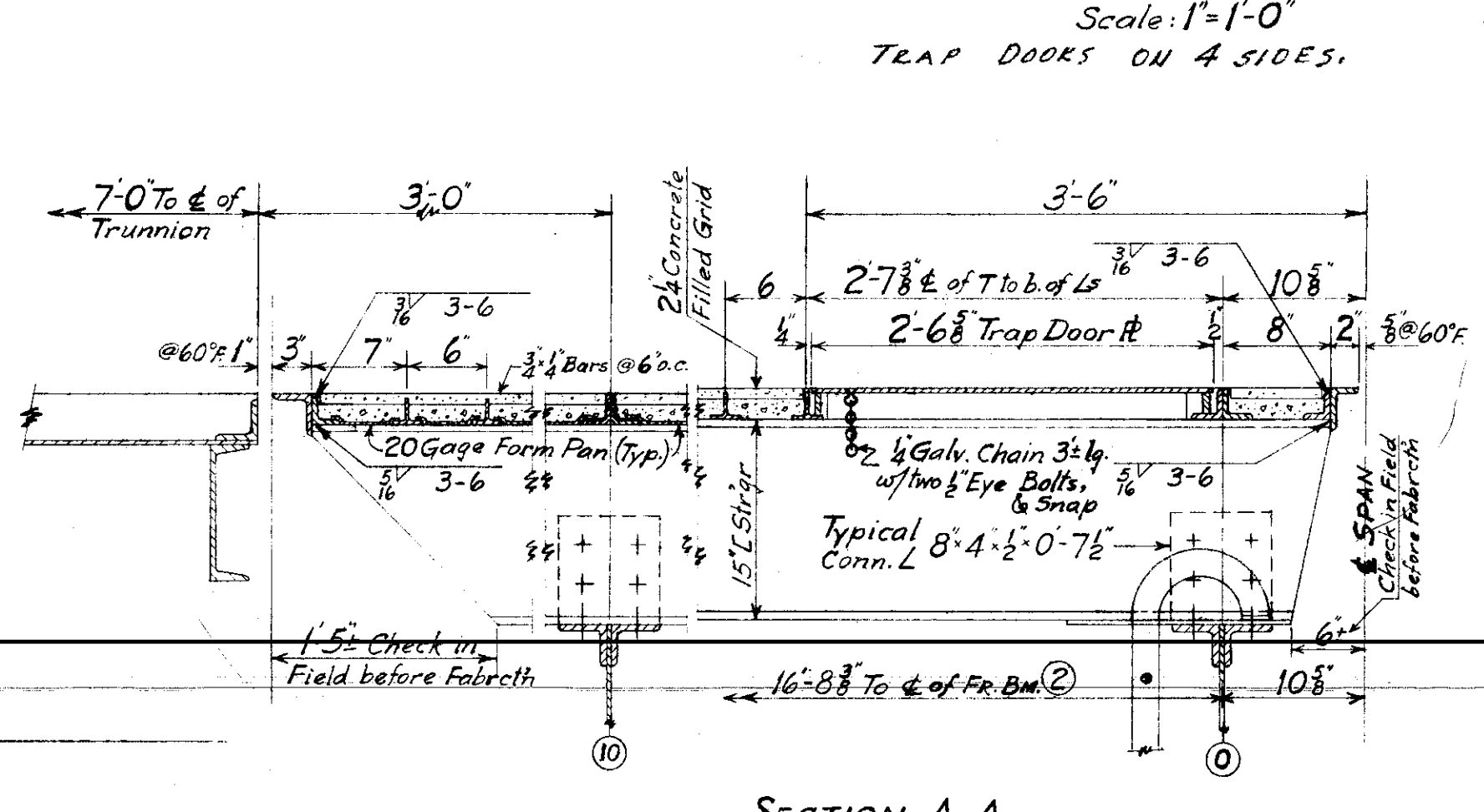
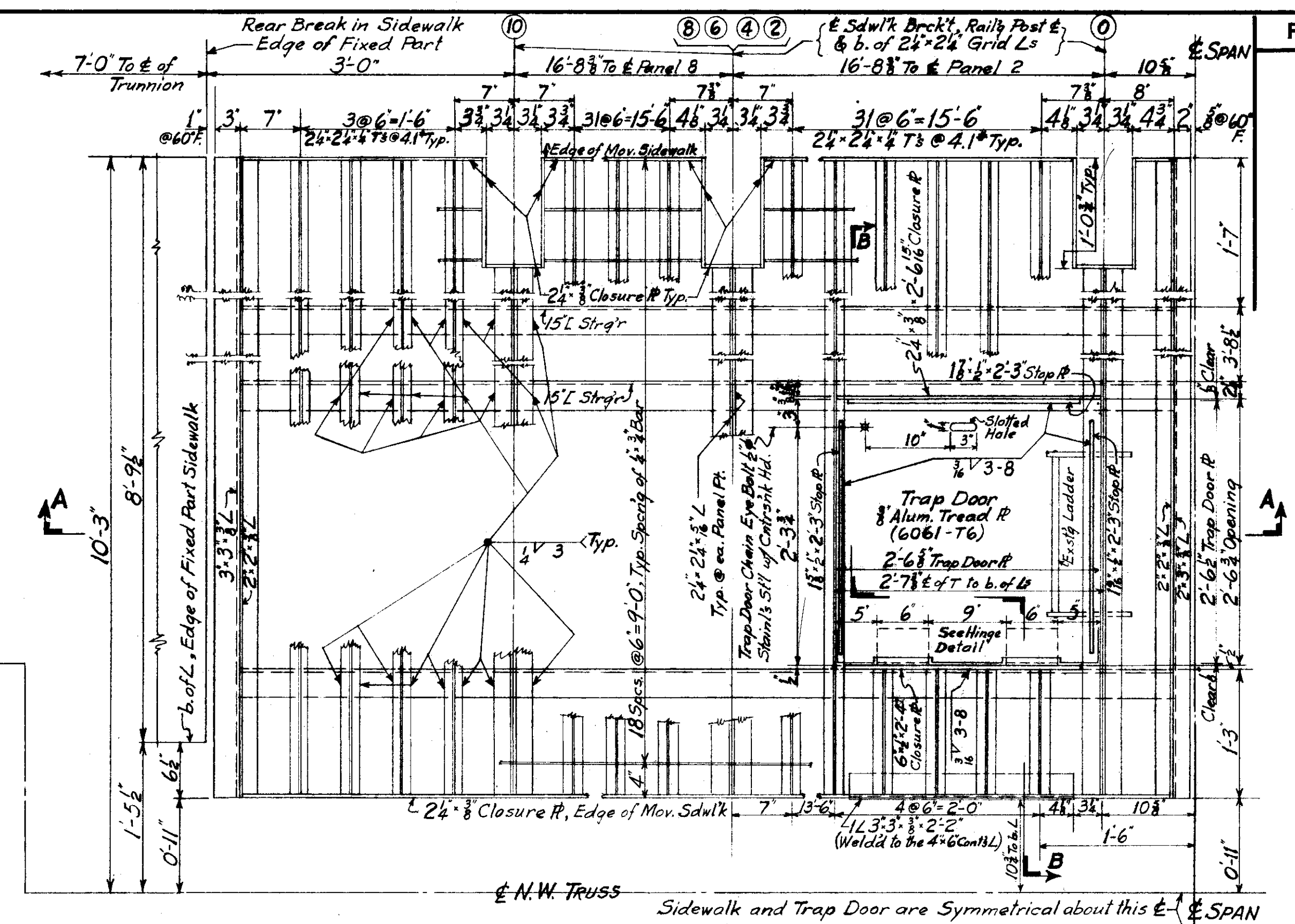
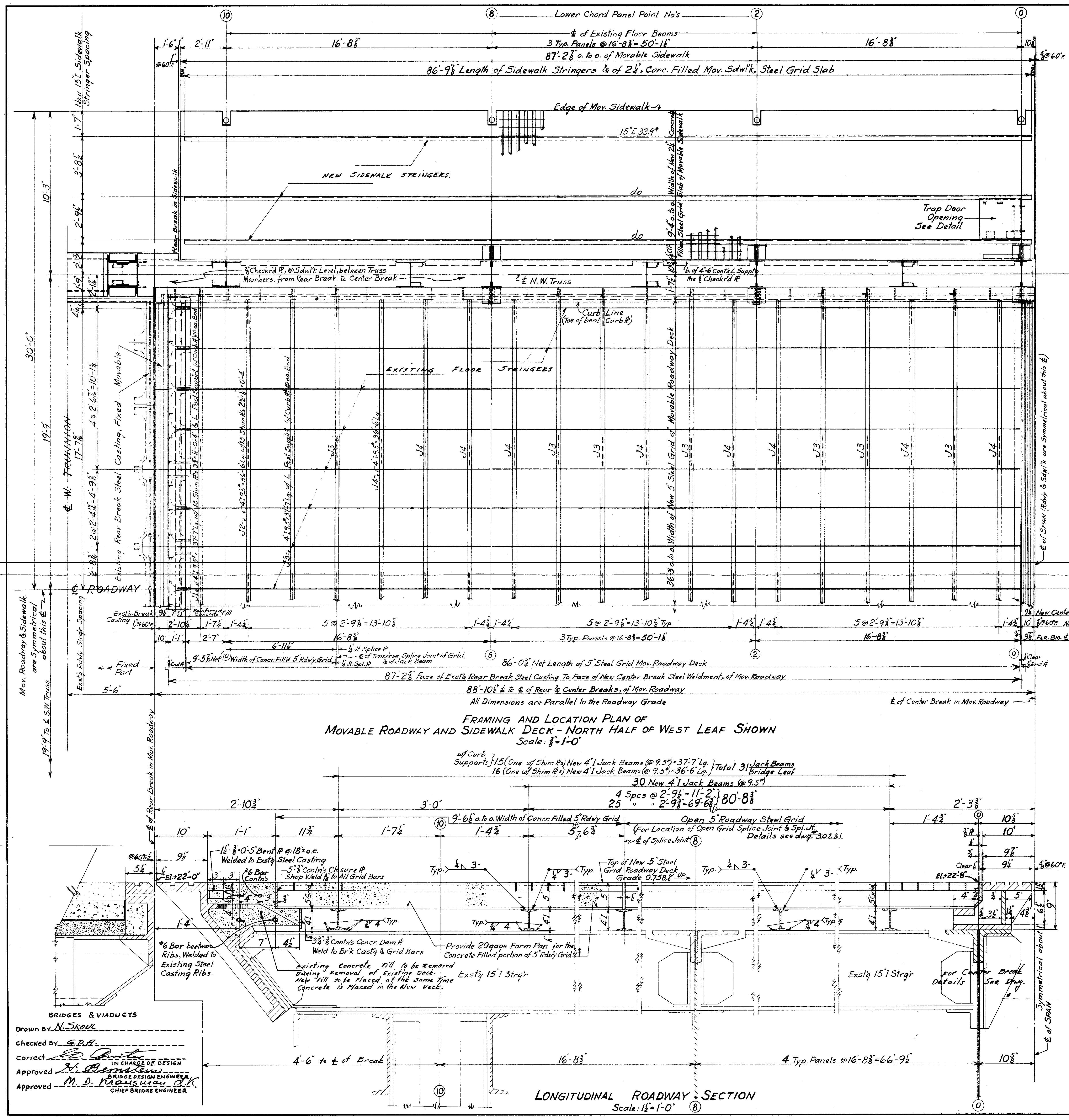
CONSTRUCTION STAGE No. 2  
Scale 1/2" = 1'-0"

CITY OF CHICAGO  
DEPARTMENT OF PUBLIC WORKS  
BUREAU OF ENGINEERING

DOUBLE LEAF TRUNNION BASCULE BRIDGE  
AT  
WEBSTER AVE.  
OVER  
NORTH BRANCH OF THE CHICAGO RIVER  
REHABILITATION PROGRAM  
AND TRAFFIC PATTERN

BRIDGES & VIADUCTS  
Drawn By L. Y. Goldman  
Checked By C. A. B.  
Correct [Signature]  
Approved [Signature] IN CHARGE OF DESIGN  
Approved [Signature] CHIEF DESIGN ENGINEER  
Approved [Signature] CHIEF BRIDGE ENGINEER

SCALE AS NOTED  
SHEET NO. 3 OF 13 SHEETS  
JULY 1967  
DRWG. NO. 30229 FILE NO. 11-159-16



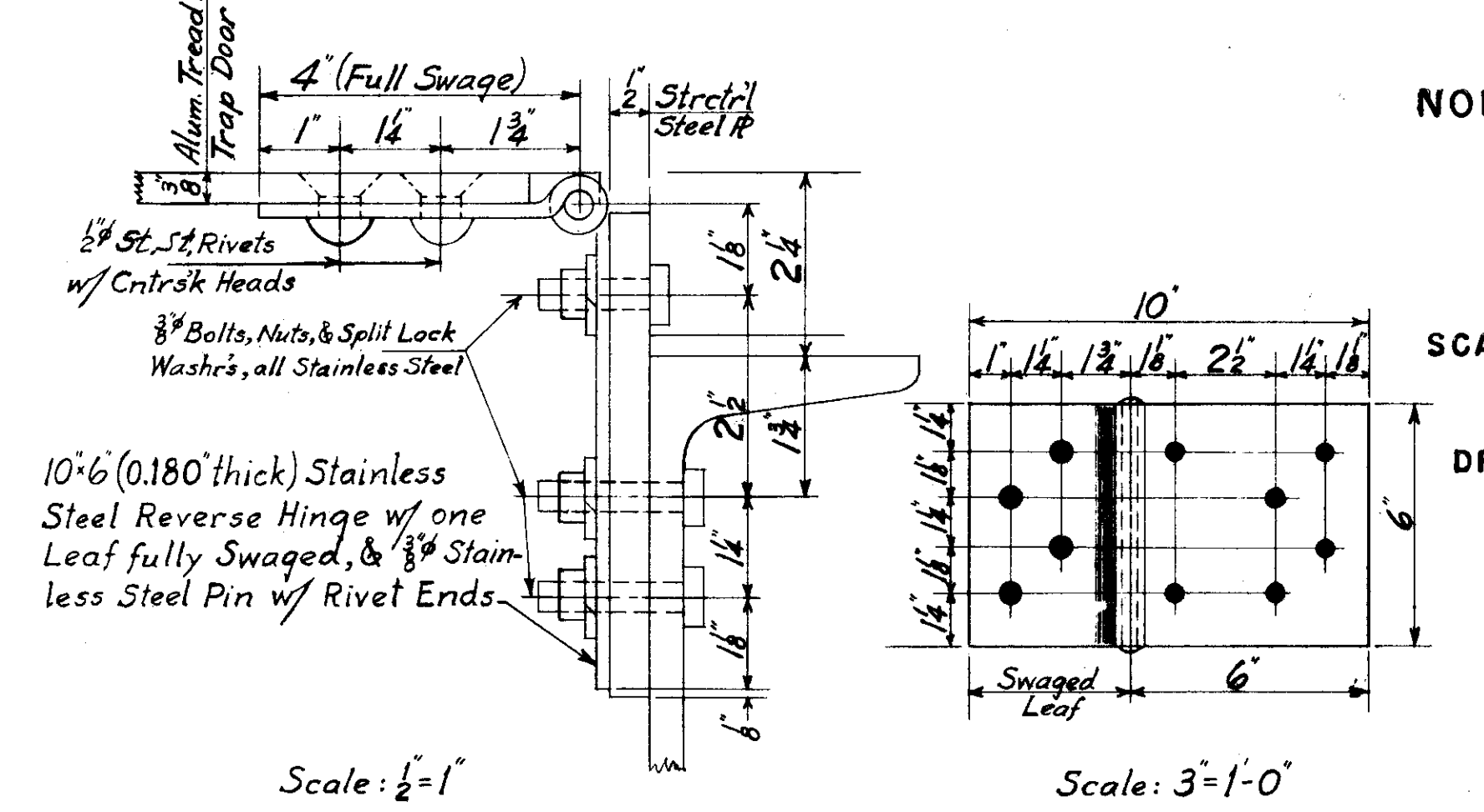
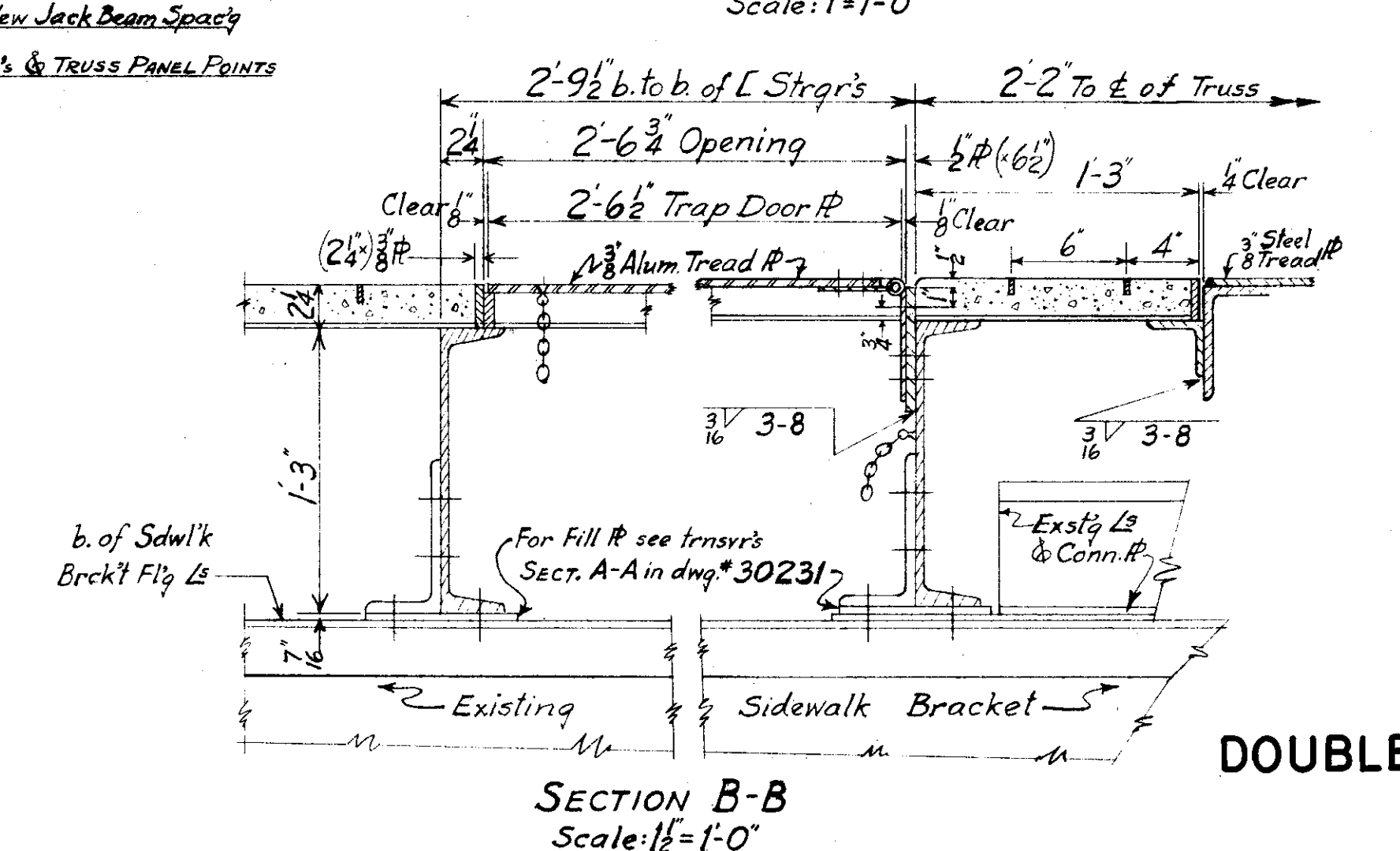
NOTES:

Dimensions shown are based on the design drawings of the original structure, and are parallel to the grade of the roadway of each leaf.

The Contractor and Fabricator shall verify, by field measurement, all dimensions which affect the details and clearances of all component parts, and shall be responsible for the proper fittings of their assembly. Fabricators' shop drawings shall indicate those dimensions which were obtained by measurement in the field.

The concrete fill for the Sidewalk grid and portion of the Roadway grid indicated shall be ordinary structural concrete and have a uniform, air dried, weight of 144 lbs. per cubic foot.

For the physical and structural properties of the ordinary structural concrete, the structural steel rolled sections and the roadway and sidewalk grid flooring, see the Specifications.



For TRANSVERSE SECTIONS, and other DETAILS see Dwg. Nos. 30231, and 30232.

CITY OF CHICAGO  
DEPARTMENT OF PUBLIC WORKS  
BUREAU OF ENGINEERING

**DOUBLE LEAF TRUNNION BASCULE BRIDGE**  
AT  
**WEBSTER AVE.**  
OVER  
NORTH BRANCH OF THE CHICAGO RIVER  
FRAMING AND LOCATION  
PLAN - MOV. PART

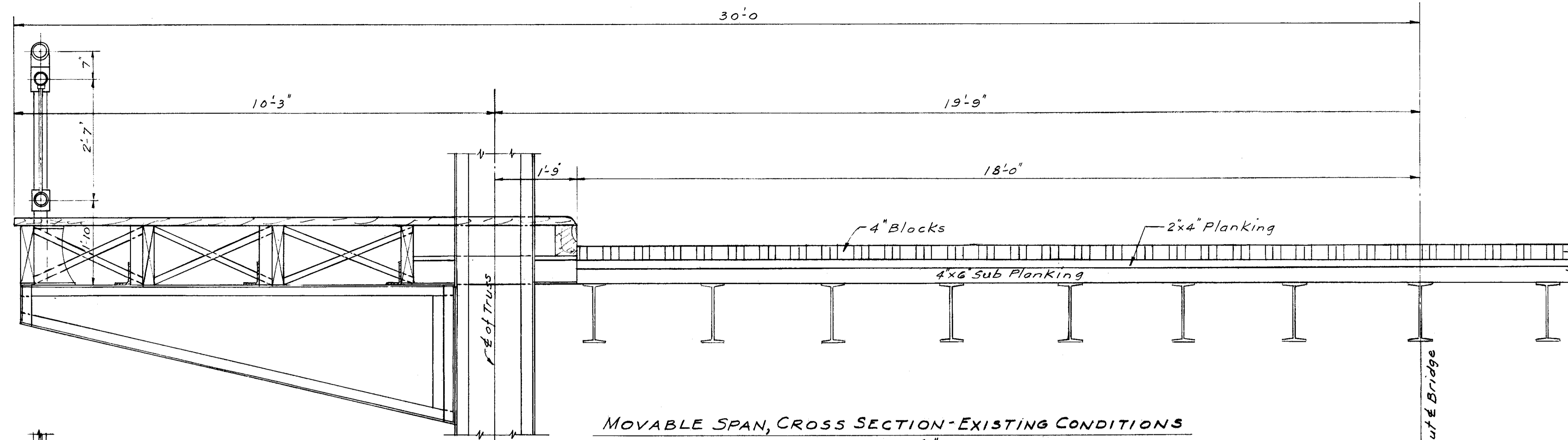
SCALE AS NOTED JULY 1967  
SHEET NO. 4 OF 13 SHEETS  
DRWG. NO. 30230 FILE NO. 11-A59-17

Drawn by *M. S. S. S.*  
Checked by *G. P. H.*  
Correct *G. P. H.*  
Approved *M. O. Krausman*  
Approved *M. O. Krausman*

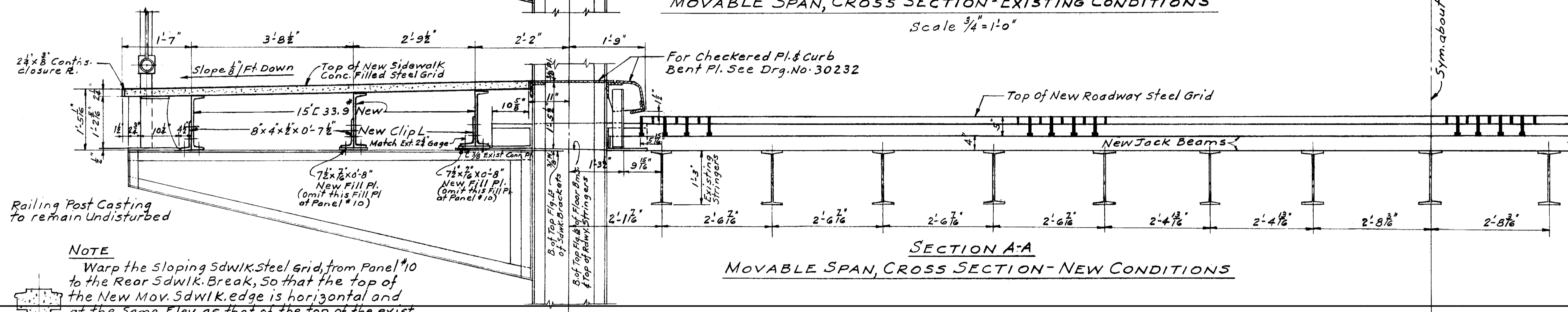
LONGITUDINAL ROADWAY SECTION  
Scale: 1/2" = 1'-0"

TRAP DOOR HINGE DETAIL, 8 REQ'D.  
MATERIAL - STAINLESS ST., 18-8 ALLOY.

REVISIONS
Revised Sect. B-B to Show Structural Pavement, Epoxy Sealant and 2" Bituminous Conc. L.Y.G. March 1968

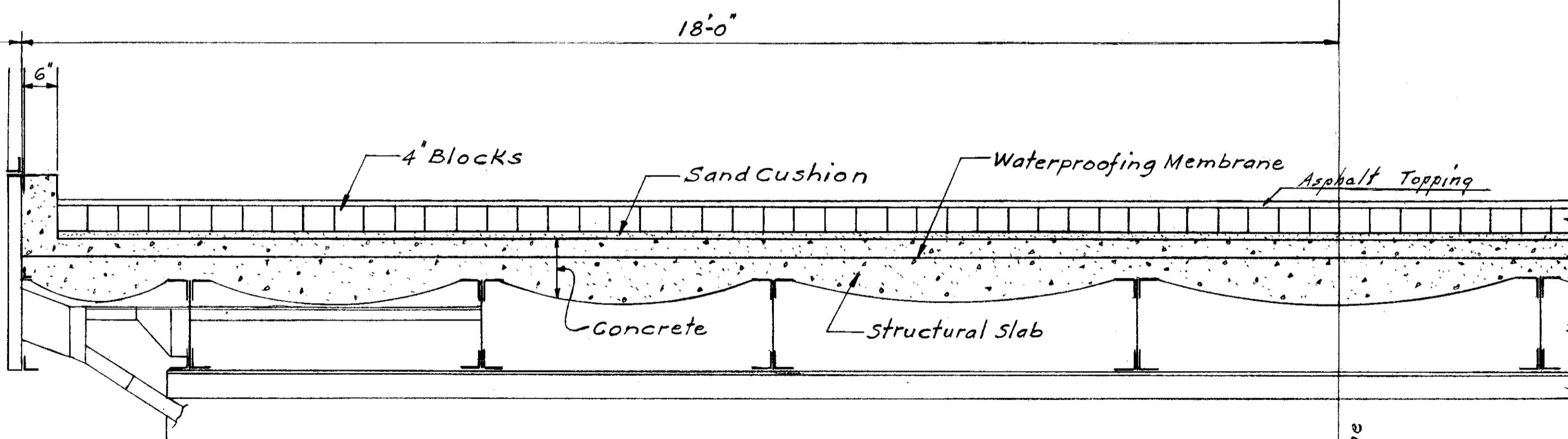
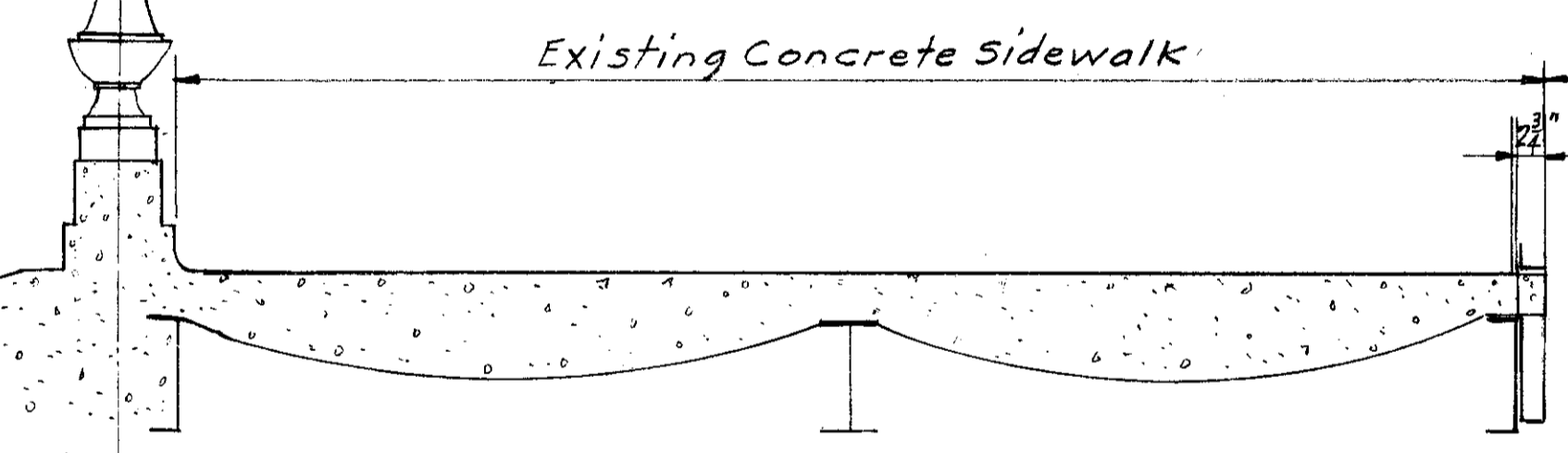


MOVABLE SPAN, CROSS SECTION-EXISTING CONDITIONS  
Scale 3/4"=1'-0"

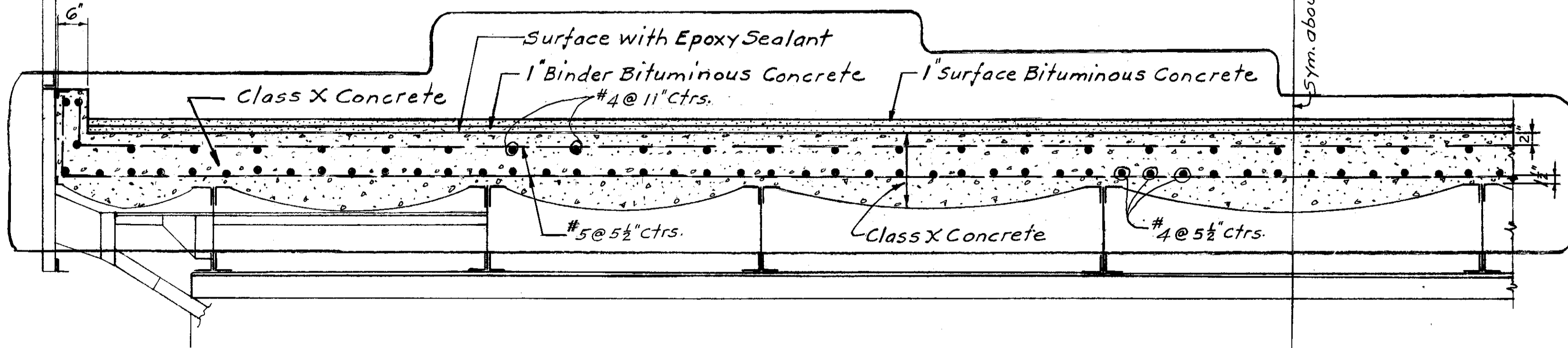
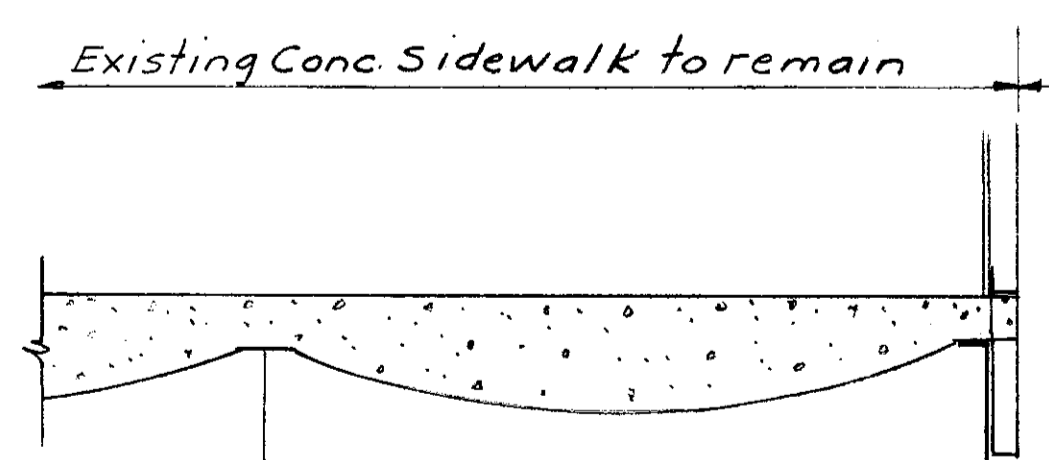


SECTION A-A  
MOVABLE SPAN, CROSS SECTION-NEW CONDITIONS  
Scale 3/4"=1'-0"

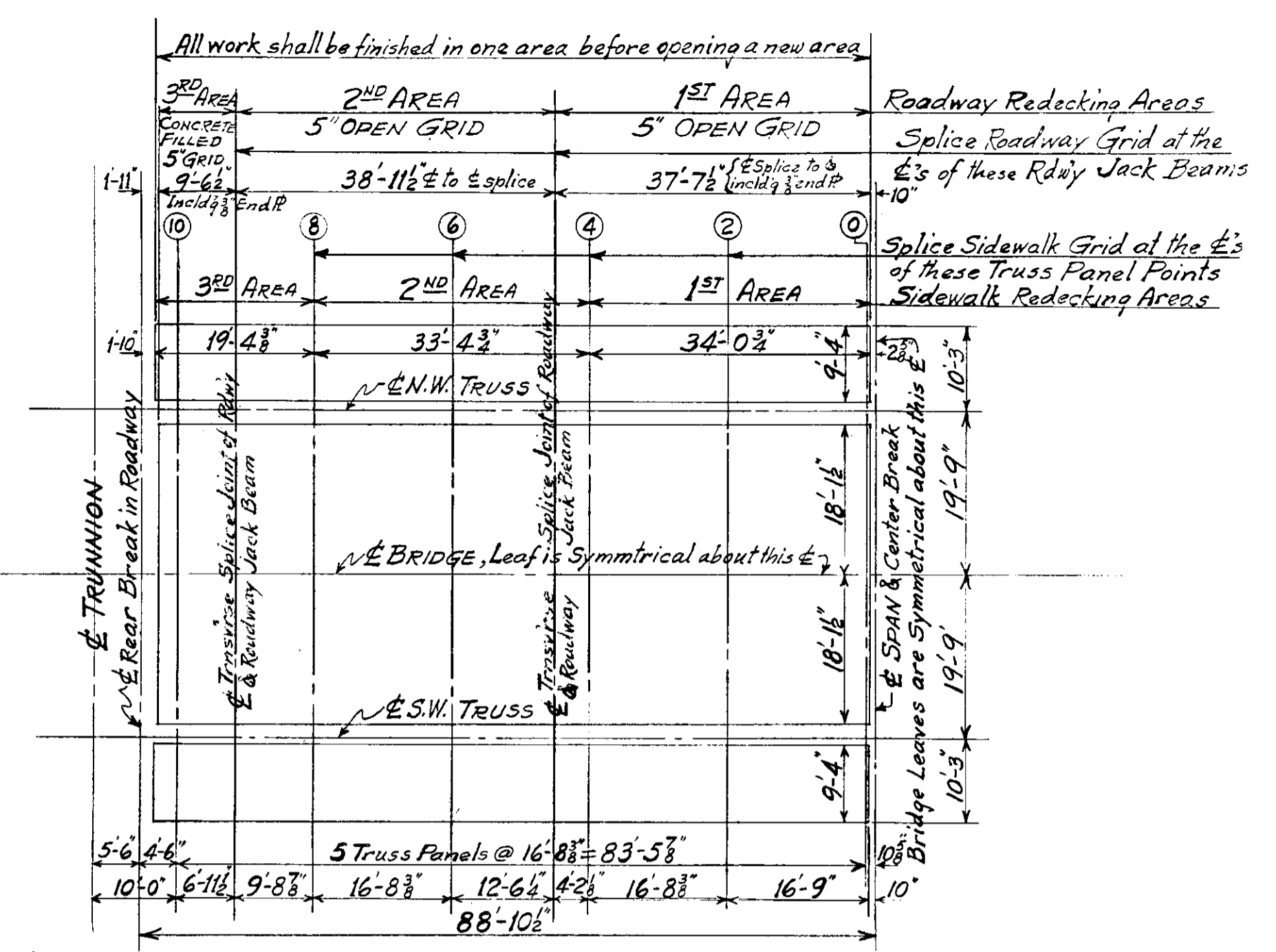
NOTE  
Warp the sloping sdwk. steel grid, from Panel #10 to the Rear Sdwk. Break, so that the top of the New Mov. Sdwk. edge is horizontal and at the same Elev. as that of the top of the exist. fixed part sdwk. edge, at the Rear Sdwk. Break.



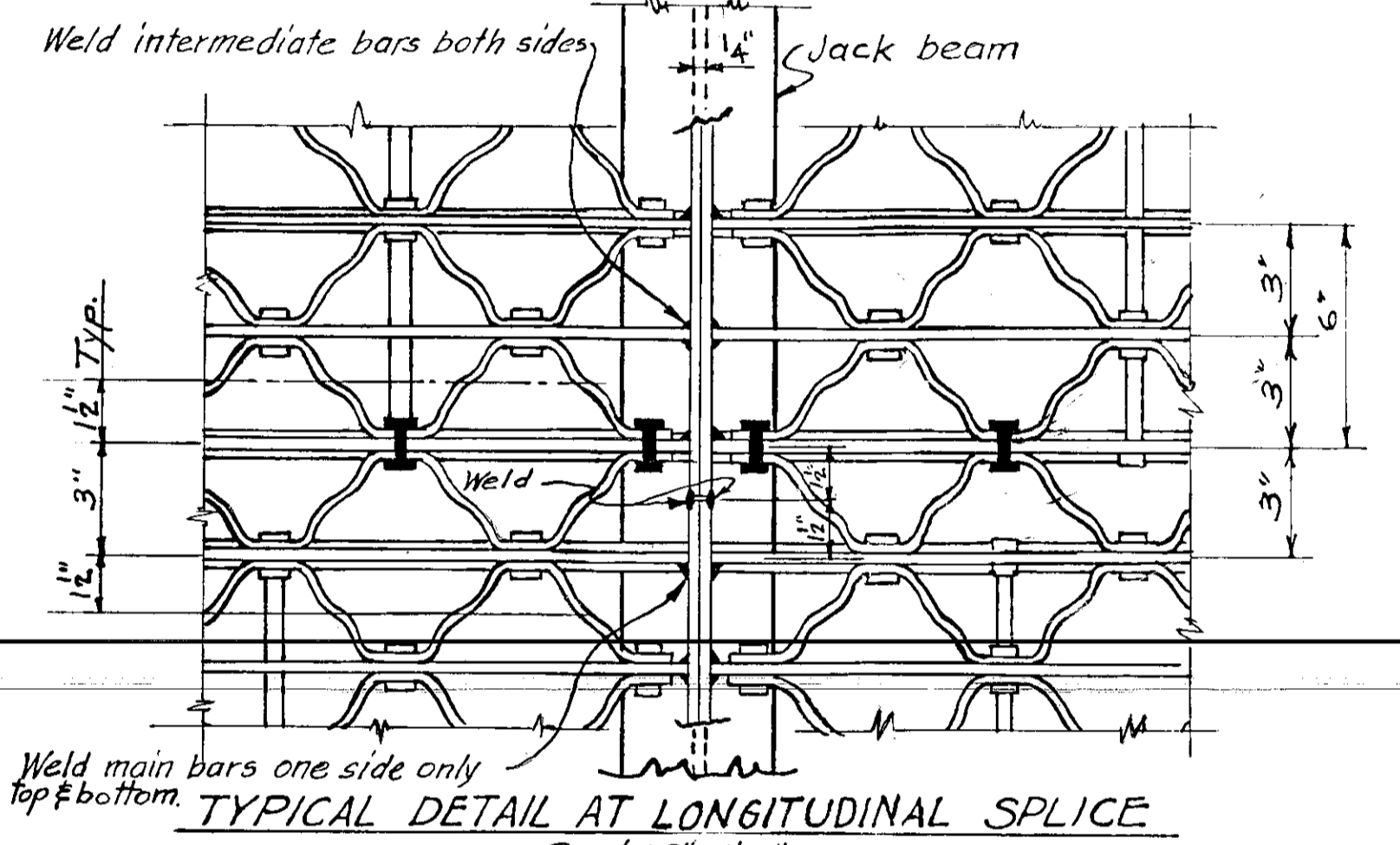
FIXED PART, CROSS SECTION-EXISTING CONDITIONS  
WEST SIDE SHOWN-EAST SIDE SIMILAR  
Scale 3/4"=1'-0"



SECTION B-B  
FIXED PART, CROSS SECTION-NEW CONDITIONS  
Scale 3/4"=1'-0"

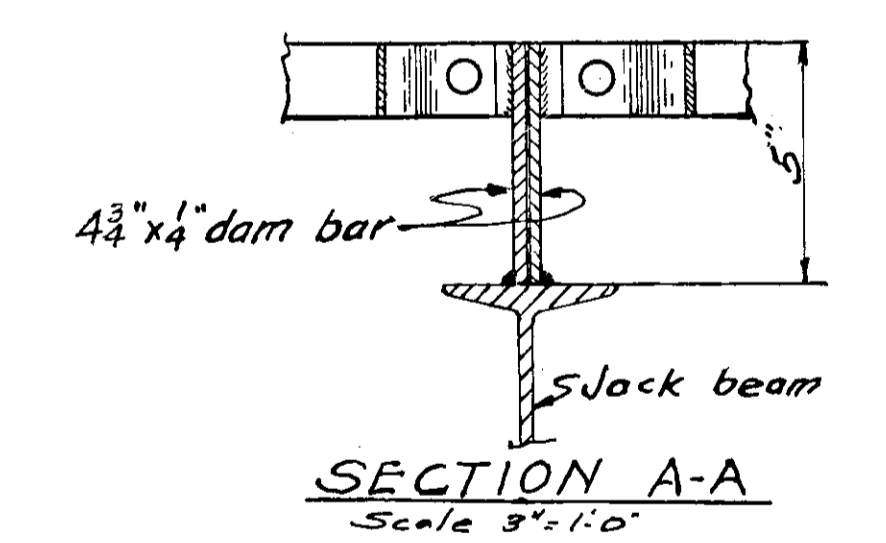


PLAN OF WEST MOVABLE BRIDGE LEAF  
SHOWING PROGRESSIVE ROADWAY AND SIDEWALK AREAS  
TO BE OPENED AND COMPLETED  
Scale: 1/8"=1'-0"



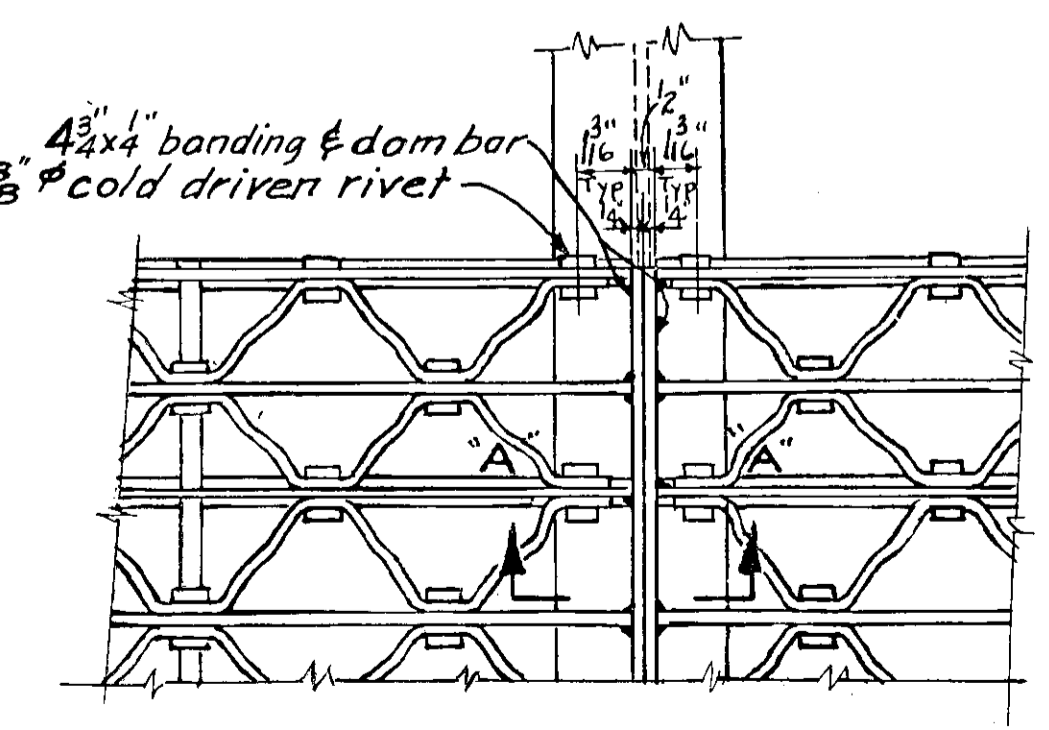
TYPICAL DETAIL AT LONGITUDINAL SPLICE  
Scale: 3/4"=1'-0"

Notes:  
4 3/4" x 4" dam bars of longitudinal splices to extend 12" beyond final main bars and weld as shown.



SECTION A-A  
Scale 3/4"=1'-0"

Note:  
Transverse Joints Must Fall Upon C. OF Jack Beams.



TYPICAL DETAIL AT TRANSVERSE JOINT SHOWING FIELD CONNECTION  
Scale: 3/4"=1'-0"

Note:  
4 3/4" x 4" dam bars to be cut flush at curb side as shown.

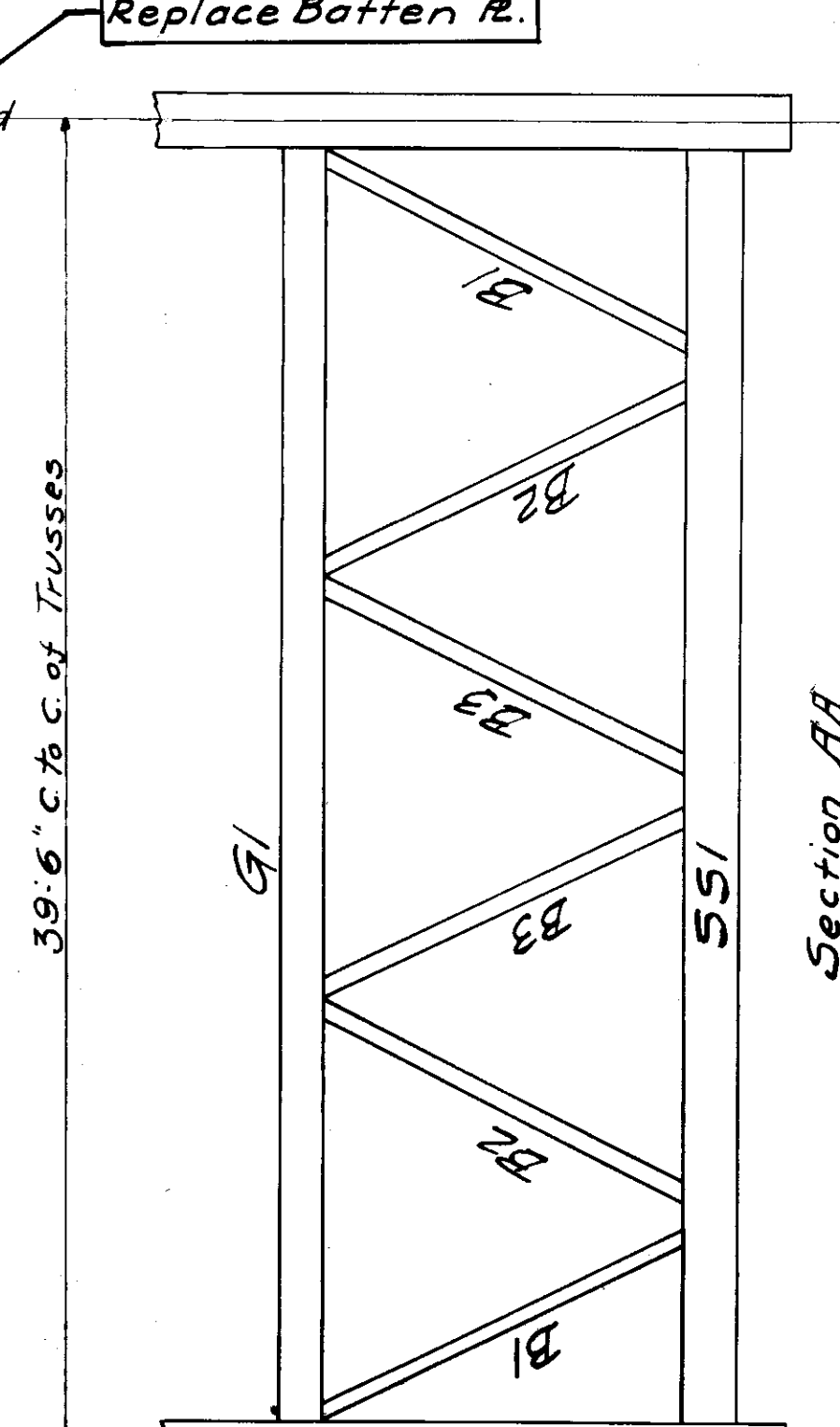
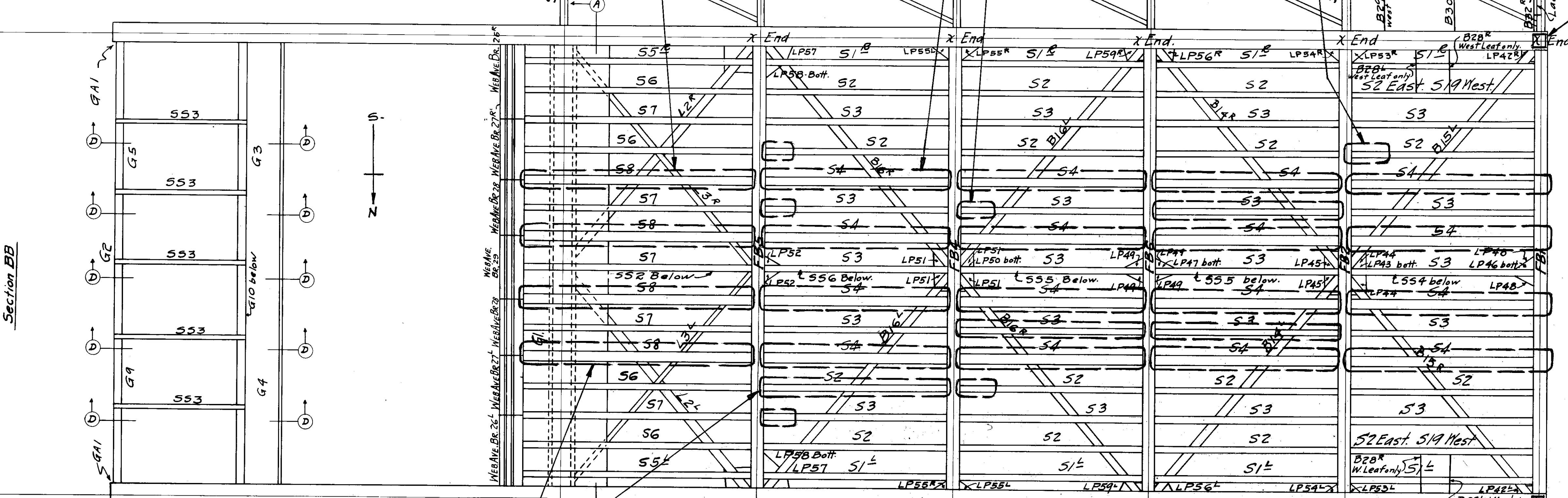
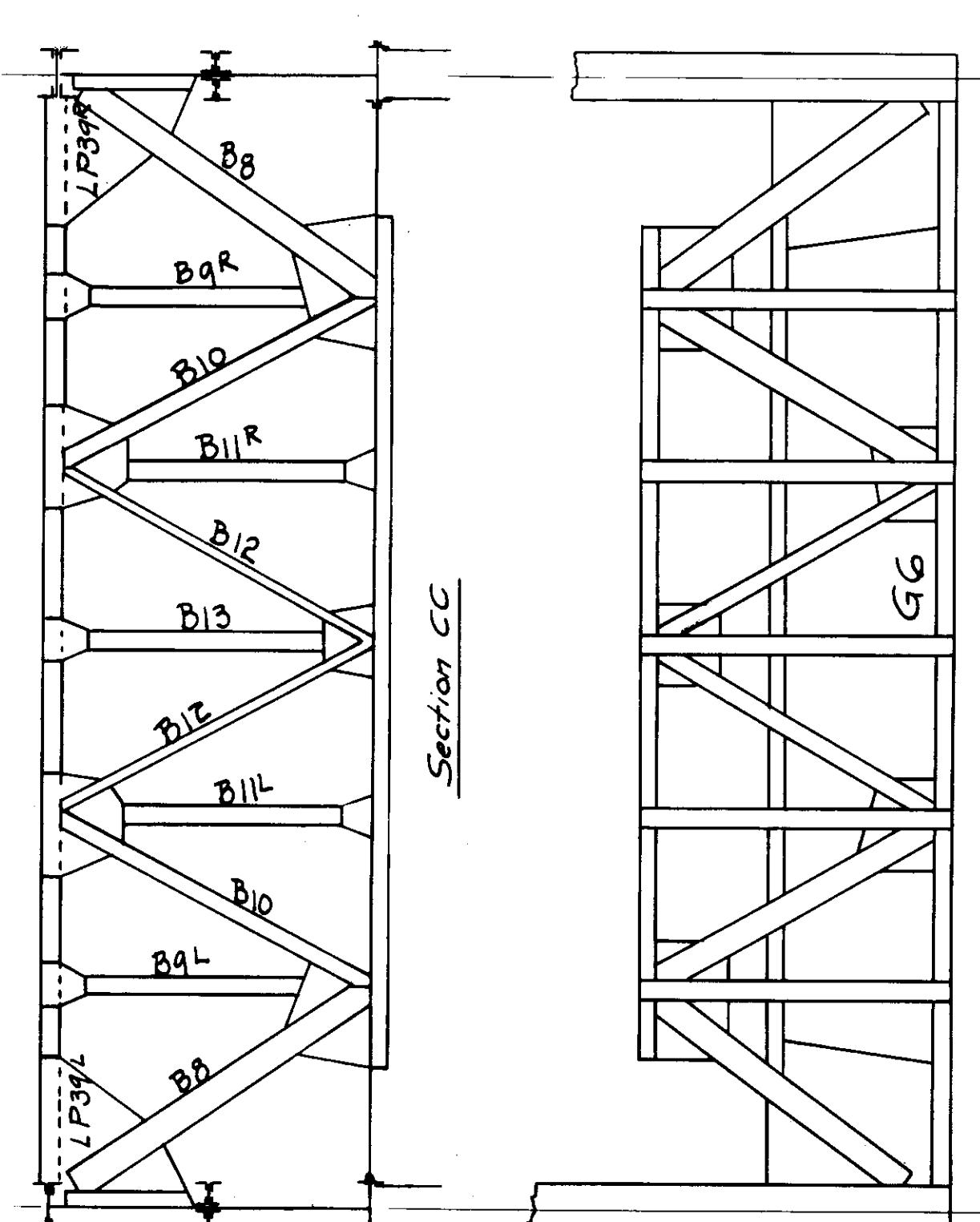
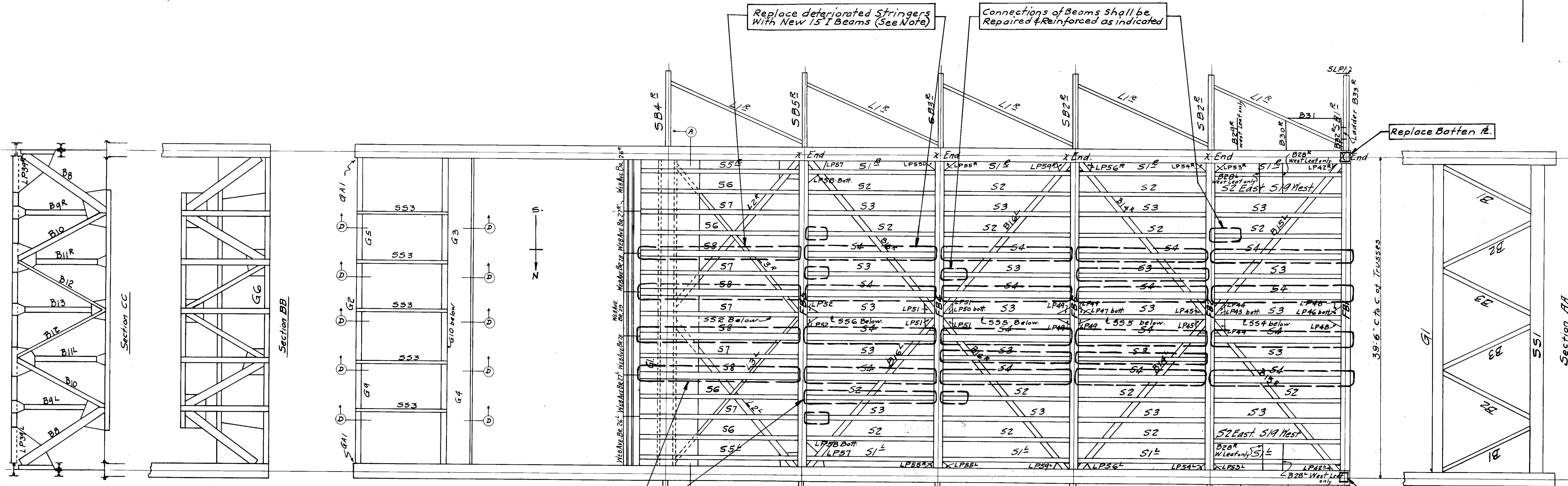
CITY OF CHICAGO  
DEPARTMENT OF PUBLIC WORKS  
BUREAU OF ENGINEERING  
**DOUBLE LEAF  
TRUNNION BASCULE BRIDGE  
AT  
WEBSTER AVE.  
OVER  
NORTH BRANCH OF THE CHICAGO RIVER  
TRANSVERSE ROADWAY SECTION  
MOVABLE & FIXED PART**  
SCALE AS NOTED JULY 1967  
SHEET NO. 5 OF 13 SHEETS  
DRWG. NO. 30231 FILE NO. 11:459-18.

BRIDGES & VIADUCTS  
Drawn BY... L.Y. Goldman  
Checked BY... G.D.A.  
Correct...  
Approved... M.D. [Signature]  
APPROVED... M.D. [Signature]  
CHIEF BRIDGE ENGINEER







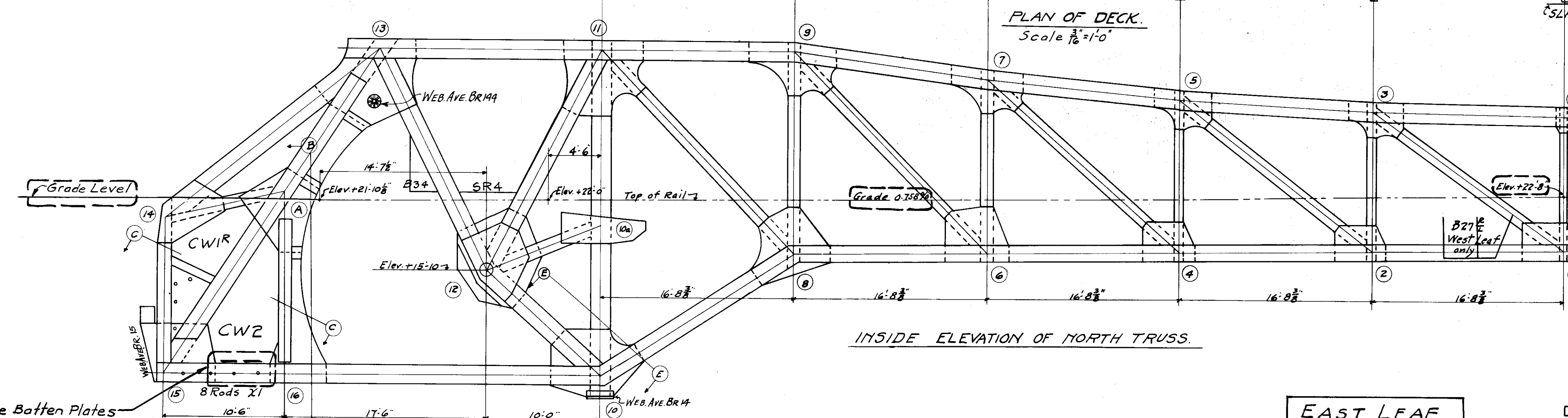


Replace deteriorated Stringers With New 15" I Beams (See Note)

Connections of Beams Shall be Repaired & Reinforced as indicated

Replace Batten R.

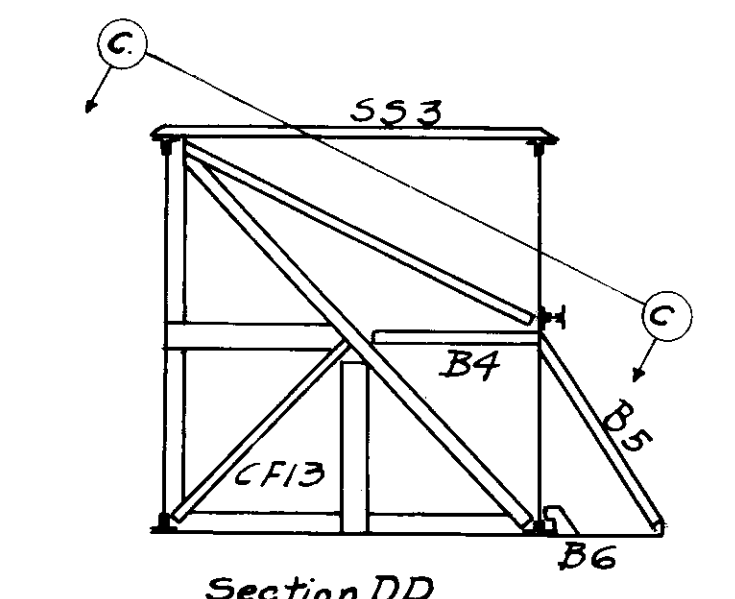
PLAN OF DECK  
Scale 1/8" = 1'-0"



**NOTE**  
 Replace Street Car Stringers Mark S4 With New 15" I Beams @ 42.9"  
 Replace S3 Stringers indicated With New 15" I Beams @ 42.9"  
 Replace S8 Stringers indicated With New 15" I Beams @ 60.0"

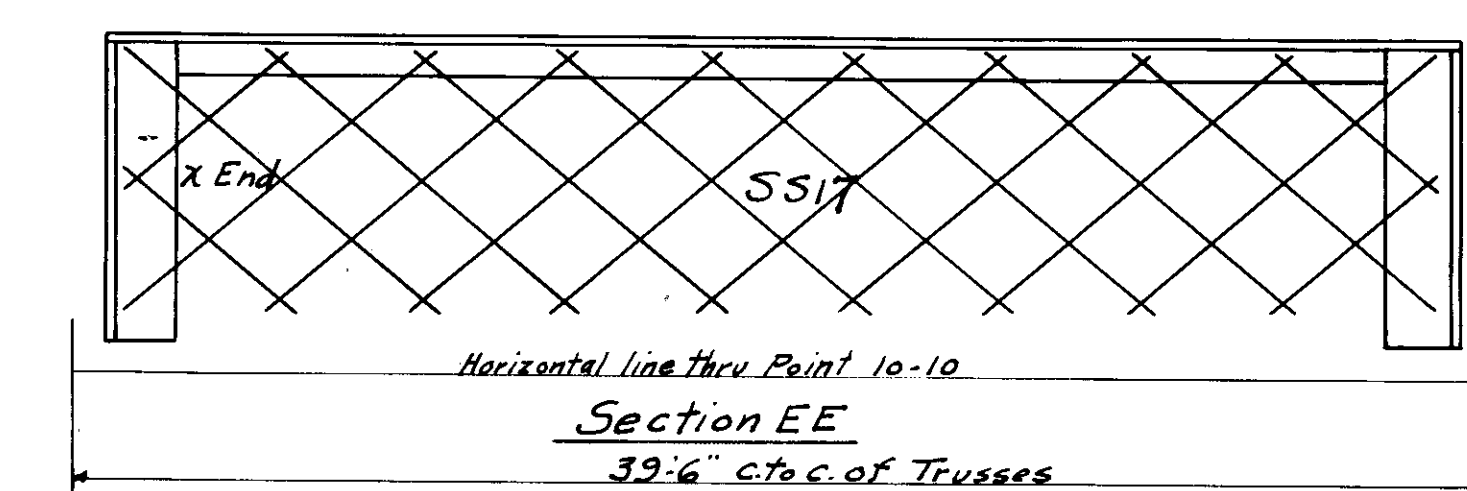
Navigation light brackets repaired or replaced, as directed  
 Replace bottom flange angle on river side

Replacement or repair of lateral bracing members shall be done as directed and Paid Under Force Account.



Replace Batten Plates

EAST LEAF



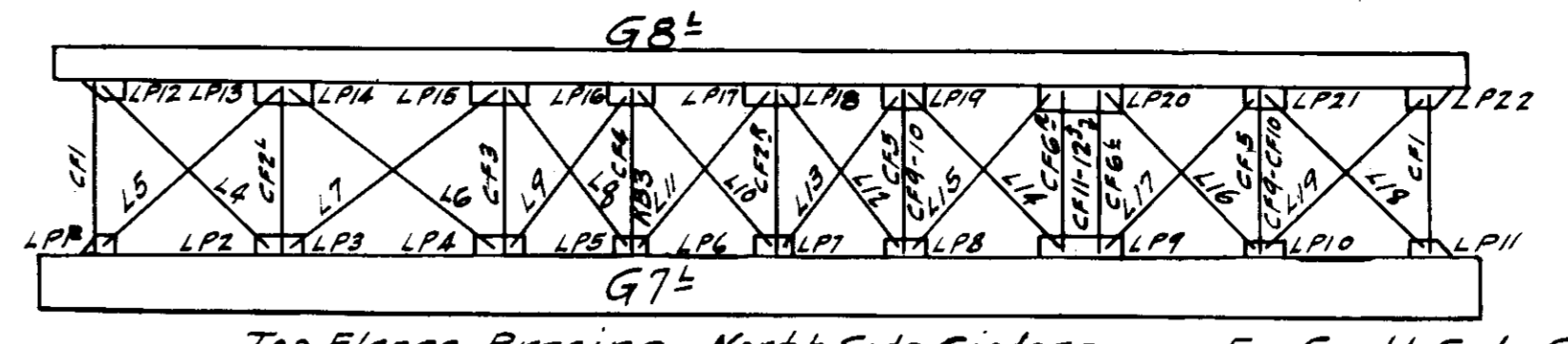
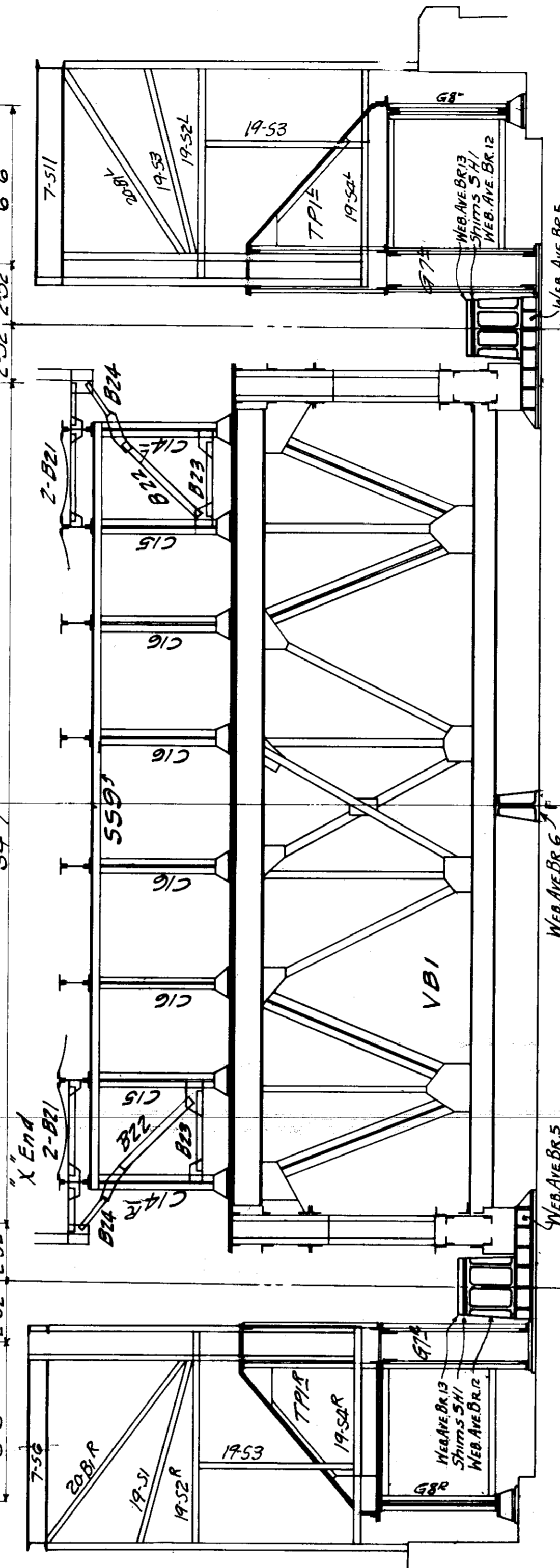
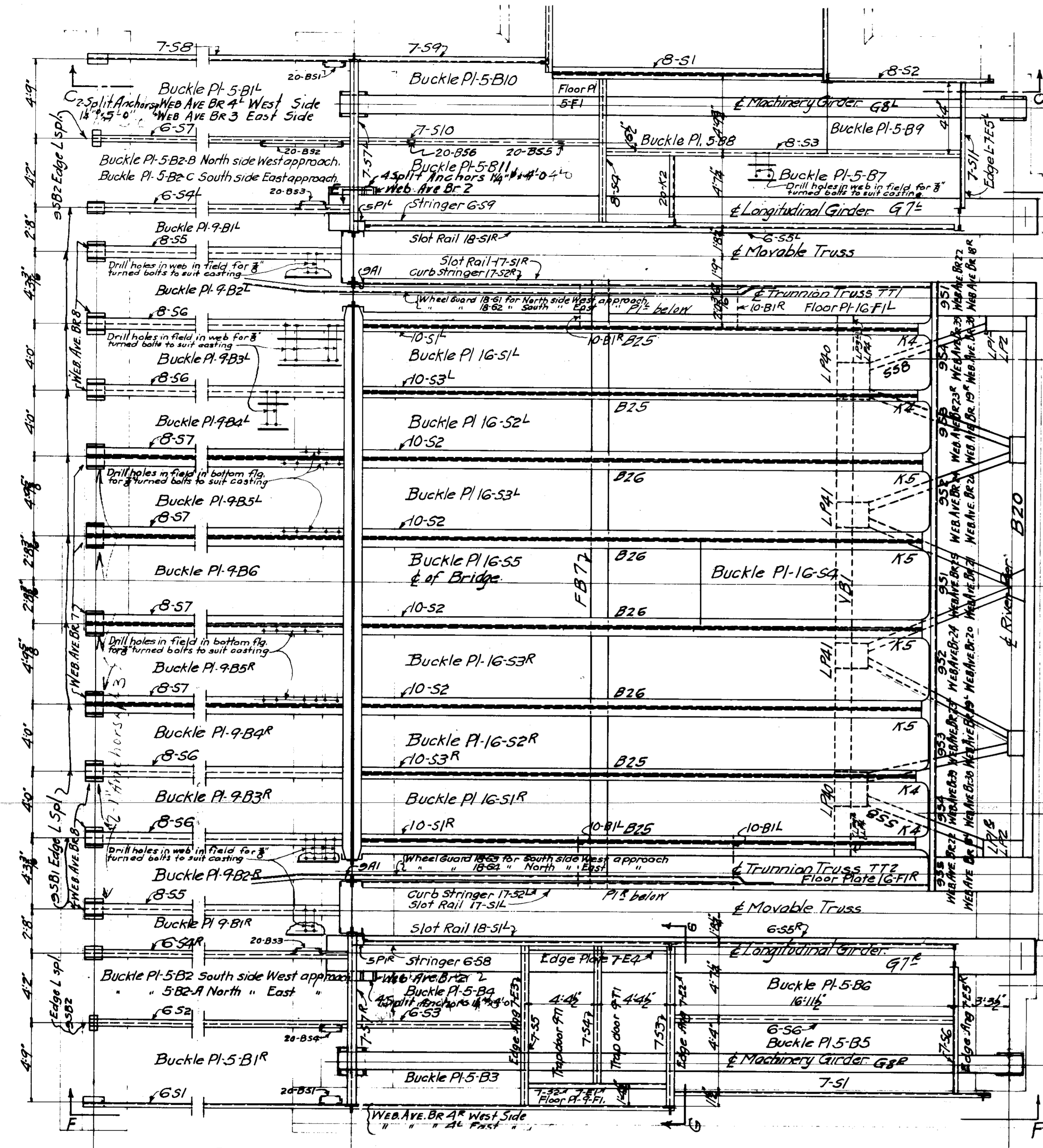
BRIDGES & VIADUCTS  
 Drawn By L.Y. Goldman  
 Checked By G.R.P.  
 Correct [Signature]  
 Approved [Signature] IN CHARGE OF DESIGN  
 Approved M.V. Krausman CHIEF BRIDGE ENGINEER

CITY OF CHICAGO  
 DEPARTMENT OF PUBLIC WORKS  
 BUREAU OF ENGINEERING  
**DOUBLE LEAF TRUNNION BASCULE BRIDGE**  
 AT  
**WEBSTER AVE.**  
 OVER  
 NORTH BRANCH OF THE CHICAGO RIVER  
 STRUCTURAL REPAIRS, TRUSSES  
 & BRIDGE FLOOR SYSTEM-EAST LEAF  
 REDECKING & REHABILITATION

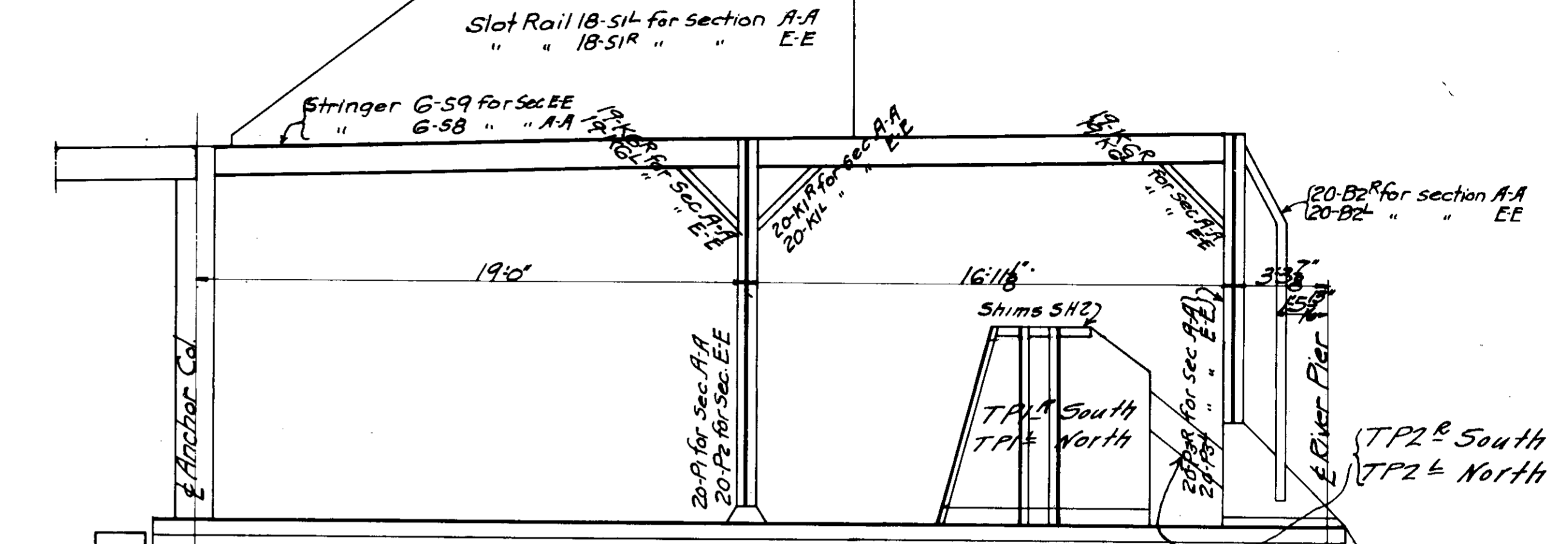
SCALE AS NOTED JULY 1967  
 SHEET NO. 8 OF 13 SHEETS  
 DRWG. NO. 30234... FILE NO. 11-559-21...

9 B Per 807

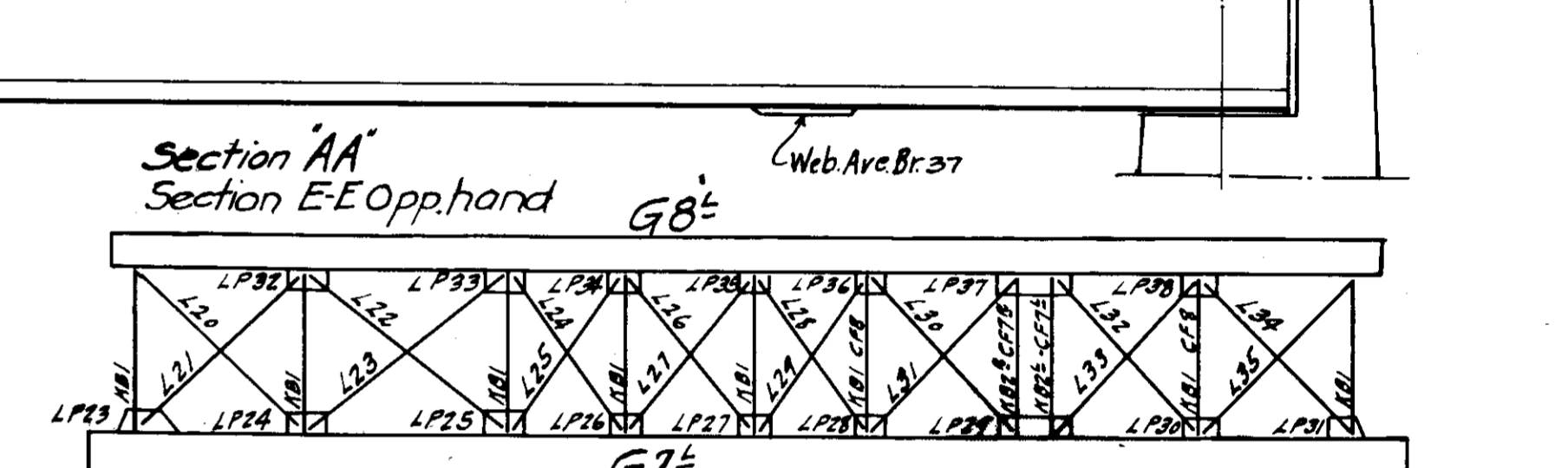




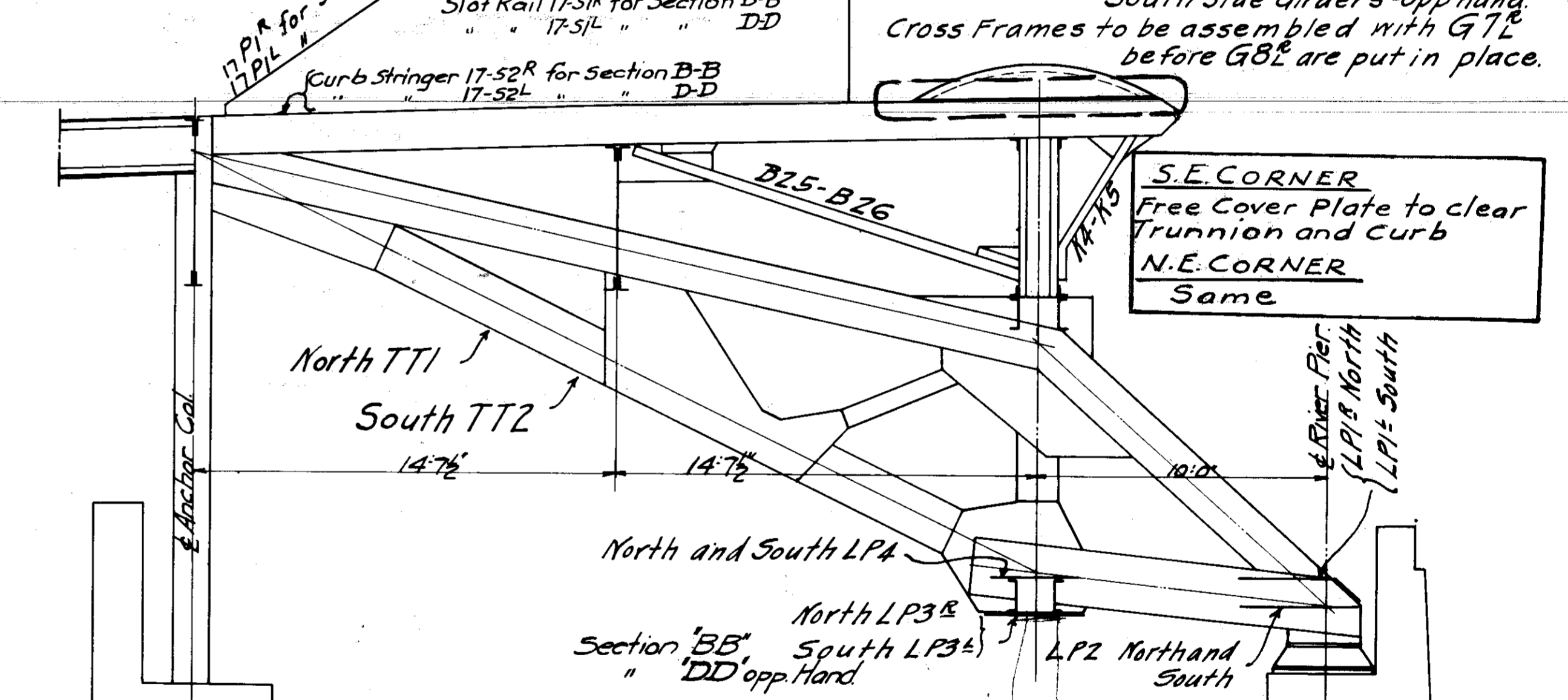
Top Flange Bracing - North Side Girders For South Side Girders - Opp hand.



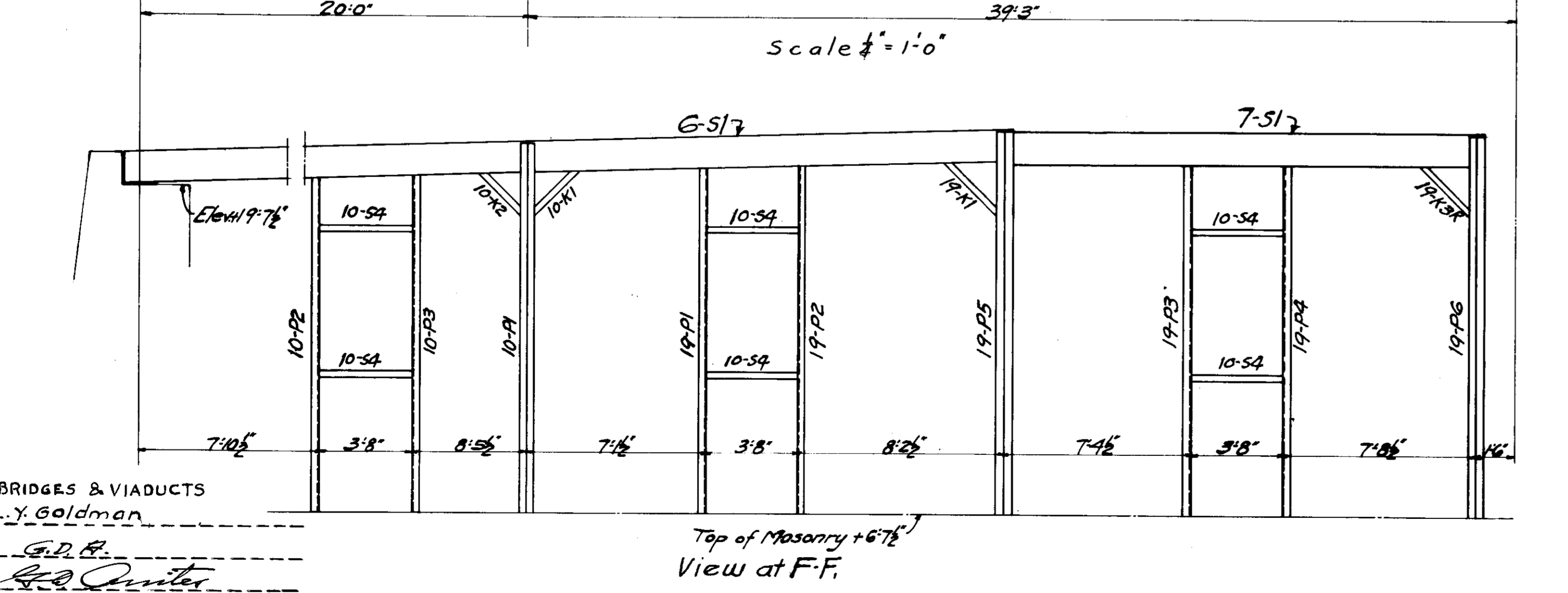
Section AA Section E-E Opp hand G8



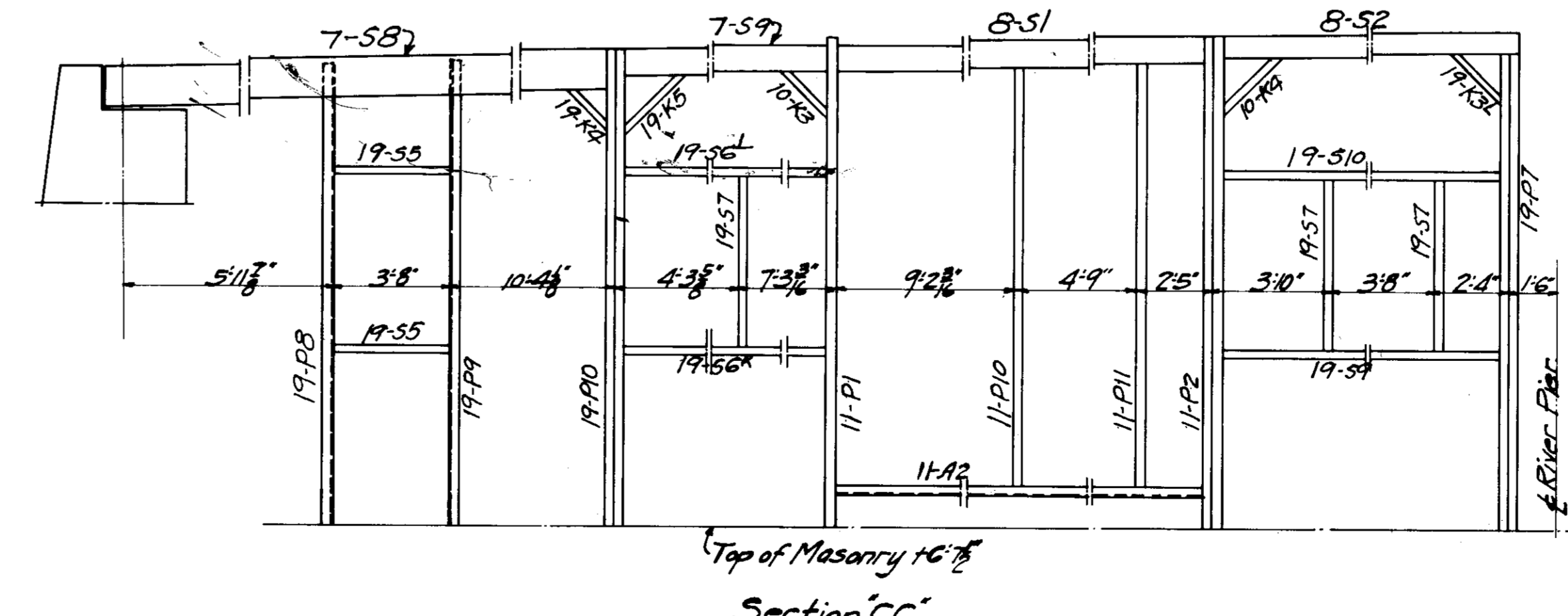
Section BB Section DD Opp hand G7



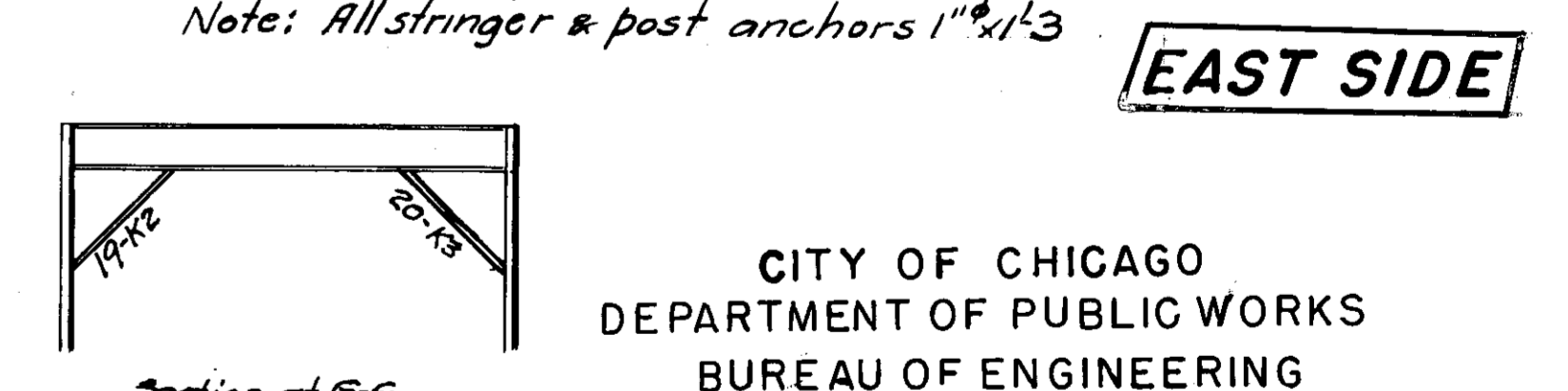
Section CC Section DD Opp hand G7



View at F-F Top of Masonry +6'7 1/2"



Section CC Top of Masonry +6'7 1/2"



Section at G-G

Note: All stringer & post anchors 1" x 1/3" EAST SIDE

CITY OF CHICAGO DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING

DOUBLE LEAF TRUNNION BASCULE BRIDGE

AT WEBSTER AVE.

OVER NORTH BRANCH OF THE CHICAGO RIVER

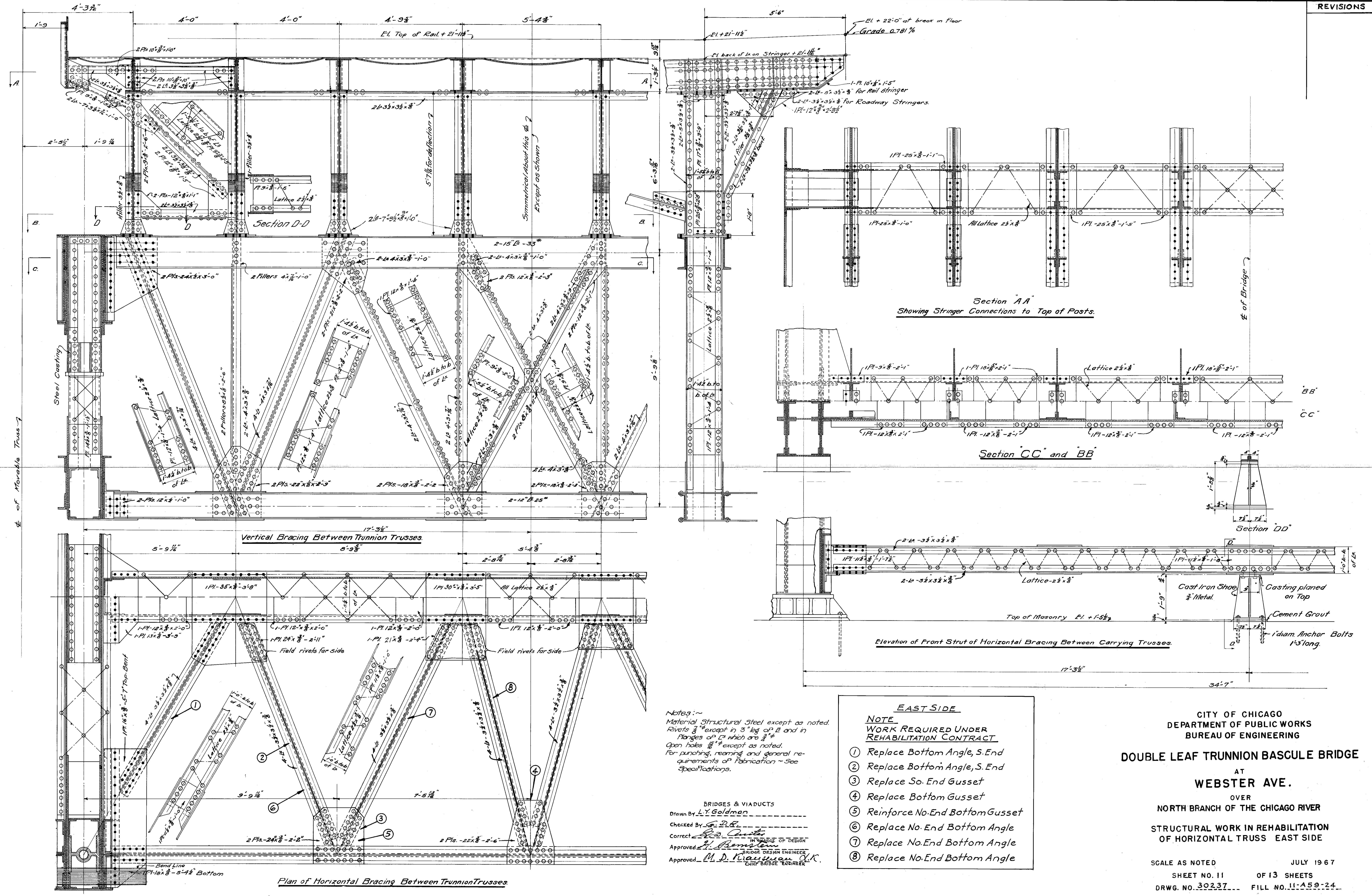
STRUCTURAL REPAIRS, REDECKING & REHABILITATION

SCALE AS NOTED JULY 1967 SHEET NO. 10 OF 13 SHEETS

DRWG NO. 30236 FILE NO. 11-A59-23

9B Per 809

BRIDGES & VIADUCTS  
 Drawn By L.Y. Goldman  
 Checked By G.D. R.  
 Correct G.D. R.  
 Approved M. D. Wasserman A.K.  
 CHIEF BRIDGE ENGINEER



Notes: -  
 Material Structural Steel except as noted.  
 Rivets 3/4" except in 3" leg of B and in  
 Planges of E which are 5/8"  
 Open holes 1/2" except as noted.  
 For punching, reaming and general re-  
 quirements of fabrication - See  
 Specifications.

BRIDGES & VIADUCTS  
 Drawn By L. T. Goldman  
 Checked By G. P. R.  
 Corrected By G. P. R.  
 Approved M. D. Krause  
 M. D. Krause, Chief Bridge Engineer

- EAST SIDE**
- NOTE**  
 WORK REQUIRED UNDER  
 REHABILITATION CONTRACT
- ① Replace Bottom Angle, S. End
  - ② Replace Bottom Angle, S. End
  - ③ Replace So. End Gusset
  - ④ Replace Bottom Gusset
  - ⑤ Reinforce No. End Bottom Gusset
  - ⑥ Replace No. End Bottom Angle
  - ⑦ Replace No. End Bottom Angle
  - ⑧ Replace No. End Bottom Angle

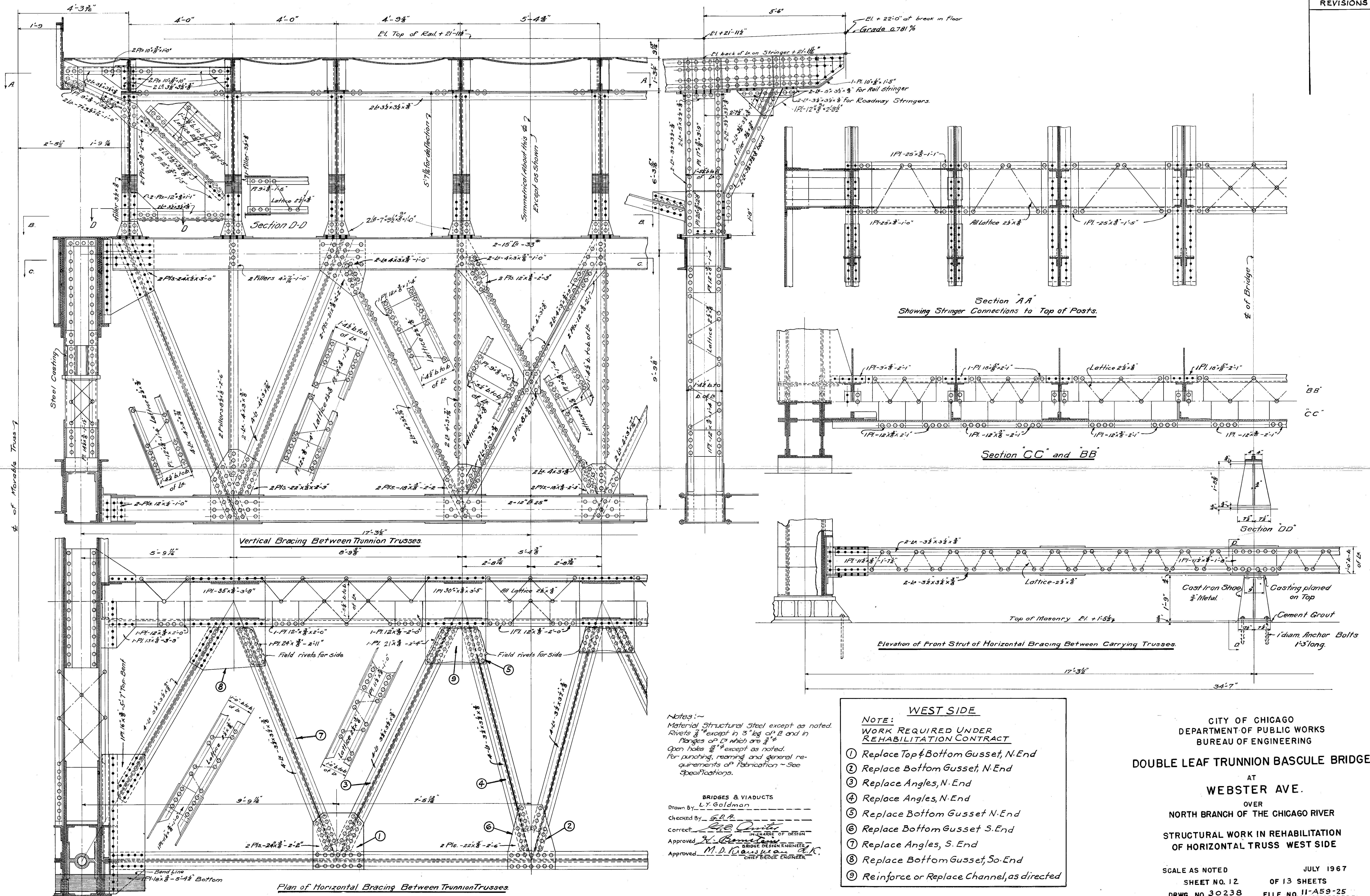
CITY OF CHICAGO  
 DEPARTMENT OF PUBLIC WORKS  
 BUREAU OF ENGINEERING

**DOUBLE LEAF TRUNNION BASCULE BRIDGE**  
 AT  
**WEBSTER AVE.**  
 OVER  
 NORTH BRANCH OF THE CHICAGO RIVER

STRUCTURAL WORK IN REHABILITATION  
 OF HORIZONTAL TRUSS EAST SIDE

SCALE AS NOTED JULY 1967  
 SHEET NO. 11 OF 13 SHEETS  
 DRWG. NO. 30237... FILL NO. 11: A59:24...

SB Per 810



Notes:-  
 Material Structural Steel except as noted.  
 Rivets 3/4" except in 3" leg of B and in  
 Flanges of C which are 5/8"  
 Open holes 1/8" except as noted.  
 For punching, reaming and general re-  
 quirements of Fabrication - See  
 Specifications.

BRIDGES & VIADUCTS  
 Drawn by: L.Y. Goldman  
 Checked by: G.P.A.  
 Corrected by: [Signature]  
 Approved: [Signature] IN CHARGE OF DESIGN  
 Approved: M.D. [Signature] CHIEF BRIDGE ENGINEER

- WEST SIDE**
- NOTE:**  
 WORK REQUIRED UNDER  
 REHABILITATION CONTRACT
- ① Replace Top & Bottom Gusset, N. End
  - ② Replace Bottom Gusset, N. End
  - ③ Replace Angles, N. End
  - ④ Replace Angles, N. End
  - ⑤ Replace Bottom Gusset N. End
  - ⑥ Replace Bottom Gusset S. End
  - ⑦ Replace Angles, S. End
  - ⑧ Replace Bottom Gusset, So. End
  - ⑨ Reinforce or Replace Channel, as directed

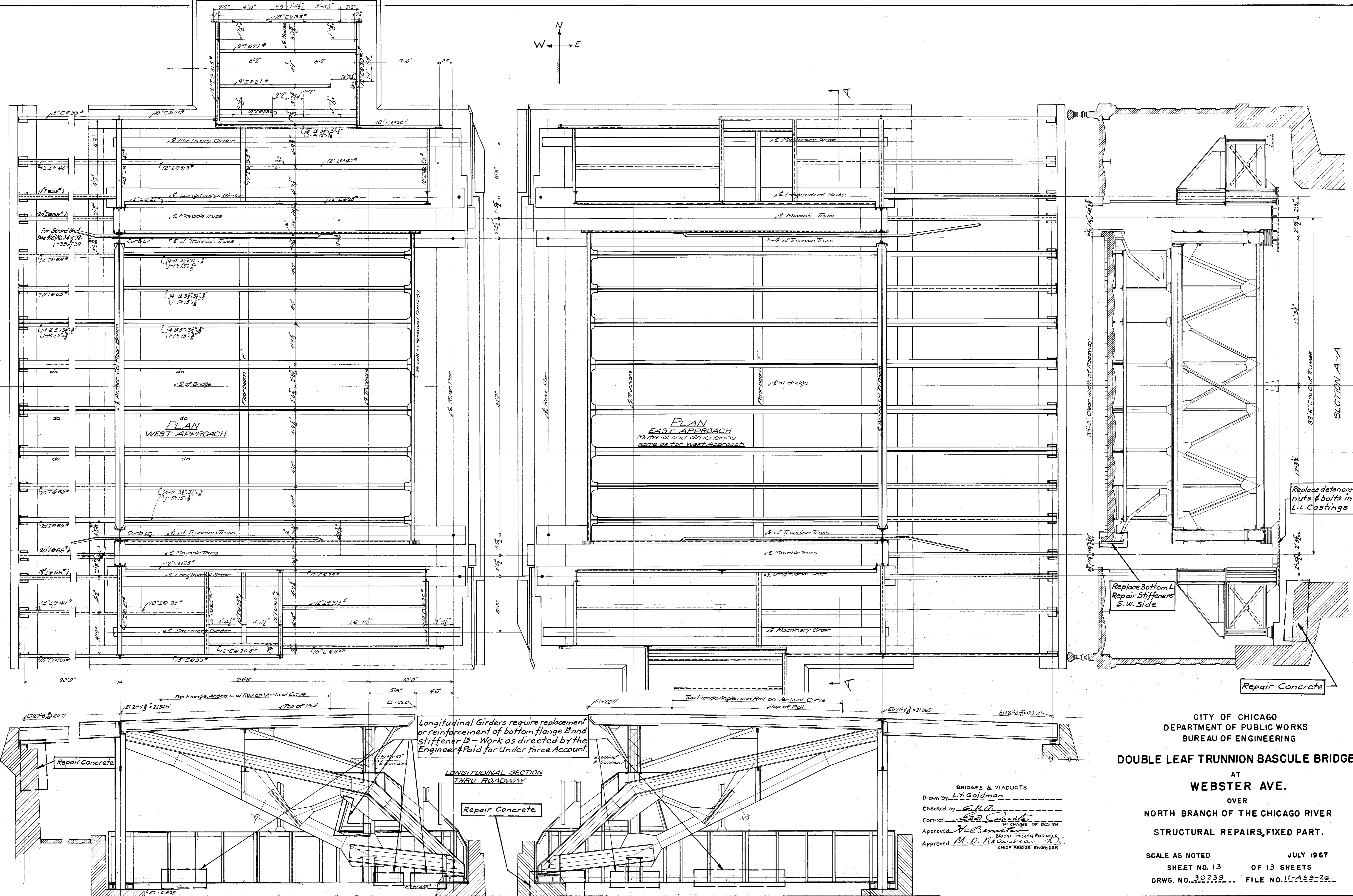
CITY OF CHICAGO  
 DEPARTMENT OF PUBLIC WORKS  
 BUREAU OF ENGINEERING

**DOUBLE LEAF TRUNNION BASCULE BRIDGE**  
 AT  
**WEBSTER AVE.**  
 OVER  
 NORTH BRANCH OF THE CHICAGO RIVER

STRUCTURAL WORK IN REHABILITATION  
 OF HORIZONTAL TRUSS WEST SIDE

SCALE AS NOTED JULY 1967  
 SHEET NO. 12 OF 13 SHEETS  
 DRWG. NO. 30238 FILE NO. 11-A59-25

38 Per 8/11



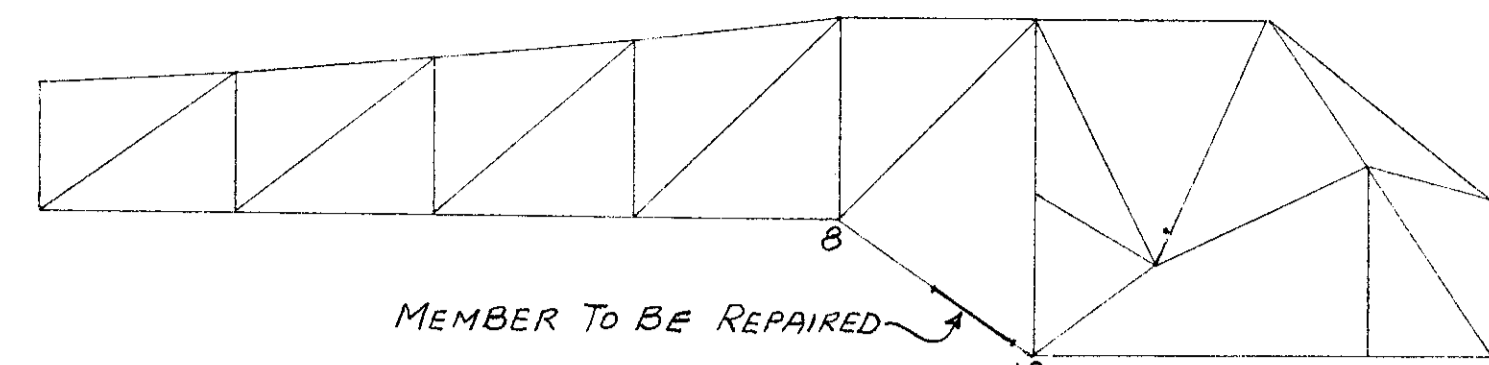
CITY OF CHICAGO  
DEPARTMENT OF PUBLIC WORKS  
BUREAU OF ENGINEERING

**DOUBLE LEAF TRUNNION BASCULE BRIDGE**  
AT  
**WEBSTER AVE.**  
OVER  
NORTH BRANCH OF THE CHICAGO RIVER  
**STRUCTURAL REPAIRS, FIXED PART.**

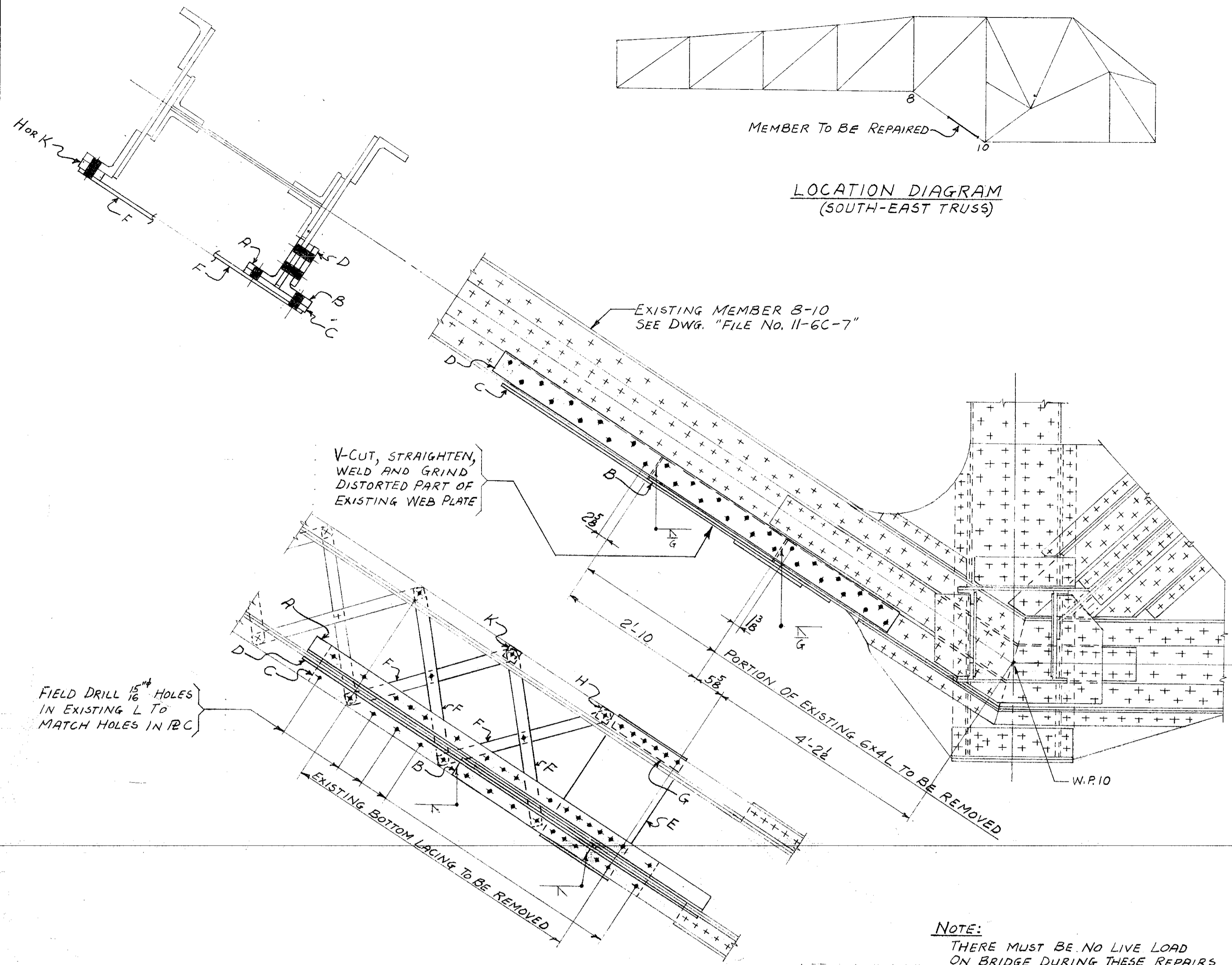
BRIDGES & VIADUCTS  
Drawn By L.Y. Goldman  
Checked By G.R.P.  
Correct L.D. Carter  
Approved H. Benington IN CHARGE OF DESIGN  
Approved M.D. Neasman CHIEF BRIDGE ENGINEER

SCALE AS NOTED JULY 1967  
SHEET NO. 13 OF 13 SHEETS  
DRWG. NO. 30239 FILE NO. 11-459-26



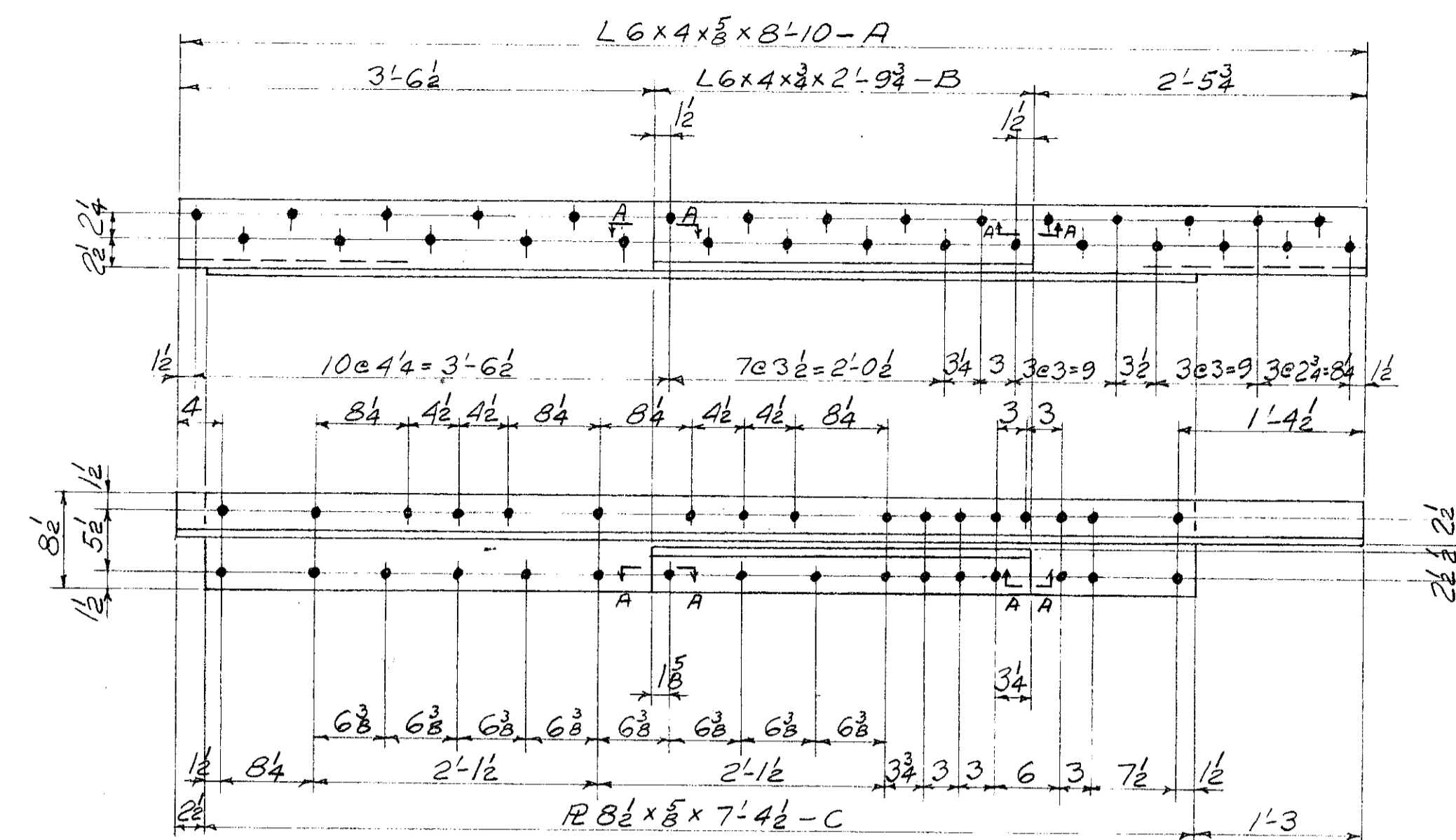


LOCATION DIAGRAM  
(SOUTH-EAST TRUSS)



FIELD WORK AND ERECTION DIAGRAM

NOTE:  
THERE MUST BE NO LIVE LOAD  
ON BRIDGE DURING THESE REPAIRS.



ANGLE - A  
ANGLE - B  
PLATE - C

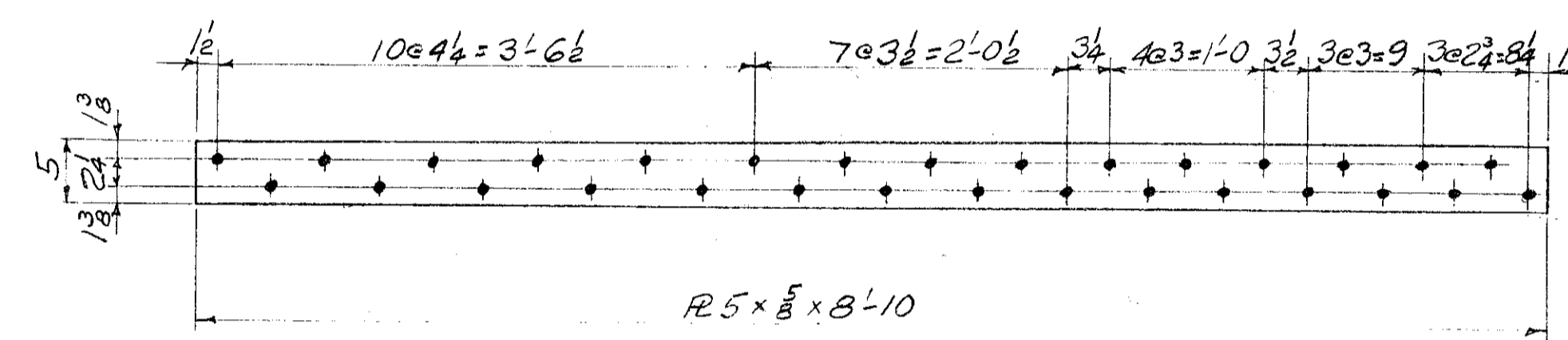


PLATE - D

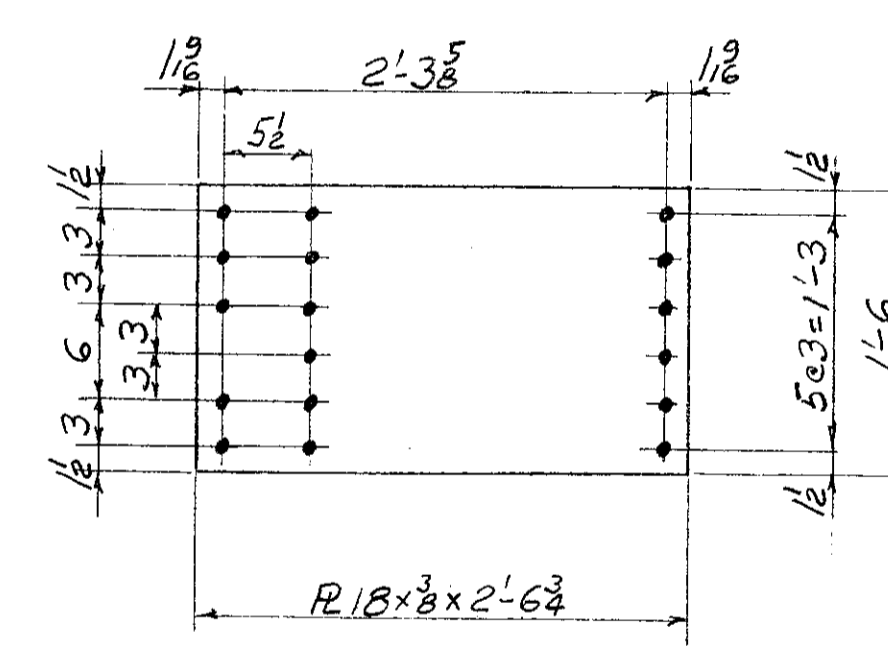


PLATE - E

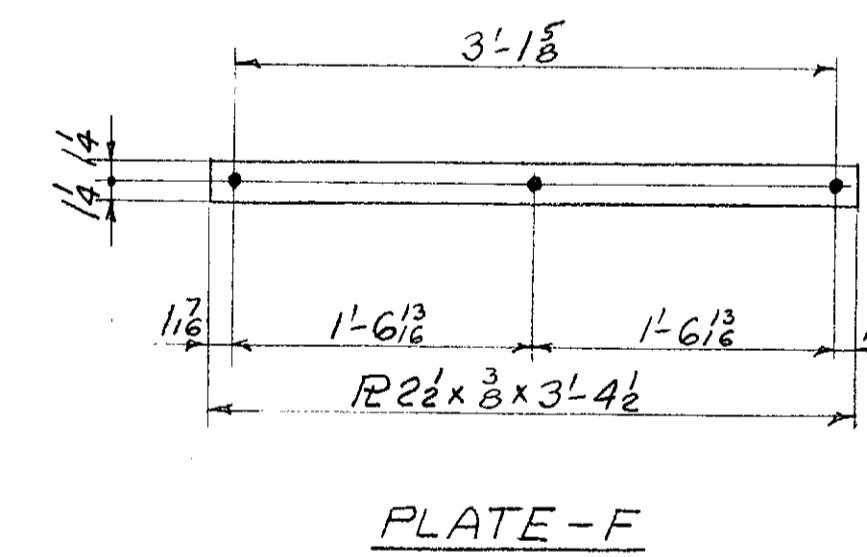


PLATE - F

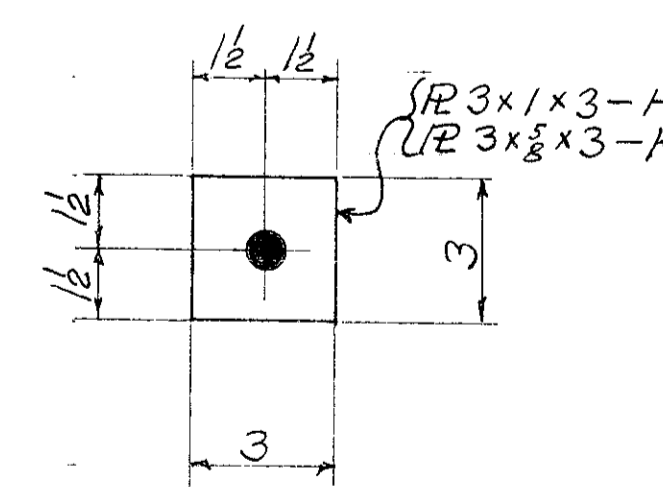


PLATE - H  
PLATE - K

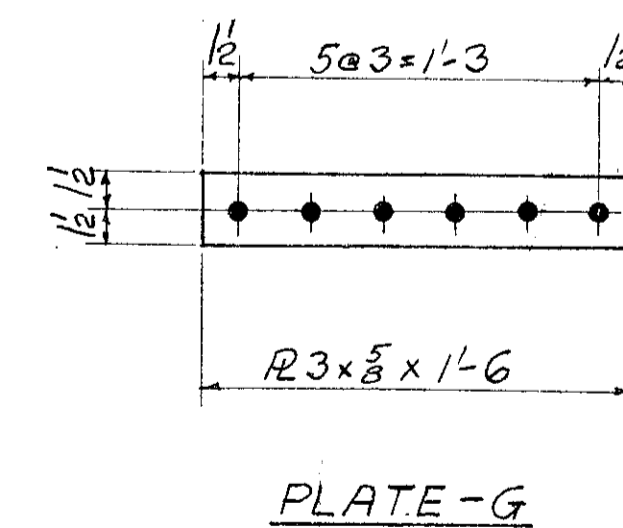
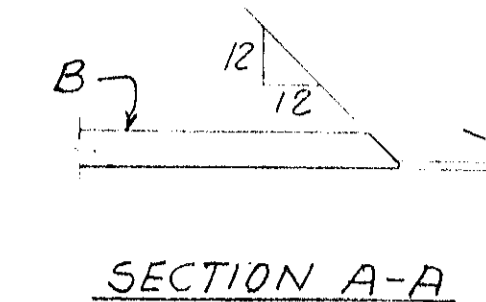


PLATE - G



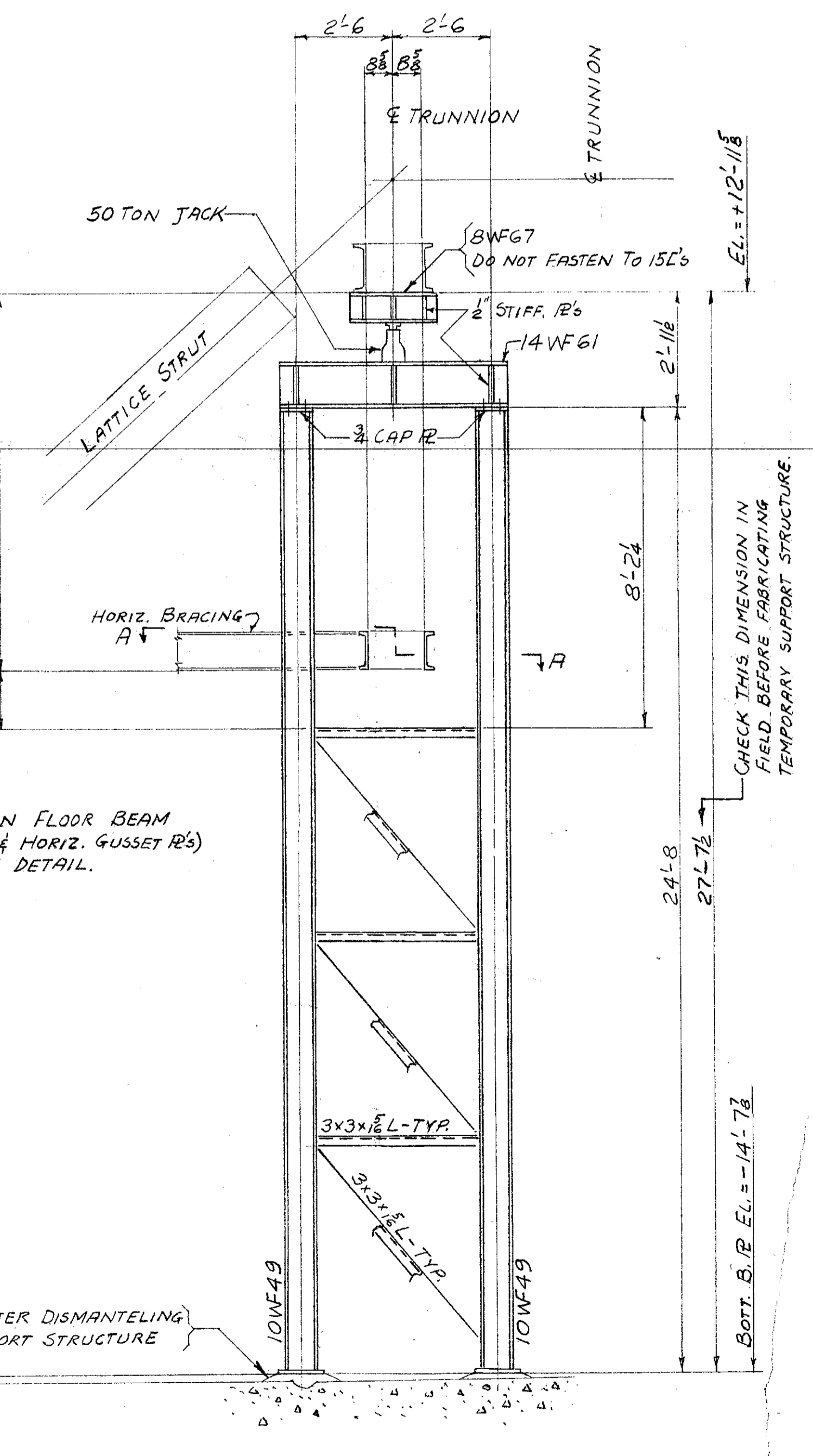
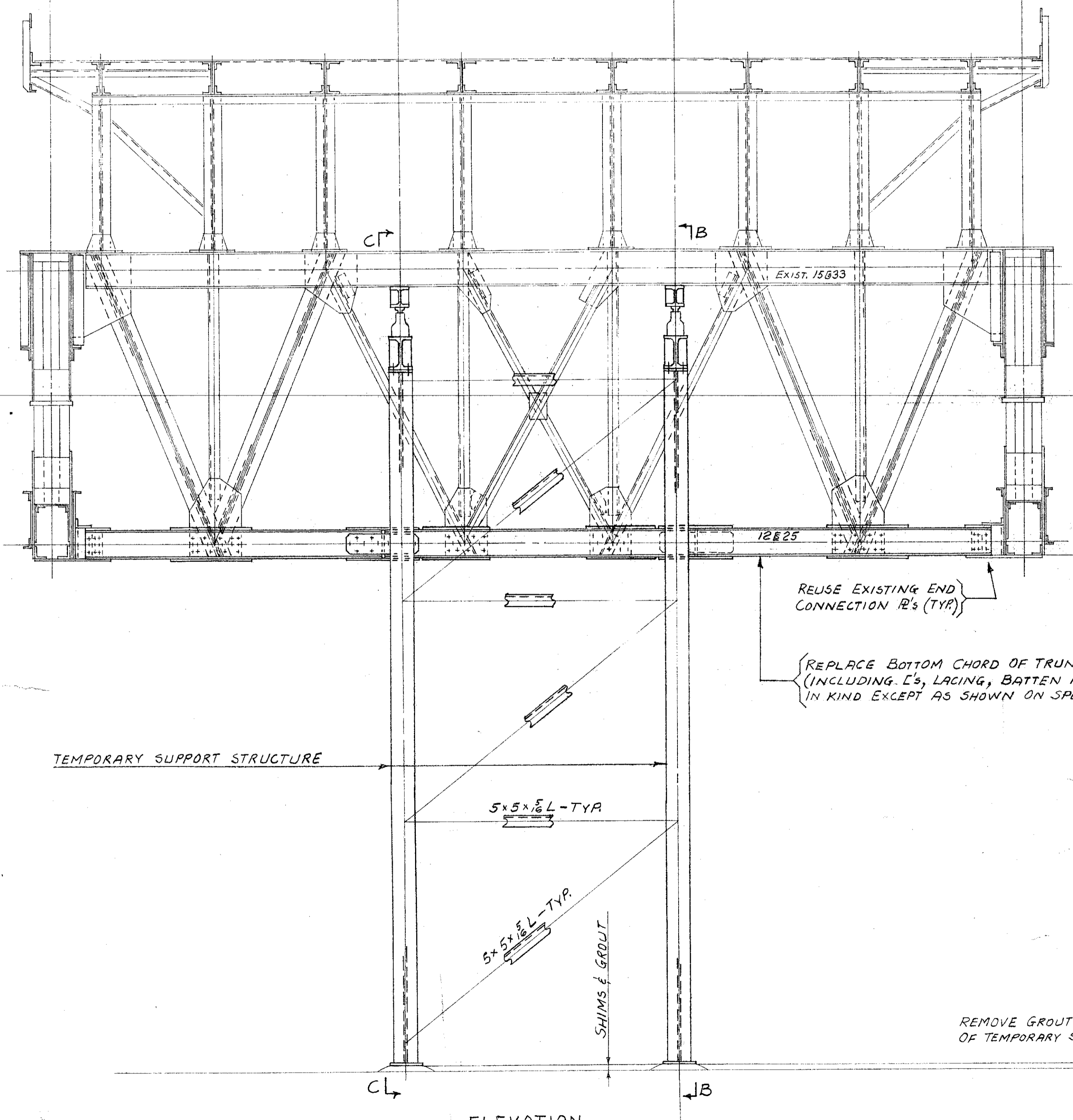
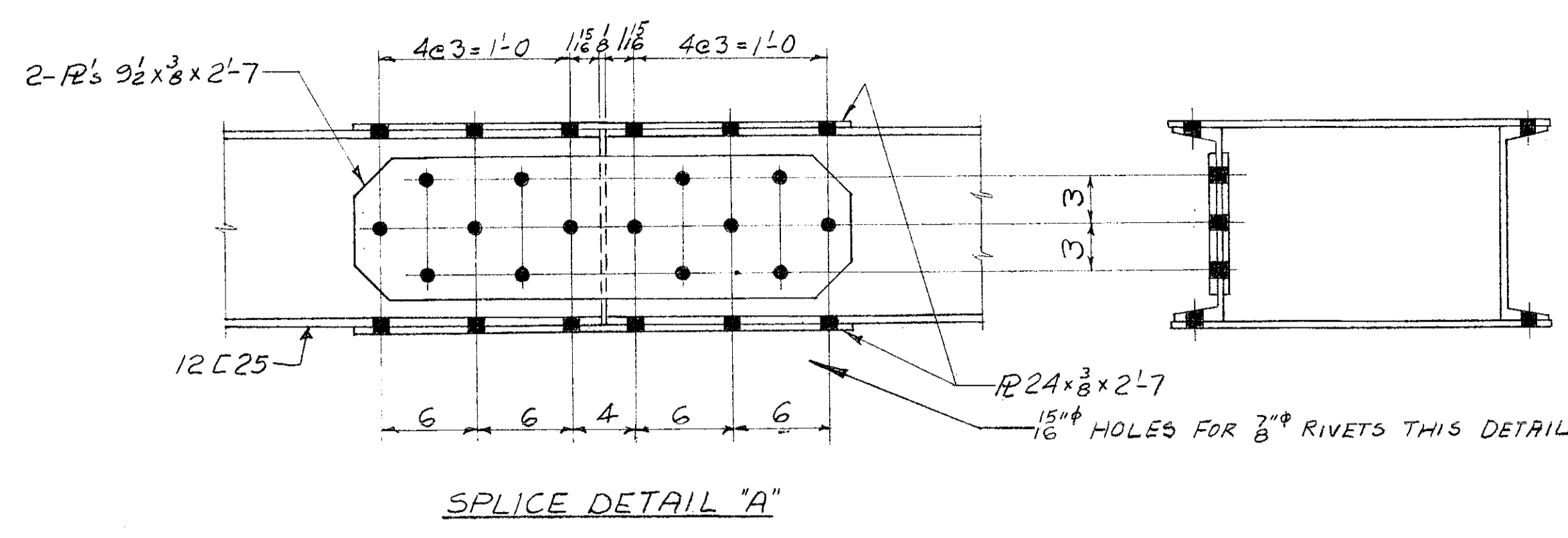
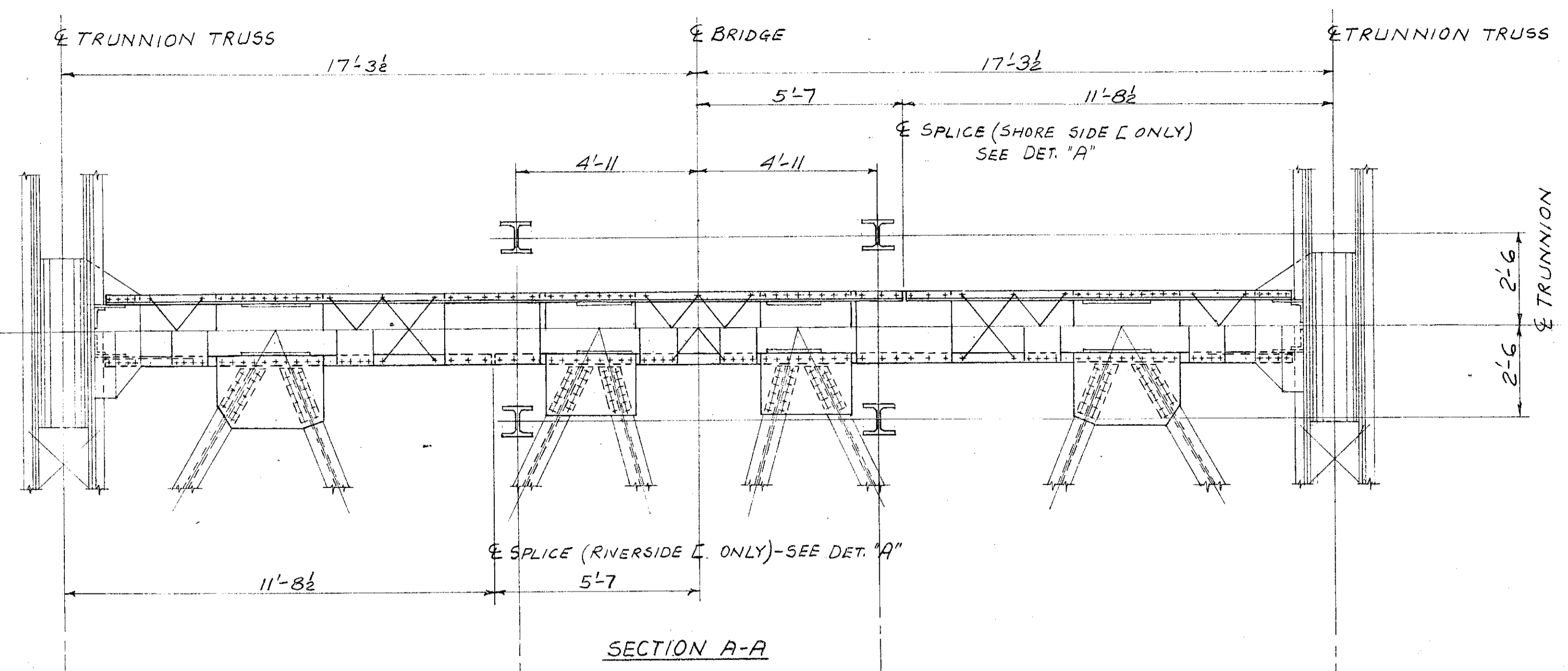
BILL OF MATERIAL					
LINE	MARK	No. Pcs.	SECTION	LENGTH	REMARKS
1	A	1	L 6 x 4 x $\frac{5}{8}$	8'-10"	
2	B	1	L 6 x 4 x $\frac{3}{4}$	2'-9 $\frac{1}{2}$ "	BEVEL END EDGES
3	C	1	R 8 $\frac{1}{2}$ x $\frac{5}{8}$	7'-4 $\frac{1}{2}$ "	
4					
5	D	1	R 5 x $\frac{5}{8}$	8'-10"	
6					
7	E	1	R 18 x $\frac{3}{8}$	2'-6 $\frac{3}{4}$ "	
8					
9	F	4	R 22 x $\frac{3}{8}$	3'-4 $\frac{1}{2}$ "	
10					
11	G	1	R 3 x $\frac{5}{8}$	1'-6"	
12					
13	H	1	R 3 x 1	0'-3"	
14	K	1	R 3 x $\frac{3}{8}$	0'-3"	
15					
16					
17					
18					
19					
20					
21					
22					

$\frac{1}{8}$ " HOLES FOR  $\frac{3}{8}$ " RIVETS

SUPPLEMENTARY SHEET ①  
TO SET OF ③

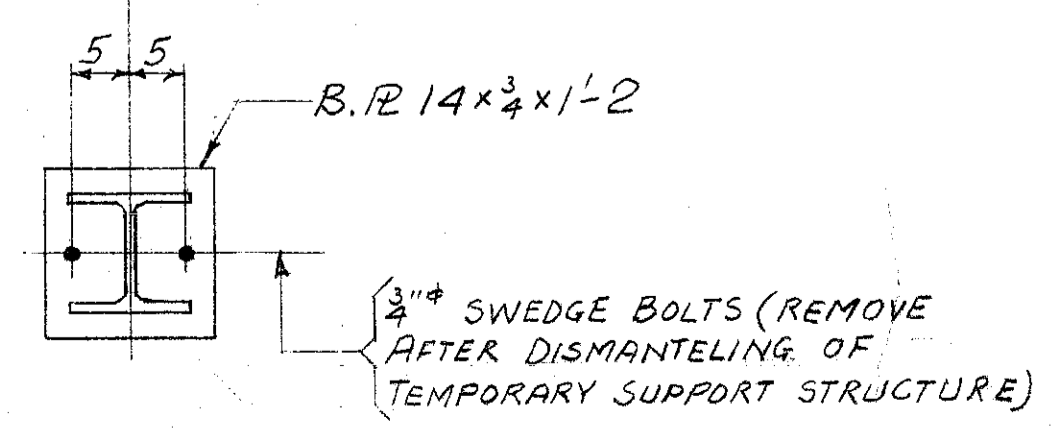
CITY OF CHICAGO DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING BRIDGE & VIADUCT DESIGN SECTION			
WEBSTER AVE. BRIDGE REDECKING & REHABILITATION REPAIRS TO S. E. TRUSS MEMBER 8-10			
DESIGNED BY A.P.	DRAWN BY KST	IN CHARGE AR	DATE Feb. 1968
APPROVED <i>H. Bernstein</i>		APPROVED <i>J. Kauer</i>	
BRIDGE ENGINEER		CHIEF BRIDGE ENGINEER	
DRWG. NO. 30559		FILE NO. 11-A59-26A	

1660570135



- INSTALLATION PROCEDURE:**
- 1) FURNISH & INSTALL TEMPORARY SUPPORT STRUCTURE.
  - 2) RAISE SCREW JACKS FOR BVFG7 TO BEAR AGAINST UNDERSIDE OF 15B33.
  - 3) REMOVE BOTTOM CHORD OF TRUNNION FLOOR BEAM.
  - 4) RAISE SCREW JACKS TO ATTAIN A 1/8" UPWARD DEFLECTION OF THE 15B33 @ THE E OF BRIDGE.
  - 5) FURNISH & INSTALL NEW BOTTOM CHORD OF TRUNNION FLOOR BEAM.
  - 6) REMOVE TEMPORARY SUPPORT STRUCTURE.
  - 7) REPEAT STEPS 1 THROUGH 6 FOR OPPOSITE SIDE.

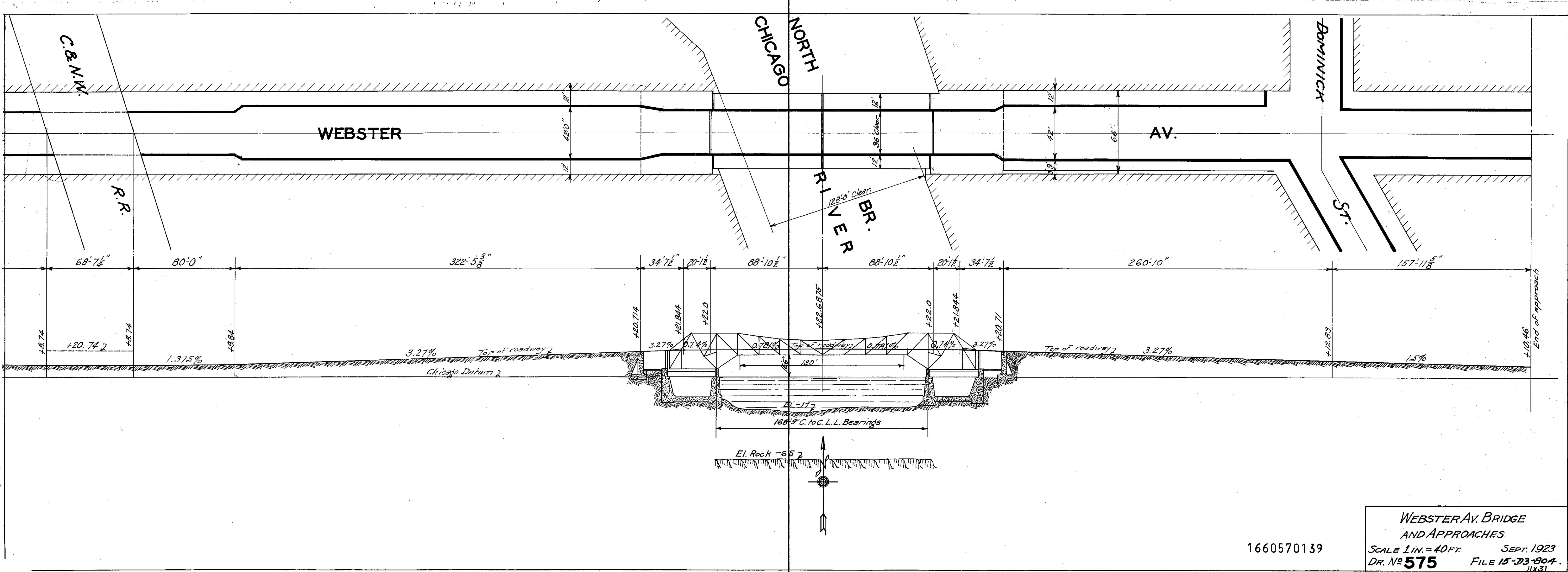
- NOTES:**
- 1) TRAFFIC TO BE LIMITED TO LIGHT VEHICLES DURING THIS REPAIR.
  - 2) FOR EXISTING BOTTOM CHORD OF TRUNNION FLOOR BEAM SEE DRAWING FILE 11-GB-31 & 11-GB-32.
  - 3) FIELD CONNECTIONS FOR TEMPORARY SUPPORT STRUCTURE - 3/4" H.S. BOLTS.



SUPPLEMENTARY SHEET ② TO SET OF ⑬

CITY OF CHICAGO DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING BRIDGE & VIADUCT DESIGN SECTION			
WEBSTER AVE. BRIDGE REDECKING & REHABILITATION REPAIRS TO TRUNNION FLOOR BEAM			
DATE A.P.	DESIGNER KST	CHECKER AR	DATE Feb 1968
DRAWN BY H. Bernstein		APPROVED J. Colgan	
DRWG. NO. 30560		FILE NO. 11-A59-26B	

1660570137



1660570139

**WEBSTER AV. BRIDGE  
AND APPROACHES**  
 SCALE 1 IN. = 40 FT.      SEPT. 1923  
 DR. NO. **575**      FILE 15-D3-804.  
 11x31

# PLAT OF SURVEY

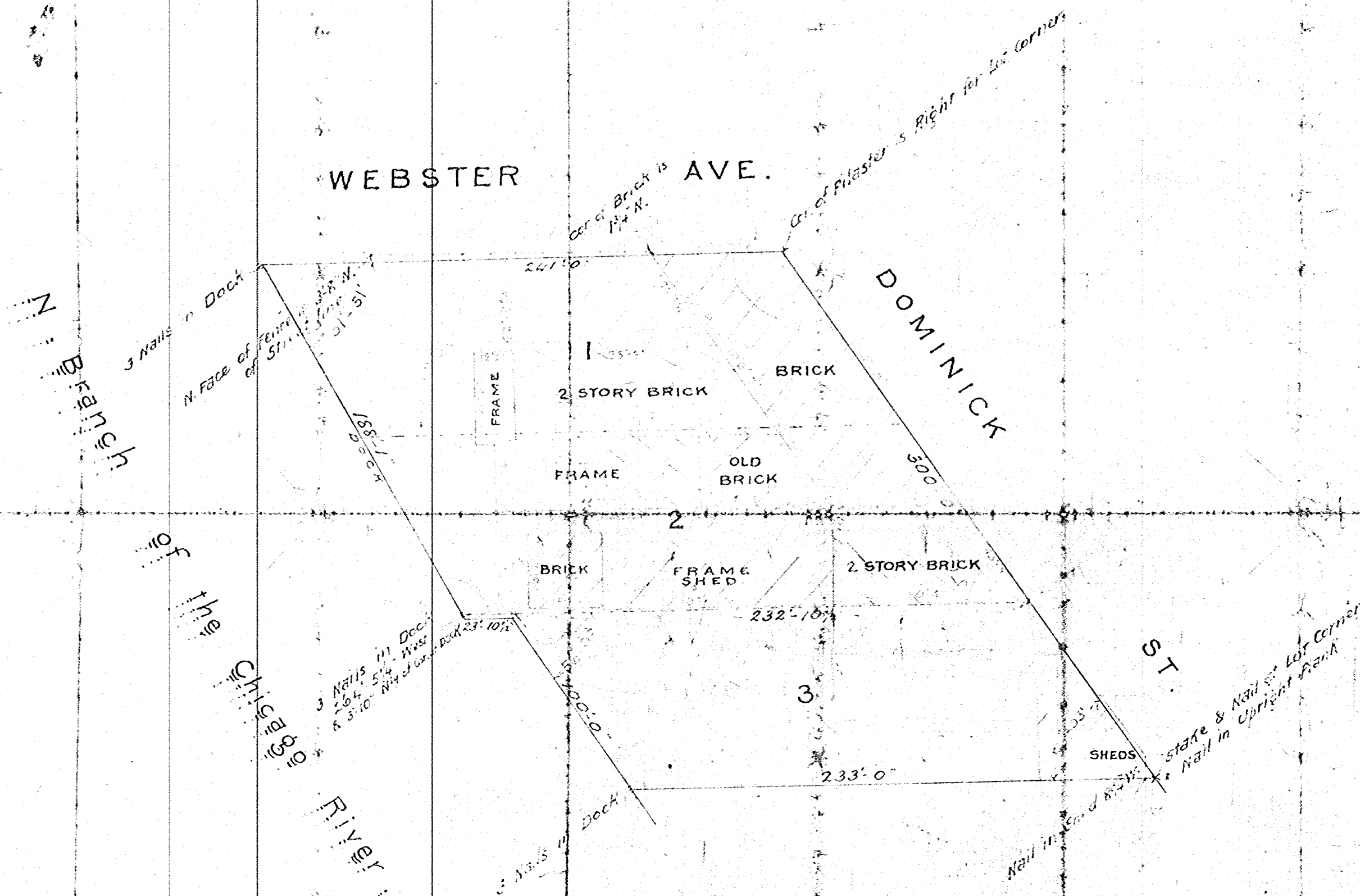
BY

EMIL RUDOLPH

408 CHICAGO OPERA HOUSE

OF

*Lots 1, 2 and 3, Block 6, Dominick's Sub<sup>n</sup> of Lots 1, 2 and 3 in Block 11, of  
Sheffield's Addition to Chicago, being a sub<sup>n</sup> in the North West 1/4 of section 37,  
Township 4<sup>th</sup> North, Range 17 East of the 3<sup>rd</sup> Principal Meridian.*



*Office Copy  
Not to be taken from  
the Files*

STATE OF ILLINOIS, )  
COUNTY OF COOK, )

I, EMIL RUDOLPH, do hereby certify that  
I have surveyed for M. G. Lutz  
the above described tract of land, and that the annexed  
plat is a correct representation of said survey.

CHICAGO, April 12<sup>th</sup> & 13<sup>th</sup> A. D. 1897.

*Emil Rudolph*  
SURVEYOR.

Book 245, Page 74, No. 138

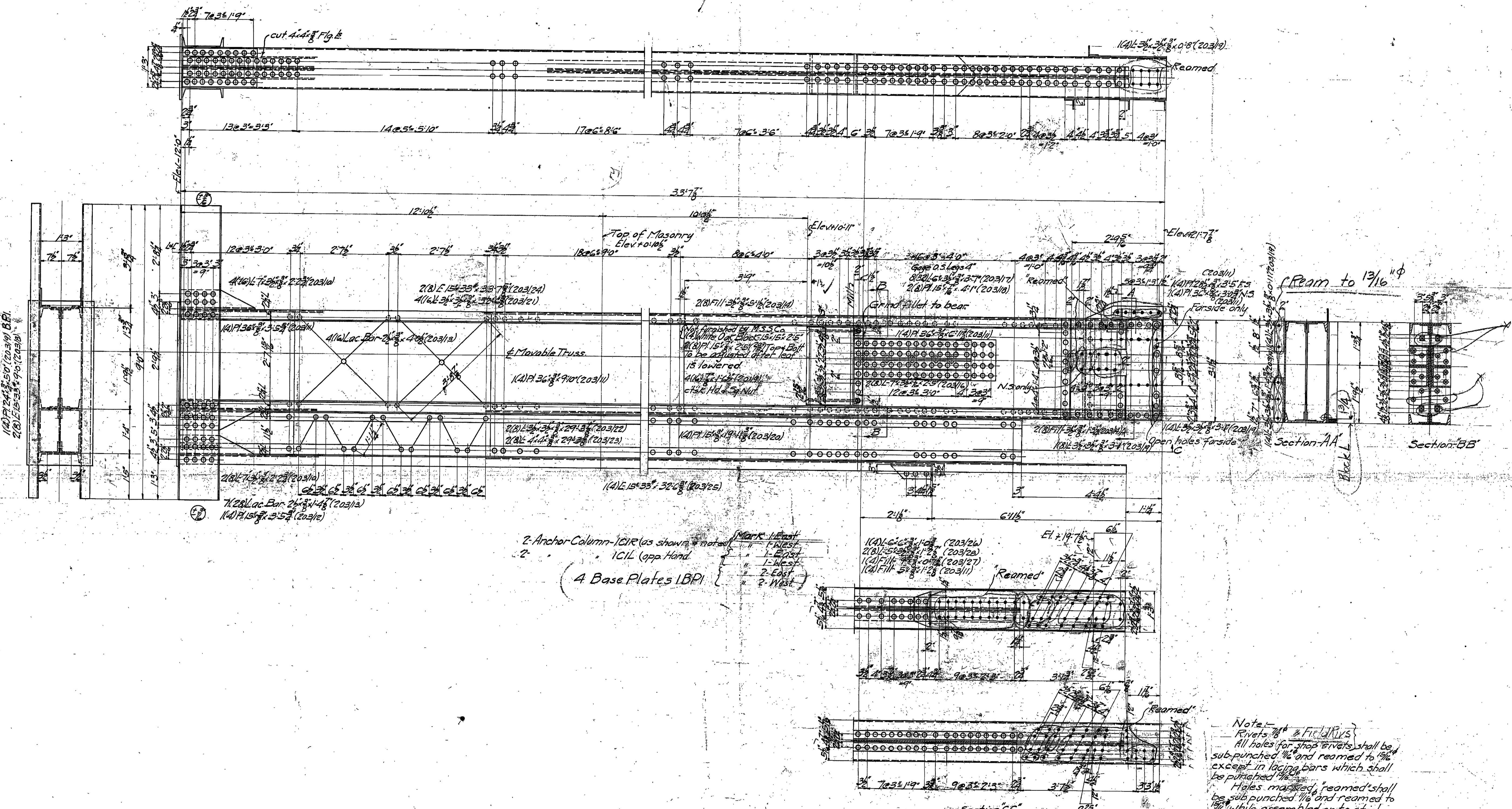
1660570140

FILE NO 25-04-651

18x21 1/2

0 CITY DATUM

Compare your points before building by the same, and AT ONCE report any difference.  
All distances marked in Feet and Inches.



2 Anchor Column-ICIL (as shown & noted)  
 2 ICIL (opp. Hand)  
 4 Base Plates LBPI

Mark 1-East  
 1-West  
 1-East  
 1-West  
 2-East  
 2-West

Note:  
 Rivets 7/8" Field Rivets  
 All holes for shop rivets shall be sub-punched 1/16" and reamed to 1/8" except in lacing bars which shall be punched 1/8".  
 Holes marked "reamed" shall be sub-punched 1/16" and reamed to 1/8" while assembled on to steel template.  
 Reaming to be done with twist drills and Ritzfoot using any lubricant.  
 Shop Paint  
 1 Coat of red lead and pure linseed oil, that least 24 lbs of red lead to 1 gallon of oil.

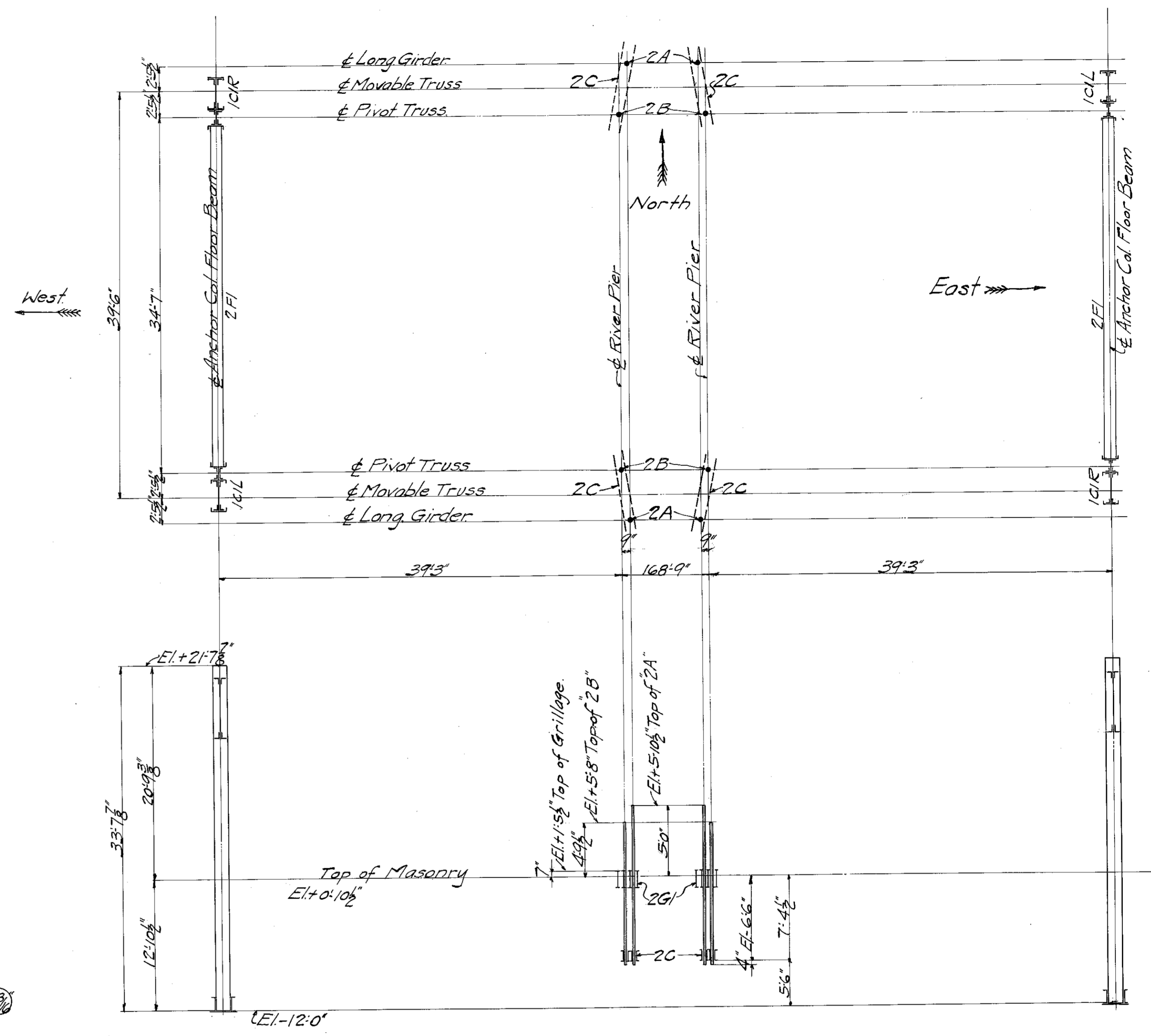
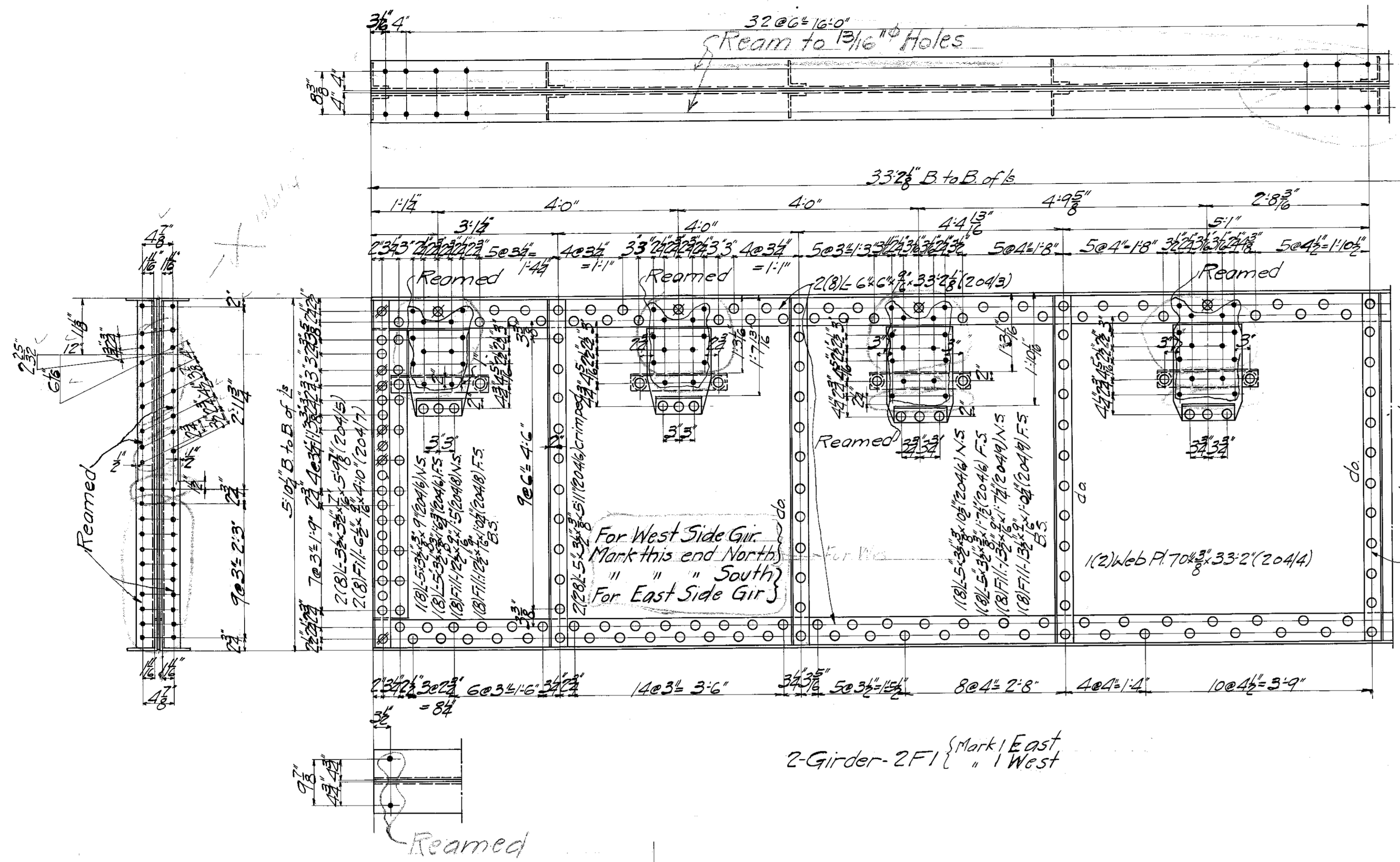
Shipping Note:  
 Care must be taken in blocking with wood (tops and sides) also bracing etc. so the columns during shipment do not get a permanent twist or bending.

Approved: *[Signature]*  
 Approved: *[Signature]*  
 Approved: *[Signature]*  
 Approved: *[Signature]*

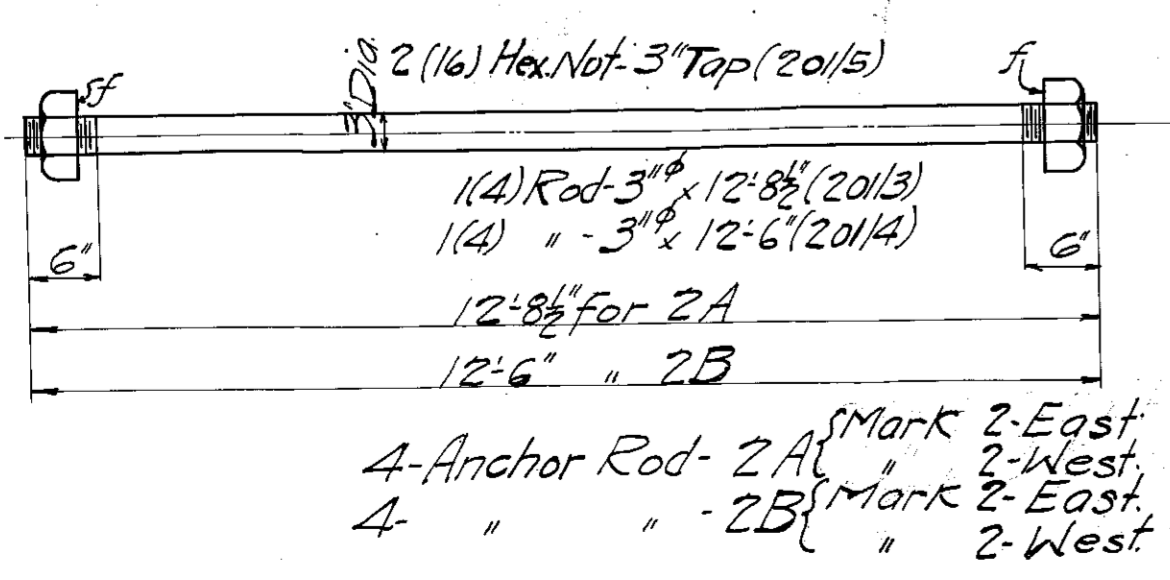
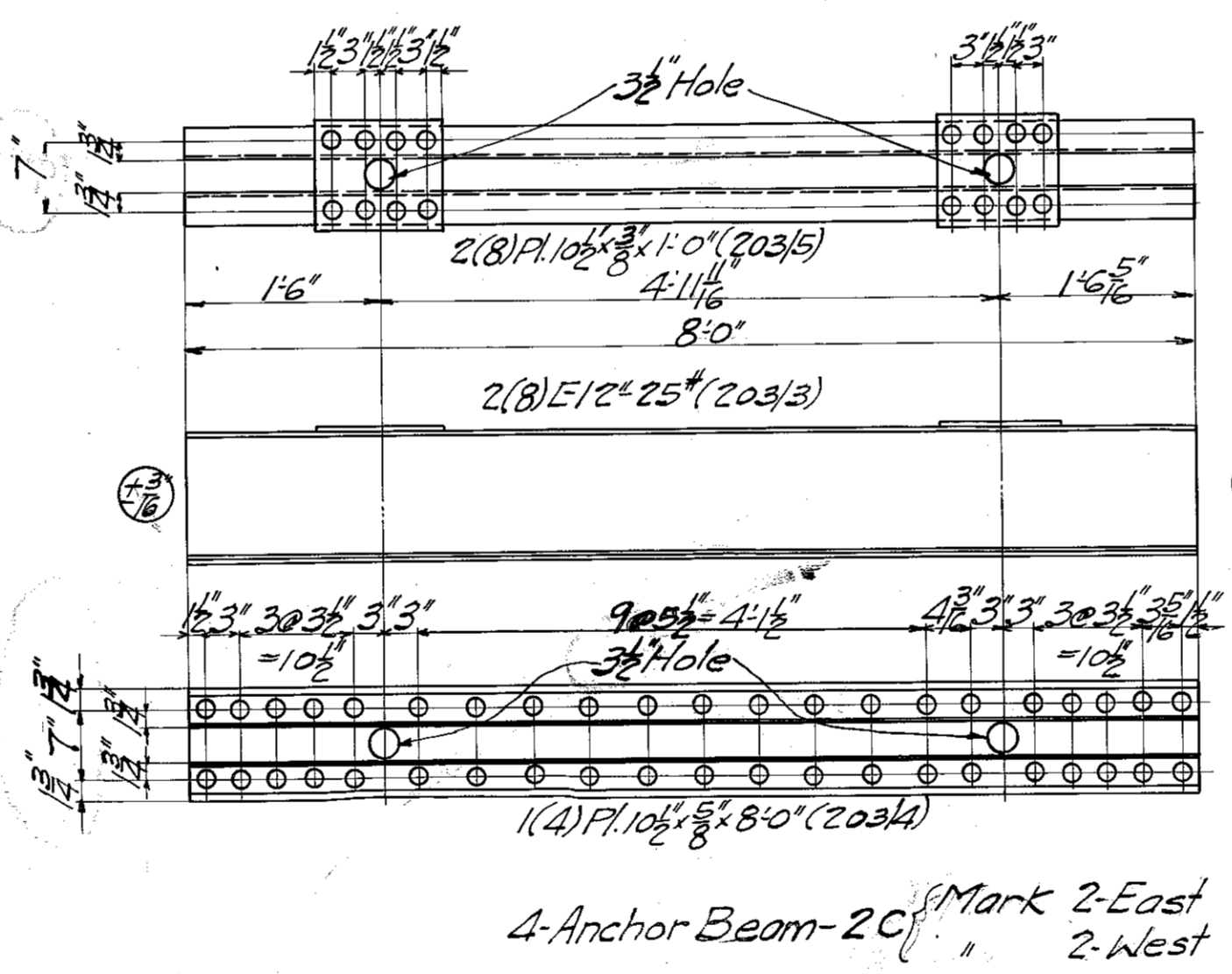
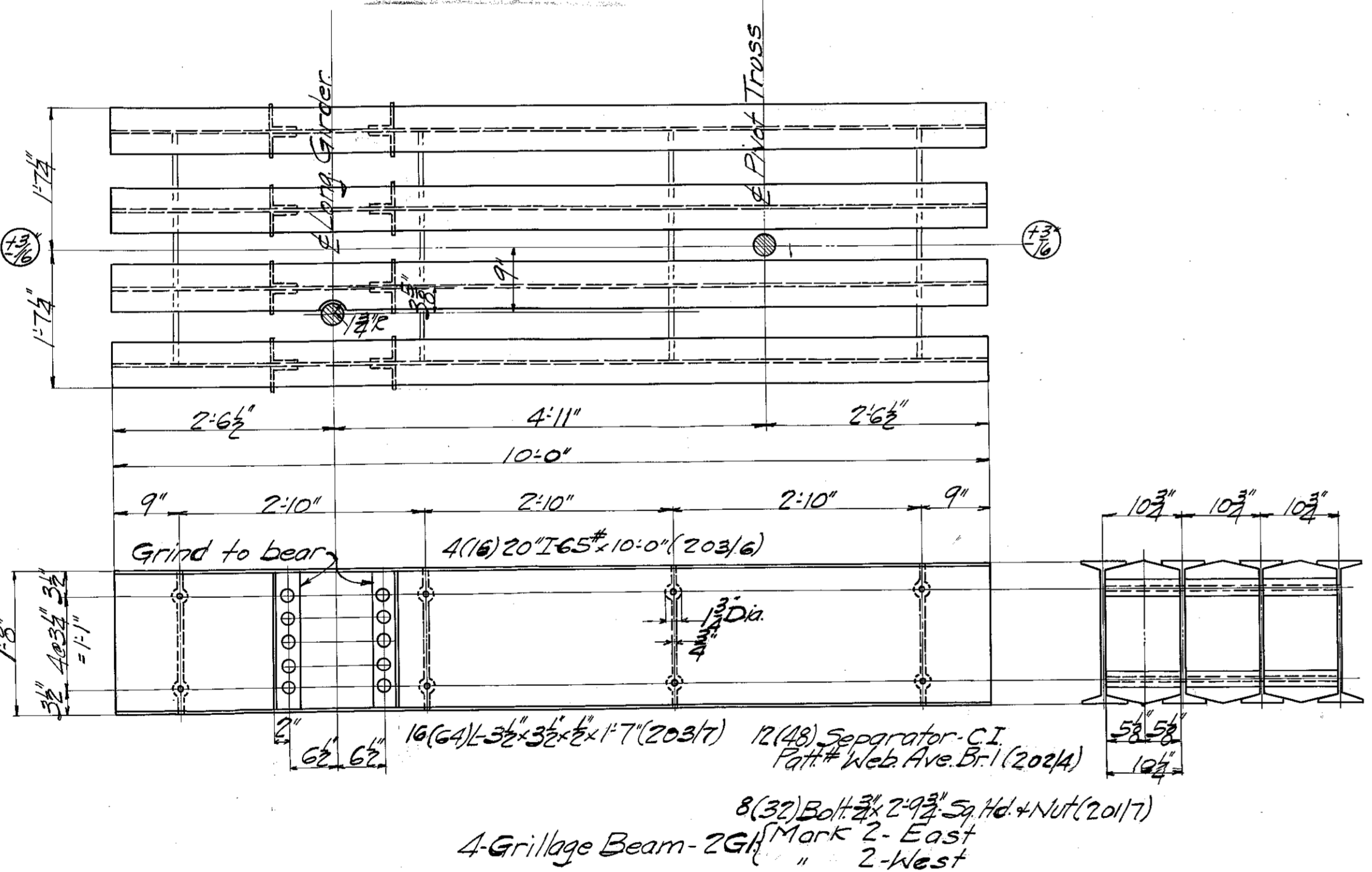
THE KETTLER-ELLIOTT ERECTION CO.,  
 WEBSTER AVE. BRIDGE  
 FOR THE  
 CITY OF CHICAGO  
 Dept. of Public Works :: Bureau of Engineering :: Division of Bridges and Harbors  
 MODERN STEEL STRUCTURAL COMPANY  
 Anchor Columns

CONTRACT No. 2201 SHEET No. 11

166057D163



Note:—  
 Rivets— $7/8$ "  
 All holes for shop rivets shall be sub-punched  $1/16$ " and reamed to  $1/16$ "  
 Holes marked "reamed" shall be sub-punched  $1/16$ " and reamed to  $1/16$ " while assembled or to steel temper.  
 Reaming to be done with twist drills and without using any lubricant.  
 Shop Paint:— See Sh. 1



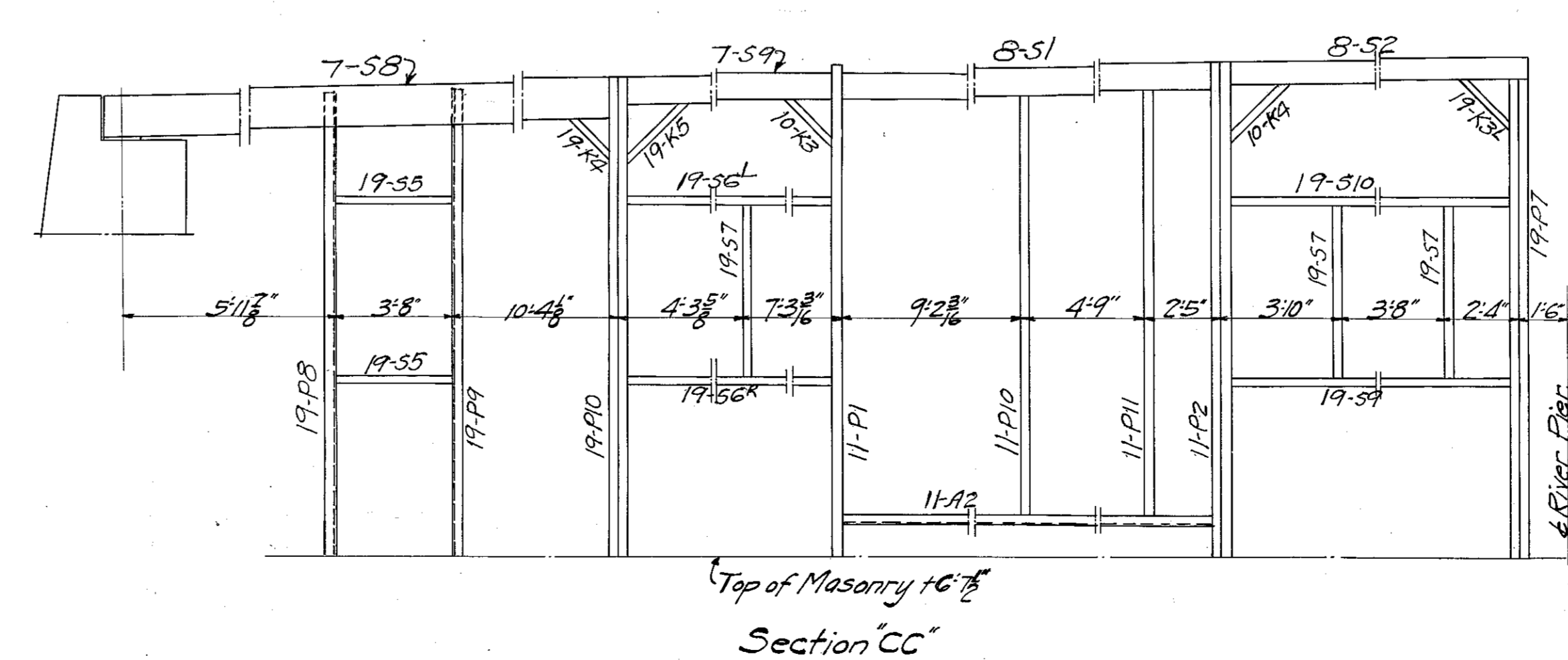
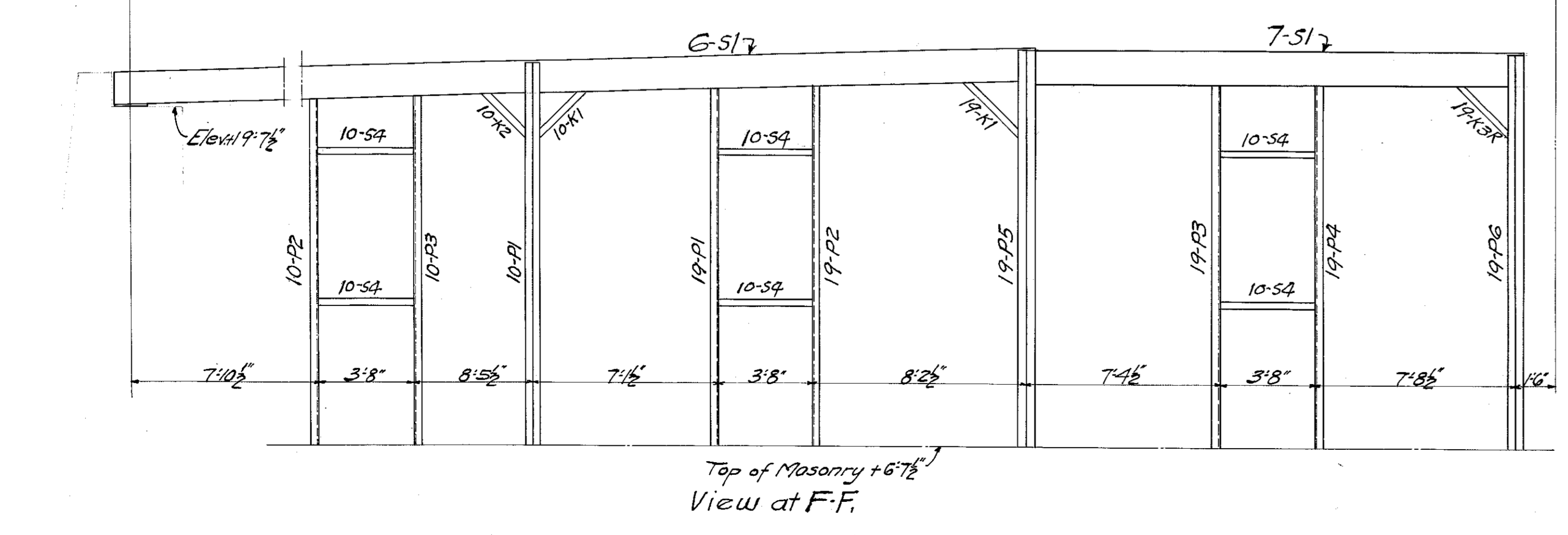
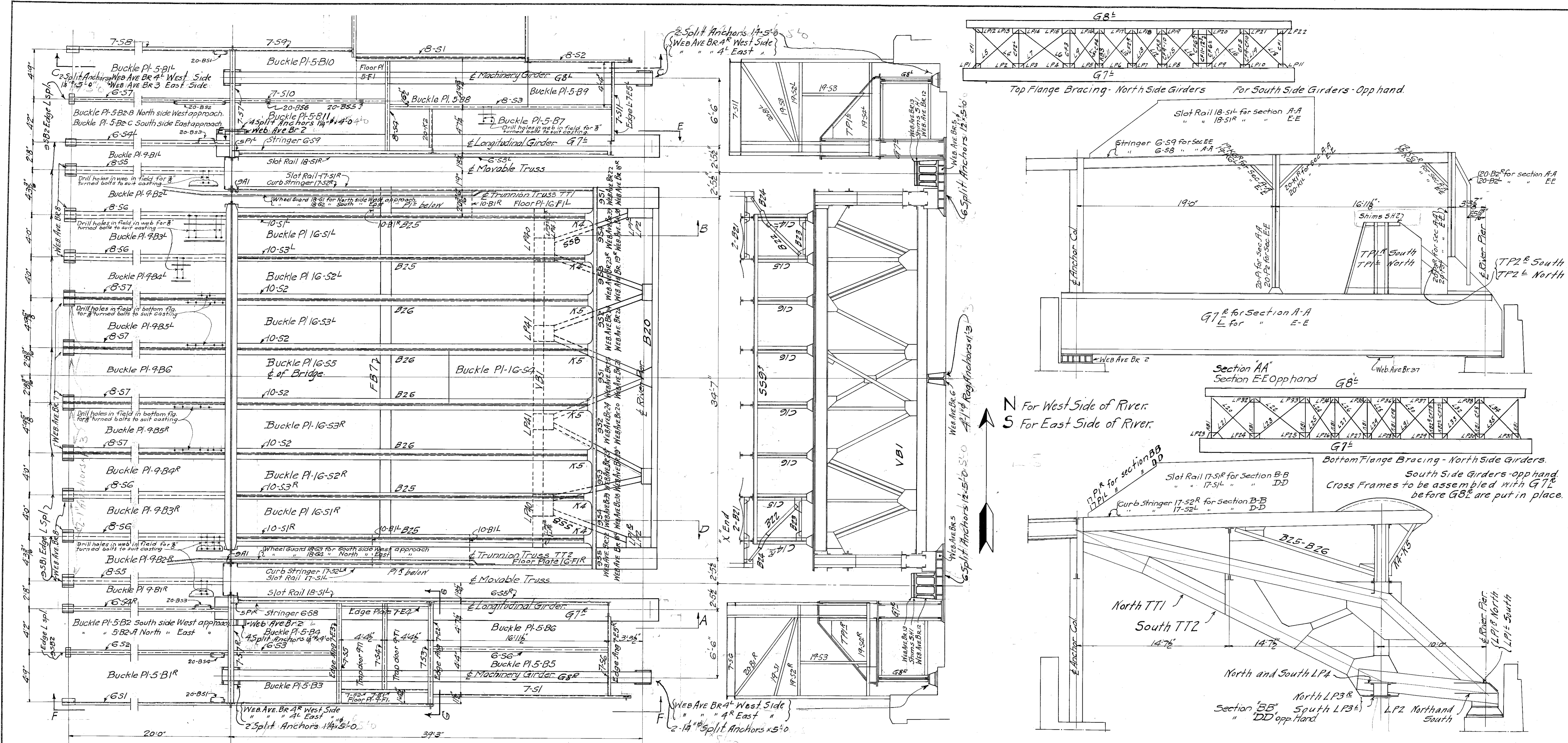
Revised 12/14 for Direction marks on 2E1.

THE KETLER-ELLIOTT ERECTION CO.  
**WEBSTER AVE. BRIDGE**  
 FOR THE  
**CITY OF CHICAGO**  
 Dept. of Public Works :: Bureau of Engineering :: Division of Bridges and Harbor  
**MODERN STEEL STRUCTURAL COMPANY**  
 Anchor Column Floor Beam-Grillage Beam

Approved *Francis von Tobo*  
 CHIEF ENGINEER  
 Approved *John G. Russell*  
 ENGINEER OF BRIDGES AND HARBOUR  
 Approved *William J. ...*  
 CITY ENGINEER  
 Approved *...*  
 COMMISSIONER OF PUBLIC WORKS

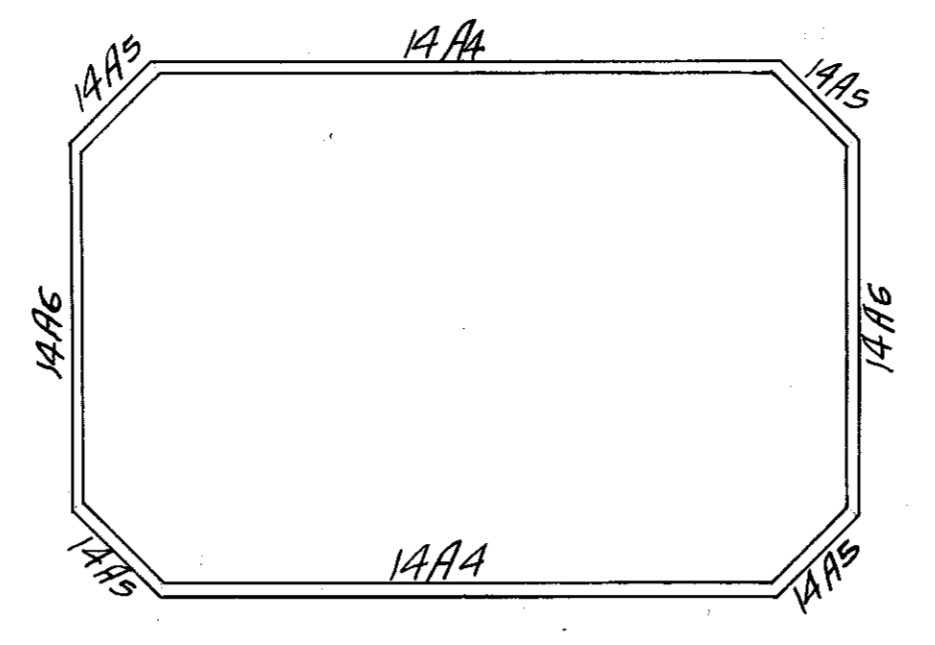
SEE MAT. BILLS 384 SCALE  $3/4$ " = 1 FT.  
 MADE BY EEH TRAGED BY EEH CHK'D BY M.R.N. 1914  
**CONTRACT No. 2201 SHEET No. 2**  
 DRAW. No. 3841  
 FILE No 11-6B-2

1660570164

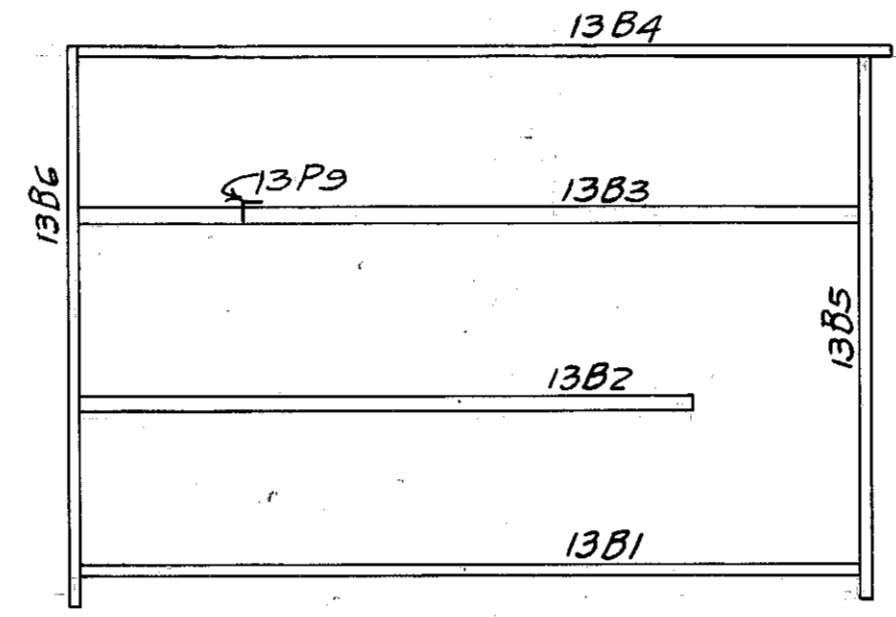


Approved *[Signature]*  
 Approved *[Signature]*  
 Approved *[Signature]*  
 Approved *[Signature]*

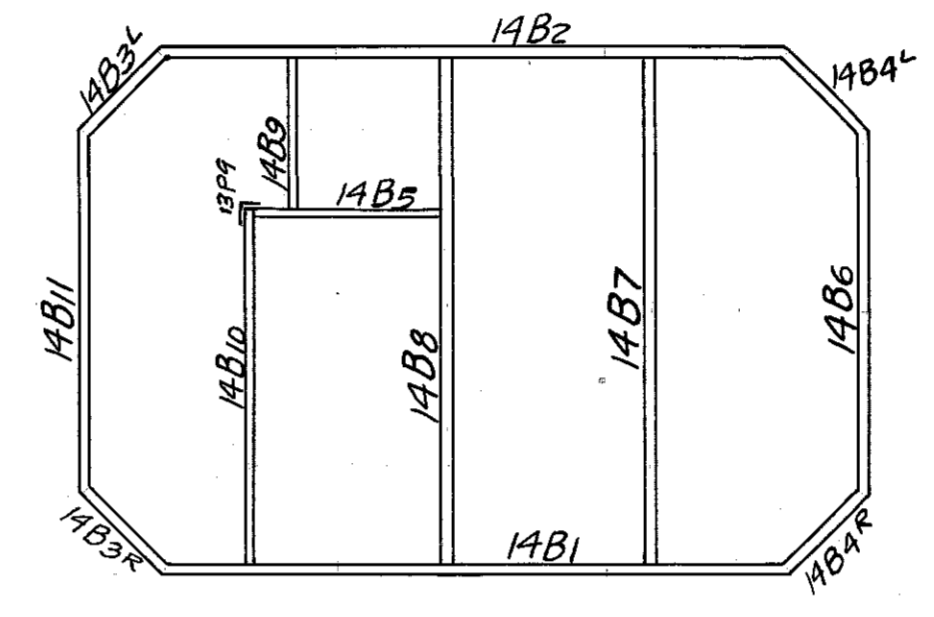
THE KETLER-ELLIOTT ERECTION CO.  
**WEBSTER AVE. BRIDGE**  
 FOR THE  
**CITY OF CHICAGO**  
 Dept. of Public Works :: Bureau of Engineering :: Division of Bridges and Harbor  
 MODERN STEEL STRUCTURAL COMPANY  
 General Diagram of Fixed Part  
 SEE MAT. BILLS. SCALE 1/4" = 1 FT.  
 MADE BY E.F.H. TRACED BY E.F.H. CHK'D BY [Signature] 1914  
**CONTRACT No. 2201M SHEET No. 3E**  
 DRAW. No. 3842  
 1660570165  
 FILE NO. 11-68-3



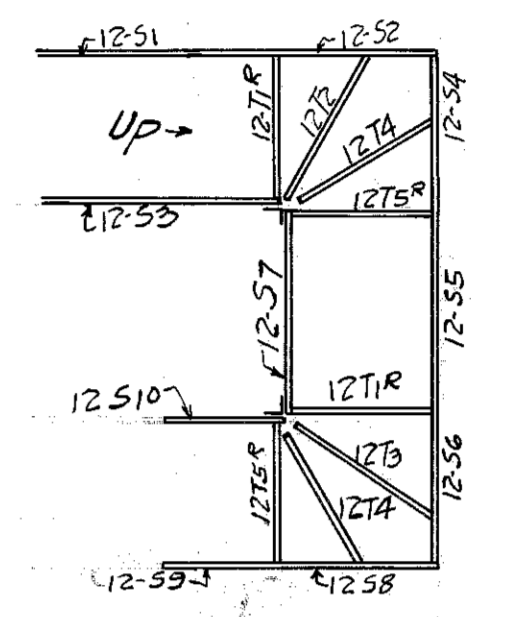
Top Plan.



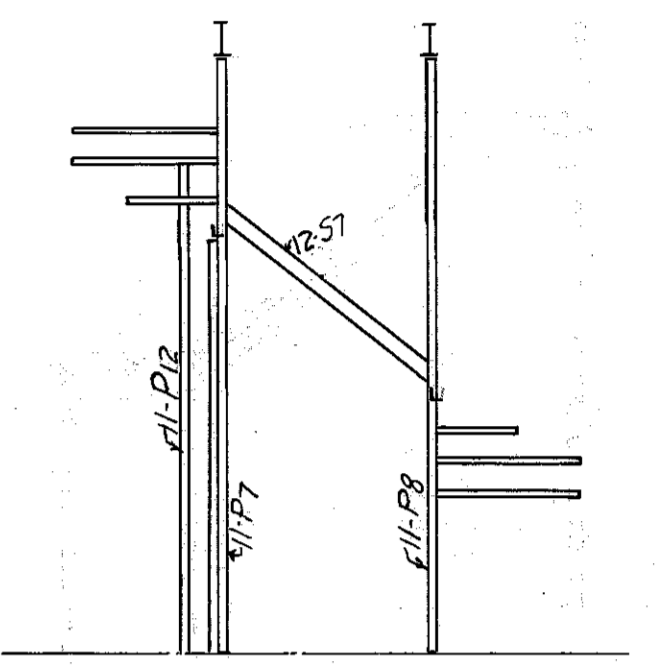
Section 'BB'



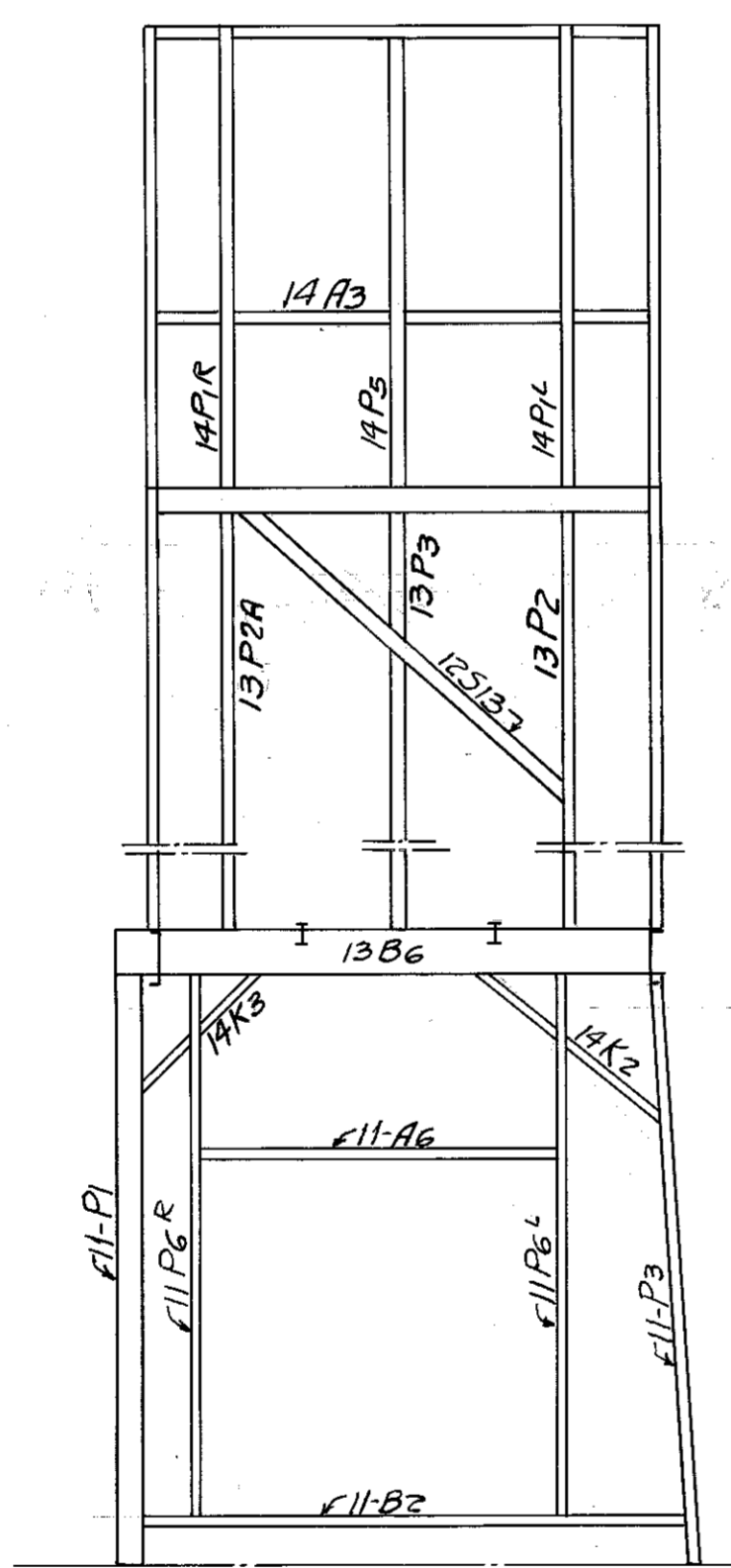
Section 'CC'



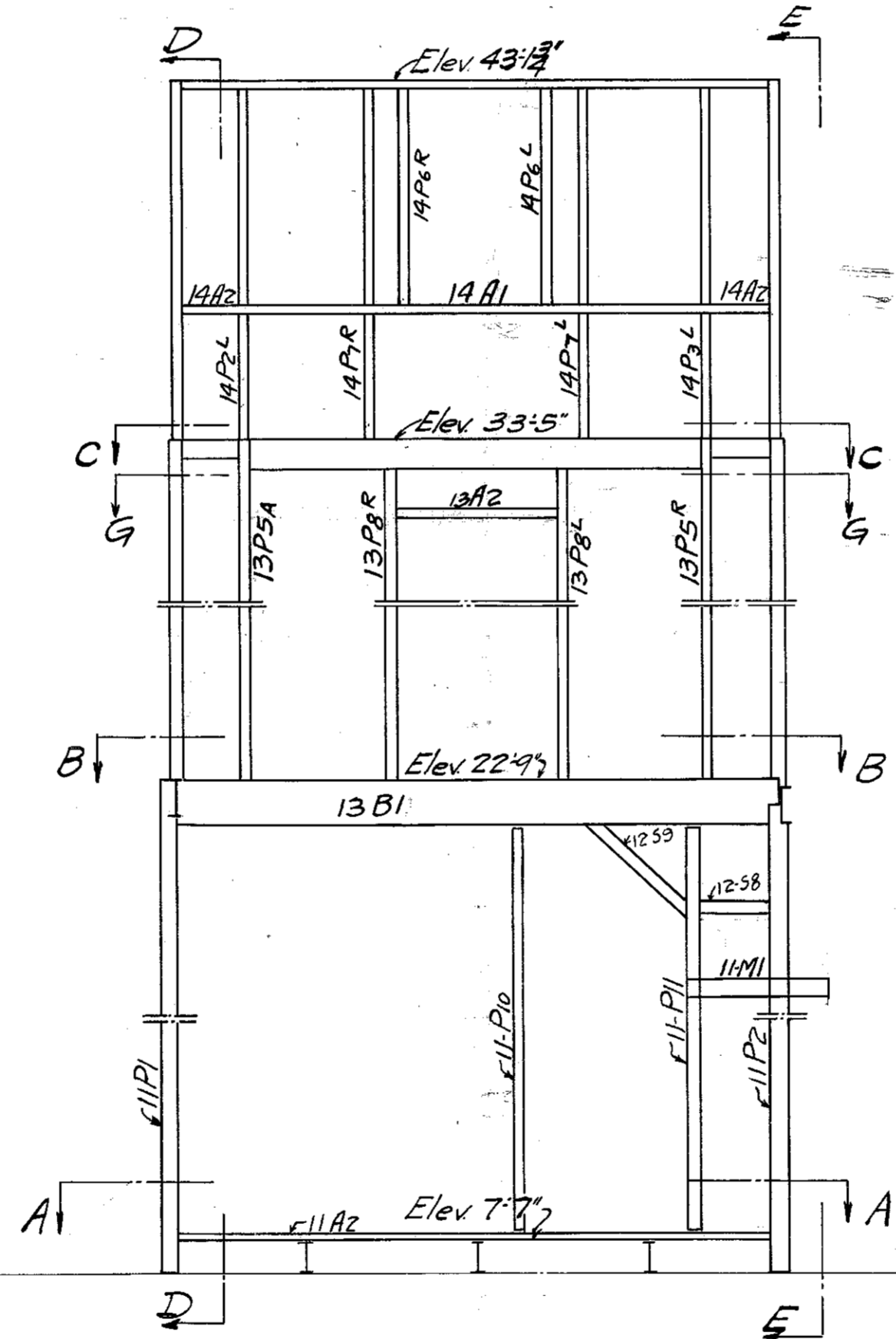
Section 'II'



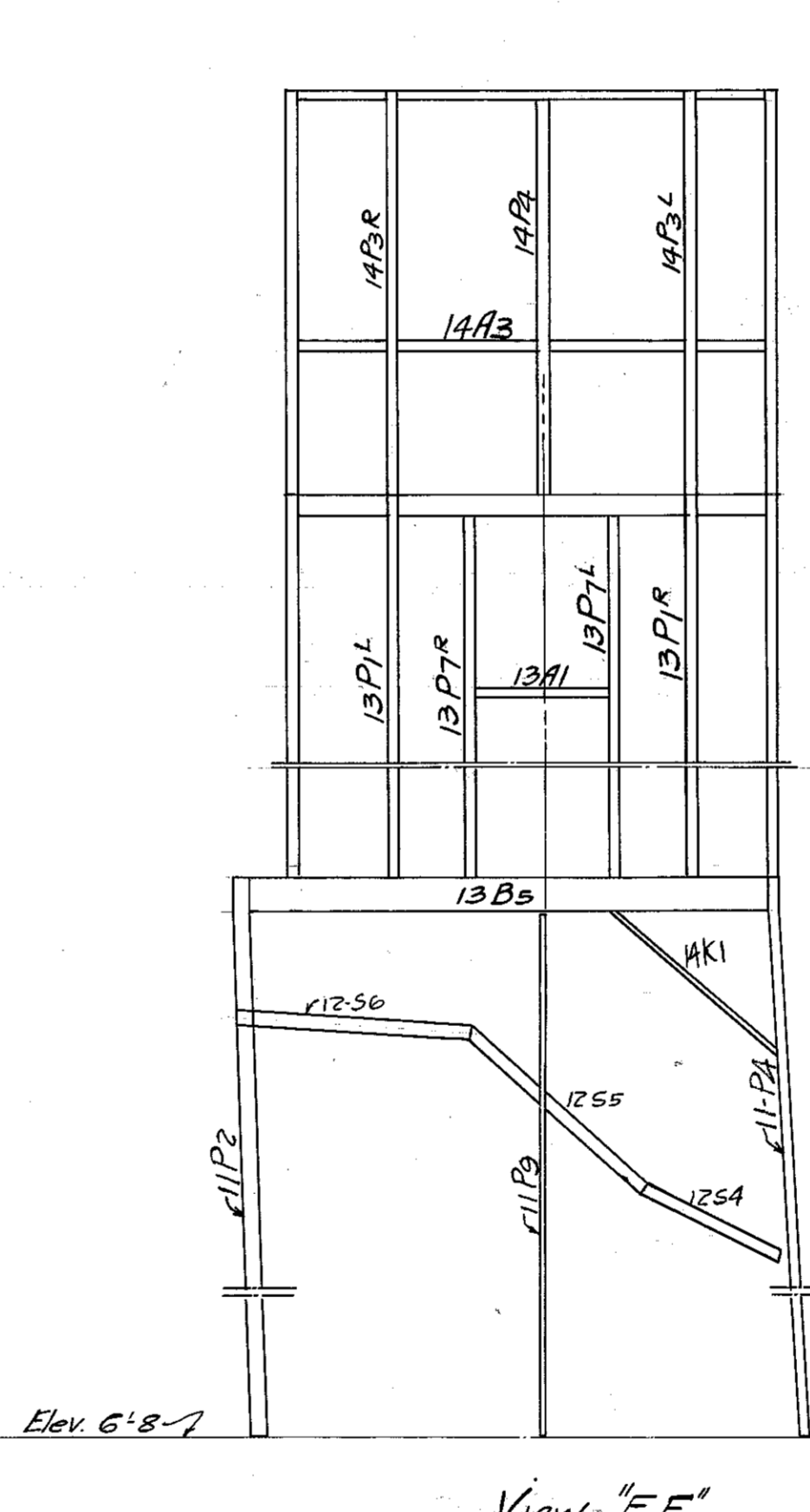
Section 'JJ'



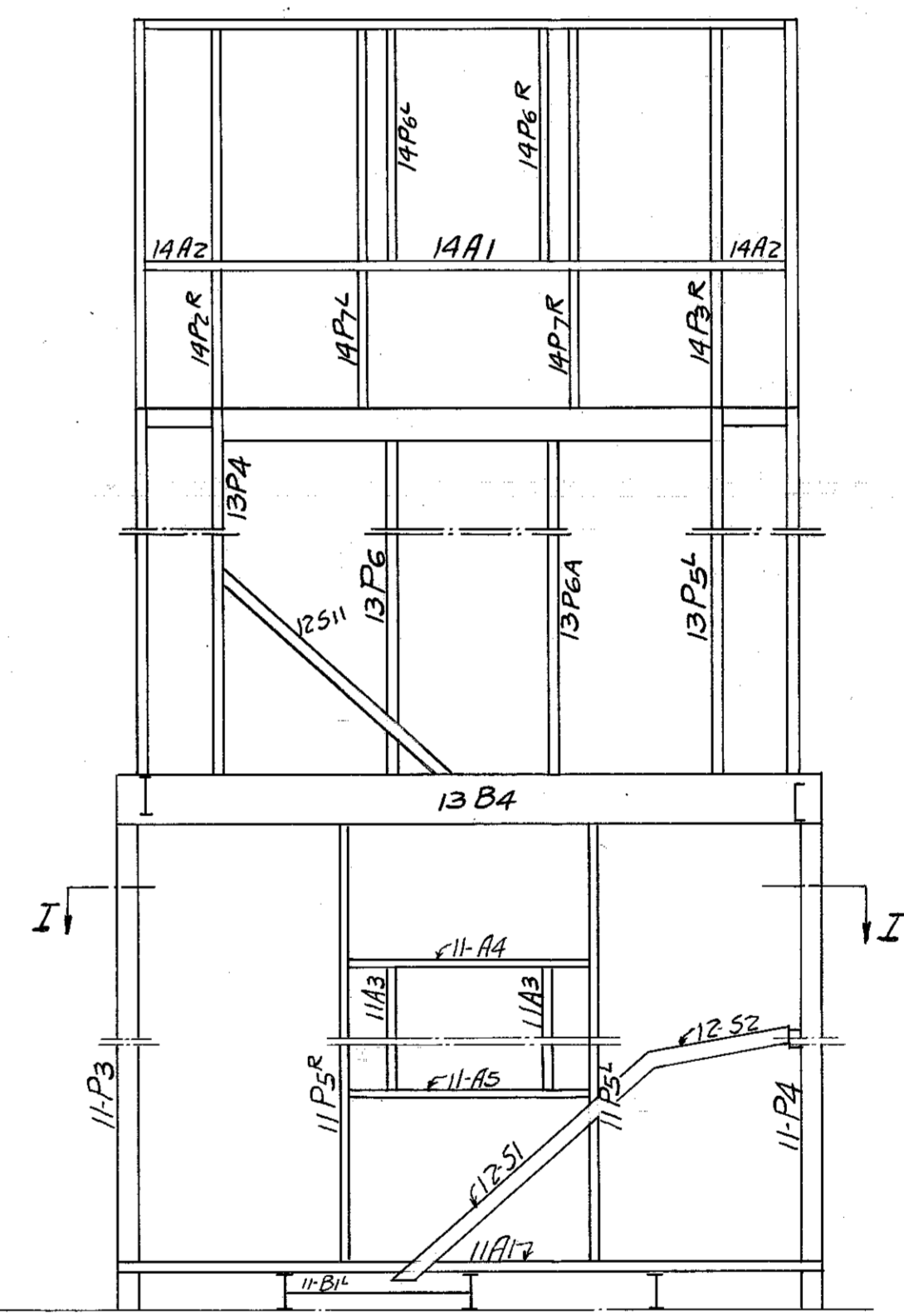
Section 'DD'



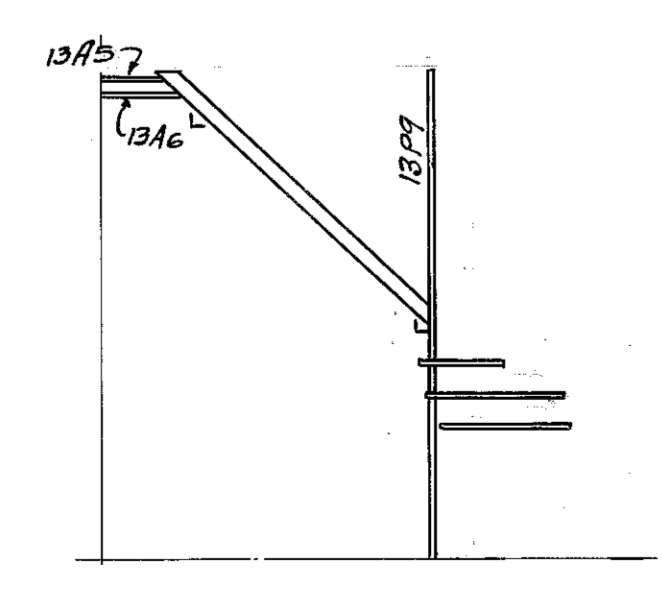
Front Elevation



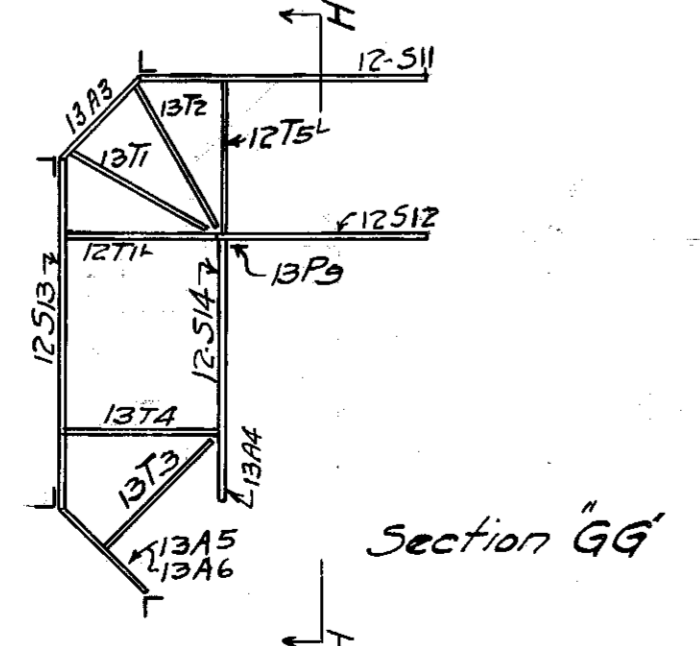
View 'EE'



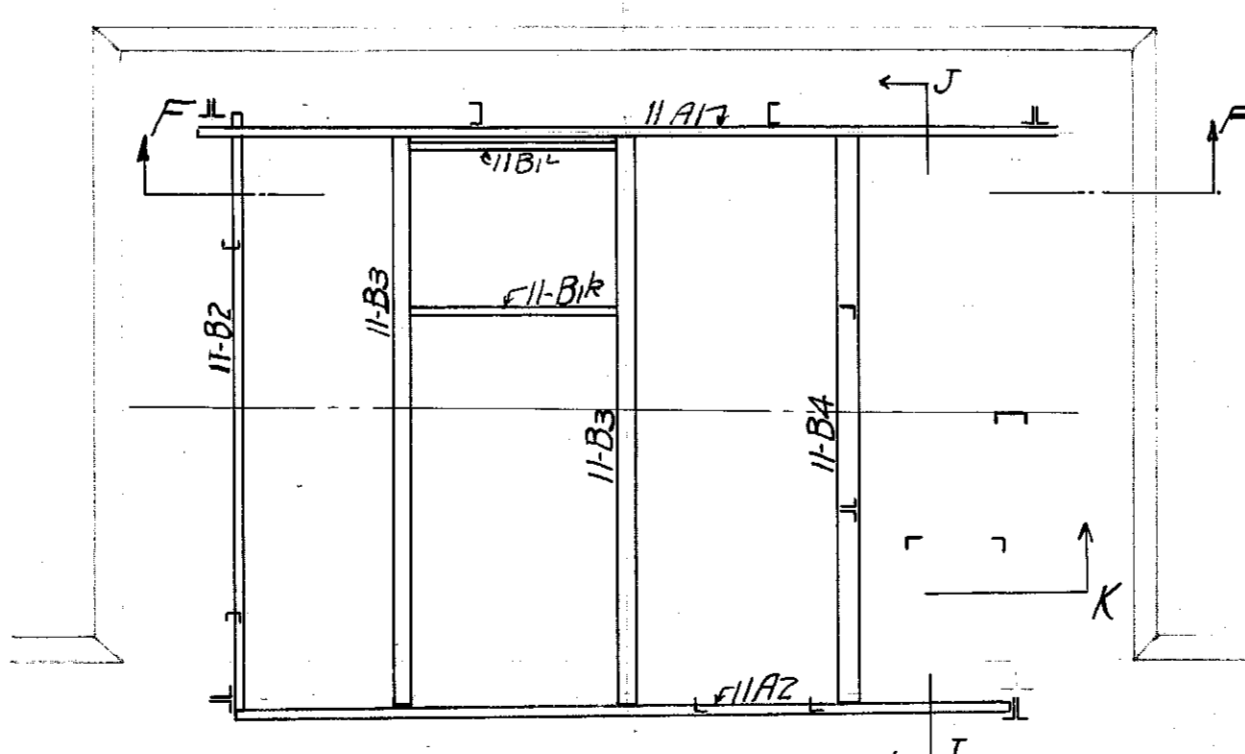
Section 'FF'



Section 'HH'

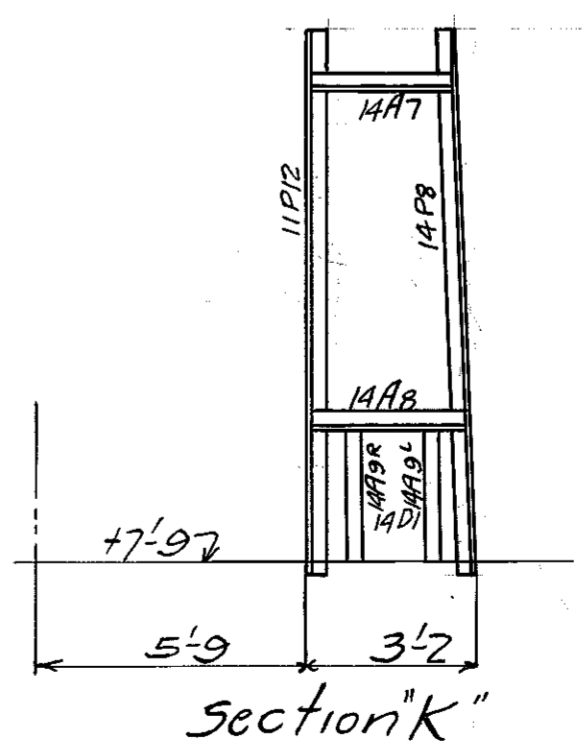


Section 'GG'



Section 'AA'

North for West Side of River  
South " East " " "



Section 'KK'

Note:  
All anchor bolts 1" x 1/3 for house.

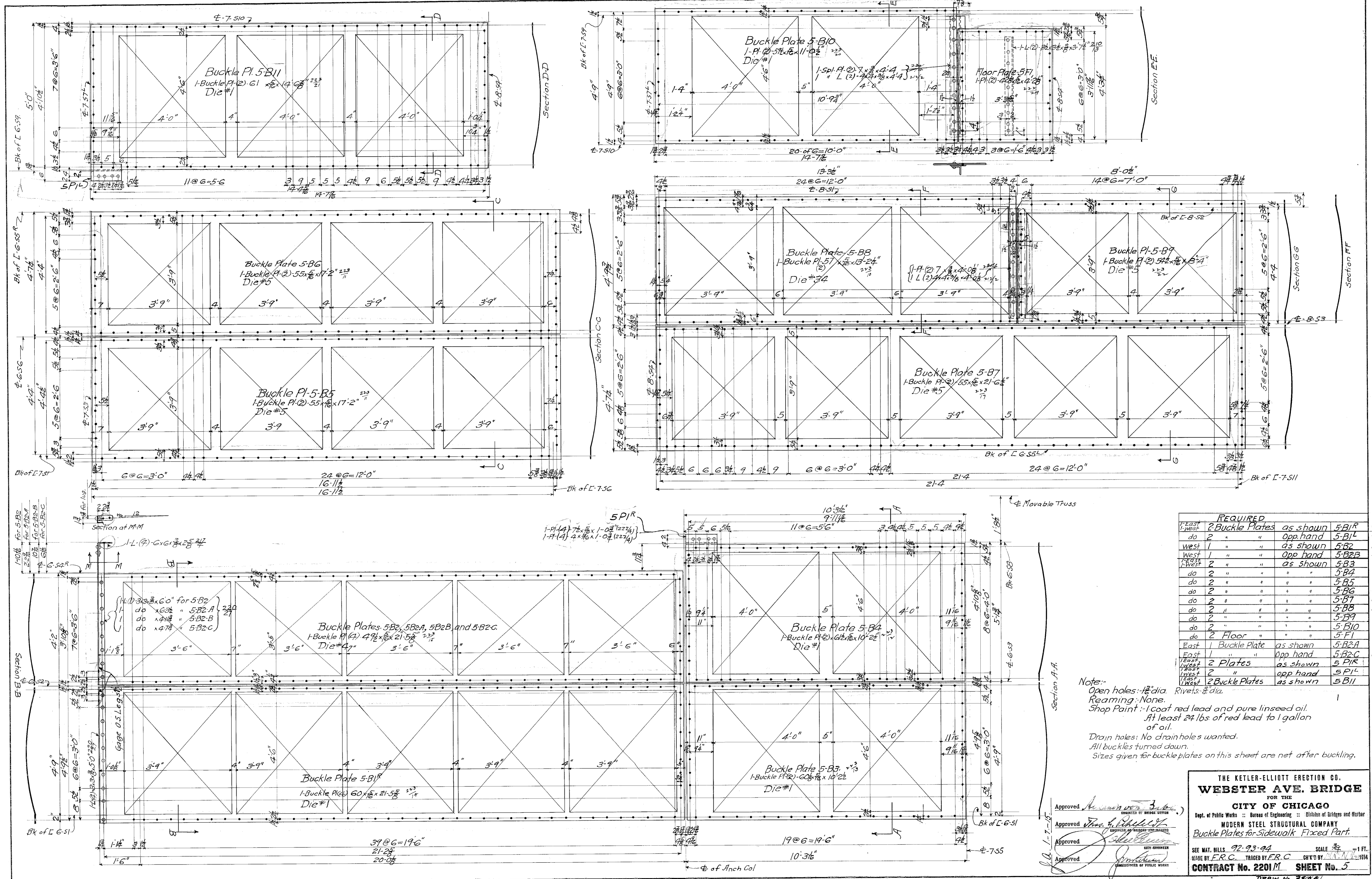
Approved *Alexander von Bako*  
ENGINEER OF BRIDGE DESIGN  
Approved *John J. Schaefer*  
ENGINEER OF STRUCTURAL DESIGN  
Approved *John Schaefer*  
CITY ENGINEER  
Approved *Robert J. Schaefer*  
COMMISSIONER OF PUBLIC WORKS

THE KETLER-ELLIOTT ERECTION CO.  
**WEBSTER AVE. BRIDGE**  
FOR THE  
**CITY OF CHICAGO**  
Dept. of Public Works :: Bureau of Engineering :: Division of Bridges and Harbor  
**MODERN STEEL STRUCTURAL COMPANY**  
Diagram of Operators House  
SEE MAT. BILLS  
MADE BY E.F.H. TRACED BY E.F.H. 1/19/1916  
SCALE 1/4" = 1 FT.  
CONTRACT No. 2201 G SHEET No. 4E

1660570165

DRAW. No 3843  
FILE No. 11-68-44



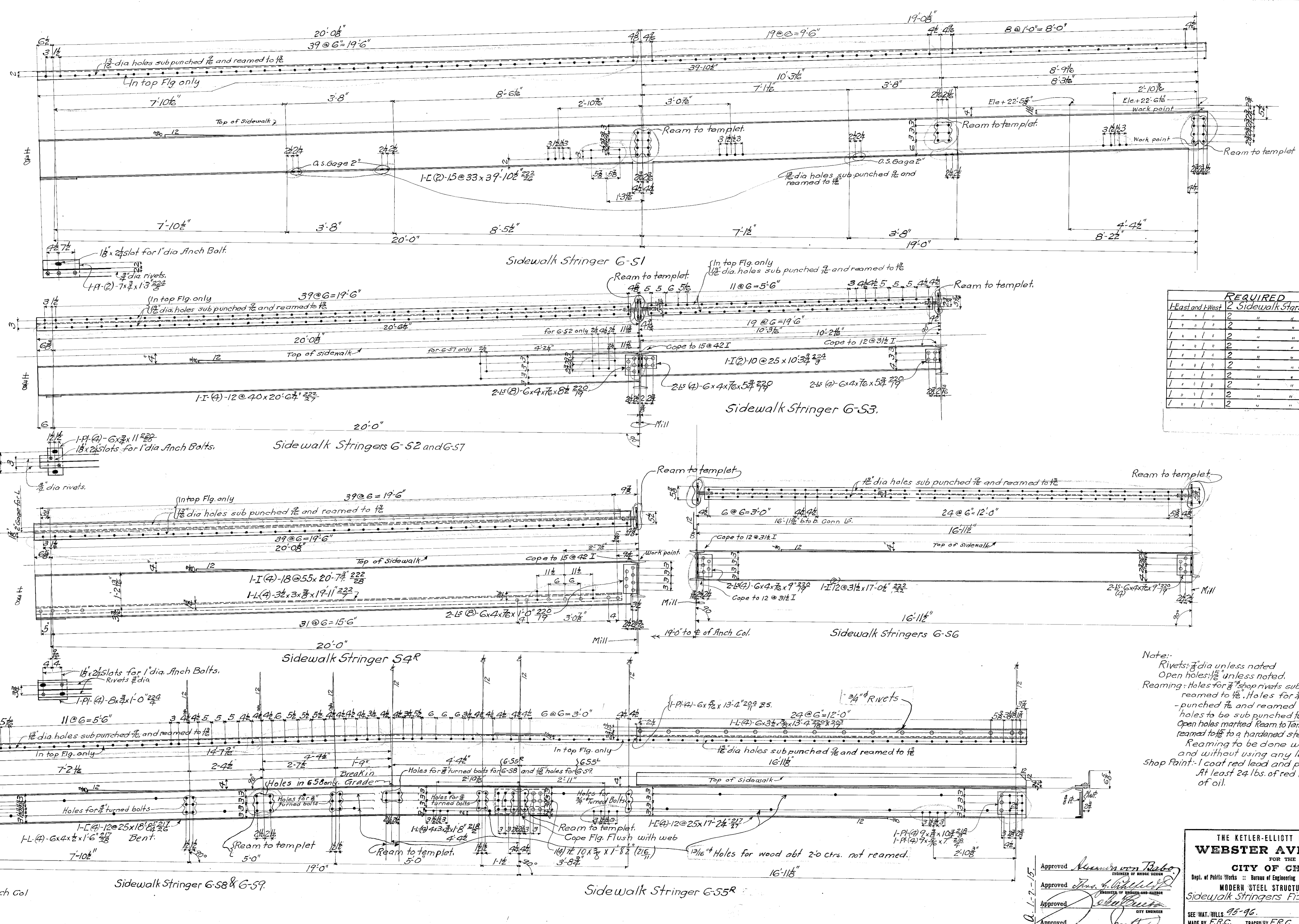


REQUIRED				
East	2	Buckle Plates	as shown	5-B1R
West	2	"	opp hand	5-B1L
West	1	"	as shown	5-B2
West	1	"	opp hand	5-B2B
West	2	"	as shown	5-B3
do	2	"	"	5-B4
do	2	"	"	5-B5
do	2	"	"	5-B6
do	2	"	"	5-B7
do	2	"	"	5-B8
do	2	"	"	5-B9
do	2	"	"	5-B10
do	2	"	"	5-F1
East	1	Buckle Plate	as shown	5-B2A
East	1	"	opp hand	5-B2C
West	2	Plates	as shown	5-B1R
West	2	"	opp hand	5-B1L
West	2	Buckle Plates	as shown	5-B11

Note:-  
 Open holes: 1/2" dia. Rivets: 3/4" dia.  
 Reaming: None.  
 Shop Point: 1-coat red lead and pure linseed oil.  
 At least 24 lbs of red lead to 1 gallon of oil.  
 Drain holes: No drain holes wanted.  
 All buckles turned down.  
 Sizes given for buckle plates on this sheet are net after buckling.

Approved *[Signature]*  
 Approved *[Signature]*  
 Approved *[Signature]*  
 Approved *[Signature]*

THE KETLER-ELLIOTT ERECTION CO.  
**WEBSTER AVE. BRIDGE**  
 FOR THE  
**CITY OF CHICAGO**  
 Dept. of Public Works :: Bureau of Engineering :: Division of Bridges and Harbor  
**MODERN STEEL STRUCTURAL COMPANY**  
 Buckle Plates for Sidewalk Fixed Part.  
 SEE MAT. BILLS 92-93-94 SCALE 1/4" = 1 FT.  
 MADE BY E.R.C. TRAGED BY E.R.C. CH'K'D BY *[Signature]*  
**CONTRACT No. 2201M SHEET No. 5**

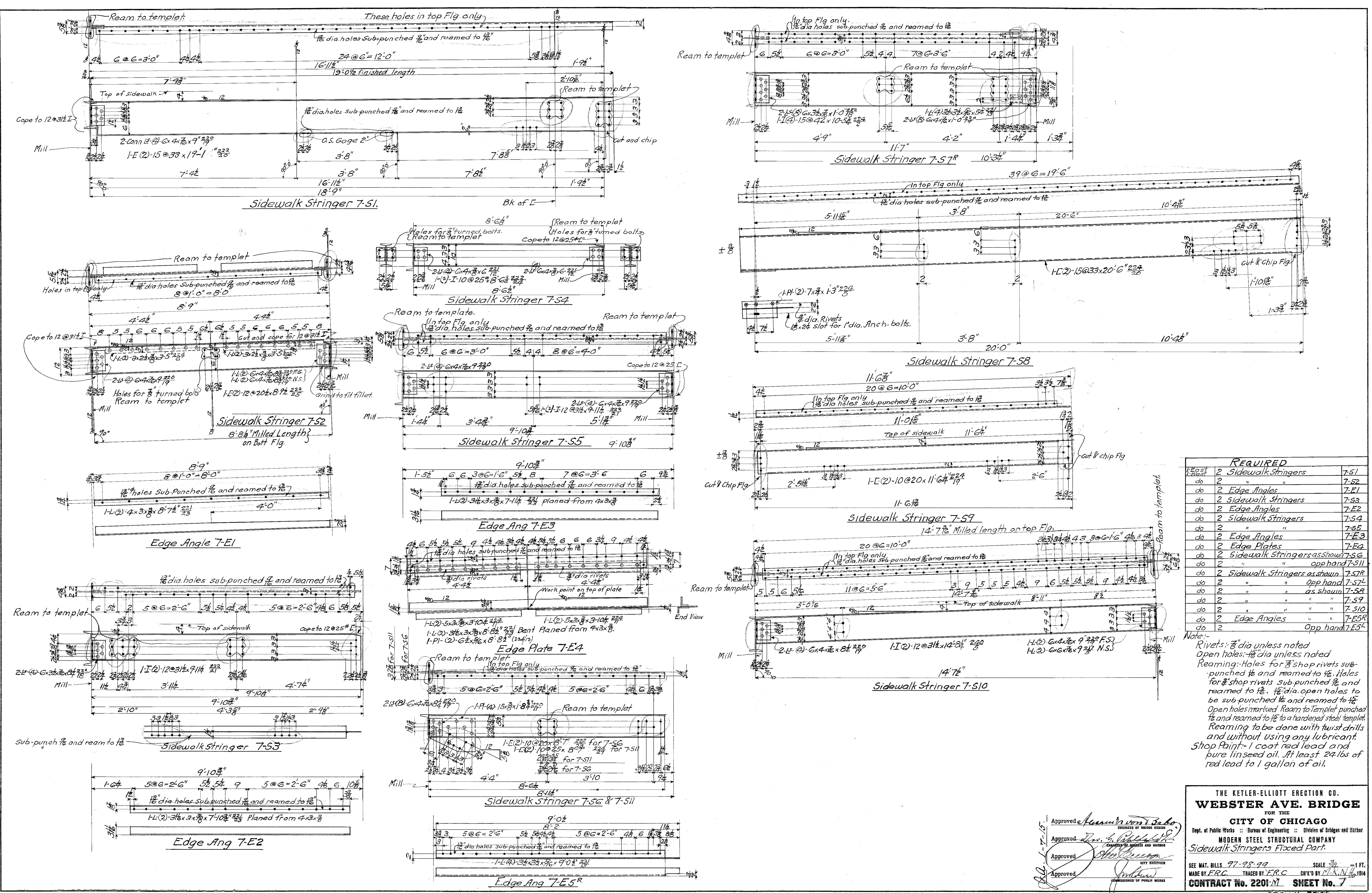


REQUIRED		
1 East and 1 West	2 Sidewalk Stars	G-51
1 " " "	" " "	G-52
1 " " "	" " "	G-53
1 " " "	" " " as shown	G-54R
1 " " "	" " " Opp hand	G-54L
1 " " "	" " " as shown	G-55R
1 " " "	" " " Opp hand	G-55L
1 " " "	" " " as shown	G-56
1 " " "	" " " " "	G-57
1 " " "	" " " " "	G-58
1 " " "	" " " Opp hand	G-59

Note:  
 Rivets: 3/4 dia unless noted  
 Open holes: 1/2 unless noted.  
 Reaming: Holes for 3/8 shop rivets sub punched 1/8 and reamed to 1/2. Holes for 3/8 shop rivets sub-punched 1/8 and reamed to 1/2. 1/2 open holes to be sub punched 1/8 and reamed to 1/2.  
 Reaming to be done with twist drills and without using any lubricant.  
 Shop Paint: 1 coat red lead and pure linseed oil. At least 24 lbs. of red lead to 1 gallon of oil.

Approved *Norman von Rabe*  
 ENGINEER OF BRIDGE DESIGN  
 Approved *John A. ...*  
 APPROVED BY BRIDGE AND MARINA  
 Approved *...*  
 CITY ENGINEER  
 Approved *...*  
 SUPERVISOR OF PUBLIC WORKS

THE KETLER-ELLIOTT ERECTION CO.  
**WEBSTER AVE. BRIDGE**  
 FOR THE  
**CITY OF CHICAGO**  
 Dept. of Public Works :: Bureau of Engineering :: Division of Bridges and Harbors  
**MODERN STEEL STRUCTURAL COMPANY**  
 Sidewalk Stringers Fixed Part.  
 SEE MAT. BILLS 95-96. SCALE 3/8"  
 MADE BY F.R.C. TRACED BY F.R.C. CH'D BY M.F.  
**CONTRACT No. 2201/M SHEET #**  
 DRAW. No. 337  
 FILE No. 11-48-



**REQUIRED**

1-5 1/2"	2 Sidewalk Stringers	7-51
do 2"	"	7-52
do 2"	Edge Angles	7-E1
do 2"	Sidewalk Stringers	7-53
do 2"	Edge Angles	7-E2
do 2"	Sidewalk Stringers	7-54
do 2"	"	7-55
do 2"	Edge Angles	7-E3
do 2"	Edge Plates	7-E4
do 2"	Sidewalk Stringers as shown	7-56
do 2"	"	Opp hand 7-511
do 2"	Sidewalk Stringers as shown	7-57R
do 2"	"	Opp hand 7-57L
do 2"	"	as shown 7-58
do 2"	"	" " 7-59
do 2"	"	" " 7-510
do 2"	Edge Angles	7-E5R
do 2"	"	Opp hand 7-E5L

**Note:**  
Rivets: 1/2" dia unless noted  
Open holes: 1/8" dia unless noted  
Reaming: Holes for 3/8 shop rivets sub-punched 1/8" and reamed to 1/8". Holes for 1/2 shop rivets sub-punched 1/8" and reamed to 1/8". 1/2" dia. open holes to be sub-punched 1/8" and reamed to 1/8". Open holes marked Ream to Templet punched 1/8" and reamed to 1/8" to a hardened steel templet. Reaming to be done with twist drills and without using any lubricant. Shop Paint: 1 coat red lead and pure linseed oil. At least 24 lbs of red lead to 1 gallon of oil.

Approved *James W. Sabin*  
ENGINEER OF BRIDGE DESIGN

Approved *John G. Brantley*  
ENGINEER OF STRUCTURES AND MATERIALS

Approved *John G. Brantley*  
CITY ENGINEER

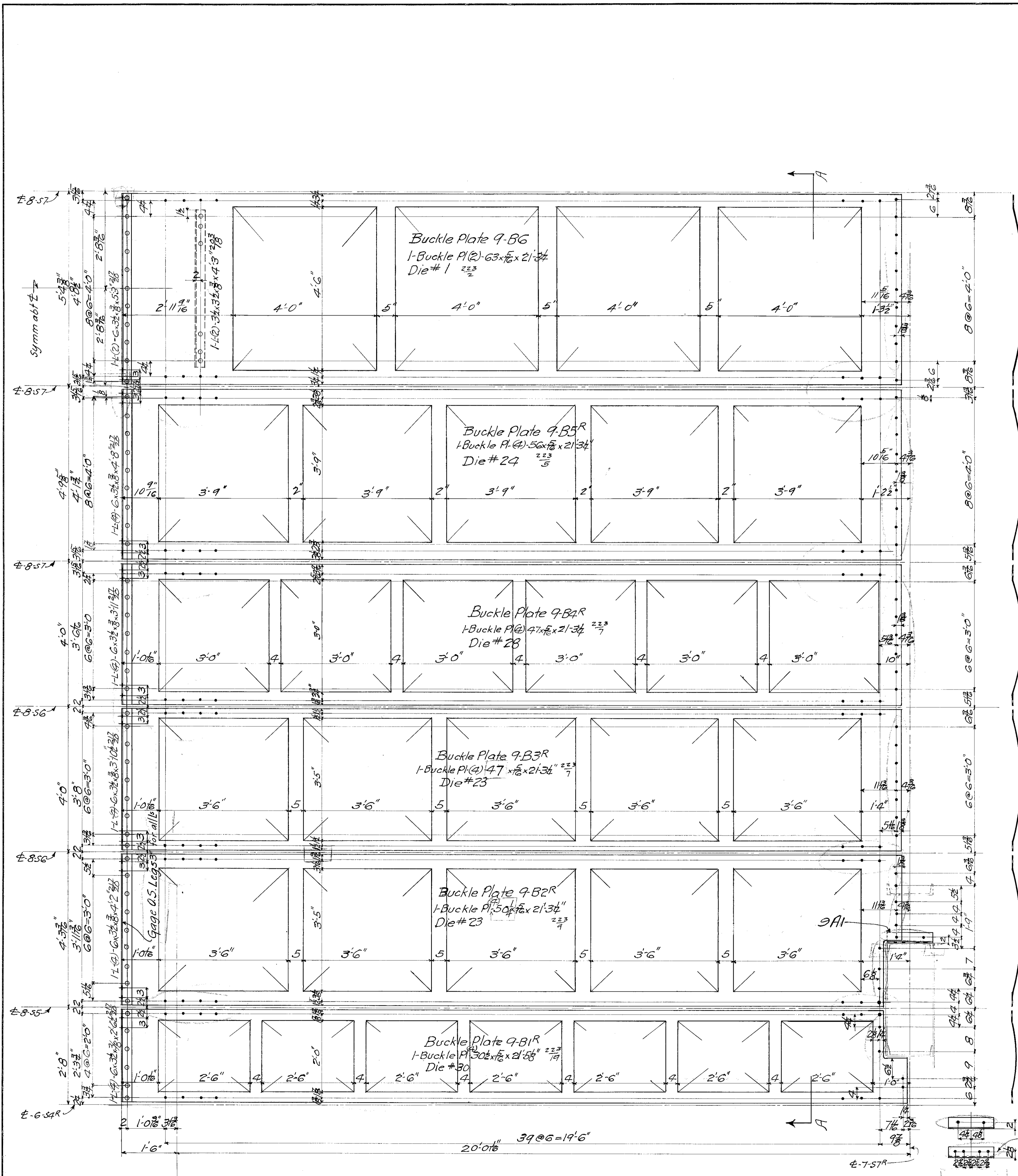
Approved *John G. Brantley*  
SUPERVISOR OF PUBLIC WORKS

THE KETLER-ELLIOTT ERECTION CO.  
**WEBSTER AVE. BRIDGE**  
FOR THE  
CITY OF CHICAGO  
Dept. of Public Works :: Bureau of Engineering :: Division of Bridges and Harbor  
**MODERN STEEL STRUCTURAL COMPANY**  
Sidewalk Stringers Flanged Part

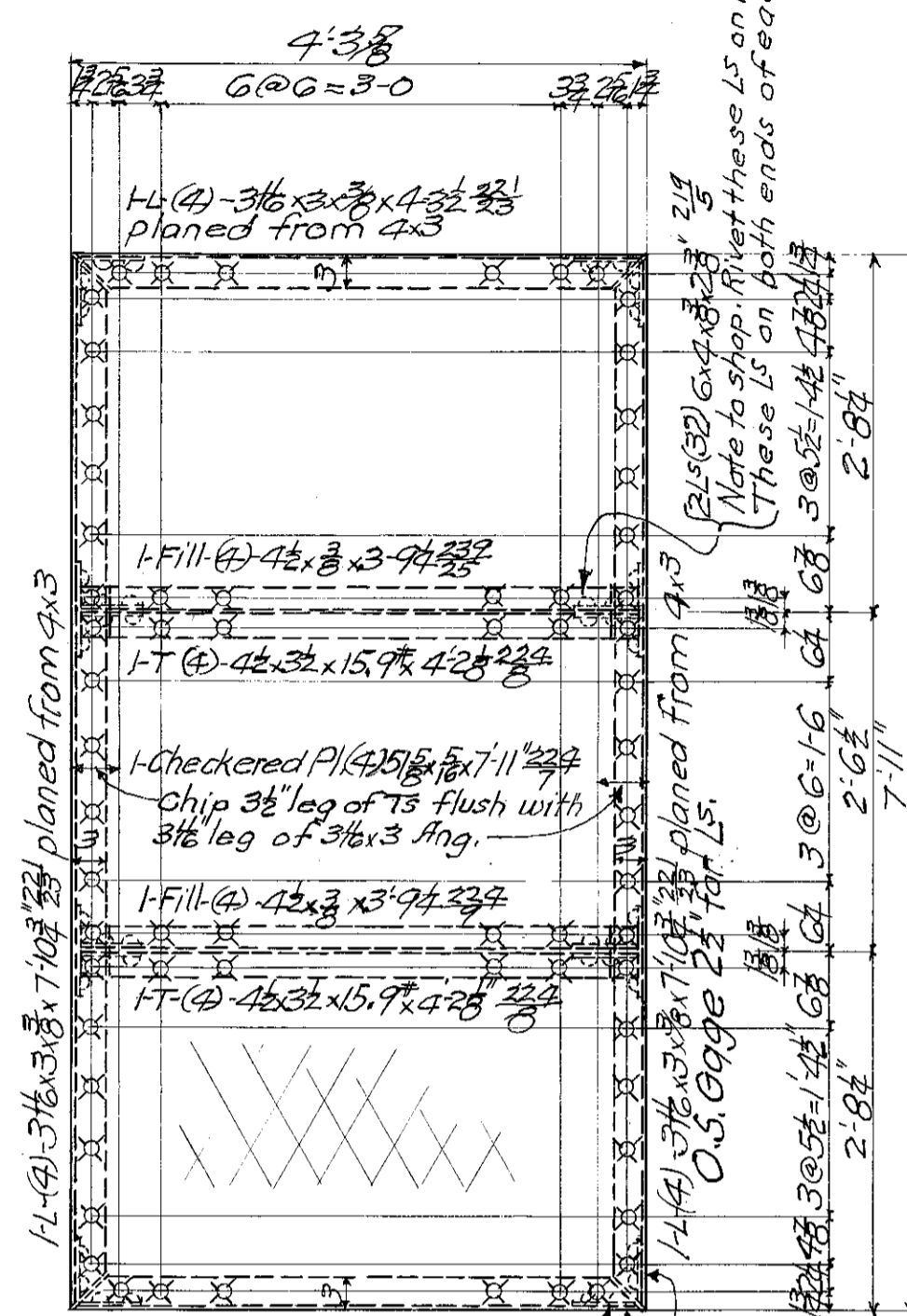
SEE MAT. BILLS 97-98-99 SCALE 3/4" = 1 FT.  
MADE BY F.R.C. TRACED BY F.R.C. CH'Y'D BY F.R.C. 1914  
**CONTRACT No. 2201-M SHEET No. 7**

1660570169  
DRAW. No. 3846  
FILE No. 11-6377



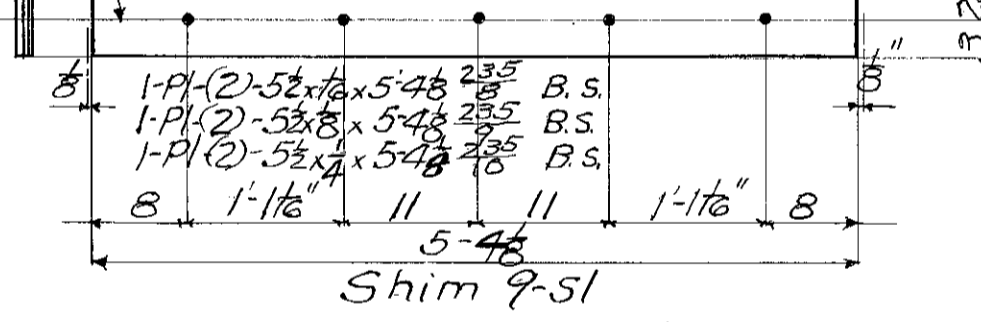


Section at A-A

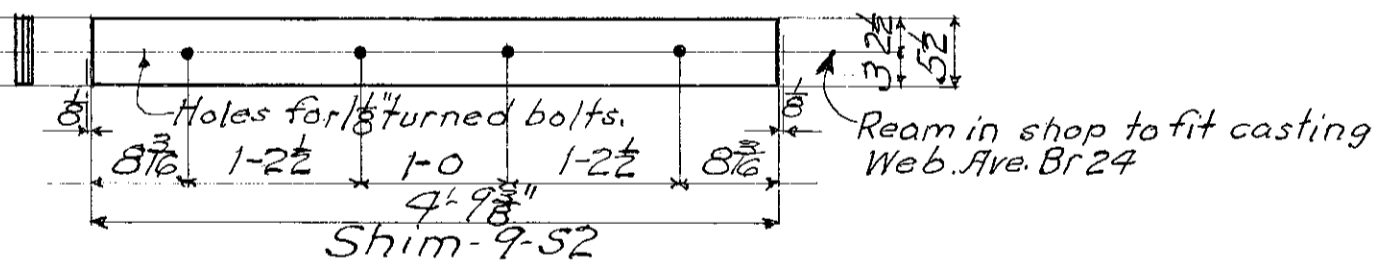


Trap Door 9-T1  
Rivets 3/8 dia.

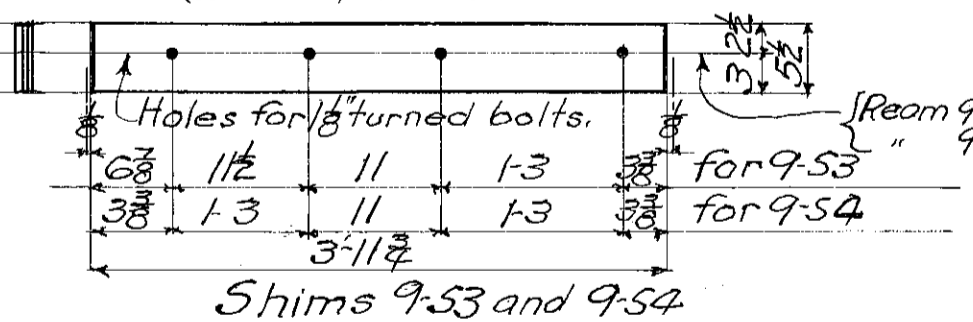
(Holes for 1/2" turned bolts. Reamed in shop to fit casting Web Ave. Br 25)



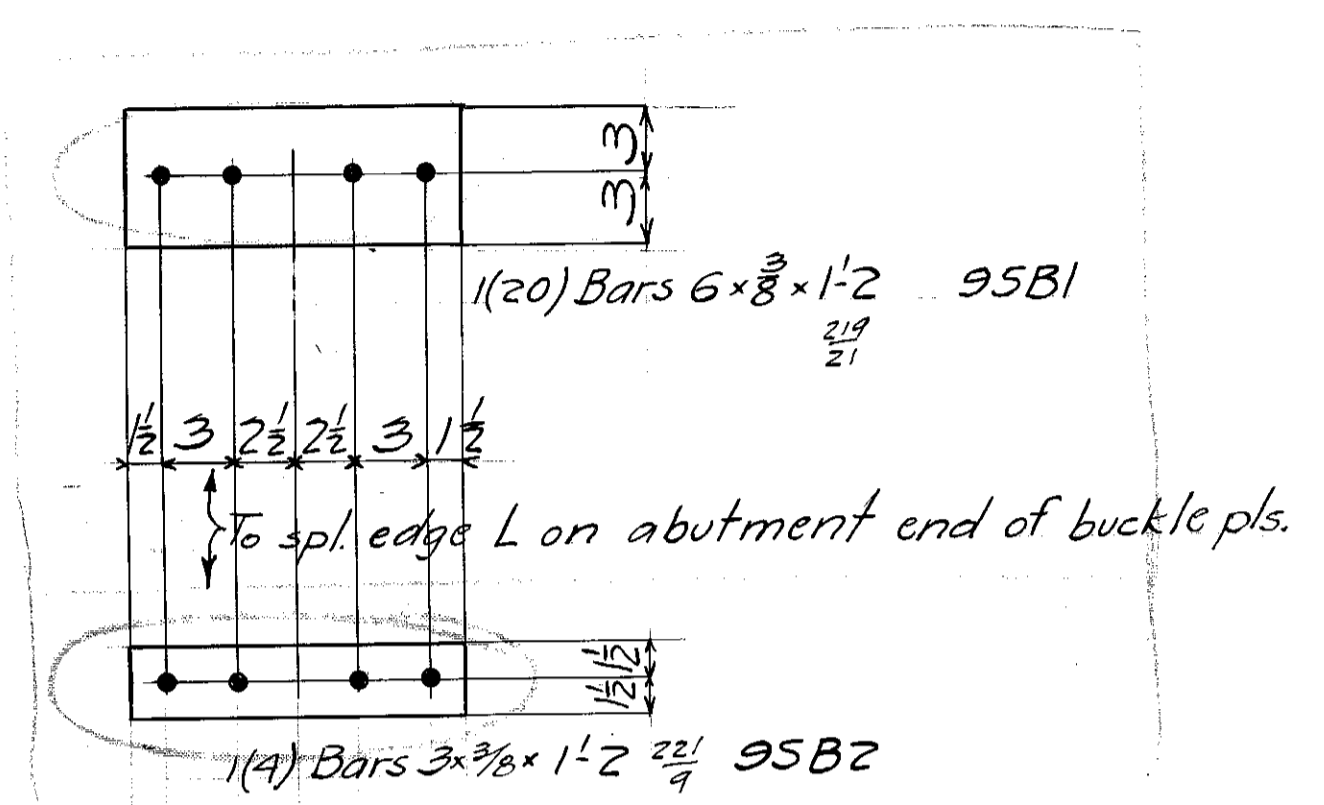
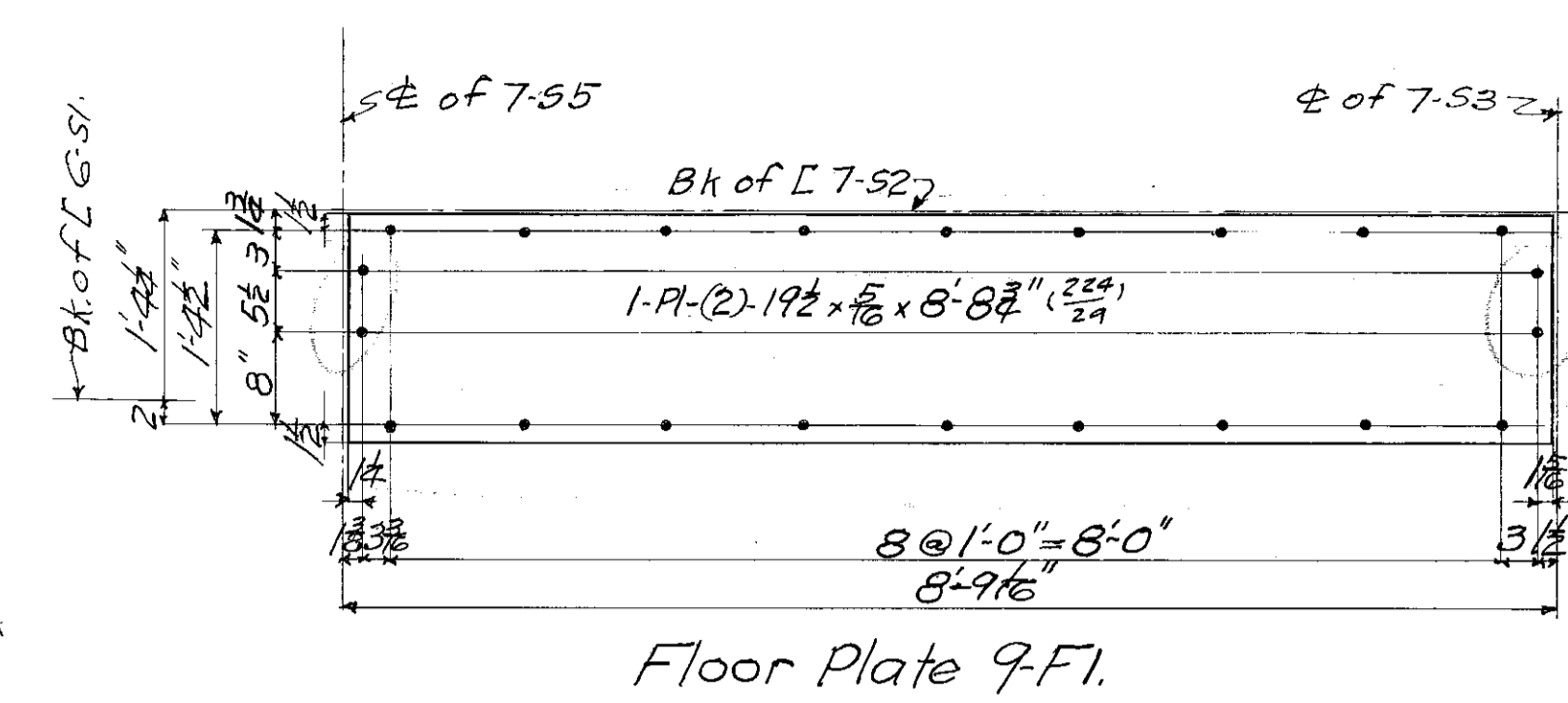
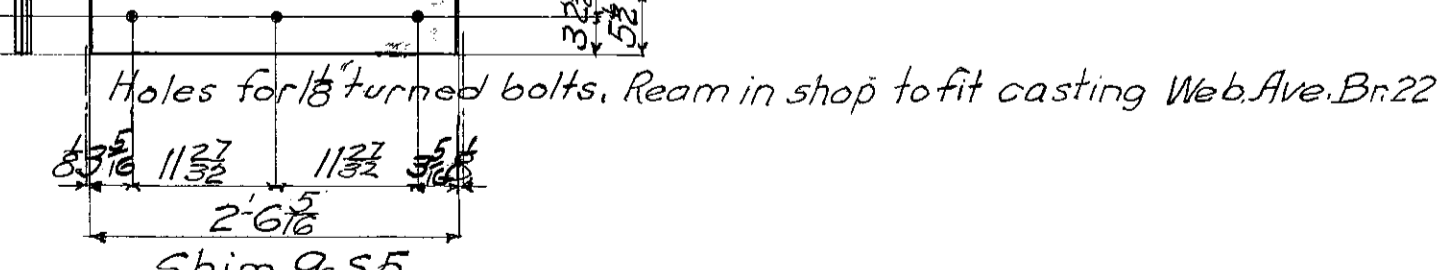
1-P (2) 5/8 x 7/8 x 4'-9 3/8 B.S.  
1-P (2) 5/8 x 7/8 x 4'-9 3/8 B.S.  
1-P (2) 5/8 x 7/8 x 4'-9 3/8 B.S.



1-P (2) 5/8 x 7/8 x 3'-11 3/8 B.S.  
1-P (2) 5/8 x 7/8 x 3'-11 3/8 B.S.  
1-P (2) 5/8 x 7/8 x 3'-11 3/8 B.S.



1-P (2) 5/8 x 7/8 x 2'-6 3/8 B.S.  
1-P (2) 5/8 x 7/8 x 2'-6 3/8 B.S.  
1-P (2) 5/8 x 7/8 x 2'-6 3/8 B.S.



REQUIRED			
1-East	2 Buckle Plates	as shown	9-B1R
1-West	2 "	Opp hand	9-B1L
do	2 "	as shown	9-B2R
do	2 "	Opp hand	9-B2L
do	2 "	as shown	9-B3R
do	2 "	Opp hand	9-B3L
do	2 "	as shown	9-B4R
do	2 "	Opp hand	9-B4L
do	2 "	as shown	9-B5R
do	2 "	Opp hand	9-B5L
do	2 "	as shown	9-B6
2-East	4 Trap doors	" "	9-T1
1-East	2 Shims	" "	9-S1
2-West	4 "	" "	9-S2
do	4 "	" "	9-S3
do	4 "	" "	9-S4
do	4 "	" "	9-S5
1-East	2 Floor Plates	" "	9-F1
1-East	20 Splice Bars	" "	95B1
2-West	4 "	" "	95B2
2-West	4 Shelf Is	" "	9-A1

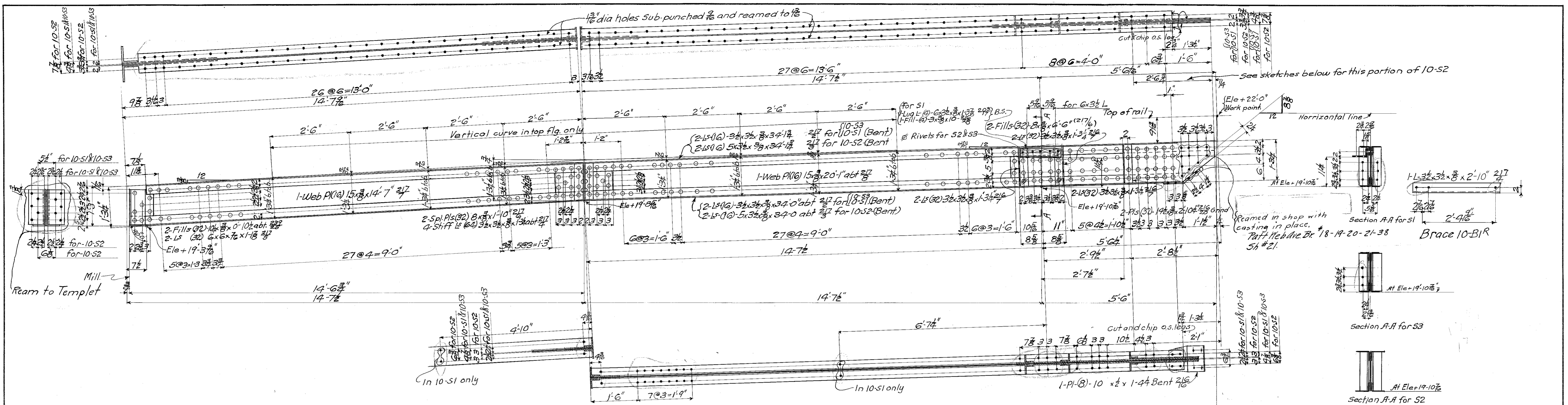
Note:-  
Rivets: 3/8 dia unless noted.  
Open holes: 1/2 dia unless noted.  
Reaming: None. " " "  
Shop Paint: 1-coat red lead and pure linseed oil. At least 24-lbs. of red lead to 1-gallon of oil.  
No drain holes wanted.  
All buckle plates turned down.  
Sizes given for buckle plates on this sheet are net after buckling.

THE KETLER-ELLIOTT ERECTION CO.  
**WEBSTER AVE. BRIDGE**  
FOR THE  
**CITY OF CHICAGO**  
Dept. of Public Works :: Bureau of Engineering :: Division of Bridges and Harbor  
**MODERN STEEL STRUCTURAL COMPANY**  
Buckle Plates for Roadway and Trap Door Fixed Port.

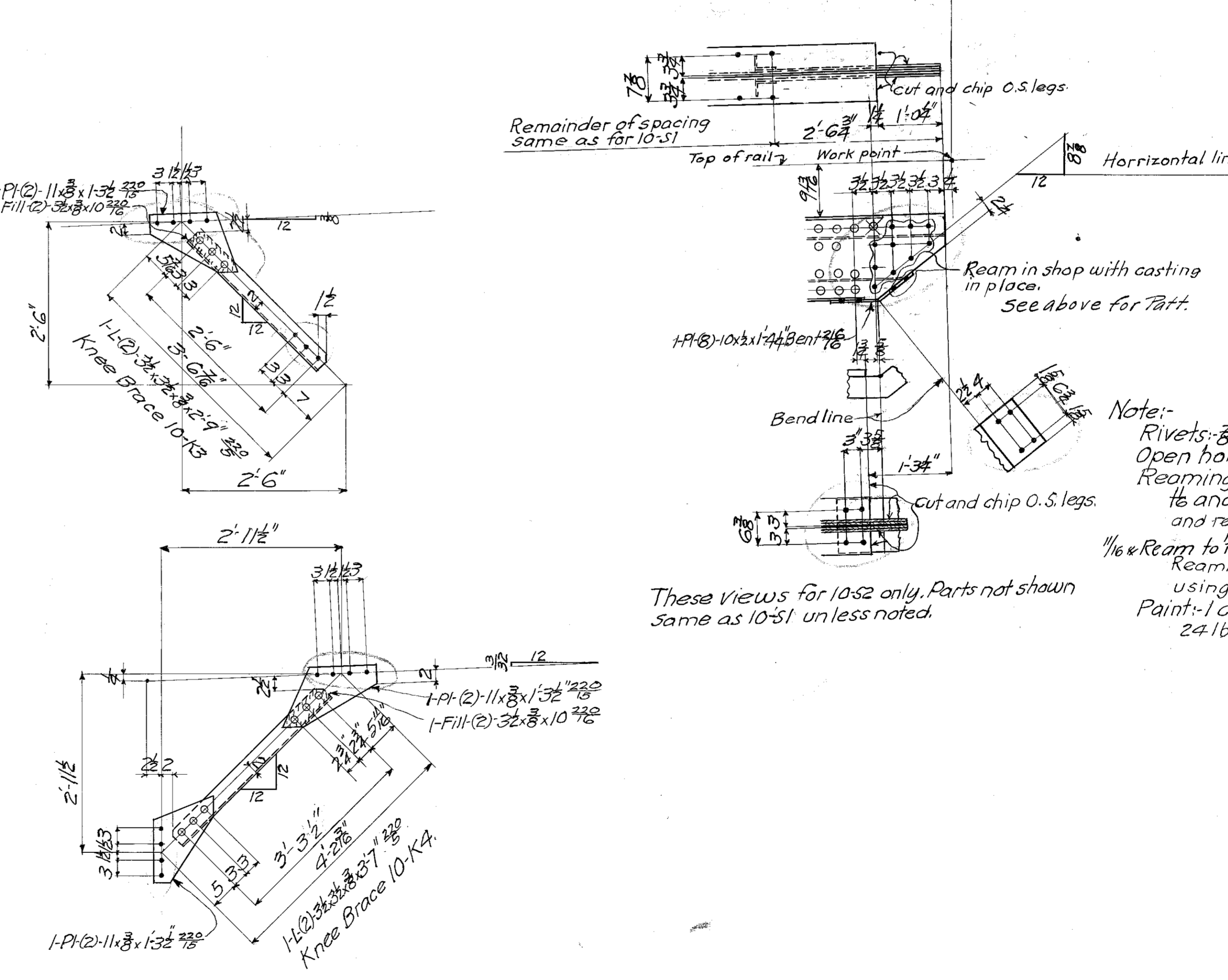
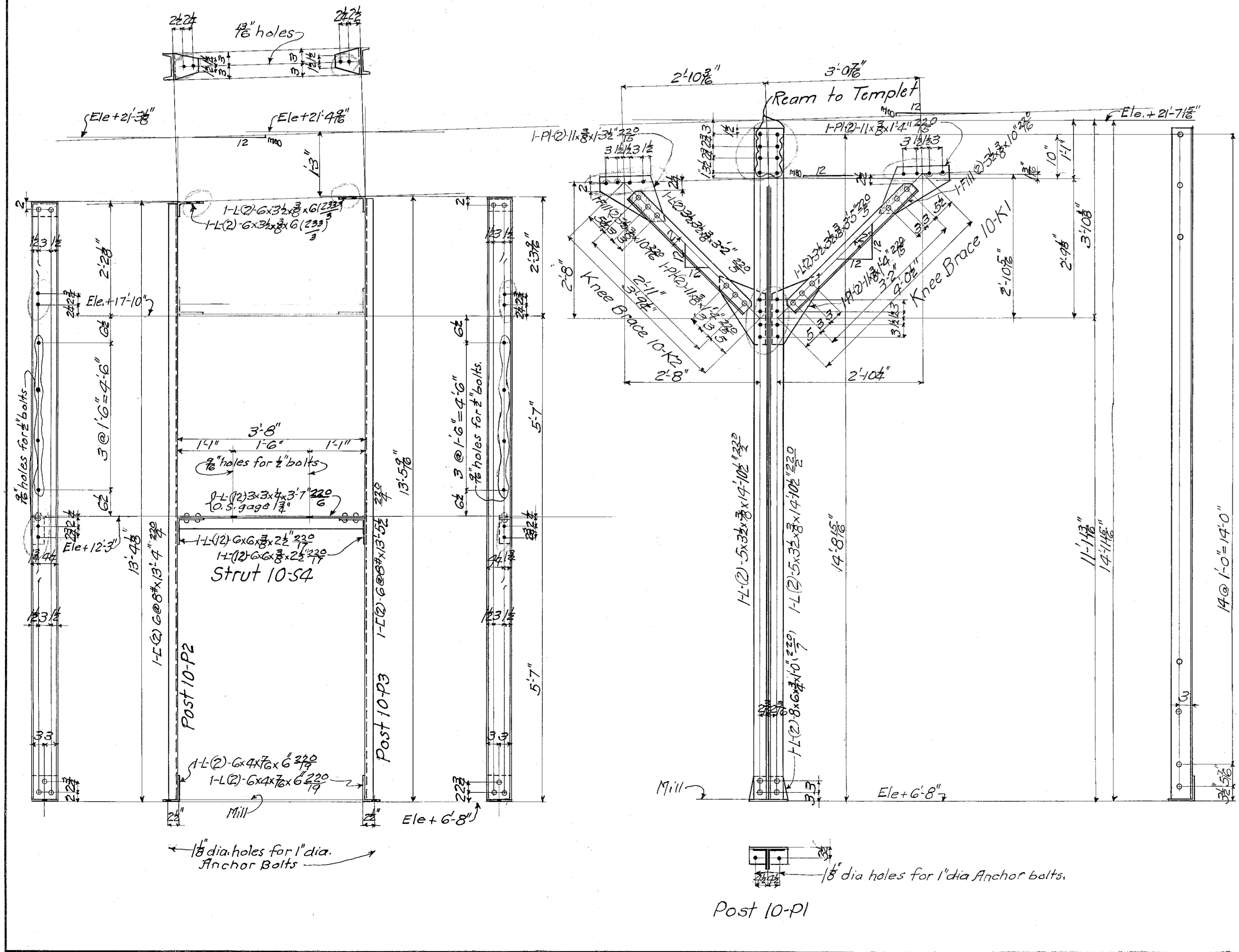
Approved [Signature]  
Approved [Signature]  
Approved [Signature]  
Approved [Signature]

SEE MAT. BILLS 102-103-104 SCALE 3/4" = 1 FT.  
MADE BY E.R.C. TRACED BY E.R.C. CH'D BY [Signature]  
**CONTRACT No. 2201M SHEET No. 9**

1660570171  
DRAW. No. 3848  
FILE No. 68-9



Roadway & Track Stringers 10-S1 and 10-S2, and 10-S3.



REQUIRED		
6 Posts	12 Struts	10-S4
1 Post	2 Posts	10-P1
do	2 "	10-P2
do	2 "	10-P3
do	2 Knee Braces	10-K1
do	2 "	10-K2
2 Posts	4 Braces as shown	10-B1R
do	4 " Opp. hand	10-B1L
1 Post	2 Roadway Stringers	10-S1R
do	2 "	10-S1L
4 Posts	8 Track	10-S2
do	2 Knee Braces	10-K3
do	2 Roadway Stringers	10-S3R
do	2 "	10-S3L

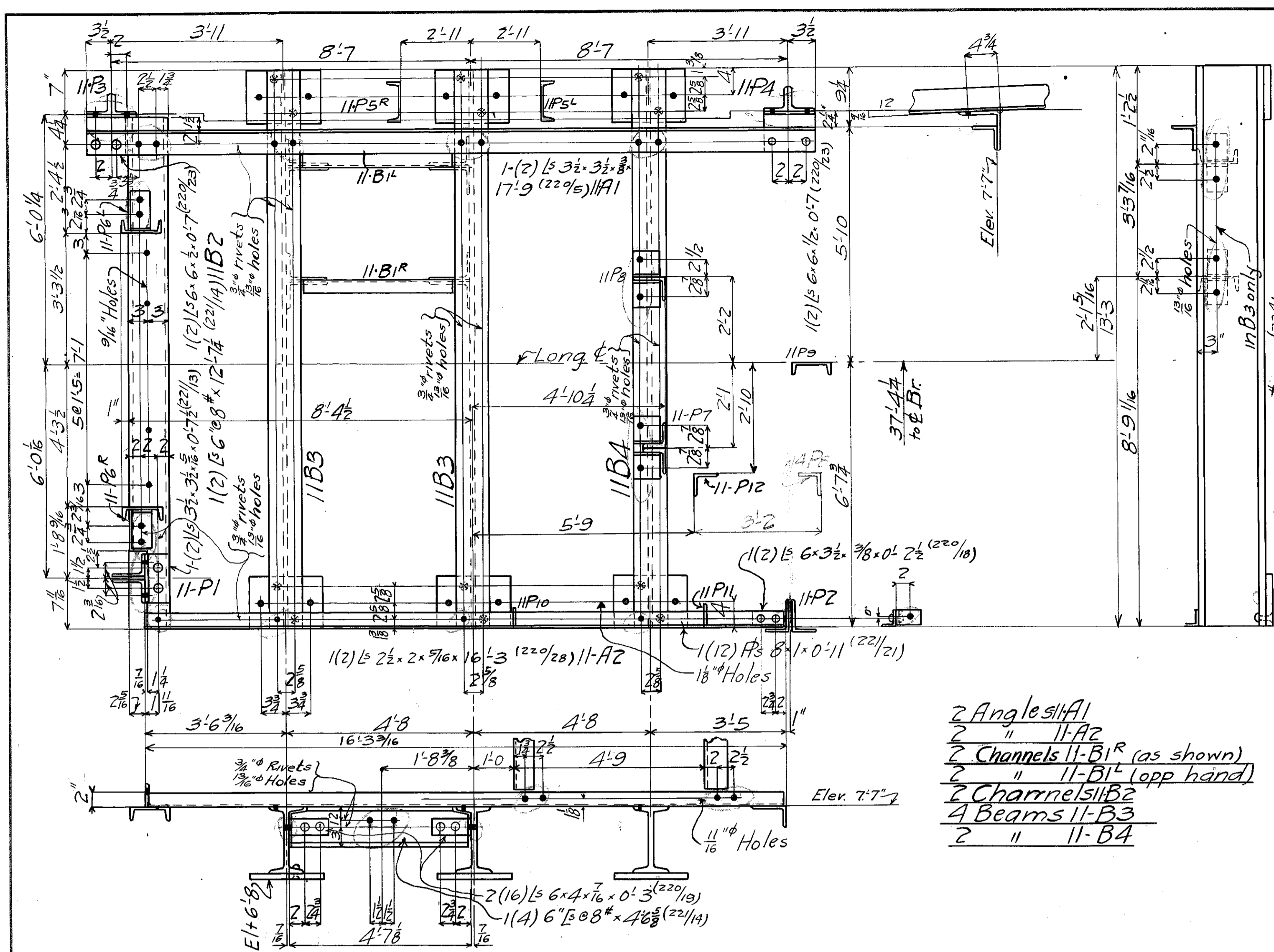
Note:-  
 Rivets: 3/4" dia unless noted.  
 Open holes: 1/2" unless noted.  
 Reaming: Holes for 3/8" shop rivets sub-punched 1/8" and reamed to 1/2". 1/2" open holes sub-punched 1/8" and reamed to 1/2". Open holes marked 'Ream to Templet punch' 1/8" x Ream to 1/8". 1/2" open holes not reamed.  
 Reaming to be done with twist drills and without using any lubricant.  
 Paint: 1 coat red lead and pure linseed oil. At least 24 lbs of red lead to 1 gallon of oil.

These views for 10-S2 only. Parts not shown same as 10-S1 unless noted.

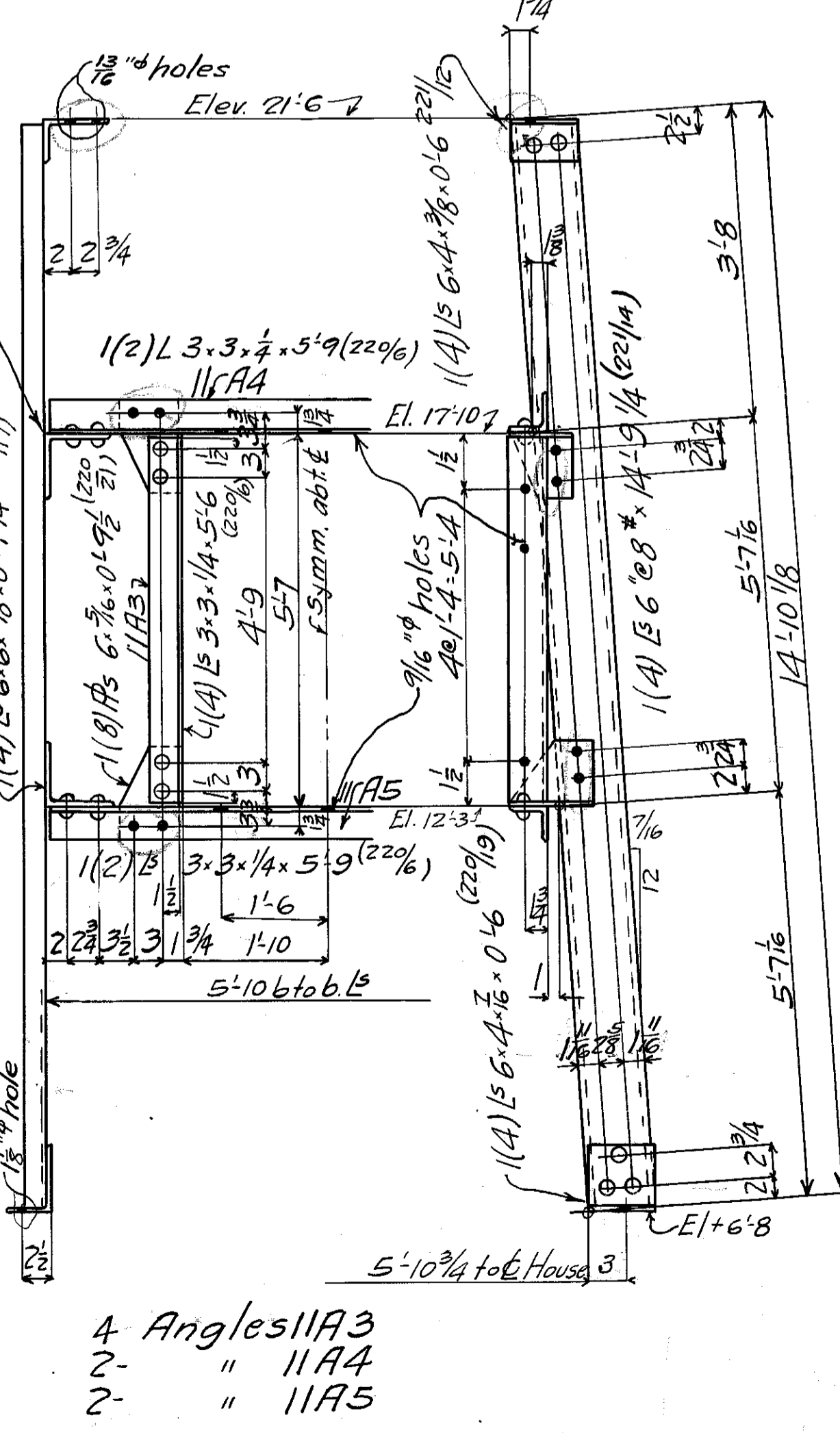
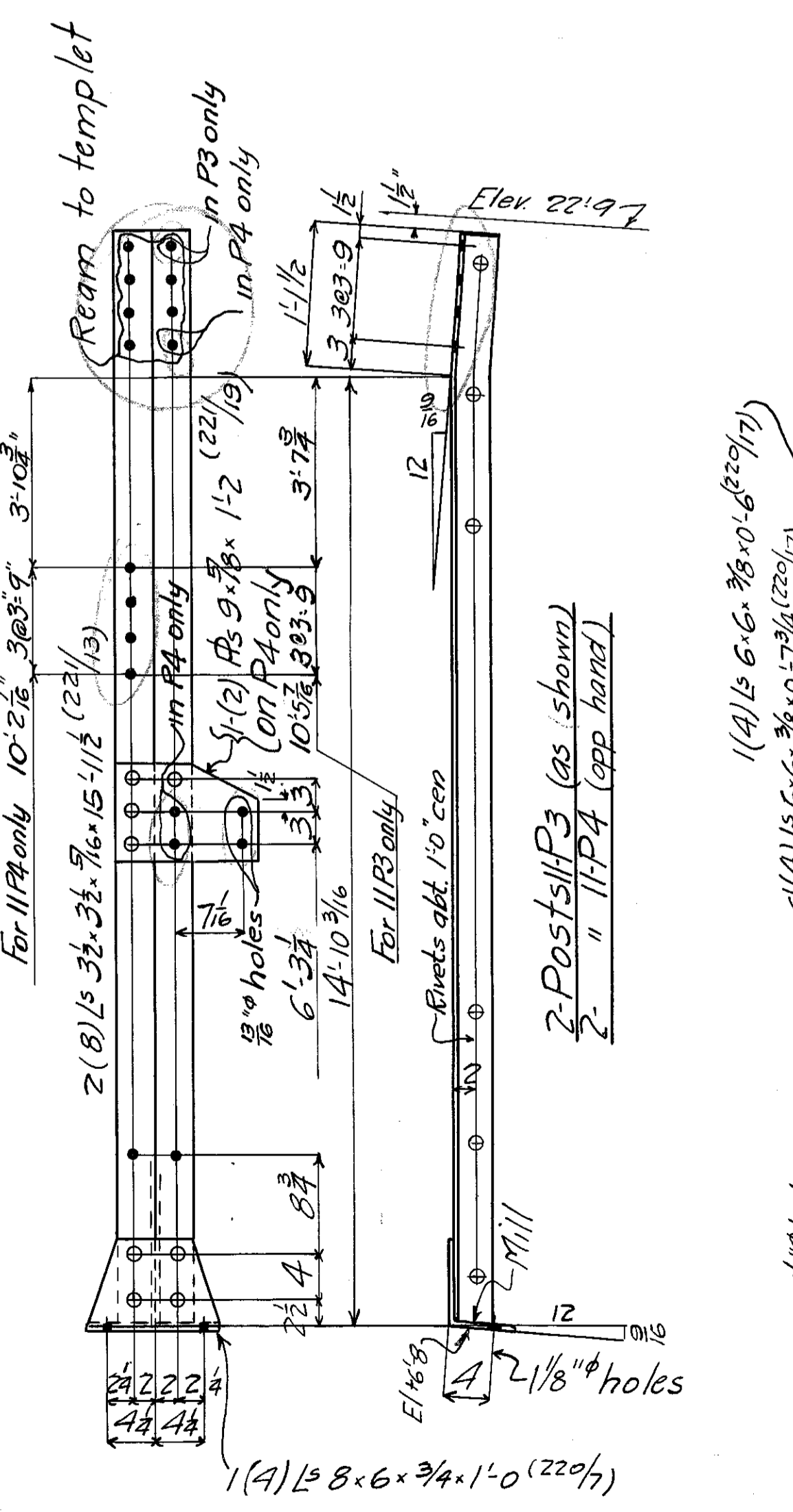
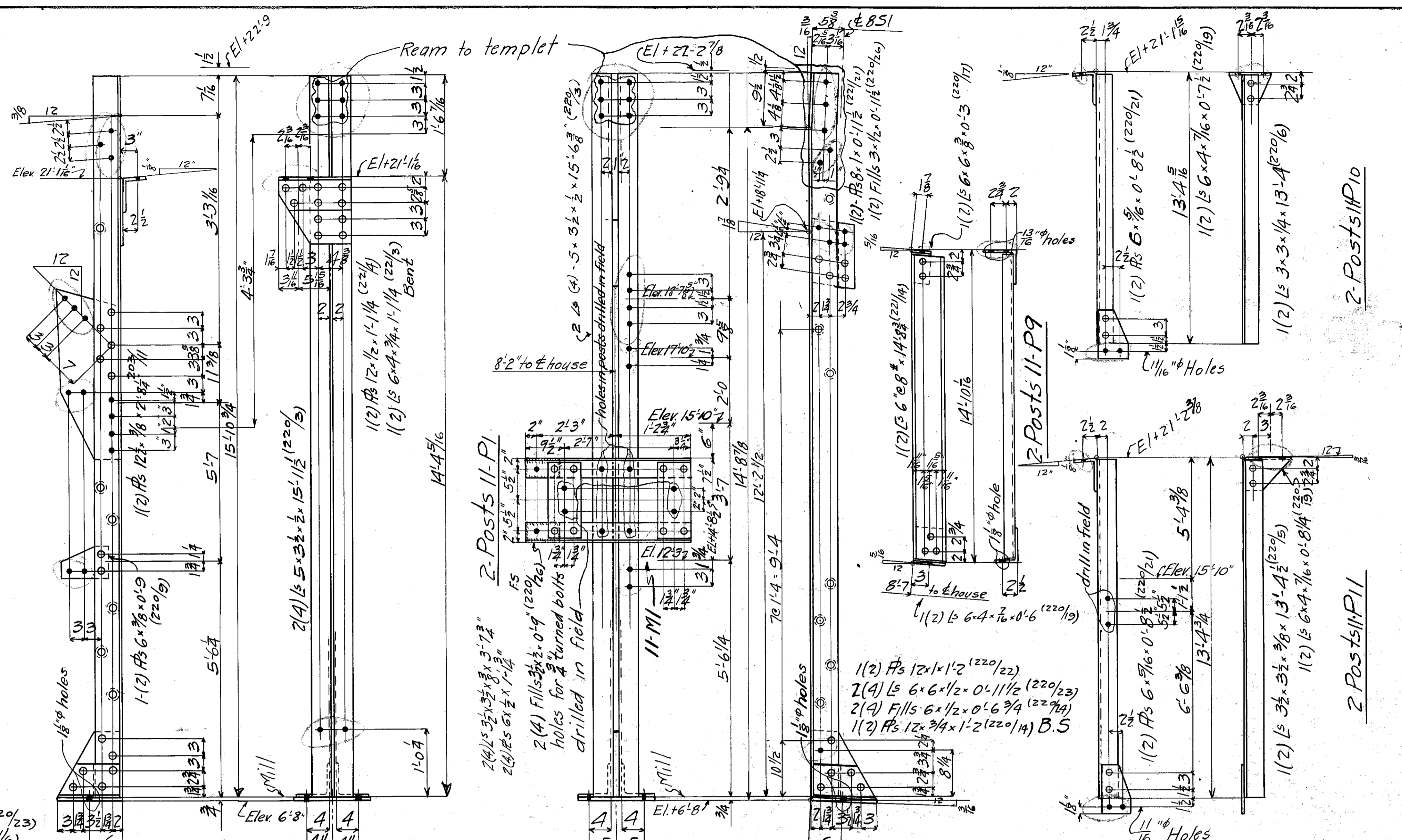
Approved: *[Signature]*  
 Approved: *[Signature]*  
 Approved: *[Signature]*  
 Approved: *[Signature]*

THE KETLER-ELLIOTT ERECTION CO.  
**WEBSTER AVE. BRIDGE**  
 FOR THE  
**CITY OF CHICAGO**  
 Dept. of Public Works :: Bureau of Engineering :: Division of Bridges and Harbor  
 MODERN STEEL STRUCTURAL COMPANY  
 Roadway Stringers and Posts Fixed Part.  
 SEE MAT. BILLS 105-106-107 SCALE 3/4" = 1 FT.  
 MADE BY E.F.C. TRACED BY E.R.C. CH'KD BY W.G.N. 1914  
**CONTRACT No. 220-M SHEET No. 10**  
 DRAW. No. 3849  
 FILE No. 11-68-10

1660570172



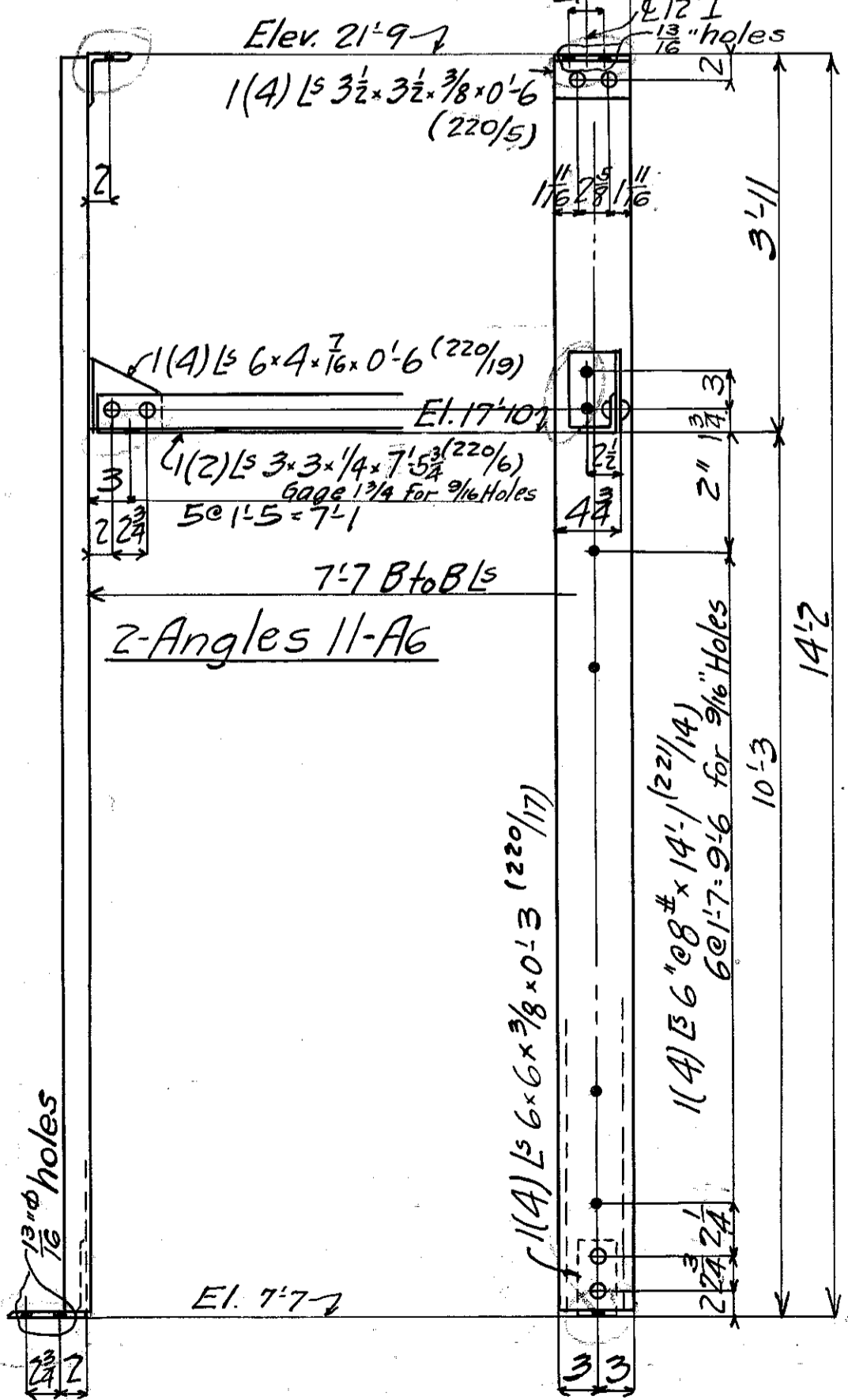
- 2 Angles 11A1
- 2 " 11A2
- 2 Channels 11-B1<sup>R</sup> (as shown)
- 2 " 11-B1<sup>L</sup> (opp hand)
- 2 Channels 11B2
- 4 Beams 11-B3
- 2 " 11-B4



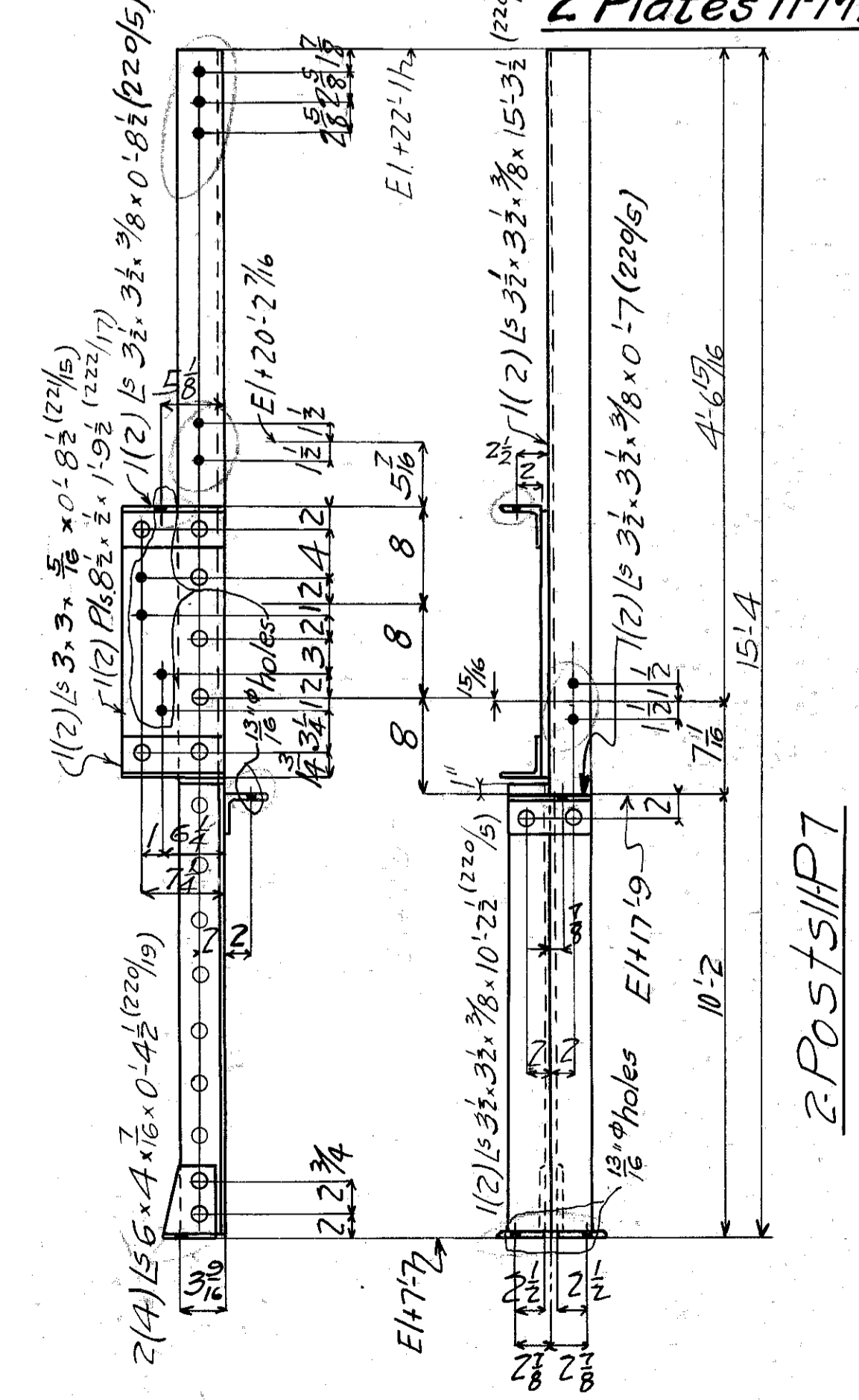
- 2-Posts 11P4 (as shown)
- 2 " 11P5 (opp hand)

- 4 Angles 11A3
- 2 " 11A4
- 2 " 11A5

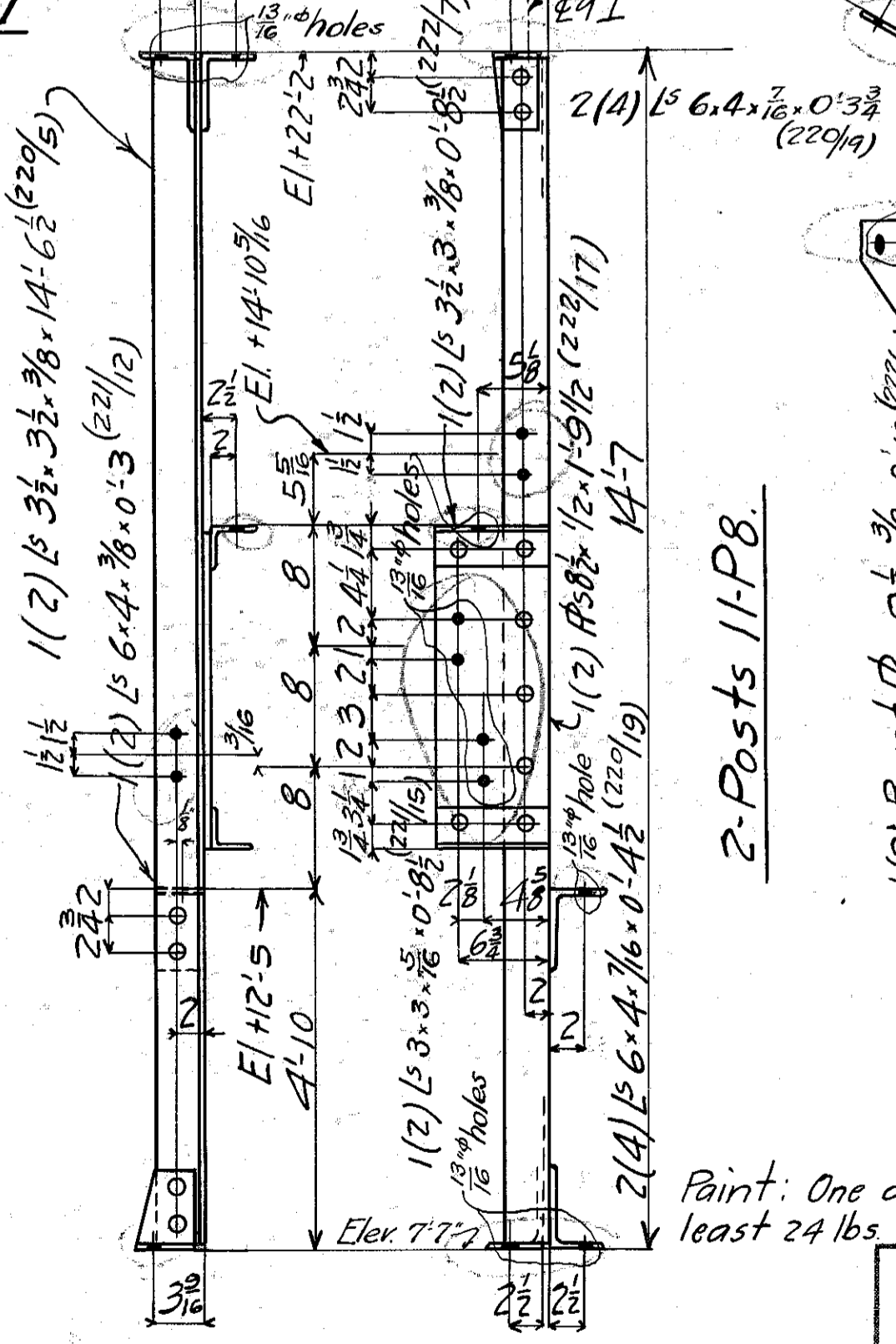
- 2(4) 6x6x1/2x1/2 (220/23)
- 1(2) P3 12x3/8x1-0 (221/6)
- 2(4) Fills 6x1/2x0-6 3/4 (220/24)
- 1(2) P3 12x3/4x1-2 (220/14) B.S.



- 2-Posts 11-P6 (as shown)
- 2 " 11-P6 (opp hand)



- 2-Posts 11P2
- 2-Plates 11-M



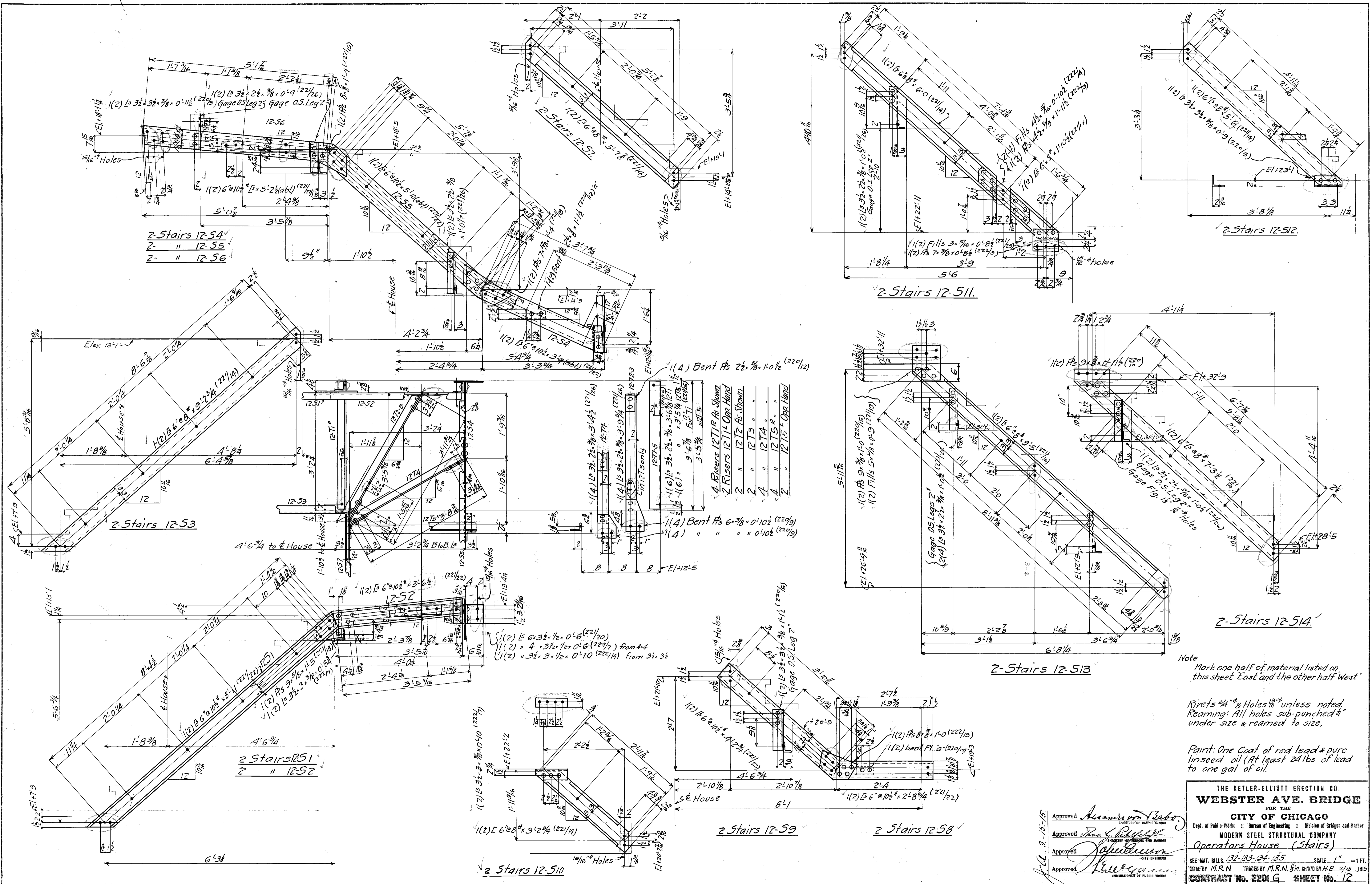
- 2-Posts 11-P8

Notes: Rivets <sup>7</sup>/<sub>8</sub>" & Holes <sup>11</sup>/<sub>16</sub>" unless noted. Reaming: All holes sub-punched & under size & reamed to size, except 3/4" holes for wood which punch full size. Open Holes marked Ream to templet punch & under size & reamed to size to a hardend steel templet. Paint: One coat of red lead & pure linseed oil. (At least 24 lbs of lead to one gallon of oil)

THE KETLER-ELLIOTT ERECTION CO.  
**WEBSTER AVE. BRIDGE**  
 FOR THE  
**CITY OF CHICAGO**  
 Dept. of Public Works :: Bureau of Engineering :: Division of Bridges and Harbor  
 MODERN STEEL STRUCTURAL COMPANY  
 Operators House Below 1<sup>st</sup> Floor Beams.  
 SEE MAT. BILLS 127-128-129-130-131-132-133-134-135-136-137-138-139-140-141-142-143-144-145-146-147-148-149-150-151-152-153-154-155-156-157-158-159-160-161-162-163-164-165-166-167-168-169-170-171-172-173-174-175-176-177-178-179-180-181-182-183-184-185-186-187-188-189-190-191-192-193-194-195-196-197-198-199-200-201-202-203-204-205-206-207-208-209-210-211-212-213-214-215-216-217-218-219-220-221-222-223-224-225-226-227-228-229-230-231-232-233-234-235-236-237-238-239-240-241-242-243-244-245-246-247-248-249-250-251-252-253-254-255-256-257-258-259-260-261-262-263-264-265-266-267-268-269-270-271-272-273-274-275-276-277-278-279-280-281-282-283-284-285-286-287-288-289-290-291-292-293-294-295-296-297-298-299-300-301-302-303-304-305-306-307-308-309-310-311-312-313-314-315-316-317-318-319-320-321-322-323-324-325-326-327-328-329-330-331-332-333-334-335-336-337-338-339-340-341-342-343-344-345-346-347-348-349-350-351-352-353-354-355-356-357-358-359-360-361-362-363-364-365-366-367-368-369-370-371-372-373-374-375-376-377-378-379-380-381-382-383-384-385-386-387-388-389-390-391-392-393-394-395-396-397-398-399-400-401-402-403-404-405-406-407-408-409-410-411-412-413-414-415-416-417-418-419-420-421-422-423-424-425-426-427-428-429-430-431-432-433-434-435-436-437-438-439-440-441-442-443-444-445-446-447-448-449-450-451-452-453-454-455-456-457-458-459-460-461-462-463-464-465-466-467-468-469-470-471-472-473-474-475-476-477-478-479-480-481-482-483-484-485-486-487-488-489-490-491-492-493-494-495-496-497-498-499-500-501-502-503-504-505-506-507-508-509-510-511-512-513-514-515-516-517-518-519-520-521-522-523-524-525-526-527-528-529-530-531-532-533-534-535-536-537-538-539-540-541-542-543-544-545-546-547-548-549-550-551-552-553-554-555-556-557-558-559-560-561-562-563-564-565-566-567-568-569-570-571-572-573-574-575-576-577-578-579-580-581-582-583-584-585-586-587-588-589-590-591-592-593-594-595-596-597-598-599-600-601-602-603-604-605-606-607-608-609-610-611-612-613-614-615-616-617-618-619-620-621-622-623-624-625-626-627-628-629-630-631-632-633-634-635-636-637-638-639-640-641-642-643-644-645-646-647-648-649-650-651-652-653-654-655-656-657-658-659-660-661-662-663-664-665-666-667-668-669-670-671-672-673-674-675-676-677-678-679-680-681-682-683-684-685-686-687-688-689-690-691-692-693-694-695-696-697-698-699-700-701-702-703-704-705-706-707-708-709-710-711-712-713-714-715-716-717-718-719-720-721-722-723-724-725-726-727-728-729-730-731-732-733-734-735-736-737-738-739-740-741-742-743-744-745-746-747-748-749-750-751-752-753-754-755-756-757-758-759-760-761-762-763-764-765-766-767-768-769-770-771-772-773-774-775-776-777-778-779-780-781-782-783-784-785-786-787-788-789-790-791-792-793-794-795-796-797-798-799-800-801-802-803-804-805-806-807-808-809-810-811-812-813-814-815-816-817-818-819-820-821-822-823-824-825-826-827-828-829-830-831-832-833-834-835-836-837-838-839-840-841-842-843-844-845-846-847-848-849-850-851-852-853-854-855-856-857-858-859-860-861-862-863-864-865-866-867-868-869-870-871-872-873-874-875-876-877-878-879-880-881-882-883-884-885-886-887-888-889-890-891-892-893-894-895-896-897-898-899-900-901-902-903-904-905-906-907-908-909-910-911-912-913-914-915-916-917-918-919-920-921-922-923-924-925-926-927-928-929-930-931-932-933-934-935-936-937-938-939-940-941-942-943-944-945-946-947-948-949-950-951-952-953-954-955-956-957-958-959-960-961-962-963-964-965-966-967-968-969-970-971-972-973-974-975-976-977-978-979-980-981-982-983-984-985-986-987-988-989-990-991-992-993-994-995-996-997-998-999-1000

1660570173

CONTRACT No. 2201 G SHEET No. 11  
 DRAW. No. 3850  
 FILE No. 11-68-11



Note  
Mark one half of material listed on this sheet East and the other half West

Rivets 3/4" & Holes 1/2" unless noted  
Reaming: All holes sub-punched 1/4" under size & reamed to size.

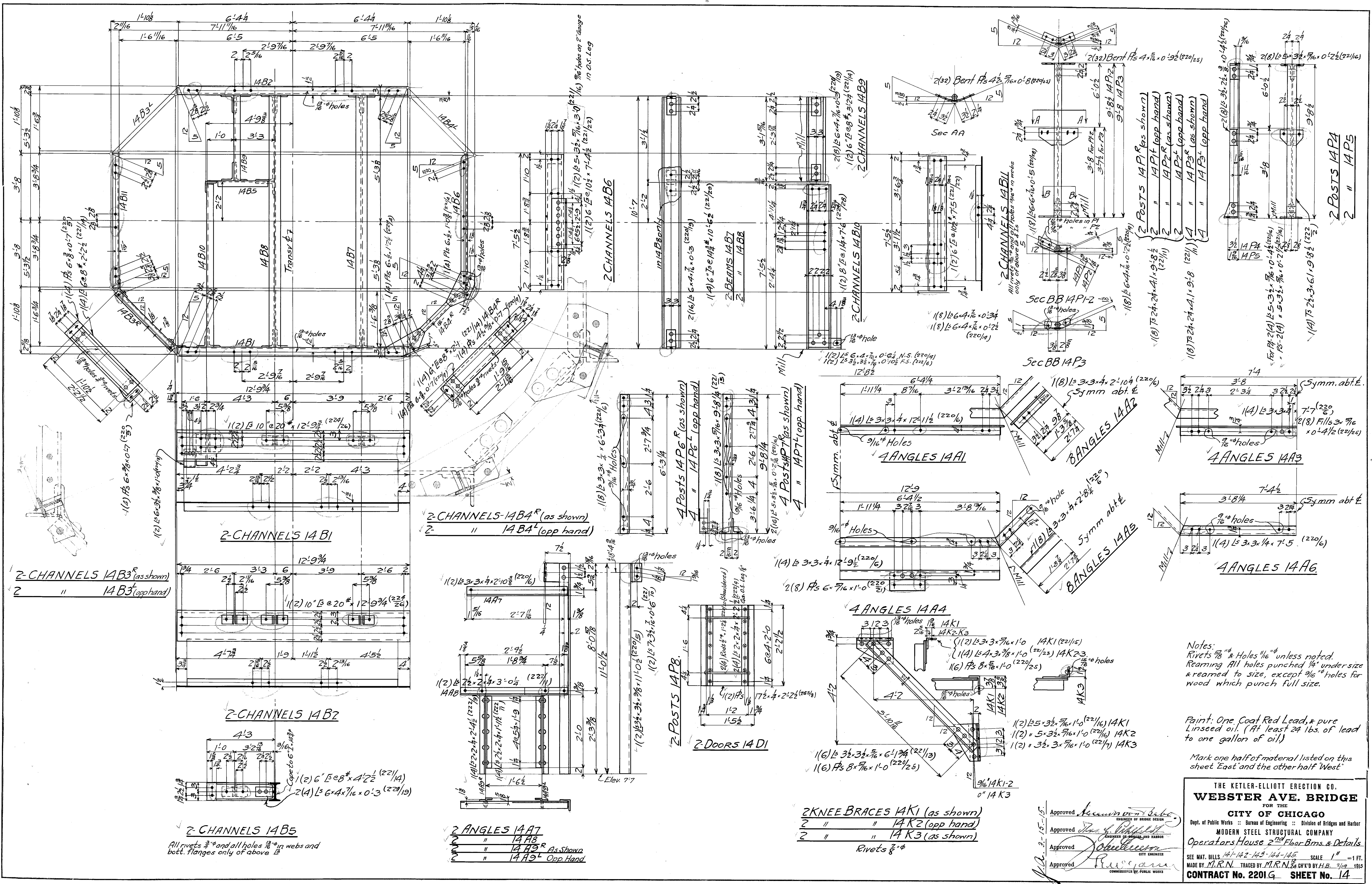
Paint: One Coat of red lead & pure linseed oil (At least 24 lbs. of lead to one gal. of oil.)

Approved *Amuravon Sabo*  
ENGINEER OF BRIDGE WORK  
Approved *John J. Kelly*  
ENGINEER OF BRIDGE AND MARINA  
Approved *John J. Kelly*  
CITY ENGINEER  
Approved *John J. Kelly*  
COMMISSIONER OF PUBLIC WORKS

THE KETLER-ELLIOTT ERECTION CO.  
**WEBSTER AVE. BRIDGE**  
FOR THE  
**CITY OF CHICAGO**  
Dept. of Public Works :: Bureau of Engineering :: Division of Bridges and Harbor  
**MODERN STEEL STRUCTURAL COMPANY**  
**Operators House (Stairs)**  
SEE MAT. BILLS 132-133-134-135 SCALE 1" = 1 FT.  
MADE BY M.R.N. TRADED BY M.R.N. 5/4 CH'Y'D BY A.B. 2/15 1915  
**CONTRACT No. 2201 G SHEET No. 12**  
DRAW. No. 3651  
FILE No. 11-68-12







Notes:  
 Rivets 7/8" and Holes 1/2" unless noted.  
 Reaming All holes punched 1/4" under size & reamed to size, except 9/16" holes for wood which punch full size.

Paint: One Coat Red Lead, & pure Linseed oil. (At least 24 lbs. of lead to one gallon of oil)

Mark one half of material listed on this sheet East and the other half West

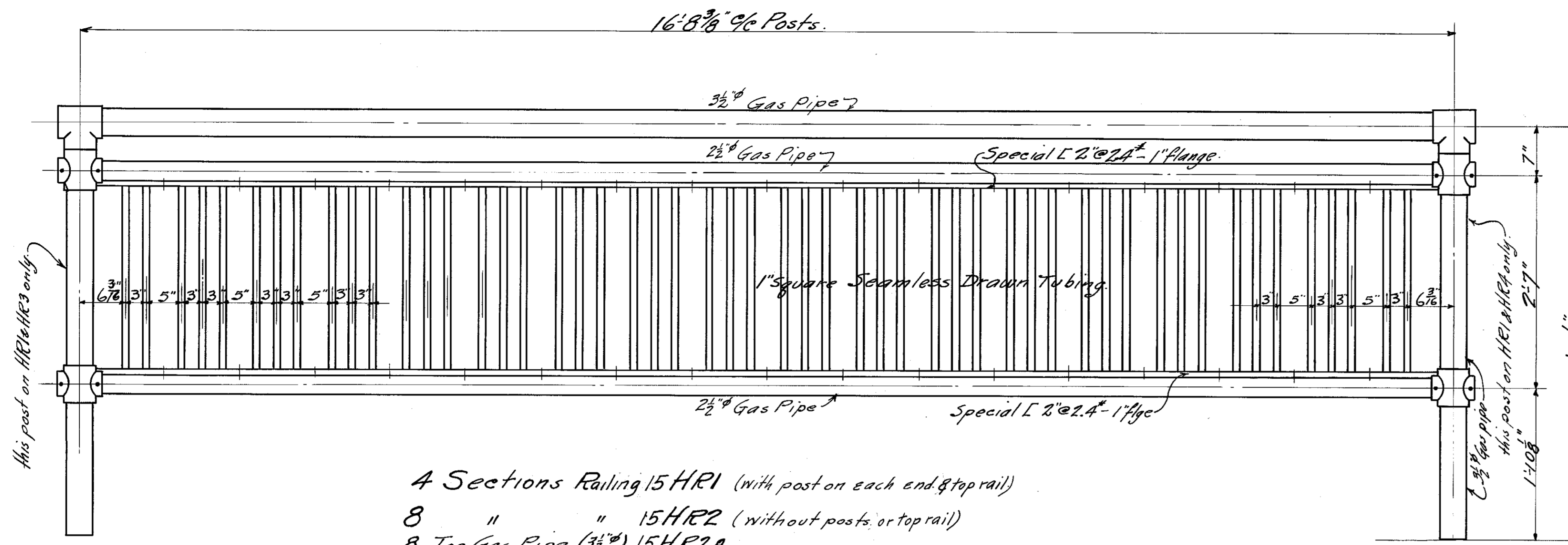
THE KETLER-ELLIOTT ERECTION CO.  
**WEBSTER AVE. BRIDGE**  
 FOR THE  
**CITY OF CHICAGO**  
 Dept. of Public Works :: Bureau of Engineering :: Division of Bridges and Harbor  
**MODERN STEEL STRUCTURAL COMPANY**  
 Operators House 2<sup>nd</sup> Floor Brms. & Details  
 SEE MAT. BILLS 141-142-143-144-145 SCALE 1" = 1 FT.  
 MADE BY M.R.N. TRAGED BY M.R.N. 24 CHY'D BY H.B. 2/10 1915  
**CONTRACT No. 2201G SHEET No. 14**

Approved: *[Signature]*  
 Approved: *[Signature]*  
 Approved: *[Signature]*  
 Approved: *[Signature]*

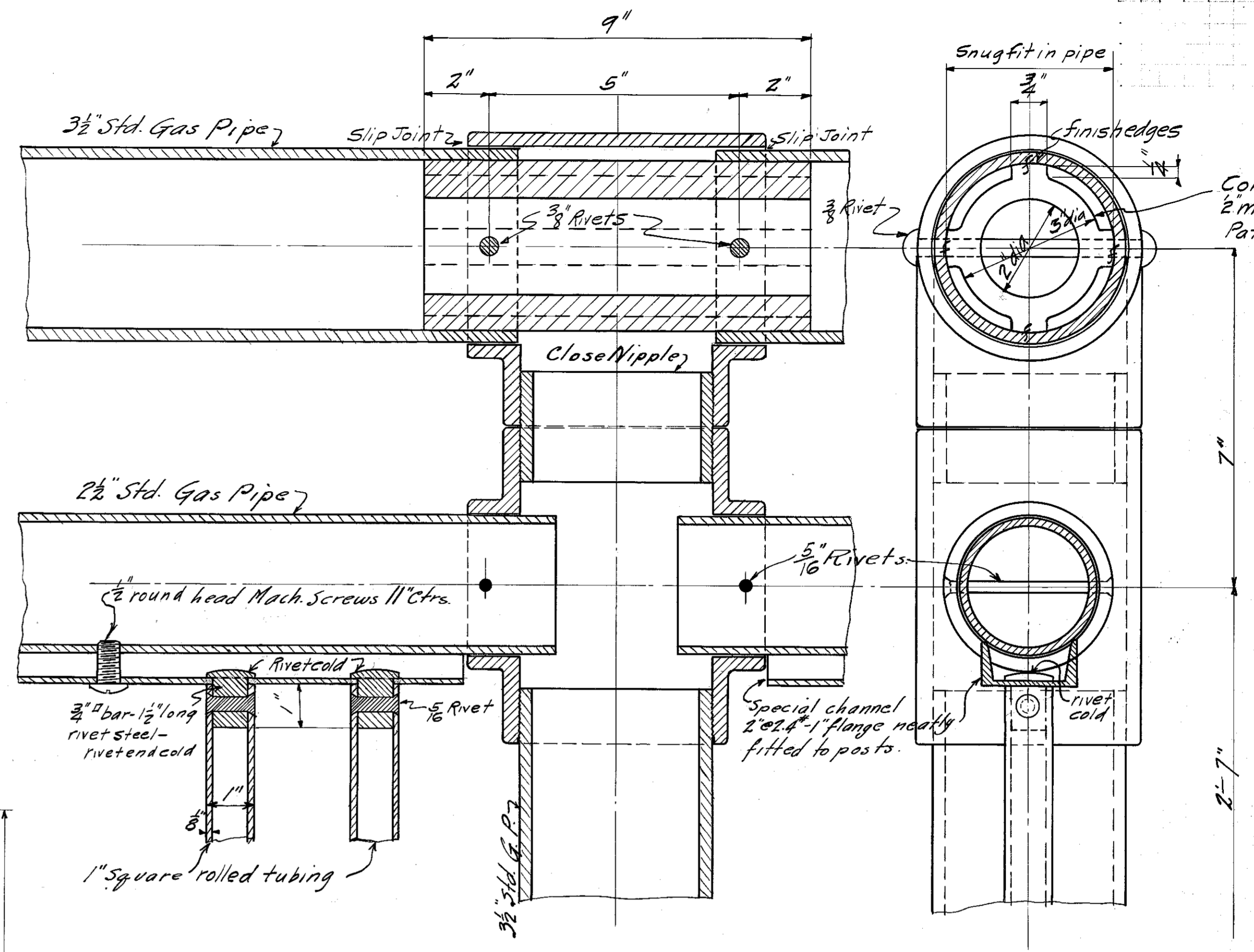
2 KNEE BRACES 14K1 (as shown)  
 2 " " 14K2 (opp hand)  
 2 " " 14K3 (as shown)  
 Rivets 7/8"

2 ANGLES 14A7  
 2 " " 14A8  
 2 " " 14A9 As Shown  
 2 " " 14A9<sup>L</sup> Opp Hand

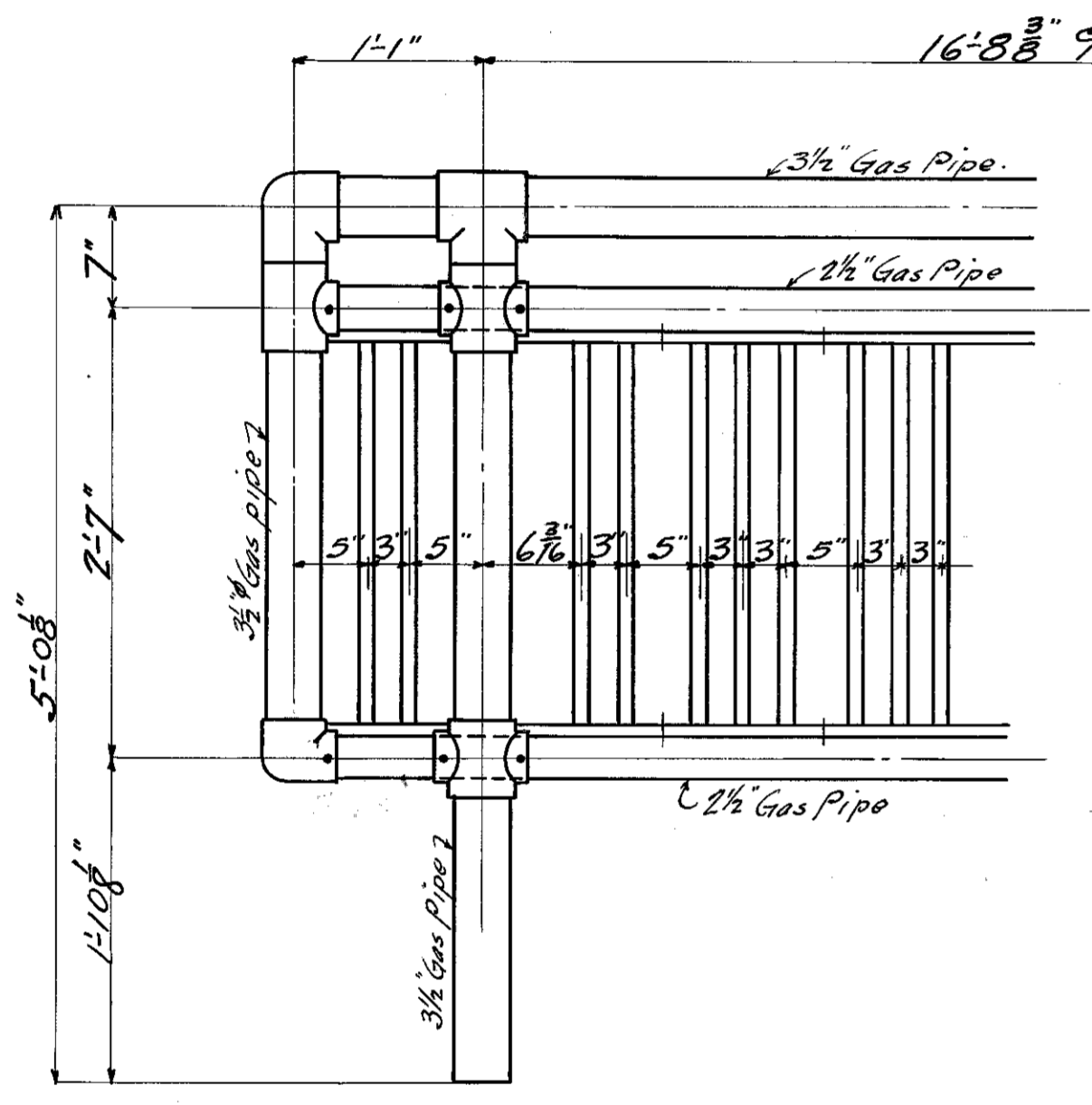
2 CHANNELS 14B5  
 All rivets 7/8" and all holes 1/2" in webs and bott. flanges only of above 15



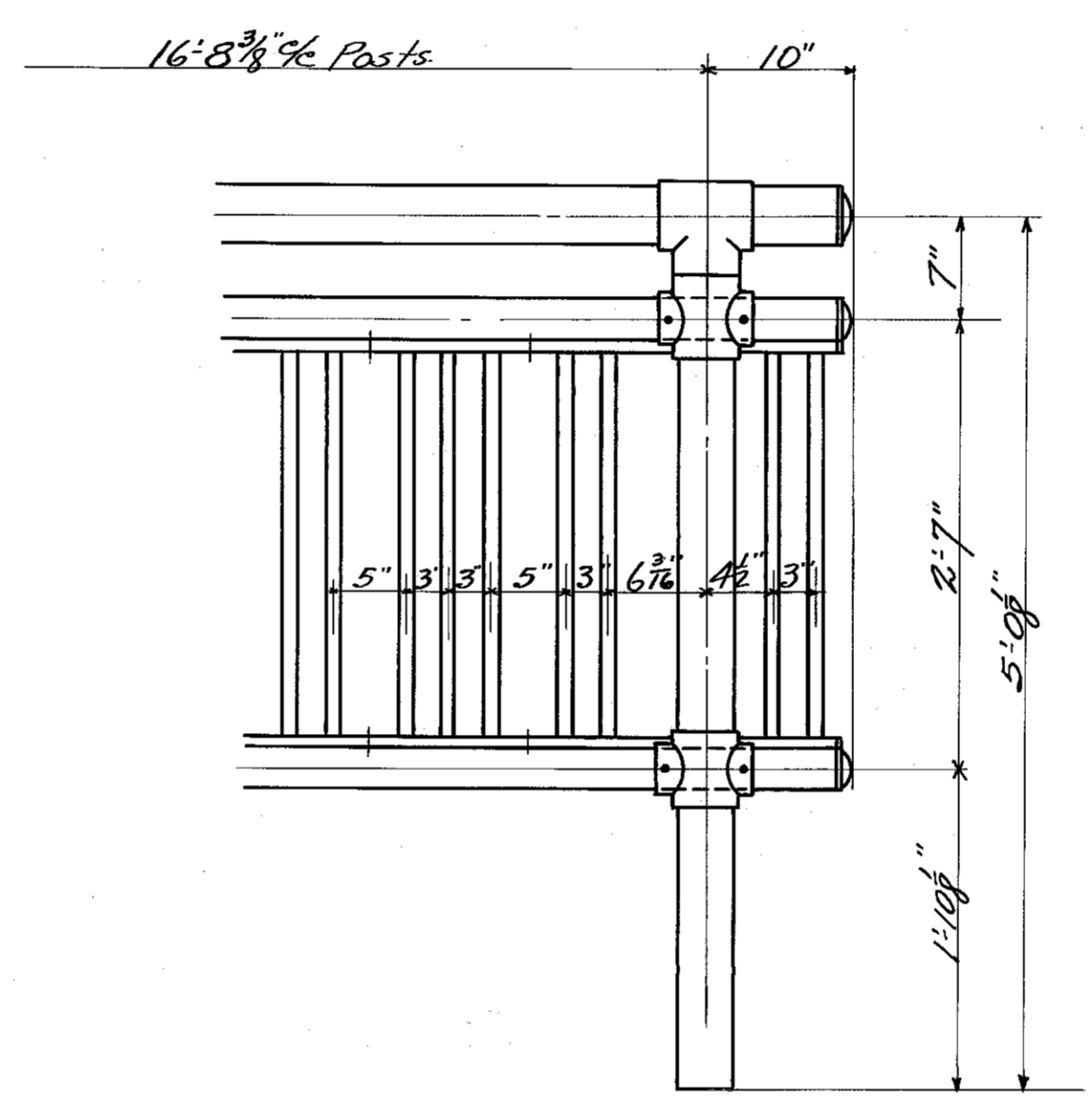
4 Sections Railing 15HR1 (with post on each end & top rail)  
 8 " " 15HR2 (without posts, or top rail)  
 8 Top Gas Pipe (3/4") 15HR2A.



1/2 Size Typical Details of Railing.

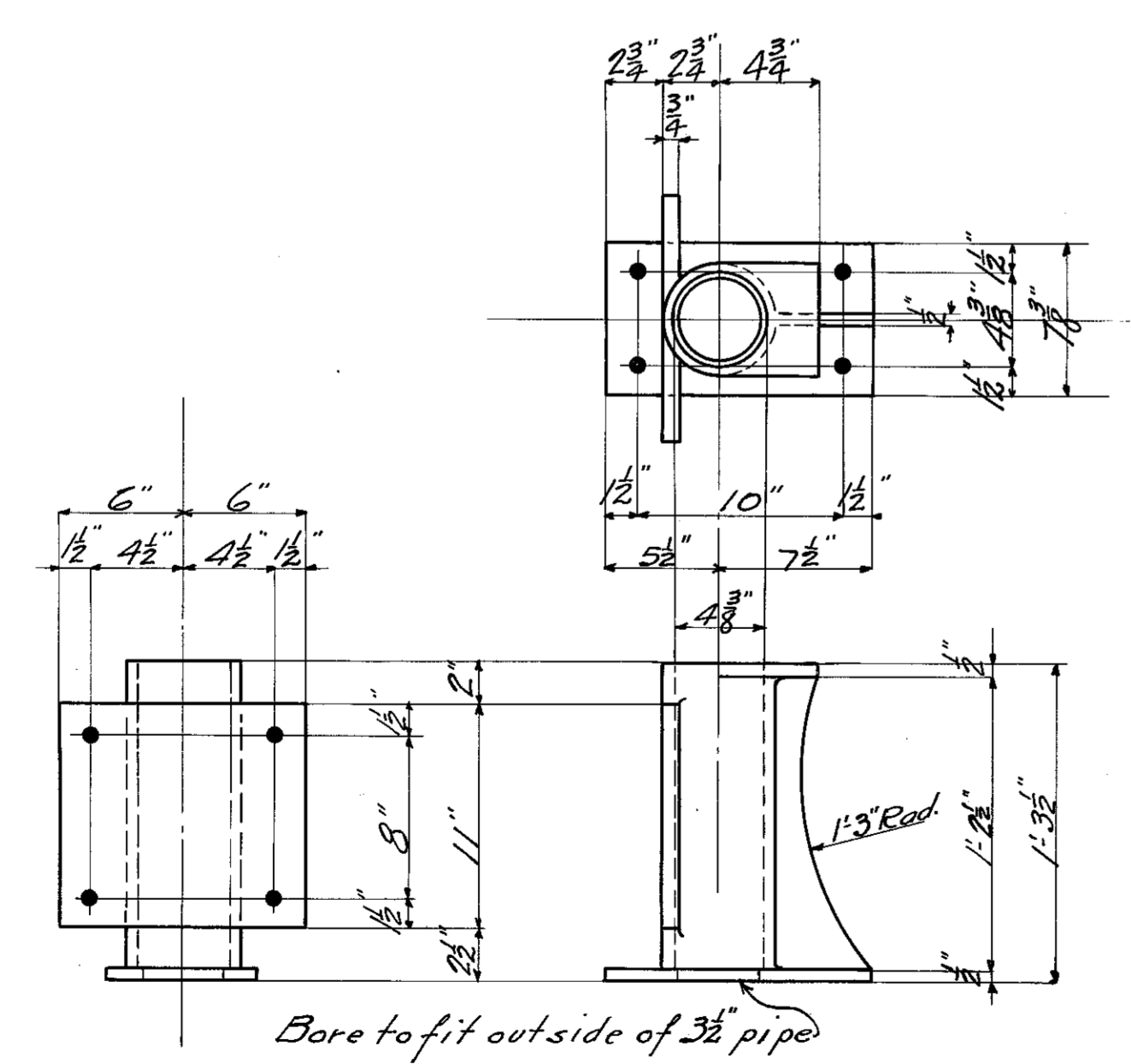


This detail for this end of HR1 only.  
 Other end same as HR1.

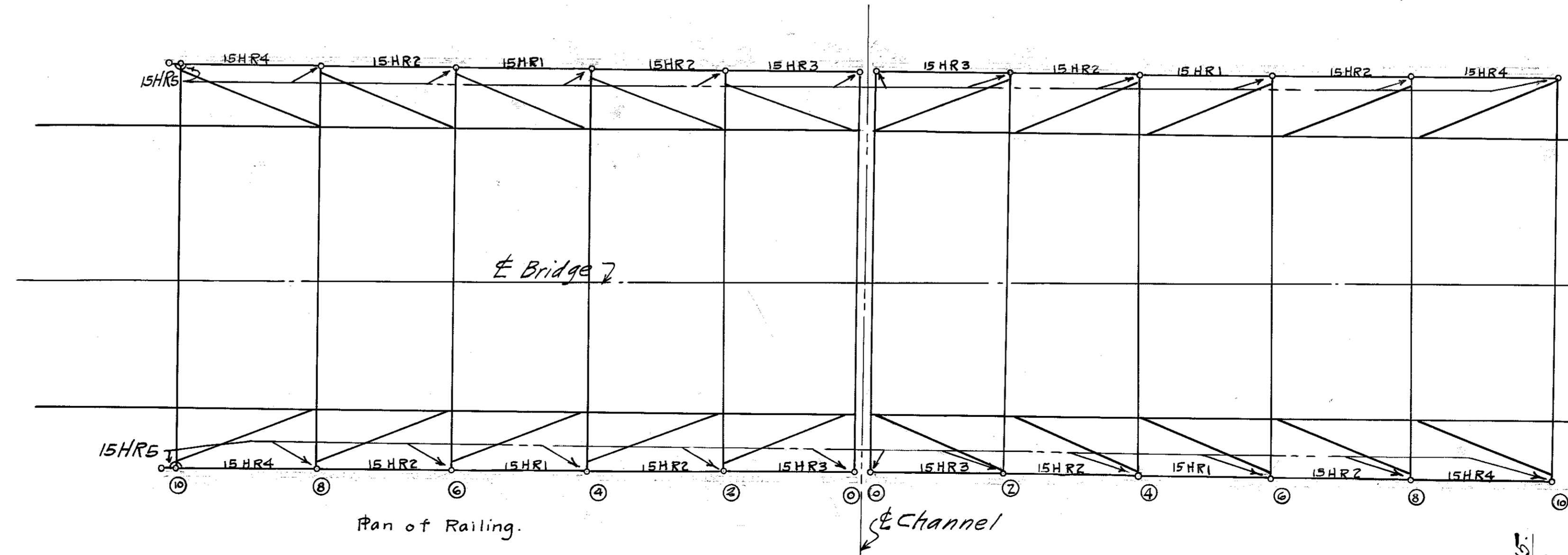


This detail for this end of HR3 only.  
 Other end same as HR1.

4 Sections Railing 15HR3. (with post on each end & top rail)  
 4 " " 15HR4. ( " " " " " " )



24 Malleable Cast Iron Post Brackets 15HR5.  
 Holes drilled for 3/4" Bolts. Pat. WEB. AVE. BR. 40

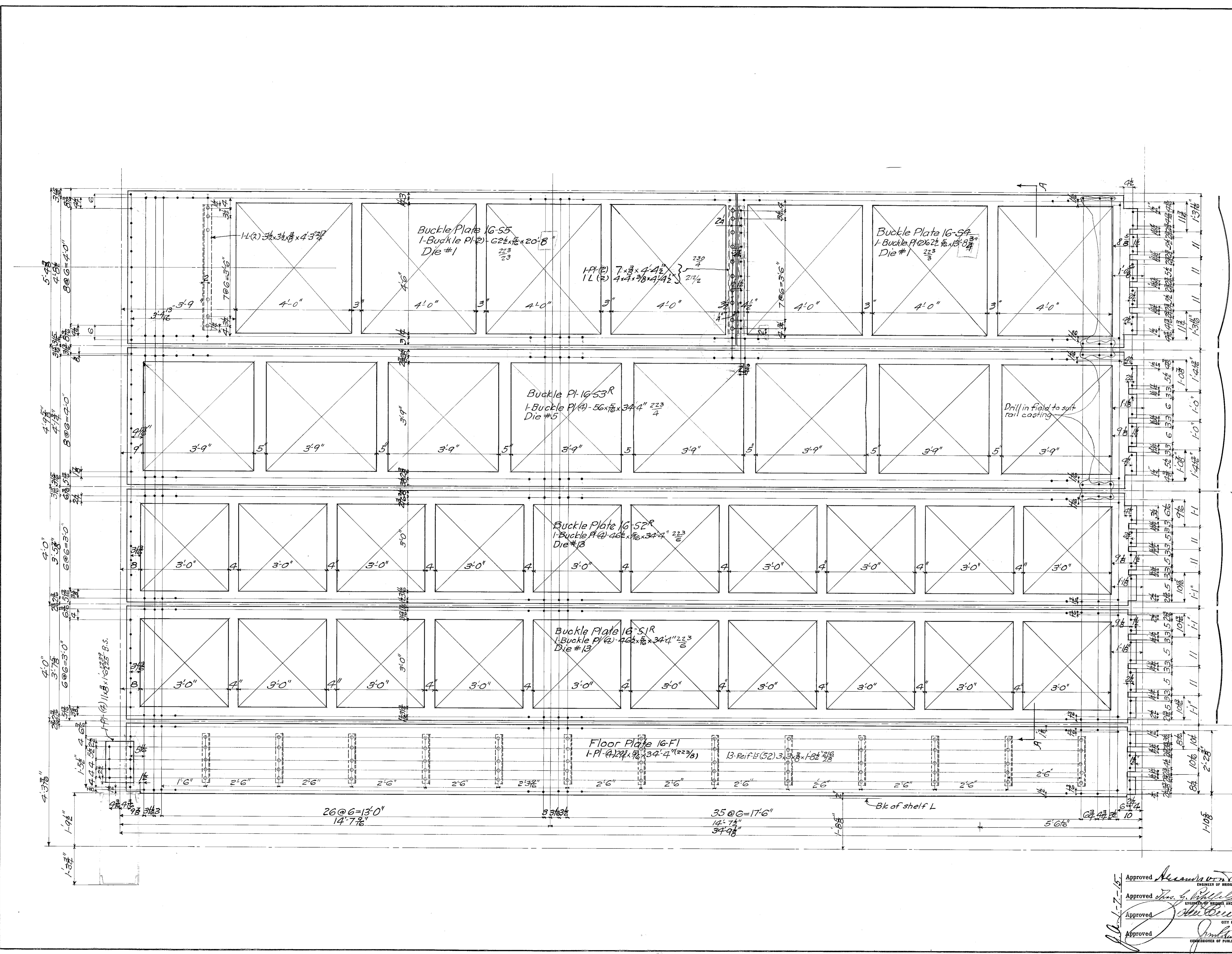


Note:-  
 All pipe to be Std. Wrot. Iron Gas Pipe.  
 All fittings to be malleable iron and have smooth finish.  
 All slip joints to have a close fit and riveted as shown.  
 Channels shall fit neatly at posts and be securely  
 screwed to gas pipe with 1/2" Rd. Hd. Mach. Screws.

Approved [Signature]  
 Approved [Signature]  
 Approved [Signature]  
 Approved [Signature]

THE KETLER-ELLIOTT ERECTION CO.  
**WEBSTER AVE. BRIDGE**  
 FOR THE  
**CITY OF CHICAGO**  
 Dept. of Public Works :: Bureau of Engineering :: Division of Bridges and Harbor  
**MODERN STEEL STRUCTURAL COMPANY**  
 Hand Railing

SEE MAT. BILLS. SCALE 1/4" = 1 FT.  
 MADE BY E. Gunther. TRACED BY F.G. [Signature] ON 1/10 BY M.R.N. 1/22/14  
**CONTRACT No. 2201 B SHEET No. 15**



Section at J-A

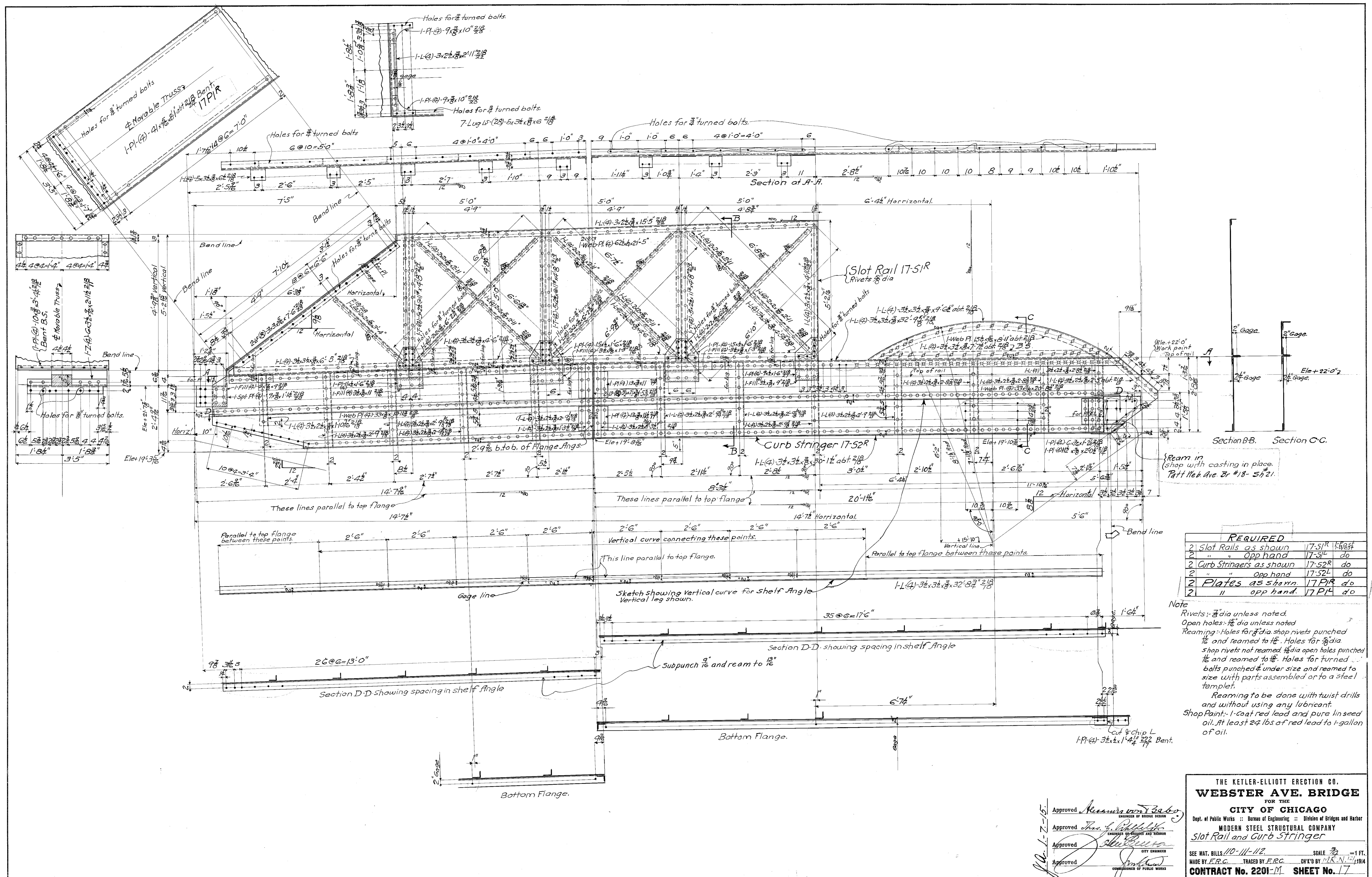
REQUIRED	as shown	16-F1R
2 Floor Plates	as shown	16-F1R
2 Floor Plates	as shown	16-F1R
2 Buckle Plates	as shown	16-S1R
2 " "	as shown	16-S1L
2 " "	as shown	16-S2R
2 " "	Opp hand	16-S2L
2 " "	as shown	16-S3R
2 " "	Opp hand	16-S3L
2 " "	as shown	16-S4
2 " "	" "	16-S5

Note:  
 Rivets: 3/8" dia.  
 Open holes: 1/8" dia.  
 Reaming: None.  
 Shop Paint: 1 coat red lead and pure linseed oil. At least 24 lbs. of red lead to 1 gallon of oil.  
 Drain holes: No drain holes wanted.  
 All buckles turned down.  
 Sizes given for buckle P's on this sheet are net after buckling.

Approved *[Signature]*  
 Approved *[Signature]*  
 Approved *[Signature]*  
 Approved *[Signature]*

THE KETLER-ELLIOTT ERECTION CO.  
**WEBSTER AVE. BRIDGE**  
 FOR THE  
**CITY OF CHICAGO**  
 Dept. of Public Works :: Bureau of Engineering :: Division of Bridges and Harbor  
**MODERN STEEL STRUCTURAL COMPANY**  
 Buckle Plates for Roadway Fixed Part

SEE MAT. BILLS 108-109- SCALE 1/4" = 1 FT.  
 MADE BY E.R.C. TRACED BY E.R.C. SHIP'D BY M.P.N.B. 1914  
**CONTRACT No. 2201-M SHEET No. 16**



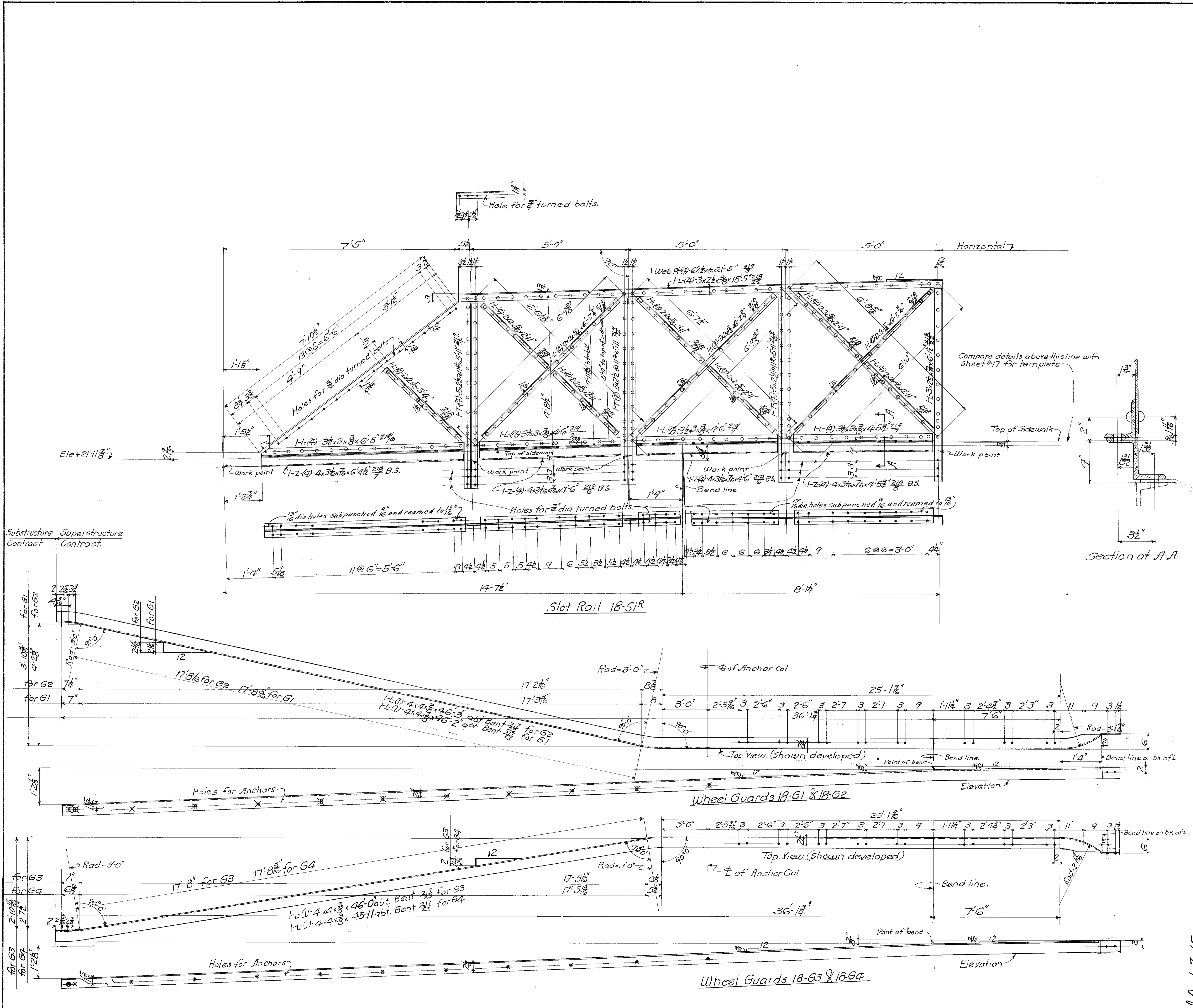
REQUIRED		
2	Slot Rails as shown	17-S1R 1/2 best
2	" opp hand	17-S1L do
2	Curb Stringers as shown	17-S2R do
2	" opp hand	17-S2L do
2	Plates as shown	17-P1R do
2	" opp hand	17-P1L do

**Note**  
 Rivets: 3/4 dia unless noted.  
 Open holes: 1/2 dia unless noted  
 Reaming: Holes for 3/4 dia shop rivets punched 1/8 and reamed to 1/8. Holes for 3/4 dia shop rivets not reamed 1/8 dia open holes punched 1/8 and reamed to 1/8. Holes for turned bolts punched 1/8 under size and reamed to size with parts assembled or to a steel template.  
 Reaming to be done with twist drills and without using any lubricant.  
 Shop Paint: 1-coat red lead and pure lin seed oil. At least 24 lbs of red lead to 1-gallon of oil.

Approved *Richard W. Babo*  
 Approved *John J. ...*  
 Approved *...*  
 Approved *...*

THE KETLER-ELLIOTT ERECTION CO.  
**WEBSTER AVE. BRIDGE**  
 FOR THE  
**CITY OF CHICAGO**  
 Dept. of Public Works :: Bureau of Engineering :: Division of Bridges and Harbor  
**MODERN STEEL STRUCTURAL COMPANY**  
 Slot Rail and Curb Stringer  
 SEE MAT. BILLS 10-11-12. SCALE 3/4" = 1 FT.  
 MADE BY E.R.C. TRACED BY E.R.C. CHK'D BY M.R.N. 1914  
**CONTRACT No. 2201-M SHEET No. 17**  
 DRAW. No. 3856  
 FILE No. 11-68-17

1660570179



REQUIRED			
2	Slot Rails	as shown	18-S1R West
2	"	opp hand	18-S1L do
1	Wheel Guard	as shown	18-G1 West
1	"	"	18-G2 East
1	"	"	18-G3 West
1	"	"	18-G4 East

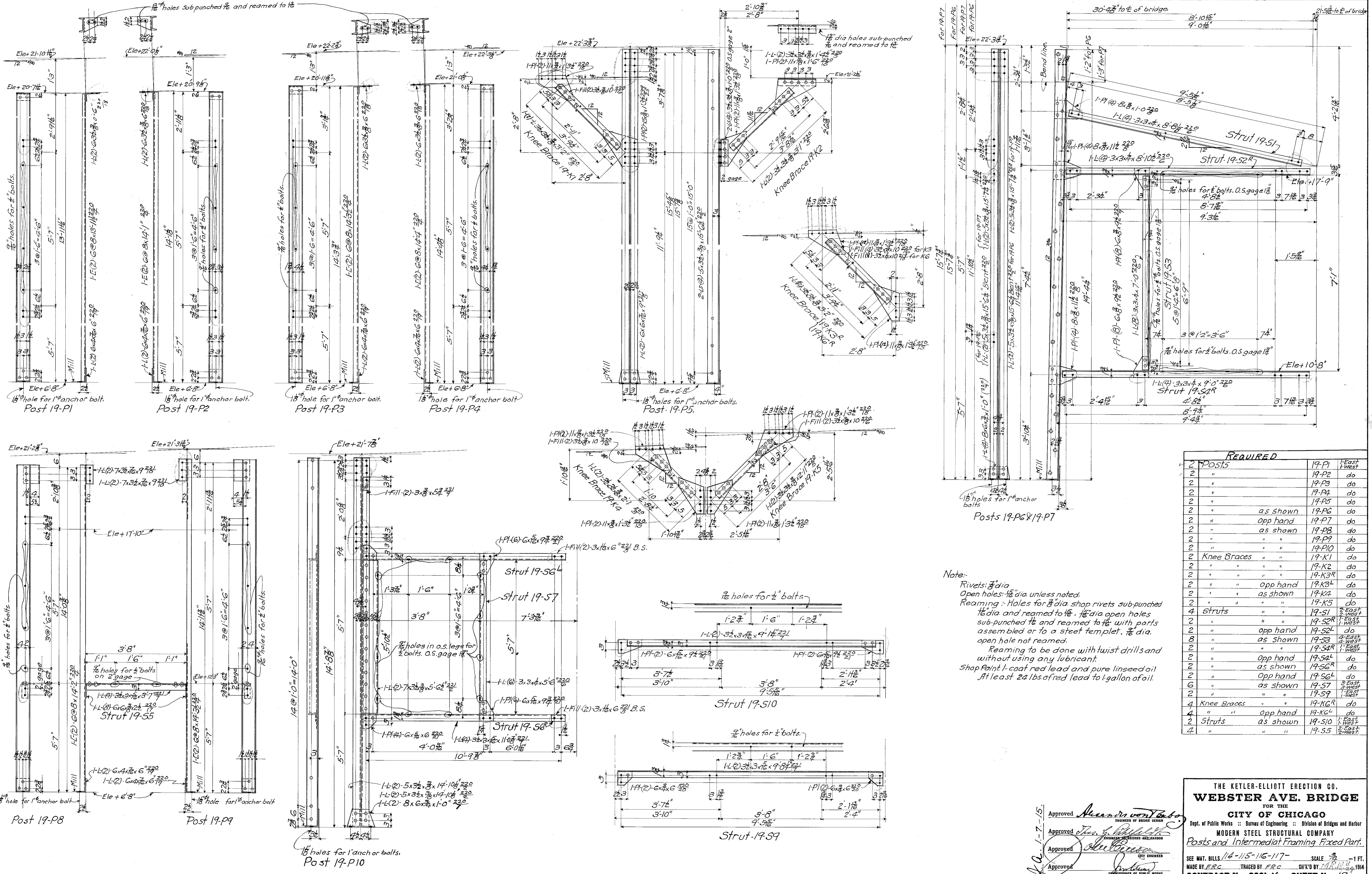
Note:-  
 Rivets: 5/8" dia  
 Open holes: 1/2" dia unless noted.  
 Reaming: Hole for 5/8" dia shop rivets not reamed, 1/2" dia open holes punched 1/8" and reamed to 1/2". Holes for 3/4" dia turned bolts punched 1/8" under size and reamed to size with parts assembled or to a steel template.  
 Reaming to be done with twist drills and without using any lubricant.  
 Shop Point: 1-coat red lead and pure linseed oil. At least 24 lbs of red lead to 1-gallon of oil.

Approved *[Signature]*  
 Approved *[Signature]*  
 Approved *[Signature]*  
 Approved *[Signature]*

THE KETLER-ELLIOTT ERECTION CO.  
**WEBSTER AVE. BRIDGE**  
 FOR THE  
**CITY OF CHICAGO**  
 Dept. of Public Works :: Bureau of Engineering :: Division of Bridges and Harbors  
**MODERN STEEL STRUCTURAL COMPANY**  
 Slot Rail and Wheel Guards

SEE MAT. BILLS 113. SCALE = 1 FT.  
 MADE BY E.R.C. TRACED BY E.R.C. CHK'D BY M.A.N.S.  
**CONTRACT No. 2201-M SHEET No. 18**

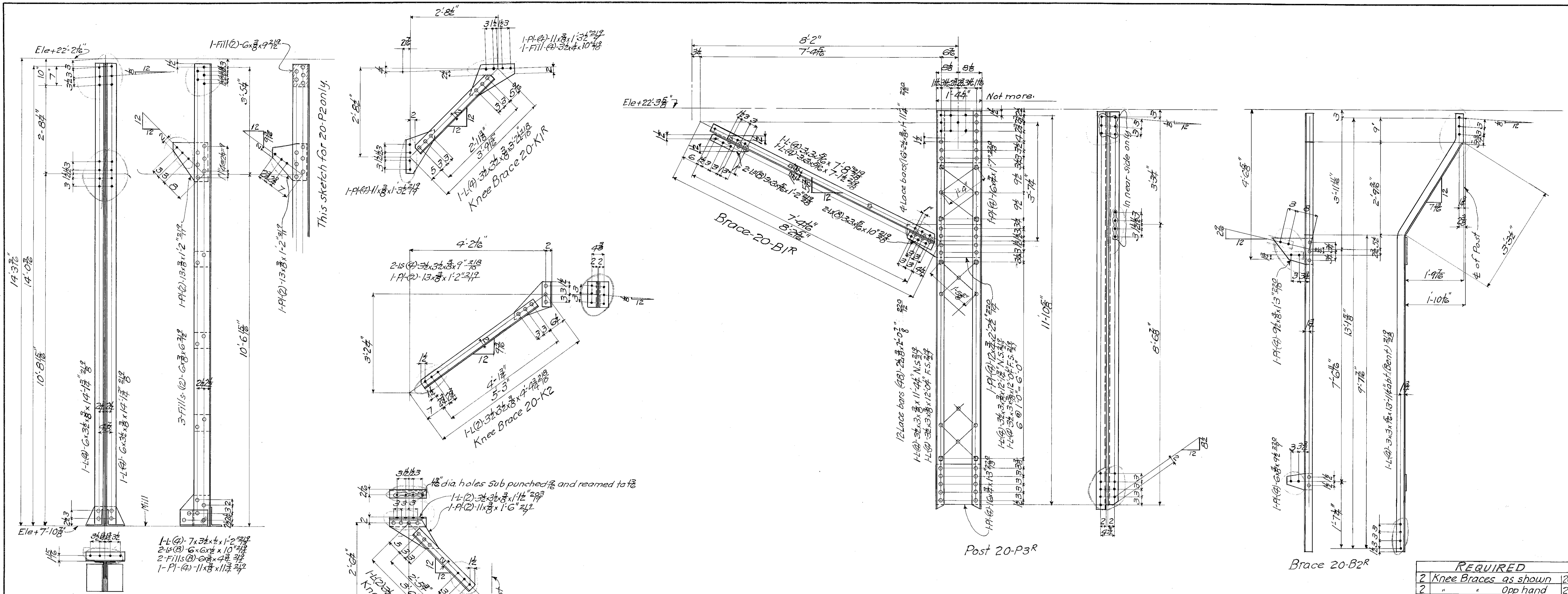
1660570180 DRAW. No. 3857 FILE No. 11-68-18



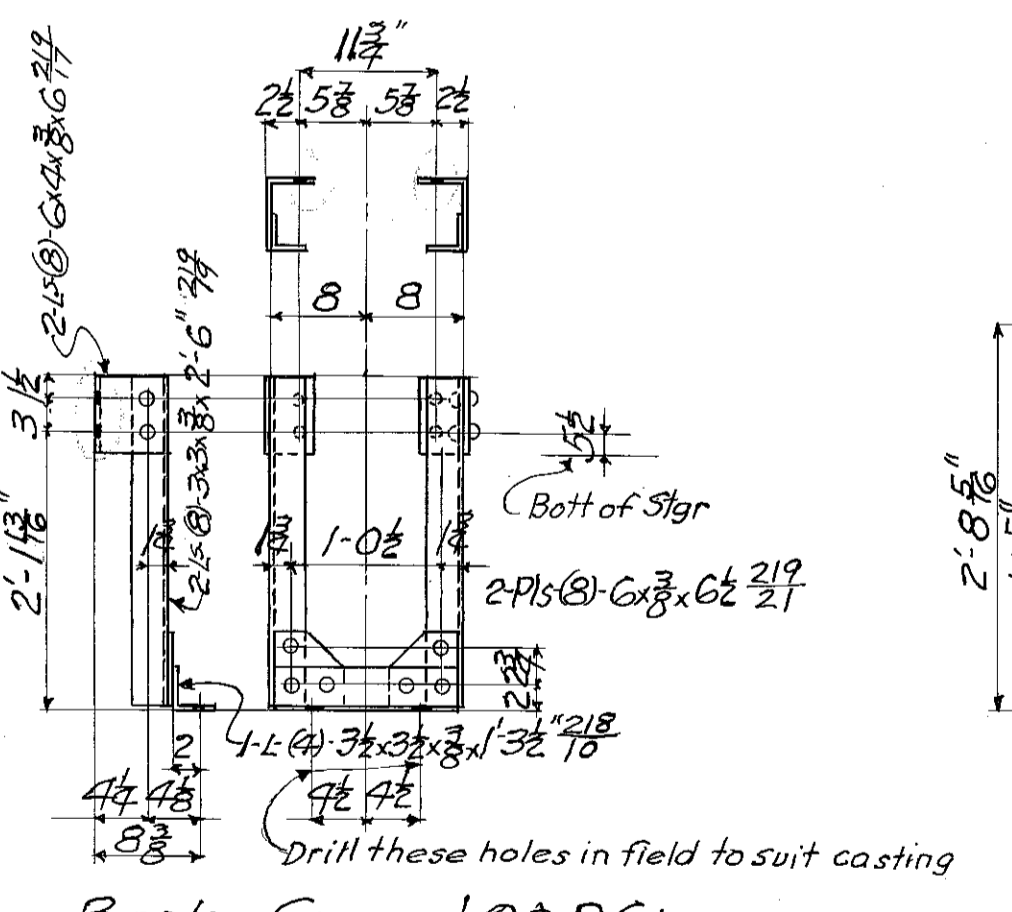
REQUIRED			
2	Posts	19-P1	1 Post
2	"	19-P2	do
2	"	19-P3	do
2	"	19-P4	do
2	"	19-P5	do
2	"	as shown	19-P6
2	"	Opp hand	19-P7
2	"	as shown	19-P8
2	"	"	19-P9
2	"	"	19-P10
2	Knee Braces	"	19-K1
2	"	"	19-K2
2	"	"	19-K3
2	"	Opp hand	19-K4
2	"	as shown	19-K5
2	"	"	19-K6
4	Struts	"	19-S1
2	"	"	19-S2
2	"	Opp hand	19-S3
8	"	as shown	19-S4
2	"	"	19-S5
2	"	Opp hand	19-S6
2	"	as shown	19-S7
2	"	"	19-S8
2	"	"	19-S9
4	Knee Braces	"	19-KGR
4	"	Opp hand	19-KGL
2	Struts	as shown	19-S10
4	"	"	19-S5

Note:  
 Rivets: 3/8" dia  
 Open holes: 1/8" dia unless noted.  
 Reaming: Holes for 3/8" dia shop rivets sub-punched 1/8" dia and reamed to 3/8" dia open holes sub-punched 5/8" and reamed to 3/8" with parts assembled or to a steel template. 3/8" dia. open hole not reamed.  
 Reaming to be done with twist drills and without using any lubricant.  
 Shop Paint: 1-coat red lead and pure linseed oil  
 At least 24 lbs of red lead to 1-gallon of oil.

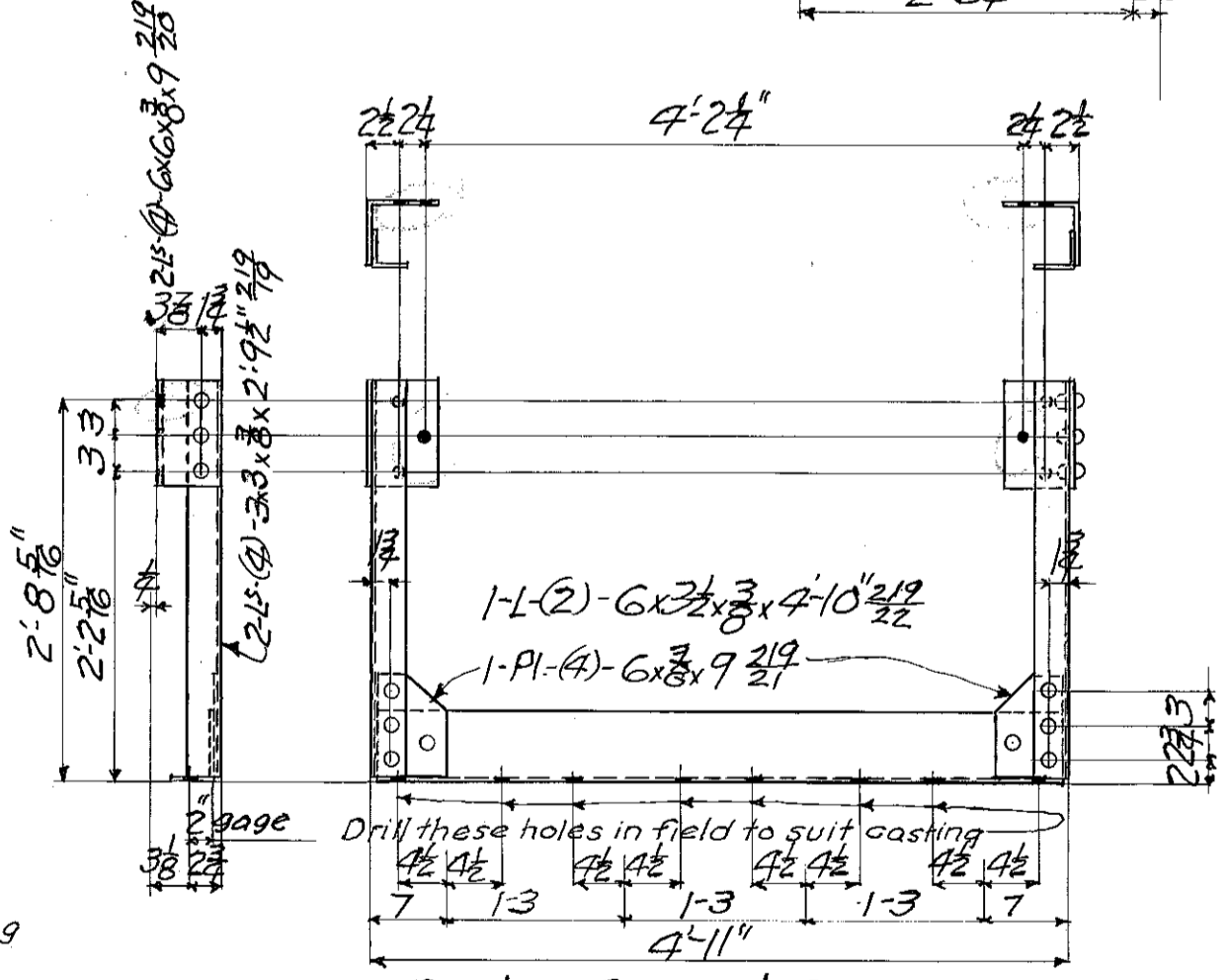
THE KETTLER-ELLIOTT ERECTION CO.  
**WEBSTER AVE. BRIDGE**  
 FOR THE  
**CITY OF CHICAGO**  
 Dept. of Public Works :: Bureau of Engineering :: Division of Bridges and Harbor  
**MODERN STEEL STRUCTURAL COMPANY**  
 Posts and Intermediate Framing Fixed Part.  
 SEE MAT. BILLS 114-115-116-117- SCALE 1/8" = 1 FT.  
 MADE BY ERC TRACED BY ERC CHK'D BY J.R.M. 12/29/1914  
**CONTRACT No. 2201-M SHEET No. 19**



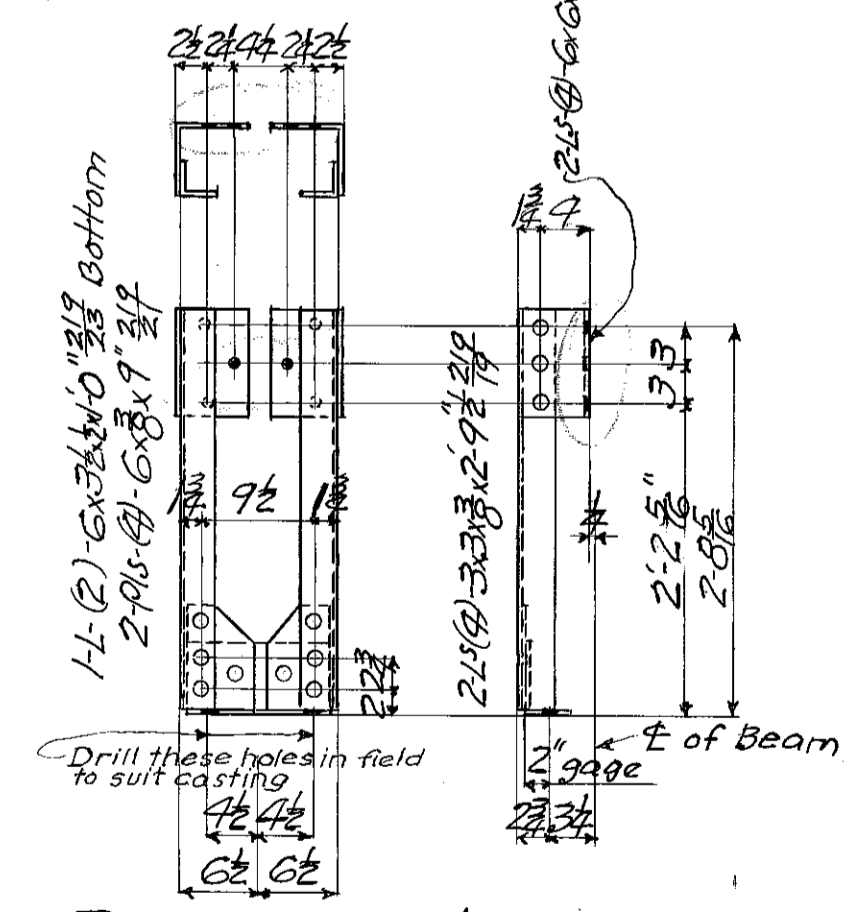
Posts - 20-P1 and 20-P2



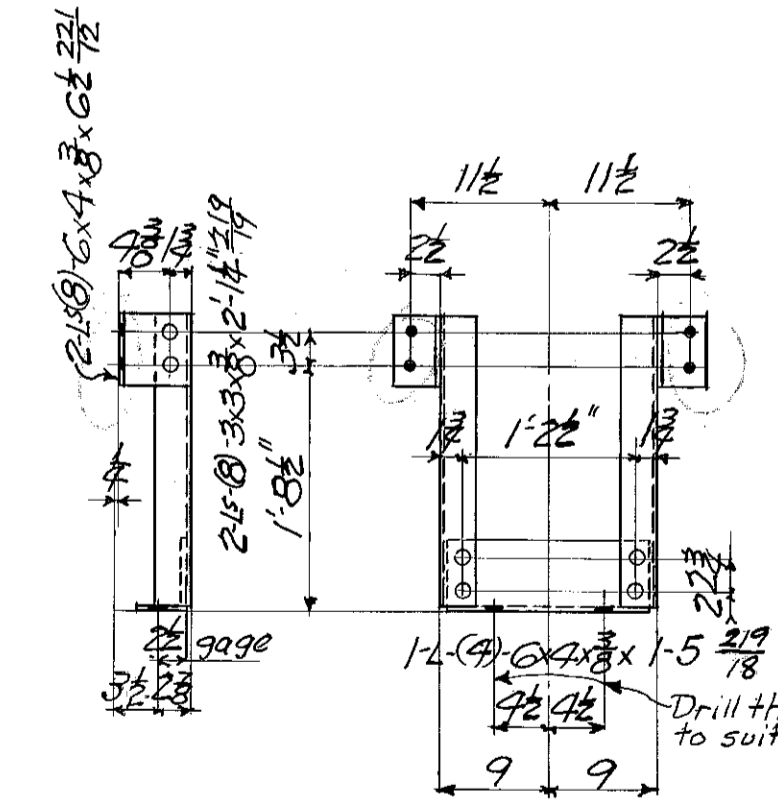
Brake Support 20-B1



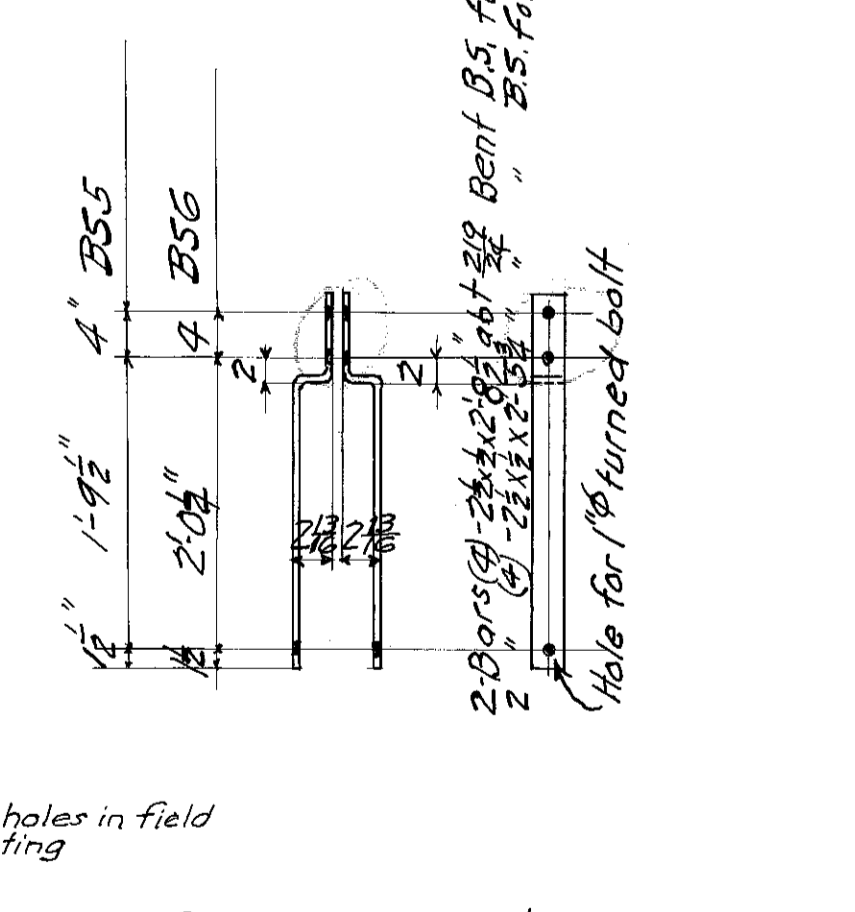
Brake Support 20-B2



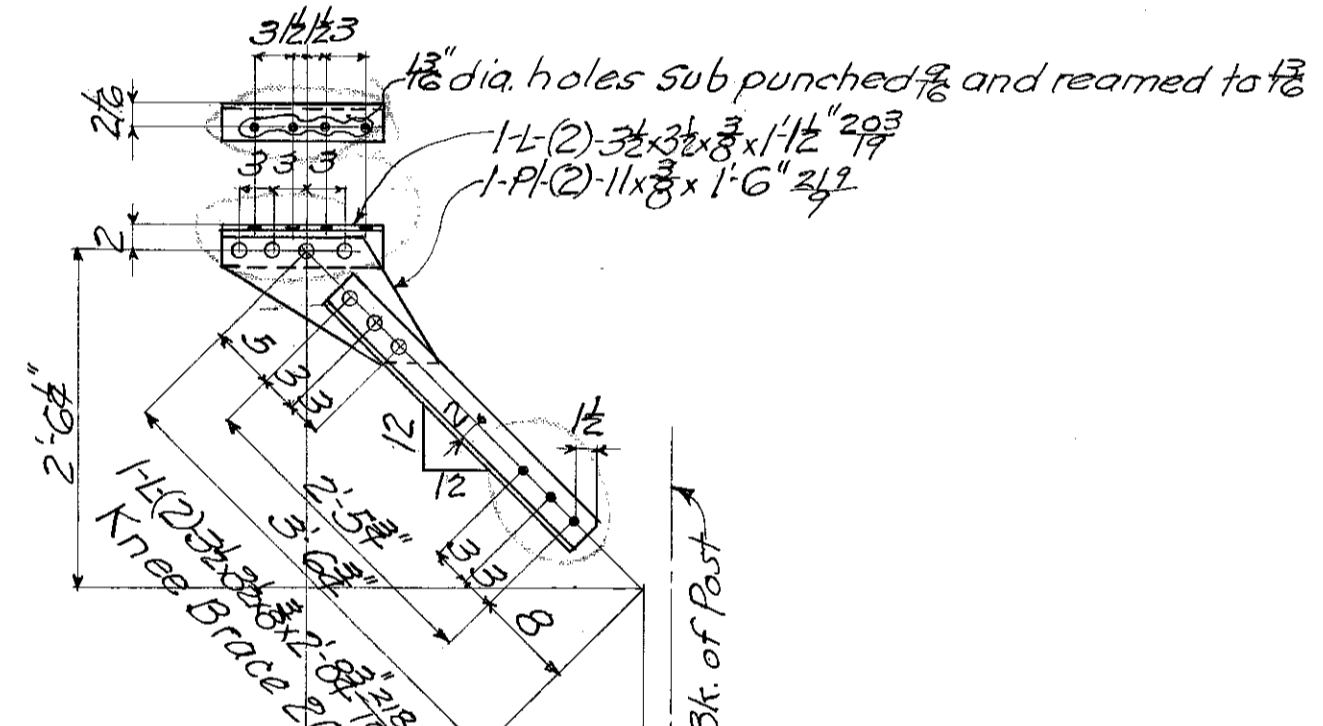
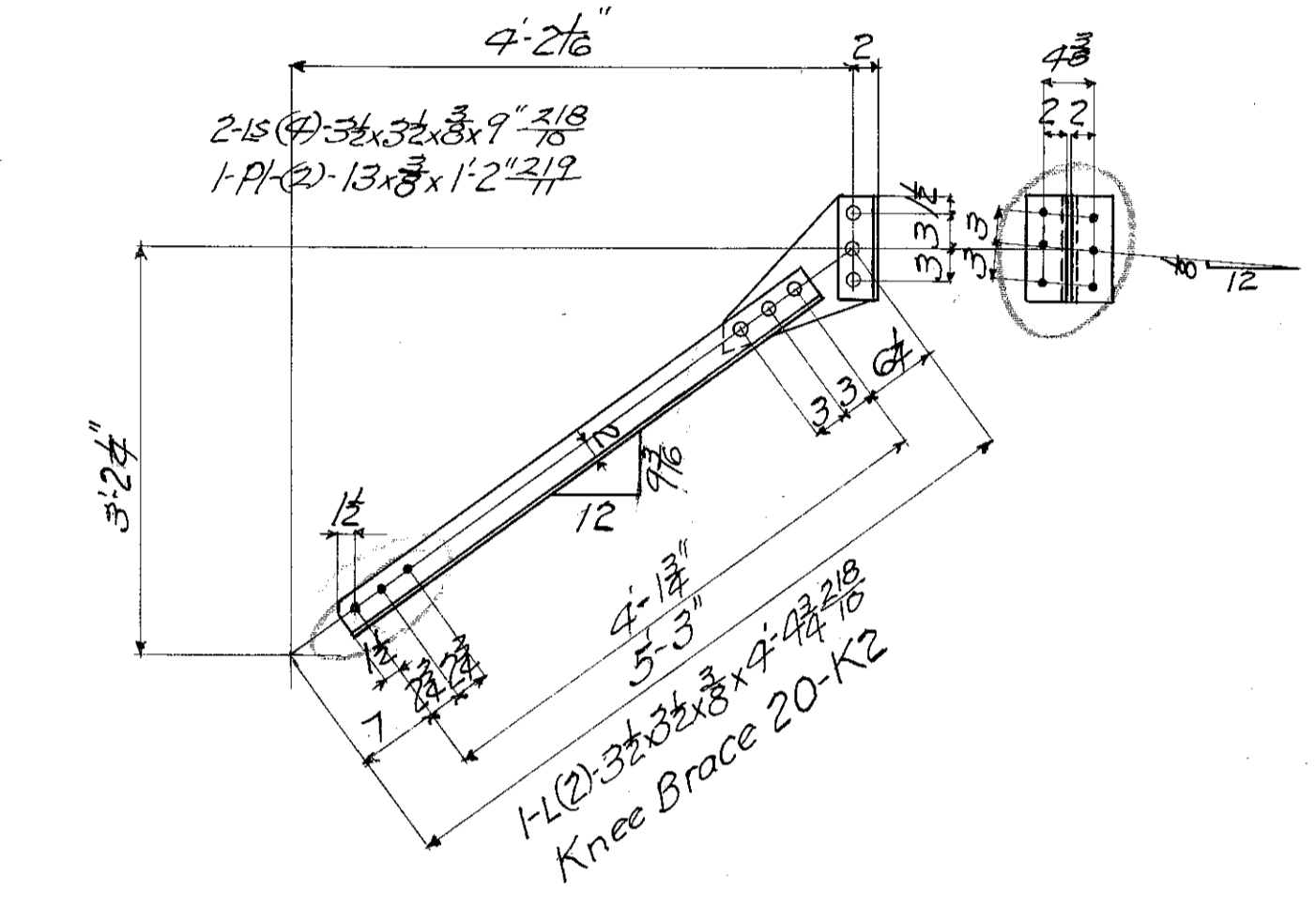
Brake Support 20-B3



Brake Support 20-B4



Brake Support 20-B5



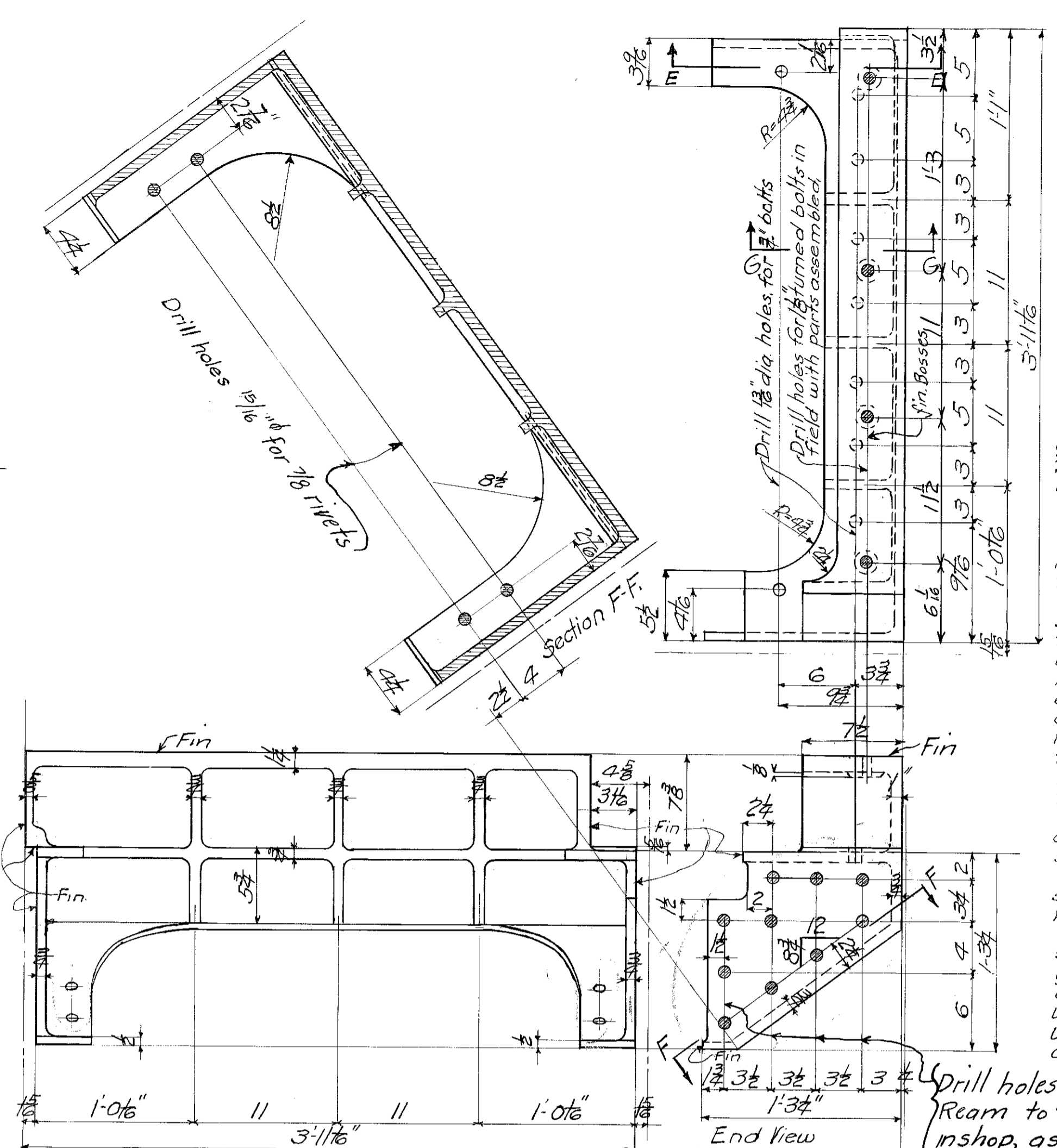
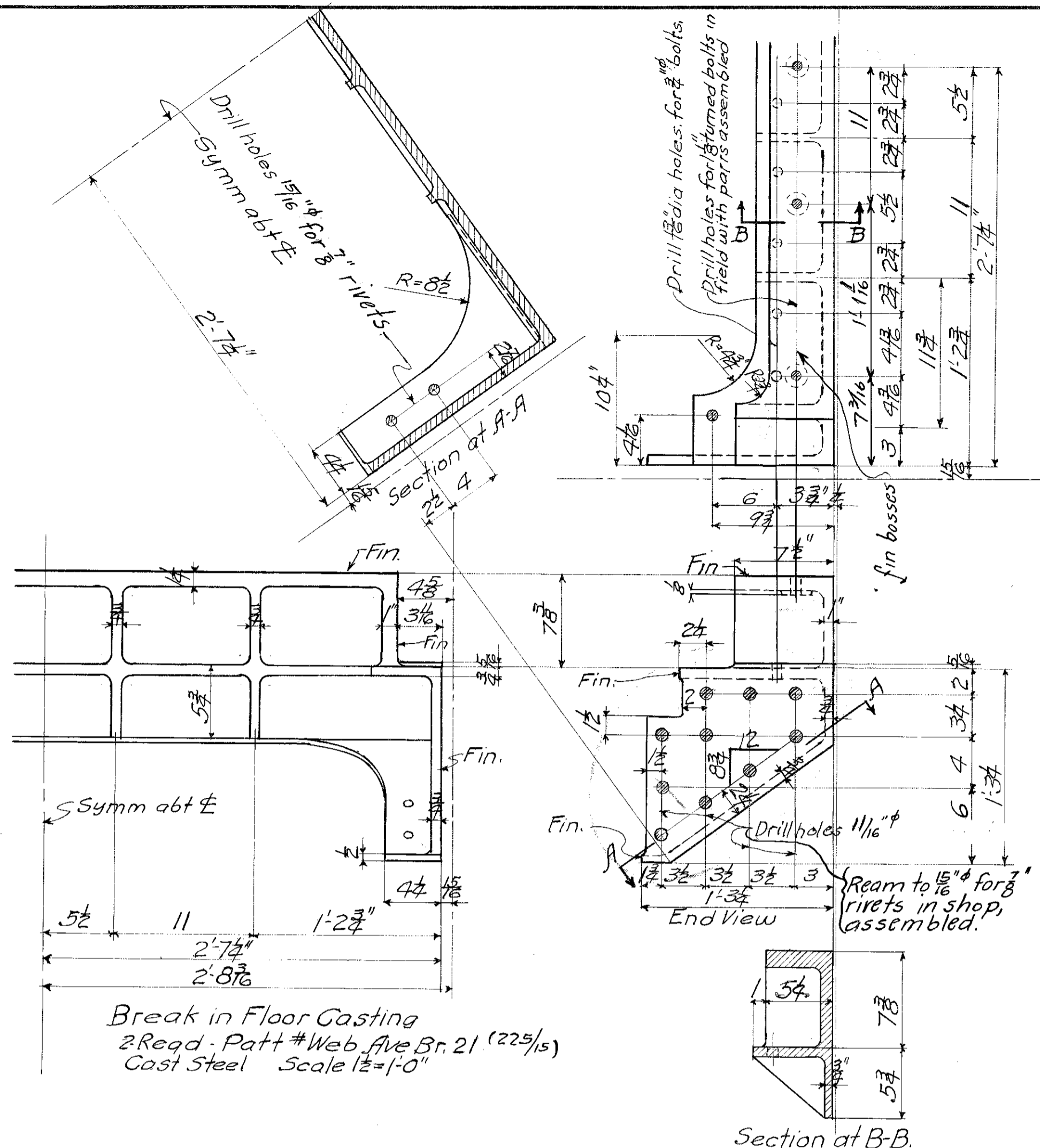
REQUIRED			
2	Knee Braces as shown	20-K1	West
2	" " " " "	20-K1	do
2	" " " " "	20-K2	do
2	" " " " "	20-K3	do
2	Posts " " "	20-P1	do
2	" " " " "	20-P2	do
2	" " " " "	20-P3R	do
2	" " " " "	20-B1	do
2	" " " " "	20-B2	do
2	" " " " "	20-B3	do
2	" " " " "	20-B4	do
2	" " " " "	20-B5	do
4	Brake supports as shown	20-B5	West
2	" " " " "	20-B5	West
2	" " " " "	20-B5	do
4	" " " " "	20-B5	West
2	" " " " "	20-B5	West
2	" " " " "	20-B5	do

Note:  
 Rivets: 3/4" dia.  
 Open holes: 1/4" dia unless noted  
 Reaming: Holes for shop rivets sub-punched 1/8" and reamed to 1/4".  
 1/2" dia open holes sub-punched 1/8" and reamed to 1/4" with parts assembled or to a steel template.  
 Reaming to be done with twist drills and without using any lubricant.  
 Shop Paint: 1 coat red lead and pure linseed oil. At least 24 lbs. of red lead to 1-gallon of oil.

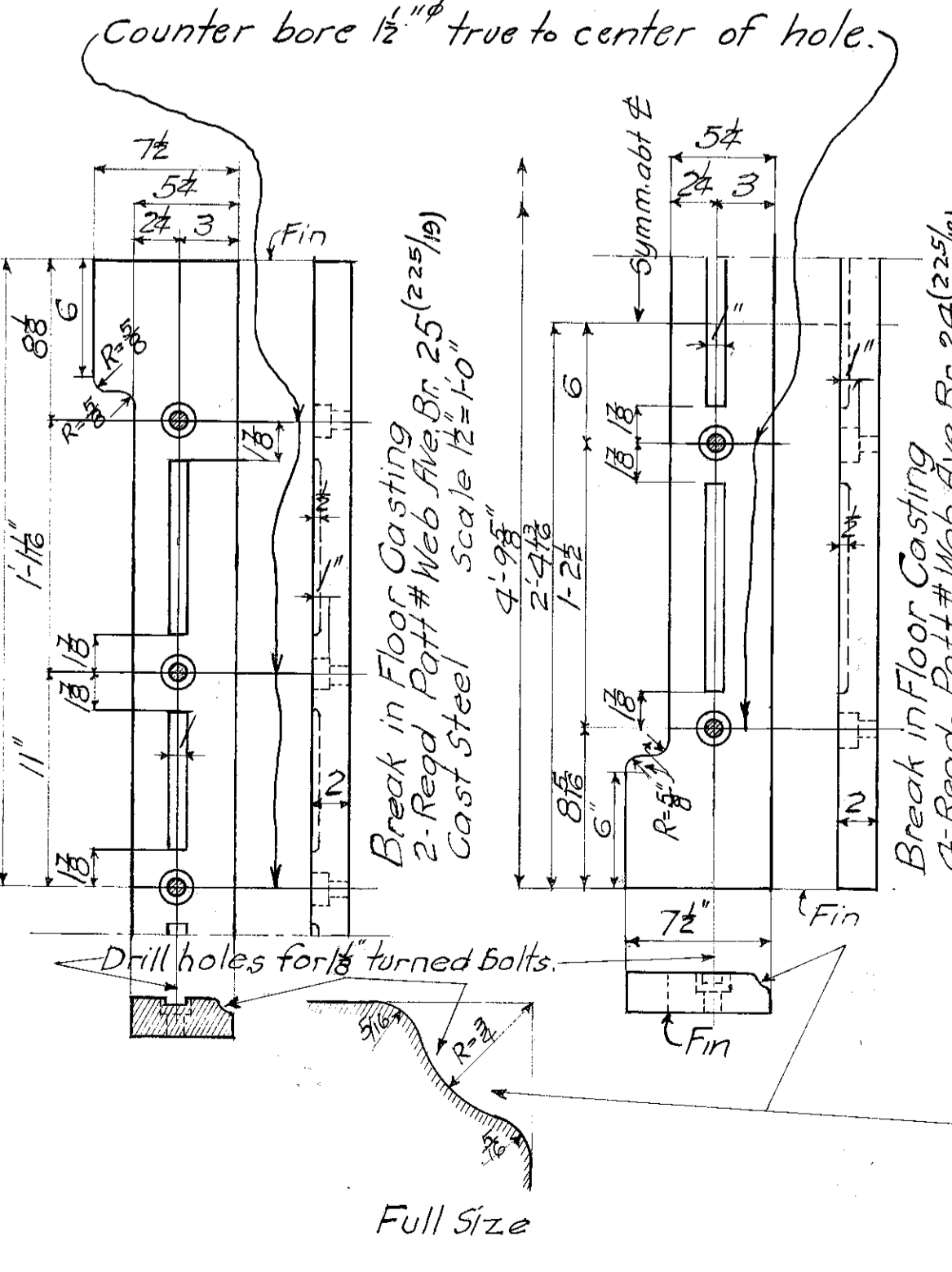
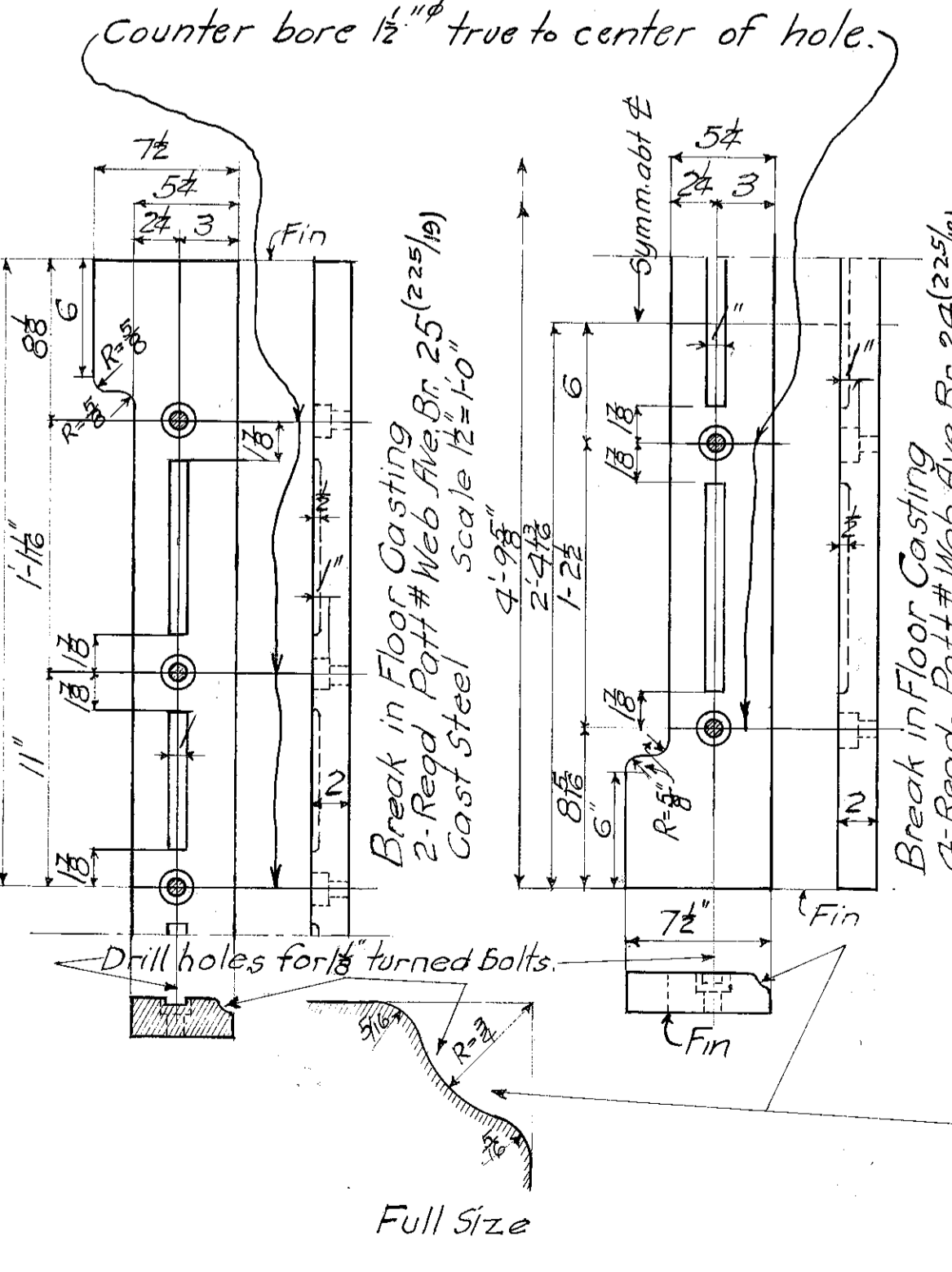
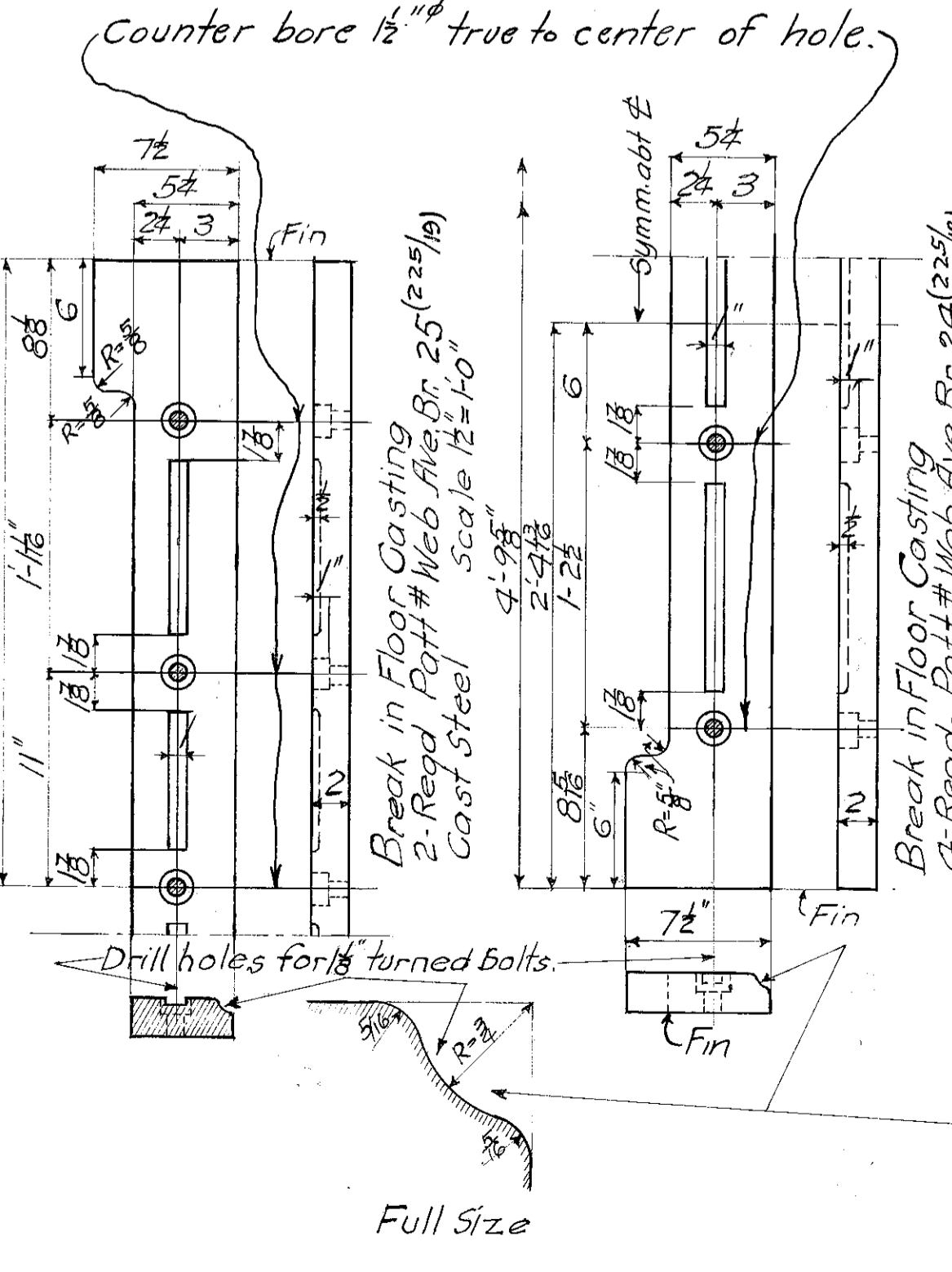
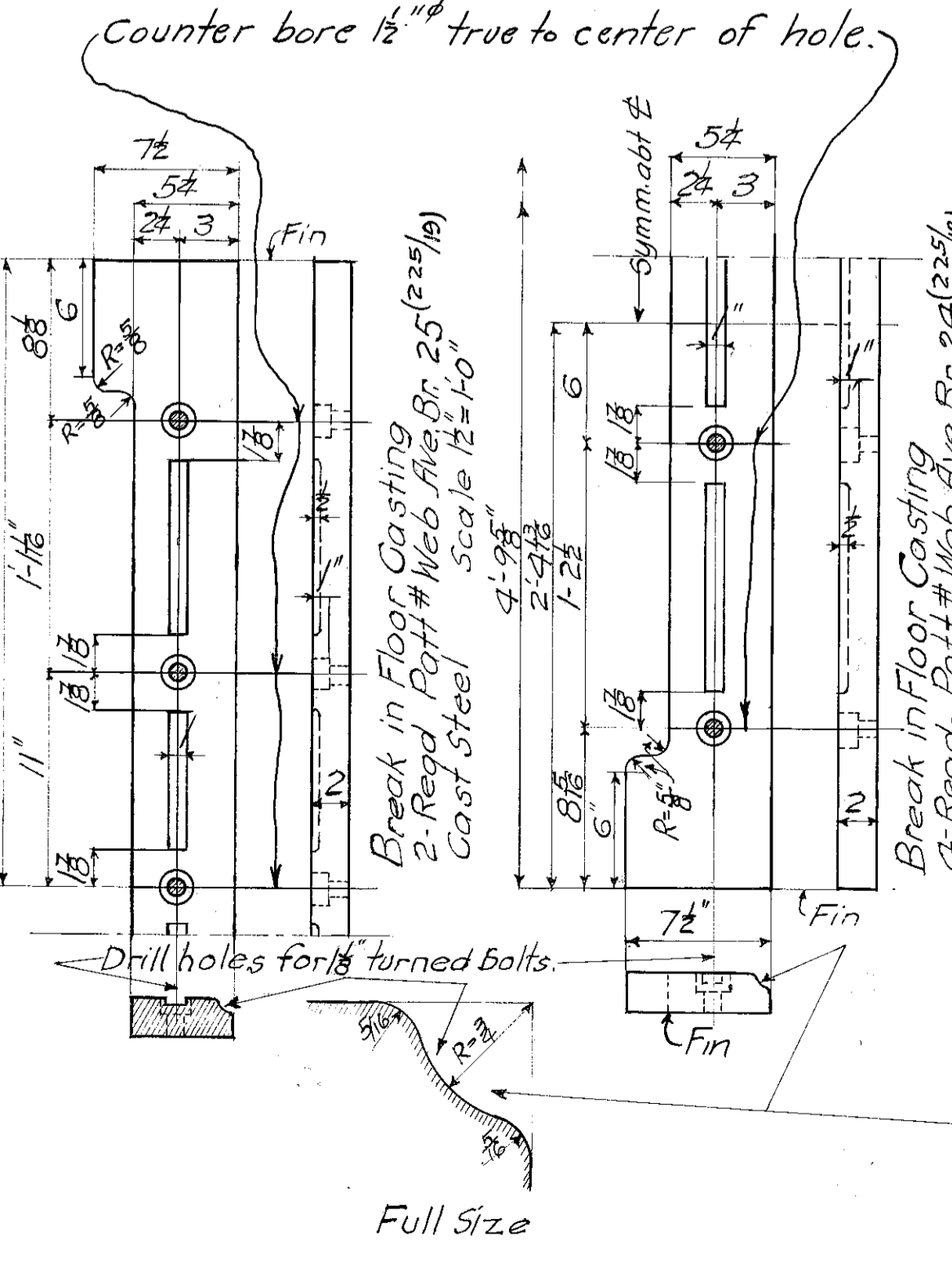
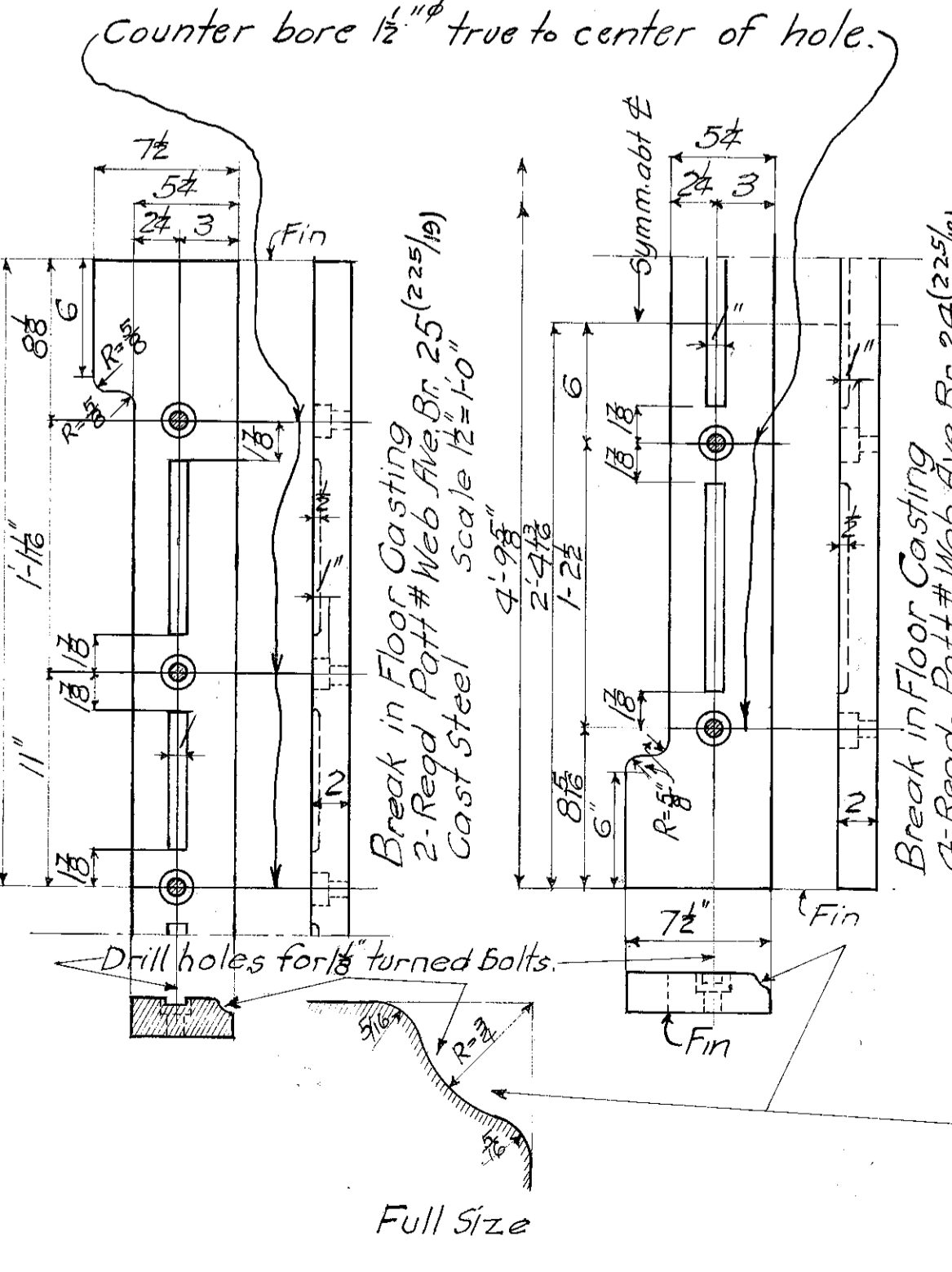
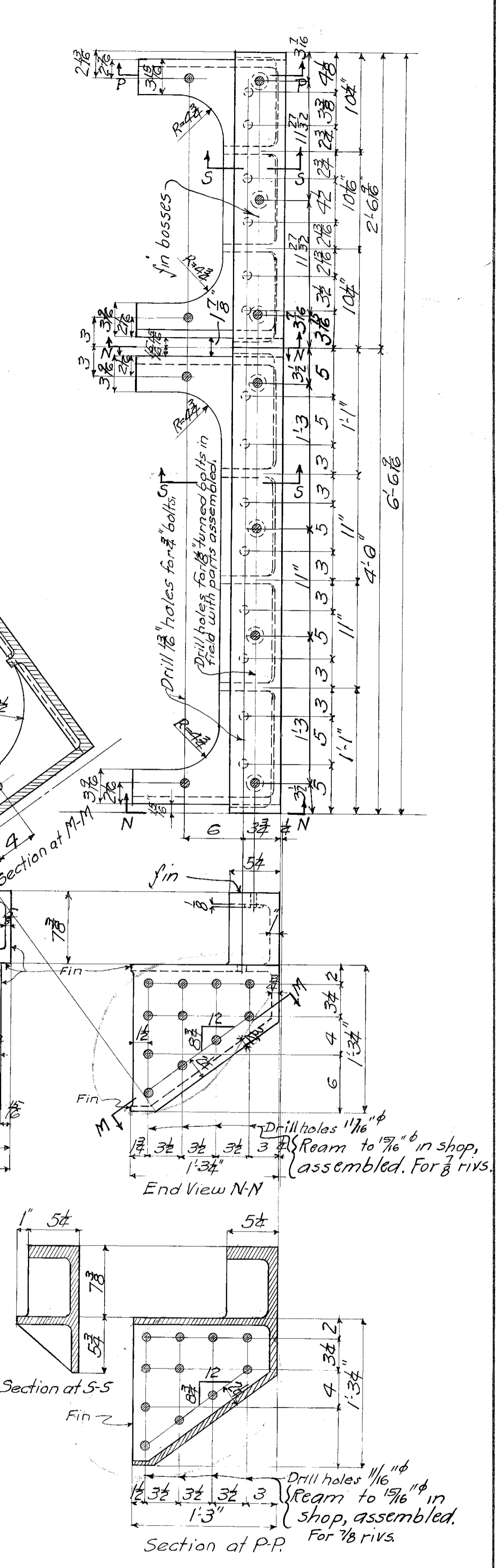
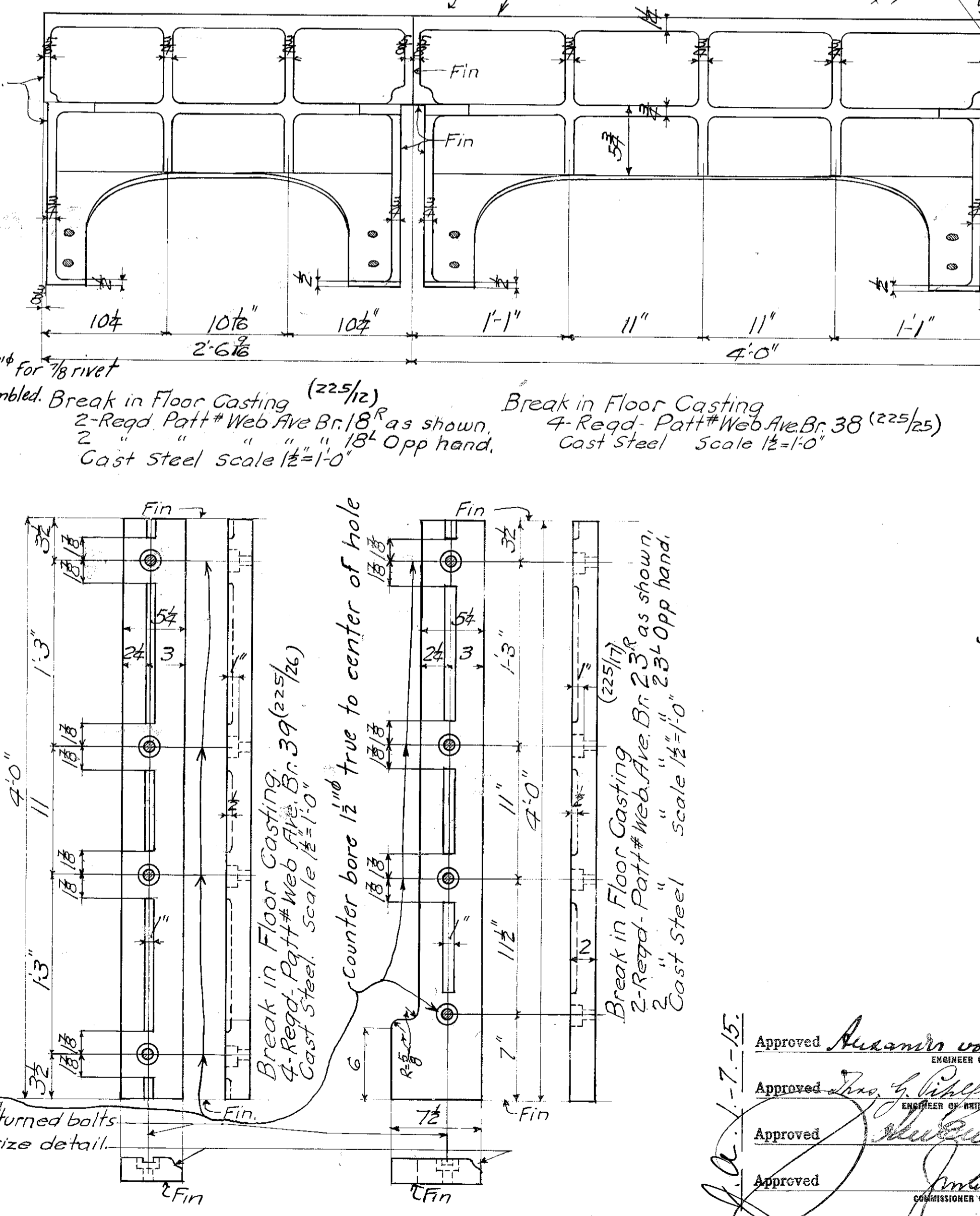
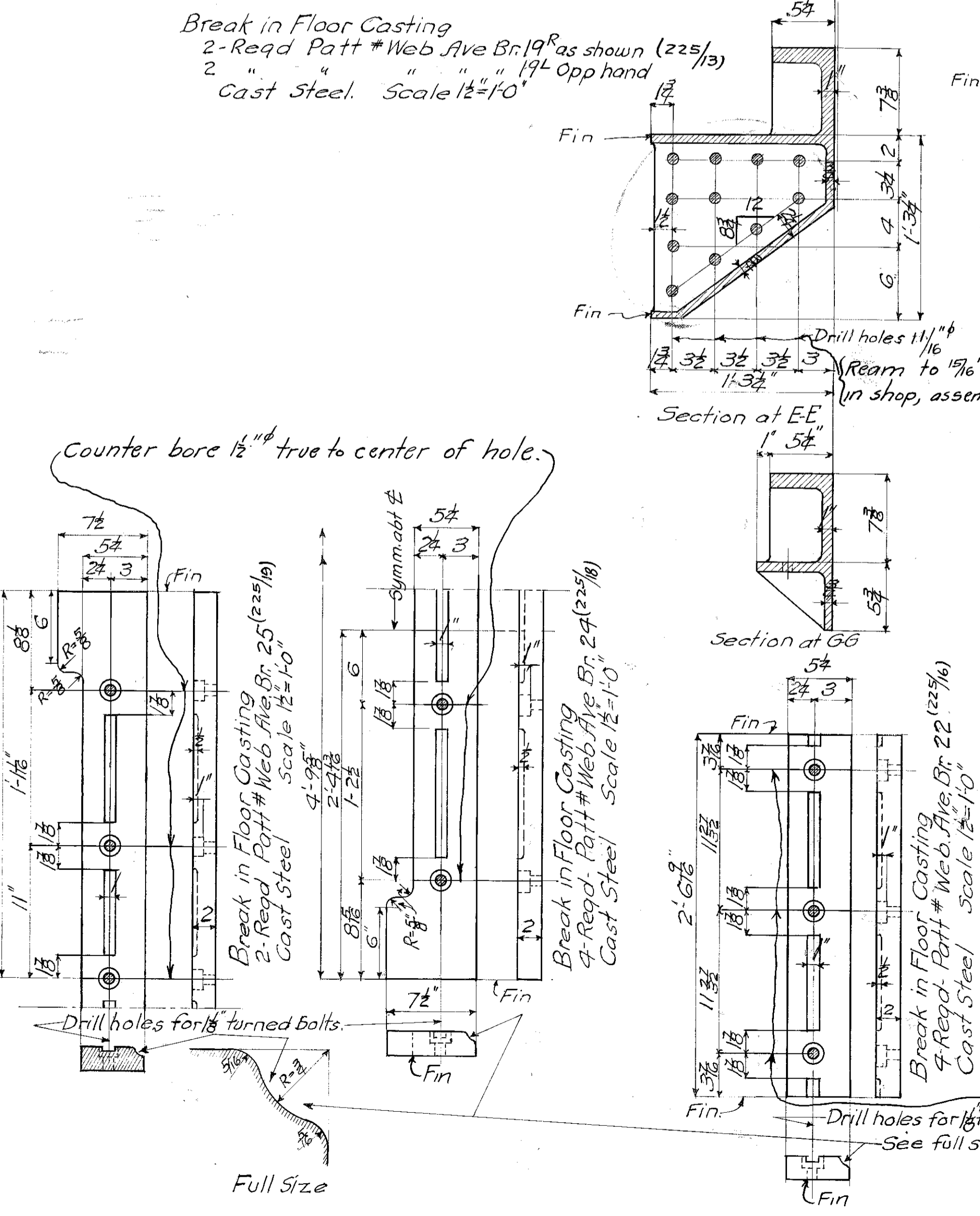
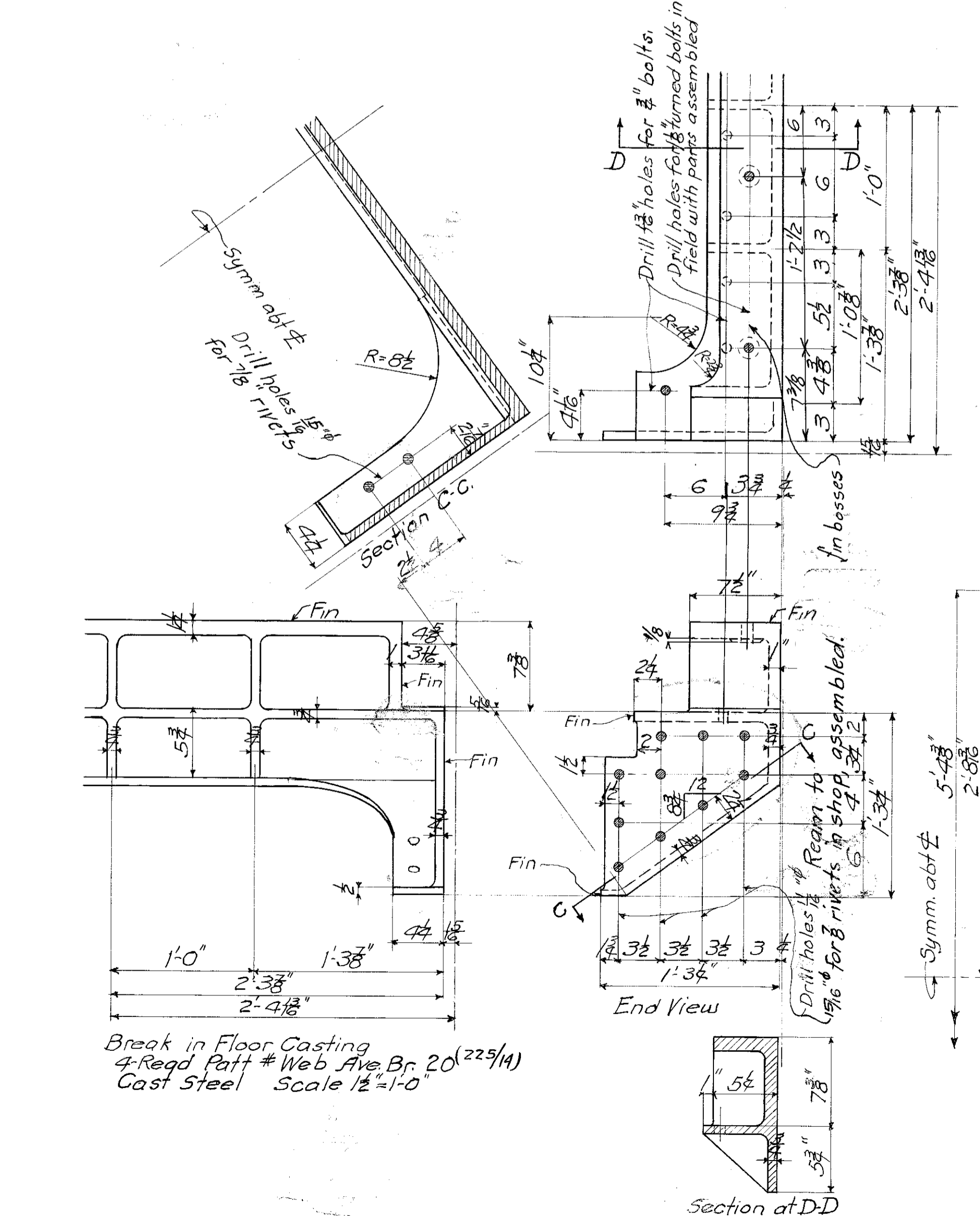
Approved [Signature]  
 Approved [Signature]  
 Approved [Signature]  
 Approved [Signature]

THE KETLER-ELLIOTT ERECTION CO.  
**WEBSTER AVE. BRIDGE**  
 FOR THE  
**CITY OF CHICAGO**  
 Dept. of Public Works :: Bureau of Engineering :: Division of Bridges and Harbors  
**MODERN STEEL STRUCTURAL COMPANY**  
 Posts, Bracing, & Brake Supports, Fixed Part.  
 SEE MAT. BILLS 118-119-120. SCALE 3/8" = 1 FT.  
 MADE BY E.R.C. TRACED BY E.R.C. CHK'D BY P.L.R.N. 1914  
**CONTRACT No. 2201/M SHEET No. 20**





**General Notes.**  
 All patterns, including core boxes, for castings of any material shall be the property of the City of Chicago, and after the bridge is completed shall be delivered in good condition by the Contractor to the pattern loft of the Bridge Division, Bureau of Engineering, in the City of Chicago.  
 All patterns for castings shall be subject to inspection and approval before castings are made from them and again on final delivery to the City.  
 Patterns for castings shall be made of thoroughly seasoned, first class pattern lumber and shall be put together to stand repeated use and long time storage without damage. They shall be finished to give a neat appearance to castings. The outer unfinished edges of all ribs, bases, etc., shall be rounded off to a radius of one-fourth the thickness of the rib, and inside corners shall be fitted with wood or leather filets, well fastened and rounded out to a radius of at least one-half the thickness of the thinnest rib forming the corner.  
 All patterns shall be fitted with lifting and tapping plates and each one, if large enough, shall have set flush with its surface a metal plate bearing the letters Web. Ave. Br. in sharp face, gothic style, at least three-quarters inch high. Each pattern shall have a designating letter and number situated so as to be visible when the casting is in position in the structure.  
 Patterns for iron and steel castings shall be stained black on surfaces unfinished on castings, red on surfaces tool finished, and yellow or clear shellac on core prints. The stain shall be mixed with the shellac. The patterns shall be thoroughly varnished before use with first class pattern shellac dissolved in grain alcohol and after final use shall be thoroughly repaired, cleaned and varnished again before delivery to the City.

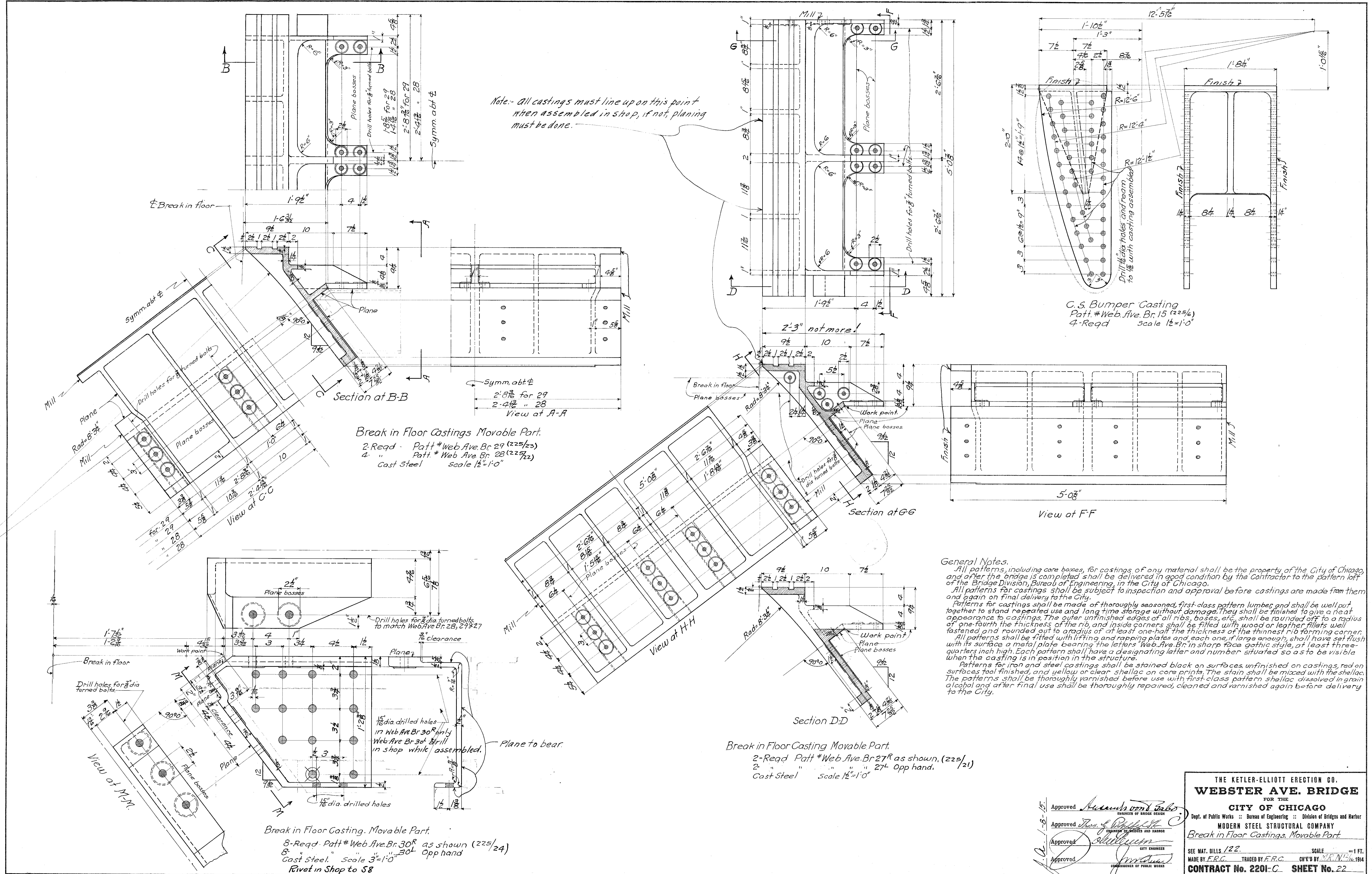


THE KETLER-ELLIOTT ERECTION CO.  
**WEBSTER AVE. BRIDGE**  
 FOR THE  
**CITY OF CHICAGO**  
 Dept. of Public Works :: Bureau of Engineering :: Division of Bridges and Harbors  
**MODERN STEEL STRUCTURAL COMPANY**  
 Break in Floor Castings, Fixed Part

Approved: *Assessors von Tabor*  
 Approved: *John J. ...*  
 Approved: *...*  
 Approved: *...*

SEE MAT. BILLS 121. SCALE = 1 FT.  
 MADE BY F.R.C. TRACED BY F.R.C. CH'G'D BY ...  
**CONTRACT No. 2201-C SHEET No. 21**  
**DRAW. No. 3860**  
 FILE No. 11-6B-21

1660570183



Note: - All castings must line up on this point when assembled in shop, if not, planing must be done.

Break in Floor Castings Movable Part.  
 2-Reqd. Patt # Web Ave Br 29 (225/23)  
 2- " " " " 28 (225/22)  
 Cast Steel scale 1/2"=1'-0"

C.S. Bumper Casting  
 Patt # Web Ave Br 15 (225/6)  
 4-Reqd scale 1/2"=1'-0"

Break in Floor Casting Movable Part.  
 2-Reqd Patt # Web Ave Br 27<sup>R</sup> as shown, (225/21)  
 2- " " " " 27<sup>L</sup> Opp hand.  
 Cast Steel scale 1/2"=1'-0"

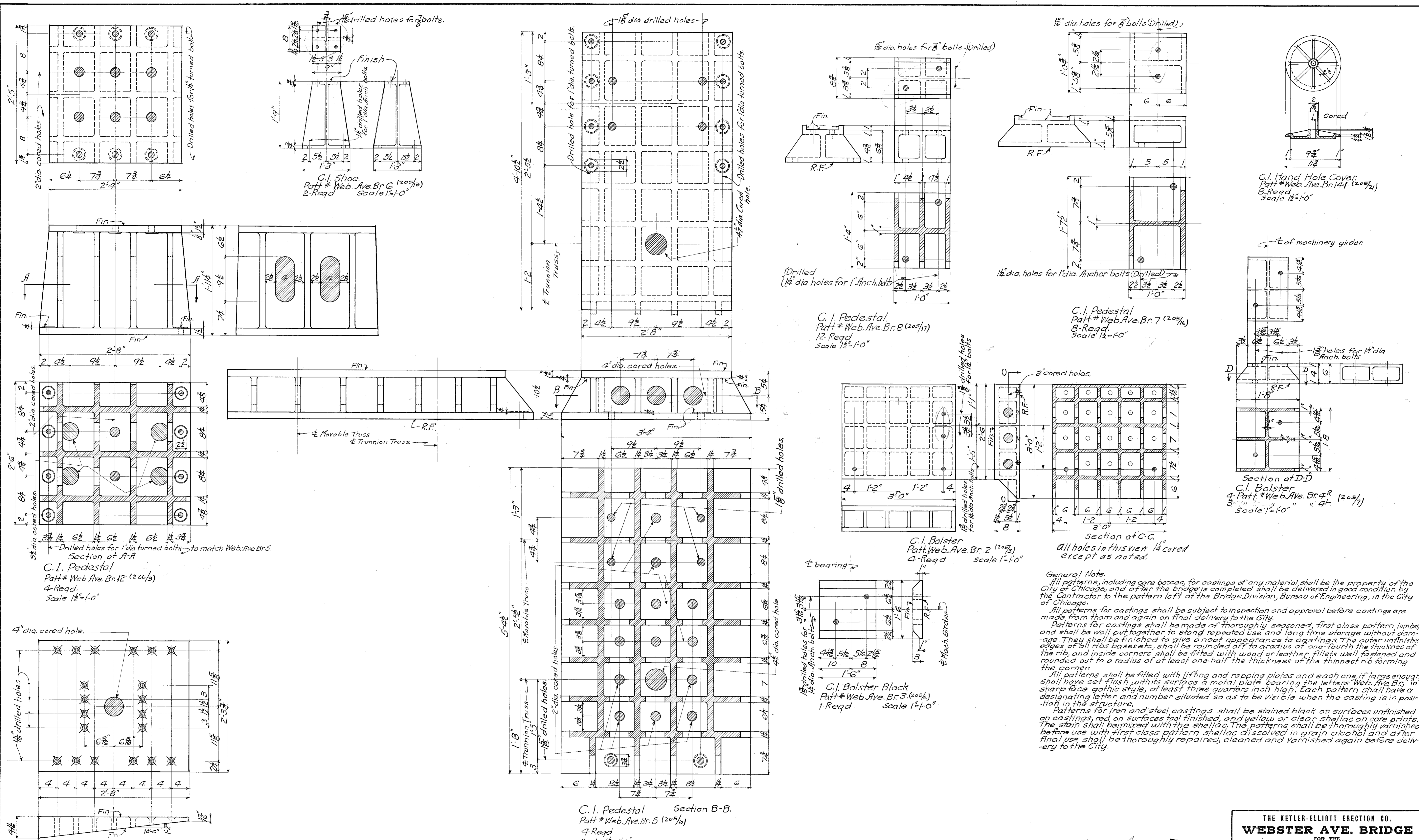
Break in Floor Casting, Movable Part.  
 8-Reqd Patt # Web Ave Br 30<sup>R</sup> as shown (225/24)  
 8- " " " " 30<sup>L</sup> Opp hand  
 Cast Steel scale 3/4"=1'-0"  
 Rivet in Shop to S8

**General Notes.**  
 All patterns, including core boxes, for castings of any material shall be the property of the City of Chicago, and after the bridge is completed shall be delivered in good condition by the Contractor to the pattern loft of the Bridge Division, Bureau of Engineering, in the City of Chicago.  
 All patterns for castings shall be subject to inspection and approval before castings are made from them and again on final delivery to the City.  
 Patterns for castings shall be made of thoroughly seasoned, first-class pattern lumber and shall be well put together to stand repeated use and long time storage without damage. They shall be finished to give a neat appearance to castings. The outer unfinished edges of all ribs, bosses, etc., shall be rounded off to a radius of one-fourth the thickness of the rib, and inside corners shall be filled with wood or leather fillets well fastened and rounded out to a radius of at least one-half the thickness of the thinnest rib forming corner.  
 All patterns shall be fitted with lifting and rapping plates and, each one, if large enough, shall have set flush with its surface a metal plate bearing the letters "Web Ave Br" in sharp face gothic style, at least three-quarters inch high. Each pattern shall have a designating letter and number situated so as to be visible when the casting is in position in the structure.  
 Patterns for iron and steel castings shall be stained black on surfaces unfinished on castings, red on surfaces tool finished, and yellow or clear shellac on core prints. The stain shall be mixed with the shellac. The patterns shall be thoroughly varnished before use with first-class pattern shellac dissolved in grain alcohol and after final use shall be thoroughly repaired, cleaned and varnished again before delivery to the City.

Approved *[Signature]*  
 Approved *[Signature]*  
 Approved *[Signature]*  
 Approved *[Signature]*

THE KETTLER-ELLIOTT ERECTION CO.  
**WEBSTER AVE. BRIDGE**  
 FOR THE  
**CITY OF CHICAGO**  
 Dept. of Public Works :: Bureau of Engineering :: Division of Bridges and Harbor  
**MODERN STEEL STRUCTURAL COMPANY**  
 Break in Floor Castings, Movable Part.  
 SEE MAT. BILLS 122. SCALE = 1 FT.  
 MADE BY F.R.C. TRADED BY F.R.C. CH'G'D BY M.N. 1914  
**CONTRACT No. 2201-C SHEET No. 22**





**General Note**  
 All patterns, including core boxes, for castings of any material shall be the property of the City of Chicago, and after the bridge is completed shall be delivered in good condition by the Contractor to the pattern loft of the Bridge Division, Bureau of Engineering, in the City of Chicago.  
 All patterns for castings shall be subject to inspection and approval before castings are made from them and again on final delivery to the City.  
 Patterns for castings shall be made of thoroughly seasoned, first class pattern lumber and shall be well put together to stand repeated use and long time storage without damage. They shall be finished to give a neat appearance to castings. The outer unfinished edges of all ribs bases etc., shall be rounded off to radius of one-fourth the thickness of the rib, and inside corners shall be fitted with wood or leather fillets well fastened and rounded out to a radius of at least one-half the thickness of the thinnest rib forming the corner.  
 All patterns shall be fitted with lifting and rapping plates and each one, if large enough, shall have set flush with its surface a metal plate bearing the letters 'Web. Ave. Br.' in sharp face gothic style, of least three-quarters inch high. Each pattern shall have a designating letter and number situated so as to be visible when the casting is in position in the structure.  
 Patterns for iron and steel castings shall be stained black on surfaces unfinished on castings, red on surfaces tool finished, and yellow or clear shellac on core prints. The stain shall be mixed with the shellac. The patterns shall be thoroughly varnished before use with first class pattern shellac dissolved in grain alcohol and after final use shall be thoroughly repaired, cleaned and varnished again before delivery to the City.

C.S. Sole Plate  
 Patt # Web. Ave. Br. 31 (205/20)  
 4 Reqd.  
 Scale 1/2"=1'-0"  
 Rivet shop to TT1 & TT2.

C.I. Pedestal Section B-B  
 Patt # Web. Ave. Br. 5 (205/10)  
 4 Reqd.  
 Scale 1/2"=1'-0"

C.I. Bolster Block  
 Patt # Web. Ave. Br. 3 (205/6)  
 1 Reqd.  
 Scale 1/2"=1'-0"

C.I. Bolster  
 Patt. Web. Ave. Br. 2 (205/3)  
 4 Reqd.  
 Scale 1/2"=1'-0"

C.I. Pedestal  
 Patt # Web. Ave. Br. 7 (205/16)  
 8 Reqd.  
 Scale 1/2"=1'-0"

C.I. Pedestal  
 Patt # Web. Ave. Br. 8 (205/11)  
 12 Reqd.  
 Scale 1/2"=1'-0"

C.I. Hand Hole Cover  
 Patt # Web. Ave. Br. 14 (205/21)  
 8 Reqd.  
 Scale 1/2"=1'-0"

Section at D-D  
 C.I. Bolster  
 3- Patt # Web. Ave. Br. 4R (205/1)  
 Scale 1/2"=1'-0"

Section at C-C  
 All holes in this view 1/4" cored  
 except as noted.

THE KETLER-ELLIOTT ERECTION CO.  
**WEBSTER AVE. BRIDGE**  
 FOR THE  
**CITY OF CHICAGO**  
 Dept. of Public Works :: Bureau of Engineering :: Division of Bridges and Harbors  
**MODERN STEEL STRUCTURAL COMPANY**  
 Iron Castings

Approved *Alexander von Bodo*  
 ENGINEER OF BRIDGE DESIGN

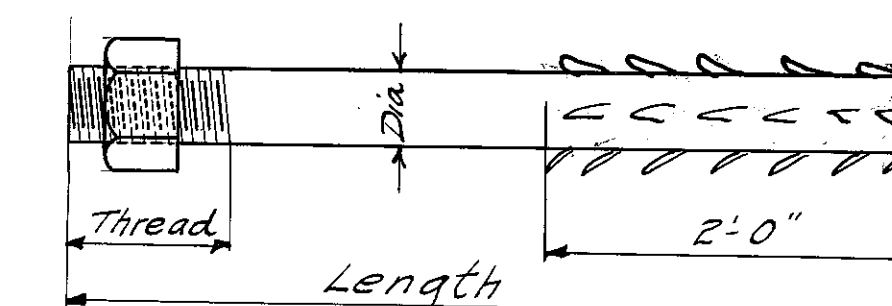
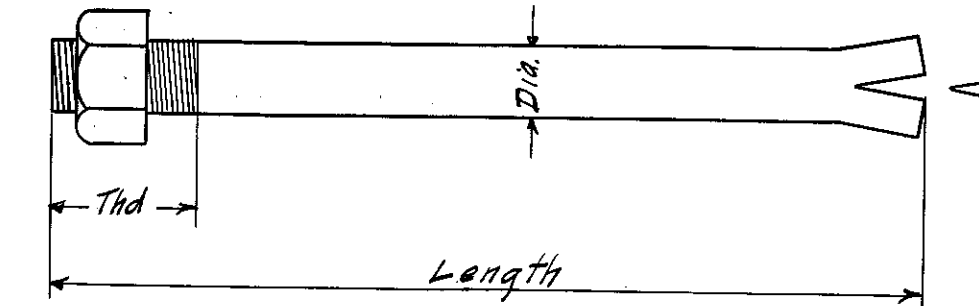
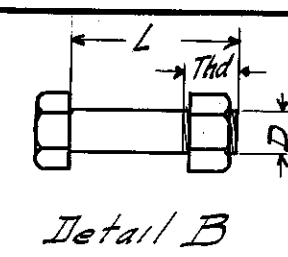
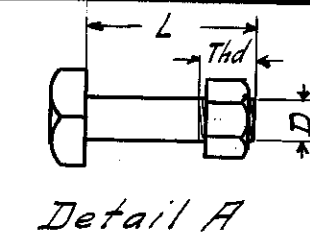
Approved *John G. Webster*  
 BRIDGE ENGINEER

Approved *William*  
 CITY ENGINEER

Approved *William*  
 COMMISSIONER OF PUBLIC WORKS

SEE MAT. BILLS 124 SCALE \_\_\_\_\_ = 1 FT.  
 MADE BY F.R.C. 121812 TRACED BY \_\_\_\_\_ CHK'D BY \_\_\_\_\_ 1914  
**CONTRACT No. 2201-D SHEET No. 24**  
 DRAW. No. 3863  
 FILE No. 11-6B-24

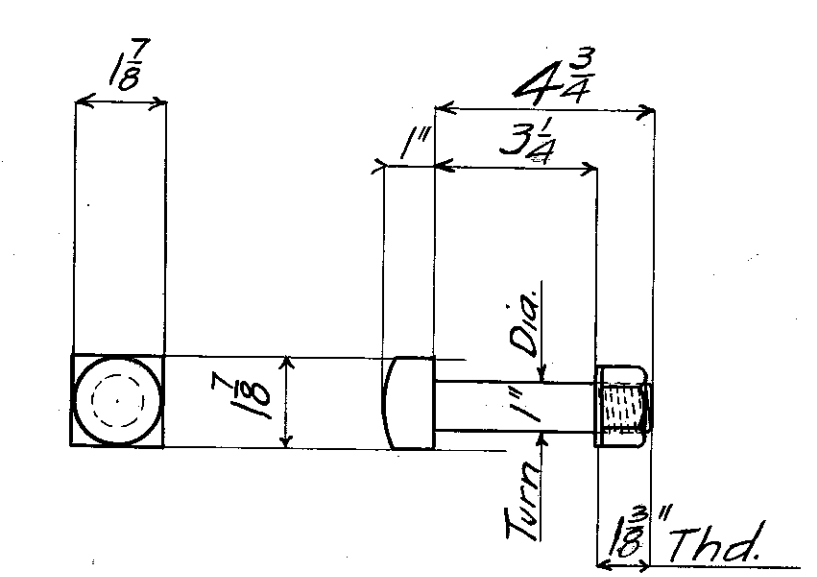
1660570186



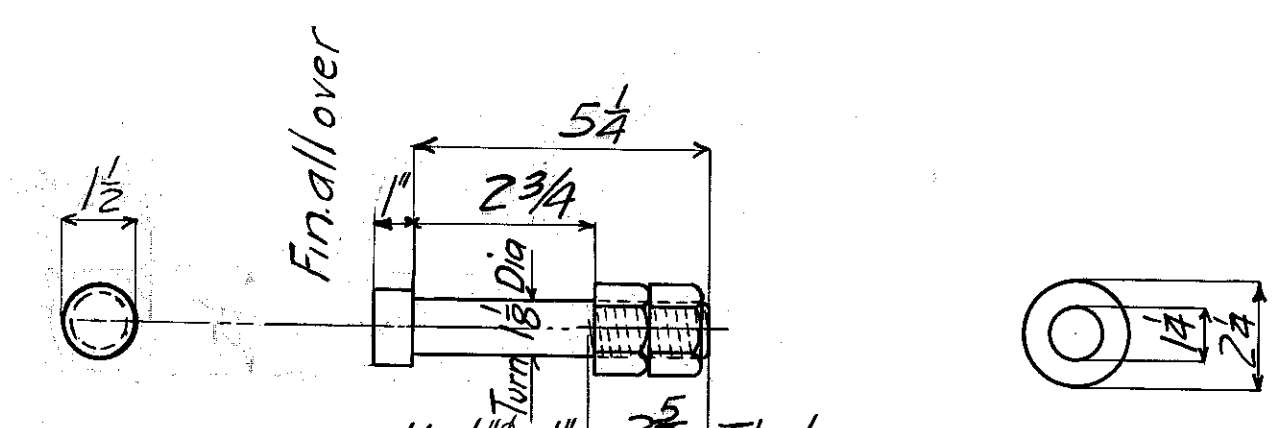
TURNED BOLTS							
No	Dia.	Grip	Length	Thread	Description	Use Detail	Location
4	3/8	2 1/4	3 1/2	1 1/8	Hex. H. & Hex. N.	B	Part # Web Ave Br. 267 to Part # Web Ave Br. 277
88	"	2 1/2	3 5/8	1 3/8	" " " "	"	" " " " 267, 277, 28, 29 to 55, 56, 57
88	"	2 + 1/4	3 1/8	1 1/8	" " " "	"	" " " " " to 61
44	"	2 3/4	3 1/8	"	" " " "	"	" " " " " "
32	"	3 + 1/4	4 1/4	"	" " " "	"	" " " " "G1 to 58
16	"	3 5/8 + 1/4	4 1/8	"	" " " "	"	" " " " " "
32	"	2 1/2 + 1/4	3 3/4	"	" " " "	"	" " " " " "
8	"	1 1/2 + 1/4	2 3/8	"	Sq. H. & Hex. N.	A	754 to 655 & 658
8	"	1 1/2 + 1/4	2	1 1/4	" " " "	"	" " 752
12	"	1 3/4 + 1/4	3	1 1/8	Hex. Hd. Hex. N.	B	Part # Web Ave Br. 267 to Web Ave Br. 277
64	1 5/16	1 3/4 + 1/4	3	1 3/8	Sq. Hd. & Hex. N.	A	CW1 to 13-15 to CW2
32	1	2 1/2 + 1/4	3	1 3/8	Hex. " " "	B	Part # Web Ave Br. 5 to Part # Web Ave Br. 12
100	Verona Nut Locks for 1 1/8" Bolts			For above bolts			
335	" " " "			" " " "			
88	Bore Washers (1 1/8" dia) for 1 1/8" Bolts			Part # Web Ave Br 267, 277, 28, 29 to 55-67			
128	3/4"	3/16 + 1/4	1 3/4	1 1/8	Sq. Hd. Hex. N.	A	17P1 to 17S1R & 18S1R
275	"	3/4 + 1/4	1 3/4	1	" " " "	"	17S1R to 17S2R; 17P1 to 17S1R & 18S1R; 18S1R to 18S2R; 18S2R to 18S3R
325	"	7/8 + 1/4	2	1	" " " "	"	Loose 75 to 18S1R; 17S1R to 17S2R
128	Verona Nut Locks for 3/4" Bolts			For above bolts.			

ANCHOR BOLTS							
No.	Dia.	Length	Thread	Nut	Wedge	Location	Item
24	1 1/2	2'-6"	3"	Hex.	1 1/2 x 1/2 x 1 1/2	At Part # Web Ave. Br. 5	(207/13)

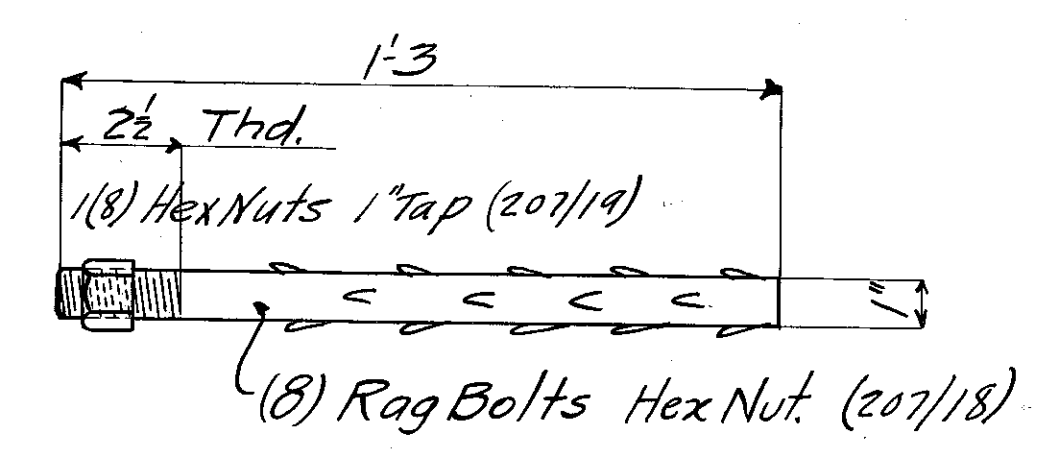
ANCHOR BOLTS (RAGGED)							
No.	Dia.	Length	Thread	Nut	Location	Item	
8	1 1/2	4'-0"	3"	Hex	at Web Ave. Br. #2	(207/5)	
16	1 1/2	5'-0"	3"	Hex	at Web Ave. Br. #3 and #4	(207/6)	



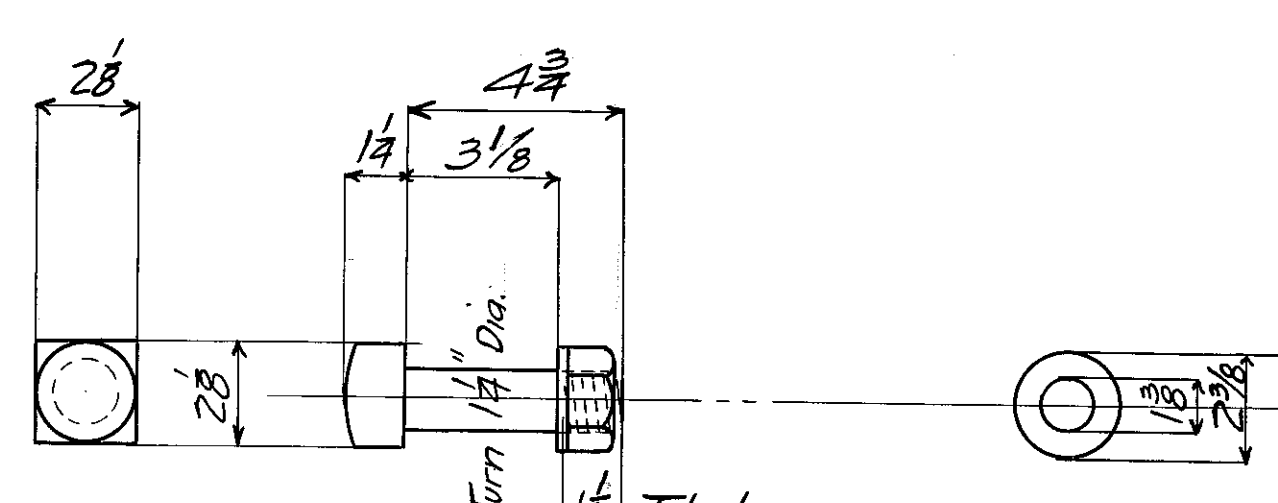
(32) Turned Bolts 1" x 0.4 3/4" Sq. Hd. & Hex Nut. (227/5)  
 (32) Verona Nut Locks (207/11)  
 32 Turned Bolts  
 Location Web Ave Br 14 to 10-11E



(70) Turned Bolts 1 1/8" x 0.6 1/4" Thd.  
 2 Hex. Nuts (227/18)  
 (Round)  
 70 Turned Bolts (Head) 70 Adjustment Washers 1/4" Thick.  
 70 " " " " 1/8" " "  
 (Above turned bolts & washers used at break in floor (Fixed Part)  
 Web Ave 25 to 951 to Web Ave Br 21, etc.

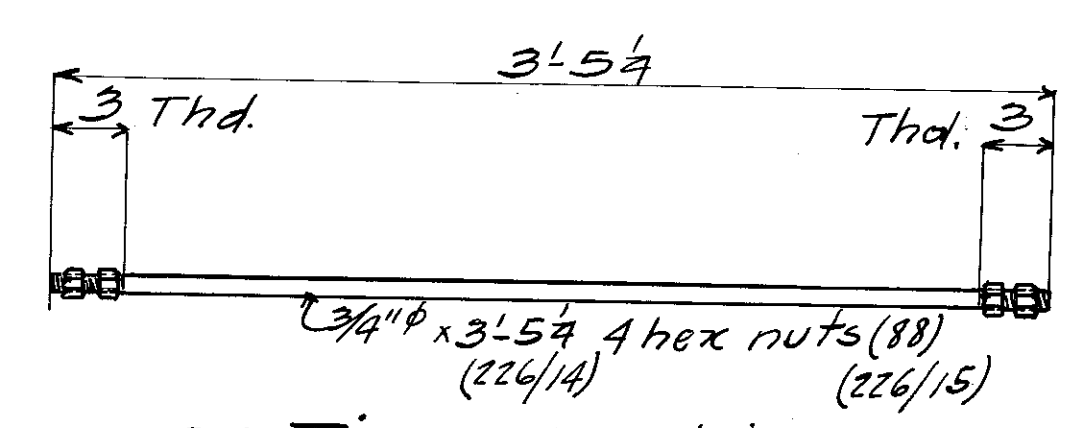


(8) Rag Bolts Hex Nut. (207/18)  
 8 Anchors  
 Location For Web Ave Br 6.

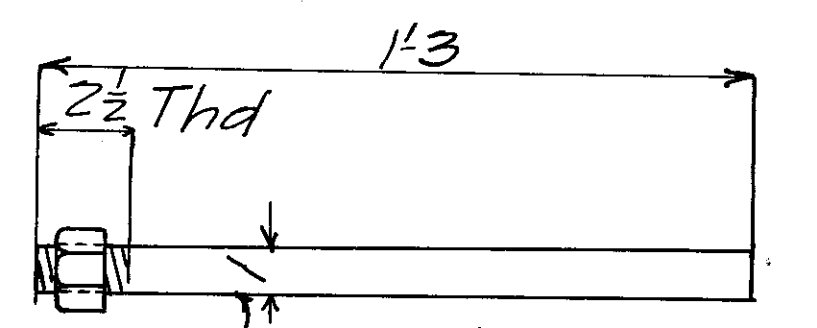


(24) Turned Bolts 1 1/4" x 0.4 3/4" Sq. Hd. & hex nut. (227/14)  
 (24) Verona nut locks (207/16)  
 24 Adjustment Washers 3/8" Thick  
 24 " " " " 1/4" " "  
 24 " " " " 1/8" " "

Location of above bolts & washers Web Ave Br 12 to Web Ave Br 13



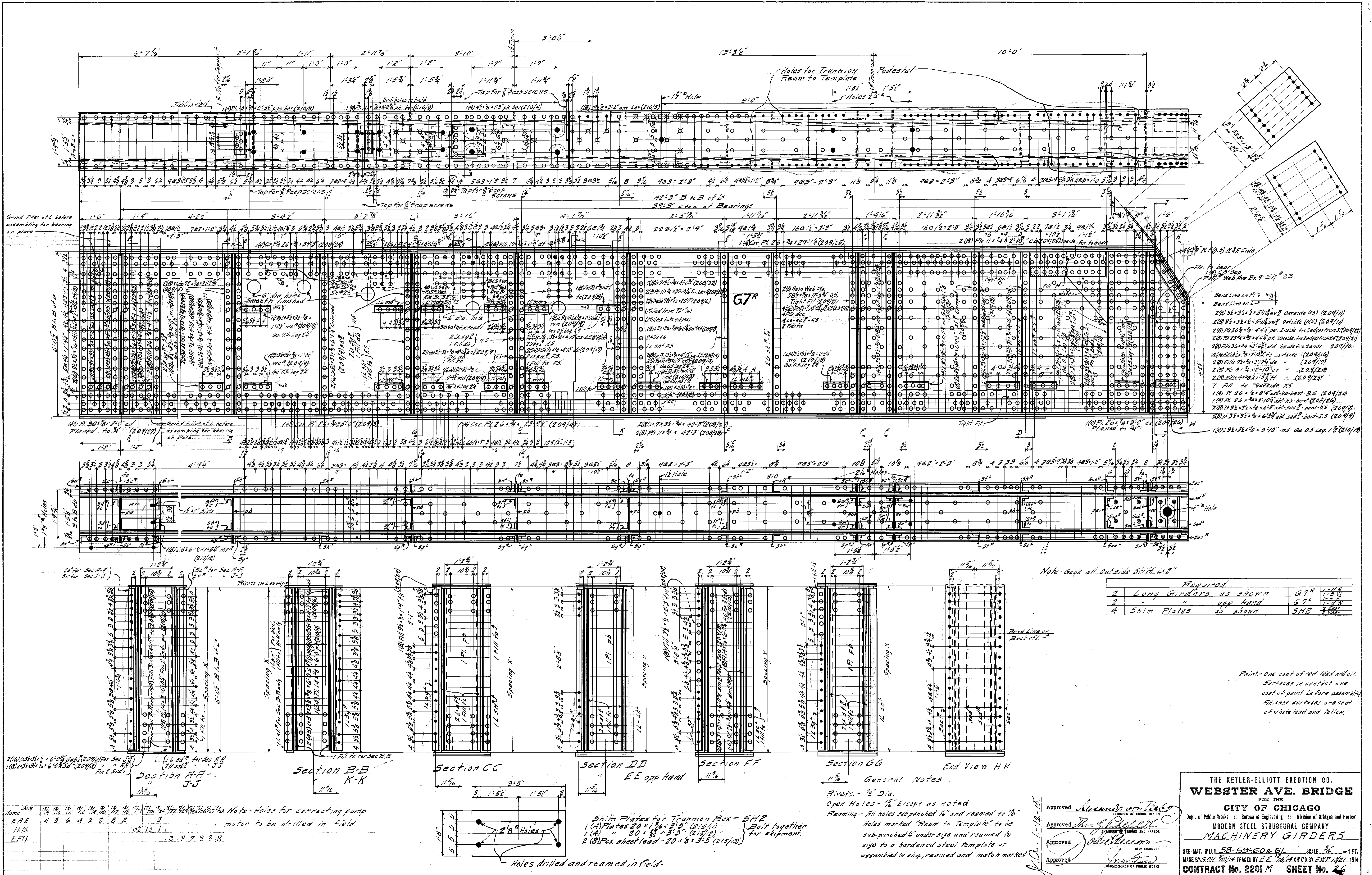
22 Tie Rods Tying stair stringers operators house.



146-1" dia x 1'-3 (207/23)  
 146 Hex Nuts 1" Tap (207/24)  
 146 Anchors Stringers & Posts.

Approved *Alexander Van Dyke*  
 Approved *John L. ...*  
 Approved *...*  
 Approved *...*

THE KETLER-ELLIOTT ERECTION CO.  
**WEBSTER AVE. BRIDGE**  
 FOR THE  
**CITY OF CHICAGO**  
 Dept. of Public Works :: Bureau of Engineering :: Division of Bridges and Harbors  
**MODERN STEEL STRUCTURAL COMPANY**  
 Bolts & Washers  
 SEE MAT. BILLS 125-126. SCALE 3" = 1 FT.  
 MADE BY E.E. TRACED BY E.E. 1750 CH'K'D BY M.R.N. 12-1915  
**CONTRACT No. 2201 E SHEET No. 25**  
 DRAW. No 3864  
 FILE No. 11-6B-25



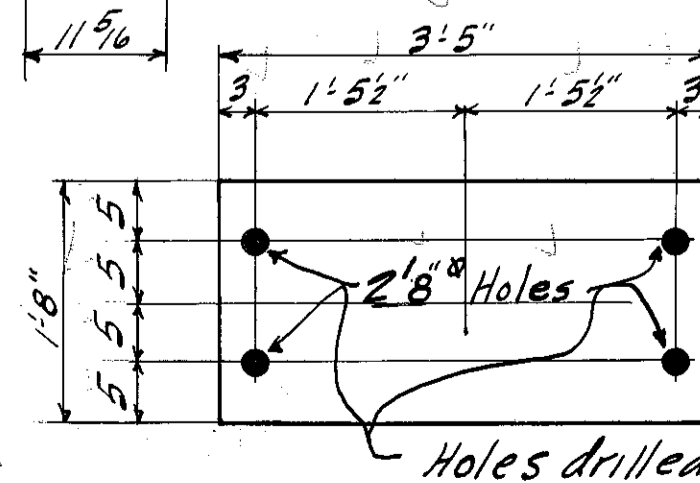
Required			
2	Long Girders as shown	G7R	1'-2 1/2"
2	" " opp hand	G7L	1'-2 1/2"
4	Shim Plates as shown	SH2	4'-0"

Note - Gauge all outside stiff L's

Paint - One coat of red lead and oil. Surfaces in contact one coat of paint before assembling. Finished surfaces one coat of white lead and yellow.

Date	Name	12/14/10	1/11/11	1/11/11	1/11/11	1/11/11	1/11/11	1/11/11	1/11/11	1/11/11	1/11/11	1/11/11	1/11/11	1/11/11	1/11/11	1/11/11	1/11/11	1/11/11	1/11/11		
ERE	A	3	6	A	2	2	B	2													
H.B.																					
E.F.H.																					

Note - Holes for connecting pump motor to be drilled in field.



Bolt together for shipment.

Rivets - 3/8" Dia.  
 Open Holes - 1/8" except as noted  
 Reaming - All holes sub-punched 1/8" and reamed to 1/8"  
 Holes marked "Team to Template" to be sub-punched 1/8" under size and reamed to size to a hardened steel template or assembled in shop, reamed and match marked

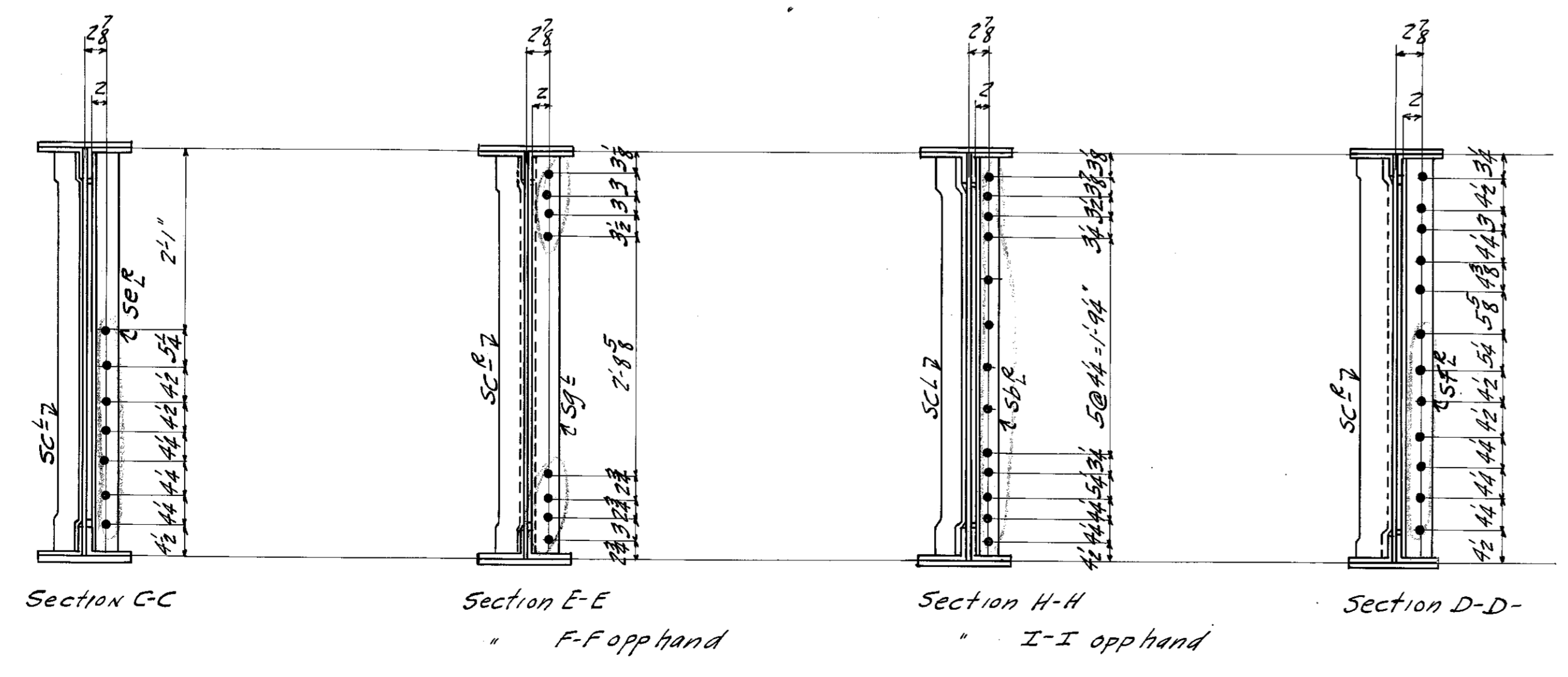
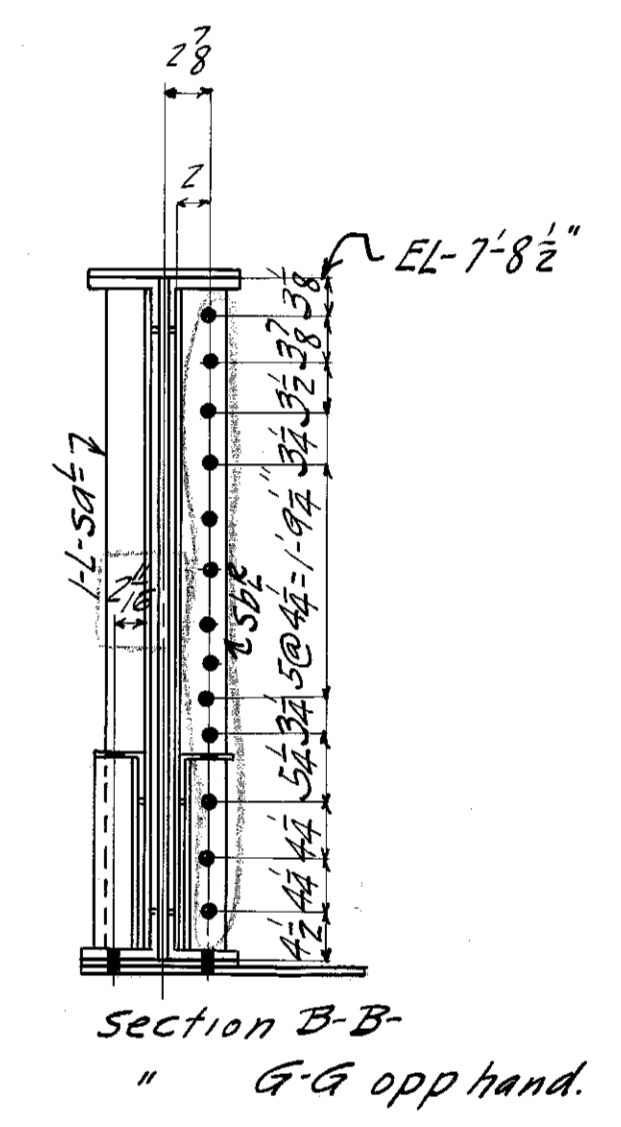
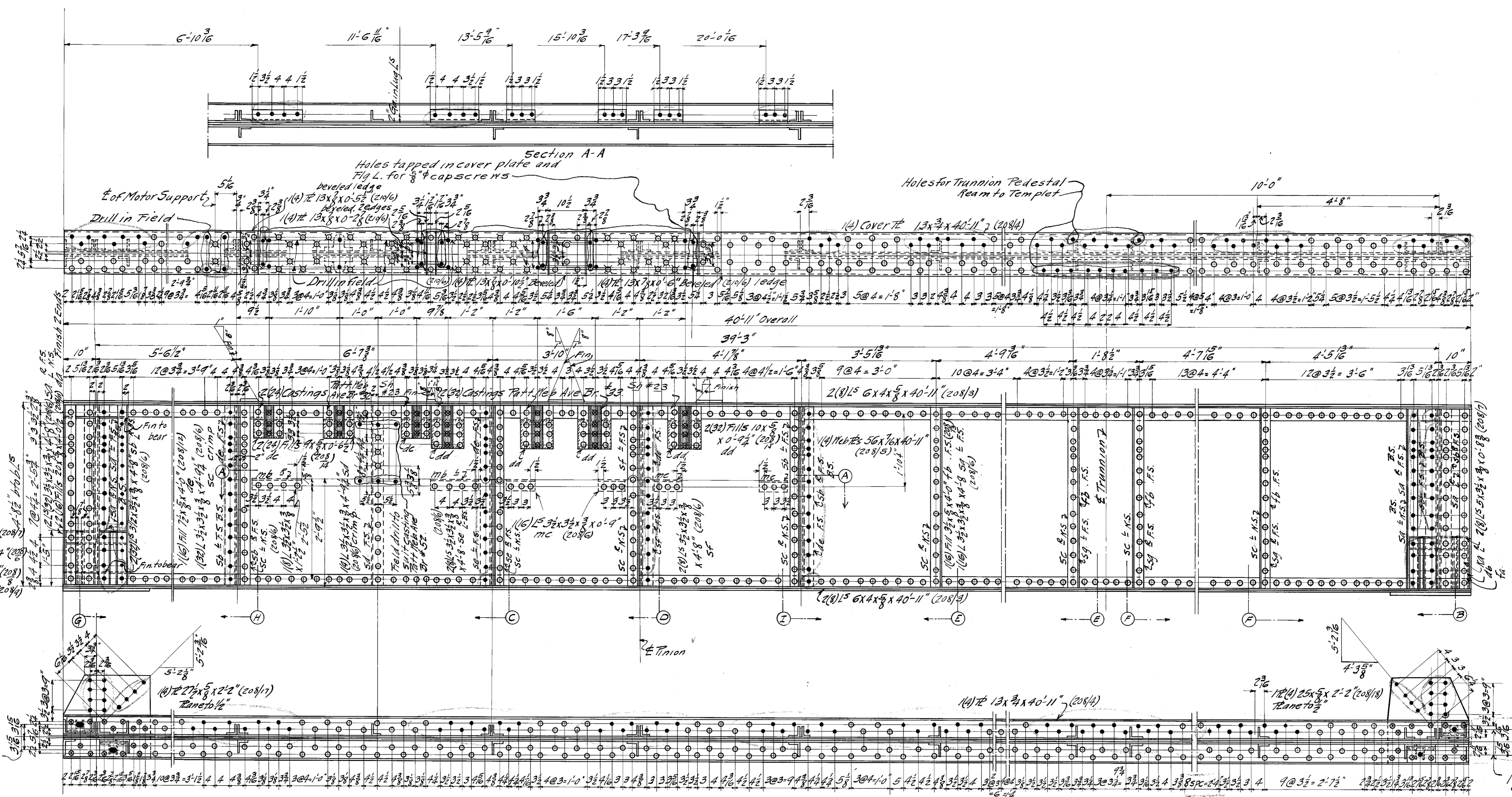
Approved: *[Signature]*  
 Approved: *[Signature]*  
 Approved: *[Signature]*  
 Approved: *[Signature]*

THE KETLER-ELLIOTT ERECTION CO.  
**WEBSTER AVE. BRIDGE**  
 FOR THE  
**CITY OF CHICAGO**  
 Dept. of Public Works :: Bureau of Engineering :: Division of Bridges and Harbor  
**MODERN STEEL STRUCTURAL COMPANY**  
**MACHINERY GIRDERS**

SEE MAT. BILLS 58-59-60 & 61. SCALE 3/4" = 1 FT.  
 MADE BY G.O.W. 1/24/11. TRACED BY E.E. 1/14/11. C.H.K.'D BY E.W.R. 1/21/11. 1914  
**CONTRACT No. 2201 M SHEET No. 26**  
 DRAW. No. 3865 Comp. 12/24/10. H.E.  
 FILE No. 11-6B-26

166057018A

NAME DATE 1/12/14  
 B.M. 11 8 6 6  
 H.B. 6 3  
 L.P. 2

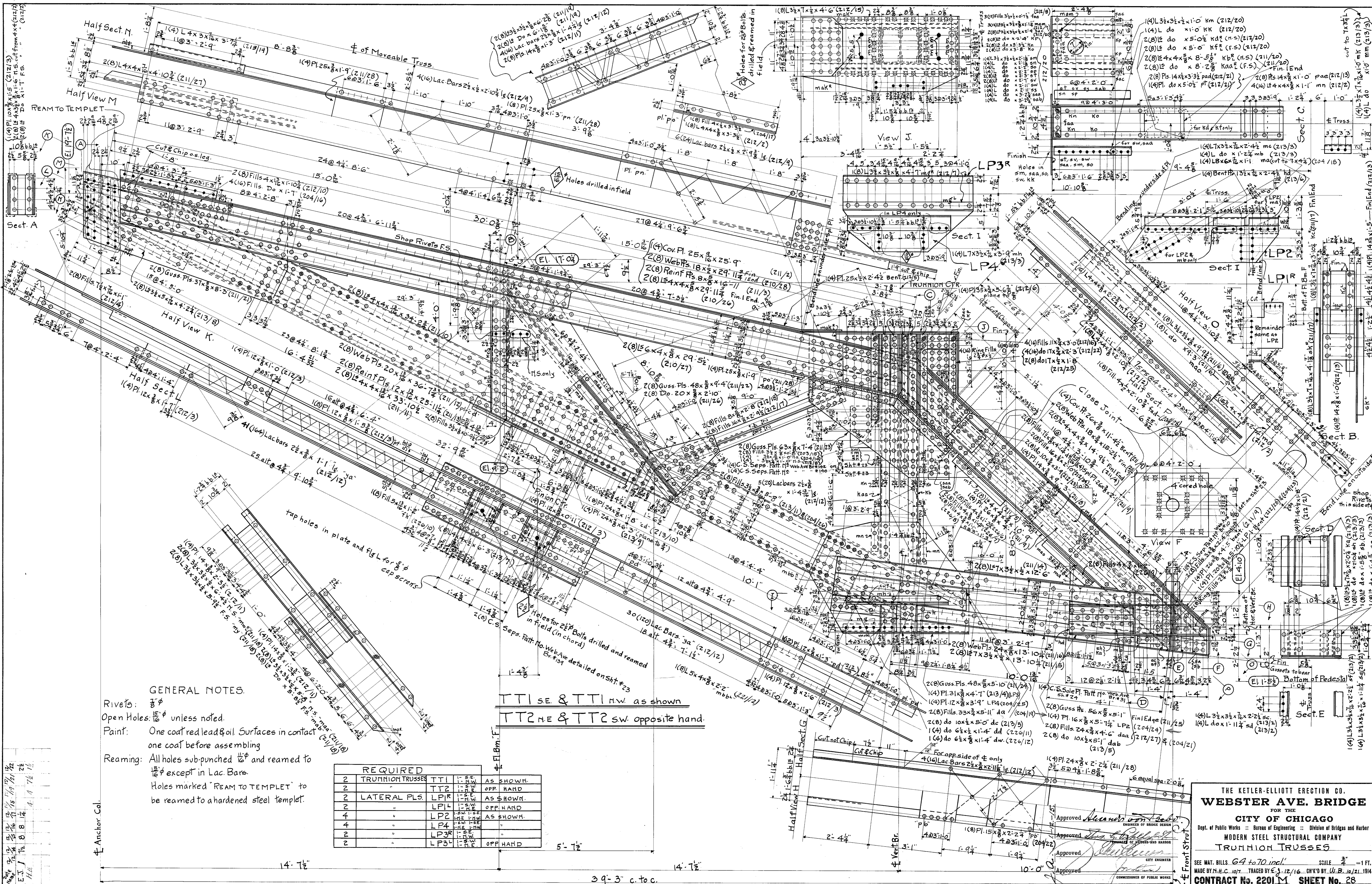


**General Notes**  
 Rivets - 7/8" dia. Open holes 1 1/2" dia. except as noted.  
 Reaming - All holes sub-punched 1/16" and reamed to 1 1/2". Open holes marked 'Ream to Templet' to be sub-punched 1/4" undersize and reamed to size to a hardened steel templet or assembled in shop, reamed and match marked.  
 Paint: One coat of red lead and oil. Surfaces in contact one coat before assembling.  
 Finished surfaces one coat of white lead and talcum.

REQUIRED			
2 Girders	as shown	G 8 1/2	1" - 1/2" - 1/2"
2 "	opp hand	G 8 1/2	1" - 1/2" - 1/2"

Approved: *Alexander J. Zabo*  
 Approved: *John G. ...*  
 Approved: *...*  
 Approved: *...*

THE KETTLER-ELLIOTT ERECTION CO.  
**WEBSTER AVE. BRIDGE**  
 FOR THE  
**CITY OF CHICAGO**  
 Dept. of Public Works :: Bureau of Engineering :: Division of Bridges and Harbors  
**MODERN STEEL STRUCTURAL COMPANY**  
**MACHINERY GIRDERS**  
 SEE MAT. BILLS 67 & 63 SCALE 3/4" = 1 FT.  
 MADE BY DEF. 12112 TRACED BY B.M. 11/8 6/14 C.H.P.'D BY E.H.P. 1/20 1914  
**CONTRACT No. 2201 M SHEET No. 27**



GENERAL NOTES

Rivets:  $\frac{3}{8}$ "

Open Holes:  $\frac{3}{8}$ " unless noted.

Paint: One coat red lead & oil. Surfaces in contact one coat before assembling

Reaming: All holes sub-punched  $\frac{3}{16}$ " and reamed to  $\frac{3}{8}$ " except in Lac. Bars. Holes marked "REAM TO TEMPLET" to be reamed to a hardened steel templet.

REQUIRED			
2	TRUNNION TRUSSES	TT1	AS SHOWN
2	"	TT2	OPP. HAND
2	LATERAL PLS	LP1	AS SHOWN
2	"	LP2	OPP. HAND
4	"	LP3	AS SHOWN
4	"	LP4	OPP. HAND
2	"	LP5	AS SHOWN
2	"	LP6	OPP. HAND

TT1 SE & TT1 NW as shown

TT2 NE & TT2 SW opposite hand

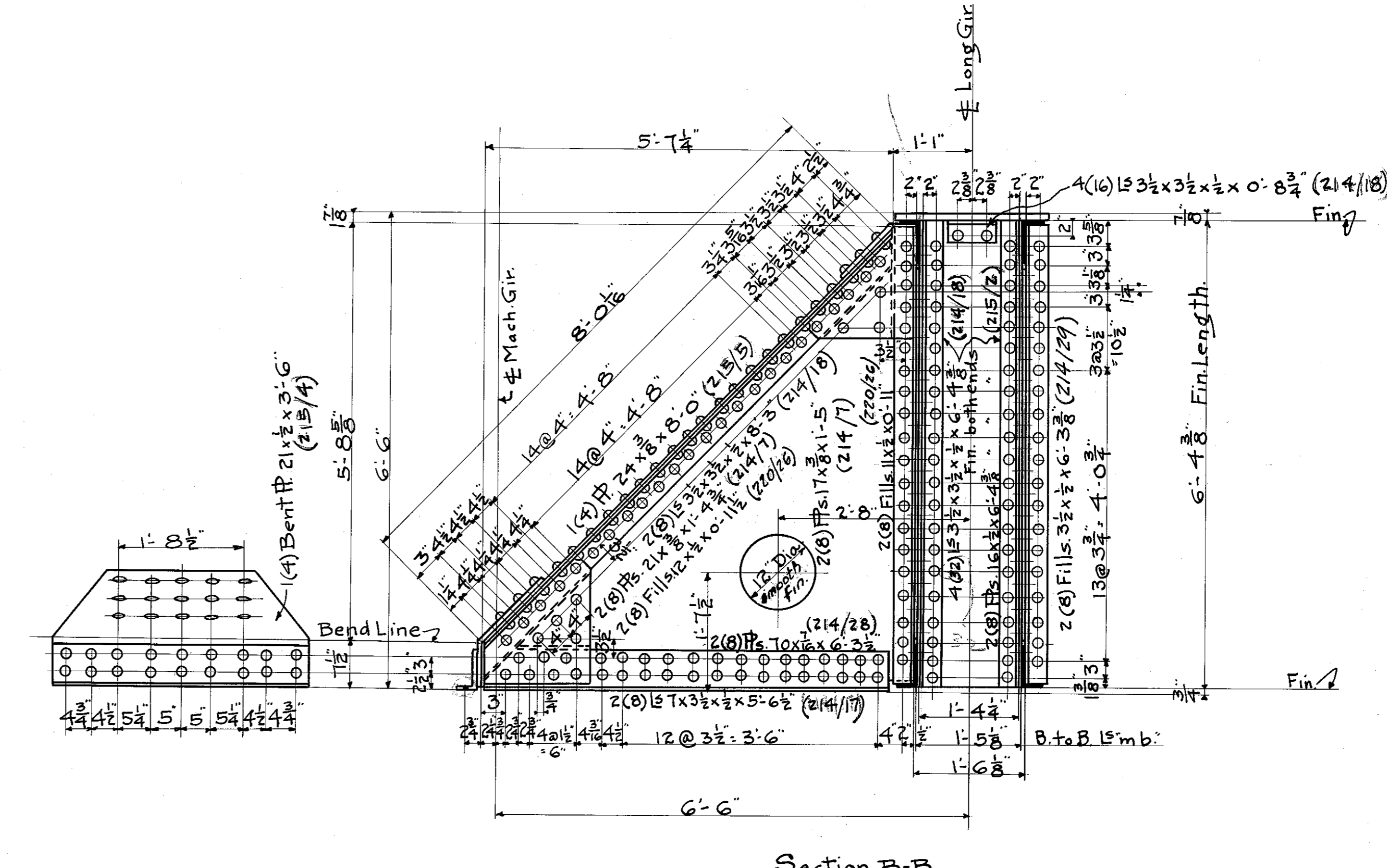
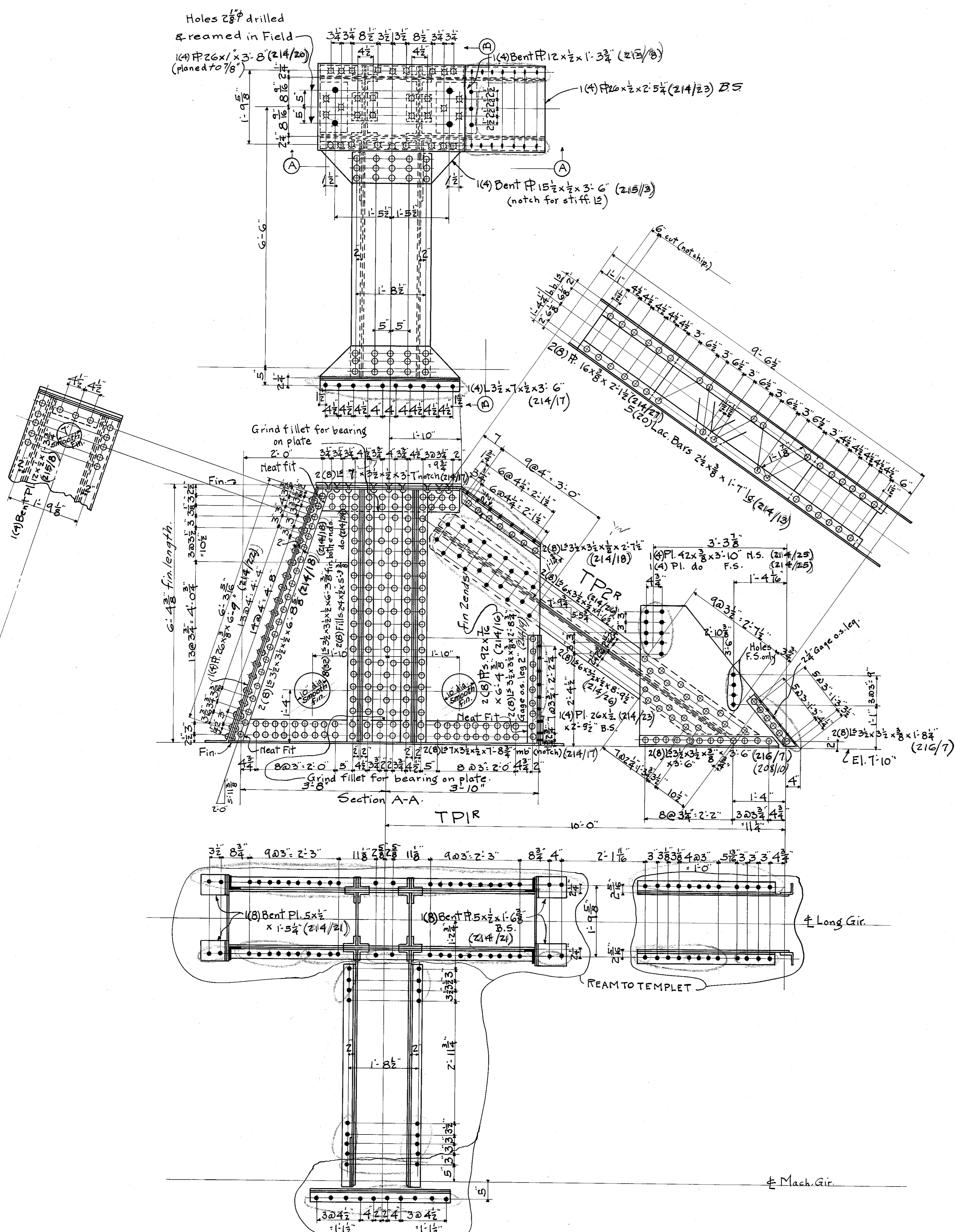
THE KETLER-ELLIOTT ERECTION CO.  
**WEBSTER AVE. BRIDGE**  
 FOR THE  
**CITY OF CHICAGO**  
 Dept. of Public Works :: Bureau of Engineering :: Division of Bridges and Harbor  
**MODERN STEEL STRUCTURAL COMPANY**  
**TRUNNION TRUSSES**

SEE MAT. BILLS 64 to 70 incl. SCALE  $\frac{3}{8}$ " = 1 FT.  
 MADE BY M.H.C. 1077 TRACED BY E.S. 12/16 CHK'D BY W.B. 10/21/14  
**CONTRACT No. 2201M SHEET No. 28**  
 DRAWN No. 3861 Comp. 12/22/14 H.B.  
 FILE No. 11-63-28  
 1660570199





DATE	REVISION
11/28	1
12/24	2
1/21	3
1/28	4
2/4	5
2/11	6

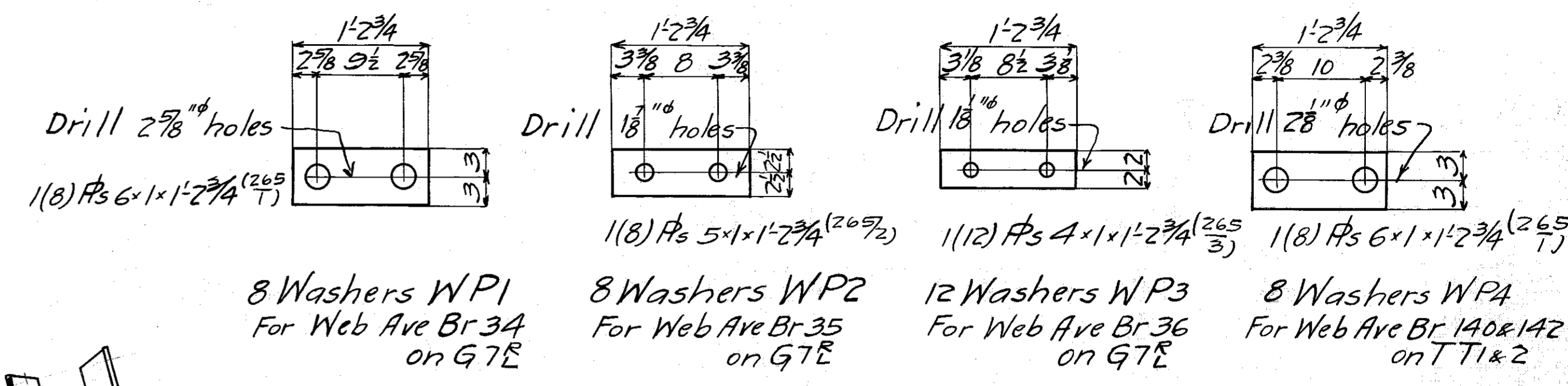
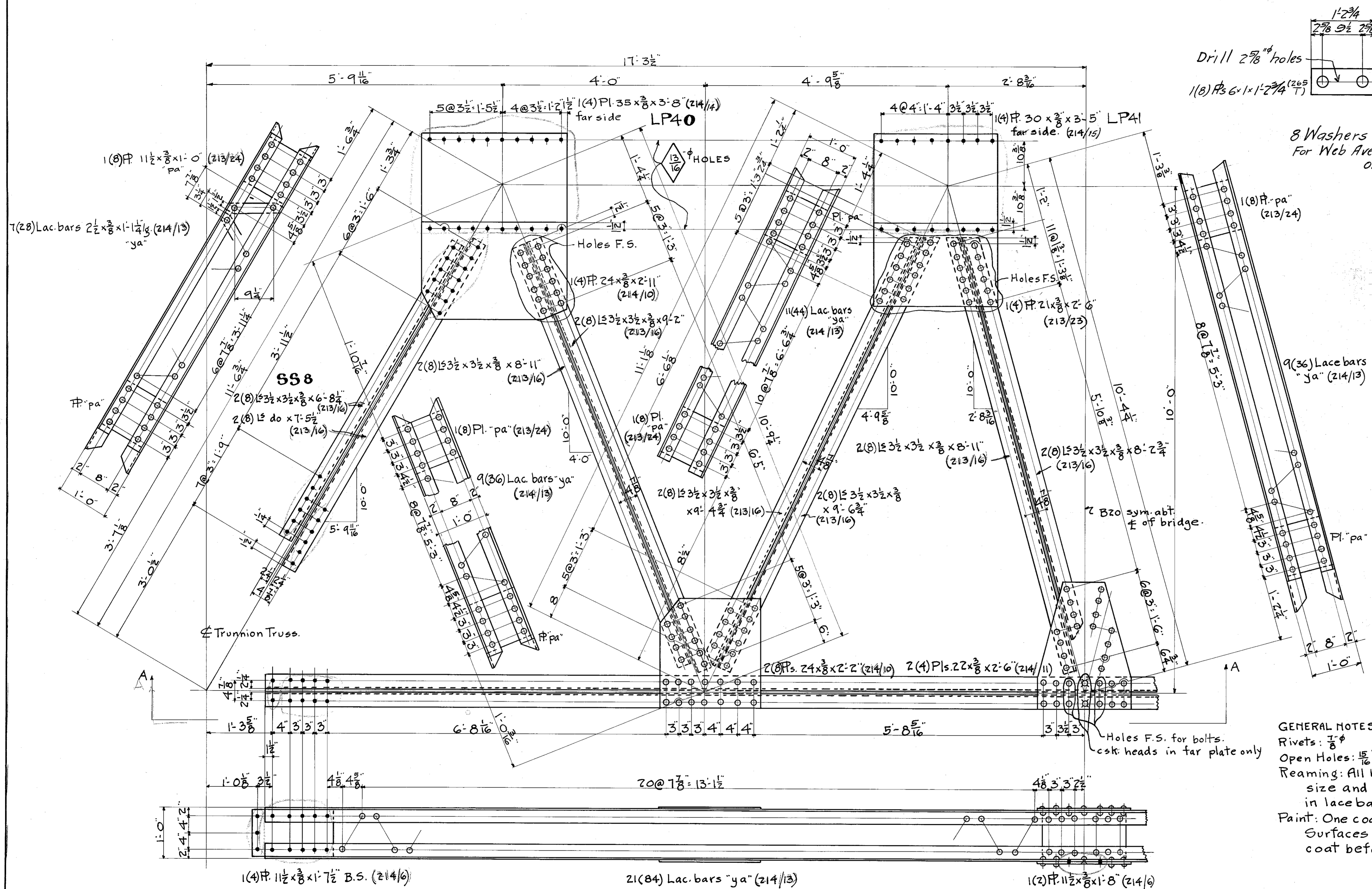


REQUIRED			
AS SHOWN	2	TRUNNION PEDESTALS	TP1R 1'-East 1'-West
OPP HAND	2	"	TP1L do.
AS SHOWN	2	STRUTS	TP2R do.
OPP HAND	2	"	TP2L do.

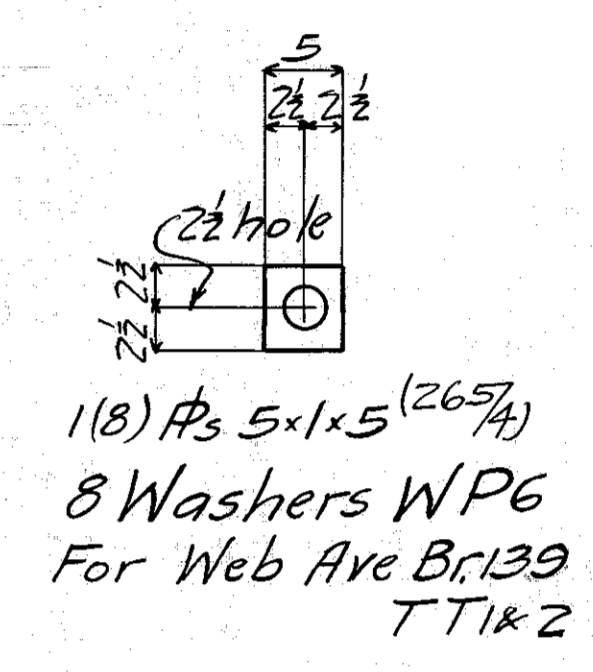
**GENERAL NOTES.**  
 Rivets:  $\frac{3}{8}$  dia.  
 Open Holes:  $\frac{1}{16}$  dia. except as noted.  
 Paint: One Coat of red lead and oil.  
 Surfaces in contact one coat of paint before assembling fin. surfaces one coat of white lead and tallow.  
 Reaming: All holes sub-punched  $\frac{1}{16}$  and reamed to  $\frac{1}{16}$  except holes in lac. bars. Holes marked "REAM TO TEMPLET" to be sub-punched  $\frac{1}{16}$  and reamed to size thru a hardened steel templet, or assembled in shop, reamed and match-marked.

Approved: *Alexander von Bodo*  
 ENGINEER OF BRIDGE DESIGN  
 Approved: *John G. Chisholm*  
 ENGINEER OF BRIDGE AND HARBOUR  
 Approved: *Albert J. ...*  
 CITY ENGINEER  
 Approved: *...*  
 COMMISSIONER OF PUBLIC WORKS

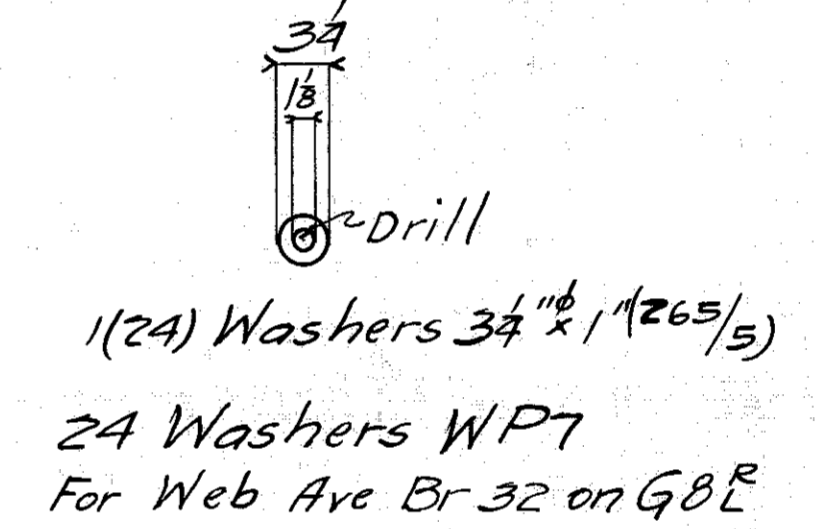
THE KETLER-ELLIOTT ERECTION CO.  
**WEBSTER AVE. BRIDGE**  
 FOR THE  
**CITY OF CHICAGO**  
 Dept. of Public Works :: Bureau of Engineering :: Division of Bridges and Harbor  
**MODERN STEEL STRUCTURAL COMPANY**  
**TRUNNION PEDESTAL & STRUT**  
 SEE MAT. BILLS 81-92 SCALE = 1 FT.  
 MADE BY H.B.T. 7/23. TRAGED BY 12/21. CHK'D BY E.W.R. 10/14/1914  
**CONTRACT No. 22011 SHEET No. 30.**



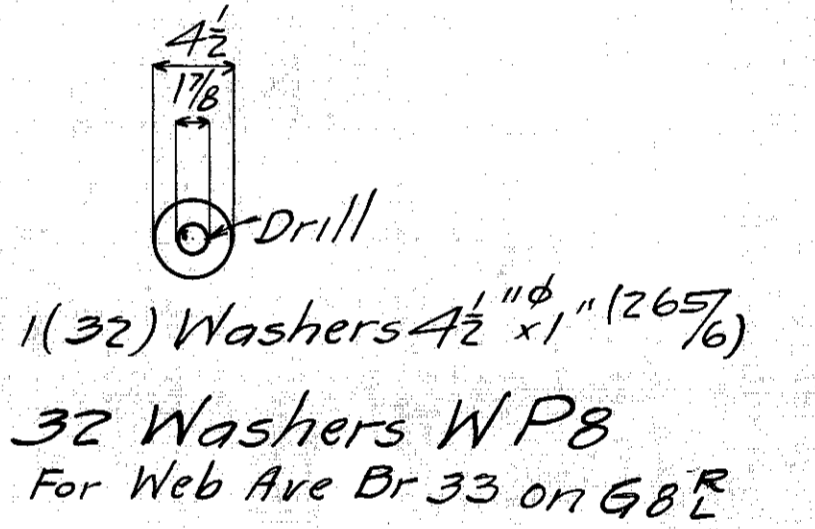
8 Washers WP1 For Web Ave Br 34 on G7E  
 8 Washers WP2 For Web Ave Br 35 on G7E  
 12 Washers WP3 For Web Ave Br 36 on G7E  
 8 Washers WPA For Web Ave Br 140 & 142 on TT1 & 2



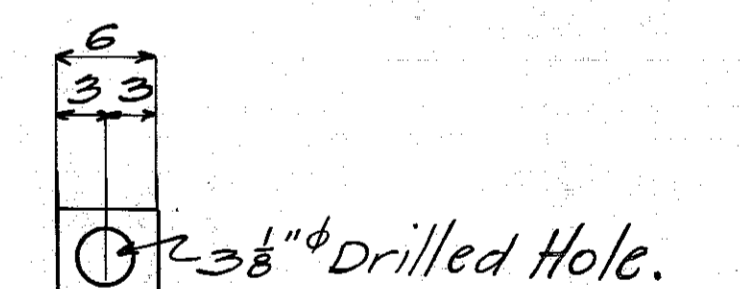
8 Washers WP6 For Web Ave Br 139 TT1 & 2



24 Washers WP7 For Web Ave Br 32 on G8E



32 Washers WP8 For Web Ave Br 33 on G8E



8 Washers WP9 For Web Ave Br 9 & 10 on TT1 & 2 & G7E

**GENERAL NOTES.**  
 Rivets: 7/8"  
 Open Holes: 5/16" except as noted.  
 Reaming: All holes subpunched 1/4" under size and reamed to size except in lac bars.  
 Paint: One coat red lead and oil surfaces in contact each one coat before assembling.



REQUIRED		REQUIRED	
8	WASHERS WP1	2	HORIZ. BRACINGS BZ0
8	" WP2	4	STRUTS SS8
12	" WP3	4	PLATES LP40
8	" WP4	4	" LP41
8	" WP6		
24	" WP7		
32	" WP8		
8	" WP9		

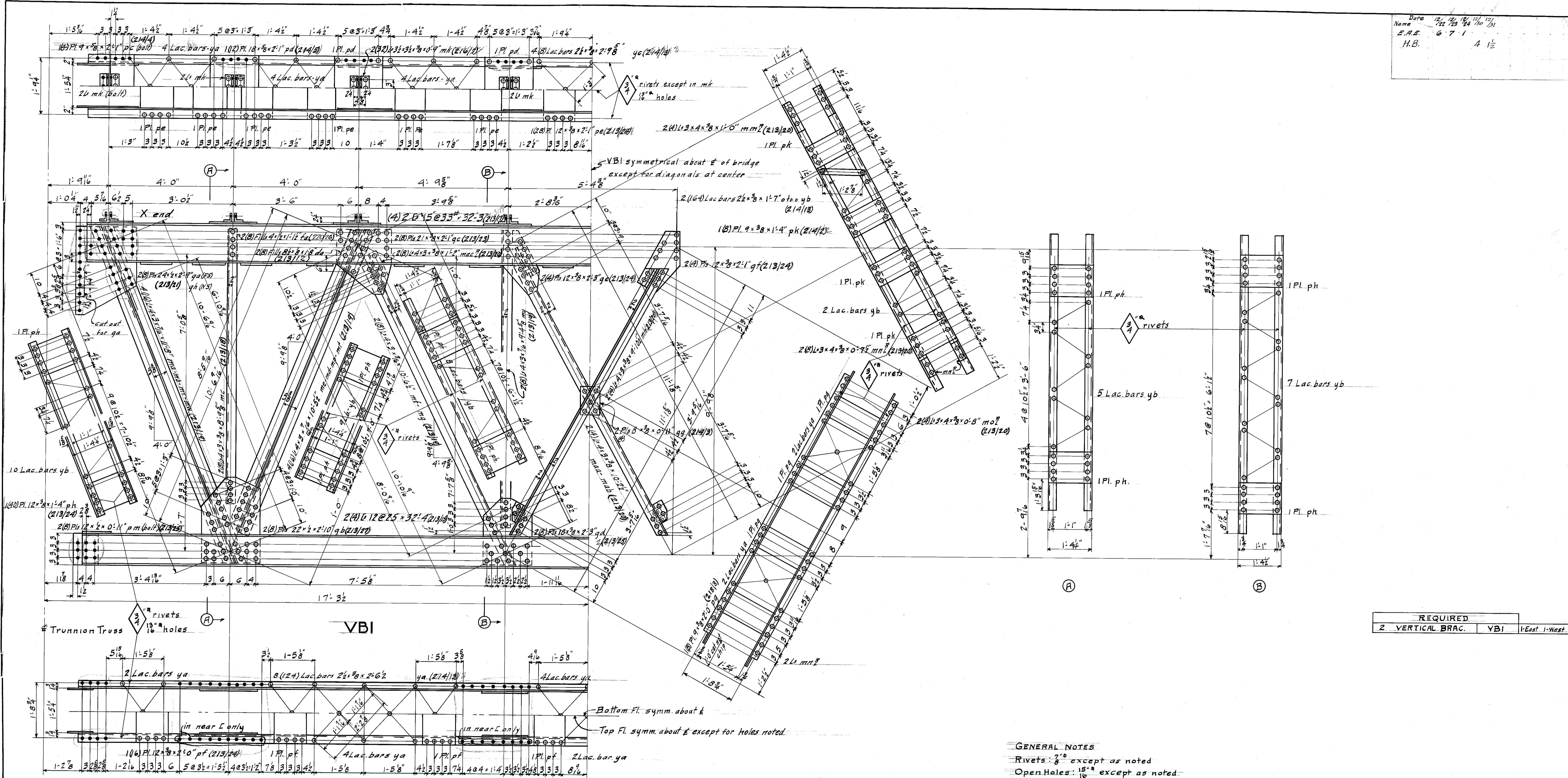
REQUIRED		REQUIRED	
2	HORIZ. BRACINGS BZ0	2	East - West
4	STRUTS SS8	2	" "
4	PLATES LP40	2	" "
4	" LP41	2	" "

Approved *Arthur von Tobo*  
 Approved *John J. ...*  
 Approved *...*  
 Approved *...*

THE KETLER-ELLIOTT ERECTION CO.  
**WEBSTER AVE. BRIDGE**  
 FOR THE  
**CITY OF CHICAGO**  
 Dept. of Public Works :: Bureau of Engineering :: Division of Bridges and Harbor  
**MODERN STEEL STRUCTURAL COMPANY**  
 BRACING FOR TRUNNION TRUSS

SEE MAT. BILLS 83-84 SCALE = 1 FT.  
 MADE BY W.S.P. 19/2. TRACED BY E.S. 12/27. CH'KD BY W.B. 10/21/1914  
**CONTRACT No. 2201 SHEET No. 31**

Date 12/12/14  
 Name E.A.E. 671  
 H.B. 4 1/2

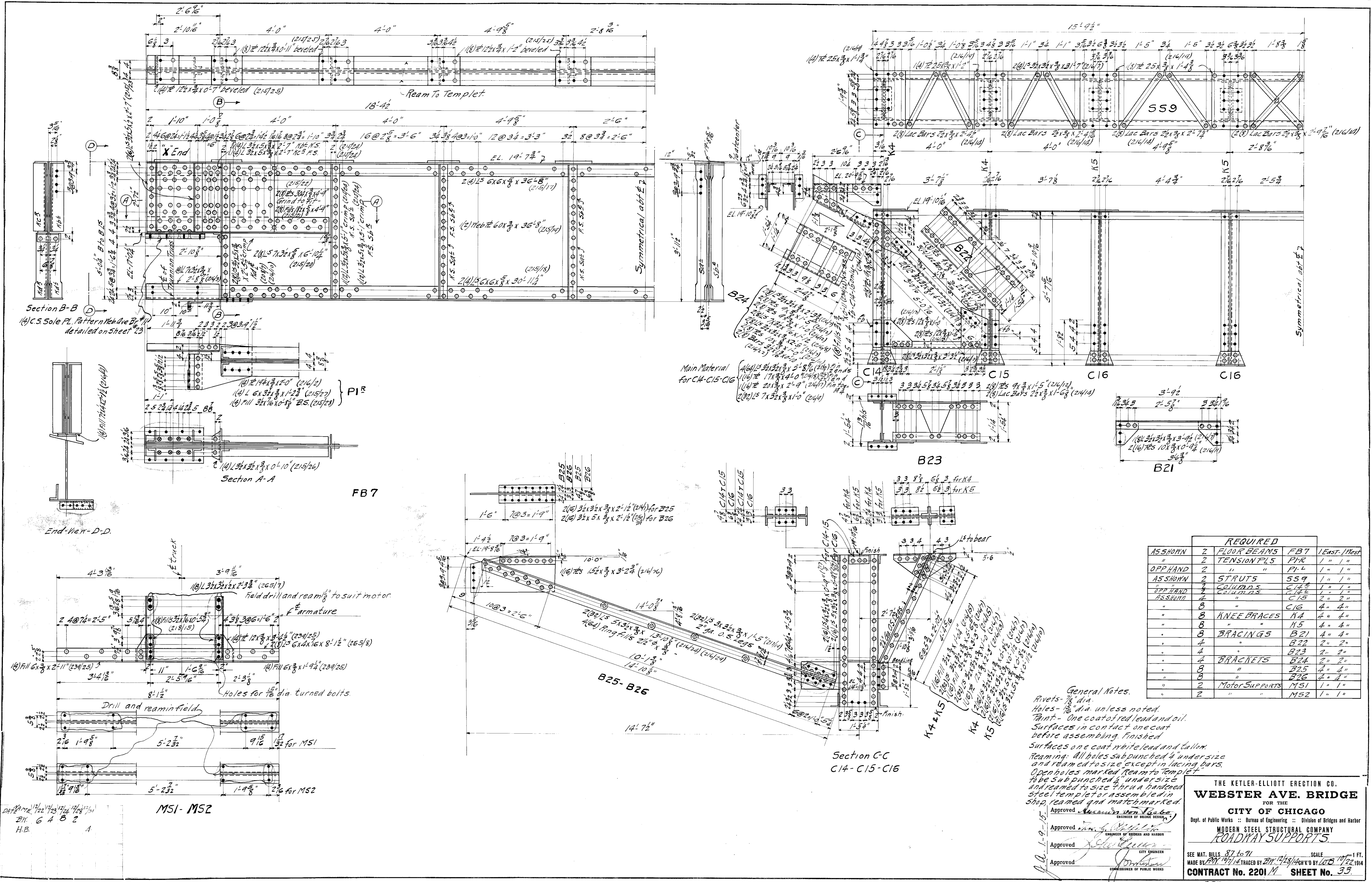


REQUIRED		
2	VERTICAL BRAC.	VBI
		1 East 1 West

**GENERAL NOTES**  
 Rivets: 7/8" except as noted  
 Open Holes: 1 1/8" except as noted  
 Reaming: All holes to be subpunched  
 1/4" under size and reamed to size,  
 except in lace bars.  
 Paint: One coat of red lead and  
 oil. Surfaces in contact each  
 one coat before assembling.

Approved *Alexander H. Beck*  
 CHIEF ENGINEER OF BRIDGE DEPT.  
 Approved *James G. ...*  
 CHIEF OF BRIDGE AND HARBOUR  
 Approved *...*  
 CITY ENGINEER  
 Approved *...*  
 COMMISSIONER OF PUBLIC WORKS

THE KETLER-ELLIOTT ERECTION CO.  
**WEBSTER AVE. BRIDGE**  
 FOR THE  
**CITY OF CHICAGO**  
 Dept. of Public Works :: Bureau of Engineering :: Division of Bridges and Harbor  
**MODERN STEEL STRUCTURAL COMPANY**  
**BRACING FOR TRUNNION TRUSSES**  
 SEE MAT. BILLS 85-86 SCALE 1" = 1 FT.  
 MADE BY W.S.P. 9/30/14 TRACED BY E.A.E. 12/14/14 BY W.B. 12/21/14  
**CONTRACT No. 2201 M SHEET No. 32**



**General Notes.**  
 Rivets - 7/8" dia.  
 Holes - 1/8" dia. unless noted.  
 Paint - One coat of red lead and oil.  
 Surfaces in contact one coat before assembling, finished.  
 Surfaces one coat white lead and talcum.  
 Reaming: All holes subpunched 1/4" undersize and reamed to size except in facing bars.  
 Open holes marked Ream to Tegment to be subpunched 1/4" undersize and reamed to size thru a finished steel templet or assembled in shop, reamed and match marked.

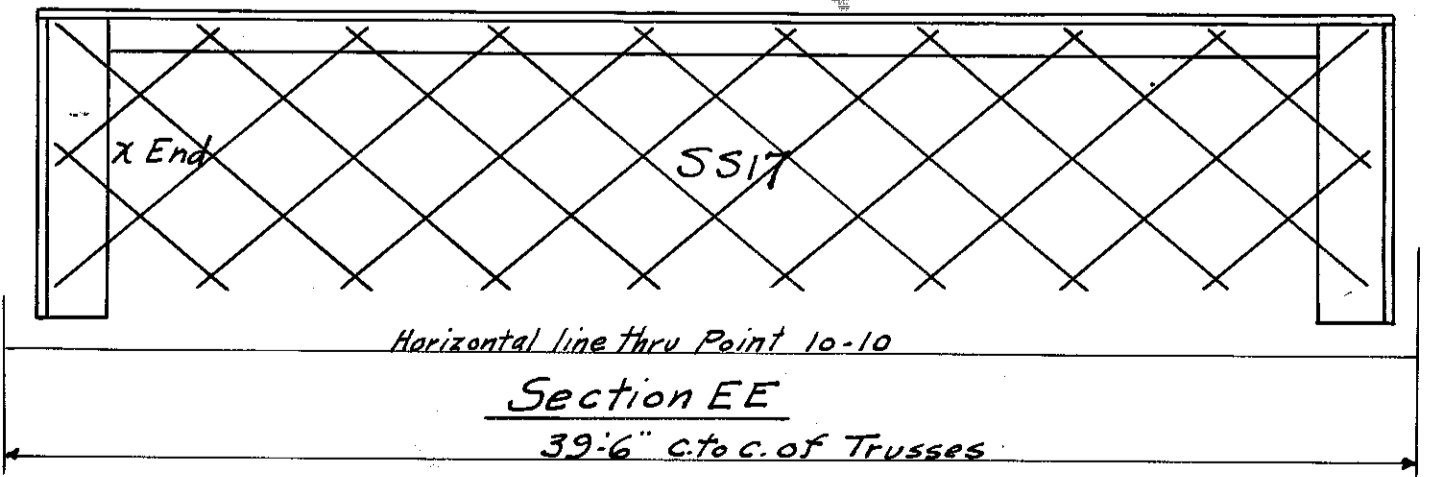
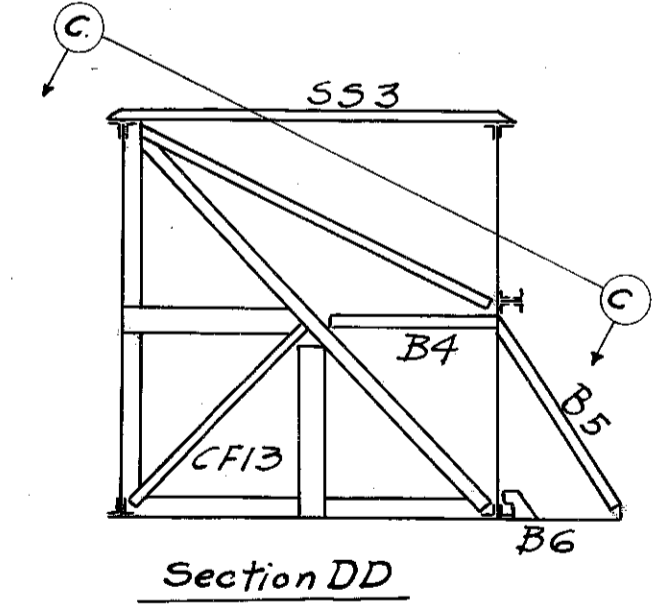
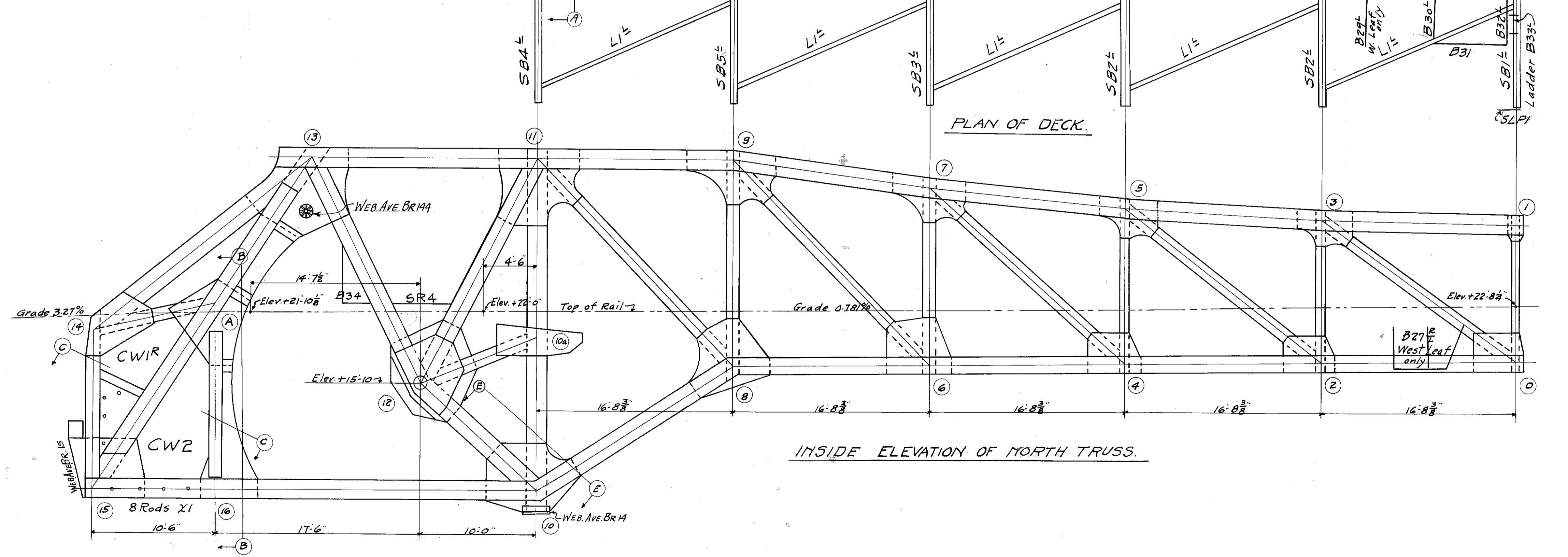
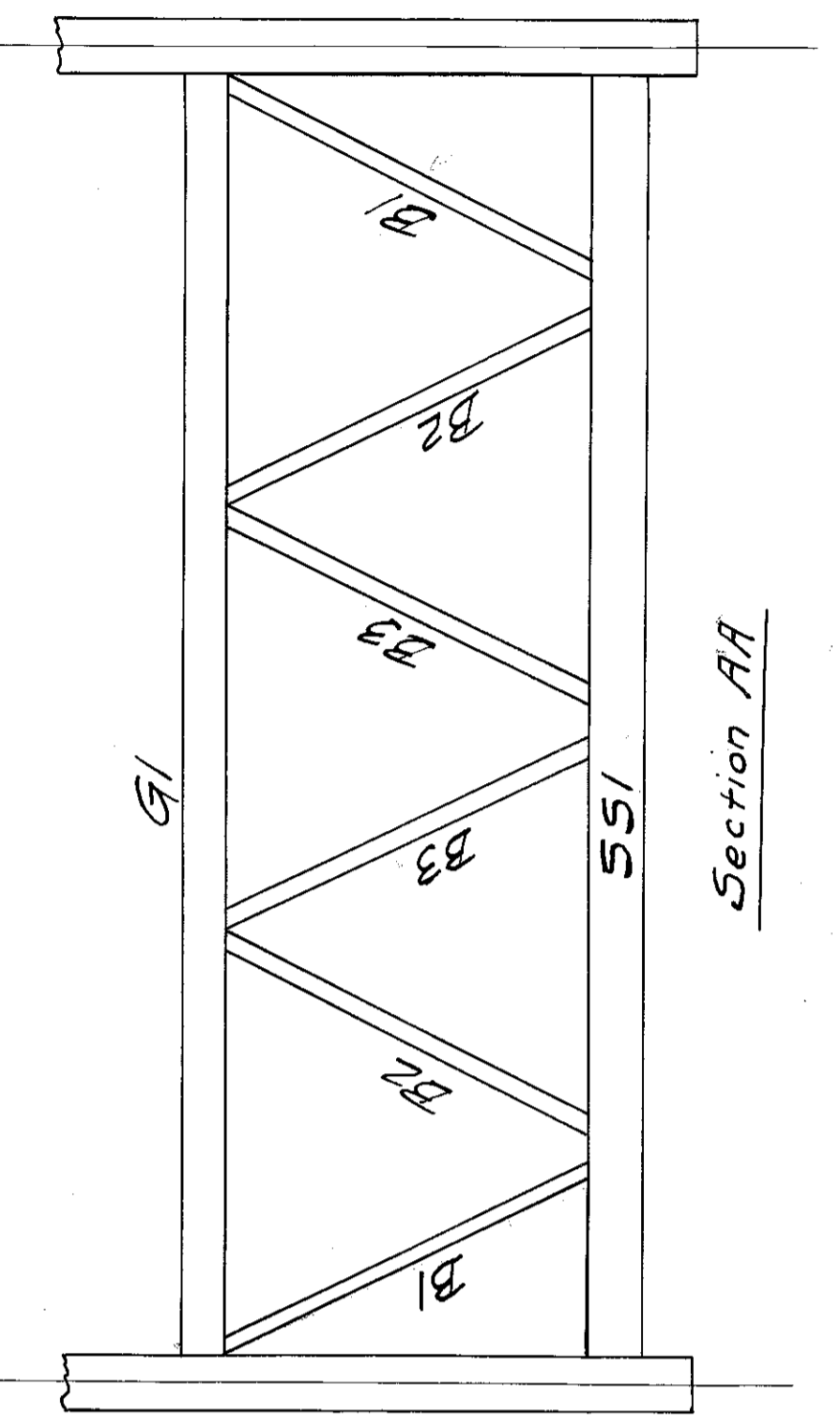
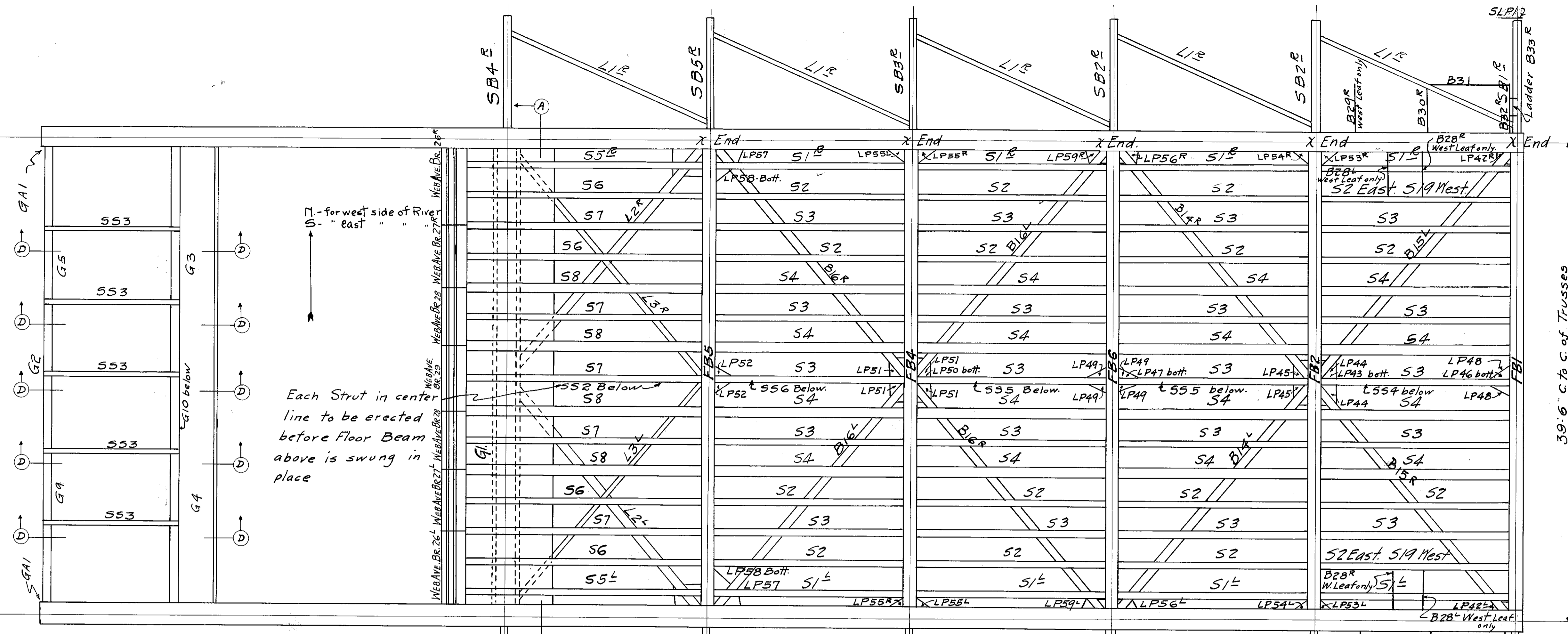
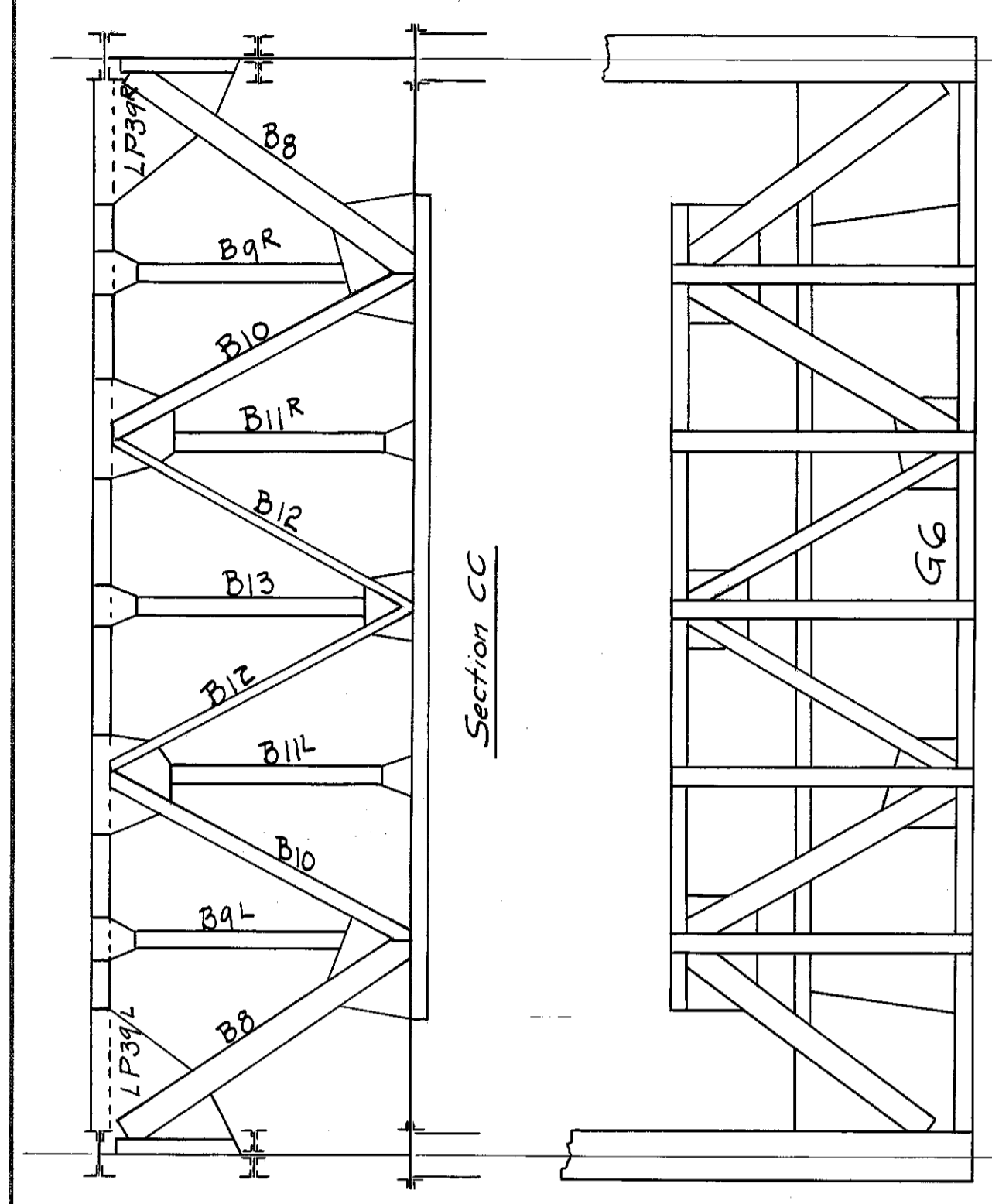
Approved: [Signature]  
 Approved: [Signature]  
 Approved: [Signature]

**THE KETLER-ELLIOTT ERECTION CO.**  
**WEBSTER AVE. BRIDGE**  
 FOR THE  
**CITY OF CHICAGO**  
 Dept. of Public Works :: Bureau of Engineering :: Division of Bridges and Harbor  
**MODERN STEEL STRUCTURAL COMPANY**  
**ROADWAY SUPPORTS**

SEE MAT. BILLS 87 to 91  
 MADE BY [Signature] TRACED BY [Signature] CHECK'D BY [Signature]  
**CONTRACT No. 22011** **SHEET No. 33**

SCALE = 1" = 1 FT.  
 DRAW. No. 3872 Comp. 12/21/14, H.B.  
 FILE No. 1167-33  
 1660570195

1/4	1/2	3/4	1	1 1/4	1 1/2	1 3/4	2	2 1/4	2 1/2	2 3/4	3	3 1/4	3 1/2	3 3/4	4	4 1/4	4 1/2	4 3/4	5
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

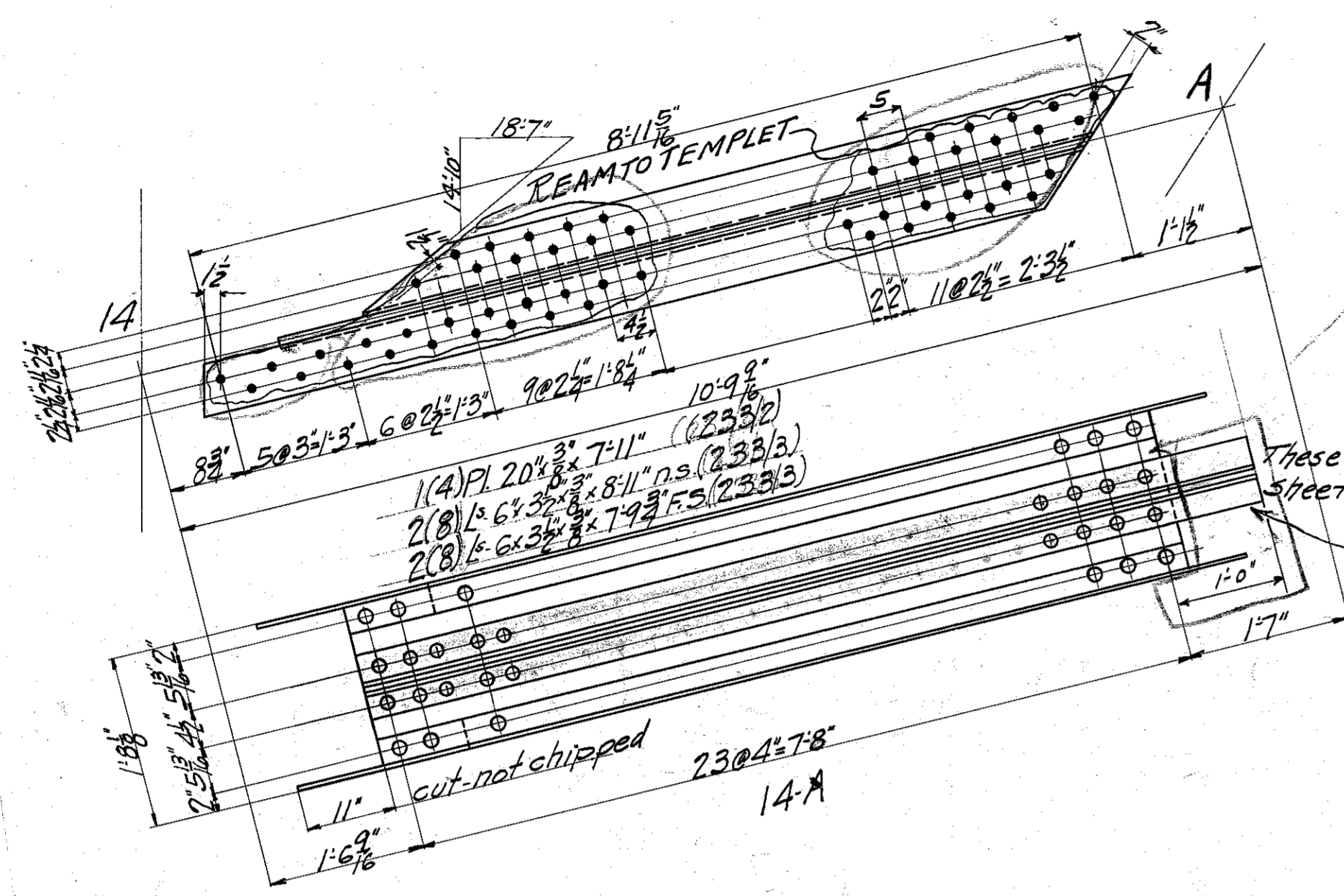


**ERECTOR-NOTE**  
 The following system of match-marking in reaming the trusses while assembled in the shop and must be followed in erection.  
 All members for the southeast truss marked SE  
 - - - - southwest - - - - SW  
 - - - - northwest - - - - NE  
 - - - - north west - - - - NW

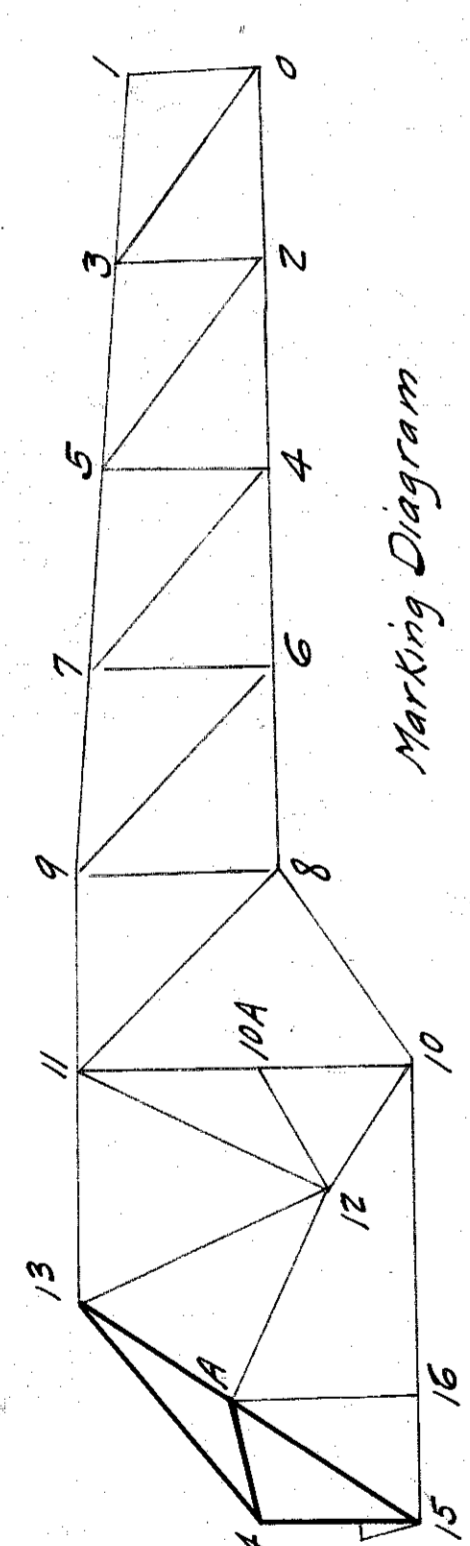
Approved: *Asaiah von Seltz*  
 ENGINEER OF BRIDGE DESIGN  
 Approved: *John J. ...*  
 ENGINEER OF BRIDGES AND HARBOR  
 Approved: *...*  
 CITY ENGINEER  
 Approved: *...*  
 COMMISSIONER OF PUBLIC WORKS

THE KETLER-ELLIOTT ERECTION CO.  
**WEBSTER AVE. BRIDGE**  
 FOR THE  
**CITY OF CHICAGO**  
 Dept. of Public Works :: Bureau of Engineering :: Division of Bridges and Harbor  
**MODERN STEEL STRUCTURAL COMPANY**  
**ERECTION PLAN OF MOVABLE PART**  
 SEE NAT. BILLS. SCALE:  $\frac{3}{16}'' = 1'$  FT.  
 MADE BY W.L.M. 1/9/14 TRACED BY E.S. 11/9/14 CHK'D BY A.W.C. 3/14/14  
**CONTRACT No. 2201 M SHEET No. 101**

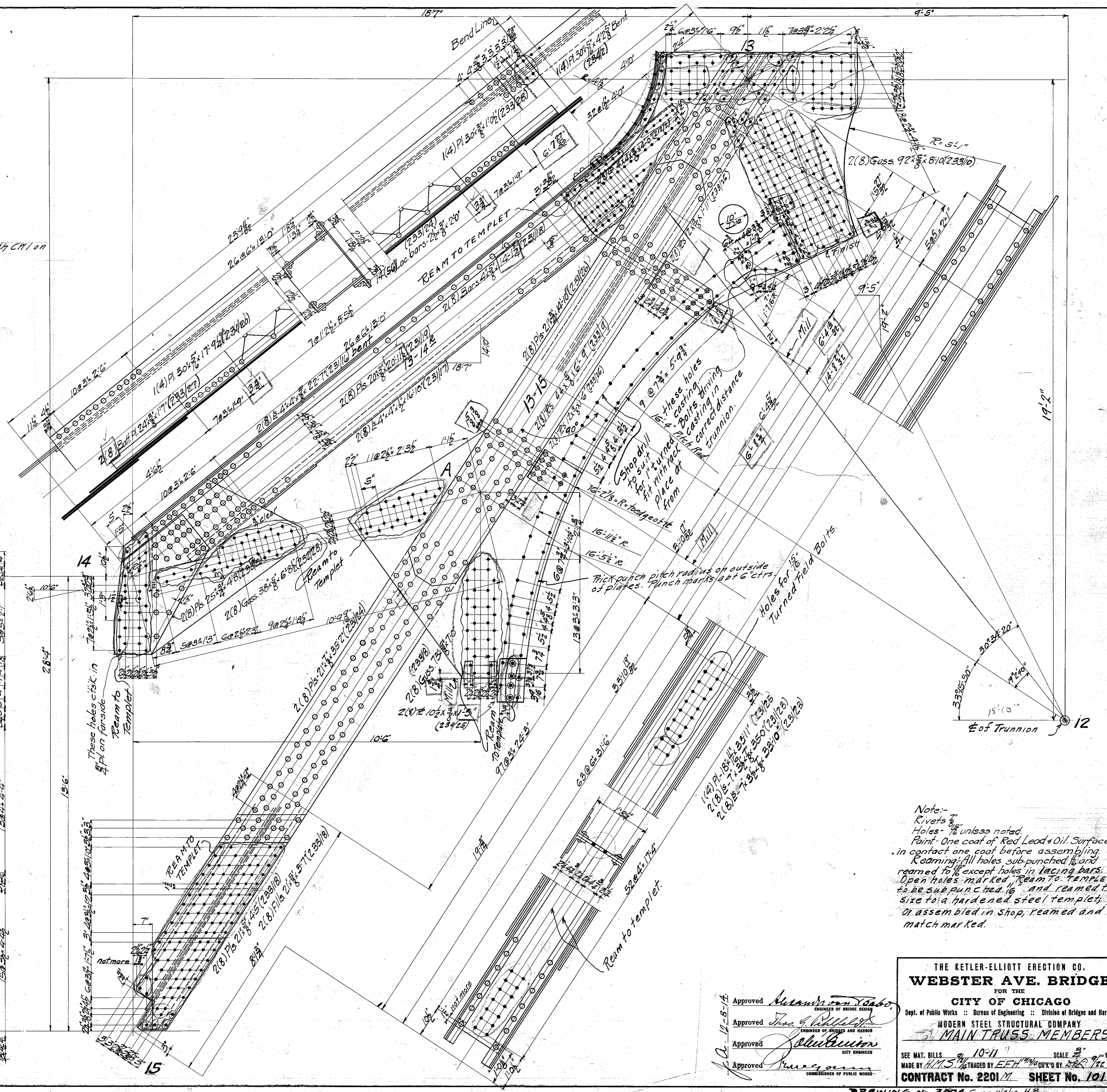
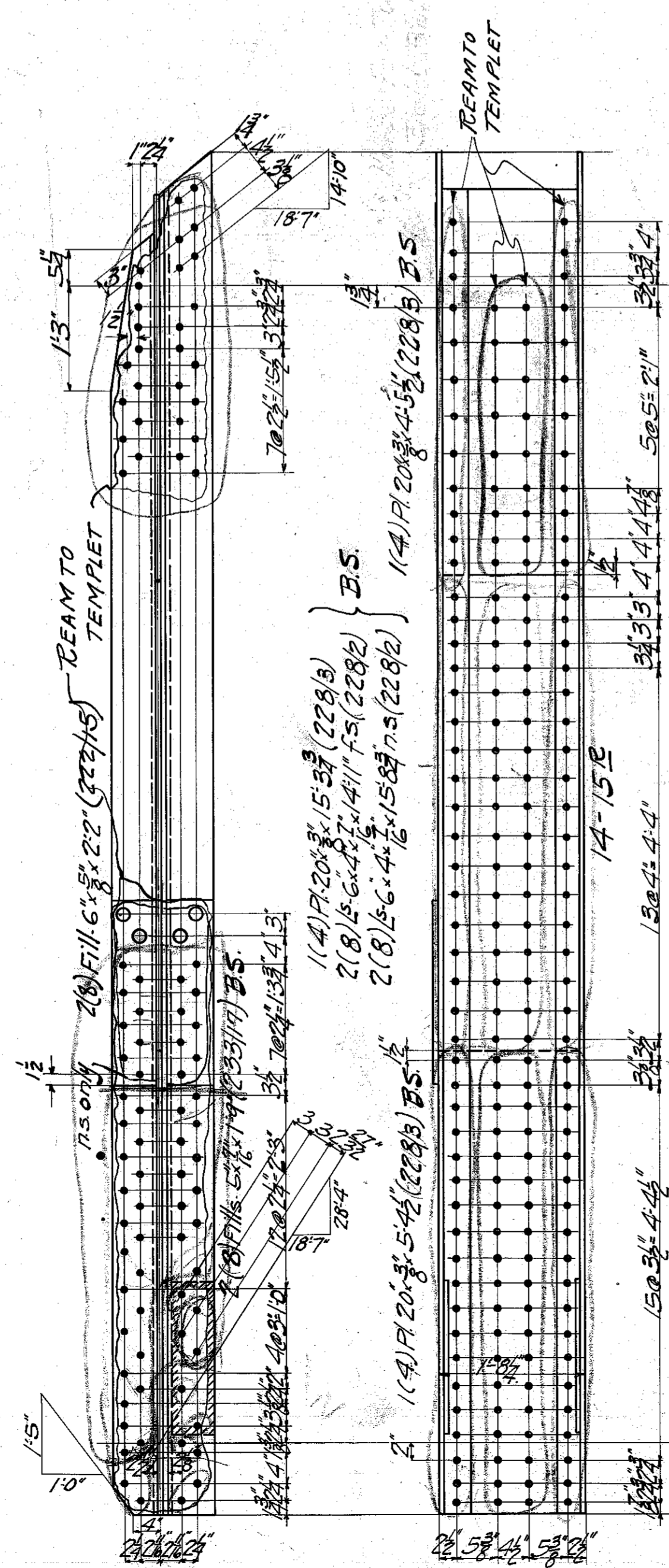
North	17	18	19	20	21	22	23	24	25
Date	11/18	11/20	11/21	11/22	11/23	11/24	11/25	11/26	11/27
Job	5	6	4	3					
H.B.		12	36	2	1	14	13		



Rivet in shop to C.M.I. shown on sheet 116



REQUIRED		
2	Truss Members as shown	13-14 & 15
2	" " opphand	13-14 & 15
4	" " as shown	13-15
2	" " as shown	14-15 & 16
2	" " opphand	14-15 & 16
4	" " as shown	14-A

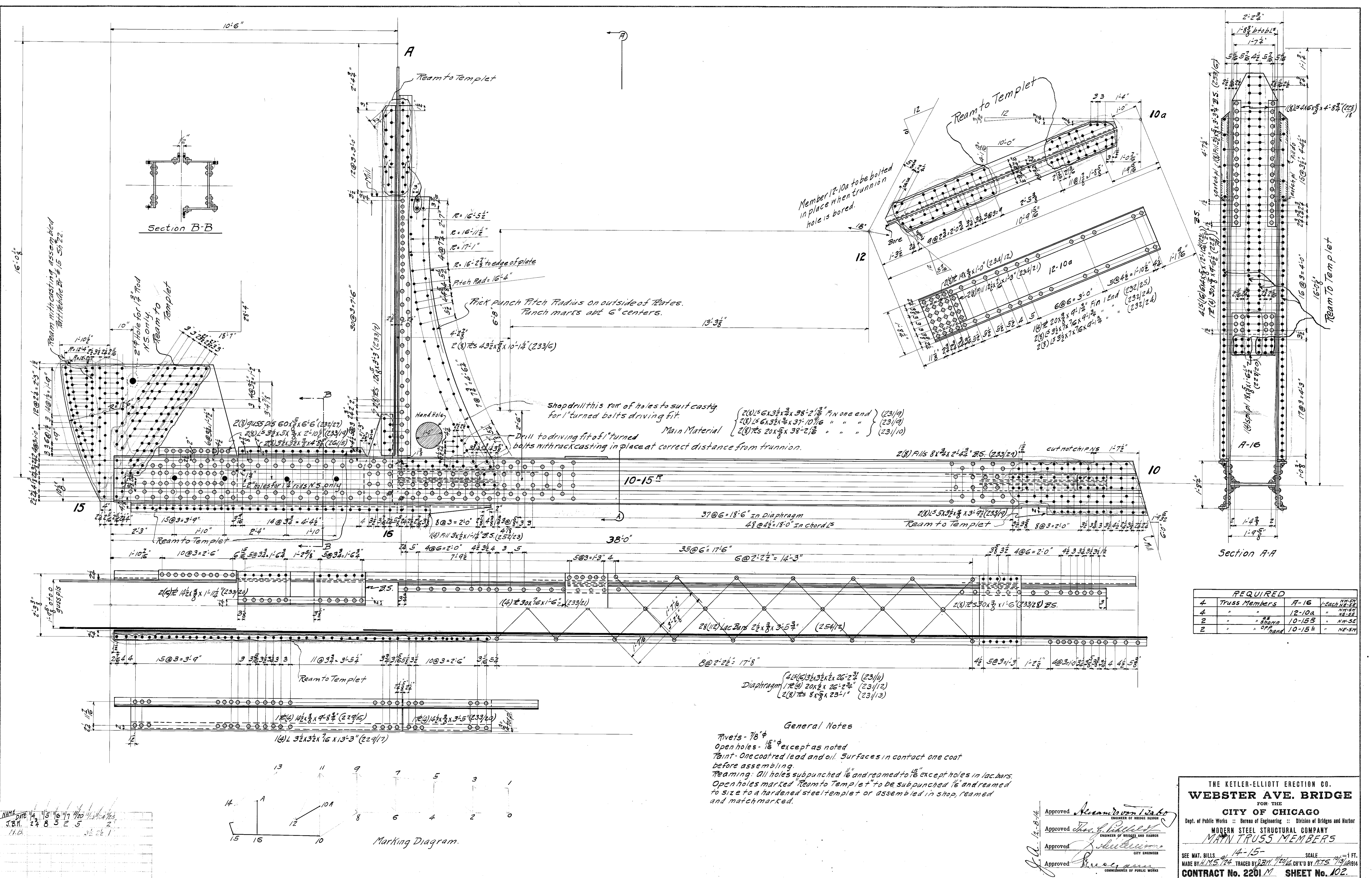


Notes:-  
 Rivets 7/8"  
 Holes - 1/8" unless noted.  
 Paint - One coat of Red Lead & Oil. Surfaces in contact one coat before assembling.  
 Reaming: All holes sub-punched and reamed to 1/8" except holes in lacing bars. Open holes marked 'Beam to Templet' to be sub-punched 1/8" and reamed to size to a hardened steel templet. Or assembled in shop, reamed and match mark red.

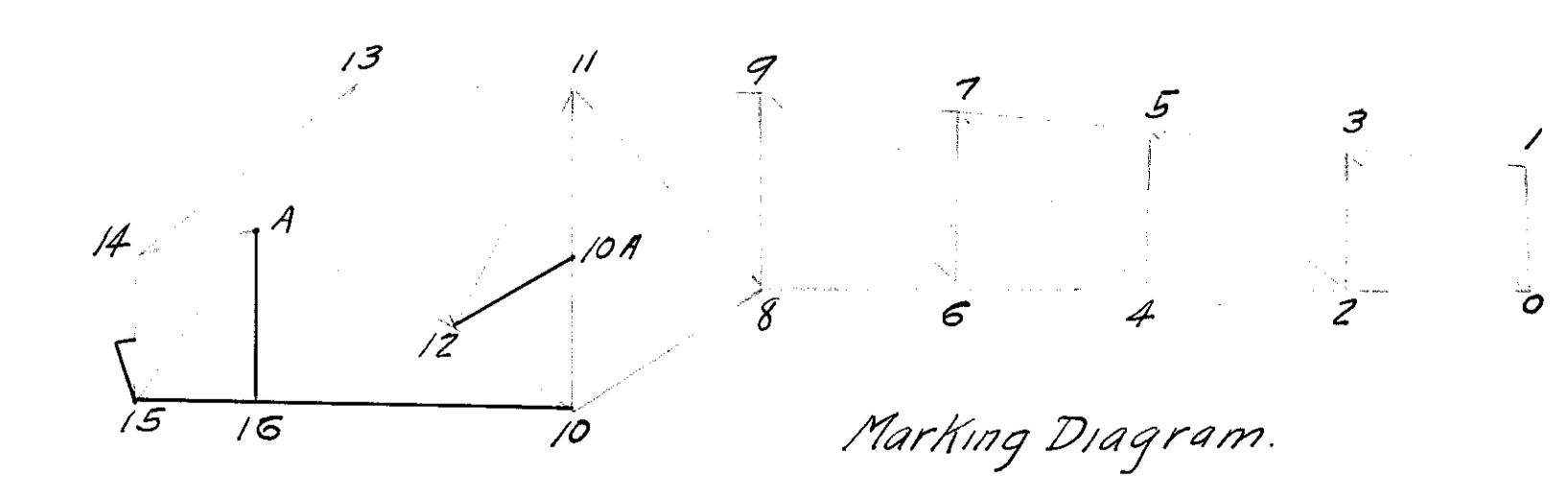
Approved [Signature]  
 Approved [Signature]  
 Approved [Signature]  
 Approved [Signature]

THE KETLER-ELLIOTT ERECTION CO.  
**WEBSTER AVE. BRIDGE**  
 FOR THE  
**CITY OF CHICAGO**  
 Dept. of Public Works :: Bureau of Engineering :: Division of Bridge and Harbor  
 MODERN STEEL STRUCTURAL COMPANY  
**MAIN TRUSS MEMBERS**

SEE MAT. BILLS 10-11 SCALE 3/8" = 1 FT.  
 MADE BY H.M.S. TRACED BY E.F.H. CHECK'D BY [Signature] 11-22-1914  
**CONTRACT No. 2201 M SHEET No. 101**



NAME	DATE	14	15	16	17	18	19	20
J.B.K.	2	8	5	2	5			
H.D.								



**General Notes**

Rivets - 7/8"  
 Open holes - 1/8" except as noted  
 Paint - One coated lead and oil. Surfaces in contact one coat before assembling.  
 Reaming: All holes subpunched 1/8" and reamed to 1/8" except holes in lac bars. Open holes marked "Ream to Templet" to be subpunched 1/8" and reamed to size to a hardened steel templet or assembled in shop, reamed and matchmarked.

REQUIRED			
4	Truss Members	A-16	1/2" EACH NW-57
4	"	12-10a	" NW-57
2	"	10-15B	" NW-57
2	"	10-15A	" NW-57

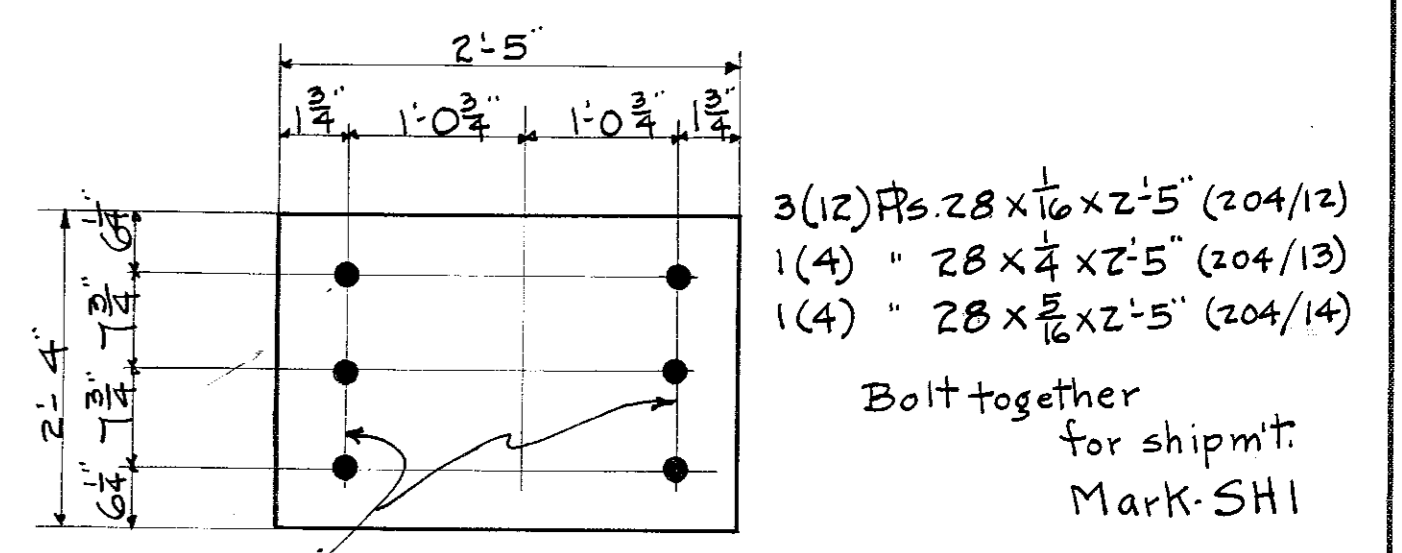
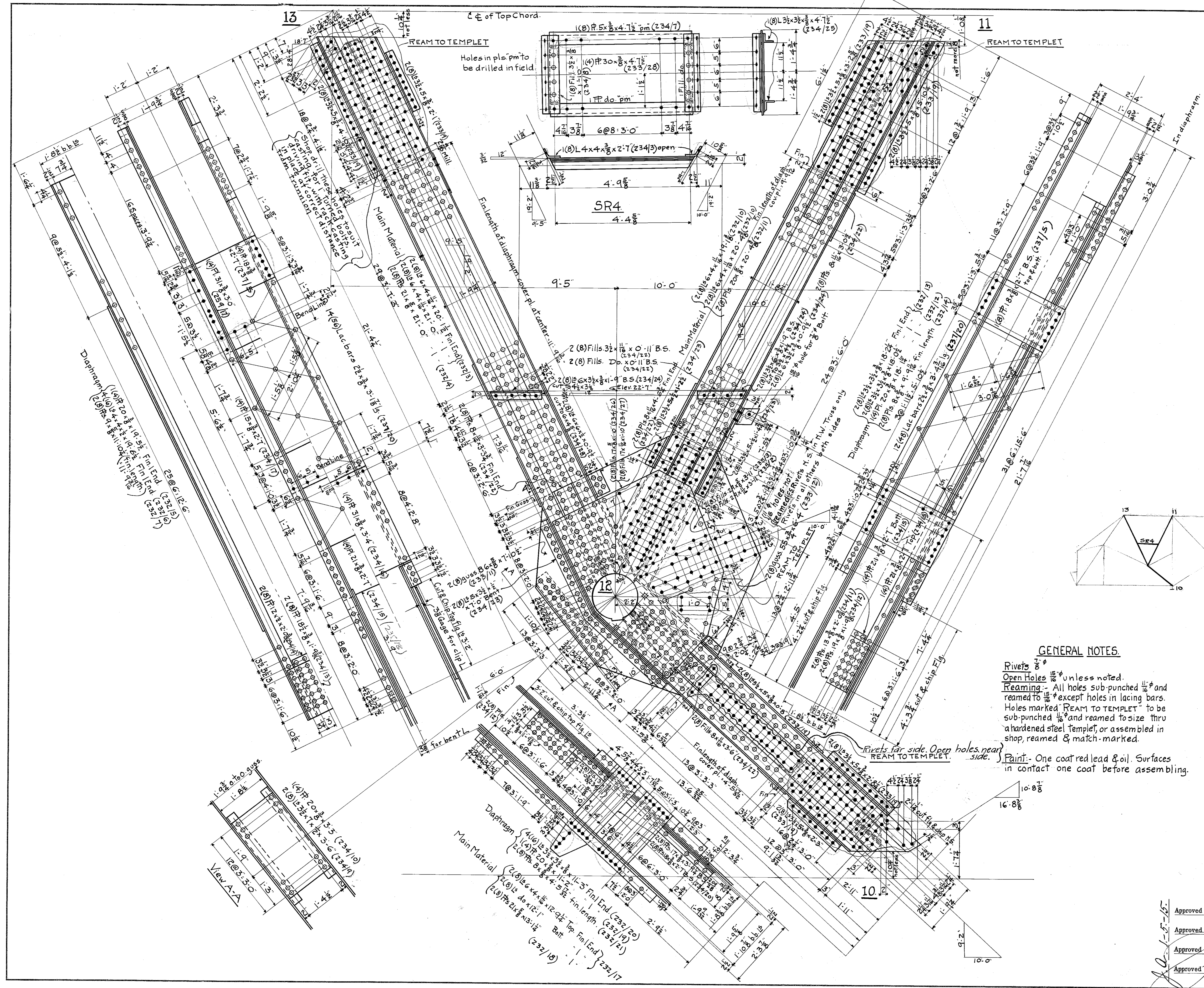
Approved: *[Signature]*  
 Approved: *[Signature]*  
 Approved: *[Signature]*  
 Approved: *[Signature]*

THE KETLER-ELLIOTT ERECTION CO.  
**WEBSTER AVE. BRIDGE**  
 FOR THE  
**CITY OF CHICAGO**  
 Dept. of Public Works :: Bureau of Engineering :: Division of Bridges and Harbor  
**MODERN STEEL STRUCTURAL COMPANY**  
**MAIN TRUSS MEMBERS**

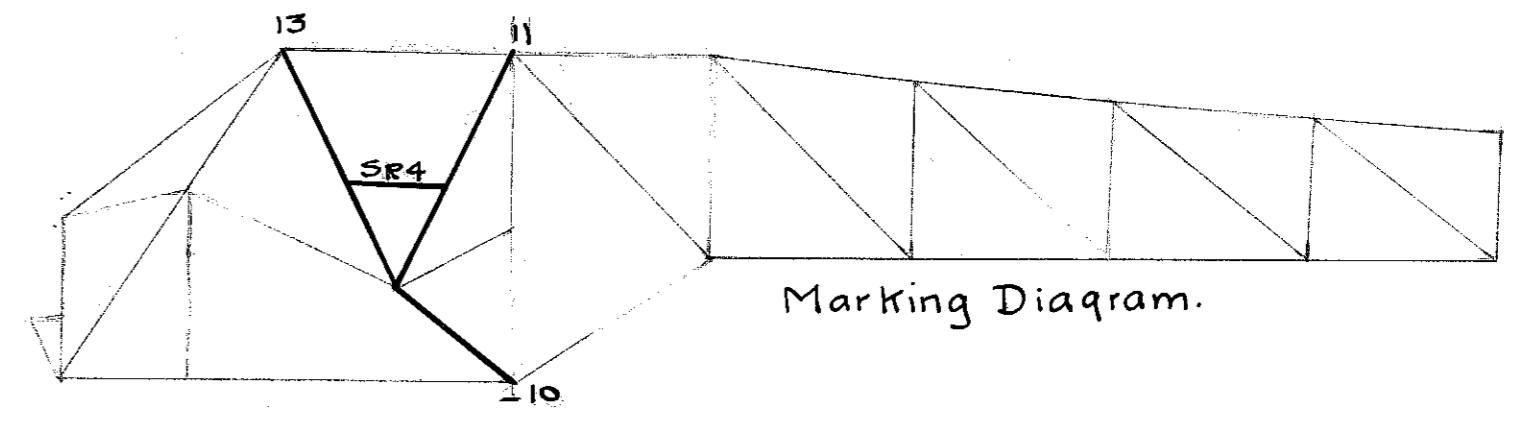
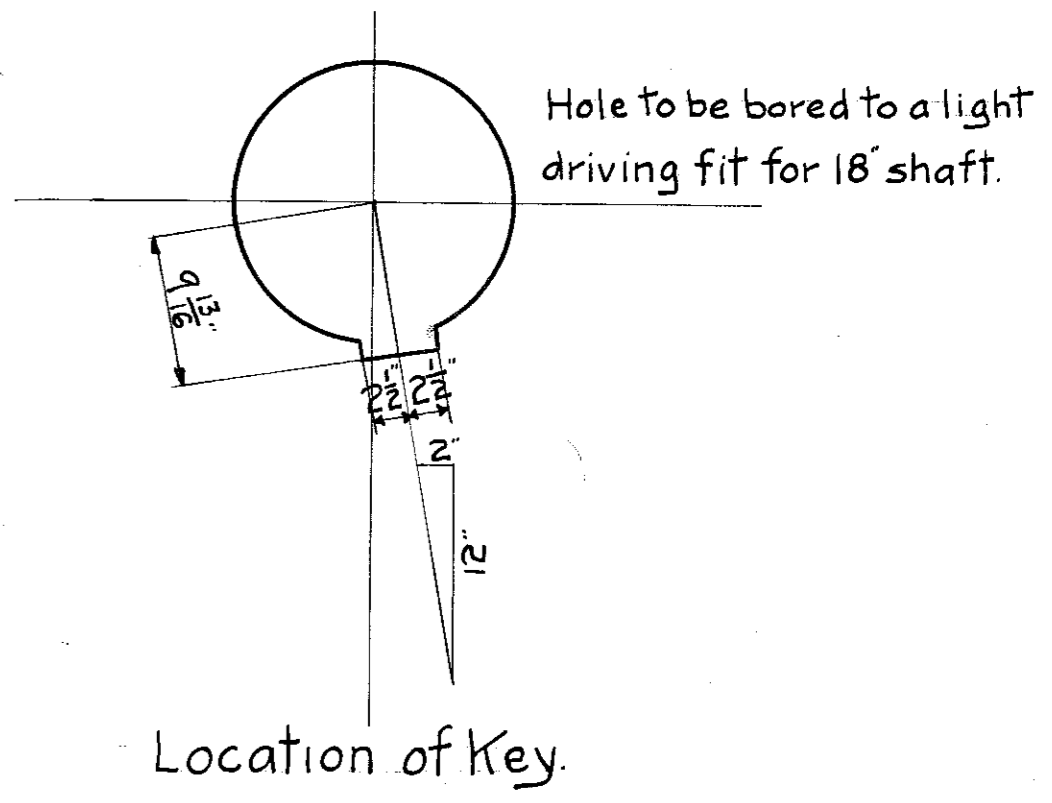
SEE MAT. BILLS 14-15- SCALE 1" = 1'-0"  
 MADE BY H.M.S. 1/24 TRACED BY B.P.M. 1/24 CH'K'D BY H.M.S. 1/24/1914  
 CONTRACT No. 2201 M SHEET No. 102  
 DRAWING No. 3875 Comp 11/24/14 H.S.  
 FILE No. 11-6-3



1/4"	1/4"	1/4"	1/4"	1/4"	DATE	NAME
1/2"	1/2"	1/2"	1/2"	1/2"	E.J.	H.B.



Drill Holes for 1/4" Turned bolts to match Pat. - Web. Ave. Br. #40



REQUIRED			
4	TRUSS MEMBERS	11-12	1 Each RW SW NE SE AS SHOWN
4	Sidewalk plates	SR4	1 Each RW SW NE SE "
1	Truss Members	10-13R	R.W. " " " "
2	"	10-13R	S.E. " " " "
4	Shims	SH1	1 Each RW SW NE SE AS SHOWN

**GENERAL NOTES.**

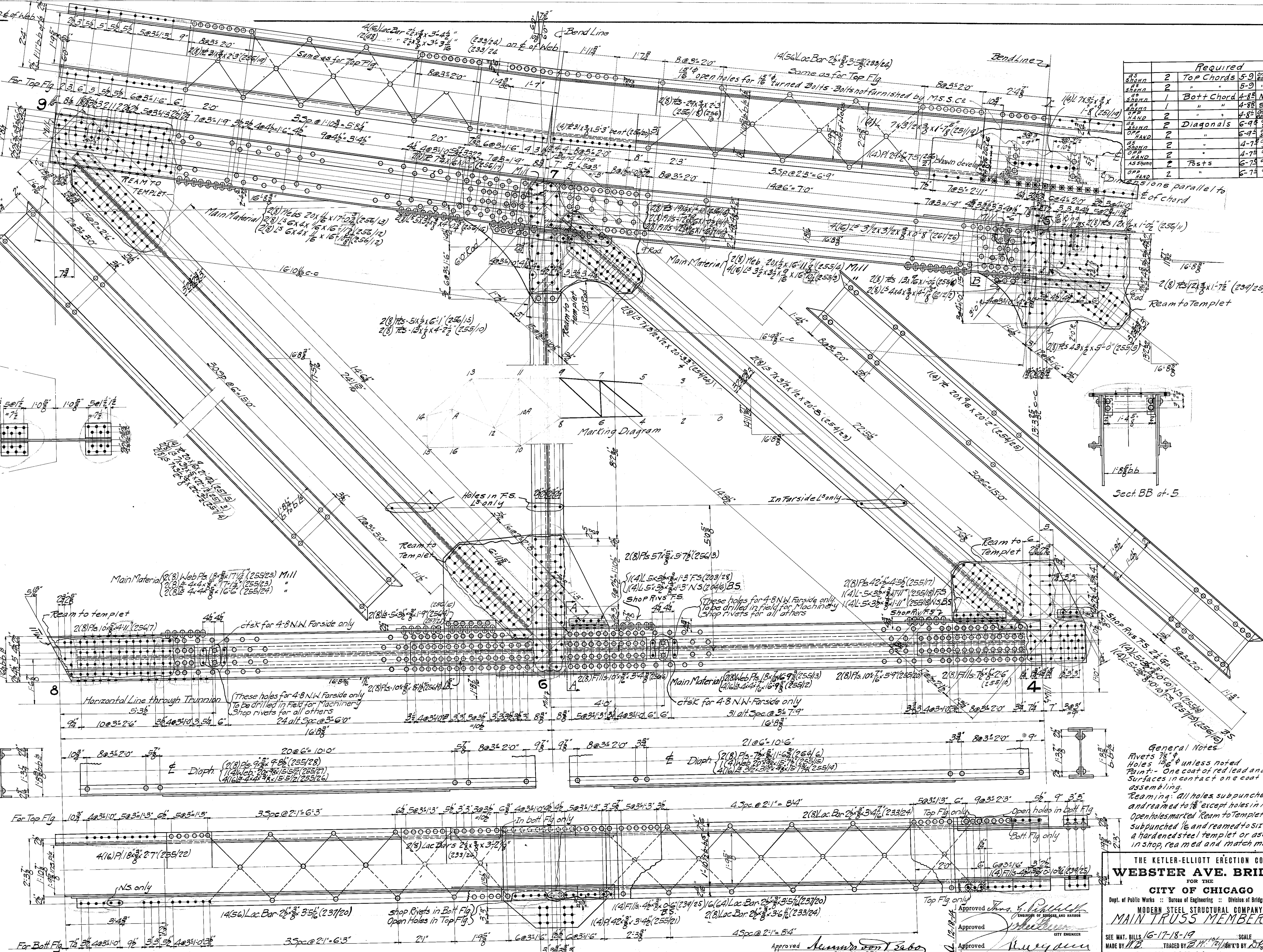
Rivets 3/8"  
 Open Holes 1/8" unless noted.  
 Reaming - All holes sub-punched 1/16" and reamed to 1/8" except holes in lacing bars.  
 Holes marked "REAM TO TEMPLET" to be sub-punched 1/16" and reamed to size thru a hardened steel templet, or assembled in shop, reamed & match-marked.  
 Paint - One coat red lead & oil. Surfaces in contact one coat before assembling.

THE KETLER-ELLIOTT ERECTION CO.  
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 FOR THE  
**CITY OF CHICAGO**  
 Dept. of Public Works :: Bureau of Engineering :: Division of Bridges and Harbor  
 MODERN STEEL STRUCTURAL COMPANY  
**MAIN TRUSS MEMBERS**

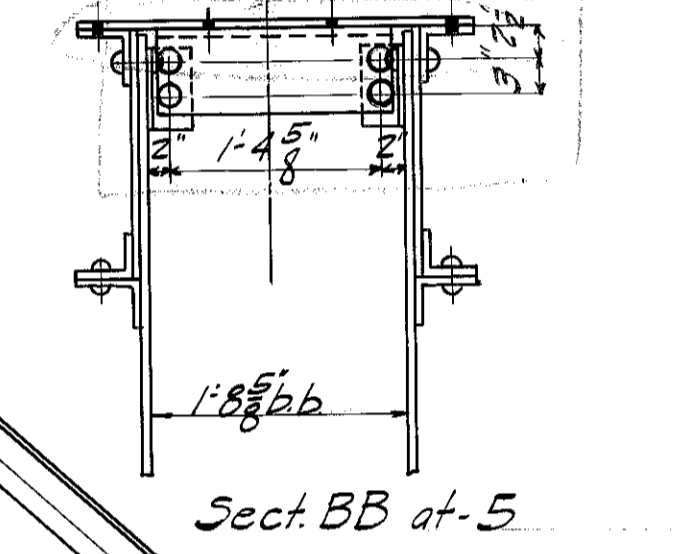
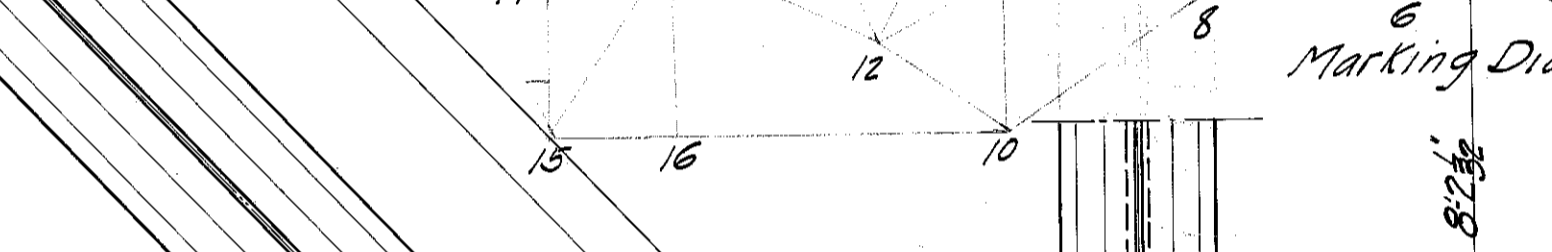
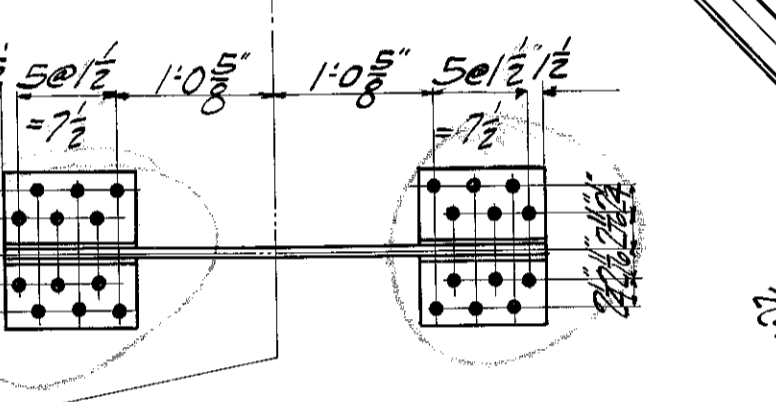
Approved: *James W. Babo* ENGINEER OF BRIDGE DESIGN  
 Approved: *John J. ...* ENGINEER OF BRIDGES AND HARBOR  
 Approved: *...* CITY ENGINEER  
 Approved: *...* COMMISSIONER OF PUBLIC WORKS

SEE MAT. BILLS 41-42-43 SCALE 3/8" = 1 FT.  
 MADE BY H.M.S. 1916 TRACED BY E.J. 11/14/1917 CH'D BY W.T.S. 10/22/1914  
**CONTRACT No. 2201** **SHEET No. 103**

Date	2/15/24	2/15/24	2/15/24	2/15/24	2/15/24
E.I.T.	3	3	3	3	3
J.R.M.	4	4	4	4	4
M.P.N.					



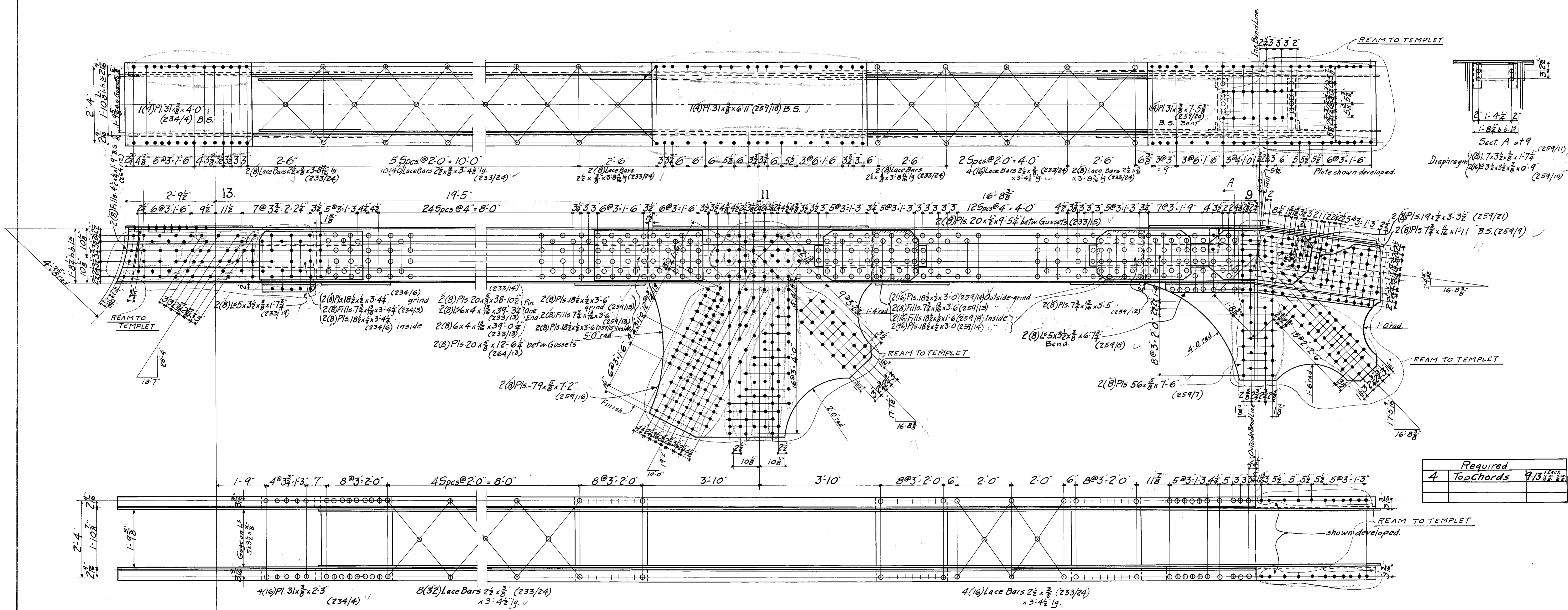
Required		
2	Top Chords	5-9
2	Bottom Chords	4-8
1	Diagonals	4-8
2	Posts	6-7



Sect. at Post 6-7

**General Notes:**  
 Rivets 7/8" unless noted  
 Holes 1/8" unless noted  
 Paint: One coat of red lead and oil.  
 Surfaces in contact one coat before assembling.  
 Reaming: All holes subpunched 1/8" and reamed to fit except holes in lac. bars. Open holes marked "Ream to Templet" to be subpunched 1/8" and reamed to size thru a hardened steel templet or assembled in shop, reamed and match marked.

**THE KETLER-ELLIOTT ERECTION CO.**  
**WEBSTER AVE. BRIDGE**  
 FOR THE  
**CITY OF CHICAGO**  
 Dept. of Public Works :: Bureau of Engineering :: Division of Bridges and Harbors  
**MODERN STEEL STRUCTURAL COMPANY**  
**MAIN TRUSS MEMBERS**  
 SEE MAT. BILLS 16-17-18-19 SCALE 1" = 1' FT.  
 MADE BY *[Signature]* DRAWN BY *[Signature]* BY *[Signature]* 1914  
**CONTRACT No. 2201 M. SHEET No. 104**  
 DRAWING No. 3877 Comp. 11/11/24 H.E.  
 FILE No. 11-6C-5



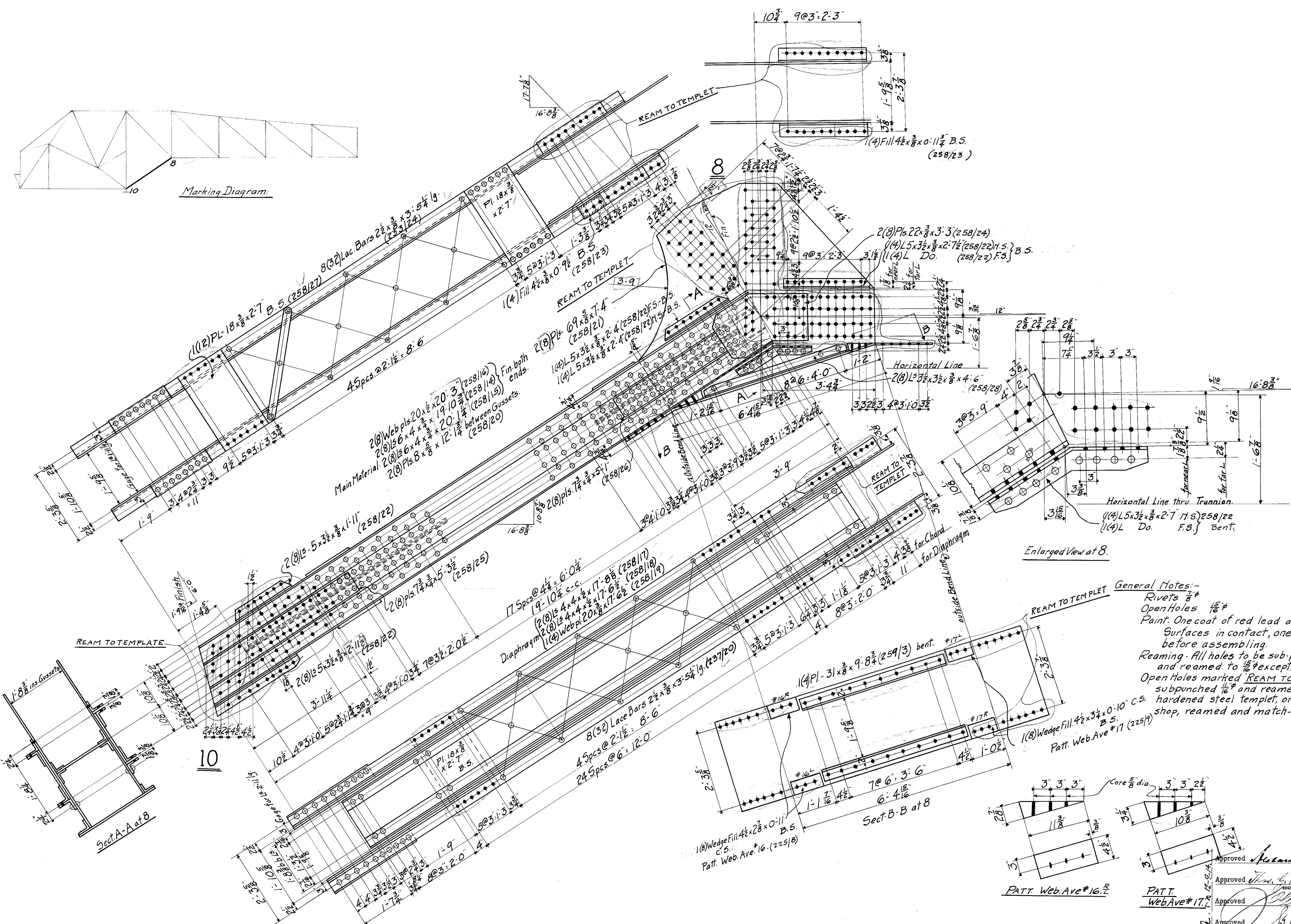
**General Notes**  
 Rivets  $\frac{3}{8}$ "  
 Open Holes  $\frac{1}{8}$ "  
 Paint One coat of red lead and oil. Surfaces in contact one coat before assembling.  
 Reaming: All holes to be sub-punched  $\frac{1}{16}$ " and reamed to  $\frac{1}{16}$ " except in lacing bars. Open Holes marked REAM TO TEMPLET to be sub-punched  $\frac{1}{16}$ " and reamed to size to a hardened steel templet, or assembled in shop, reamed and match-marked.

Marking Diagram.

Approved *Wm. B. ...*  
 Approved *...*  
 Approved *...*  
 Approved *...*

THE KETLER-ELLIOTT ERECTION CO.  
**WEBSTER AVE. BRIDGE**  
 FOR THE  
**CITY OF CHICAGO**  
 Dept. of Public Works :: Bureau of Engineering :: Division of Bridges and Harbor  
**MODERN STEEL STRUCTURAL COMPANY**  
**MAIN TRUSS MEMBERS.**  
 SEE MAT. BILLS 12-13 SCALE  $\frac{3}{8}$ " = 1 FT.  
 MADE BY W. B. 7/21 TRADED BY E. J. 11/10 CHK'D BY 2/10/1914  
**CONTRACT No. 220111 SHEET No. 105**

139	1/10	1/21	1/20	1/12	1/11	DATE
						NAME
						E.J.
						H.E.



		Required	
as shown	2	Bottom Chord	8-10" one each N.W.-S.E.
opp hand	2	"	" 8-10" " N.E.-S.W.

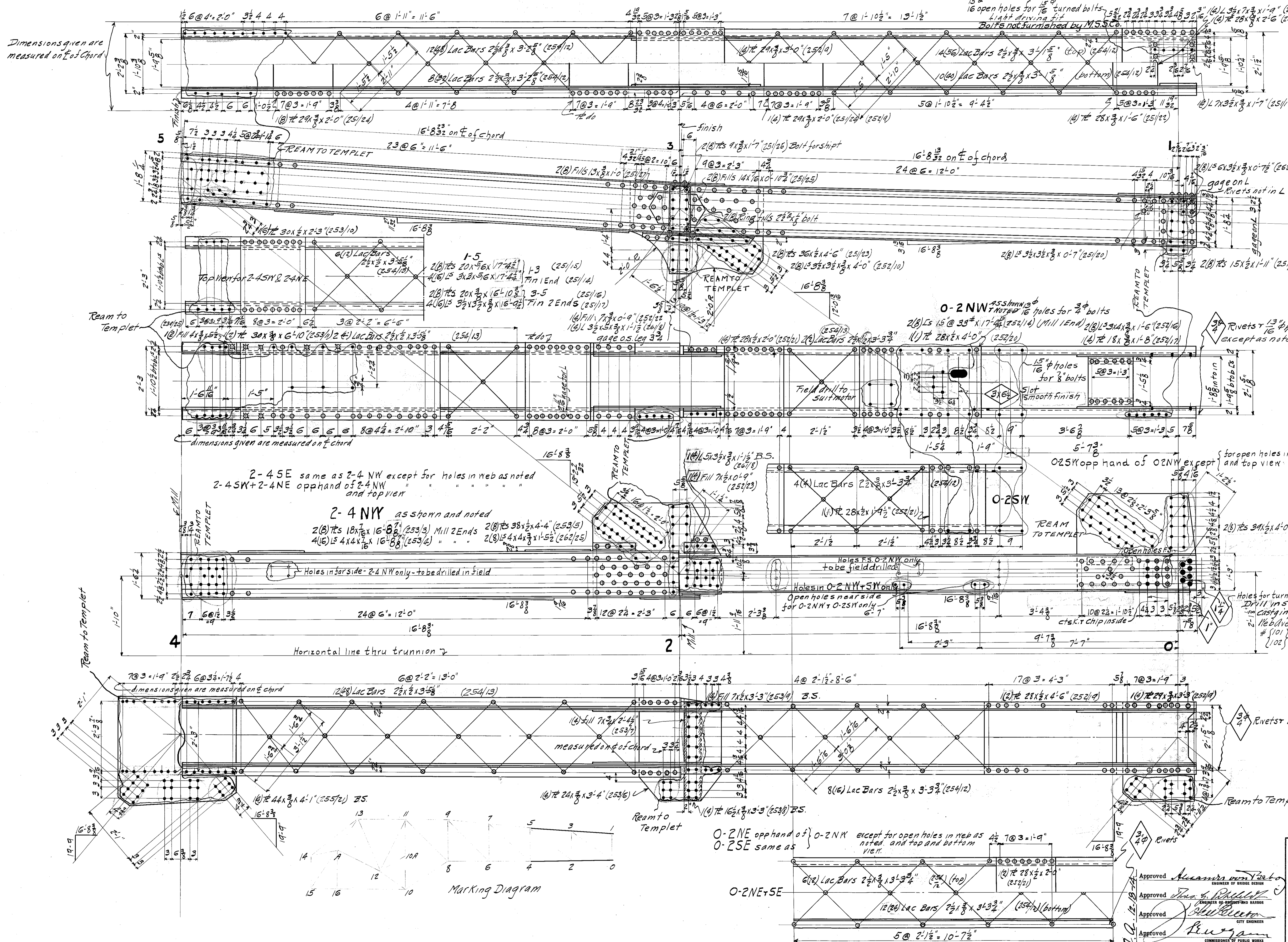
**General Notes:-**  
 Rivets 5/8"  
 Open Holes 1 1/8"  
 Paint: One coat of red lead and oil  
 Surfaces in contact, one coat before assembling.  
 Reaming: All holes to be sub-punched 1/8" and reamed to 1/8" except in lacing bars. Open Holes marked "REAM TO TEMPL" to be sub-punched 1/8" and reamed to size to a hardened steel templet, or assembled in shop, reamed and match-marked.

THE KETLER-ELLIOTT ERECTION CO.  
**WEBSTER AVE. BRIDGE**  
 FOR THE  
**CITY OF CHICAGO**  
 Dept. of Public Works :: Bureau of Engineering :: Division of Bridges and Harbor  
 MODERN STEEL STRUCTURAL COMPANY  
**MAIN TRUSS MEMBERS**

Approved: *[Signature]* ENGINEER OF BRIDGE DESIGN  
 Approved: *[Signature]* CHIEF OF BRIDGE AND ALLEYS  
 Approved: *[Signature]* CITY ENGINEER  
 Approved: *[Signature]* COMMISSIONER OF PUBLIC WORKS

SEE MET. BILLS 20 SCALE 3/4" = 1 FT.  
 MADE BY W.B. 1/22 TRACED BY E.S. 1/10 CHK'D BY J.D. 10/2 1914  
**CONTRACT No. 2201** **SHEET No. 106**  
 DRAWING No. 3879 Comp 11-2-14 11.23  
 FILE No. 11-66-7

1/16 1/8 1/4 3/8 1/2 5/8 3/4 7/8 1 1 1/8 1 1/4 1 1/2 1 3/4 2 2 1/4 3 3 1/4 4 5 6 7 8 9 10 11 12



REQUIRED		
1	CHORD SECTION	0-2NW As shown
1	"	0-2SW opphand
1	"	0-2SE as shown
1	"	0-2NE opphand
1	"	2-4NW as shown
1	"	2-4SW opphand
1	"	2-4SE as shown
1	"	2-4NE opphand
1	"	1-5NW as shown
1	"	1-5NE "
1	"	1-5SE "

General Notes

Rivets  $\frac{3}{4}$ " unless noted

Holes  $\frac{1}{8}$ "

Paint - One coat of red lead and oil

Surfaces in contact one coat before assembling.

Reaming - All holes sub-punched & under size and reamed to size except in lacing bars

Holes marked "REAM TO TEMPLET" to be punched to under size and reamed to size to a hardened steel templet or assembled in shop, reamed, and match marked.

Tracing Revised 12/24/44

THE KETLER-ELLIOTT ERECTION CO.

**WEBSTER AVE. BRIDGE**

FOR THE

**CITY OF CHICAGO**

Dept. of Public Works :: Bureau of Engineering :: Division of Bridges and Harbors

MODERN STEEL STRUCTURAL COMPANY

**MAIN TRUSS MEMBERS**

SEE MAT. BILLS 21-22-23 SCALE 1" = 1'-0"

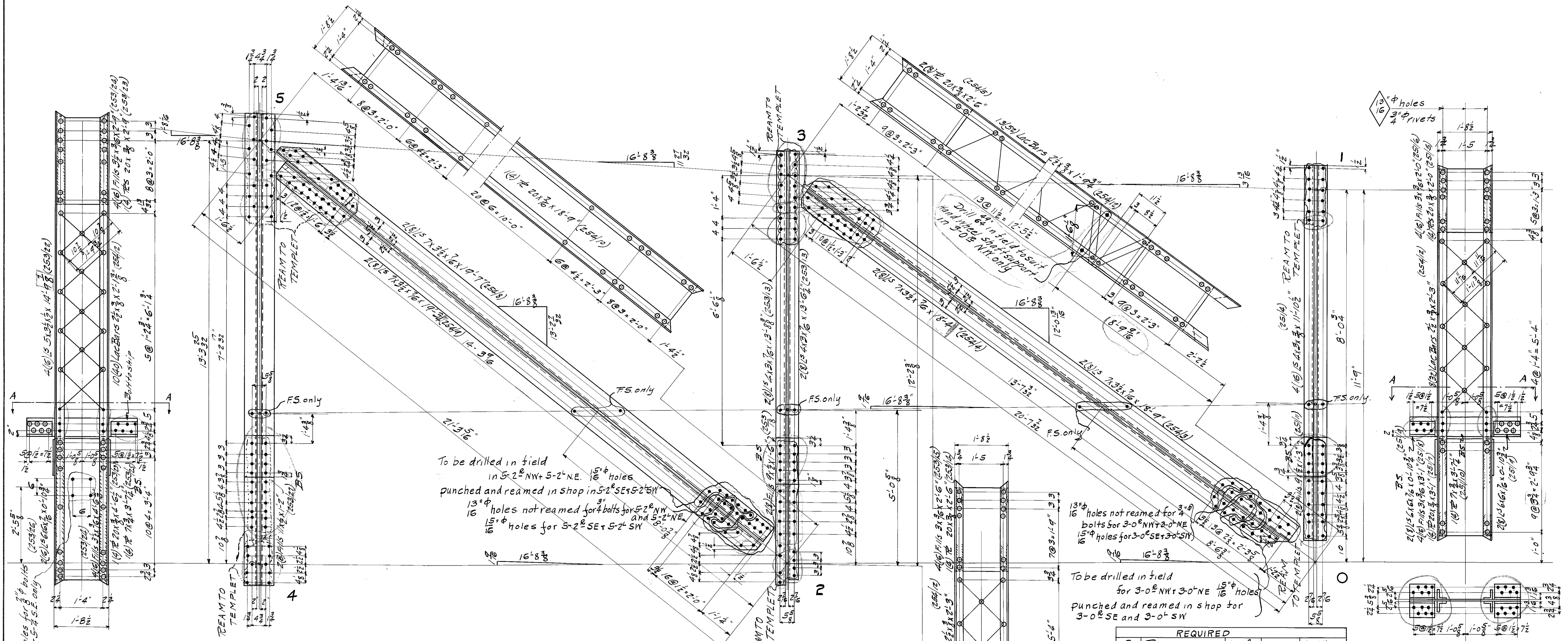
MADE BY M.S. 2/10/45 TRACED BY J.M. 1/12/45 CHK'D BY J.M. 1/30/45

CONTRACT No. 2201 M. SHEET No. 107

DRAWING No. 3880 Comp 1/22/44 H.B.

FILE No. 11-6C-8

DATE 12-23-14  
 J.B.M. 6 2 3 12 2  
 H.B.



To be drilled in field  
 in 5-2<sup>NE</sup> NW + 5-2<sup>NE</sup> NE 15<sup>φ</sup> holes  
 punched and reamed in shop in 5-2<sup>SE</sup> SE + 5-2<sup>SW</sup> SW  
 13<sup>φ</sup> holes not reamed for 4 bolts for 5-2<sup>NE</sup> NW  
 and 5-2<sup>NE</sup> NE  
 15<sup>φ</sup> holes for 5-2<sup>SE</sup> SE + 5-2<sup>SW</sup> SW

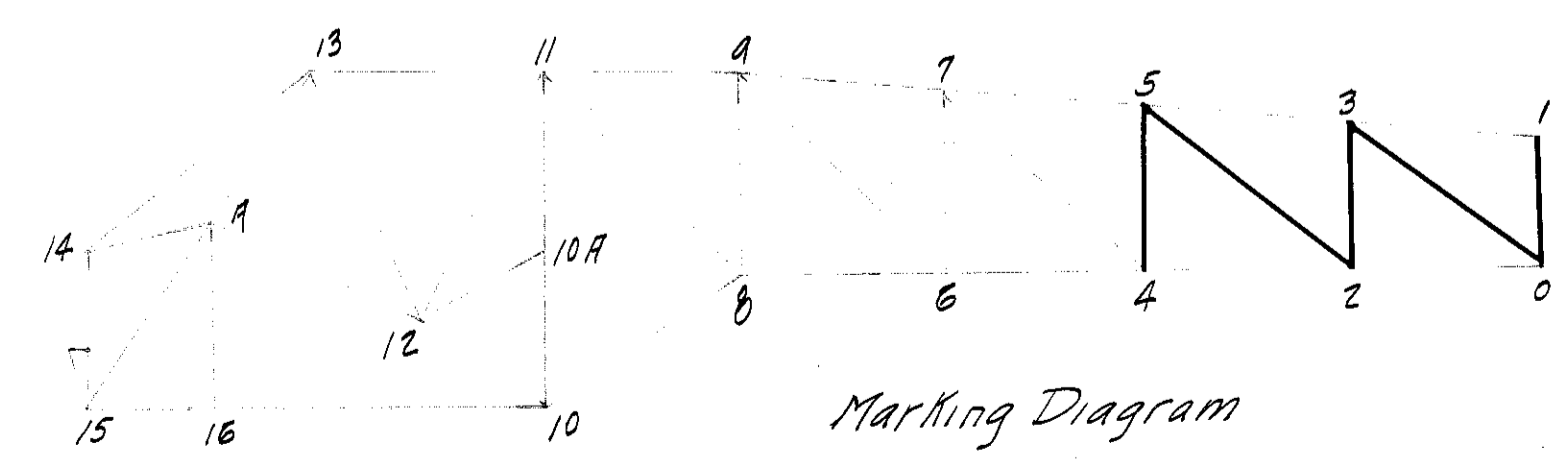
To be drilled in field  
 for 3-0<sup>NE</sup> NW + 3-0<sup>NE</sup> NE 15<sup>φ</sup> holes  
 punched and reamed in shop for  
 3-0<sup>SE</sup> SE and 3-0<sup>SW</sup> SW

**General Notes**  
 Rivets: 3/4<sup>φ</sup> except as noted  
 Open Holes: 15<sup>φ</sup> except as noted  
 PAINT: One coat red lead and oil. Surfaces  
 in contact one coat before assembling  
 Reaming: All holes punched 1/4 under size  
 and reamed to size except in lace bars,  
 and as noted in 5-2<sup>NE</sup> NW + 5-2<sup>NE</sup> NE, 3-0<sup>NE</sup> NW,  
 and 3-0<sup>NE</sup> NE.  
 Holes marked "REAM TO TEMPLT"  
 to be punched 1/4 under size and reamed  
 to size to a hardened steel templet,  
 or assembled in shop, reamed and  
 match marked.

REQUIRED			
2	POSTS	1-0 <sup>NE</sup>	NW + SE AS SHOWN
2	"	1-0 <sup>SE</sup>	SW + NE OPP HAND
2	"	3-2 <sup>NE</sup>	NW + SE AS SHOWN
2	"	3-2 <sup>SE</sup>	SW + NE OPP HAND
2	"	5-4 <sup>R</sup>	NW + SE AS SHOWN
2	"	5-4 <sup>L</sup>	SW + NE OPP HAND
1	DIAGONAL	3-0 <sup>NE</sup>	NW
1	"	3-0 <sup>SE</sup>	NE OPP HAND
1	"	3-0 <sup>R</sup>	SE AS SHOWN
1	"	3-0 <sup>L</sup>	SW OPP HAND
1	"	5-2 <sup>NE</sup>	NW AS SHOWN
1	"	5-2 <sup>SE</sup>	NE OPP HAND
1	"	5-2 <sup>R</sup>	SE AS SHOWN
1	"	5-2 <sup>L</sup>	SW OPP HAND

except for web holes omitted

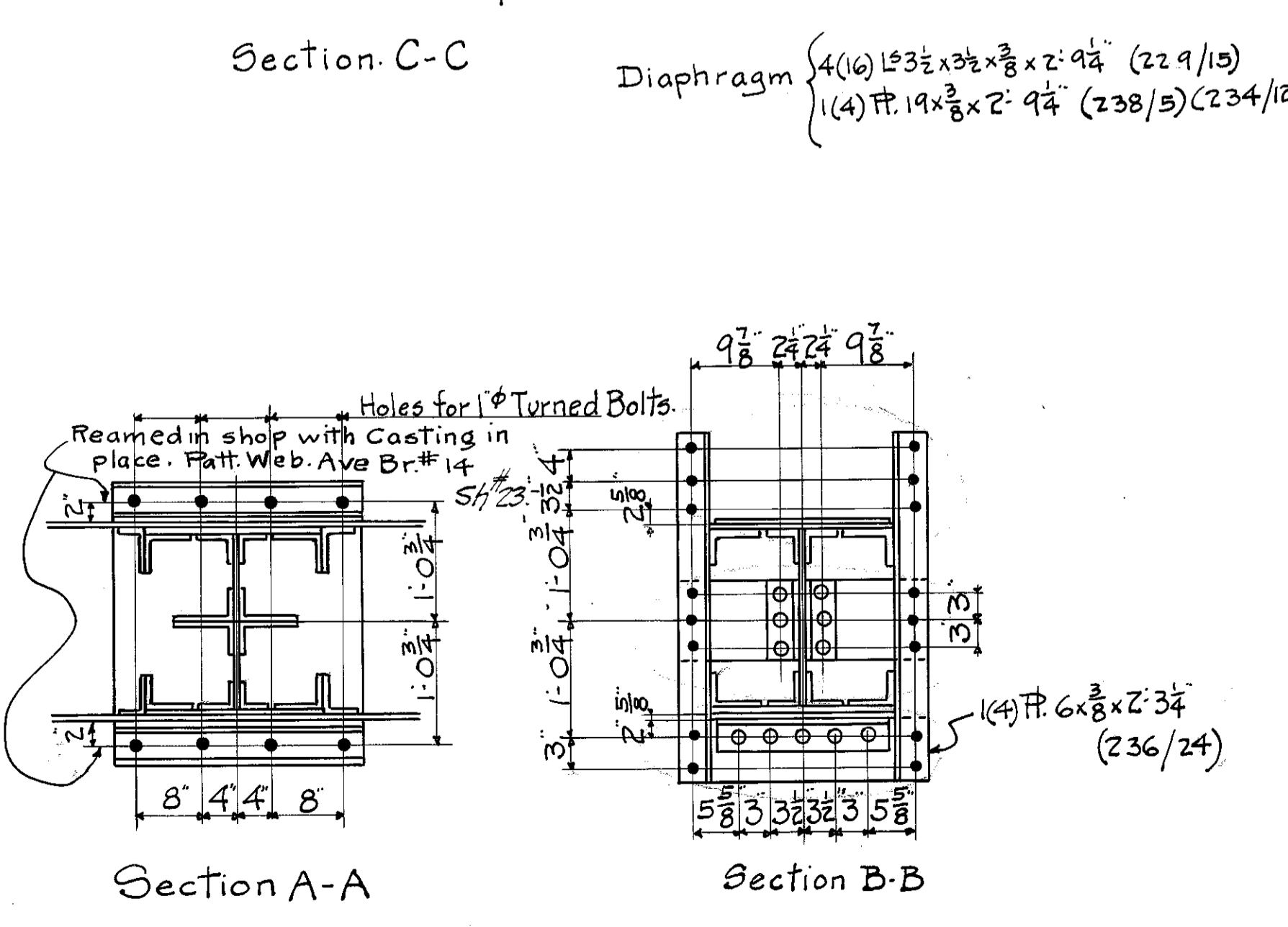
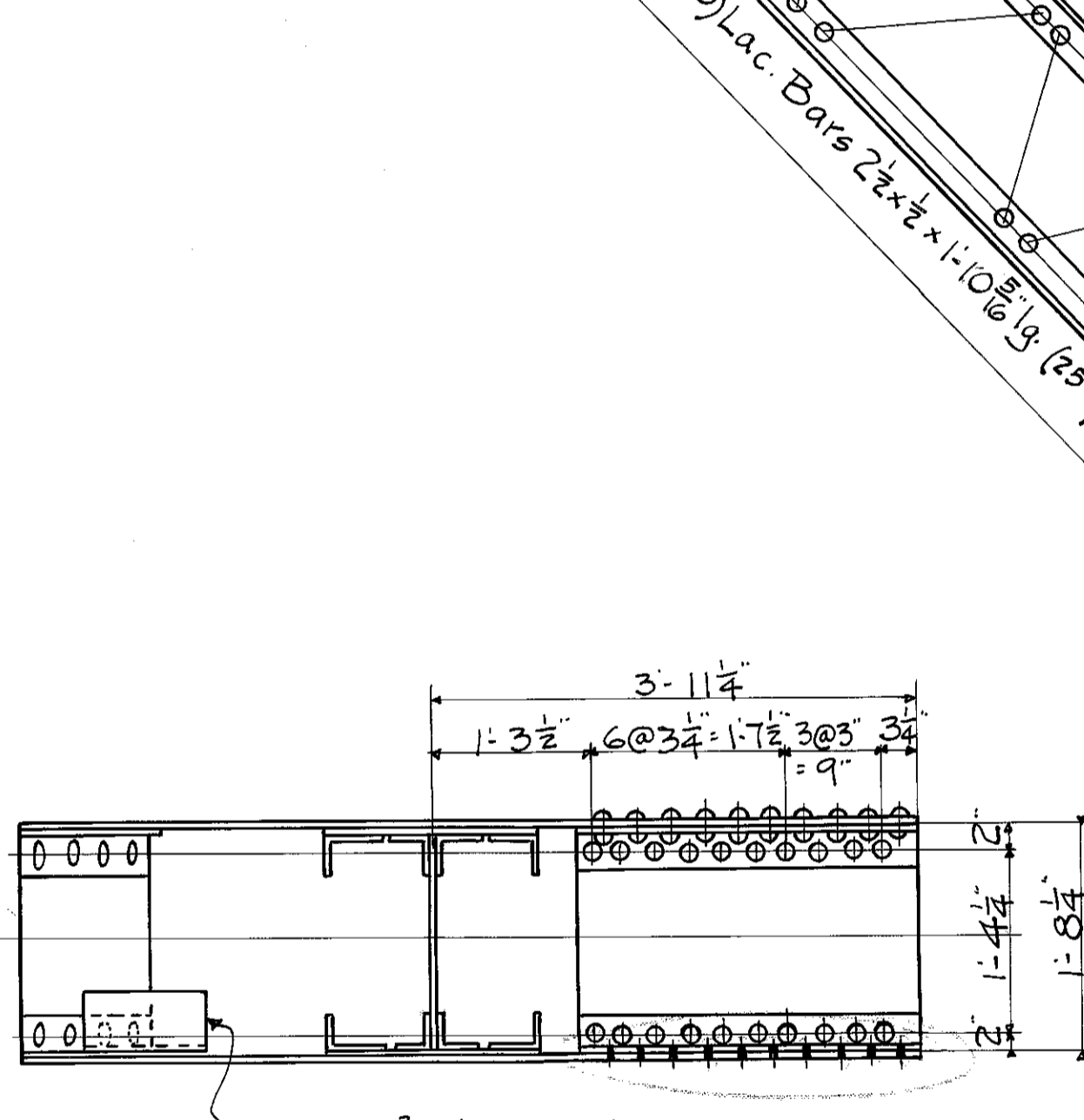
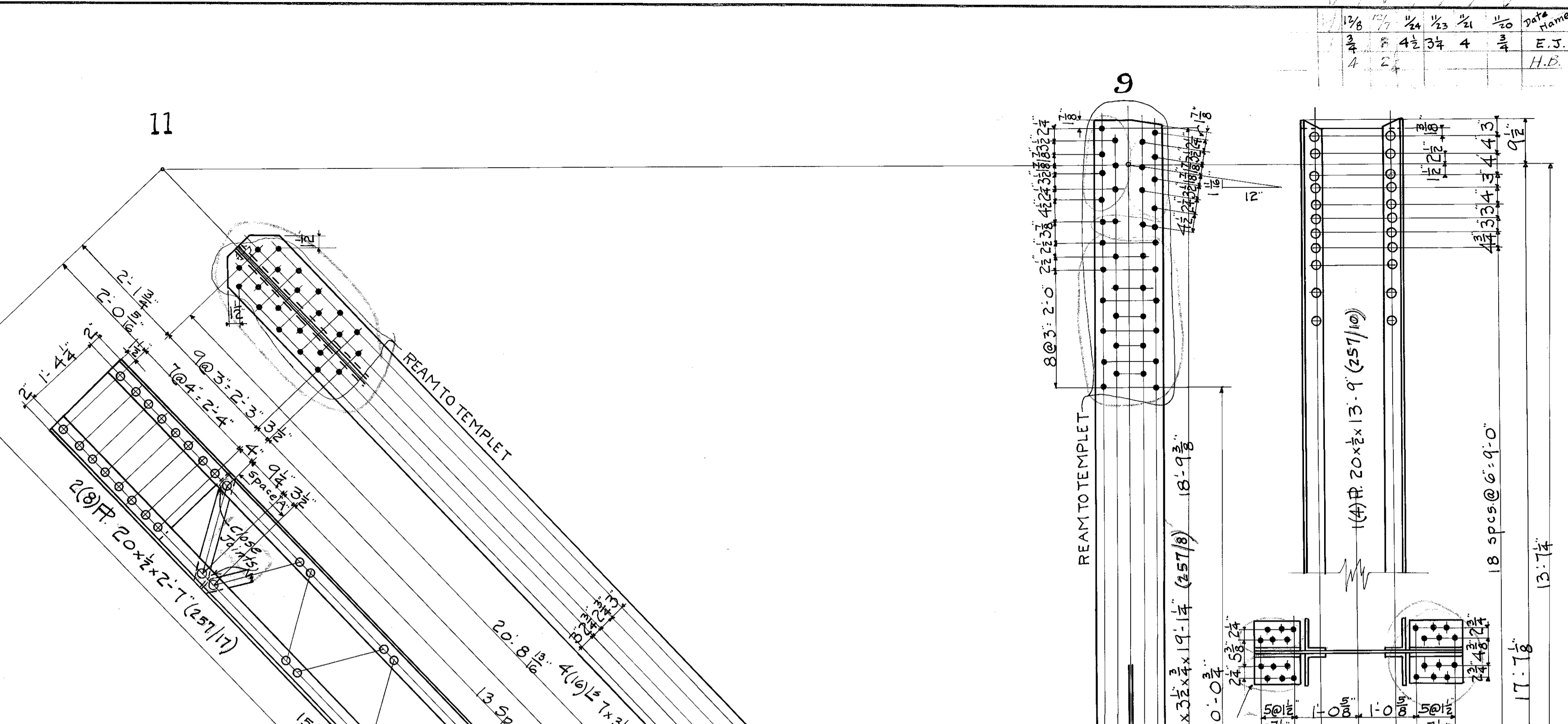
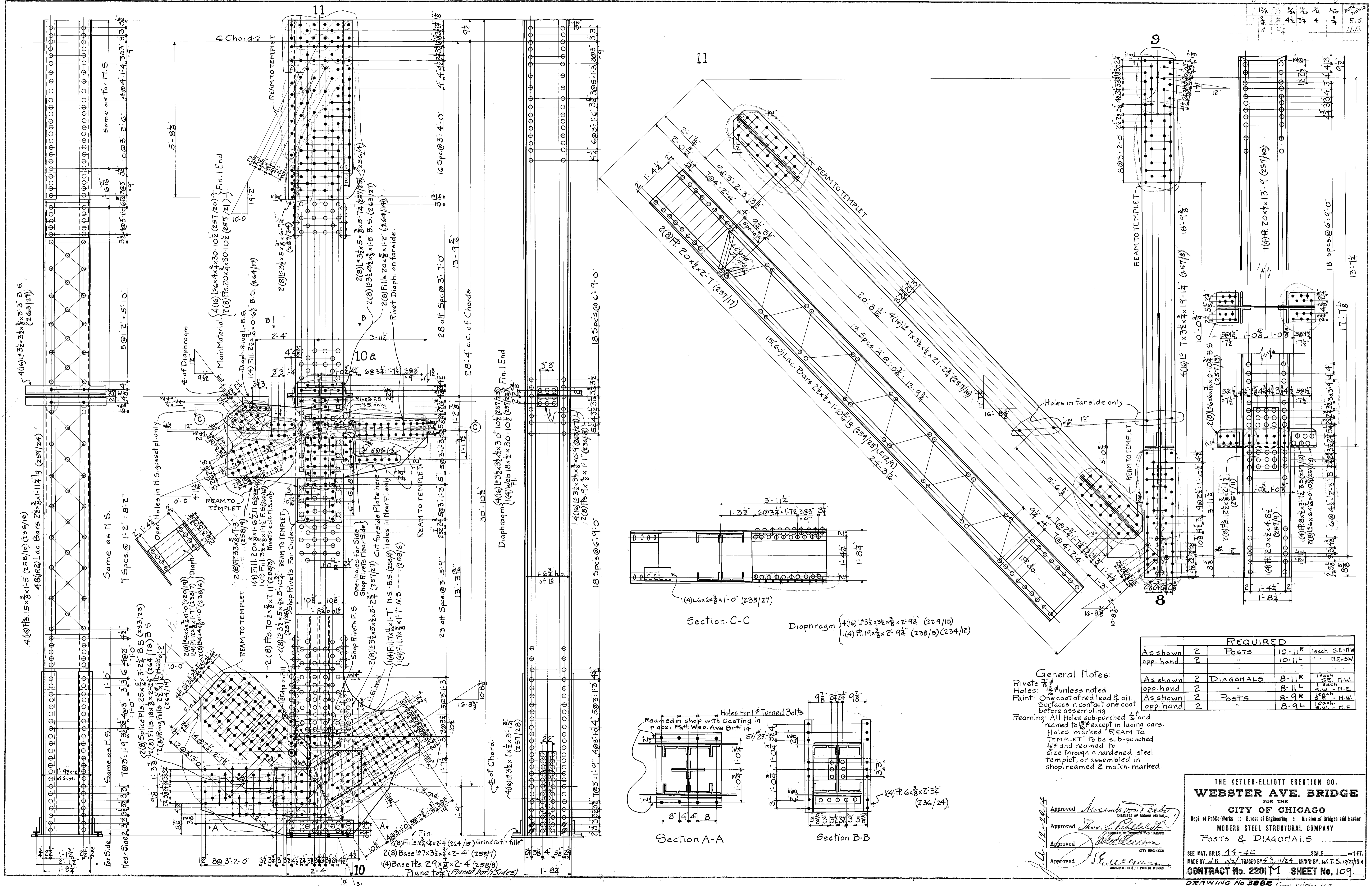
Section A-A



Approved *Alvan W. Tabor*  
 ENGINEER OF BRIDGE DESIGN  
 Approved *John J. ...*  
 ENGINEER OF STRUCTURES AND HARBOUR  
 Approved *...*  
 CITY ENGINEER  
 Approved *...*  
 COMMISSIONER OF PUBLIC WORKS

THE KETLER-ELLIOTT ERECTION CO.  
**WEBSTER AVE. BRIDGE**  
 FOR THE  
**CITY OF CHICAGO**  
 Dept. of Public Works :: Bureau of Engineering :: Division of Bridges and Harbors  
**MODERN STEEL STRUCTURAL COMPANY**  
**MAIN TRUSS MEMBERS**  
 SEE MAT. BILLS 24-25-26 SCALE 1/4" = 1'-0"  
 MADE BY M.S.P. 9/18/14 TRACED BY ... CH'K'D BY ...  
**CONTRACT No. 2201 M SHEET No. 108.**  
 DRAWING No. 3881 FILE No. 11-6C-9 Comp. 4/23/14 H.B.

1660570204



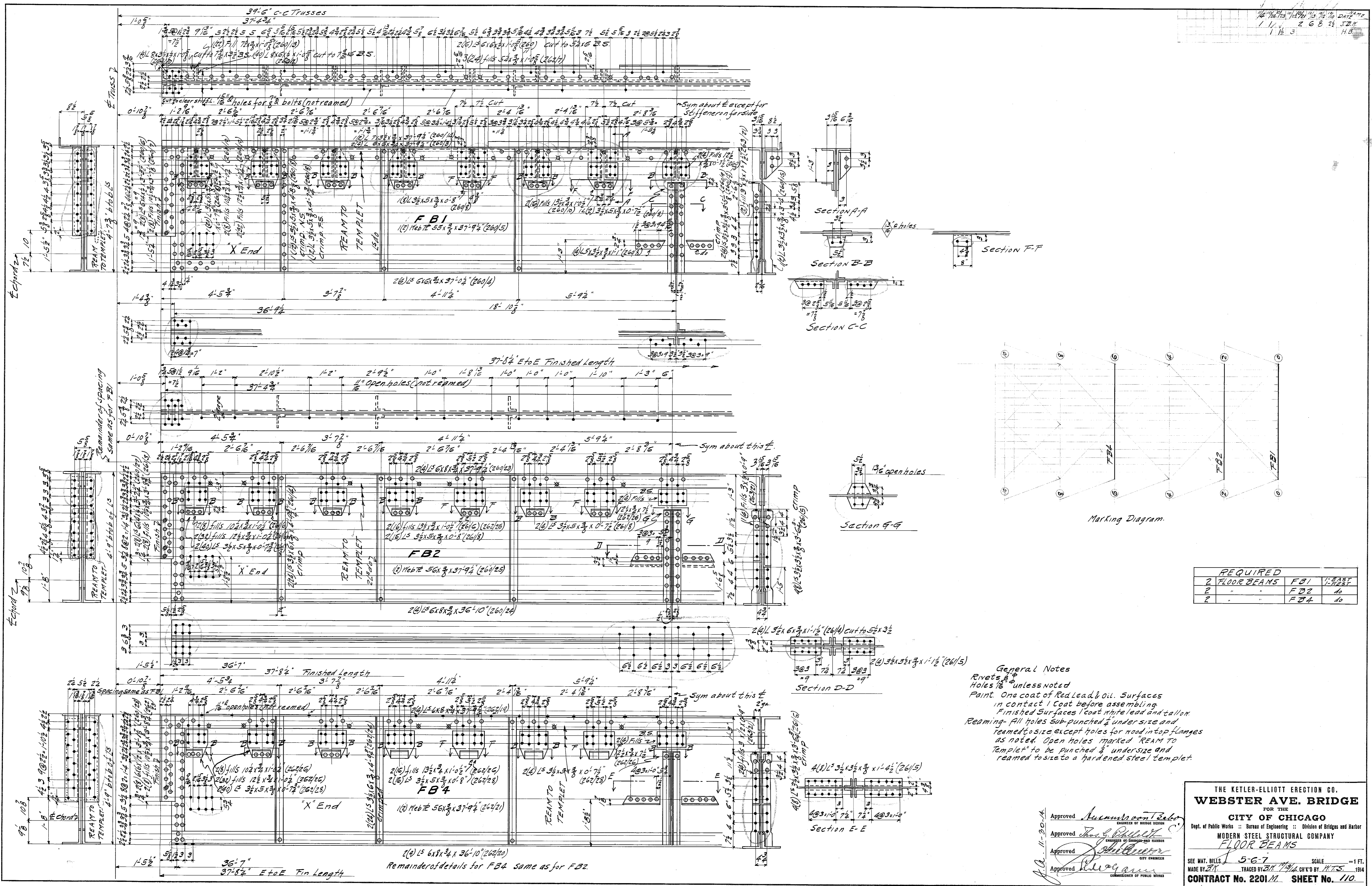
**REQUIRED**

As shown	2	Posts	10-11 R	each SE-NW
opp. hand	0		10-11 L	each NE-SW
As shown	2	DIAGONALS	8-11 R	each SE-NW
opp. hand	0		8-11 L	each NE-SW
As shown	2	Posts	8-9 R	each SE-NW
opp. hand	2		8-9 L	each NE-SW

**General Notes:**  
 Rivets: 7/8" unless noted  
 Holes: 1 1/4" unless noted  
 Paint: One coat of red lead & oil.  
 Surfaces in contact one coat before assembling.  
 Reaming: All holes sub-punched and reamed to size except in lacing bars. Holes marked REAM TO TEMPLET to be sub-punched and reamed to size through a hardened steel templet, or assembled in shop, reamed & match-marked.

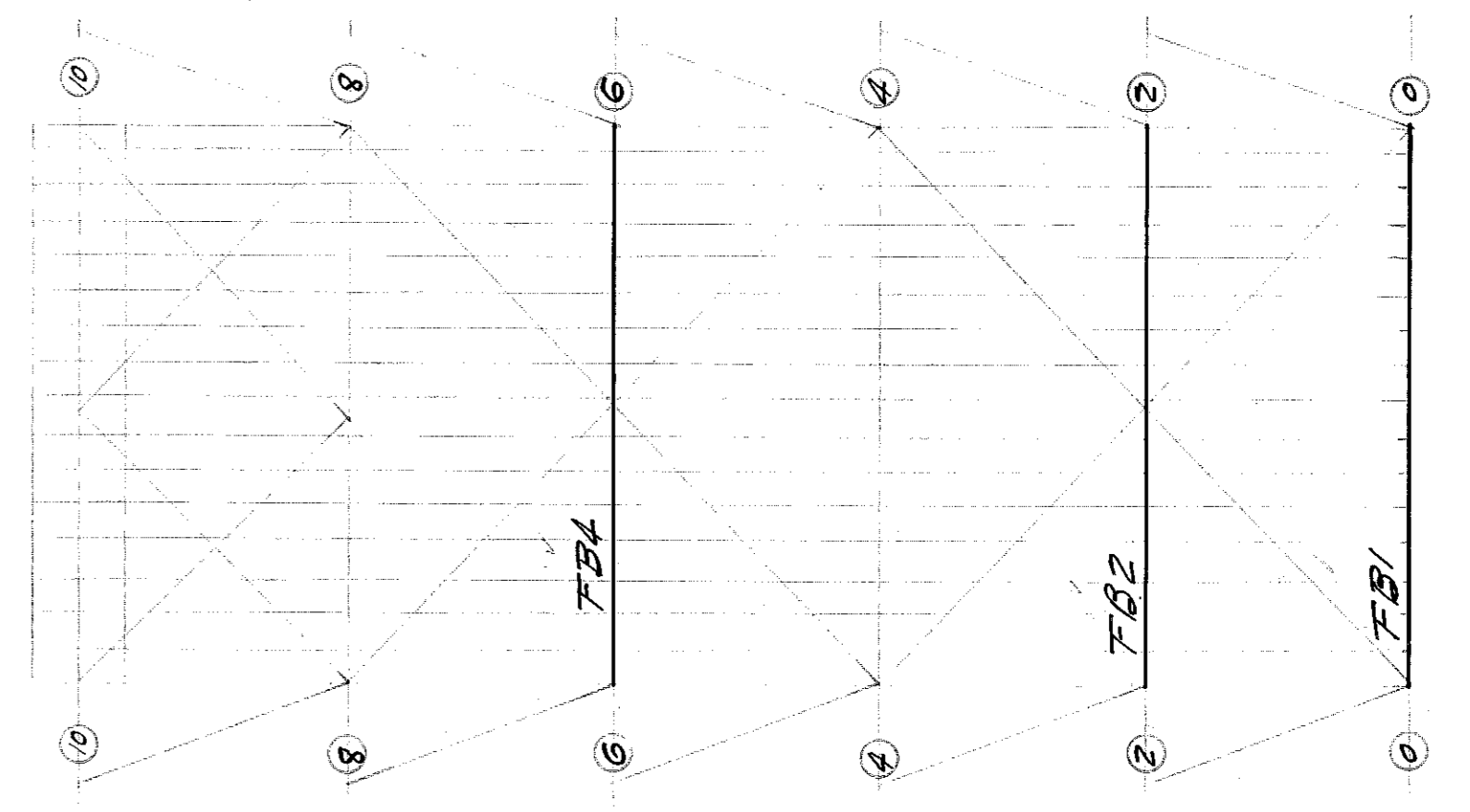
Approved: *[Signature]*  
 Approved: *[Signature]*  
 Approved: *[Signature]*  
 CITY ENGINEER

**THE KETLER-ELLIOTT ERECTION CO.**  
**WEBSTER AVE. BRIDGE**  
 FOR THE  
**CITY OF CHICAGO**  
 Dept. of Public Works :: Bureau of Engineering :: Division of Bridges and Harbor  
**MODERN STEEL STRUCTURAL COMPANY**  
**POSTS & DIAGONALS**  
 SEE MAT. BILLS 44-45 SCALE 1" = 1'-0"  
 MADE BY W.B. 1022/ TRAGED BY S. 11/24 SHW'D BY W.T.S. 10/22/1914  
**CONTRACT No. 22011 SHEET No. 109**  
 DRAWING No. 3888 Comp. 12/8/11 H.E.  
 FILE No. 11-6C-10



**General Notes**  
 Rivets 5/8"  
 Holes 1/8" unless noted  
 Paint. One coat of Red Lead & Oil. Surfaces in contact 1 coat before assembling. Finished Surfaces 1 coat white lead and tallon.  
 Reaming - All holes sub-punched 1/8" under size and reamed to size except holes for rood in top flanges as noted. Open holes marked "REAM TO TEMPLET" to be punched 1/8" under size and reamed to size to a hardened steel templet.

REQUIRED			
2	FLOOR BEAMS	FB1	1'-EAST
2	"	FB2	10
2	"	FB4	10

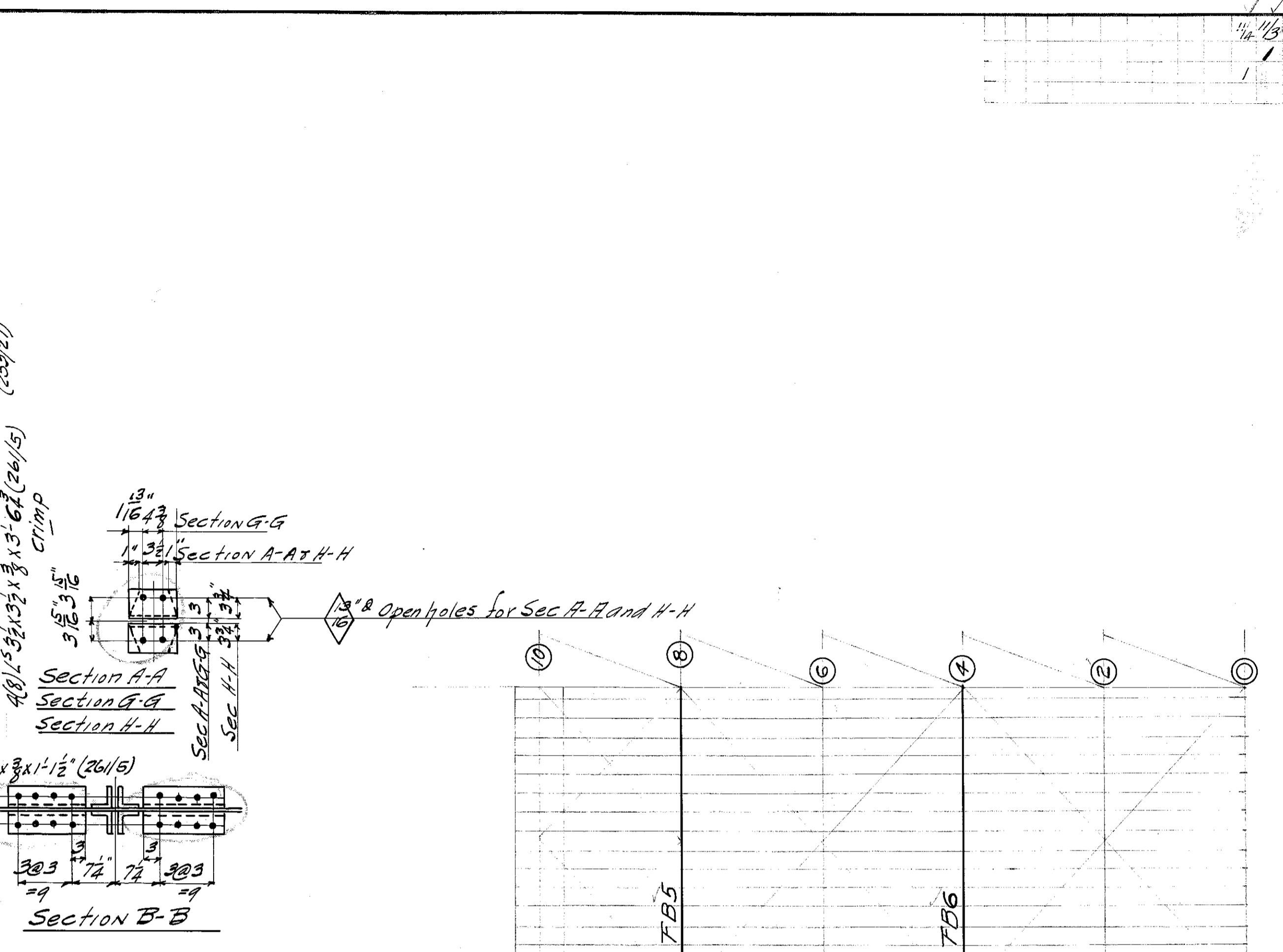
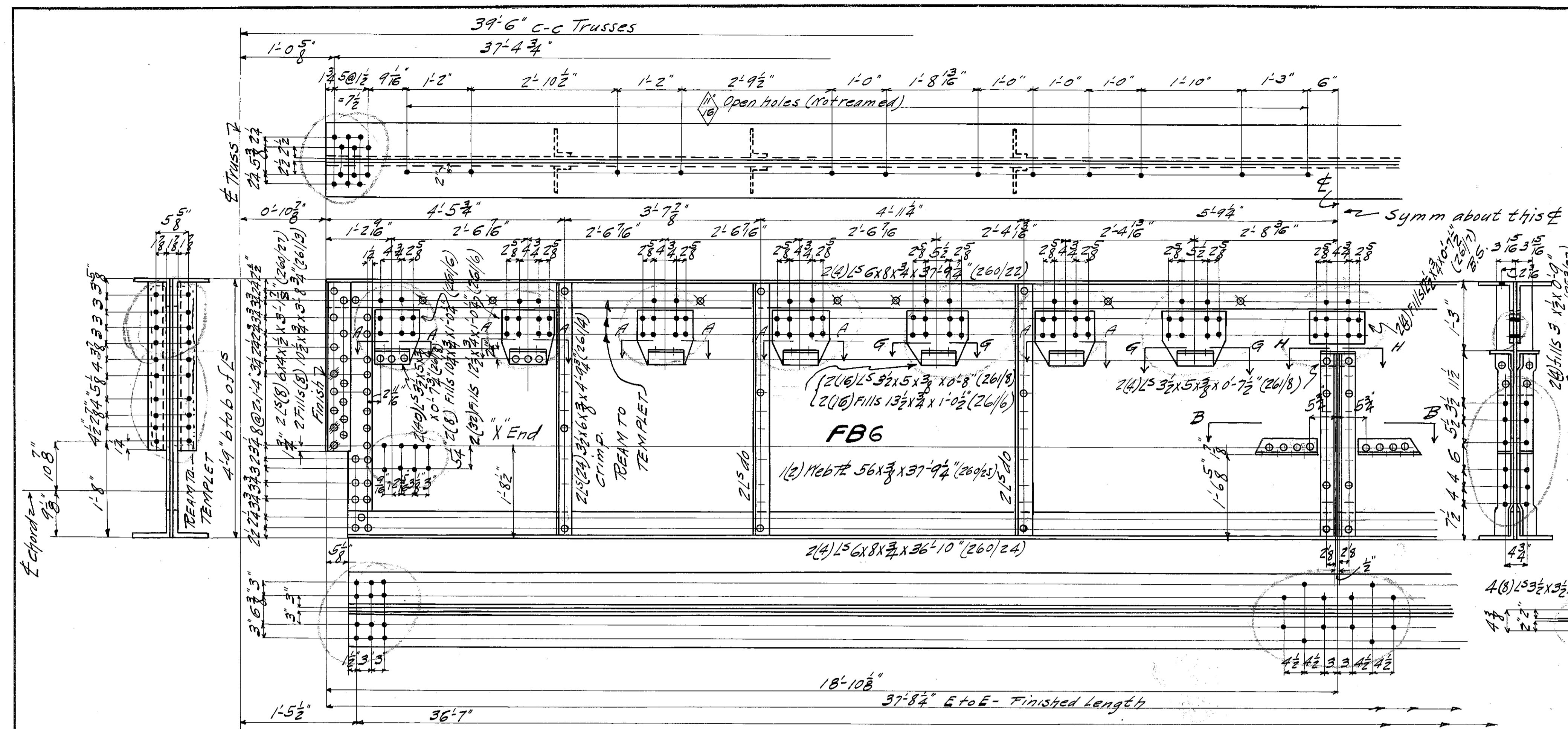


Marking Diagram.

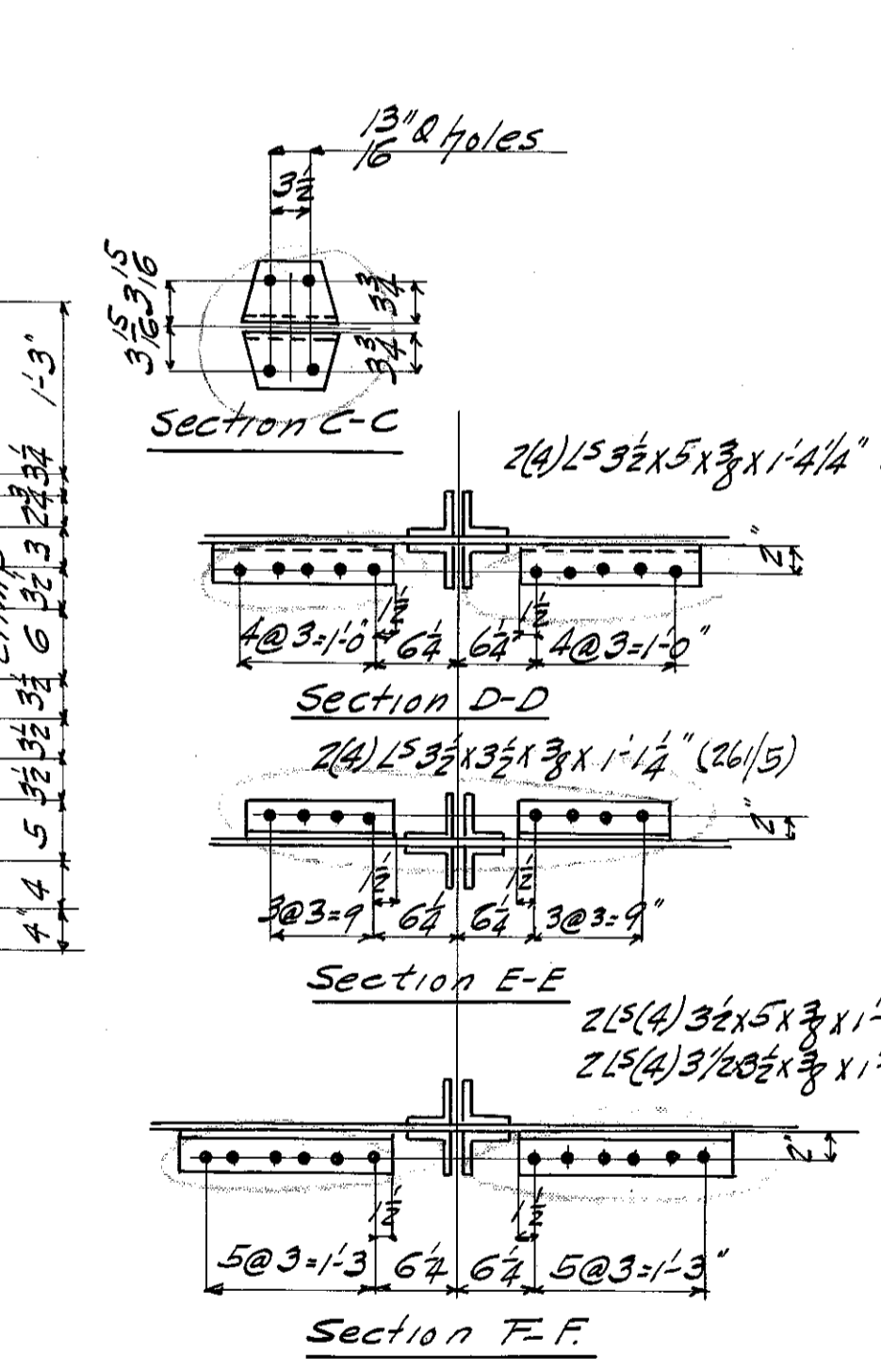
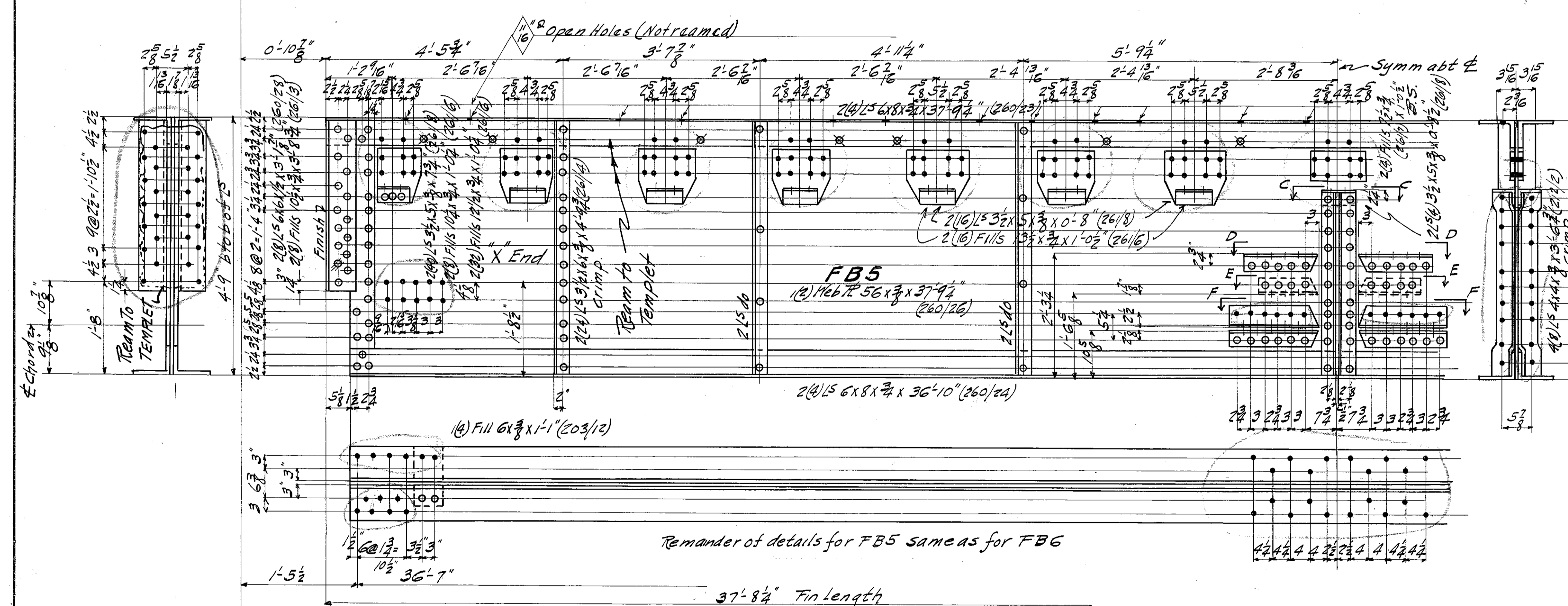
Approved: *James A. ...*  
 Approved: *...*  
 Approved: *...*  
 Approved: *...*

THE KETLER-ELLIOTT ERECTION CO.  
**WEBSTER AVE. BRIDGE**  
 FOR THE  
**CITY OF CHICAGO**  
 Dept. of Public Works :: Bureau of Engineering :: Division of Bridges and Harbor  
**MODERN STEEL STRUCTURAL COMPANY**  
**FLOOR BEAMS**  
 SEE MAT. BILLS 5-6-7 SCALE - 1 FT.  
 MADE BY J.M. TRACED BY B.M. 1/11/14. CH'K'D BY H.T.S. 1/14/14  
**CONTRACT No. 2201/M. SHEET No. 110.**





For remainder of details for FB6 see FB2 Sheet # 110



**General Notes**  
 Rivets 7/8\"  
 Holes 5/8\" except as noted  
 Paint - One coat of Red Lead and Oil Surfaces  
 in contact 1 coat before assembling.  
 Finished surfaces 1 coat White Lead and Tallow.  
 Reaming - All holes sub-punched 3/4\" under size and  
 reamed to size except holes in top flanges  
 as noted. Open holes marked 'Ream to  
 Templet' to be sub-punched 1/4\" and reamed  
 to size to a hardened steel templet

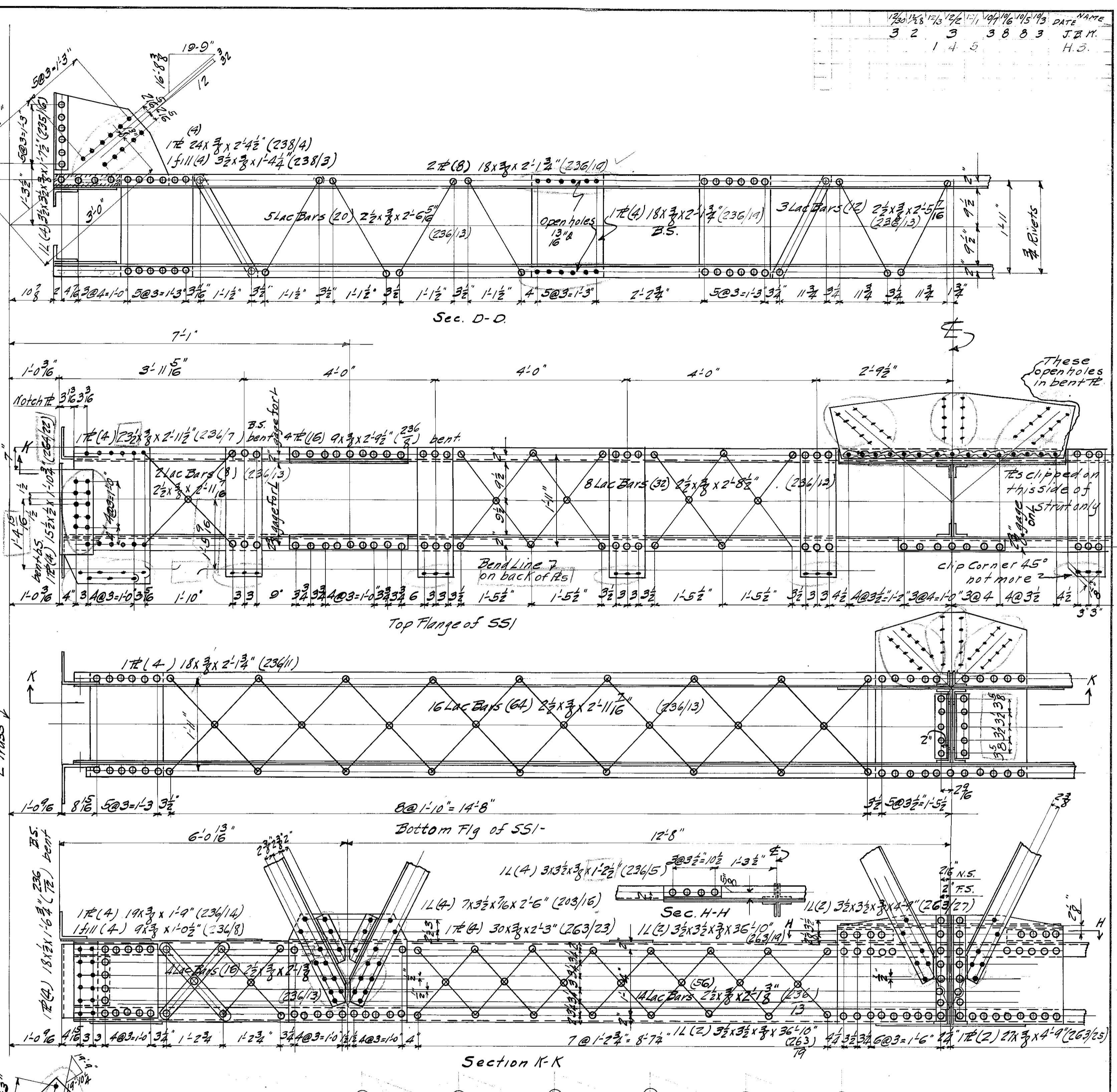
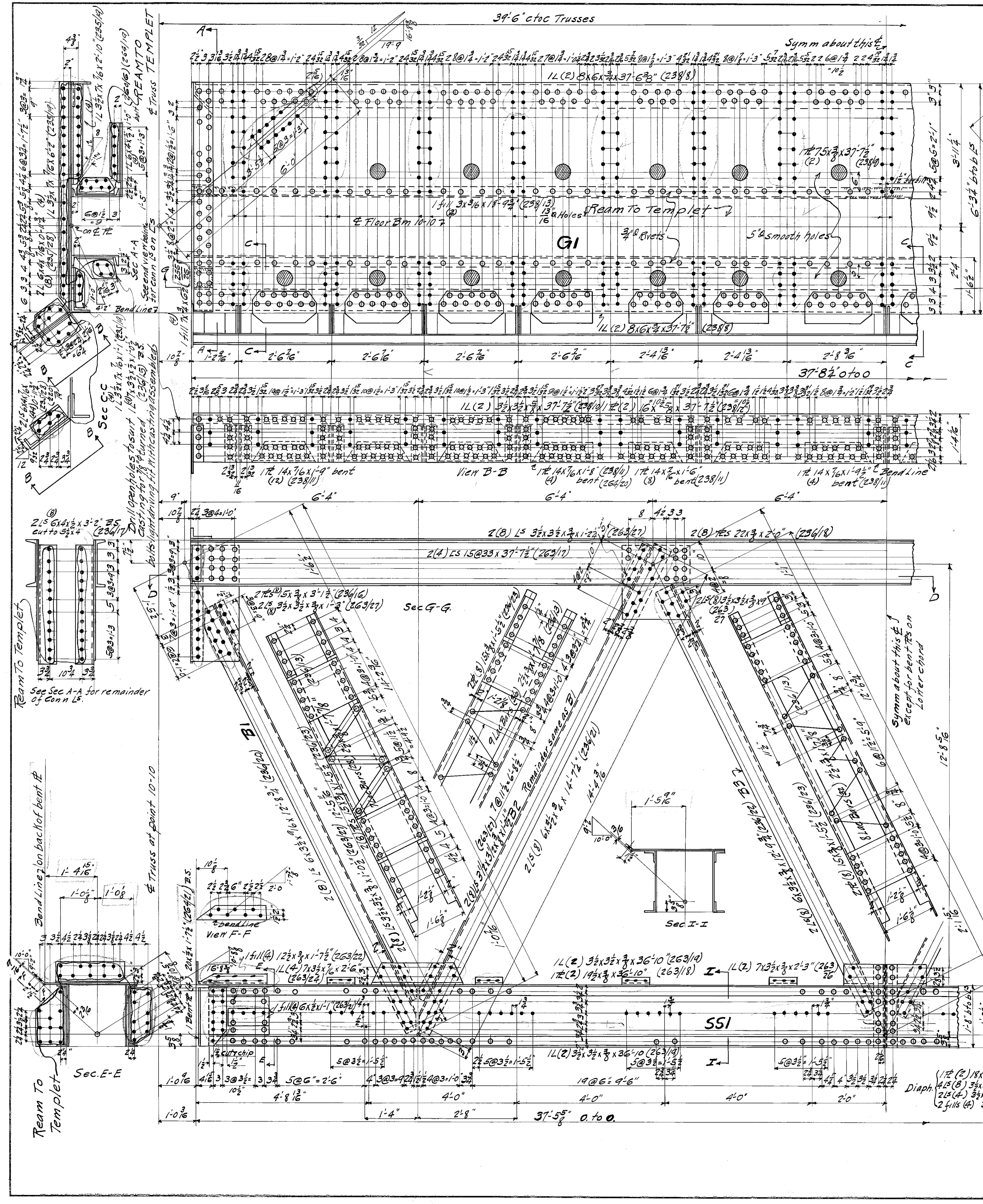
REQUIRED			
2	FLOOR BEAMS	FB6	1/2\"
2	"	FB5	DO

Approved *[Signature]*  
 Approved *[Signature]*  
 Approved *[Signature]*  
 Approved *[Signature]*

THE KETLER-ELLIOTT ERECTION CO.  
**WEBSTER AVE. BRIDGE**  
 FOR THE  
**CITY OF CHICAGO**  
 Dept. of Public Works :: Bureau of Engineering :: Division of Bridges and Trestles  
**MODERN STEEL STRUCTURAL COMPANY**  
**FLOOR BEAMS**

SEE MAT. BILLS 8-9 SCALE 1/4\" = 1 FT.  
 MADE BY B.K. TRAGED BY B.K. 1910/18 CH'D BY M.T.S. 1914  
**CONTRACT No. 2201/M. SHEET No. 111**

Comp. 1/16/18 by H.B.  
 DRAWING No. 3884  
 FILE No. 11-66-12



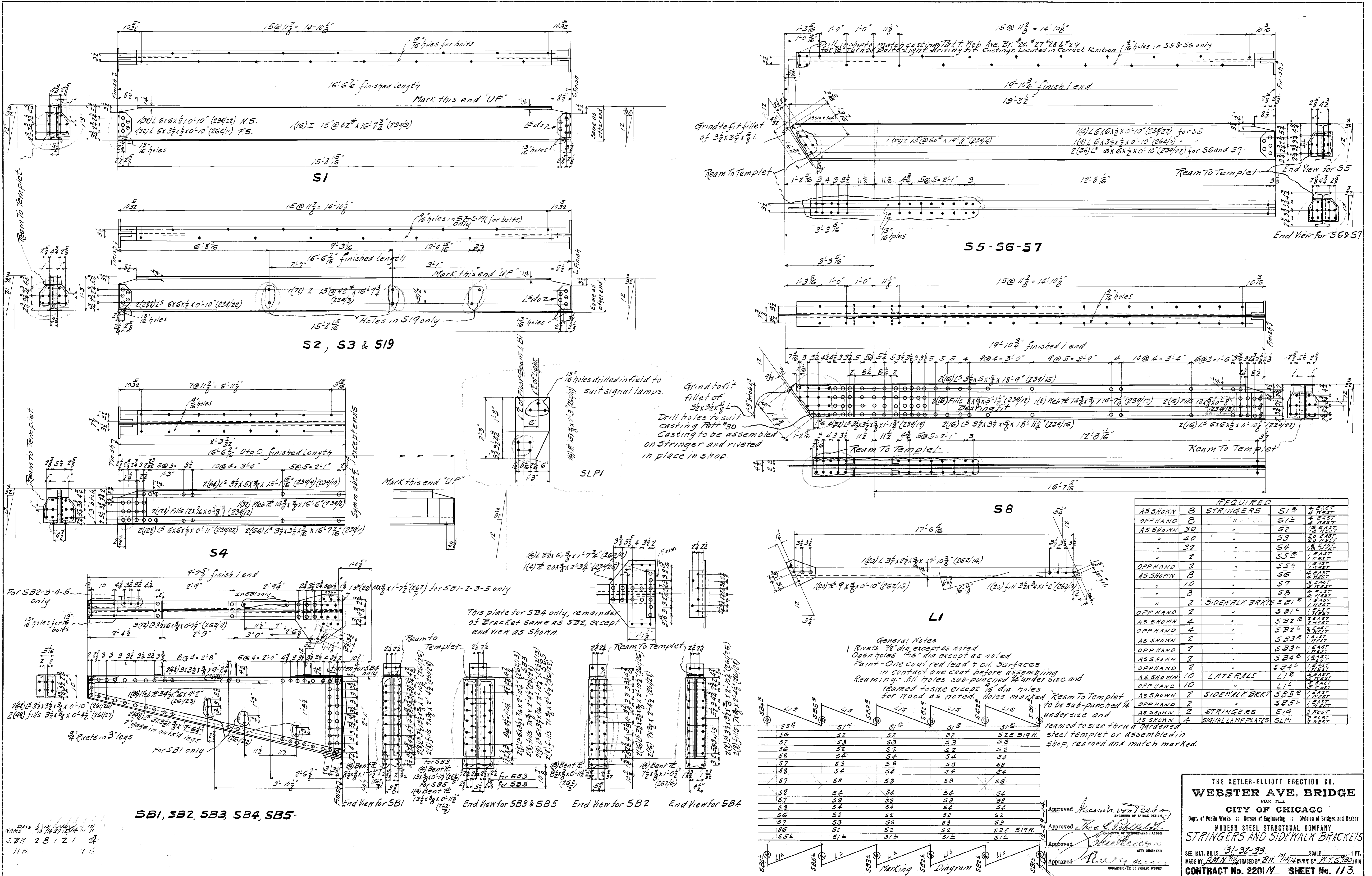
REQUIRED	
2	Horizontal Bars G1 1/2x1/2
2	Spirts SS1 1/2x1/2
4	Diagonals B1 1/2x1/2
4	" B2 1/2x1/2
4	" B3 1/2x1/2

**General Notes**  
 Rivets - 7/8 except as noted  
 Holes - 1/8 except as noted  
 Paint - One coat lead and oil surfaces in contact one coat before assembling. Two coats surfaces one coat white lead and oil.  
 Reaming: All holes sub punched 1/4 under size and reamed to size except holes in lacing bars. All holes marked Rem to Templet to be punched 1/4 under size and reamed to size thru a

hardened steel templet, or assembled in shop, reamed and match-buried Marking Diagram.

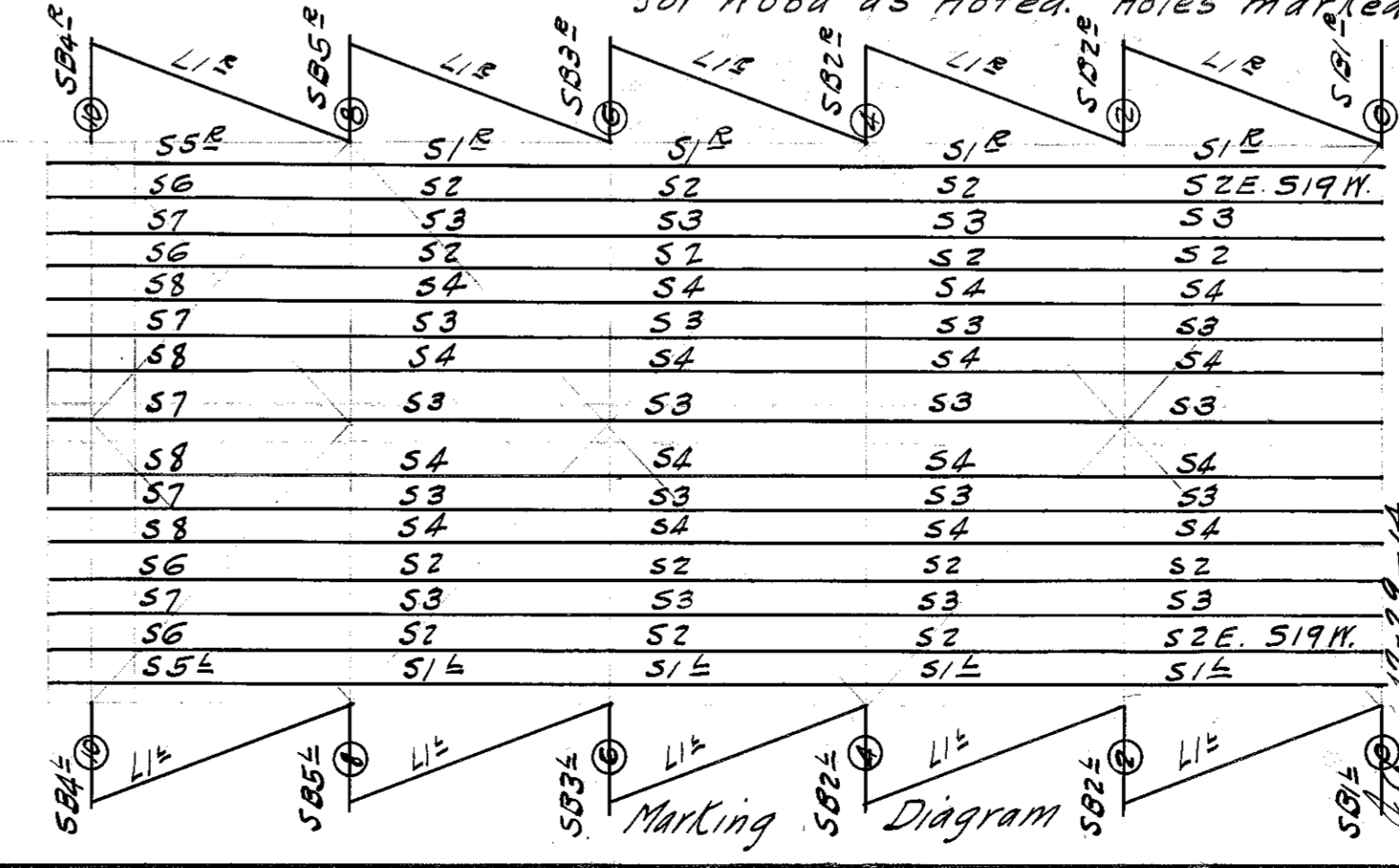
Approved *[Signature]*  
 Approved *[Signature]*  
 Approved *[Signature]*  
 Approved *[Signature]*

THE KETLER-ELLIOTT ERECTION CO.  
**WEBSTER AVE. BRIDGE**  
 FOR THE  
**CITY OF CHICAGO**  
 Dept. of Public Works :: Bureau of Engineering :: Division of Bridges and Harbor  
**HORIZONTAL STEEL STRUCTURAL COMPANY**  
**HORIZONTAL GIRDER + BRACING**  
 SEE MAT. BILLS 27-28-29-30 SCALE 1/4" = 1 FT.  
 MADE BY N.L.M. TRACED BY B.H. CH'Y'D BY M.T.S. 1914  
**CONTRACT No. 220177 SHEET No. 112**  
 Comp. 12/2/14 H.B.  
 FILE No. 11-6C-13



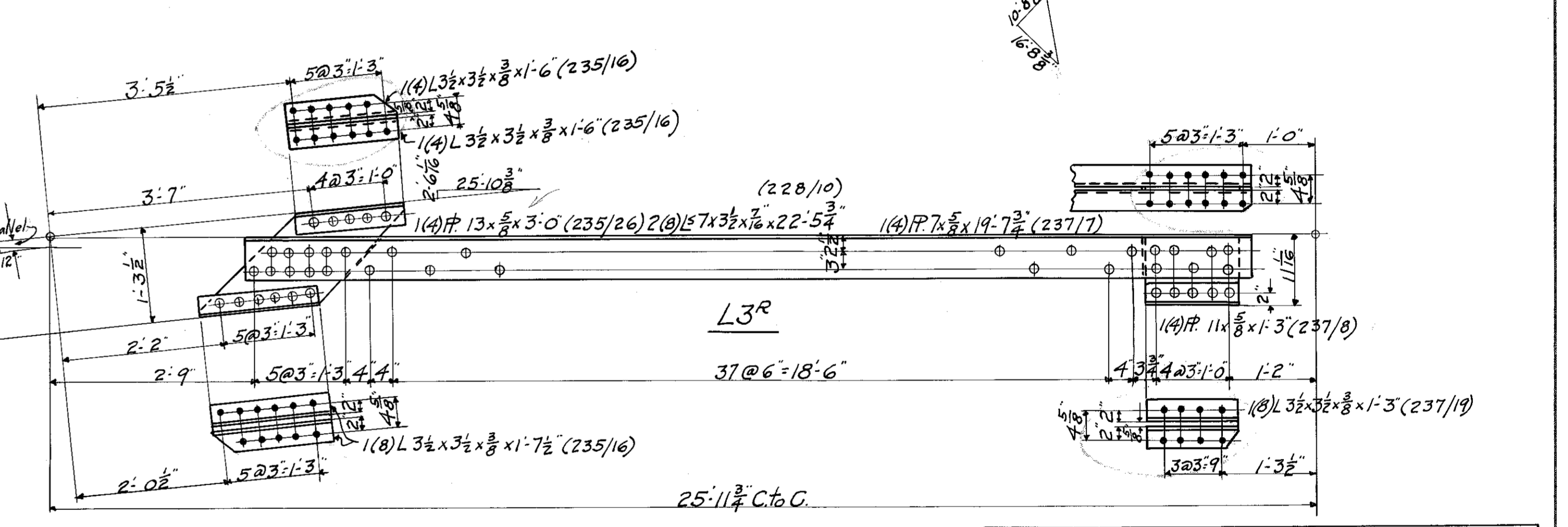
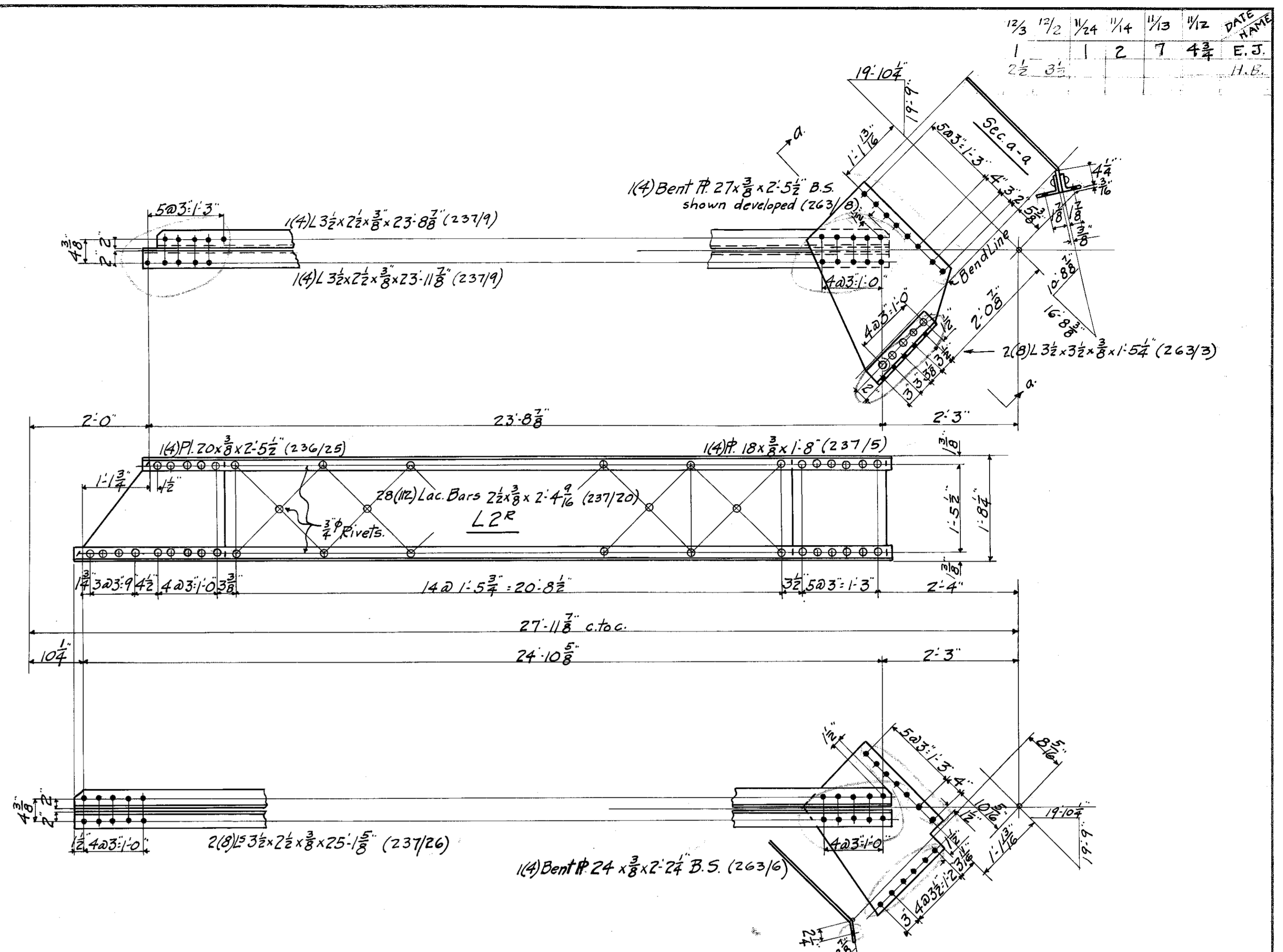
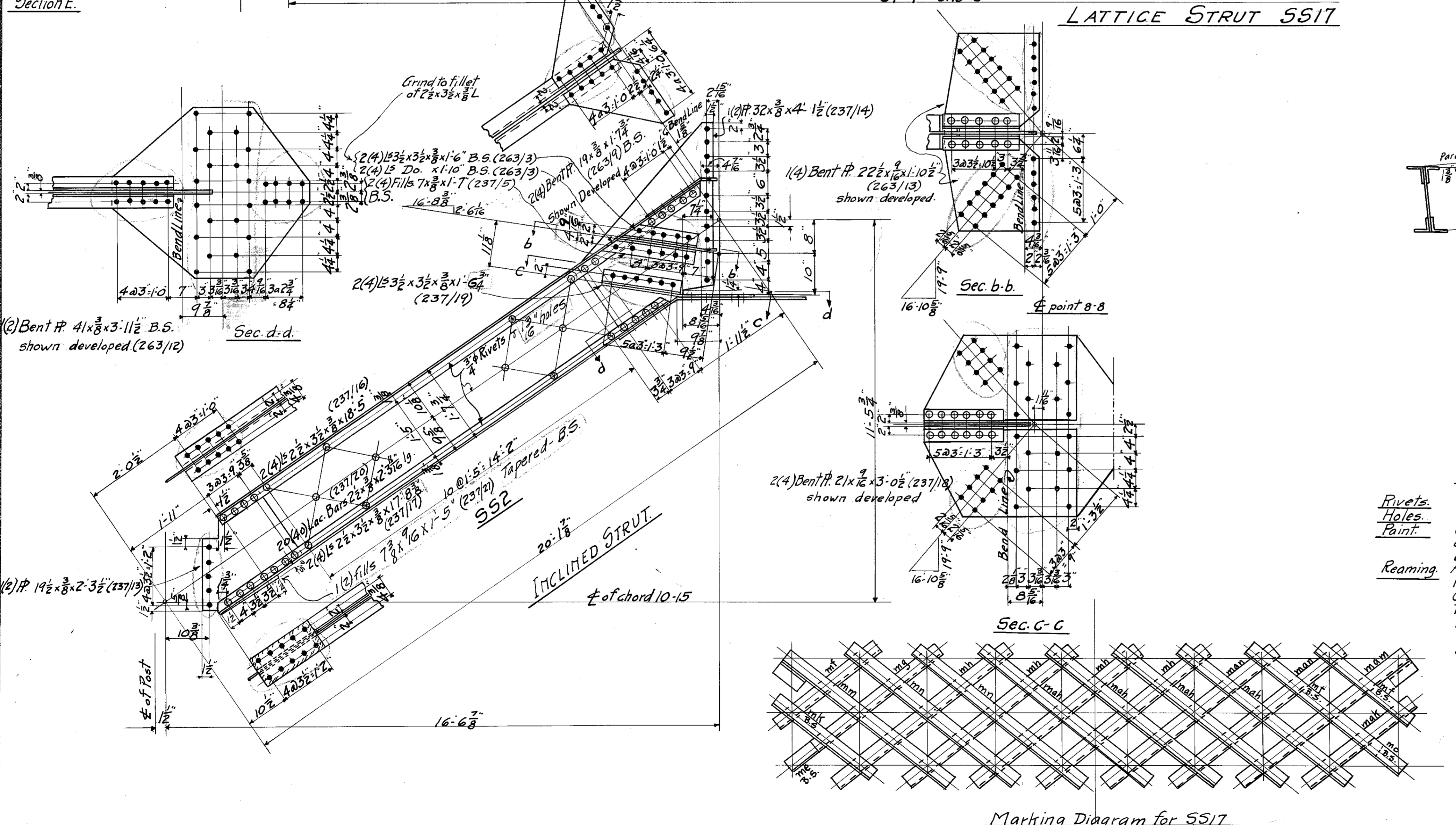
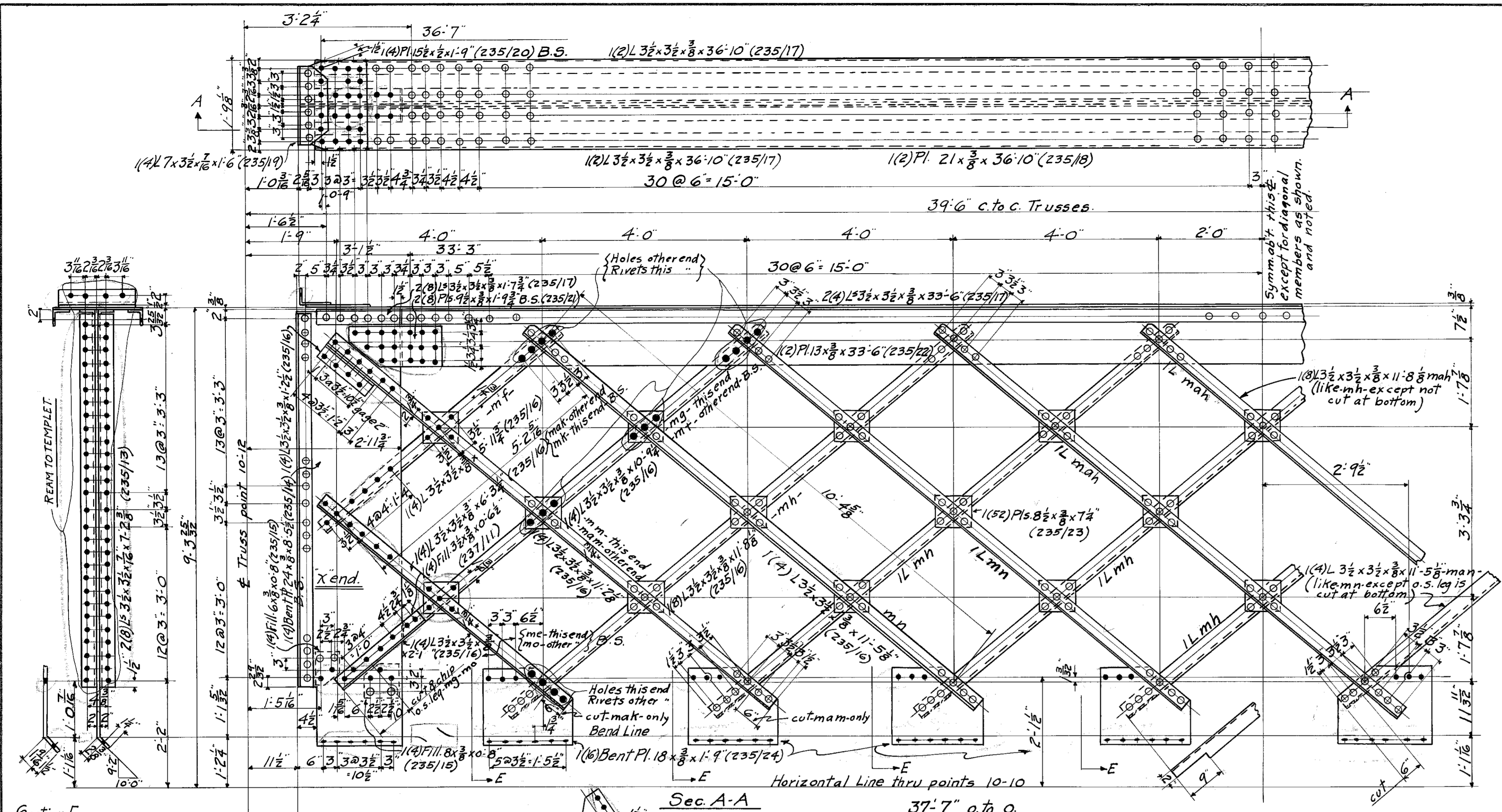
AS SHOWN	REQUIRED	STRINGERS	SIDE	4 EAST
OPPHAND	8	S1R	4 EAST	4 WEST
AS SHOWN	8	S1L	4 EAST	4 WEST
"	30	S2	16 EAST	14 WEST
"	40	S3	20 EAST	20 WEST
"	32	S4	16 EAST	16 WEST
"	2	S5R	2 EAST	2 WEST
OPPHAND	2	S5L	2 EAST	2 WEST
AS SHOWN	8	S6	2 EAST	2 WEST
"	10	S7	2 EAST	2 WEST
"	8	S8	2 EAST	2 WEST
"	2	SIDEWALK BRKTS SBI	2 EAST	2 WEST
OPPHAND	4	SBI	2 EAST	2 WEST
AS SHOWN	4	SBI	2 EAST	2 WEST
OPPHAND	4	SBI	2 EAST	2 WEST
AS SHOWN	2	SBI	2 EAST	2 WEST
OPPHAND	2	SBI	2 EAST	2 WEST
AS SHOWN	10	LATERALS	L1L	2 EAST
OPPHAND	10	L1R	2 EAST	2 WEST
AS SHOWN	2	SIDEWALK BRKT	SBI	2 EAST
OPPHAND	2	SBI	2 EAST	2 WEST
AS SHOWN	2	STRINGERS	S19	2 EAST
AS SHOWN	4	SIGNAL LAMP PLATES	SLPI	2 EAST

**General Notes**  
 1 Rivets 7/8" dia except as noted  
 2 Open holes 1 1/2" dia except as noted  
 3 Paint - One coat red lead & oil. Surfaces in contact one coat before assembling  
 4 Reaming - All holes sub-punched 1/4" under size and reamed to size except 1/2" dia holes reamed to size thru a hardened steel templet or assembled in shop, reamed and match marked.



THE KETTLER-ELLIOTT ERECTION CO.  
**WEBSTER AVE. BRIDGE**  
 FOR THE  
**CITY OF CHICAGO**  
 Dept. of Public Works :: Bureau of Engineering :: Division of Bridges and Harbor  
**MODERN STEEL STRUCTURAL COMPANY**  
**STRINGERS AND SIDEWALK BRACKETS**  
 SEE MAT. BILLS 31-32-33. SCALE 1" = 1 FT.  
 MADE BY A.M.N. TRACED BY B.M. CHECK'D BY M.T.S. B2194  
**CONTRACT No. 2201/M SHEET No. 11.3**  
 DRAWING No. 3886  
 FILE No. 11-6C-14  
 1660570209

DATE 8/14/22  
 NAME J.B.M. 28121  
 H.B. 7/13



**REQUIRED**

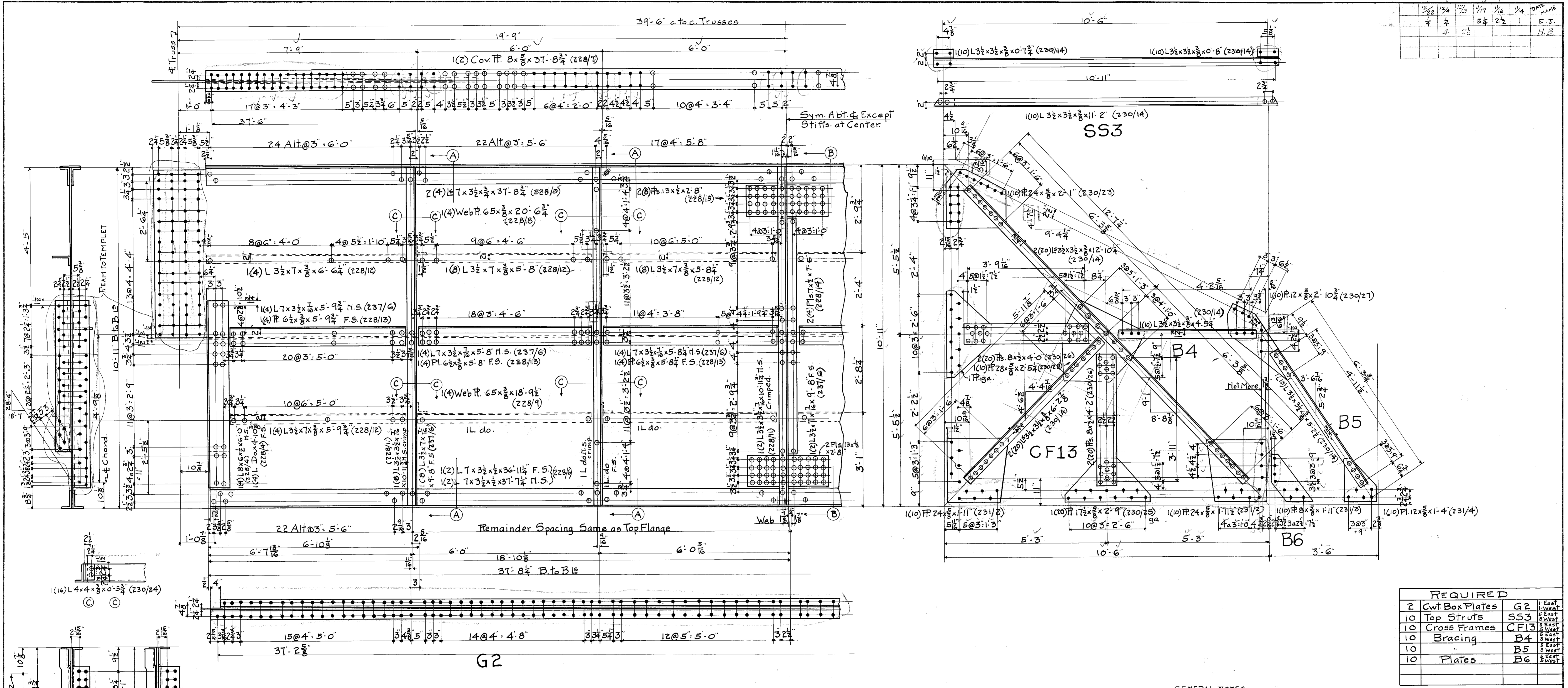
As Shown	2	Lattice Struts	SS17	1/2 East
	2	Inclined	SS2	1/2 East
	2	Laterals	L2R	1/2 East
Opp. Hand.	2		L2L	1/2 West
As Shown	2		L3R	1/2 East
Opp. Hand	2		L3L	1/2 West

**General Notes:-**  
 Rivets:  $\frac{3}{8}$ " except as noted  
 Holes:  $\frac{3}{8}$ " except as noted.  
 Paint: One coat of red lead and oil. Surfaces in contact one coat before assembling.  
 Reaming: All holes to be sub-punched  $\frac{1}{8}$ " under size & reamed to size except in lacing bars. Open holes marked "REAM TO TEMPLET" to be sub-punched  $\frac{1}{8}$ " and reamed to size to a hardened steel templet, or assembled in shop reamed and match marked.

Approved *Alexander von Tobo*  
 Approved *John G. ...*  
 Approved *John ...*  
 Approved *...*

**THE KETLER-ELLIOTT ERECTION CO.**  
**WEBSTER AVE. BRIDGE**  
 FOR THE  
**CITY OF CHICAGO**  
 Dept. of Public Works :: Bureau of Engineering :: Division of Bridges and Harbor  
**MODERN STEEL STRUCTURAL COMPANY**  
**BRACING FOR BEAM AT 10-10.**  
 SEE MAT. BILLS 34-35-36 SCALE  $\frac{1}{4}$ " = 1 FT.  
 MADE BY W.L.M. 9/25/14 TRACED BY E.J. 11/14/14 CH'K'D BY W.T.S. 10/31/14  
**CONTRACT No. 2201 M SHEET No. 114**  
 DRAWING No. 3887 Comp. 10/31/14 H.E.  
 FILE No. 11-6C-15

12/22	1/4	1/2	3/4	1	DATE
					H.B.



**GENERAL NOTES**

- Rivets: 3/8"
- Open Holes: 1 1/8"
- Paint: One coat red lead & oil. Surfaces in contact, one coat before assembling.
- Reaming: All holes sub-punched 1/16" and reamed to 1/8".
- Open Holes marked "REAM TO TEMPL" to be sub-punched 1/16" and reamed to size to a hardened steel template, or assembled in shop, reamed & match-marked.

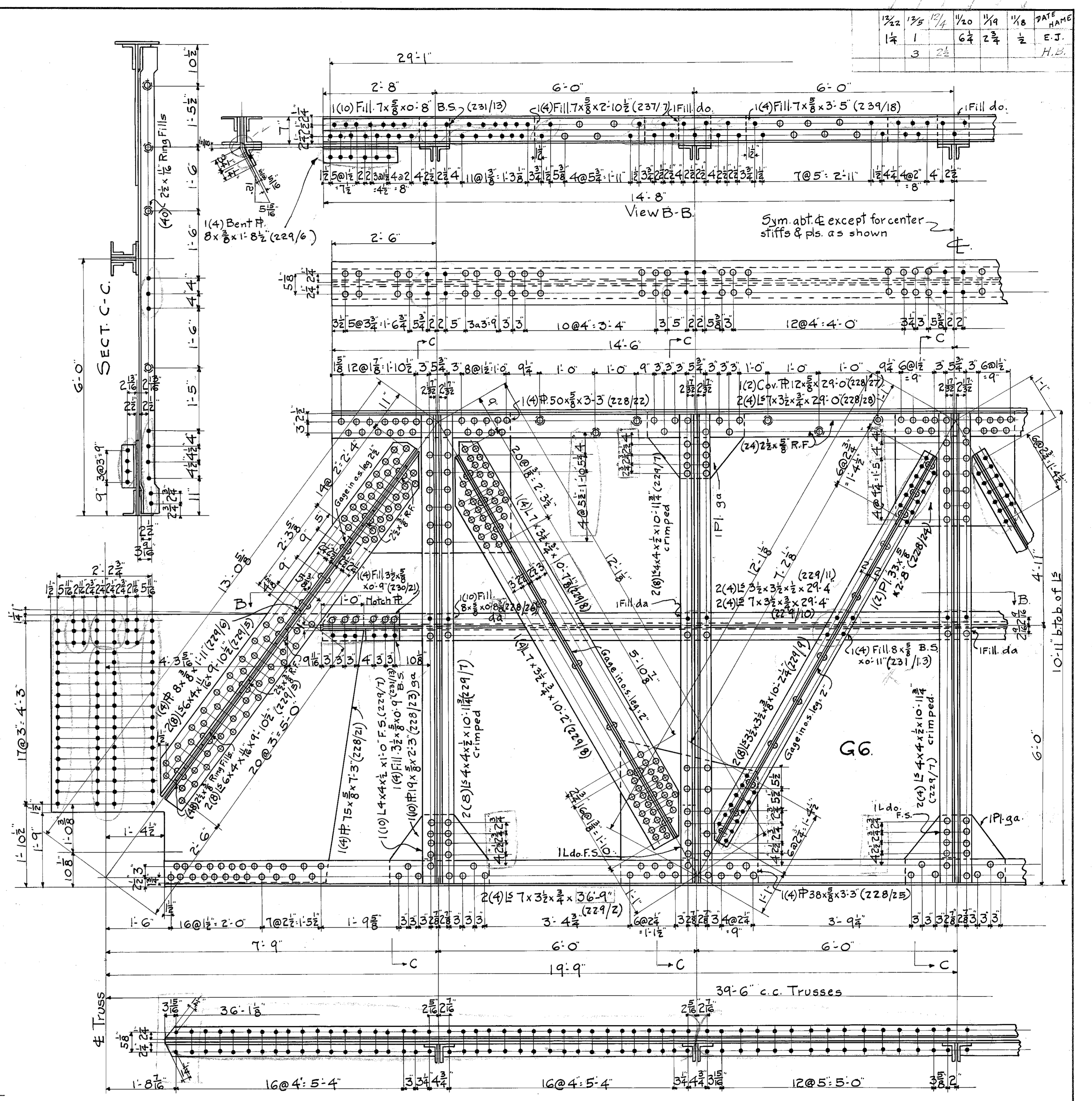
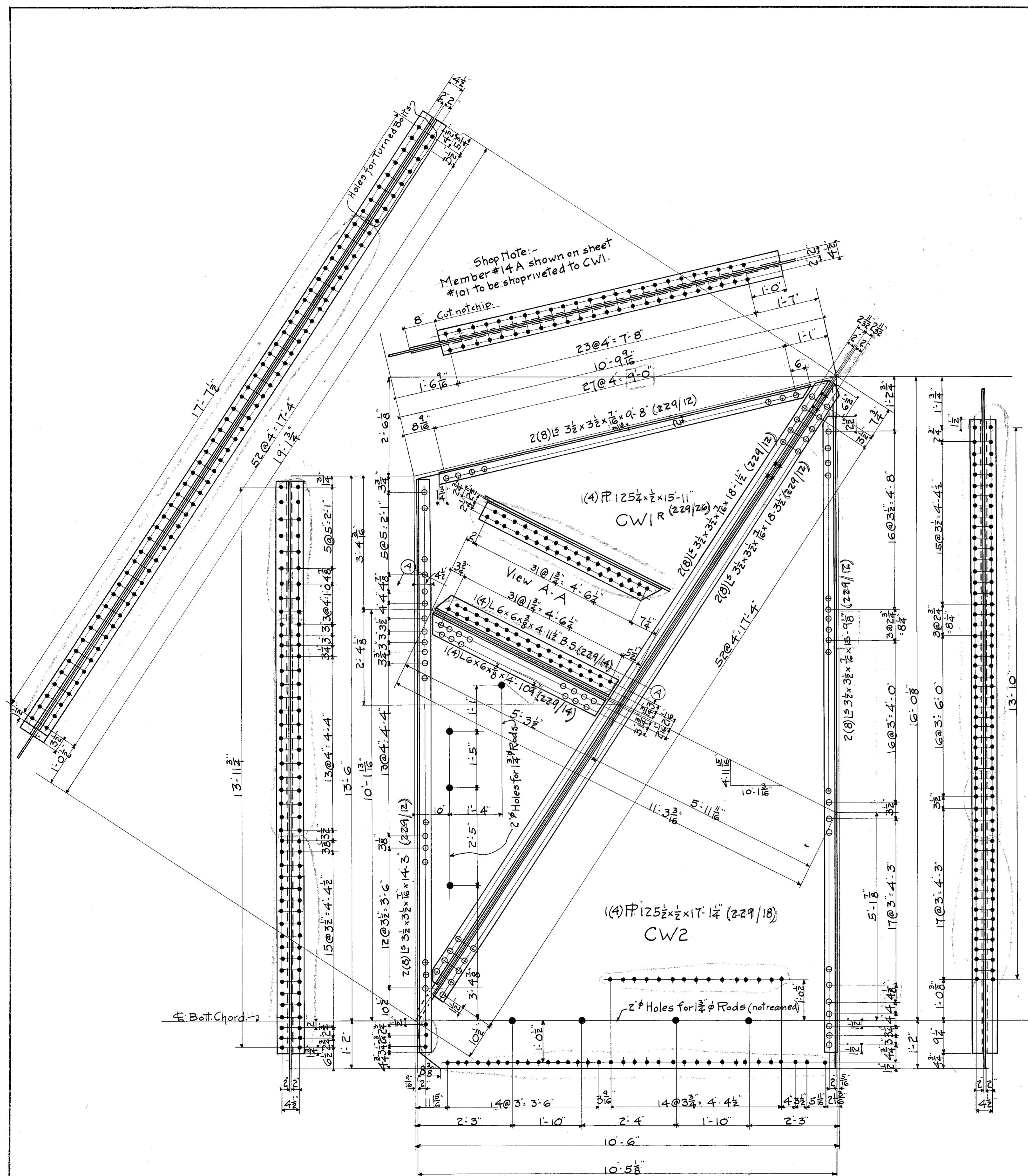
THE KETLER-ELLIOTT ERECTION CO.  
**WEBSTER AVE. BRIDGE**  
 FOR THE  
**CITY OF CHICAGO**  
 Dept. of Public Works :: Bureau of Engineering :: Division of Bridges and Harbor  
**MODERN STEEL STRUCTURAL COMPANY**  
**CWT. BOX PLATES & CROSS FRAMES**

SEE MAT. BILLS 37-38 SCALE: 3/4" = 1 FT.  
 MADE BY W.L.M. 2/4 TRACED BY E.J. 11/18/14. CHK'D BY W.T.S. 10/17/1914  
**CONTRACT No. 220111 SHEET No. 115**

*Approved* [Signature] [Title]  
*Approved* [Signature] [Title]  
*Approved* [Signature] [Title]  
*Approved* [Signature] [Title]

**DRAWING No. 3888** Comp. 12/1/14  
**FILE No. 11-6C-16**

1/2"	3/8"	1/4"	1/8"	3/16"	1/16"	DATE
1 1/4"	1"	6 3/4"	2 3/4"	1/2"	1/8"	E.J.
	3"	2 1/2"				H.B.



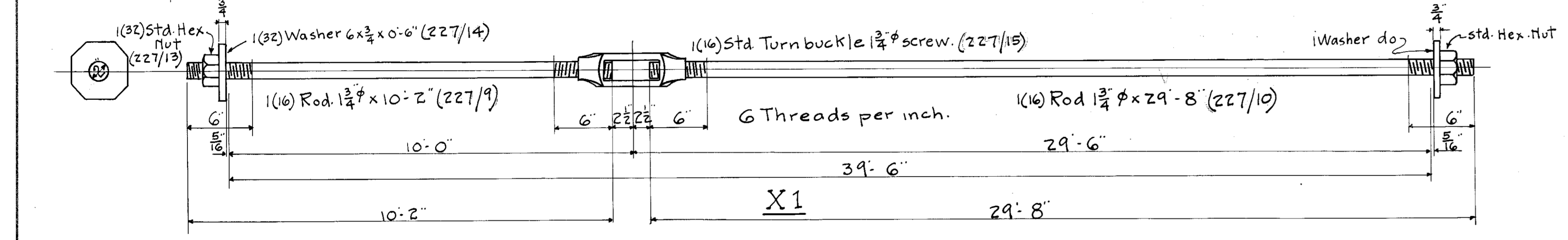
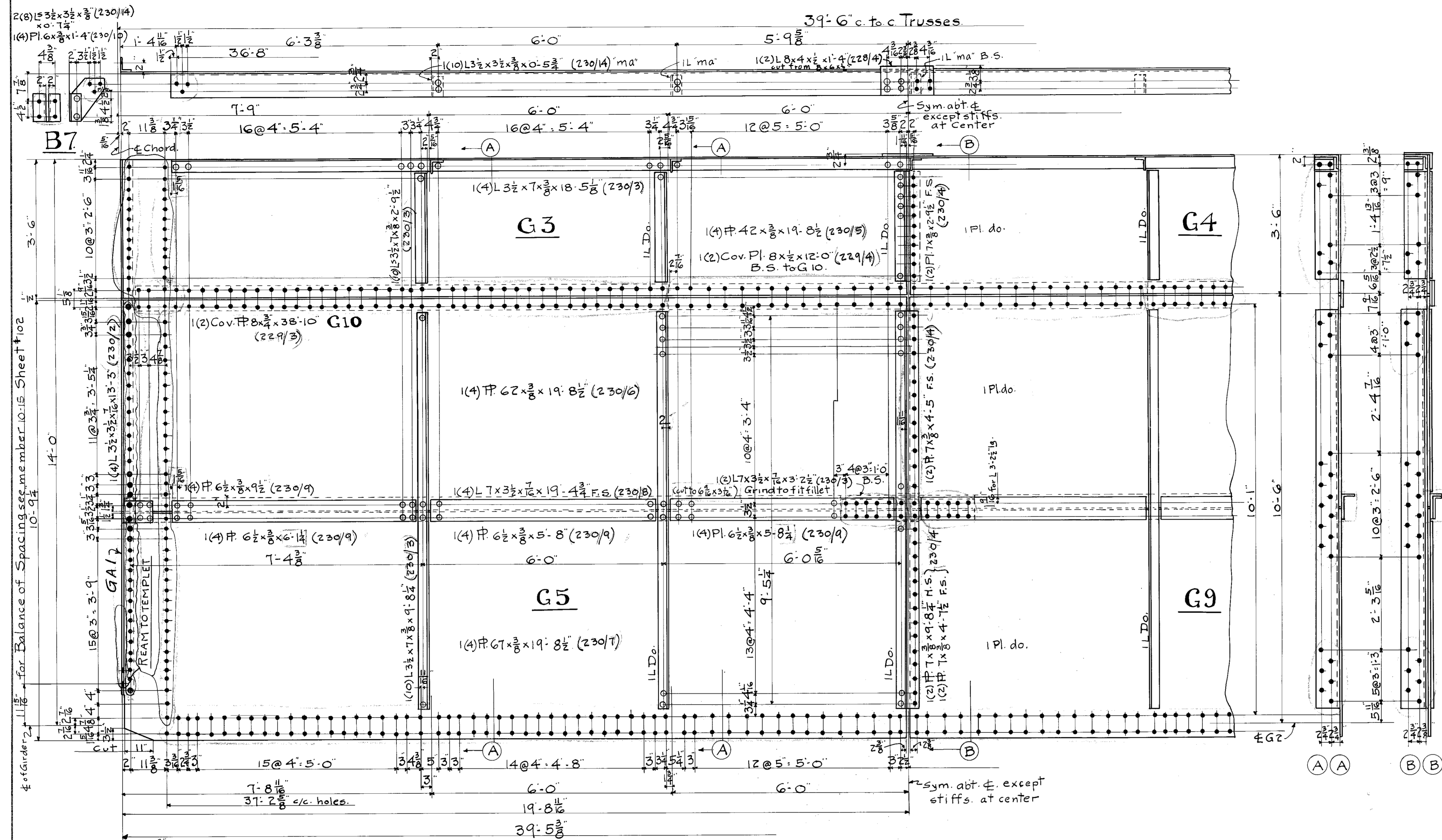
REQUIRED			
As shown	2	CW1 PLATES	CW1R 1 East 1 West
Opp Hand	2	-	CW1R 1 East 1 West
As shown	4	-	CW2 2 East 2 West
"	2	-	G6 1 East 1 West

Gen. Notes:-  
 Rivets:  $\frac{3}{4}$ "  
 Open Holes:  $\frac{1}{8}$ " except where noted  
 Paint: One coat of red lead Boil  
 Surfaces in contact, one coat  
 before assembling  
 Reaming: All holes subpunched  $\frac{1}{16}$ "  
 and reamed to  $\frac{1}{16}$ " except as noted.

Approved: *Harold von Boko*  
 ENGINEER OF BRIDGE DESIGN  
 Approved: *John S. Balluff*  
 CHIEF OF BRIDGES AND HARBOUR  
 Approved: *[Signature]*  
 CITY ENGINEER  
 Approved: *[Signature]*  
 COMMISSIONER OF PUBLIC WORKS

THE KETLER-ELLIOTT ERECTION CO.  
**WEBSTER AVE. BRIDGE**  
 FOR THE  
**CITY OF CHICAGO**  
 Dept. of Public Works :: Bureau of Engineering :: Division of Bridges and Harbor  
 MODERN STEEL STRUCTURAL COMPANY  
**CWT RATES**  
 SEE M.T. BILL 39-40 SCALE  $\frac{3}{4}$ " = 1 FT.  
 MADE BY *A.B. 3/28* TRACED BY *E.J. 1/20* CHK'D BY *W.T.S. 10/12/1914*  
**CONTRACT No. 22011 SHEET No. 116**  
 DRAWING NO 3889 Comp. 12/15/14 H.B.  
 FILE No. 11-6C-17

1/8"	1/16"	1/32"	1/64"	1/128"	Date	Name



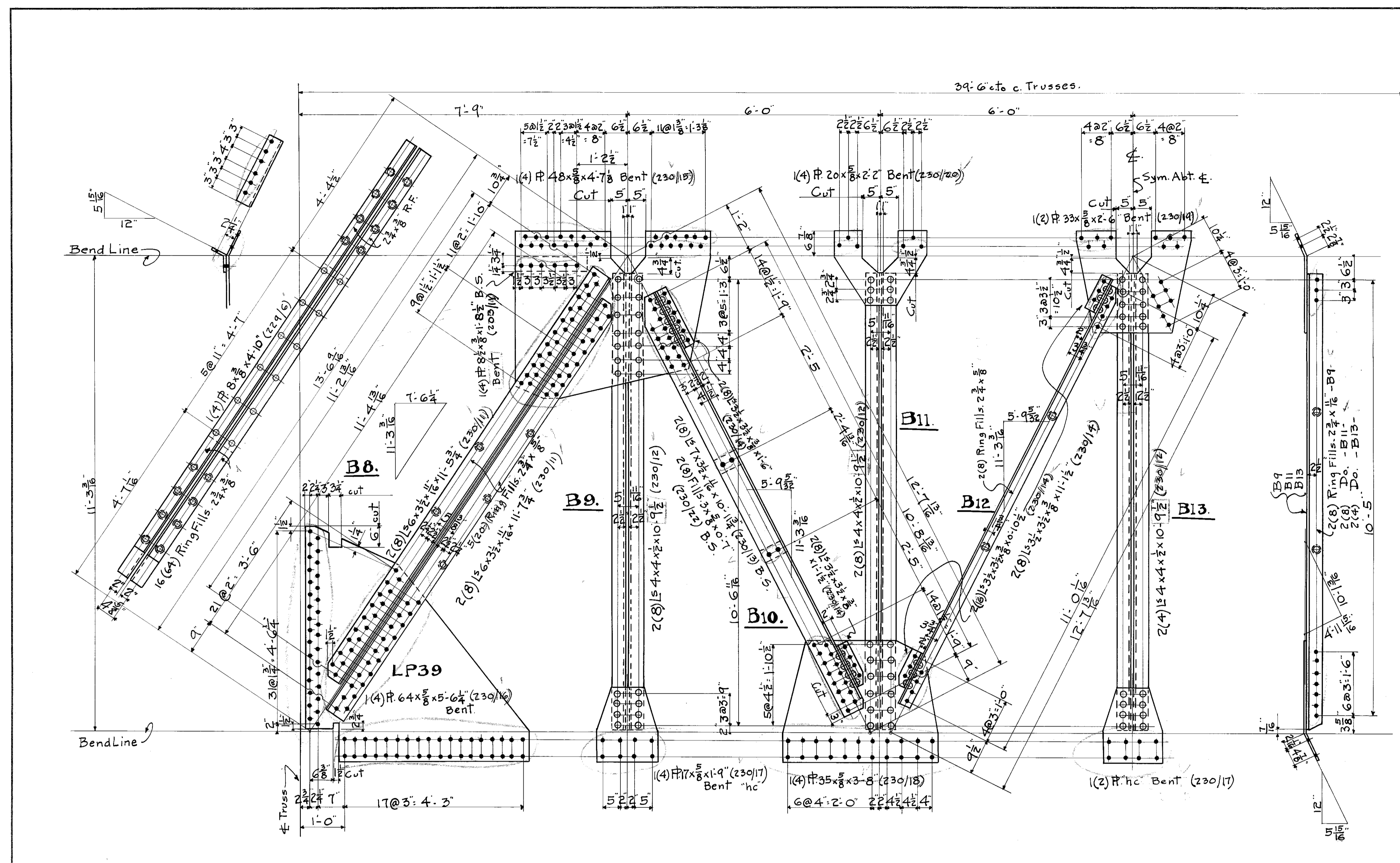
REQUIRED		
2	Cwt. Box Plates	G3
2	"	G4
2	"	G5
4	Braces	B7
16	Rods	X1
2	Cwt. Box Plates	G9
2	"	G10
4	ANGLES	GAI

**GENERAL NOTES**  
 Rivets:  $\frac{7}{8}$ "  
 Open Holes:  $\frac{15}{16}$ "  
 Paint: One coat red lead + oil. Surfaces in contact one coat before assembling  
 Reaming: All holes sub punched  $\frac{1}{16}$ " and reamed to  $\frac{15}{16}$ " Holes marked "REAM TO TEMPLET" to be sub punched  $\frac{1}{16}$ " and reamed to size thru a hardened steel templet, or assembled in shop, reamed and match-marked.

Approved: *[Signature]*  
 Approved: *[Signature]*  
 Approved: *[Signature]*  
 Approved: *[Signature]*

THE KETLER-ELLIOTT ERECTION CO.  
**WEBSTER AVE. BRIDGE**  
 FOR THE  
**CITY OF CHICAGO**  
 Dept. of Public Works :: Bureau of Engineering :: Division of Bridges and Harbor  
**MODERN STEEL STRUCTURAL COMPANY**  
**BOTTOM CWT. BOX & RODS.**  
 SEE MAT. BILLS. **46&47** SCALE:  $\frac{3}{4}$ " = 1 FT.  
 MADE BY W.L.M.C. 3/28 TRACED BY G.W.Z.B. CHK'D BY W.T.S. 10/7/1914  
**CONTRACT No. 2201 M SHEET No. 117**

1	12	1/30	Date NAME
2	12	1/30	E. J.
3	12	1/30	H. L.



39'-6" to c. Trusses.

REQUIRED.			
2	Lat. Plates	as shown	LP39R 1-East 1-West
2	"	opp. hand.	LP39L 1-East 1-West
4	Bracing	as shown	B8 2-East 2-West
2	"	as shown	B9R 1-East 1-West
2	"	opp. hand.	B9L 1-East 1-West
4	"	as shown	B10 2-East 2-West
2	"	as shown	B11R 1-East 1-West
2	"	opp. hand.	B11L 1-East 1-West
4	"	as shown	B12 2-East 2-West
2	"	as shown.	B13 1-East 1-West

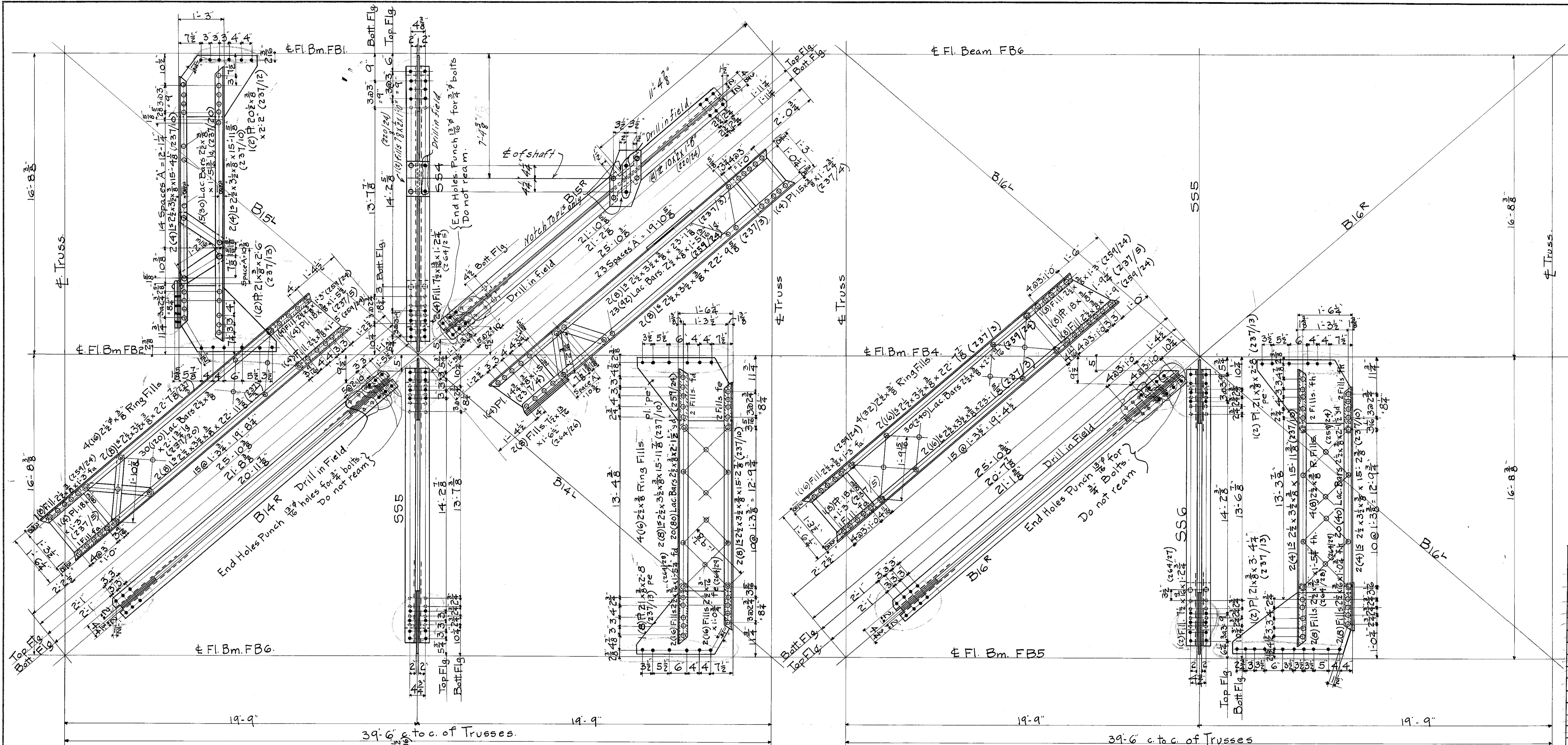
**GENERAL NOTES.**  
 Rivets:  $\frac{7}{8}$ "  
 Open Holes:  $\frac{15}{16}$ "  
 Paint: One coat of red lead and oil.  
 Surfaces in contact one coat before assembling.  
 Reaming: All holes sub-punched  $\frac{1}{16}$ " and reamed to  $\frac{15}{16}$ "

Approved *Wm. J. ...*  
 Approved *John ...*  
 Approved *...*  
 Approved *...*

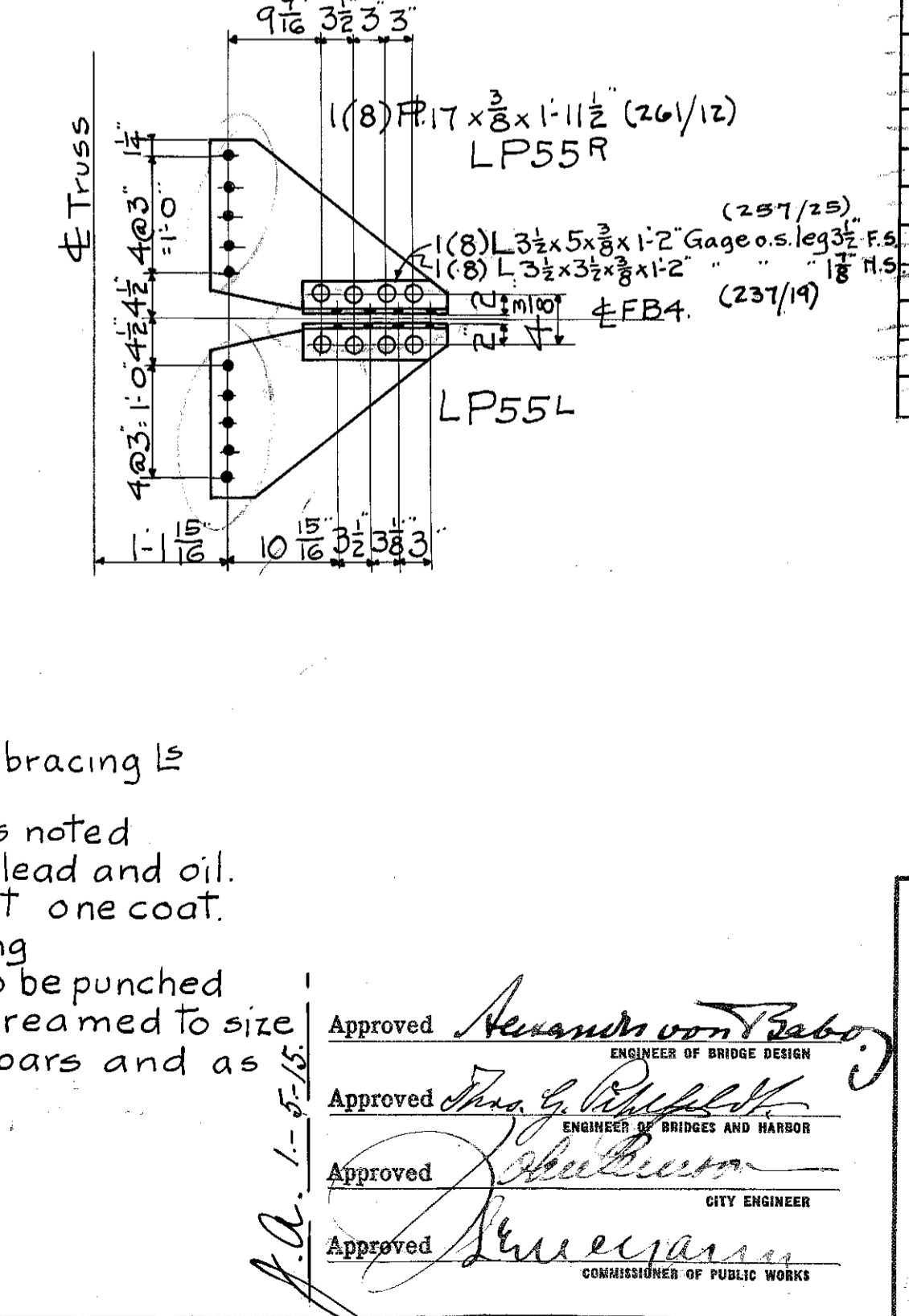
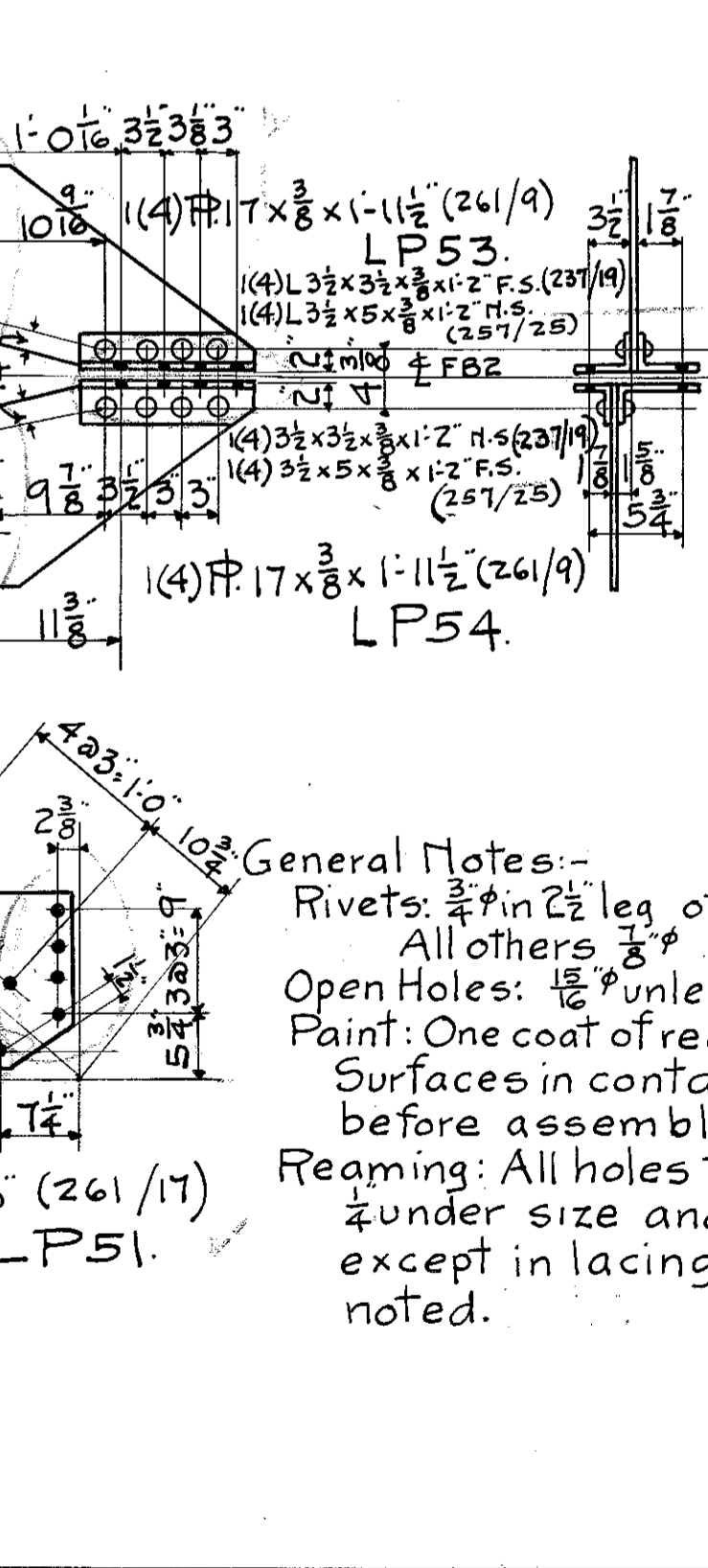
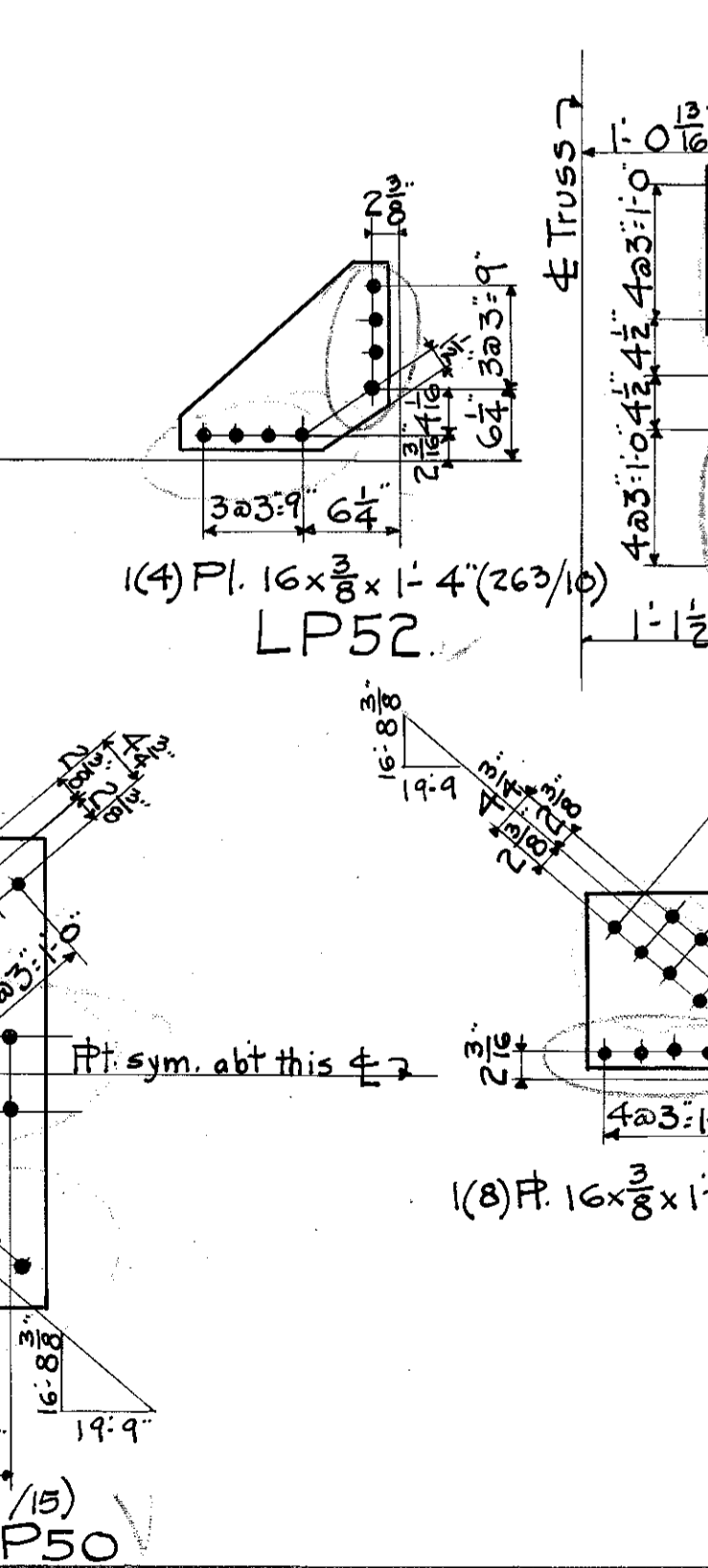
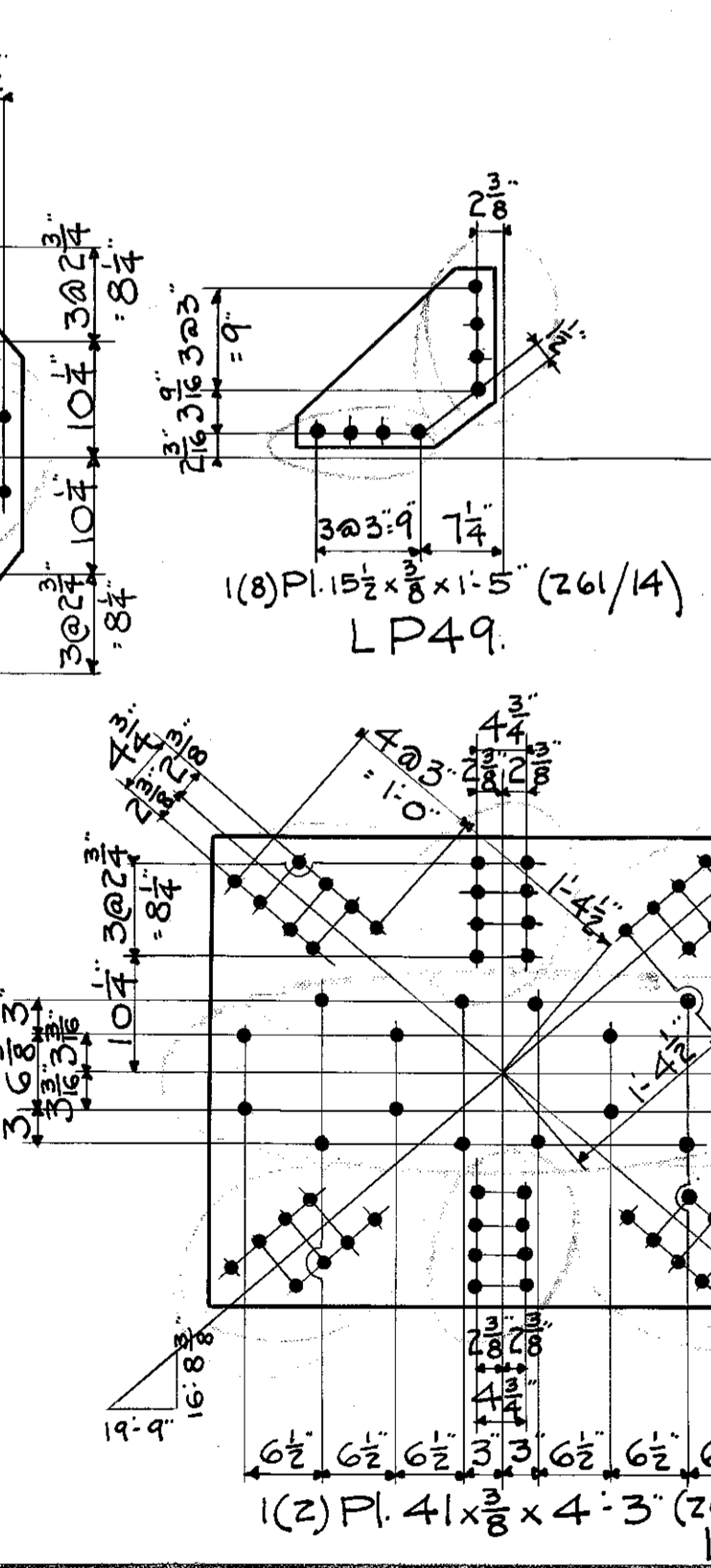
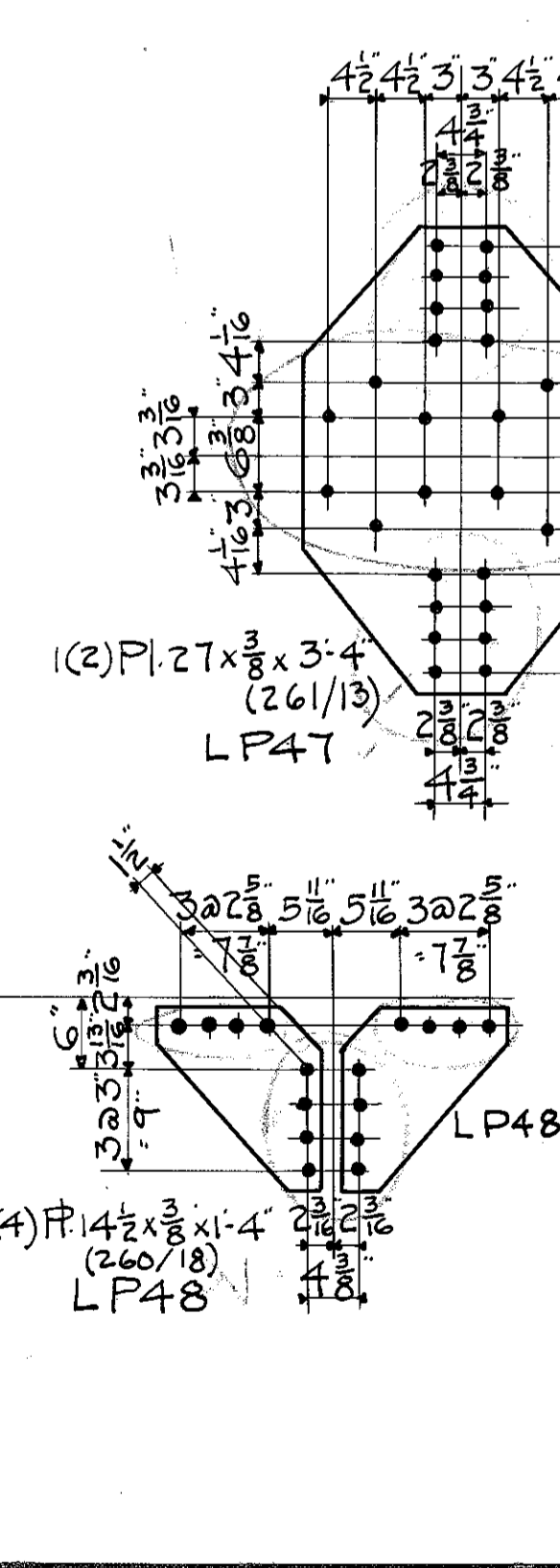
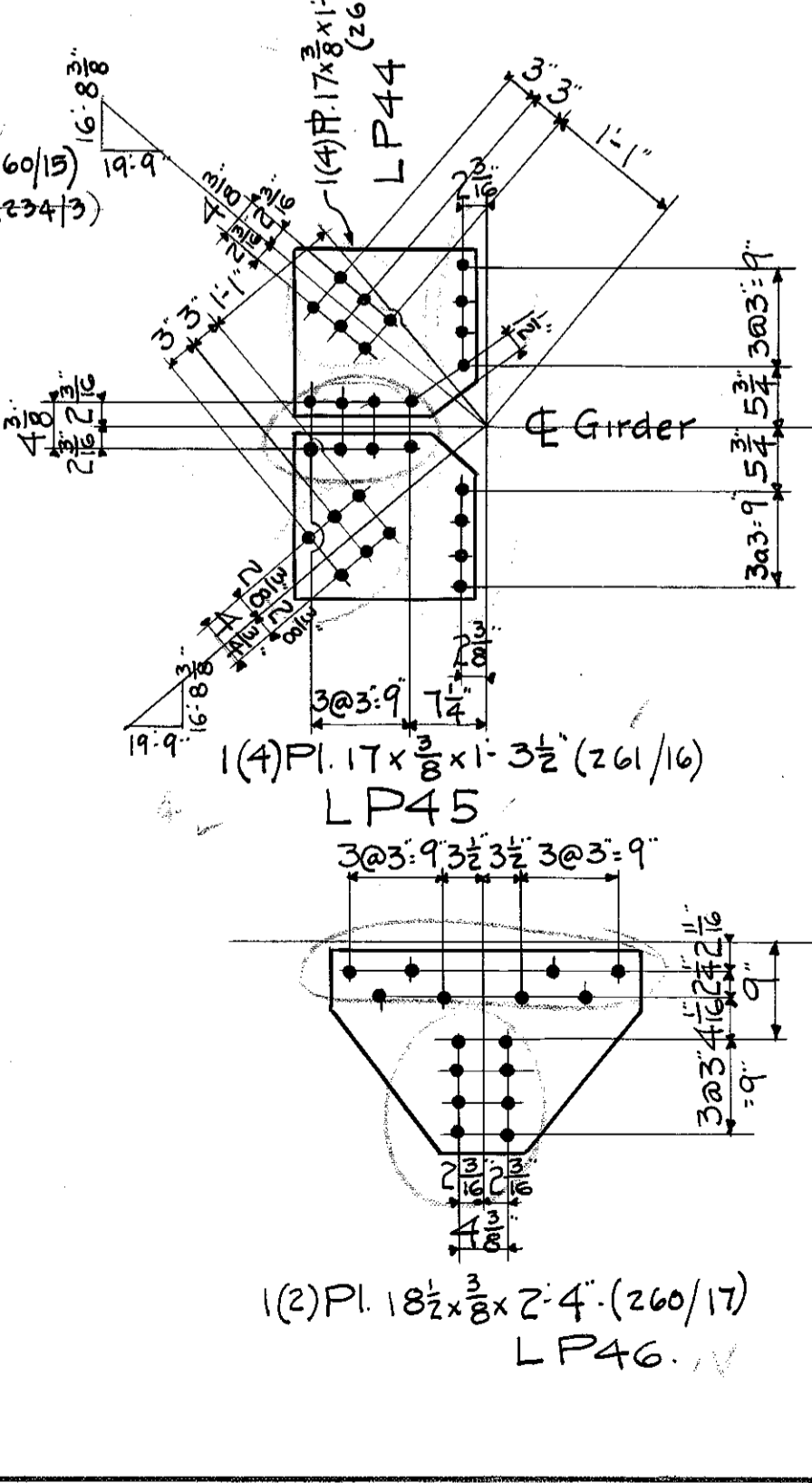
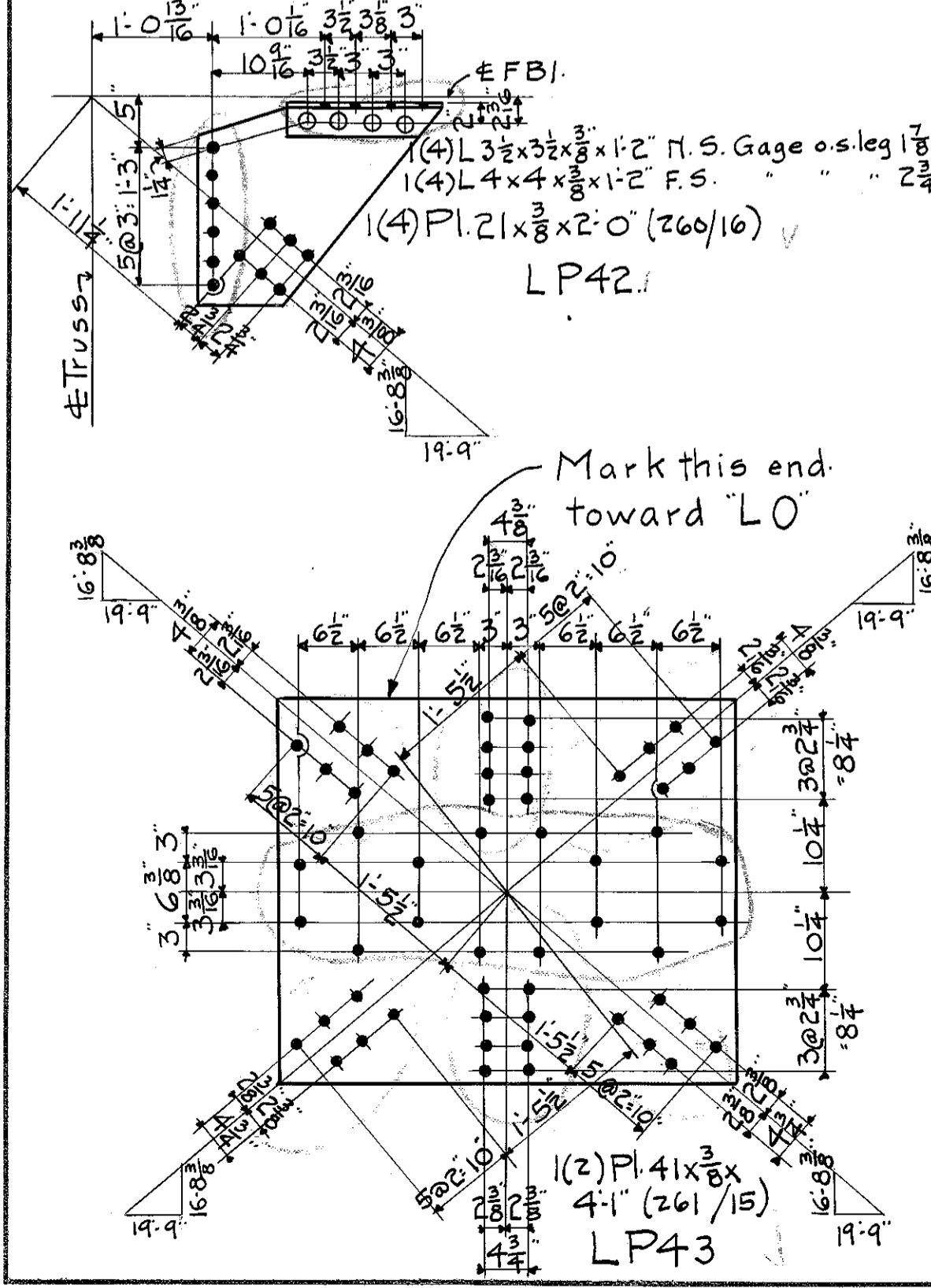
THE KETTLER-ELLIOTT ERECTION CO.  
**WEBSTER AVE. BRIDGE**  
 FOR THE  
**CITY OF CHICAGO**  
 Dept. of Public Works :: Bureau of Engineering :: Division of Bridges and Harbors  
**MODERN STEEL STRUCTURAL COMPANY**  
**INCLINED BRACING**  
 SEE MAT. BILLS 48 & 49 SCALE  $\frac{3}{8}$ " = 1 FT.  
 MADE BY M.L. Mc. 750. TRACED BY E. J. 11/30. SH'D BY W.T.S. 12/7/1914  
**CONTRACT No. 2201 M SHEET No. 116**

DRAWING No 3891 Comp. 12/14/14 H.B.  
 FILE No. 6C-19  
 1660570214





REQUIRED.			
2	BRACINGS	B14R	As shown
2	"	B14L	opp hand
2	"	B15R	As shown
2	"	B15L	opp hand
4	"	B16R	As shown
4	"	B16L	opp hand
2	STRUTS	S54	As shown
2	"	S55	"
2	"	S56	"
2	LAT. PLATES	LP42R	"
2	"	LP42L	opp hand
4	"	LP44	As shown
2	"	LP45	"
2	"	LP46	"
2	"	LP47	"
4	"	LP48	"
8	"	LP49	"
2	"	LP50	"
2	"	LP51	"
4	"	LP52	"
2	"	LP53R	"
2	"	LP53L	opp hand
4	"	LP55R	As shown
4	"	LP55L	opp hand
2	"	LP43	As shown
2	"	LP54R	"
2	"	LP54L	opp hand



General Notes:-  
 Rivets:  $\frac{3}{4}$ " in 2 $\frac{1}{2}$  leg of bracing is  
 All others  $\frac{1}{2}$ "  
 Open Holes:  $\frac{1}{2}$ " unless noted  
 Paint: One coat of red lead and oil.  
 Surfaces in contact one coat.  
 before assembling  
 Reaming: All holes to be punched  
 under size and reamed to size  
 except in lacing bars and as  
 noted.

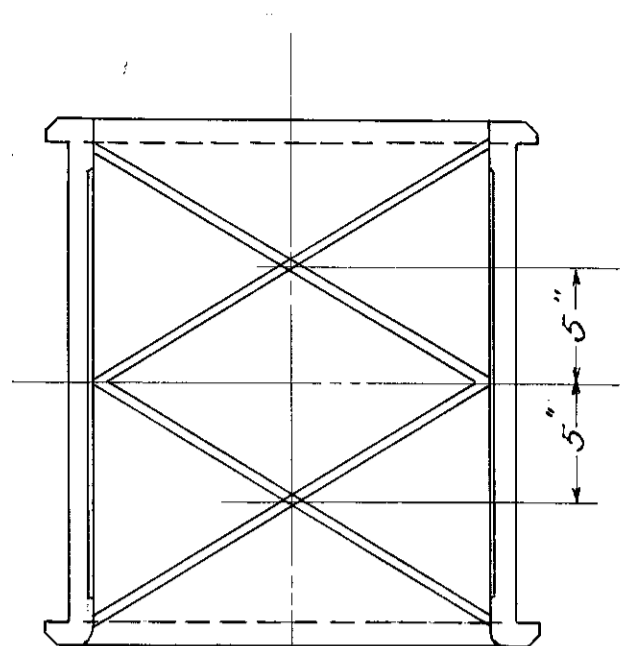
Approved *[Signature]*  
 Approved *[Signature]*  
 Approved *[Signature]*

THE KETLER-ELLIOTT ERECTION CO.  
**WEBSTER AVE. BRIDGE**  
 FOR THE  
**CITY OF CHICAGO**  
 Dept. of Public Works :: Bureau of Engineering :: Division of Bridges and Harbors  
 MODERN STEEL STRUCTURAL COMPANY  
 LATERALS

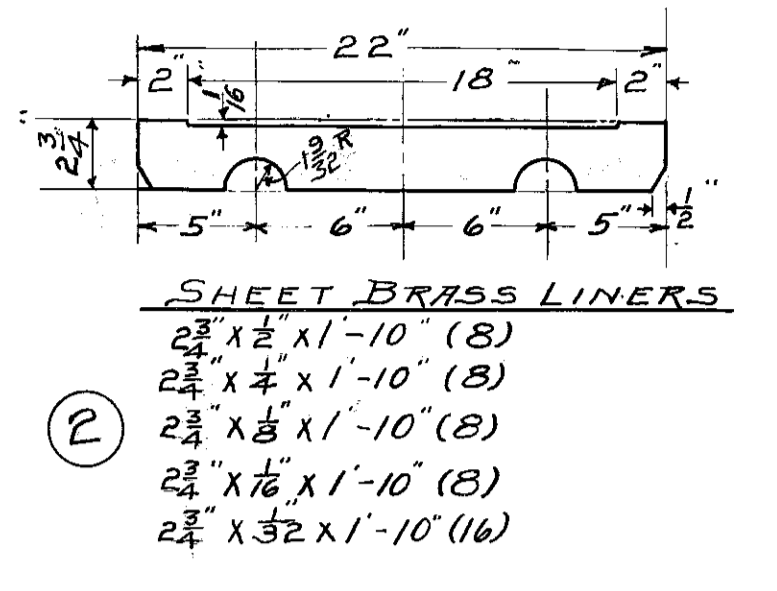
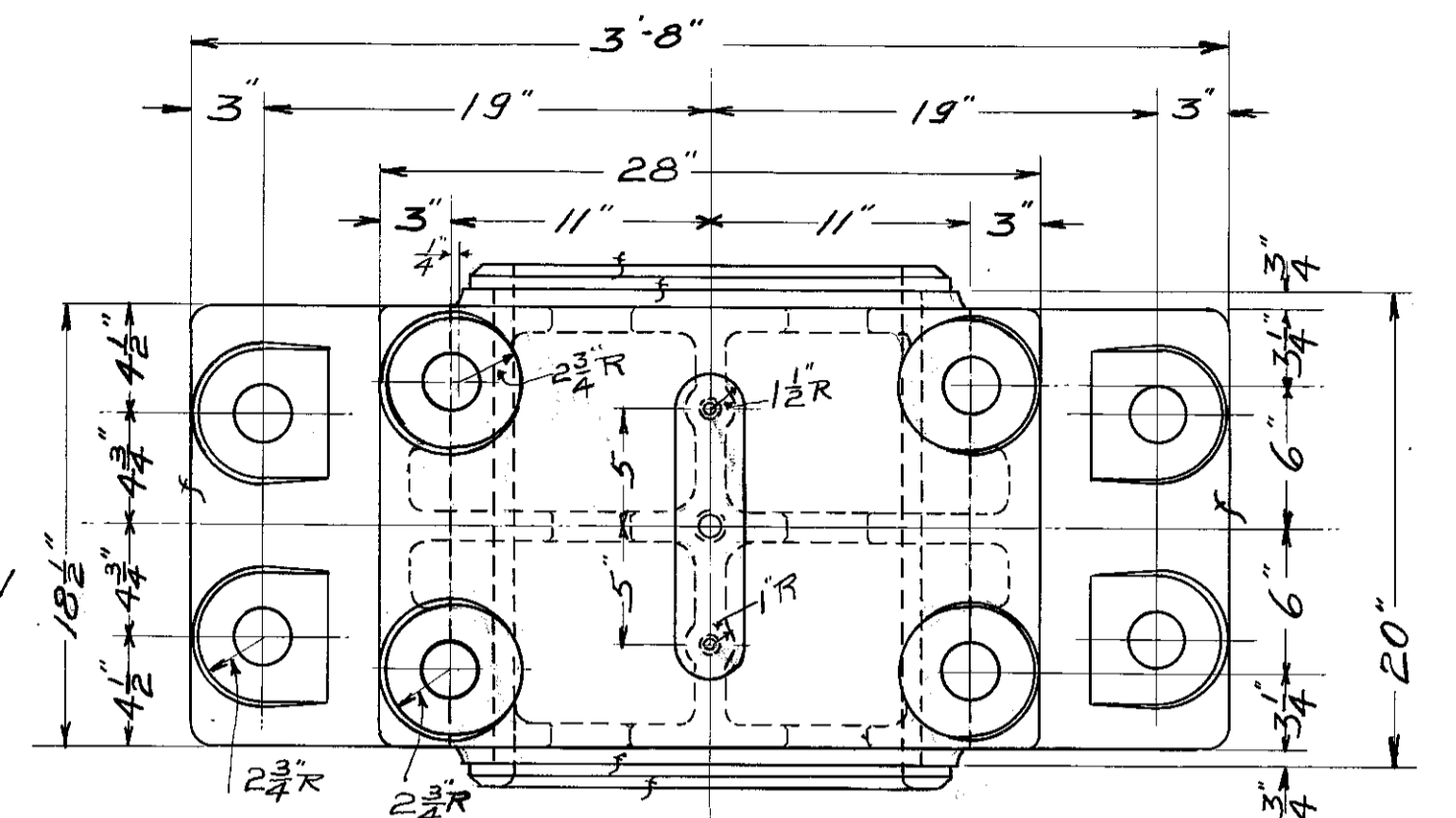
SEE MAT. BILLS 50-51-52-53 SCALE  $\frac{3}{8}$ " = 1'-0"  
 MADE BY H.B.T. 10/19/14 TRACED BY E.J. 12/1/14 CH'D BY J.P. 10/19/14  
 CONTRACT No. 2201 M SHEET No. 119

DRAWING No 3892 Comp 1/10/14  
 FILE No. 11-6C-20

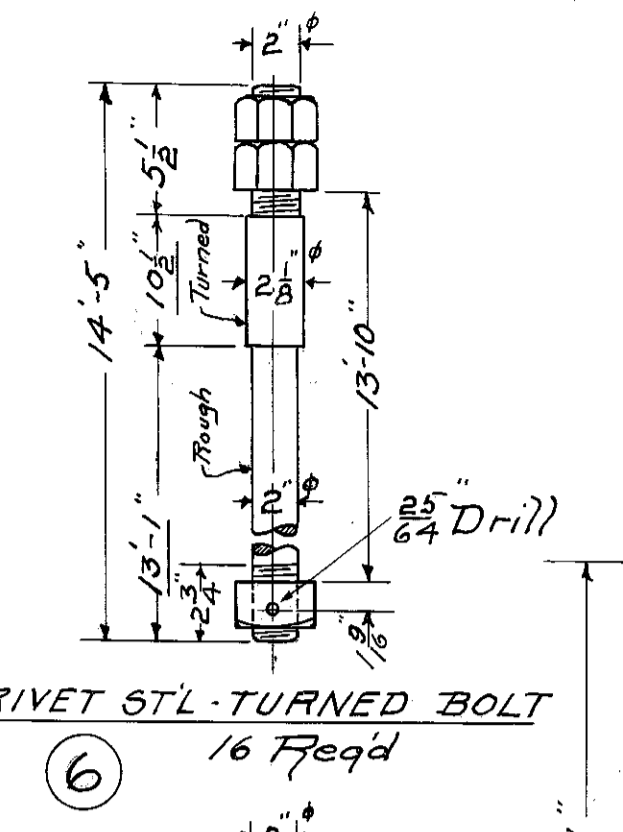




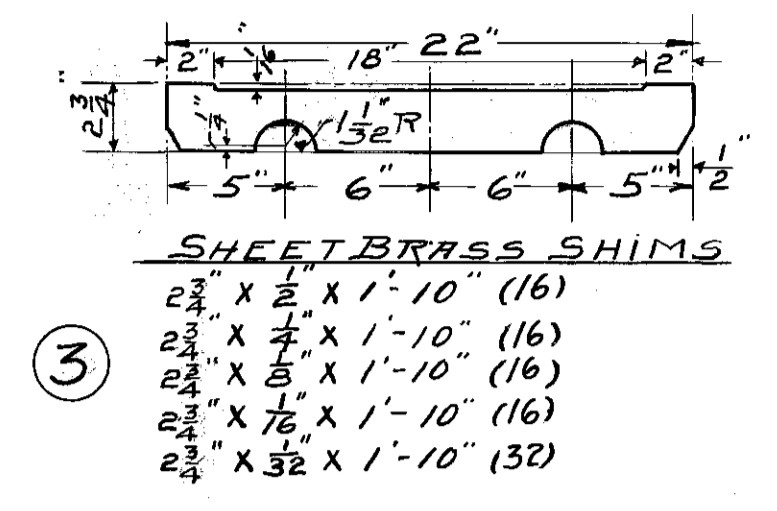
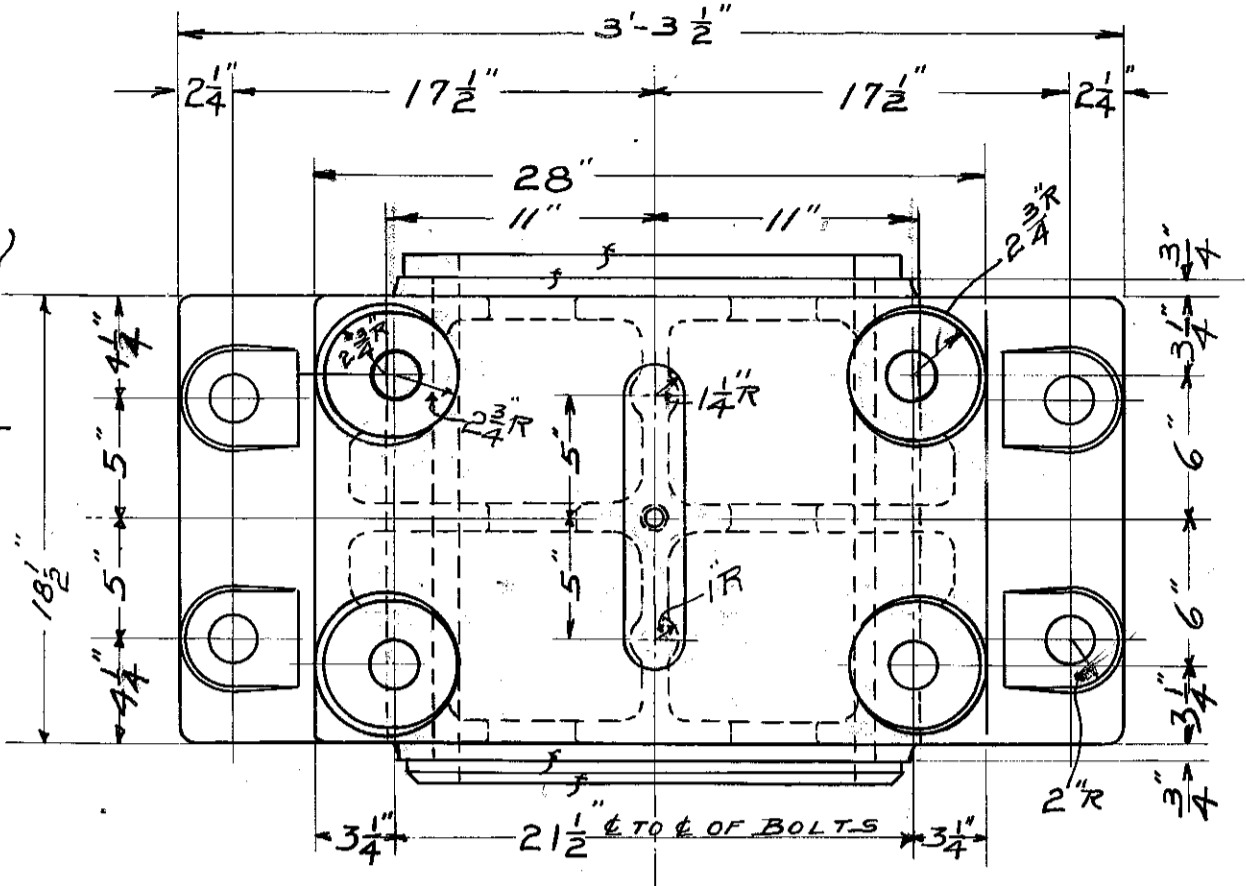
Cut oil grooves in bushings of cap and base of Rack—  
Pinion Shaft Bearing-Pat #41  
only



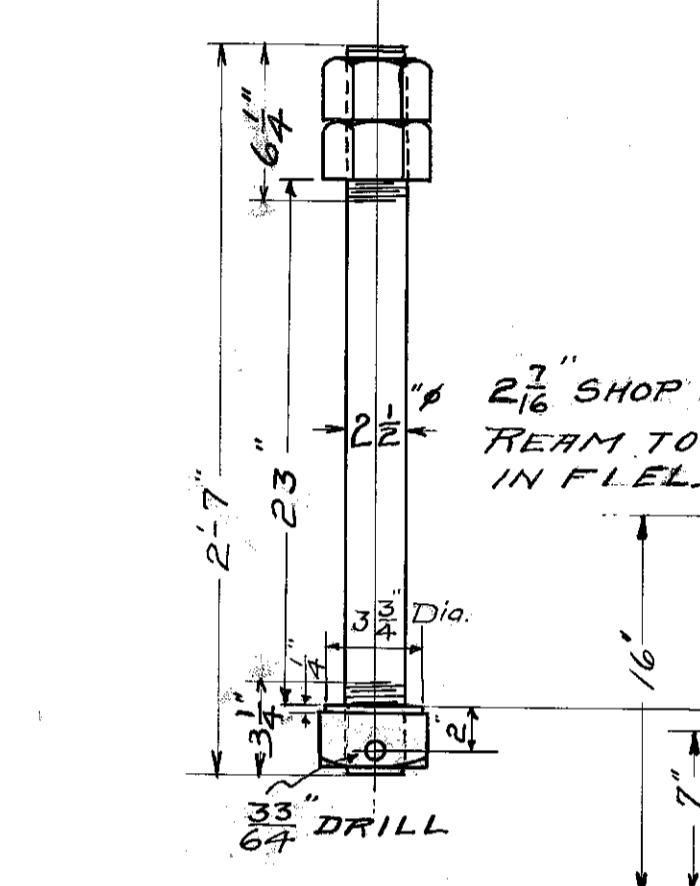
**SHEET BRASS LINERS**  
 2 1/2" x 1/2" x 1'-10" (8)  
 2 1/2" x 1/2" x 1'-10" (8)  
 2 1/2" x 1/2" x 1'-10" (8)  
 2 1/2" x 1/2" x 1'-10" (16)



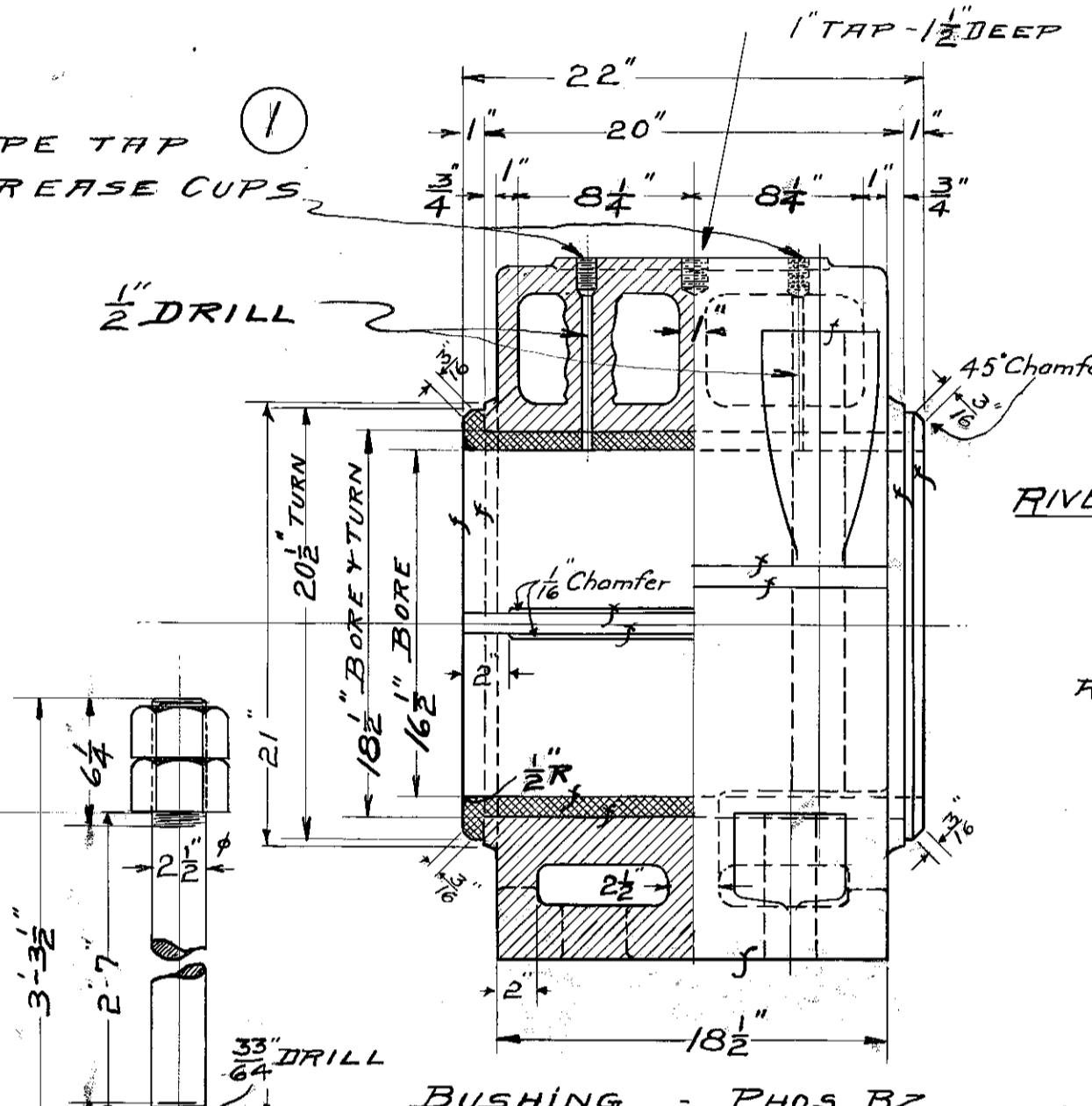
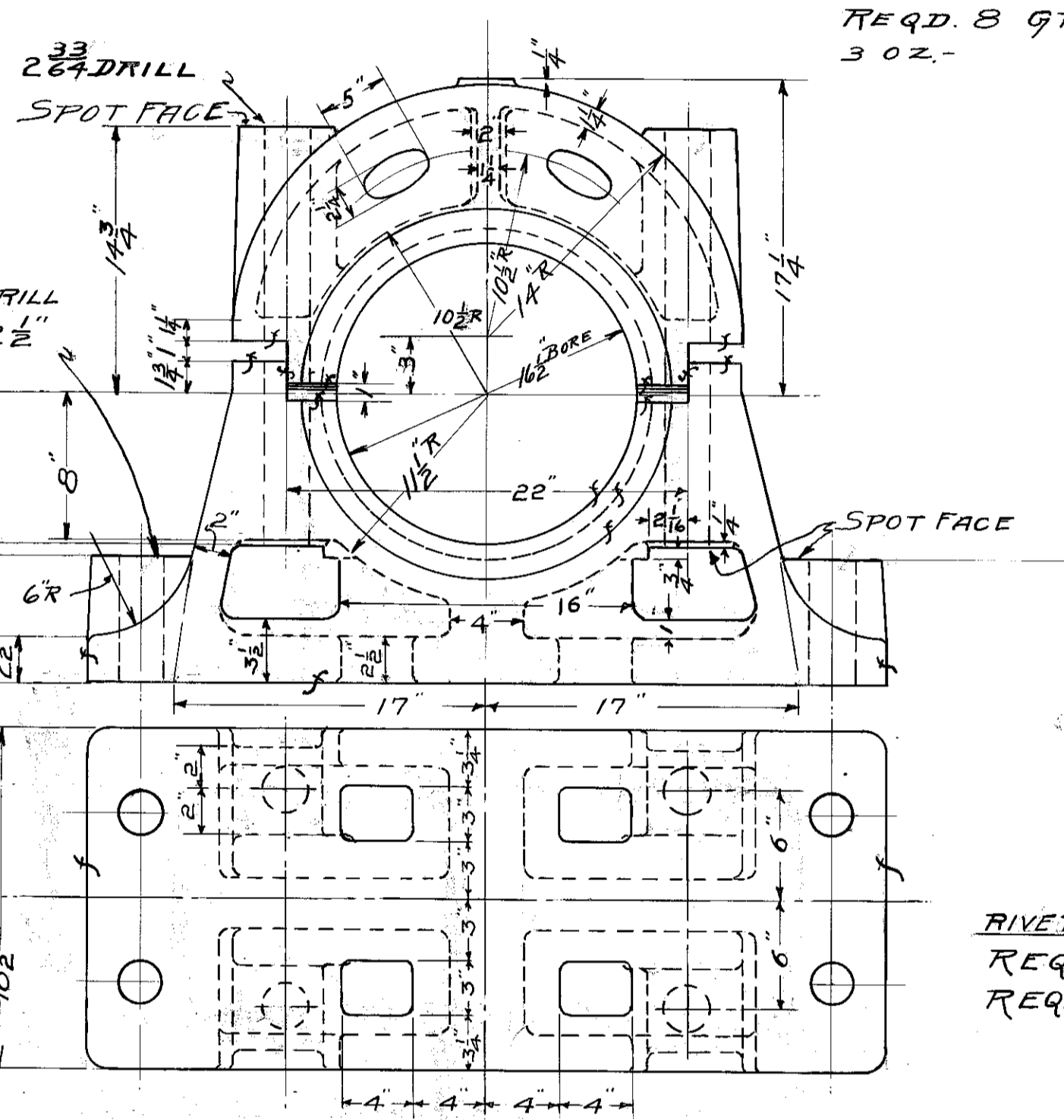
**RIVET STL-TURNED BOLT**  
 16 Reqd



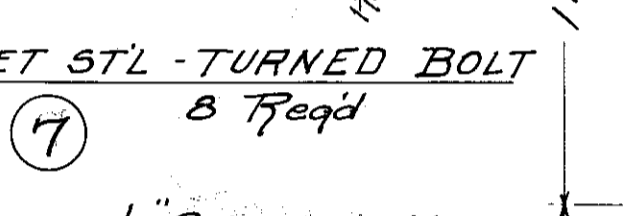
**SHEET BRASS SHIMS**  
 2 1/2" x 1/2" x 1'-10" (16)  
 2 1/2" x 1/2" x 1'-10" (16)  
 2 1/2" x 1/2" x 1'-10" (16)  
 2 1/2" x 1/2" x 1'-10" (16)  
 2 1/2" x 1/2" x 1'-10" (16)  
 2 1/2" x 1/2" x 1'-10" (16)



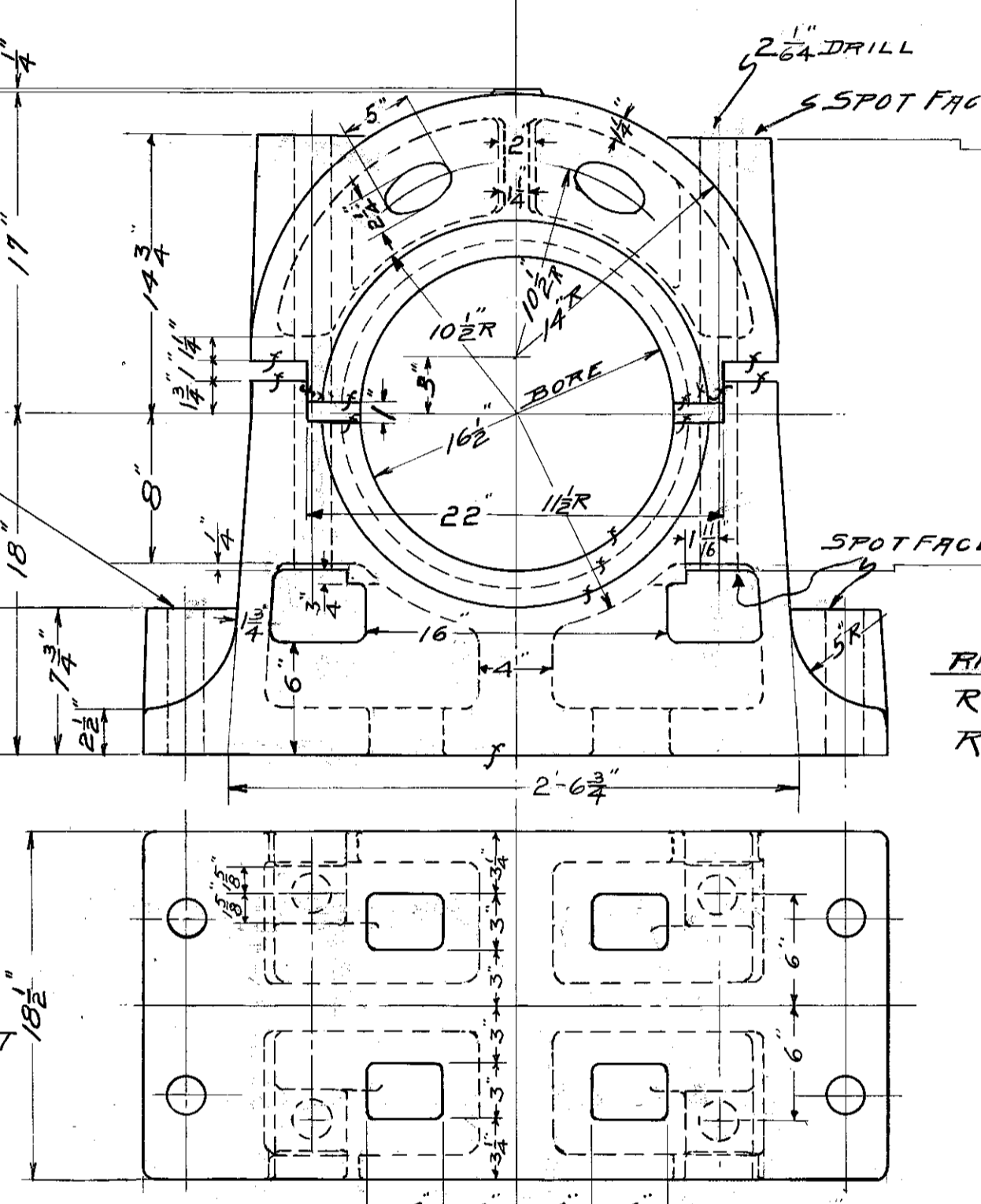
**RIVET STL-TURNED BOLT**  
 REQD. 16 - 2 1/2" x 2-7/8"  
 REQD. 16 - COT PIN 1/2" x 4 1/2"



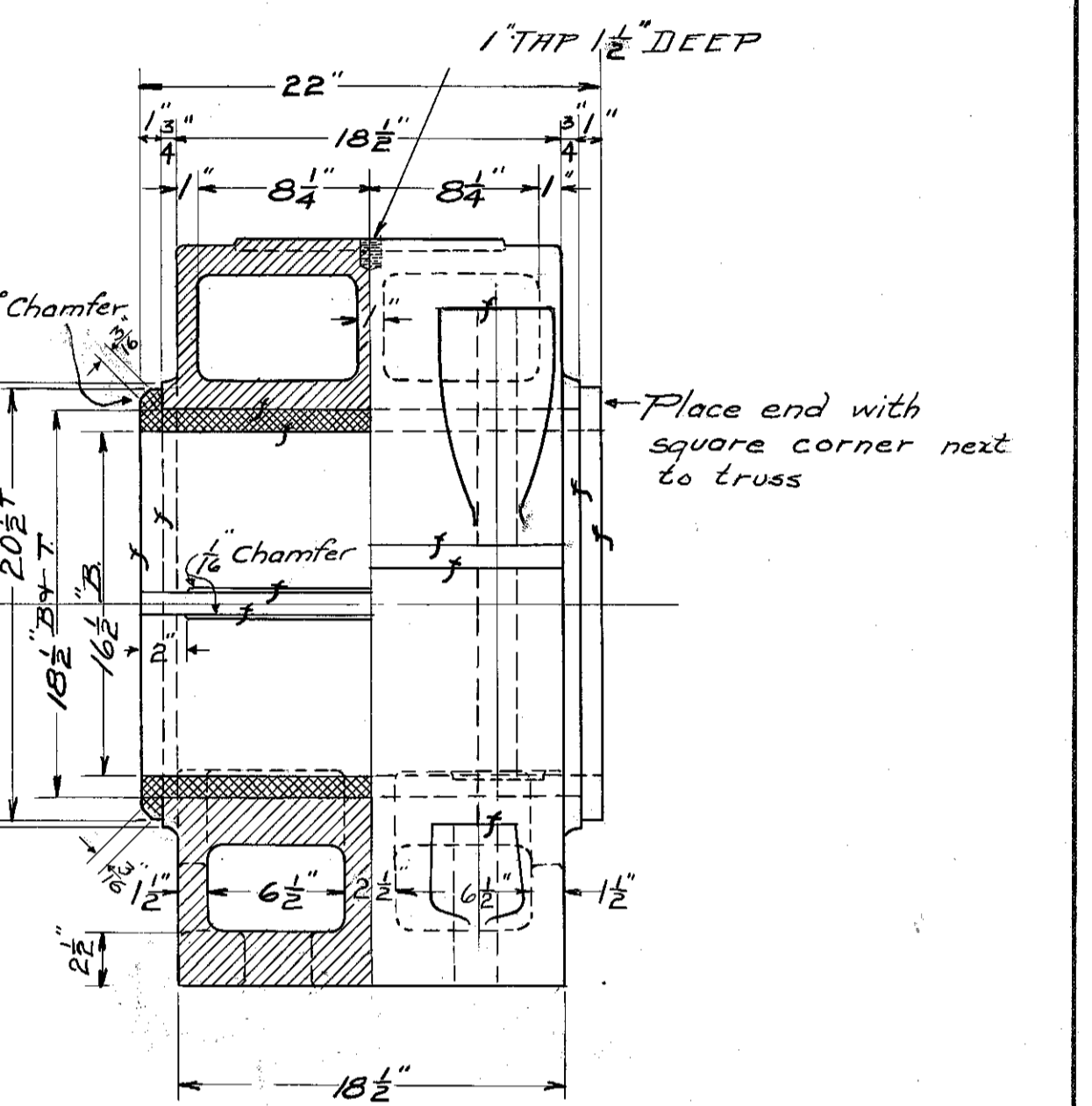
**BUSHING - PHOS. BZ**  
 PAT. WEB. AVE. BR. #43 - 4 REQD.  
 FINISH ALL OVER



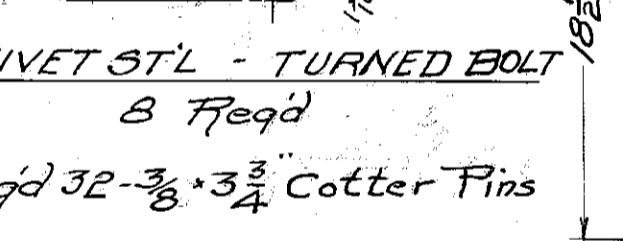
**RIVET STL-TURNED BOLT**  
 8 Reqd



**RIVET STL-TURNED BOLT**  
 REQD. 32 - 2" x 2 1/2"  
 REQD. 32 - 3/8" x 3 3/4" COTTER PIN.



**BUSHING PHOS. BZ**  
 PAT. WEB. AVE. BR. #43 - 8 REQD.  
 FINISH ALL OVER



**RIVET STL-TURNED BOLT**  
 8 Reqd  
 32 - 3/8" x 3 3/4" Cotter Pins

**RACK PINION SHAFT BEARING - CAST STEEL**  
 BASE - PAT. WEB. AVE. BR. #41 - 4 REQD.  
 CAP - PAT. WEB. AVE. BR. #42 - 4 REQD.  
 (B2)

**TRUNNION BEARING - CAST STEEL**  
 BASE - PAT. WEB. AVE. BR. #45 - 8 REQD.  
 CAP - PAT. WEB. AVE. BR. #42 - 8 REQD.  
 (B1)

**PATTERNS**

ALL PATTERNS FOR CASTINGS SHALL BE SUBJECT TO INSPECTION AND APPROVAL BEFORE CASTINGS ARE MADE FROM THEM AND AGAIN ON FINAL DELIVERY TO THE CITY.

PATTERNS FOR CASTINGS SHALL BE MADE OF THOROUGHLY SEASONED, FIRST CLASS PATTERN LUMBER, AND SHALL BE WELL PUT TOGETHER TO STAND REPEATED USE AND LONG TIME STORAGE WITHOUT DAMAGE. THEY SHALL BE FINISHED TO GIVE A NEAT APPEARANCE TO CASTINGS. THE OUTER UNFINISHED EDGES OF ALL RIBS, BASES, ETC., SHALL BE ROUNDED OFF TO A RADIUS OF ONE-FOURTH THE THICKNESS OF THE RIB, AND INSIDE CORNERS SHALL BE FITTED WITH WOOD OR LEATHER FILLETS WELL FASTENED AND ROUNDED OUT TO A RADIUS OF AT LEAST ONE-HALF THE THICKNESS OF THE THINNEST RIB FORMING THE CORNER.

ALL PATTERNS SHALL BE FITTED WITH LIFTING AND TAPPING PLATES AND EACH ONE, IF LARGE ENOUGH, SHALL HAVE SET FLUSH WITH ITS SURFACE A METAL PLATE BEARING THE LETTERS 'WEB. AVE. BR.' IN SHARP-FACED GOTHIC STYLE, AT LEAST THREE-QUARTERS INCH HIGH. EACH PATTERN SHALL HAVE A DESIGNATING LETTER AND NUMBER SITUATED SO AS TO BE VISIBLE WHEN THE CASTING IS IN POSITION IN THE STRUCTURE.

PATTERNS FOR IRON AND STEEL CASTINGS SHALL BE STAINED BLACK ON SURFACES UNFINISHED ON CASTINGS, RED ON SURFACES TOOL FINISHED, AND YELLOW OR CLEAR SHELLAC ON CORE PRINTS. THE STAIN SHALL BE MIXED WITH THE SHELLAC. THE PATTERNS SHALL BE THOROUGHLY VARNISHED BEFORE USE WITH FIRST-CLASS PATTERN SHELLAC DISSOLVED IN GRAIN ALCOHOL AND AFTER FINAL USE SHALL BE THOROUGHLY REPAIRED, CLEANED AND VARNISHED AGAIN BEFORE DELIVERY TO THE CITY.

**BOLTS, NUTS AND WASHERS**

TURNED BOLTS SHALL BE TRUE TO FORM AND SIZE, THE BODY SHALL BE LONG ENOUGH FOR AMPLE BEARING IN HOLE, THICK WASHERS BEING USED WHERE NECESSARY, THE AXIS OF THREAD SHALL COINCIDE WITH THAT OF THE BOLT BODY THE THREAD SHALL BE LATHE-CUT AND LONG ENOUGH FOR FULL BEARING IN NUT, SHALL FIT SNUGLY AND BE CHAMFERED AT END. IN GENERAL, BOLTS SHALL HAVE SQUARE HEADS AND HEX NUTS.

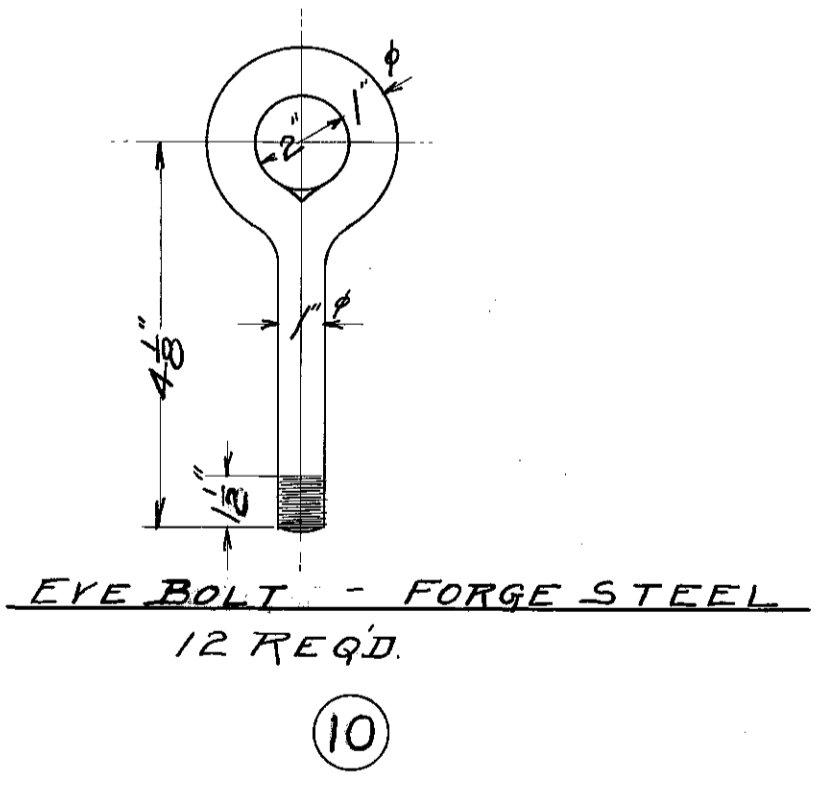
ALL NUTS USED ON MACHINERY PARTS SHALL BE SEMI-FINISHED AND BEARING SURFACES SHALL BE FACED SQUARE WITH AXIS OF THREAD, WHERE TWO NUTS ARE USED ON A BOLT FOR LOCKING, THEY SHALL BOTH BE STANDARD THICKNESS. BEVEL WASHERS SHALL BE USED WHEREVER NUTS OR BOLT HEADS WOULD OTHERWISE COME AGAINST THE SLANT SURFACE OF AN I-BEAM OR CHANNEL FLANGE.

**NUTLOCKS AND SPRING COTTERS**  
 BOLTS FOR JOURNAL BLOCKS SHALL BE PROVIDED WITH DOUBLE NUTS WHEREVER SHOWN ON THE ACCOMPANYING PLANS. BOTH NUTS SHALL BE FULL THICKNESS. ALL OTHER BOLTS HOLDING MACHINERY PARTS, INCLUDING FOUNDATION RODS, SHALL BE PROVIDED WITH NUT LOCKS APPROVED BY THE COMMISSIONER OF PUBLIC WORKS. WHERE SHEET METAL NUT LOCKS ARE USED THEY SHALL BE PAINTED BEFORE USE.

**TRUNNION BEARINGS**

THE JOURNAL BLOCK SHALL BE BORED SO THAT ITS SURFACE WILL BE CONCENTRIC WITH THE SHAFT SURFACE WHEN IN PLACE, AND THE BUSHING SHALL BE TURNED AND BORED TO FIT, TO GOOD BEARING, THE JOURNAL BLOCK AND SHAFT RESPECTIVELY, PROPER ALLOWANCE FOR FREE MOVEMENT AND LUBRICATION SHALL BE MADE BETWEEN THE TRUNNION JOURNAL AND THE BUSHING DIAMETERS.

ALL JOURNAL BLOCKS TO BE PROVIDED WITH 30% GREASE CUPS UNLESS OTHERWISE NOTED. FOR GENERAL REQUIREMENTS OF MATERIAL AND WORKMANSHIP SEE SPECIFICATIONS. THE HOLES FOR BASE BOLTS IN THE JOURNAL BLOCKS SHALL BE DRILLED WITH AN ALLOWANCE FOR REAMING AND AFTER THE ENTIRE MACHINERY HAS BEEN ERECTED AND CAREFULLY ADJUSTED IN THE FIELD THEY SHALL BE REAMED TO THE REQUIRED SIZE, WITH CASTING IN THEIR PROPER PLACES.



**EYE BOLT - FORGE STEEL**  
 12 REQD.  
 (10)

Approved *Abraham von Anley, Jr.*  
 ENGINEER OF BRIDGE DESIGN

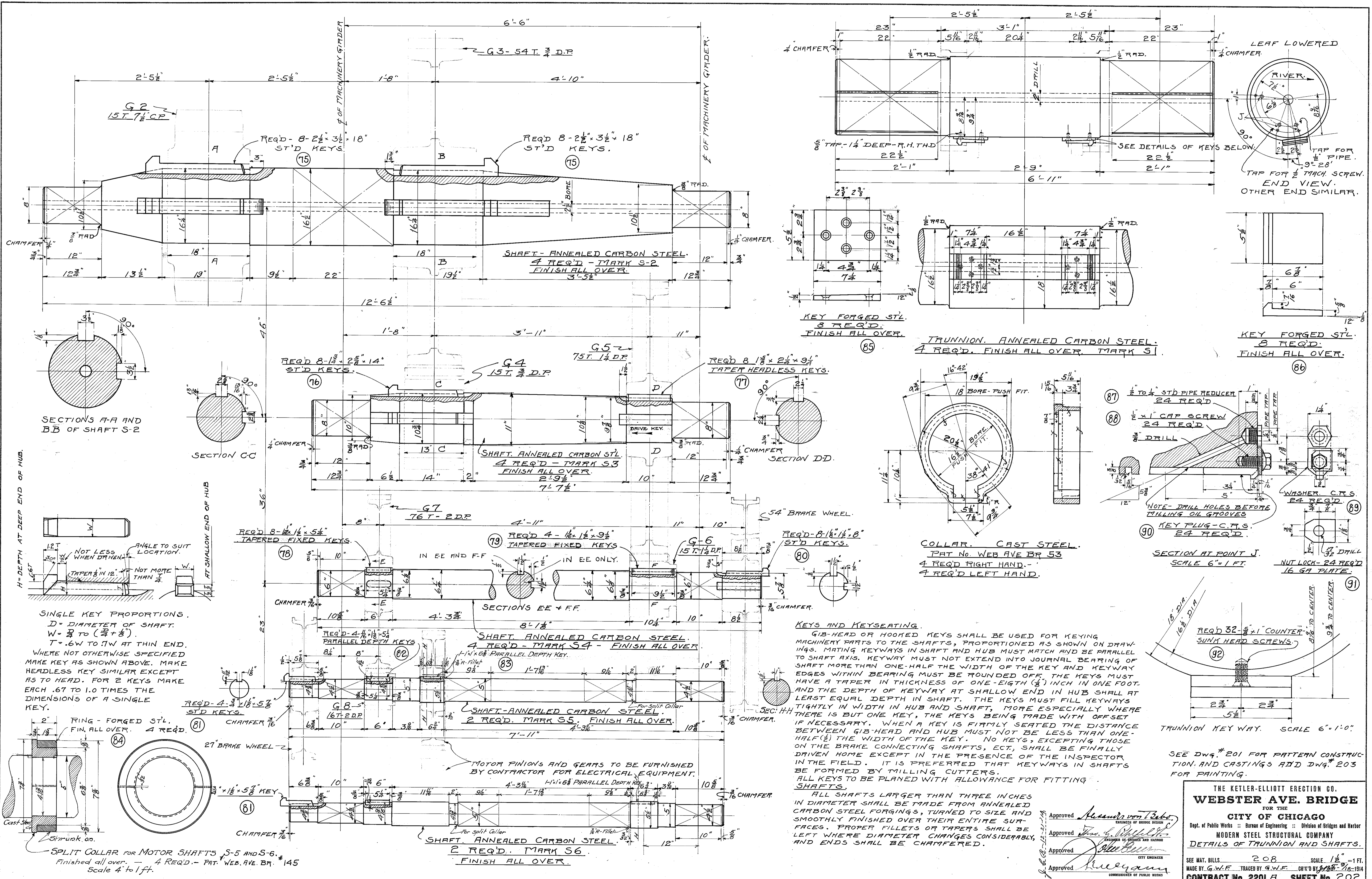
Approved *John G. ...*  
 ASSISTANT SUPERVISOR AND BARON

Approved *...*  
 CITY ENGINEER

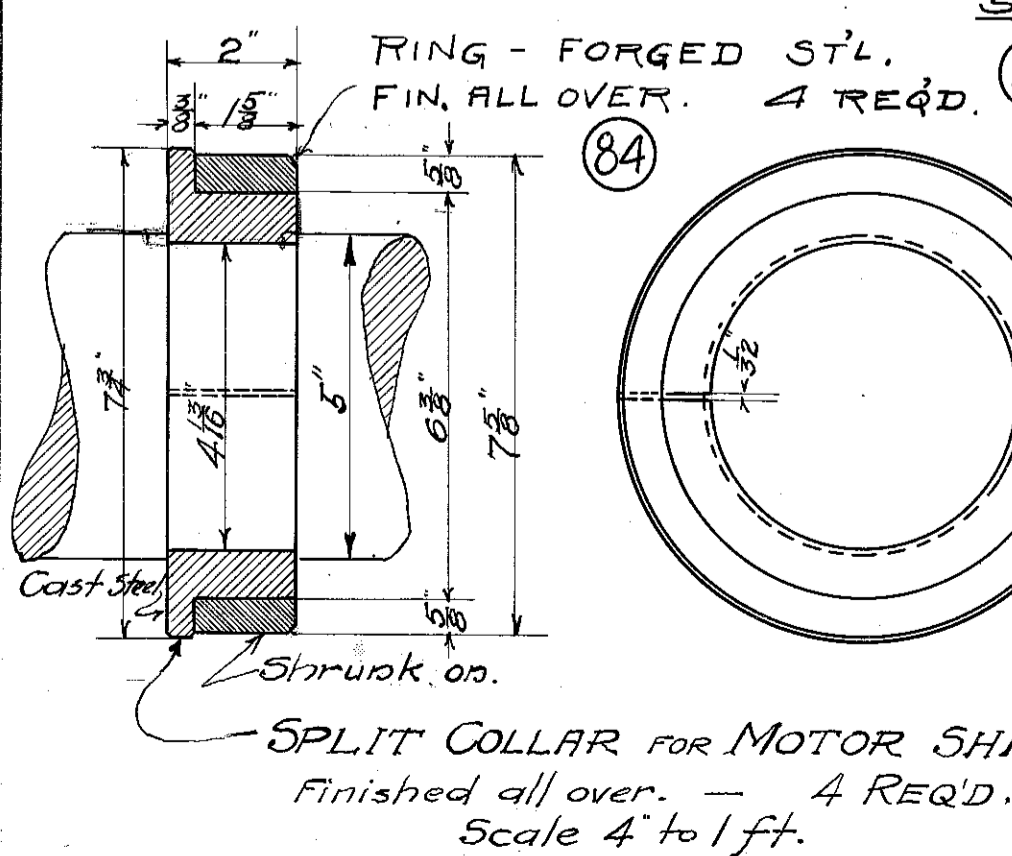
Approved *...*  
 COMMISSIONER OF PUBLIC WORKS

THE KETTLER-ELLIOTT ERECTION CO.  
**WEBSTER AVE. BRIDGE**  
 FOR THE  
**CITY OF CHICAGO**  
 Dept. of Public Works :: Bureau of Engineering :: Division of Bridges and Harbor  
**MODERN STEEL STRUCTURAL COMPANY**  
 MAIN DRIVE SHAFT + TRUNNION BEARING

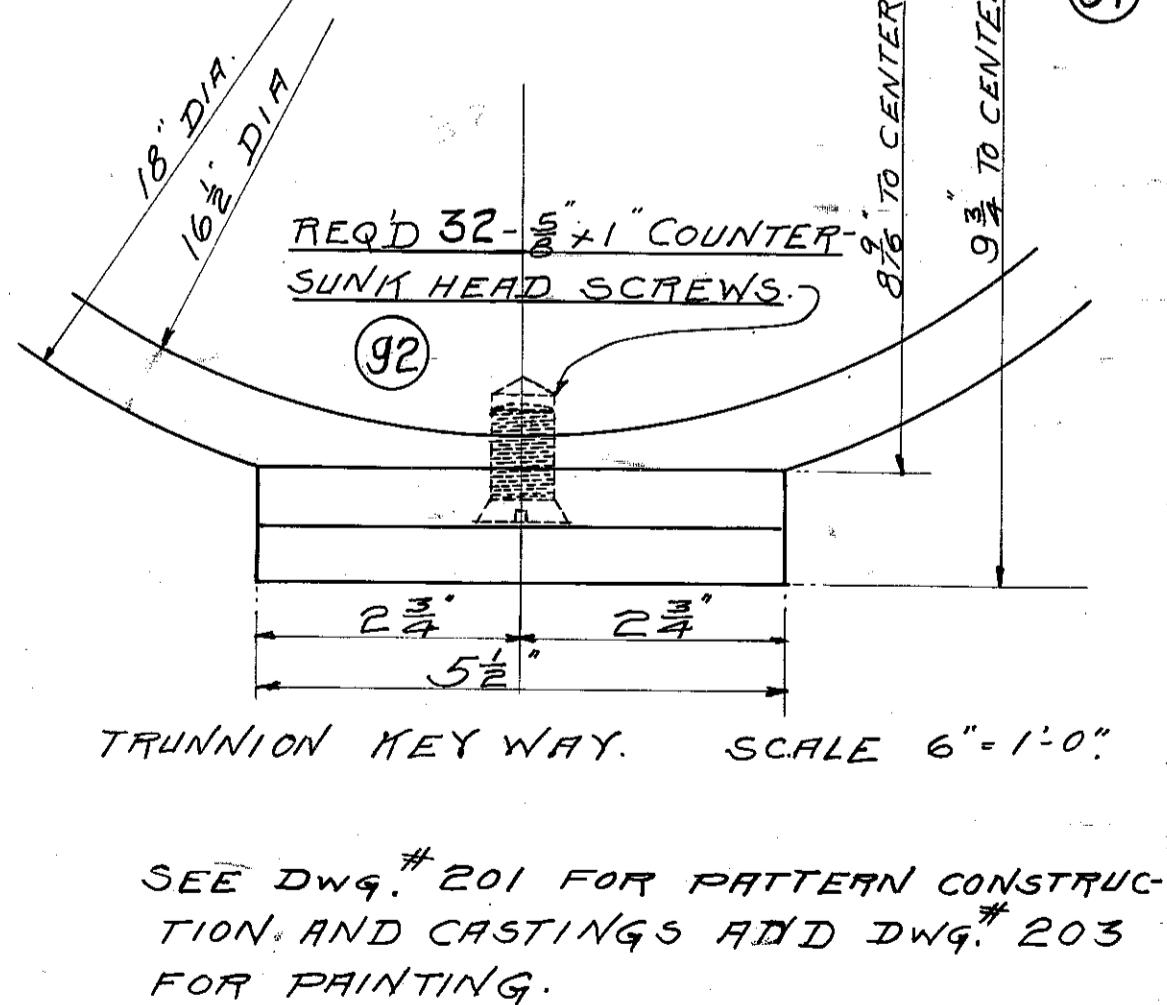
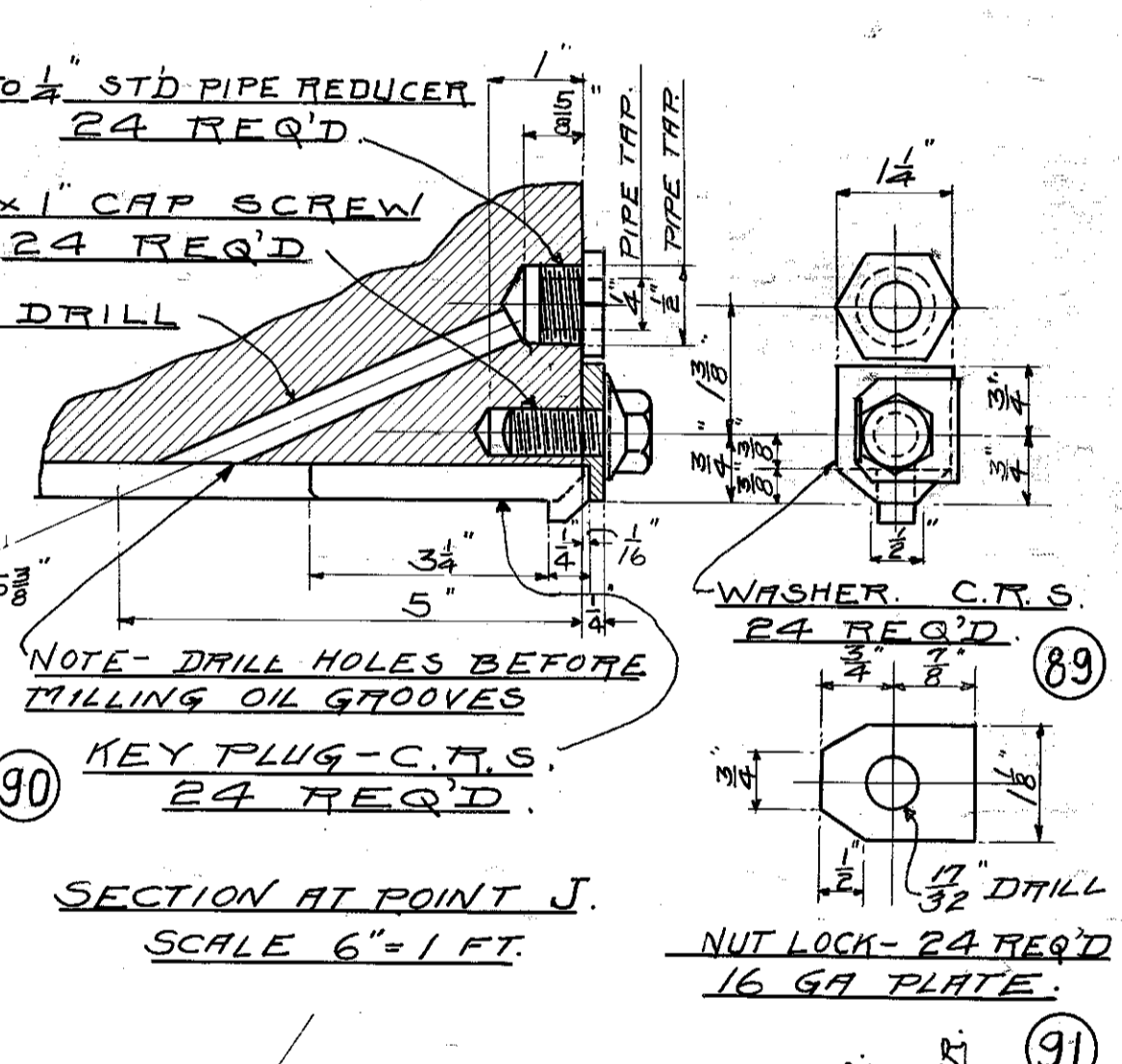
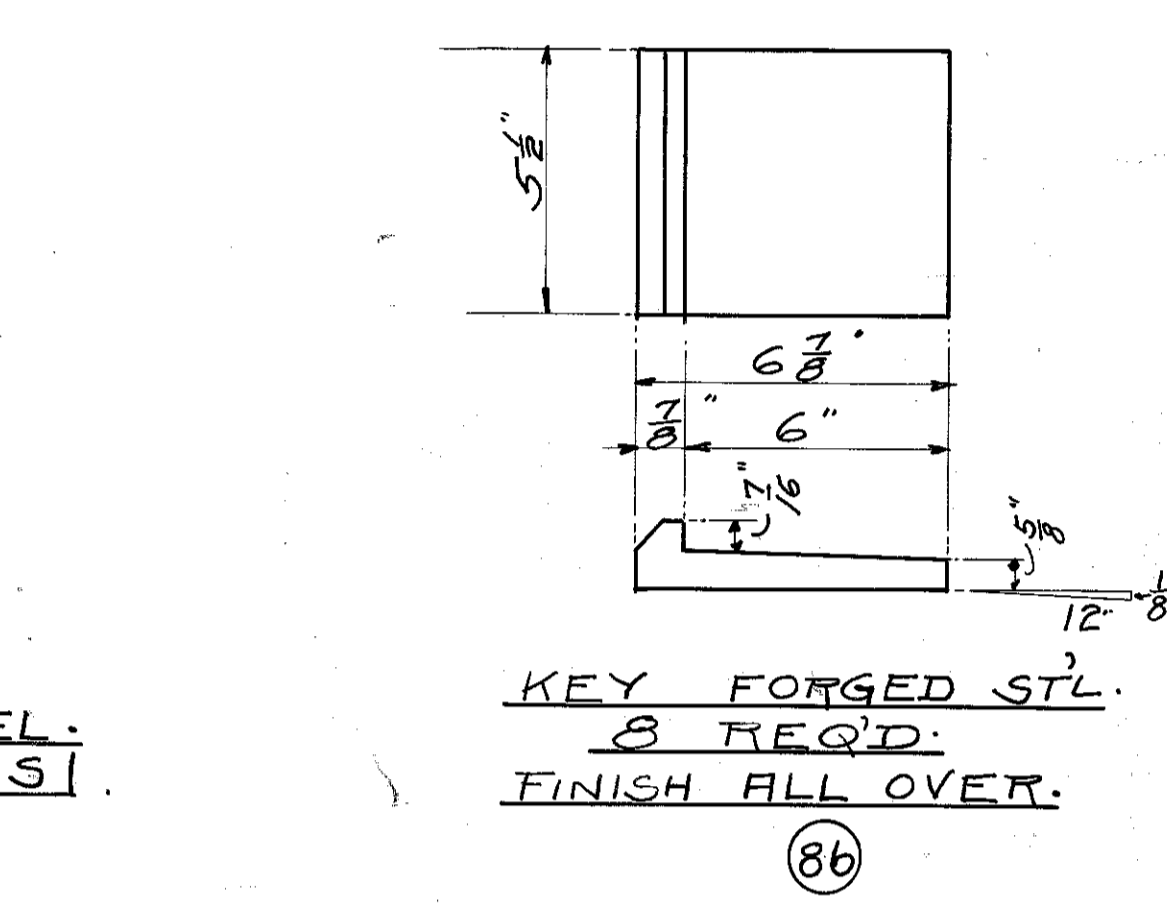
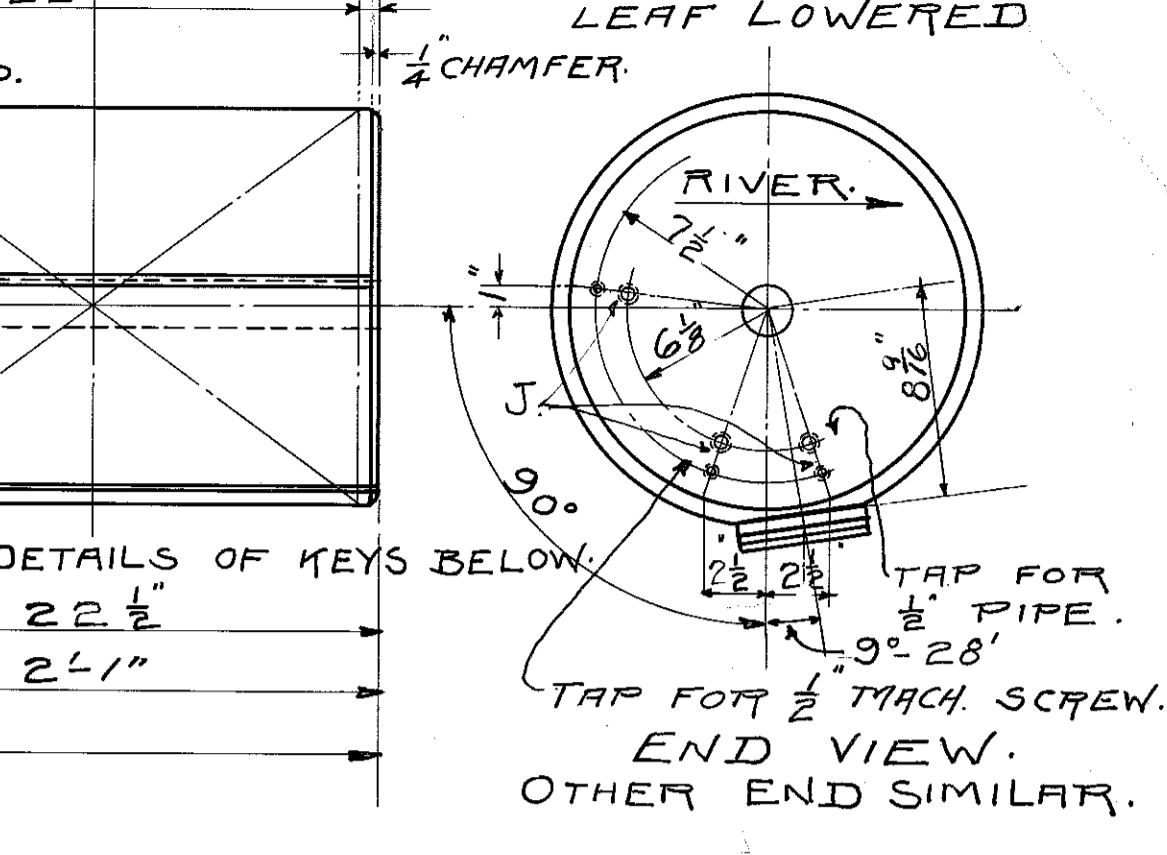
SEE MAT. BILLS # 201 & 202 SCALE 1/2" = 1 FT.  
 MADE BY L.M.K. - TRACED BY G.W.F. CH'D BY 235/9/1914  
**CONTRACT No. 2201A SHEET No. 201**  
 DRAWING No. 3894  
 FILE No. 11-6C-22



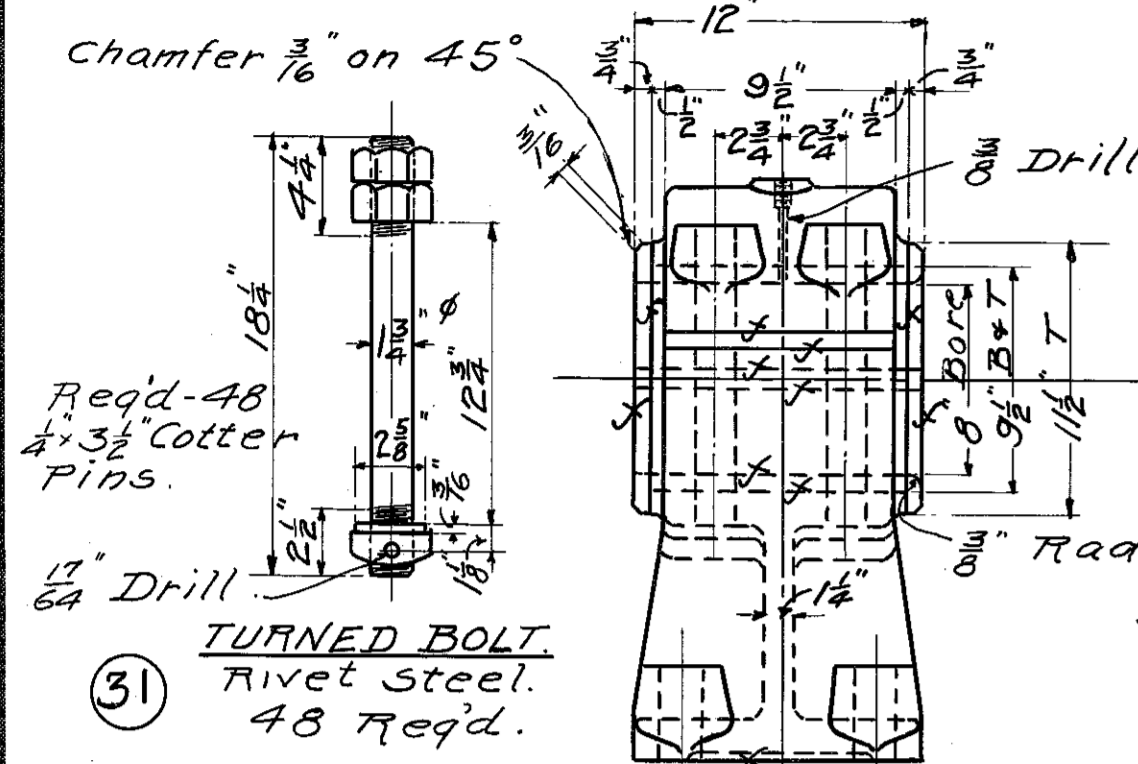
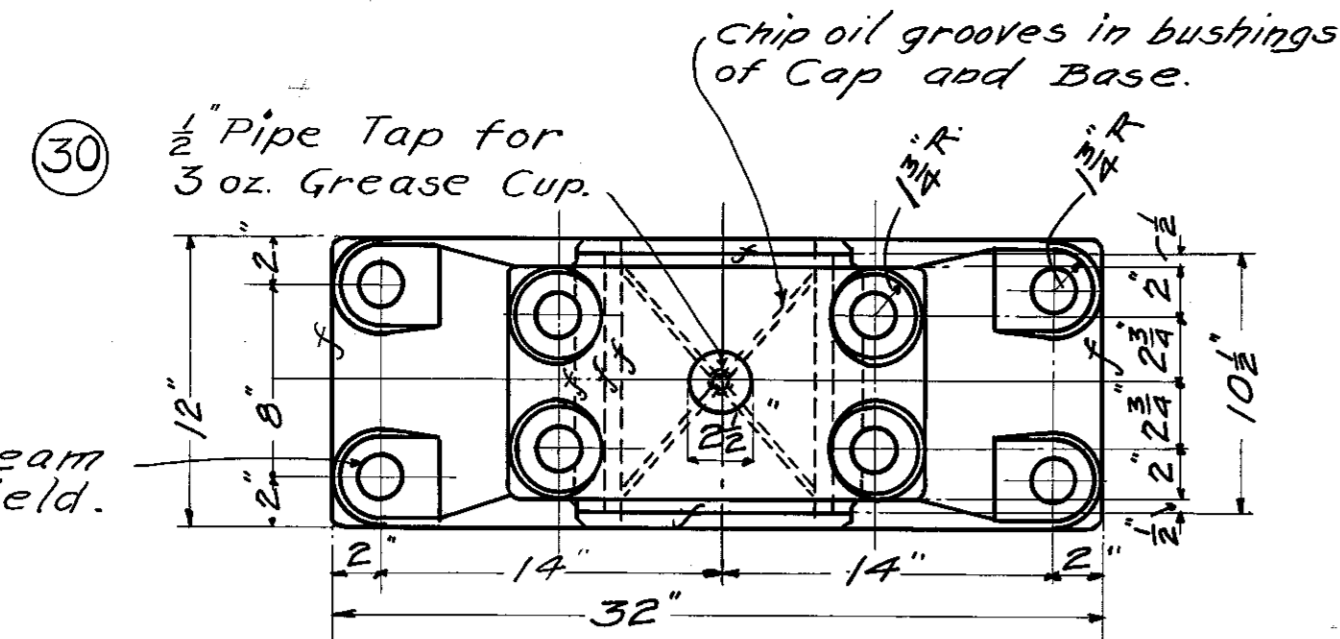
**SINGLE KEY PROPORTIONS.**  
 D = DIAMETER OF SHAFT.  
 W =  $\frac{D}{4}$  TO  $(\frac{D}{4} + \frac{1}{8})$ .  
 T = .6W TO 1W AT THIN END.  
 WHERE NOT OTHERWISE SPECIFIED  
 MAKE KEY AS SHOWN ABOVE. MAKE  
 HEADLESS KEY SIMILAR EXCEPT  
 AS TO HEAD. FOR 2 KEYS MAKE  
 EACH .67 TO 1.0 TIMES THE  
 DIMENSIONS OF A SINGLE  
 KEY.



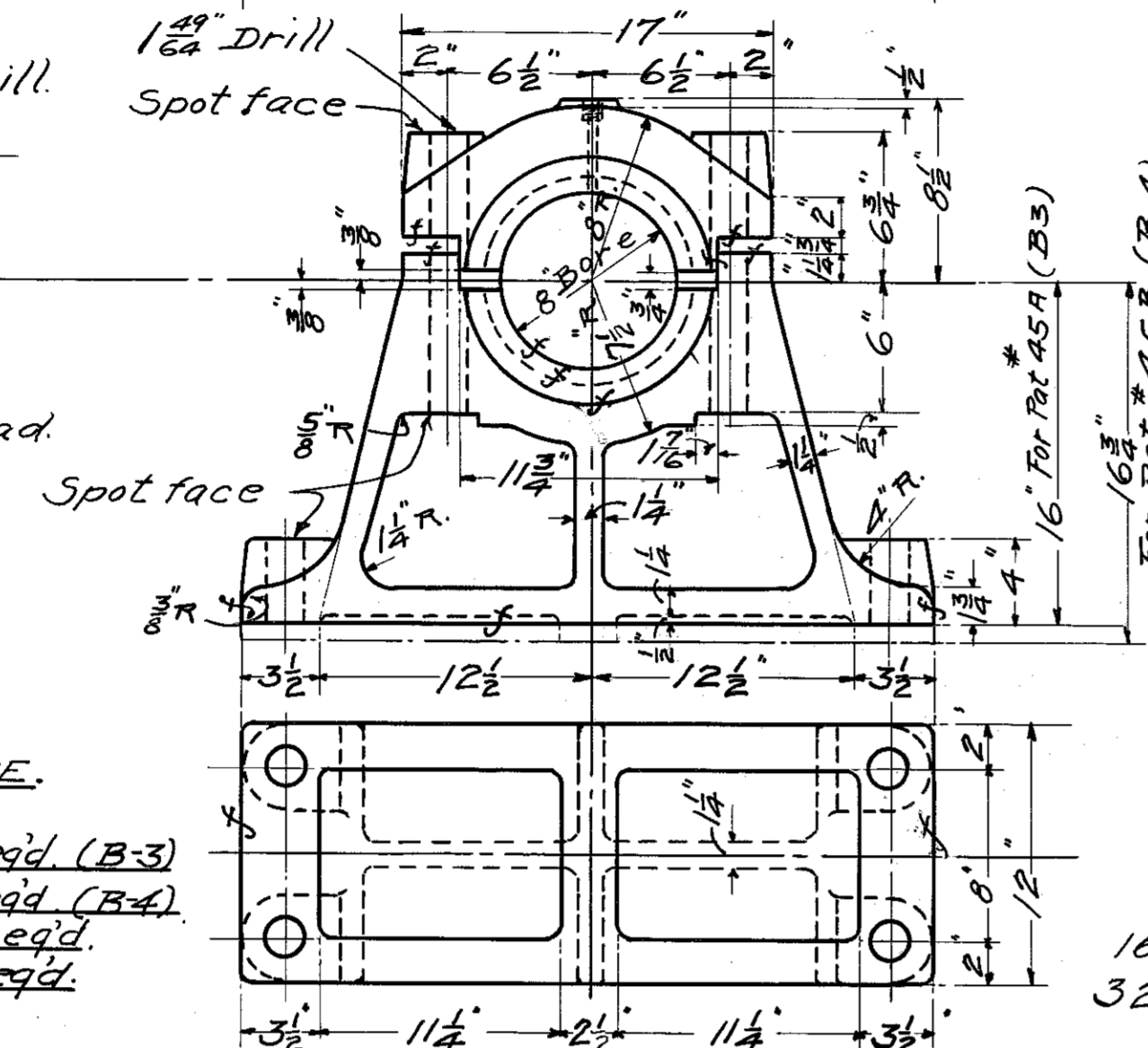
**KEYS AND KEYSEATING.**  
 GIB-HEAD OR HOOKED KEYS SHALL BE USED FOR KEYING MACHINERY PARTS TO THE SHAFTS, PROPORTIONED AS SHOWN ON DRAWINGS. MATING KEYWAYS IN SHAFT AND HUB MUST MATCH AND BE PARALLEL TO SHAFT AXIS. KEYWAY MUST NOT EXTEND INTO JOURNAL BEARING OF SHAFT MORE THAN ONE-HALF THE WIDTH OF THE KEY AND KEYWAY EDGES WITHIN BEARING MUST BE ROUNDED OFF. THE KEYS MUST HAVE A TAPER IN THICKNESS OF ONE-EIGHTH ( $\frac{1}{8}$ ) INCH IN ONE FOOT. AND THE DEPTH OF KEYWAY AT SHALLOW END IN HUB SHALL AT LEAST EQUAL DEPTH IN SHAFT. THE KEYS MUST FIT KEYWAYS TIGHTLY IN WIDTH IN HUB AND SHAFT, MORE ESPECIALLY WHERE THERE IS BUT ONE KEY, THE KEYS BEING MADE WITH OFFSET IF NECESSARY. WHEN A KEY IS FIRMLY SEATED THE DISTANCE BETWEEN GIB-HEAD AND HUB MUST NOT BE LESS THAN ONE-HALF ( $\frac{1}{2}$ ) THE WIDTH OF THE KEY. NO KEYS, EXCEPTING THOSE ON THE BRAKE CONNECTING SHAFTS, ETC., SHALL BE FINALLY DRIVEN HOME EXCEPT IN THE PRESENCE OF THE INSPECTOR IN THE FIELD. IT IS PREFERRED THAT KEYWAYS IN SHAFTS BE FORMED BY MILLING CUTTERS. ALL KEYS TO BE PLANNED WITH ALLOWANCE FOR FITTING SHAFTS.  
 ALL SHAFTS LARGER THAN THREE INCHES IN DIAMETER SHALL BE MADE FROM ANNEALED CARBON STEEL FORINGS, TURNED TO SIZE AND SMOOTHLY FINISHED OVER THEIR ENTIRE SURFACES. PROPER FILLETS OR TAPERS SHALL BE LEFT WHERE DIAMETER CHANGES CONSIDERABLY, AND ENDS SHALL BE CHAMFERED.



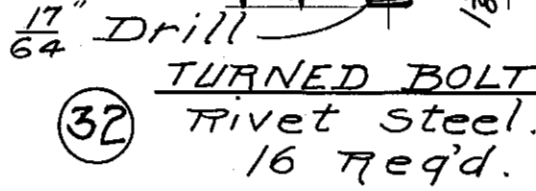
THE KETLER-ELLIOTT ERECTION CO.  
**WEBSTER AVE. BRIDGE**  
 FOR THE  
**CITY OF CHICAGO**  
 Dept. of Public Works :: Bureau of Engineering :: Division of Bridges and Harbor  
**MODERN STEEL STRUCTURAL COMPANY**  
 DETAILS OF TRUNNION AND SHAFTS.  
 SEE MAT. BILLS. 208. SCALE. 1 1/2" = 1 FT.  
 MADE BY G.W.F. TRACED BY G.W.F. CHECK'D BY J.H.B. 1/18-1914  
**CONTRACT No. 2201 A SHEET No. 202**  
 SHAFTS 35 AND 36 REVISED JAN. 7 1915.  
**DRAWING No 3895**  
 FILE No. 11-6C-23



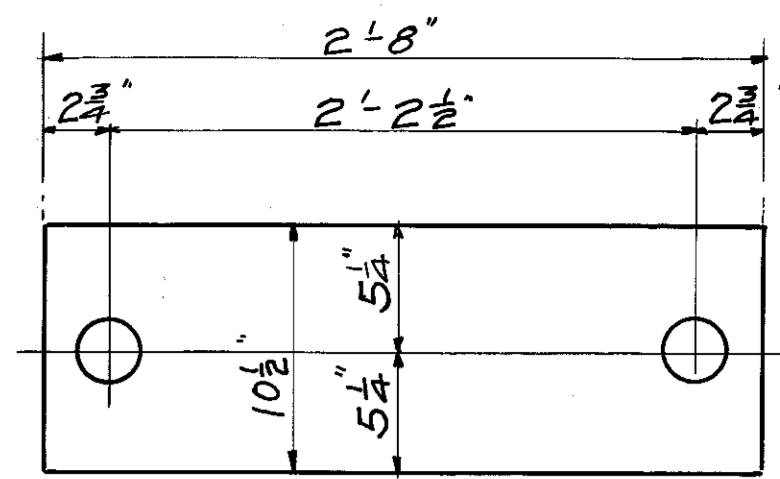
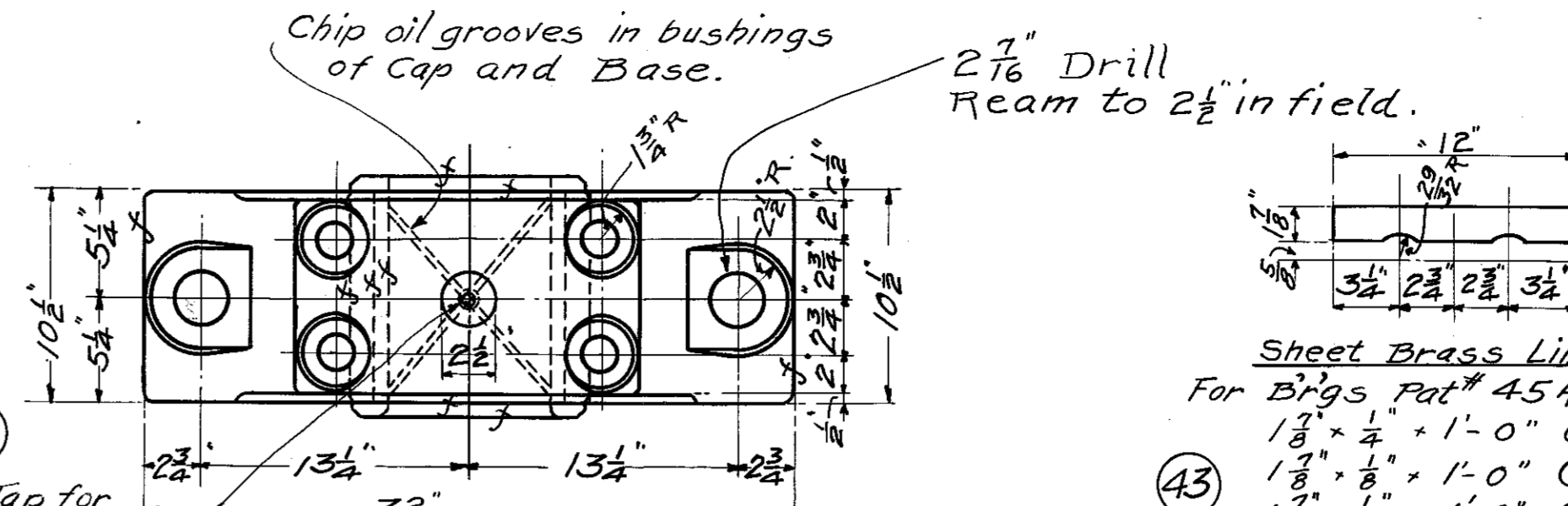
**BEARING FOR MAIN DRIVE SHAFT AND 1<sup>ST</sup> INTERMEDIATE.**  
 Cast Steel.  
 BASE - Pat. # WEB. AVE. BR. 45A - 4 Reqd. (B3)  
 BASE - Pat. # WEB. AVE. BR. 45B - 8 Reqd. (B4)  
 CAP - Pat. # WEB. AVE. BR. 46 - 12 Reqd.  
 BUSHING - Phos. Bz. 12 Reqd.  
 Pat. # WEB. AVE. BR. 48.



Reqd 16  $\frac{1}{4}$  x  $\frac{3}{8}$  Cotter Pins.

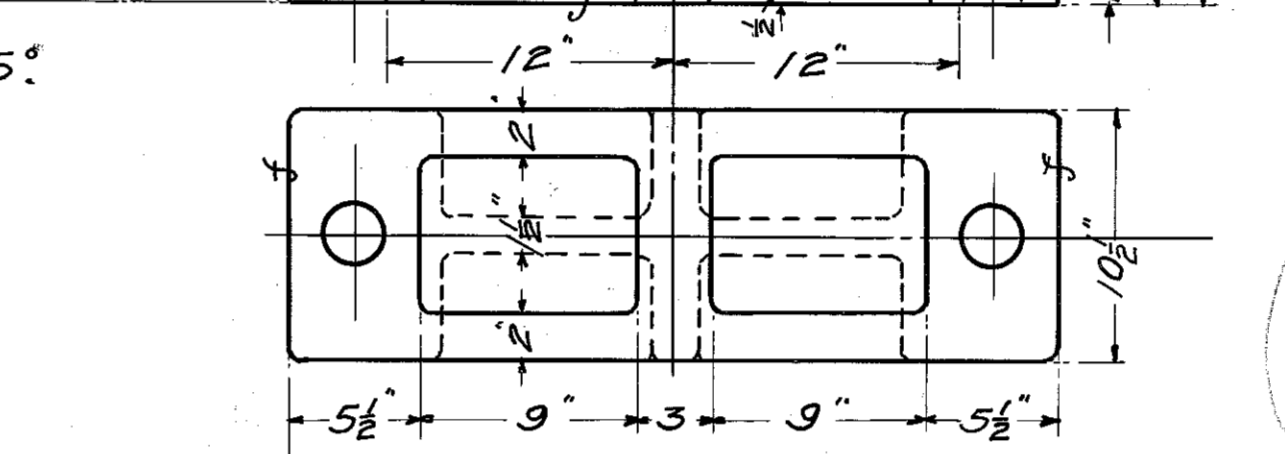
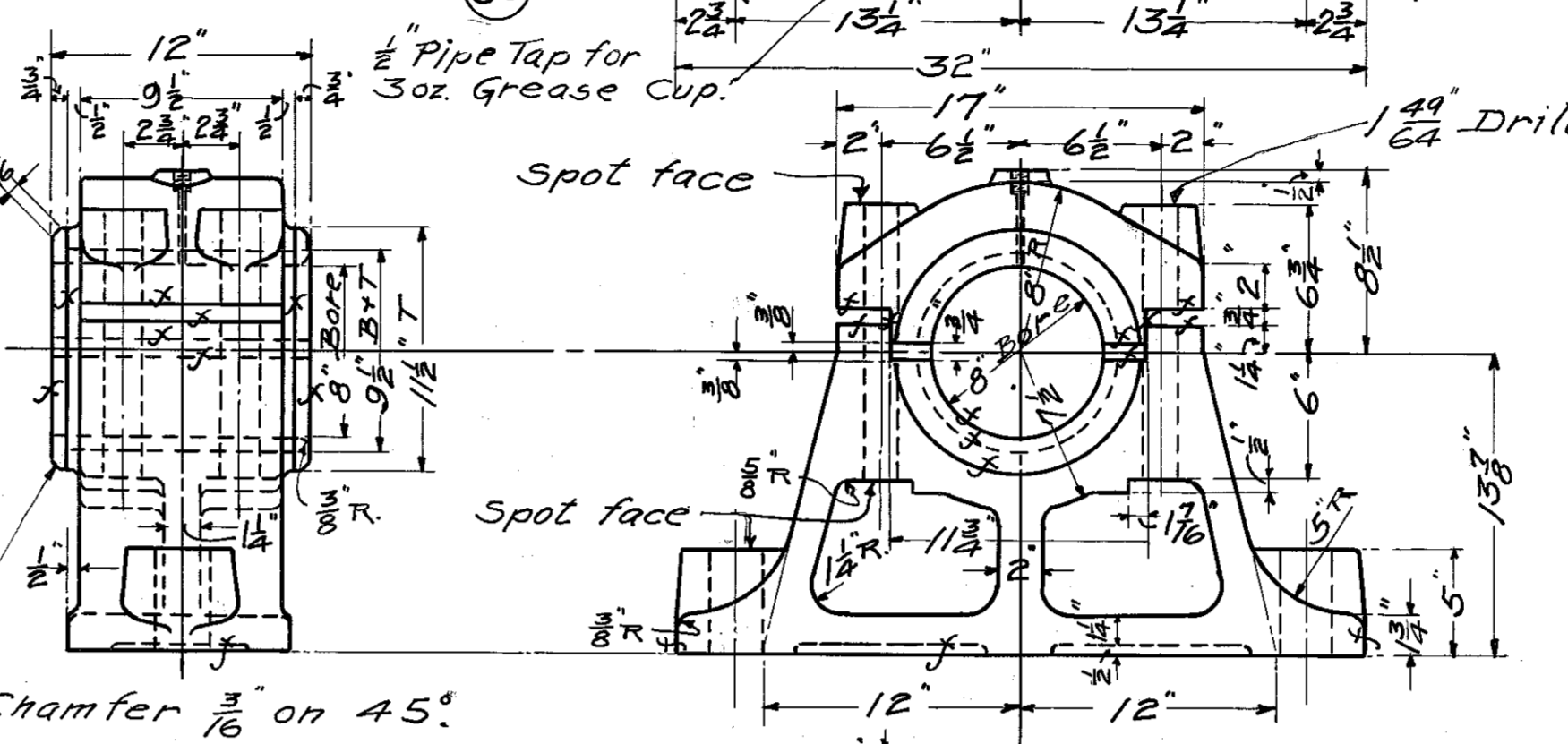


**TURNED BOLT. Rivet steel.**  
 16 Reqd with G-1-10 and L-2-3 for Pat. # 45A (B3)  
 32 " " " 1-8 " " " 2-2 for Pat. # 45B (B4)

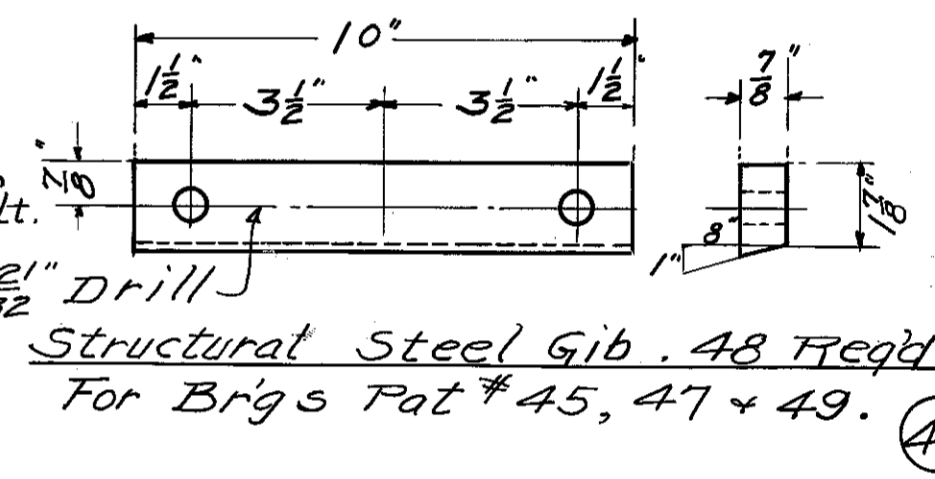
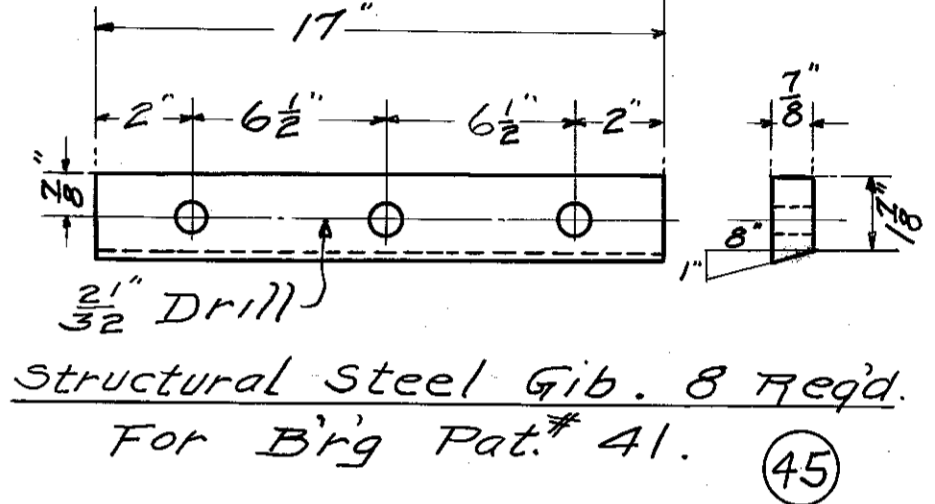
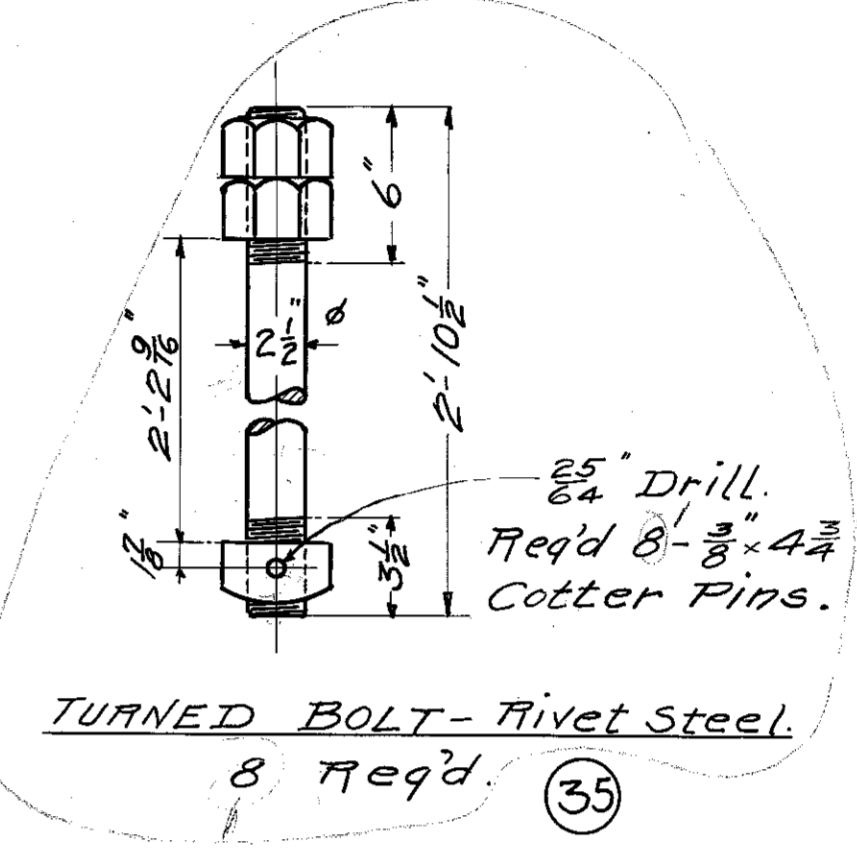


**Sheet Brass Liners.**  
 For Brigs Pat. # 45A, 45B + 47.  
 1 1/2 x 1/4 x 1-0 (64)  
 1 1/2 x 1/4 x 1-0 (32)  
 1 1/2 x 1/4 x 1-0 (32)  
 1 1/2 x 1/4 x 1-0 (64)

**Shims for bearings B5.**  
 8 Reqd  $\frac{1}{8}$  thick.  
 8 "  $\frac{1}{16}$  "



**OUTBOARD BEARING. Cast Steel.**  
 BASE - Pat. # WEB. AVE. BR. 47 - 4 Reqd. (B5)  
 CAP - Pat. # WEB. AVE. BR. 46 - 4 Reqd.  
 BUSHING - Phos. Bz. 4 Reqd.  
 Pat. # WEB. AVE. BR. 48.

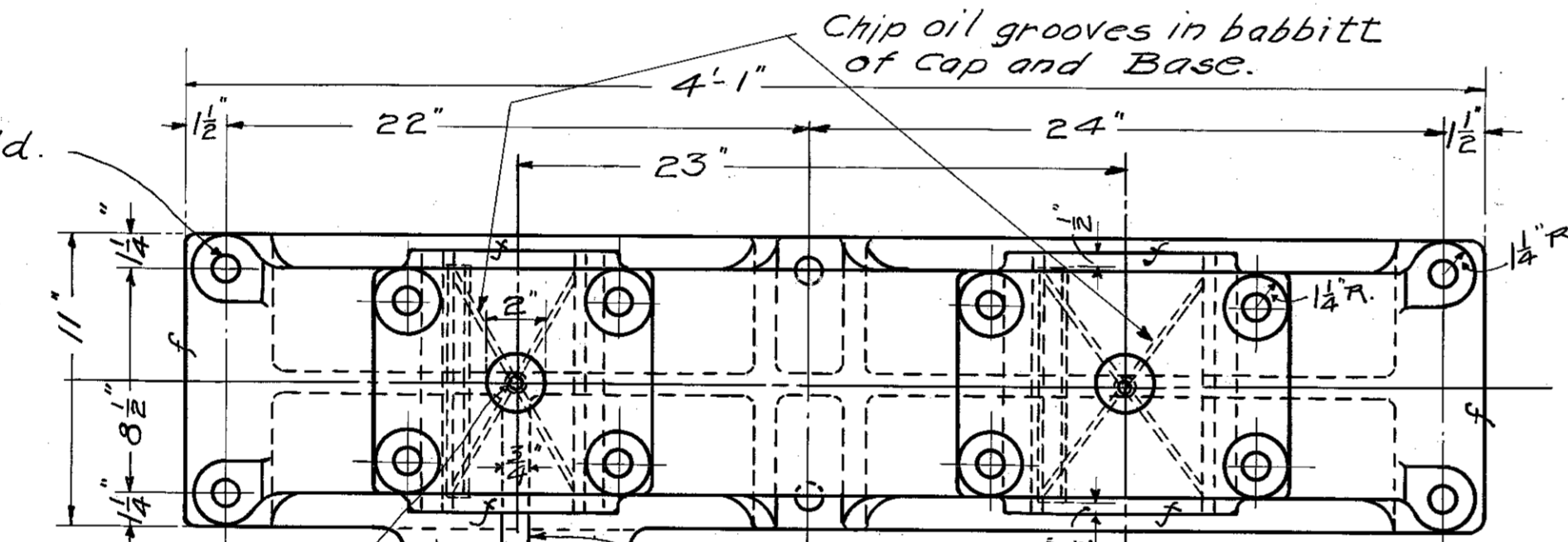


**SHAFT BEARINGS.**

All journal blocks shall be of cast steel, annealed, lined with phosphor bronze or babbitt, as indicated on the accompanying plans. Where phosphor bronze bushings are used, the journal block shall be bored so that its surface will be concentric with the shaft surface when in place, and the bushing shall be turned and bored to fit, to good bearing, the journal block and shaft respectively. Where babbitt is used it shall be thoroughly ballpeen hammered in place and then bored to fit, to good bearing on the shaft when in place.

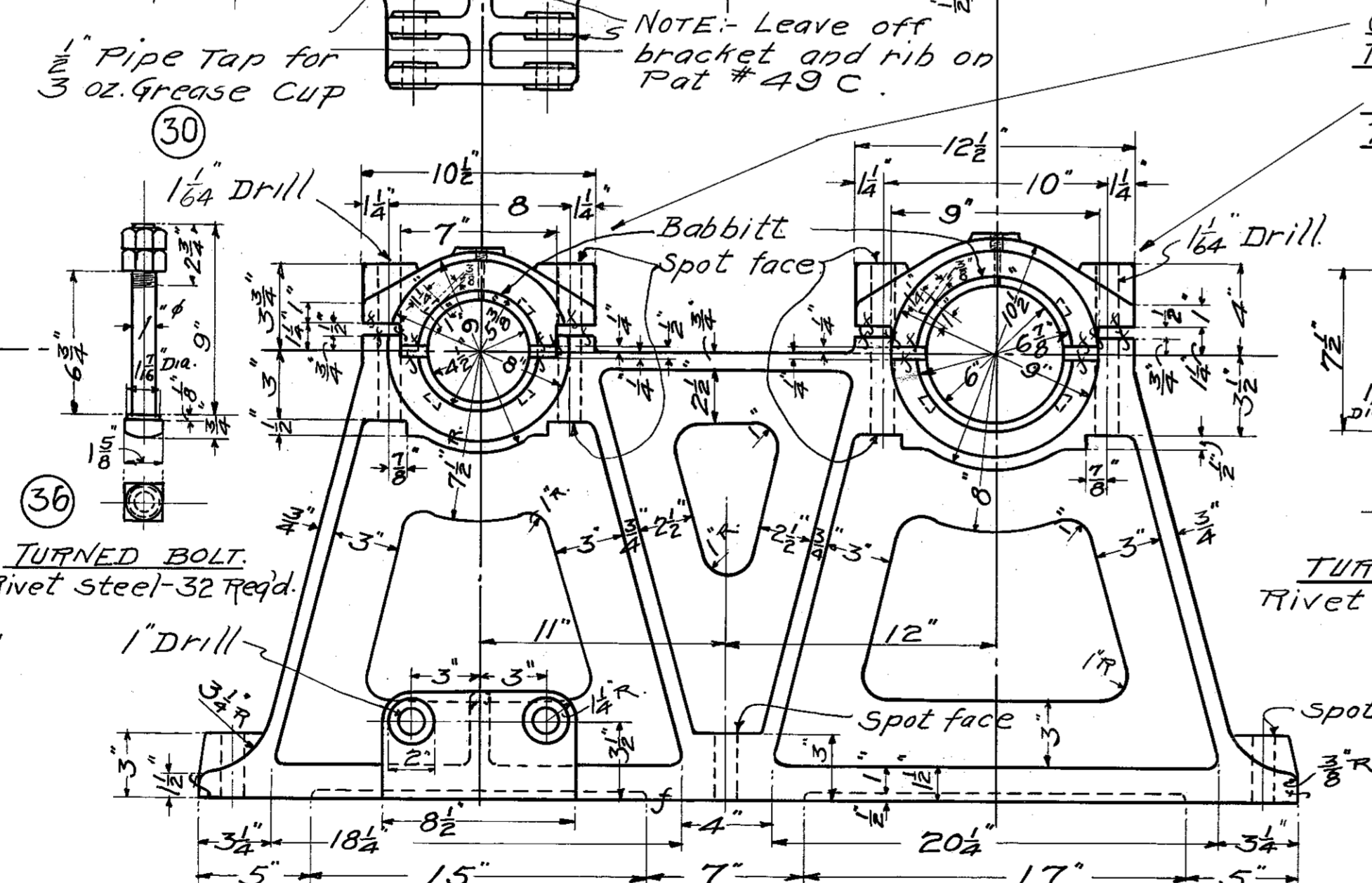
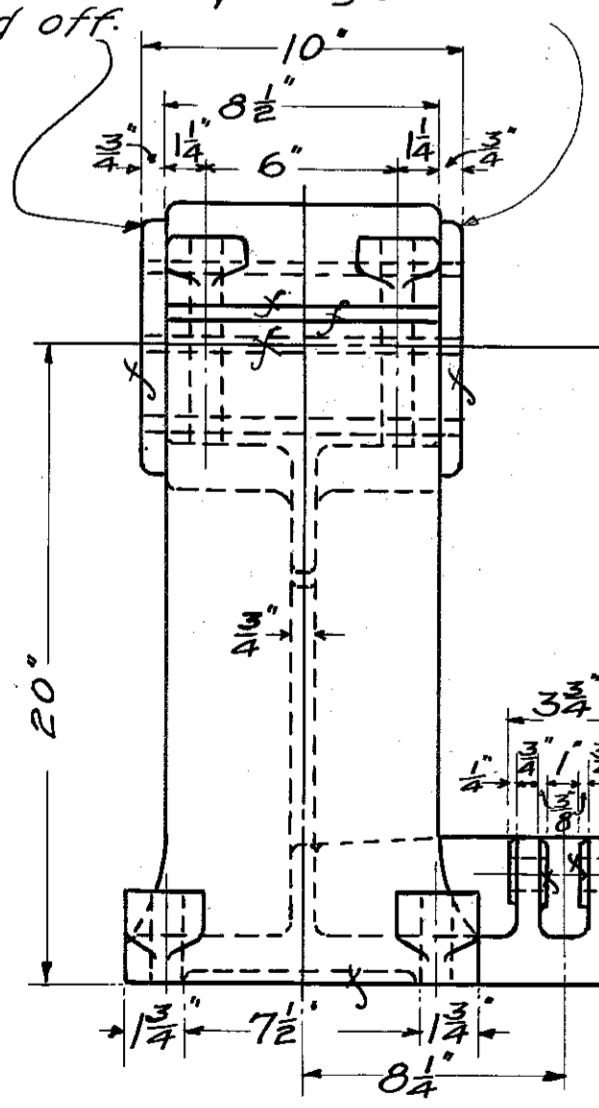
**PAINTING.**

Before shipment from the machine shop, all castings shall have all molding and casting irregularities chipped down smooth, have all molding sand and loose annealing scale removed, and have applied to them a suitable priming coat and then a coat of filler well brushed in and rubbed down, and be given one coat of carbonaceous paint, of the quality specified for structural steel, on unfinished surfaces. Unfinished parts of forgings shall be similarly treated. Finished surfaces of fixed joints shall have a coat of the same paint. All finished working surfaces shall be coated with white lead and tallow.



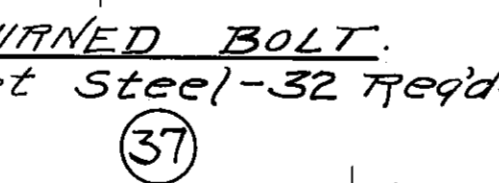
**Sheet Brass Liners.**  
 1 1/2 x 1/4 x 0-10 (16)  
 1 1/2 x 1/4 x 0-10 (16)  
 1 1/2 x 1/4 x 0-10 (16)  
 1 1/2 x 1/4 x 0-10 (32)

Exposed sharp edges to be rounded off.



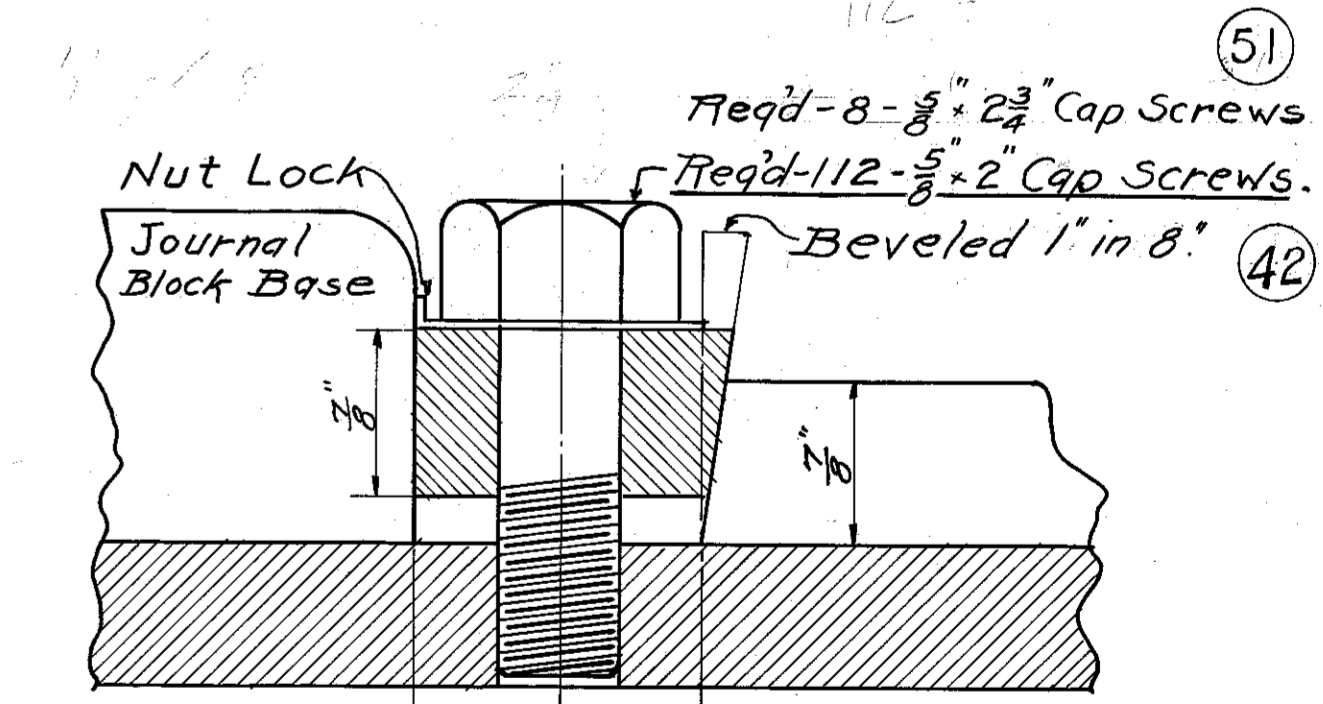
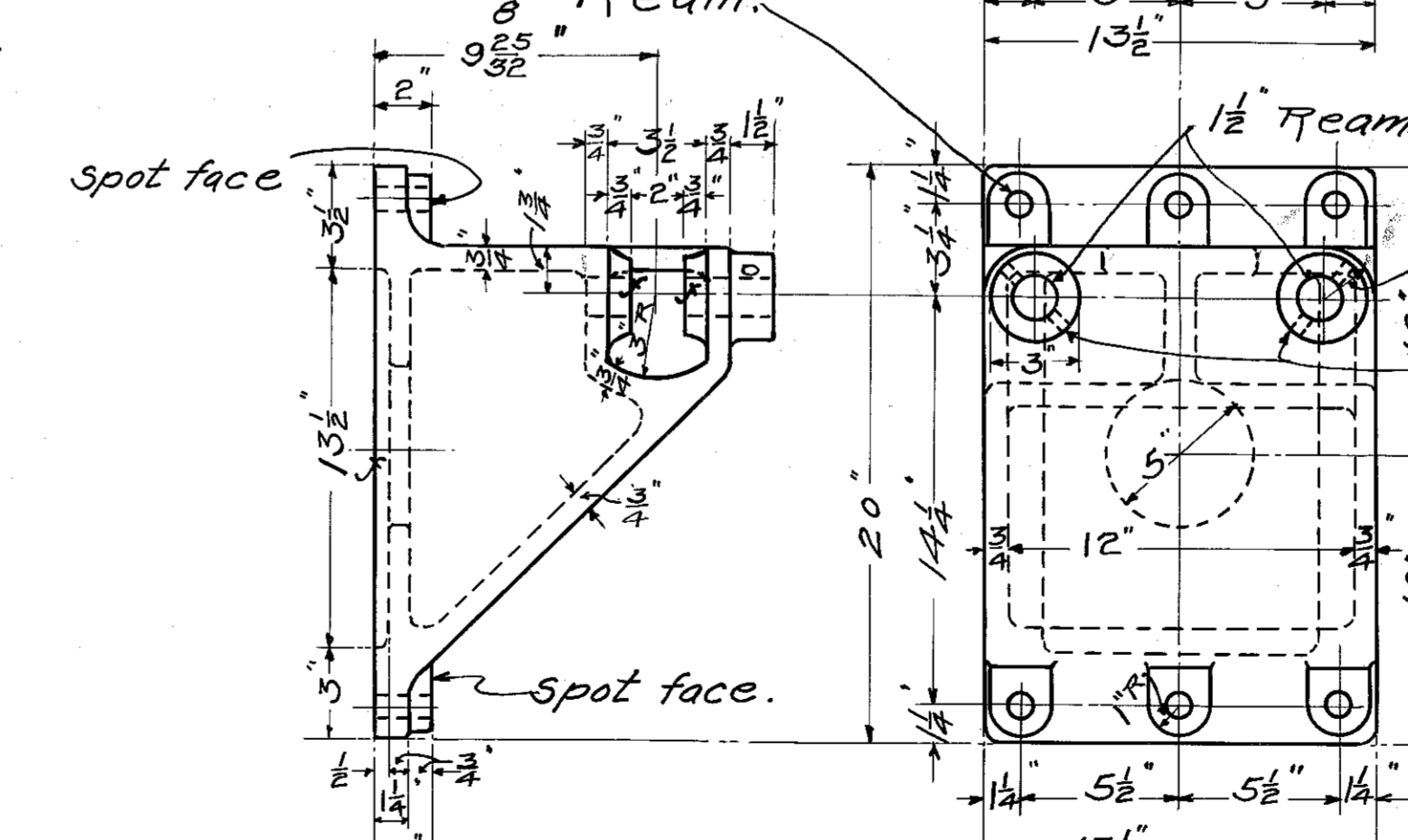
**CAP. Cast Steel.**  
 Pat. # WEB. AVE. BR. 50 - 8 Reqd.  
**CAP. Cast Steel.**  
 Pat. # WEB. AVE. BR. 51 - 8 Reqd.

**Sheet Brass Liners.**  
 1 1/2 x 1/4 x 0-10 (16)  
 1 1/2 x 1/4 x 0-10 (16)  
 1 1/2 x 1/4 x 0-10 (16)  
 1 1/2 x 1/4 x 0-10 (32)



**TURNED BOLT. Rivet steel.**  
 24 Reqd.

40 Reqd 16  $\frac{1}{2}$  x  $\frac{1}{4}$  Mach. Bolts with Lock Nuts.  
 41 Reqd 8  $\frac{3}{4}$  x  $\frac{1}{2}$  Mach. Bolts with Lock Nuts.



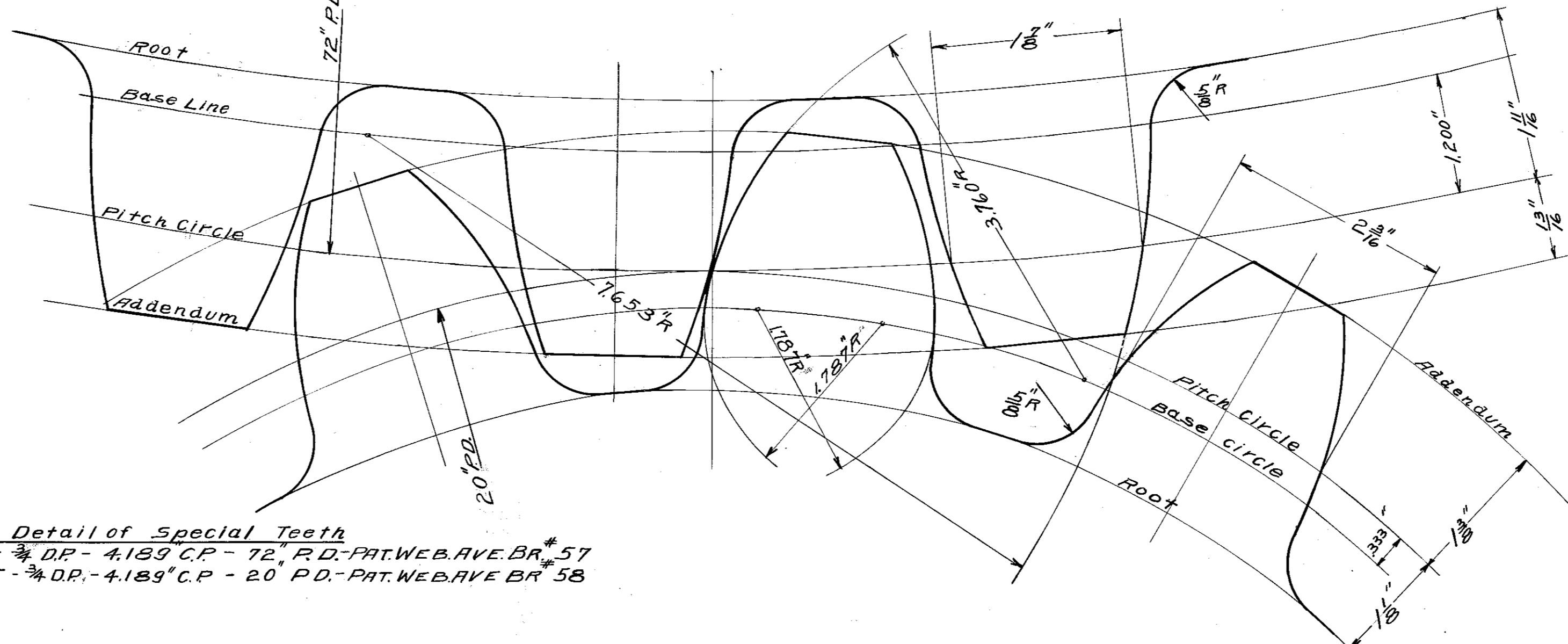
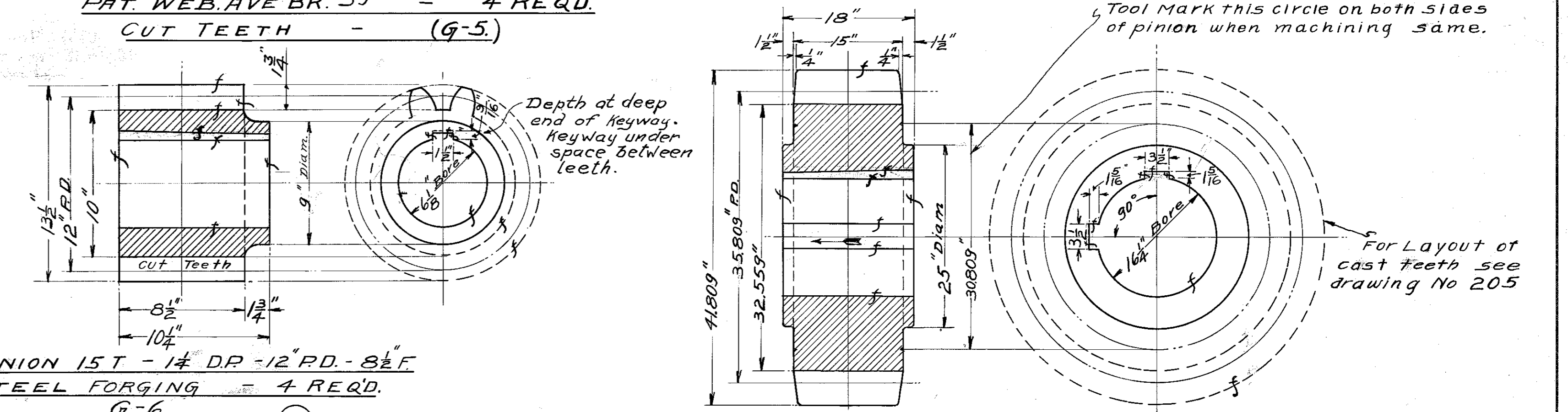
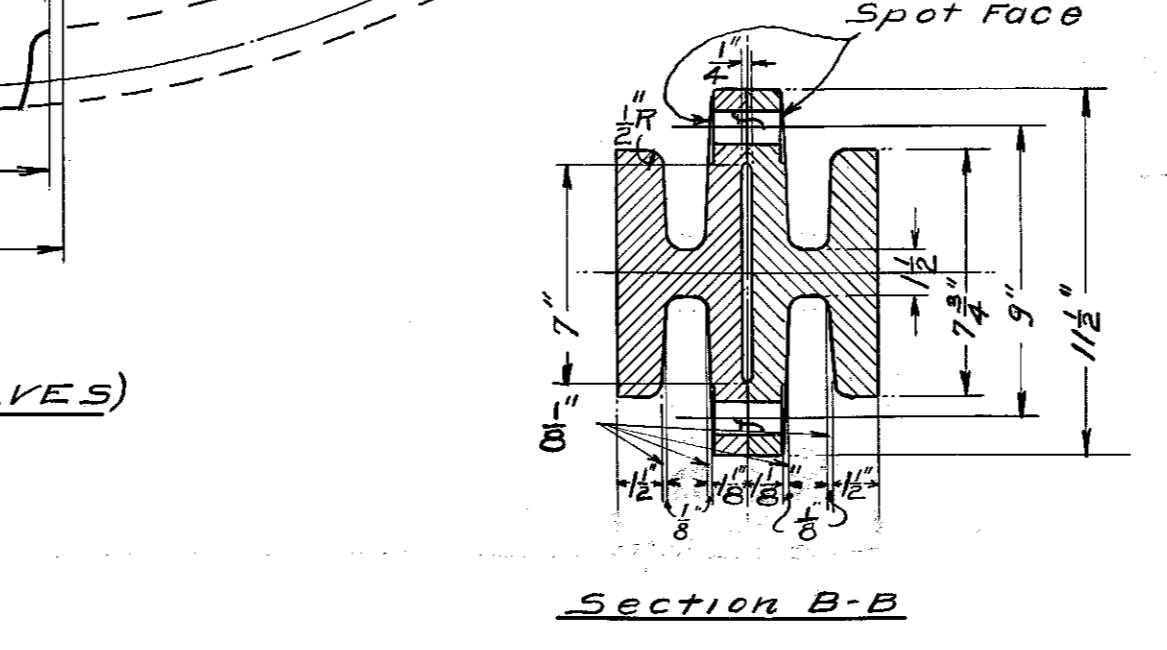
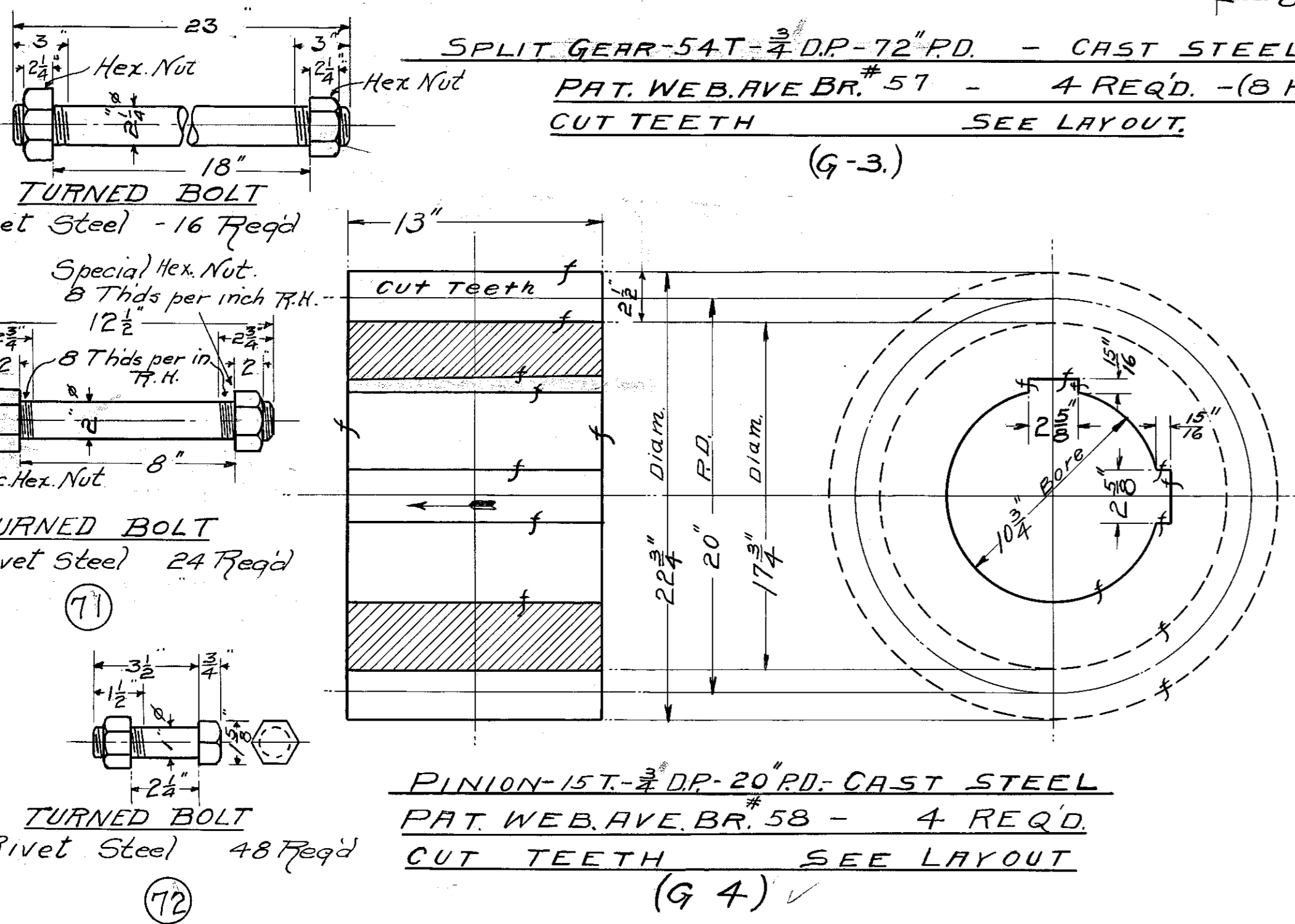
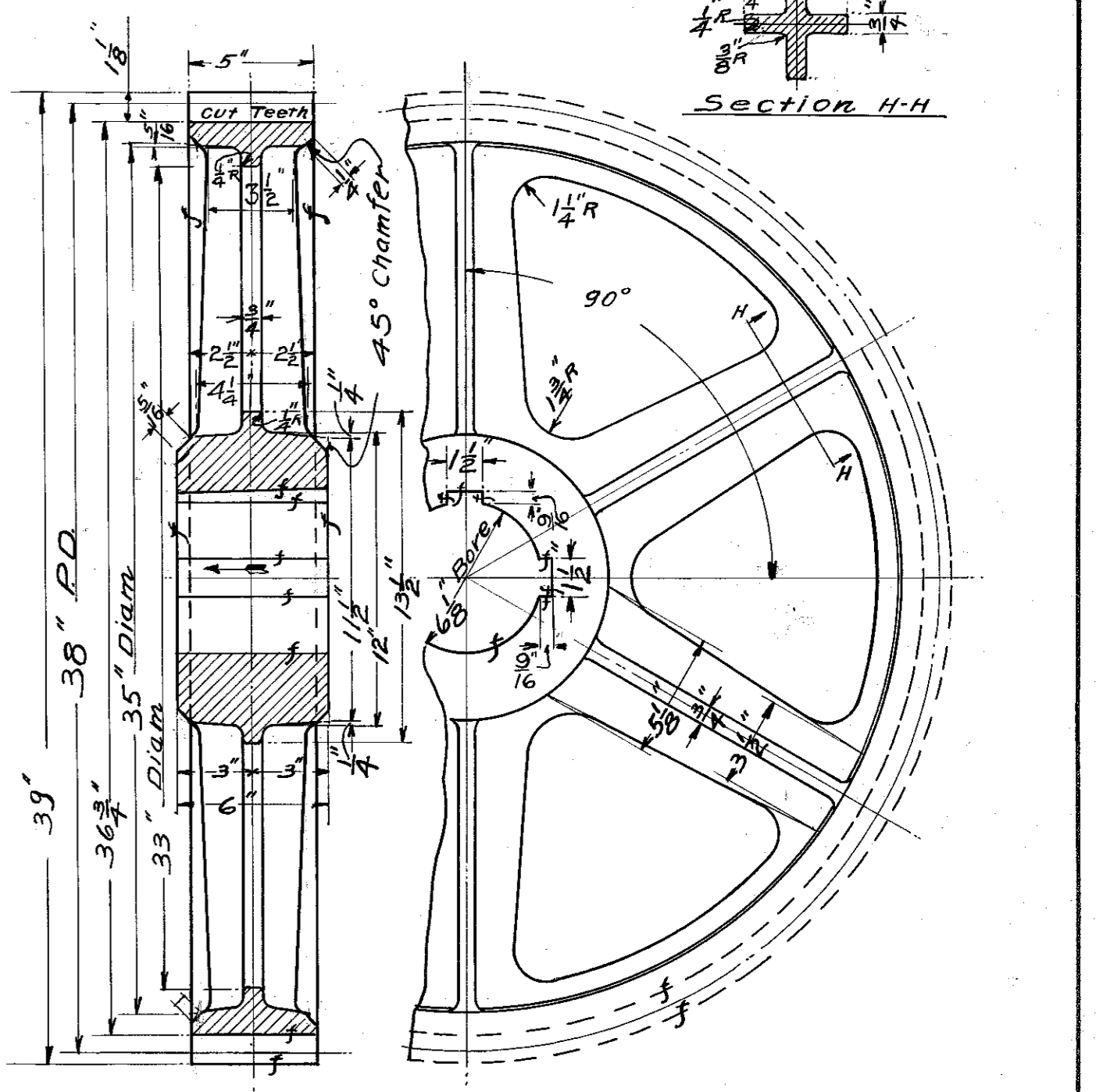
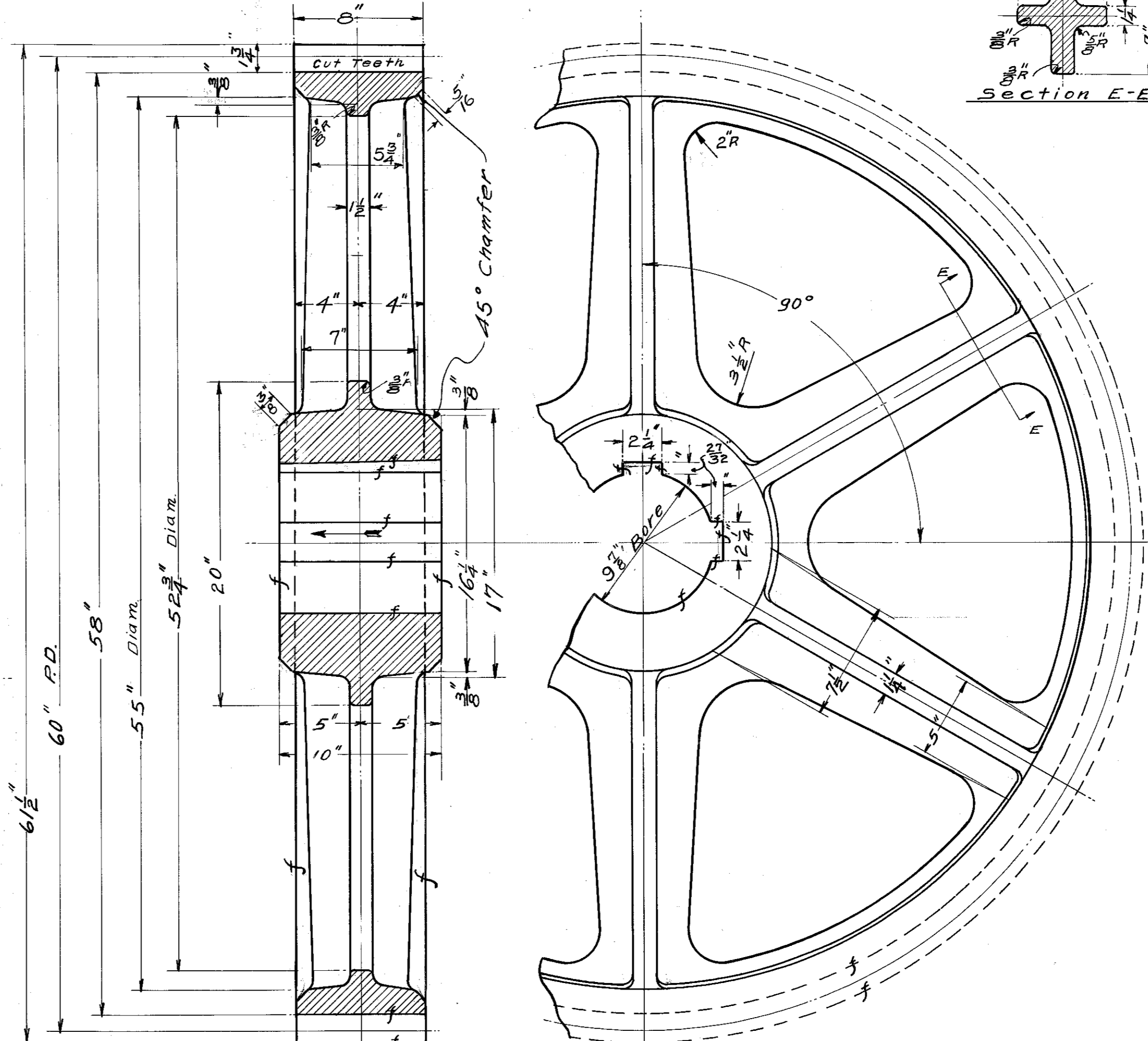
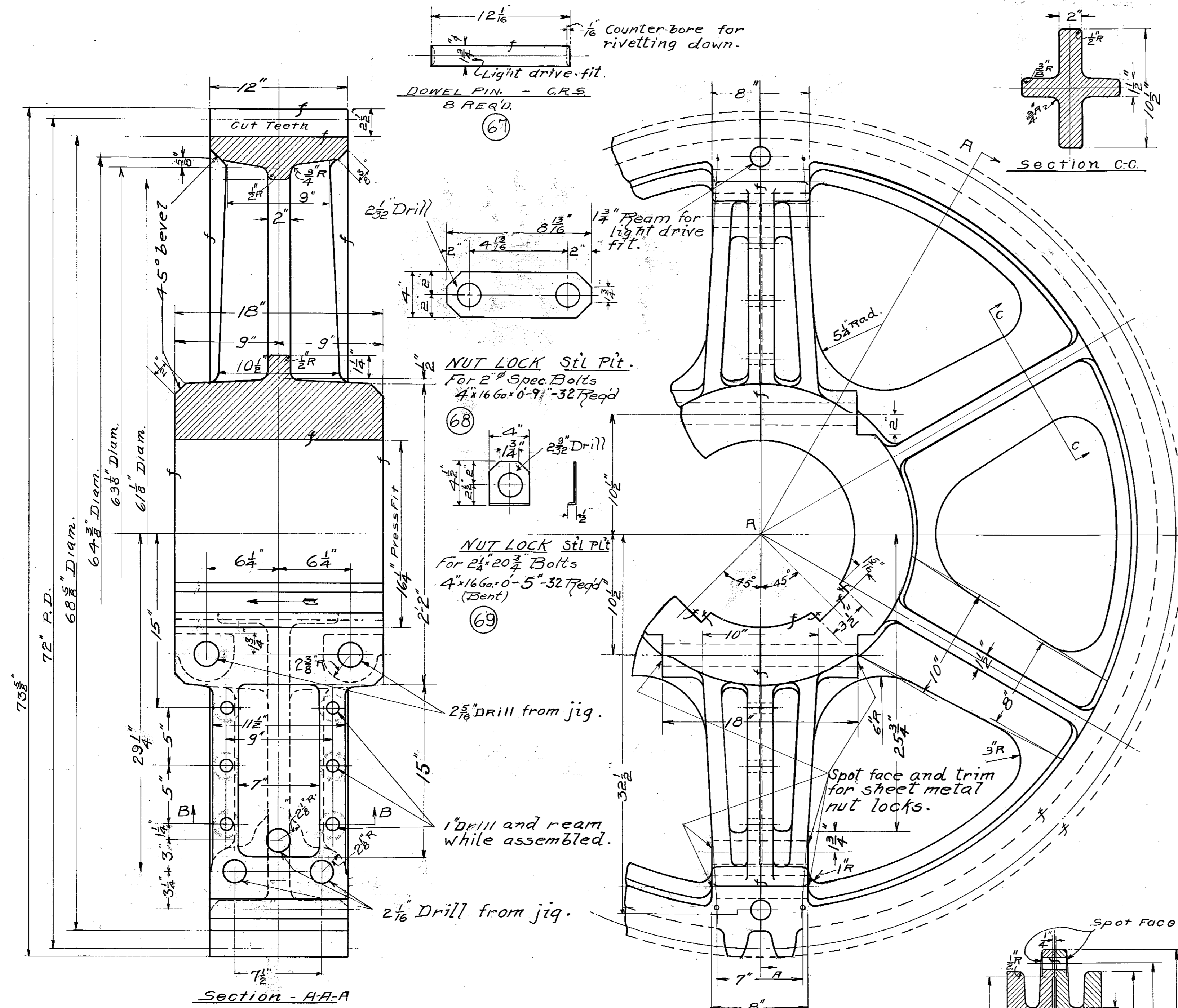
**JOURNAL BLOCK GIBS.**  
 NOTE - All shear plates to have edges planed as shown in sketch.

**BRAKE BRACKET Cast Steel.**  
 Pat. # WEB. AVE. BR. 52. 4 Reqd.  
 B9.

**NOTE -**  
 See Dwg No. 201 for general notes concerning patterns, turned bolts, ect.

Approved *[Signature]*  
 Approved *[Signature]*  
 Approved *[Signature]*

THE KETLER-ELLIOTT ERECTION CO.  
**WEBSTER AVE. BRIDGE**  
 FOR THE  
**CITY OF CHICAGO**  
 Dept. of Public Works :: Bureau of Engineering :: Division of Bridges and Harbor  
**MODERN STEEL STRUCTURAL COMPANY**  
**DETAIL OF BEARINGS.**  
 SEE MAT. BILLS 204-205 + 206 SCALE 1/2" = 1'-0"  
 MADE BY L.M.K. TRACED BY L.M.K. CH'D BY B.E. 1/21 1914  
**CONTRACT No. 2201A SHEET No. 203**



**GEARS.**  
See drawing 201 for pattern construction. All gears shall be of cast or forged steel. All gear teeth, except those of the racks and main pinions, shall be accurately cut to Brown & Sharpe standard involute pattern, except where shown otherwise on the accompanying plans. The pitch lines shall be plainly marked on both sides of the gears. The gears shall be bored true and have a light driving fit on the shafts, to which they shall be securely keyed. Sub contractor machining gears must bore all gears and pinions to press fit on shafts. Depths of keyways are for deep ends. See drawing 202 for instructions regarding keys and key seating, and drawing 203 for castings and painting.

Approved: [Signature]  
Approved: [Signature]  
Approved: [Signature]  
Approved: [Signature]

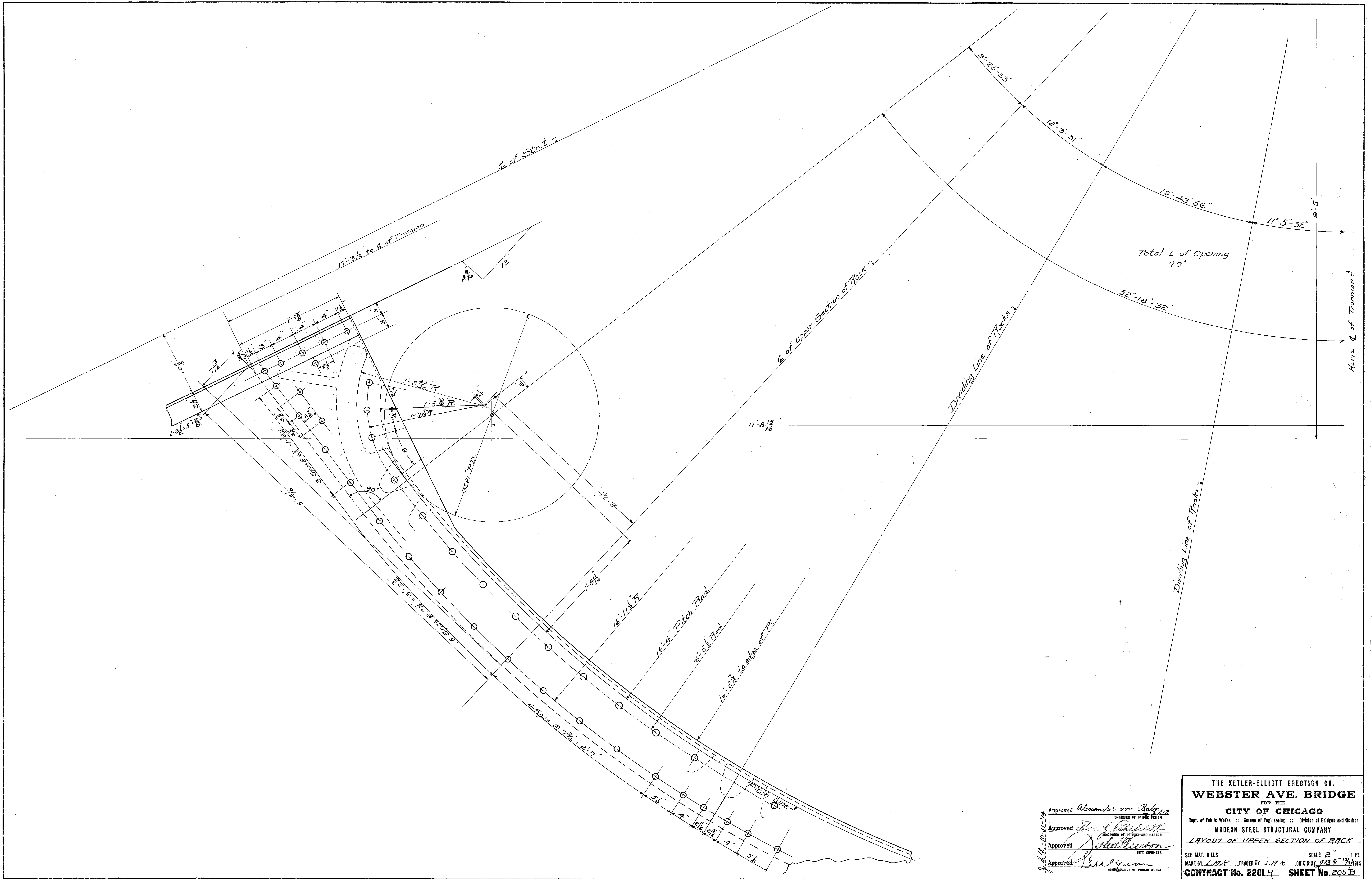
THE KETLER-ELLIOTT ERECTION CO.  
**WEBSTER AVE. BRIDGE**  
FOR THE  
**CITY OF CHICAGO**  
Dept. of Public Works :: Bureau of Engineering :: Division of Bridges and Harbor  
**MODERN STEEL STRUCTURAL COMPANY**  
DETAIL OF GEARING.

SEE MAT. BILLS 207 SCALE 2 1/2" = 1 FT.  
MADE BY G.W.F. TRACED BY G.W.F. CHK'D BY G.W.F. 2/27/14  
**CONTRACT No. 2201A SHEET No. 204**





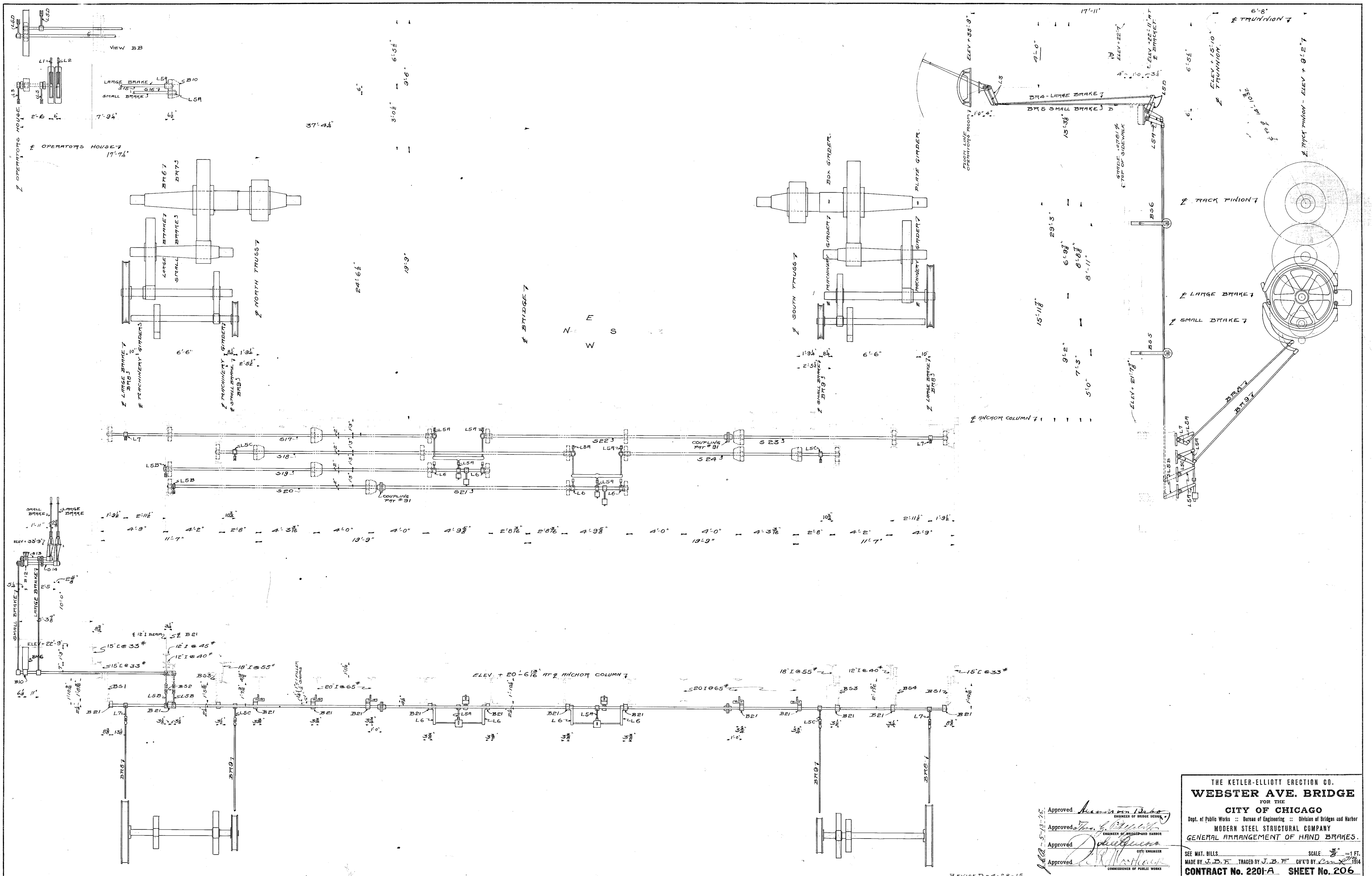




Approved *Alexander von Balthasar*  
 ENGINEER OF BRIDGE DESIGN  
 Approved *James J. Sullivan*  
 CHIEF ENGINEER  
 Approved *John J. Sullivan*  
 CITY ENGINEER  
 Approved *Henry J. Sullivan*  
 COMMISSIONER OF PUBLIC WORKS

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**WEBSTER AVE. BRIDGE**  
 FOR THE  
**CITY OF CHICAGO**  
 Dept. of Public Works :: Bureau of Engineering :: Division of Bridges and Harbor  
**MODERN STEEL STRUCTURAL COMPANY**  
 LAYOUT OF UPPER SECTION OF ROCK  
 SEE MAT. BILLS. SCALE 2" = 1 FT.  
 MADE BY L.M.K. TRACED BY L.M.K. CHK'D BY R.B.F. 12/1914  
**CONTRACT No. 2201 R SHEET No. 205 B**

DRAWING No. 3900  
 FILE No. 11-6C-28



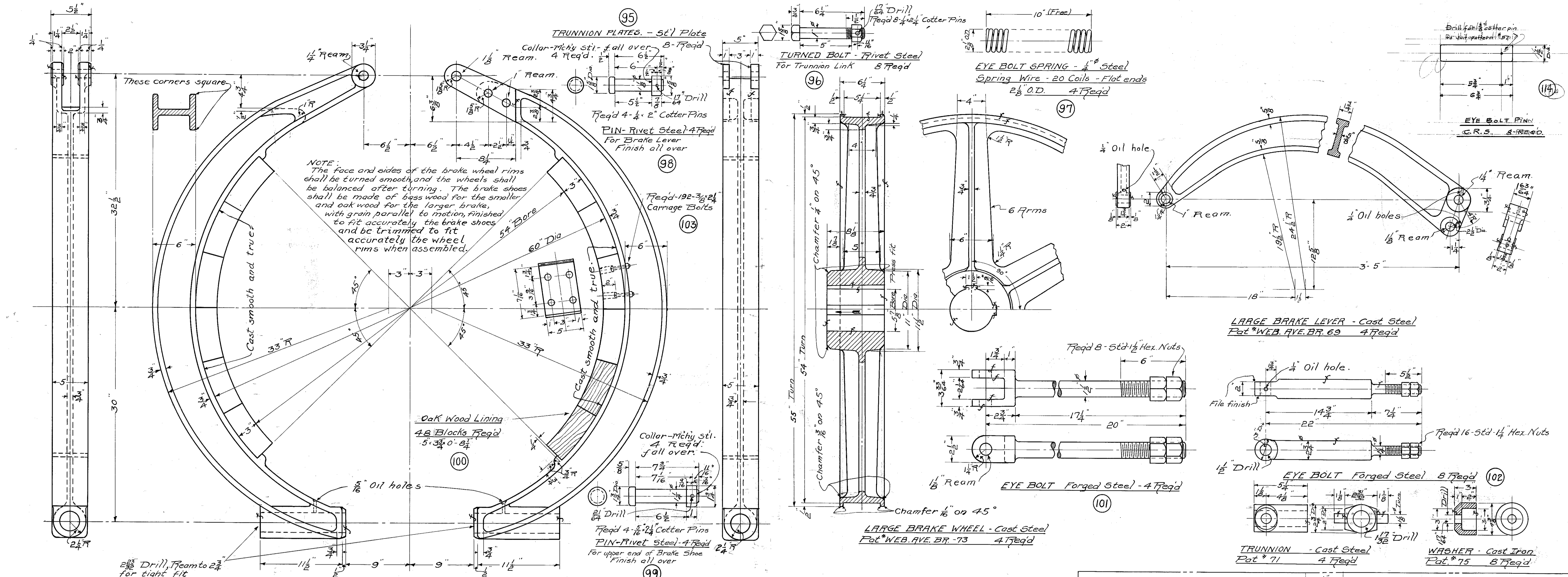
Approved *[Signature]*  
 Approved *[Signature]*  
 Approved *[Signature]*  
 Approved *[Signature]*

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**WEBSTER AVE. BRIDGE**  
 FOR THE  
**CITY OF CHICAGO**  
 Dept. of Public Works :: Bureau of Engineering :: Division of Bridges and Harbor  
**MODERN STEEL STRUCTURAL COMPANY**  
 GENERAL ARRANGEMENT OF HAND BRAKES.  
 SEE MAT. BILLS. SCALE  $\frac{1}{8}'' = 1'$   
 MADE BY J.B.F. TRACED BY J.B.F. CHK'D BY *[Signature]*  
**CONTRACT No. 2201-A SHEET No. 206**

1660570224

DRAWING No 3901  
 FILE No. 11-66-29

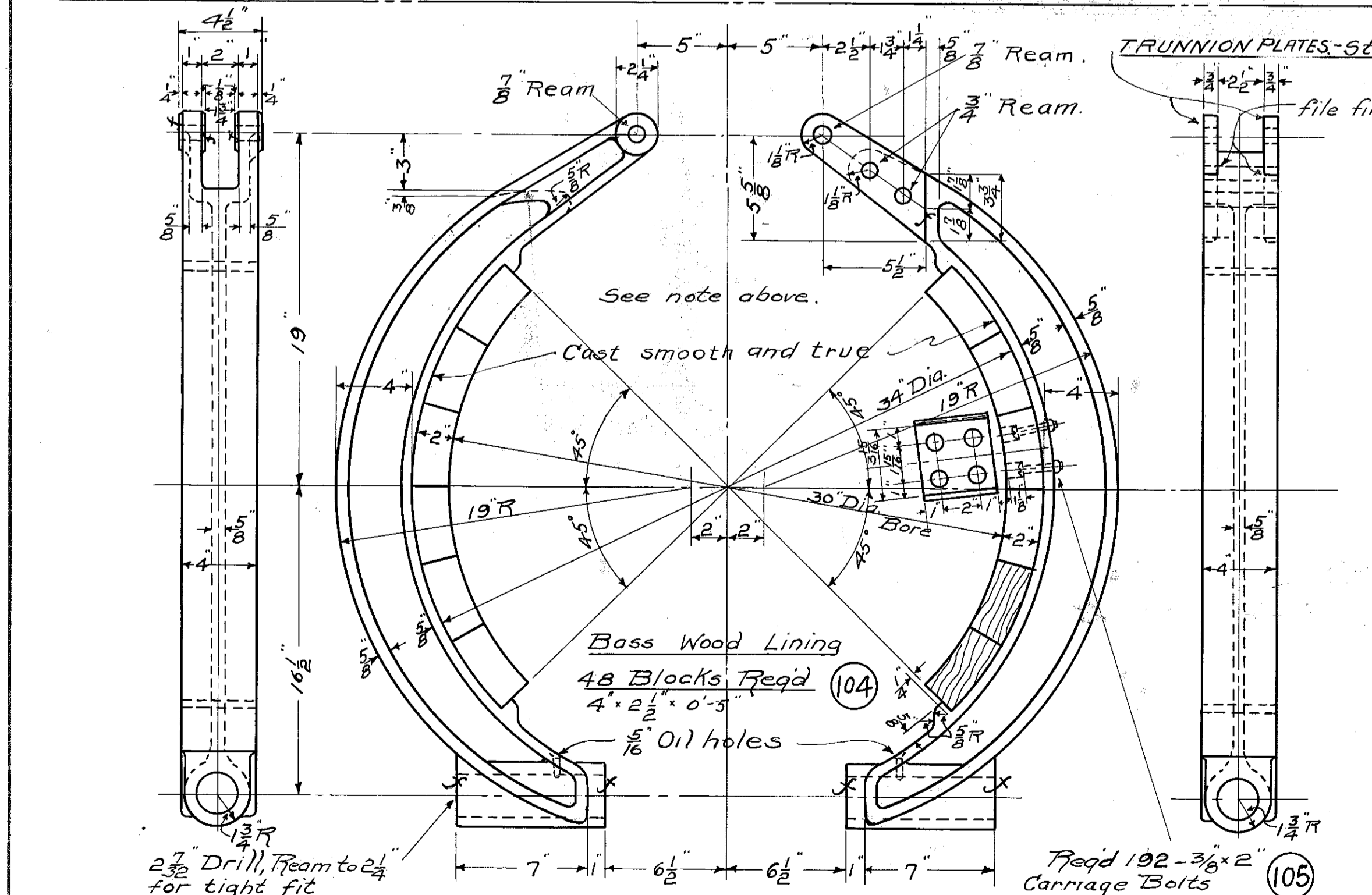
REVISED - 4-28-15



**FIRST LARGE BRAKE SHOE - Cast Steel**  
Pat. WEB. AVE. BR. 64 4-Req'd

**SECOND LARGE BRAKE SHOE - Cast Steel**  
Pat. WEB. AVE. BR. 65 4-Req'd

**DETAILS OF LARGE BRAKE**  
4 REQ'D - COMPLETE



**FIRST SMALL BRAKE SHOE - Cast Steel**  
Pat. WEB. AVE. BR. 66 4-Req'd

**SECOND SMALL BRAKE SHOE - Cast Steel**  
Pat. WEB. AVE. BR. 67 4-Req'd

**DETAILS OF SMALL BRAKE**  
4 REQ'D - COMPLETE

**WASHER - Cast Iron**  
Pat. 74 8-Req'd

See Dwg # 201 for general notes concerning patterns turned bolts etc., # 203 for castings, painting, ect. See Dwg # 217 for details of brake support t.

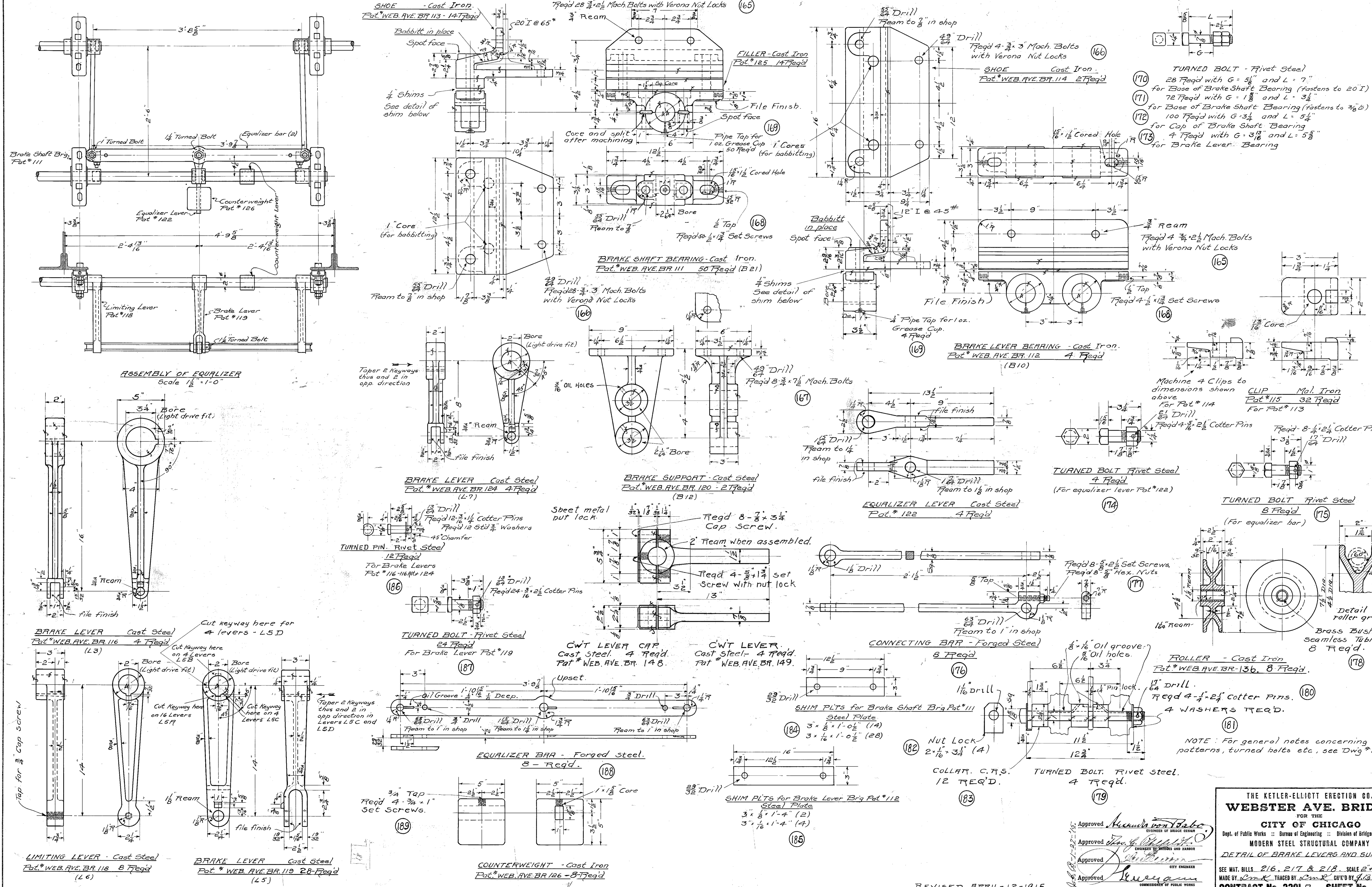
Approved \_\_\_\_\_  
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Approved \_\_\_\_\_

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FOR THE  
**CITY OF CHICAGO**  
Dept. of Public Works :: Bureau of Engineering :: Division of Bridges and Harbor  
**MODERN STEEL STRUCTURAL COMPANY**  
**DETAIL OF BRAKES**

SEE MAT. BILLS 208 & 209. SCALE 2"=3'-11"  
MADE BY ENR. TRAGED BY ENR. CH'Y'D BY 225 10/11/1914  
**CONTRACT NO. 22017 SHEET NO. 207**

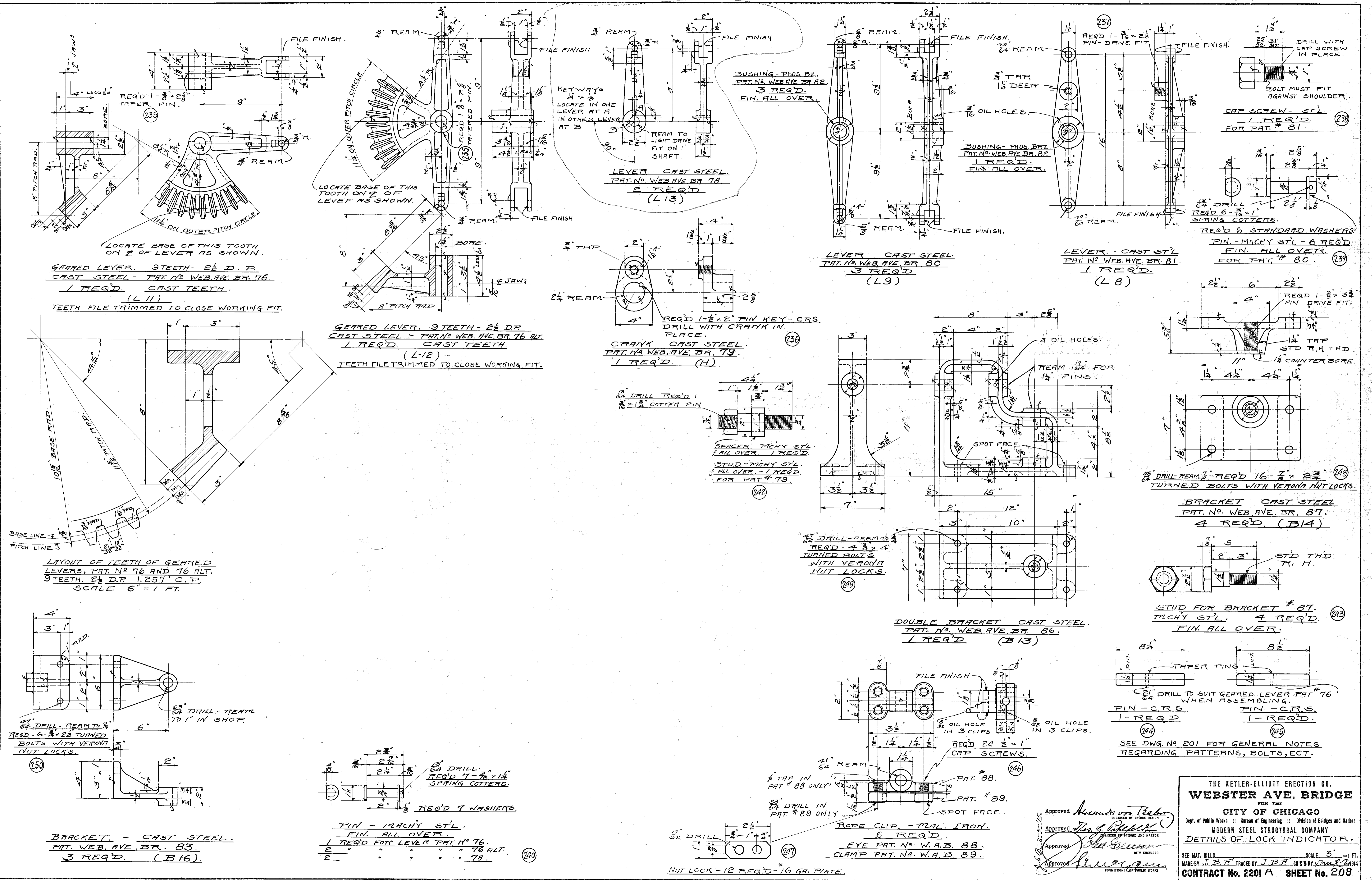
DRAWING NO 3902  
FILE NO. 11-6C-30

1660570225



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 FOR THE  
**CITY OF CHICAGO**  
 Dept. of Public Works :: Bureau of Engineering :: Division of Bridges and Harbor  
**MODERN STEEL STRUCTURAL COMPANY**  
 DETAIL OF BRAKE LEVERS AND SUPPORTS  
 SEE MAT. BILLS. 216, 217 & 218. SCALE 2" = 3' = 1 FT.  
 MADE BY CONK. TRADED BY CONK. SHIP'D BY J. B. & S. 1914  
**CONTRACT NO. 2201 A SHEET NO. 208**  
 DRAWING No. 3903  
 FILE No. 11-6C-31

Approved [Signature]  
 CHIEF ENGINEER  
 Approved [Signature]  
 CHIEF OF BRIDGE DESIGN  
 Approved [Signature]  
 CITY ENGINEER  
 Approved [Signature]  
 COMMISSIONER OF PUBLIC WORKS



GEARED LEVER. 9 TEETH - 2 1/2 D.P. CAST STEEL - PAT. NO. WEB. AVE. BR. 76. 1 REQ'D. CAST TEETH. (L 11) TEETH FILE TRIMMED TO CLOSE WORKING FIT.

GEARED LEVER. 9 TEETH - 2 1/2 D.P. CAST STEEL - PAT. NO. WEB. AVE. BR. 76 ALT. 1 REQ'D. CAST TEETH. (L 12) TEETH FILE TRIMMED TO CLOSE WORKING FIT.

LAYOUT OF TEETH OF GEARED LEVERS. PAT. NO. 76 AND 76 ALT. 9 TEETH. 2 1/2 D.P. 1.257" C.P. SCALE 6" = 1 FT.

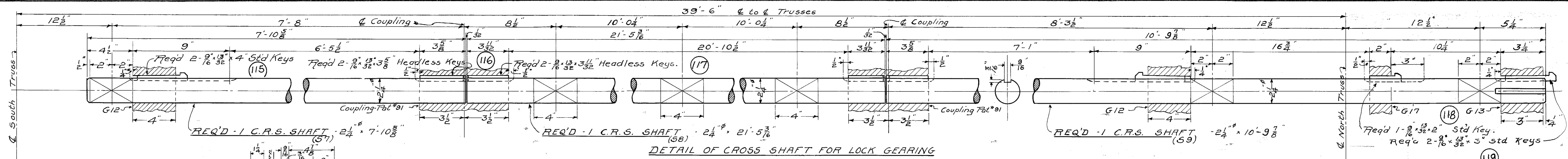
BRACKET - CAST STEEL. PAT. WEB. AVE. BR. 83. 3 REQ'D. (B 16)

PIN - MACHY STL. FIN. ALL OVER. 1 REQ'D FOR LEVER PAT. NO. 76. 1 REQ'D. " " " " 76 ALT. 2 " " " " 78.

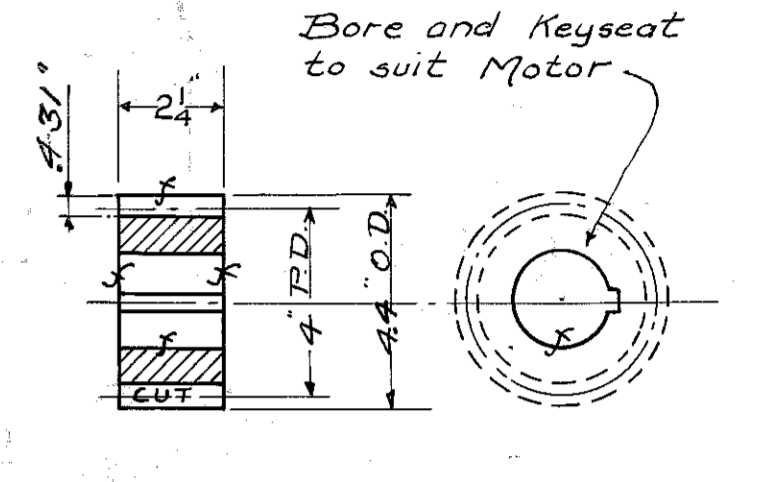
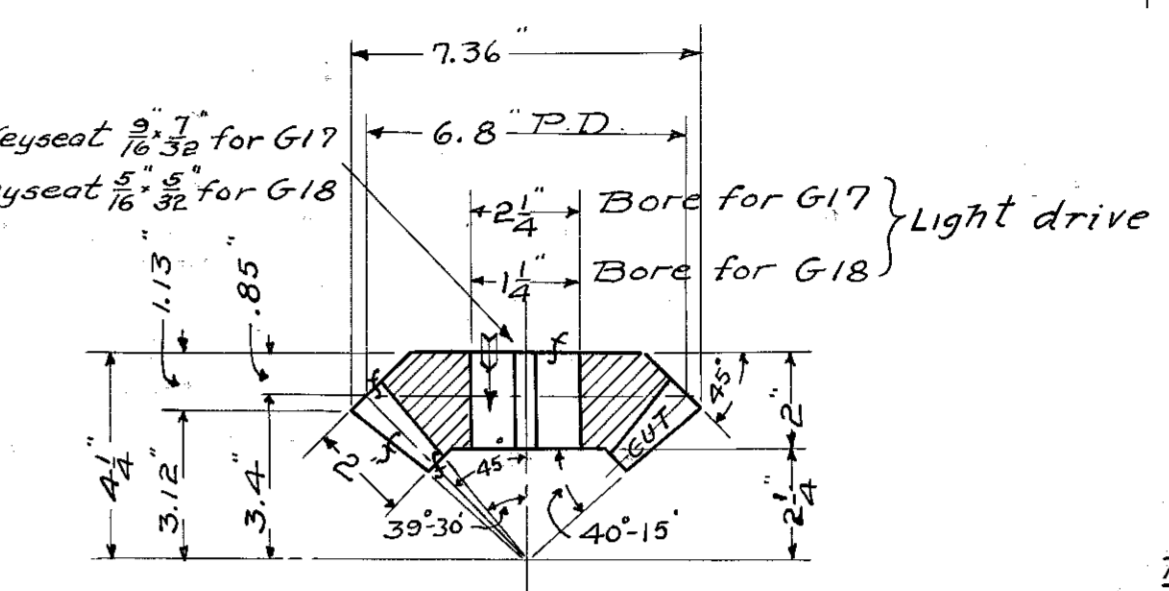
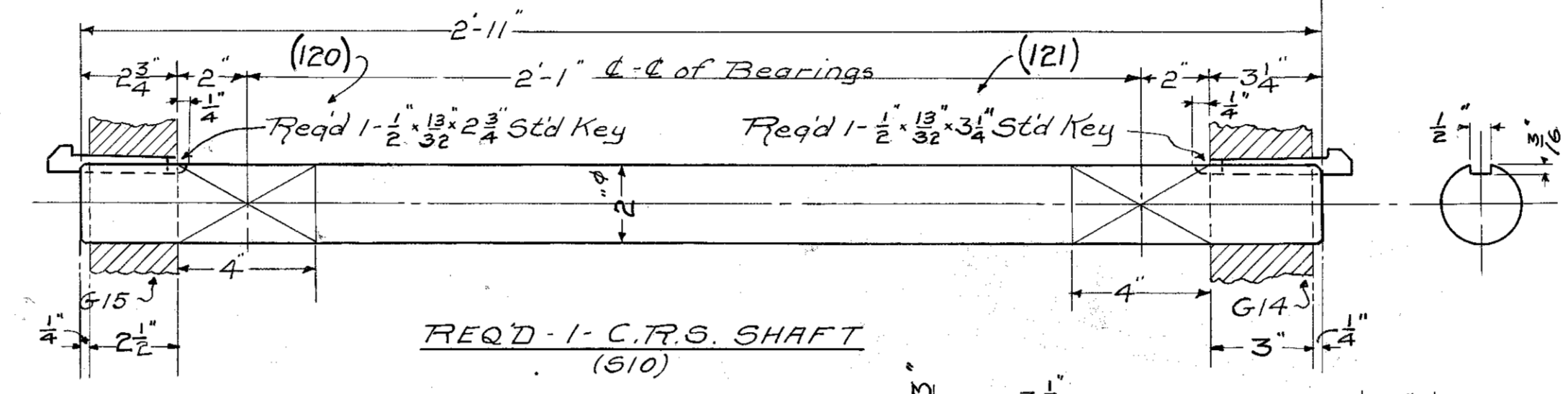
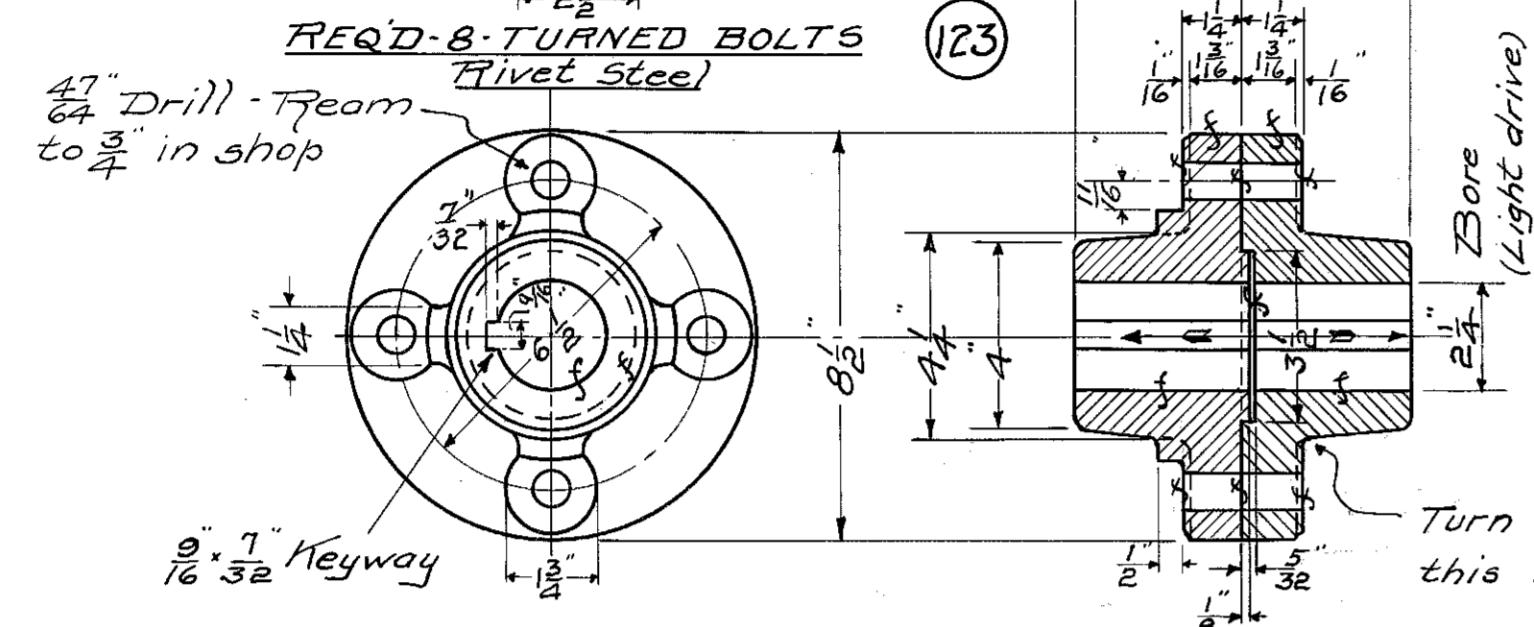
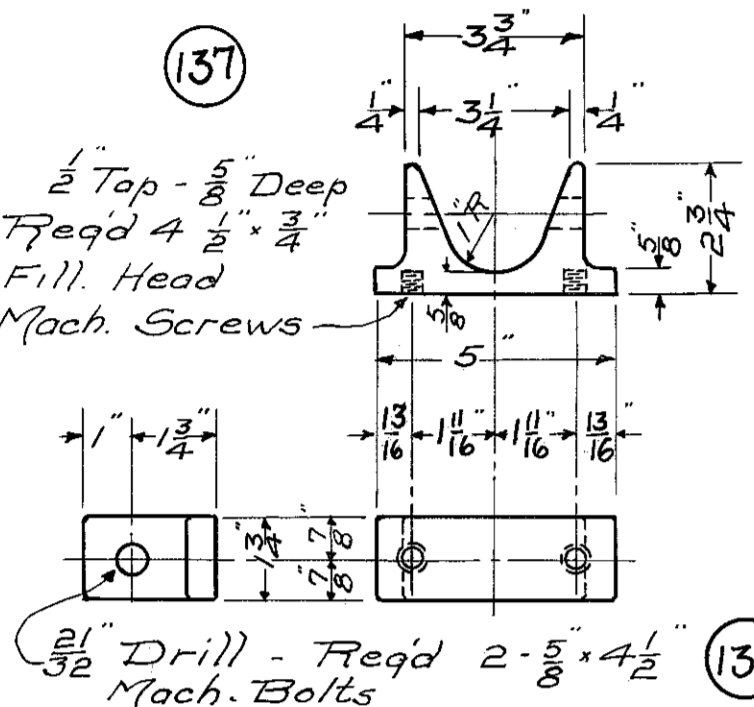
DOUBLE BRACKET CAST STEEL. PAT. NO. WEB. AVE. BR. 86. 1 REQ'D. (B 13)

STUD FOR BRACKET # 87. MCHY STL. 4 REQ'D. FIN. ALL OVER. (B 14)

THE KETLER-ELLIOTT ERECTION CO.  
**WEBSTER AVE. BRIDGE**  
 FOR THE  
**CITY OF CHICAGO**  
 Dept. of Public Works :: Bureau of Engineering :: Division of Bridges and Harbors  
**MODERN STEEL STRUCTURAL COMPANY**  
 DETAILS OF LOCK INDICATOR.  
 SEE MAT. BILLS. SCALE 3" = 1 FT.  
 MADE BY J.B.P. TRACED BY J.B.P. CH'K'D BY J.B.P. 3/1914  
**CONTRACT NO. 2201 A SHEET No. 209**  
 DRAWING No. 3904  
 FILE No. 11-60-32

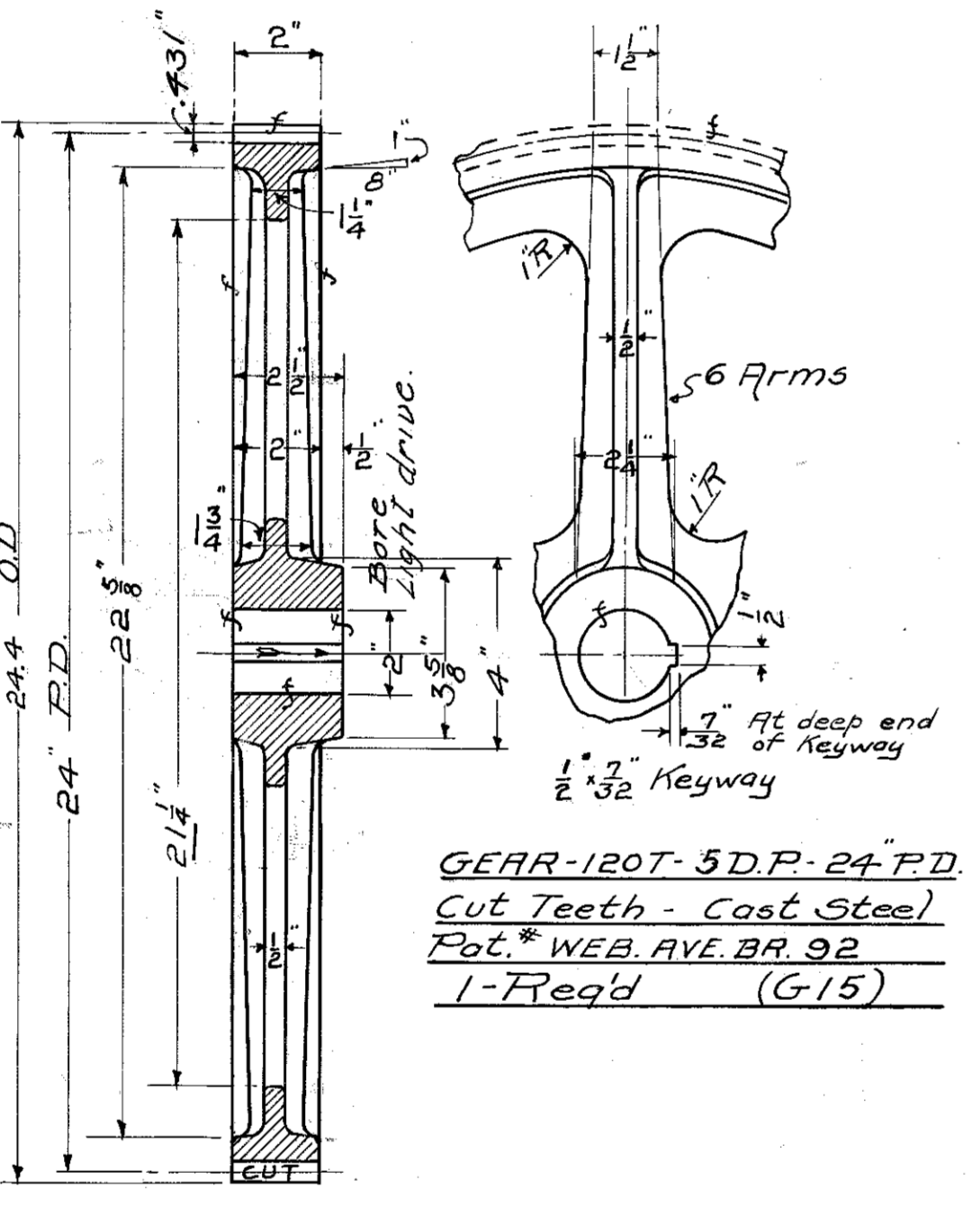
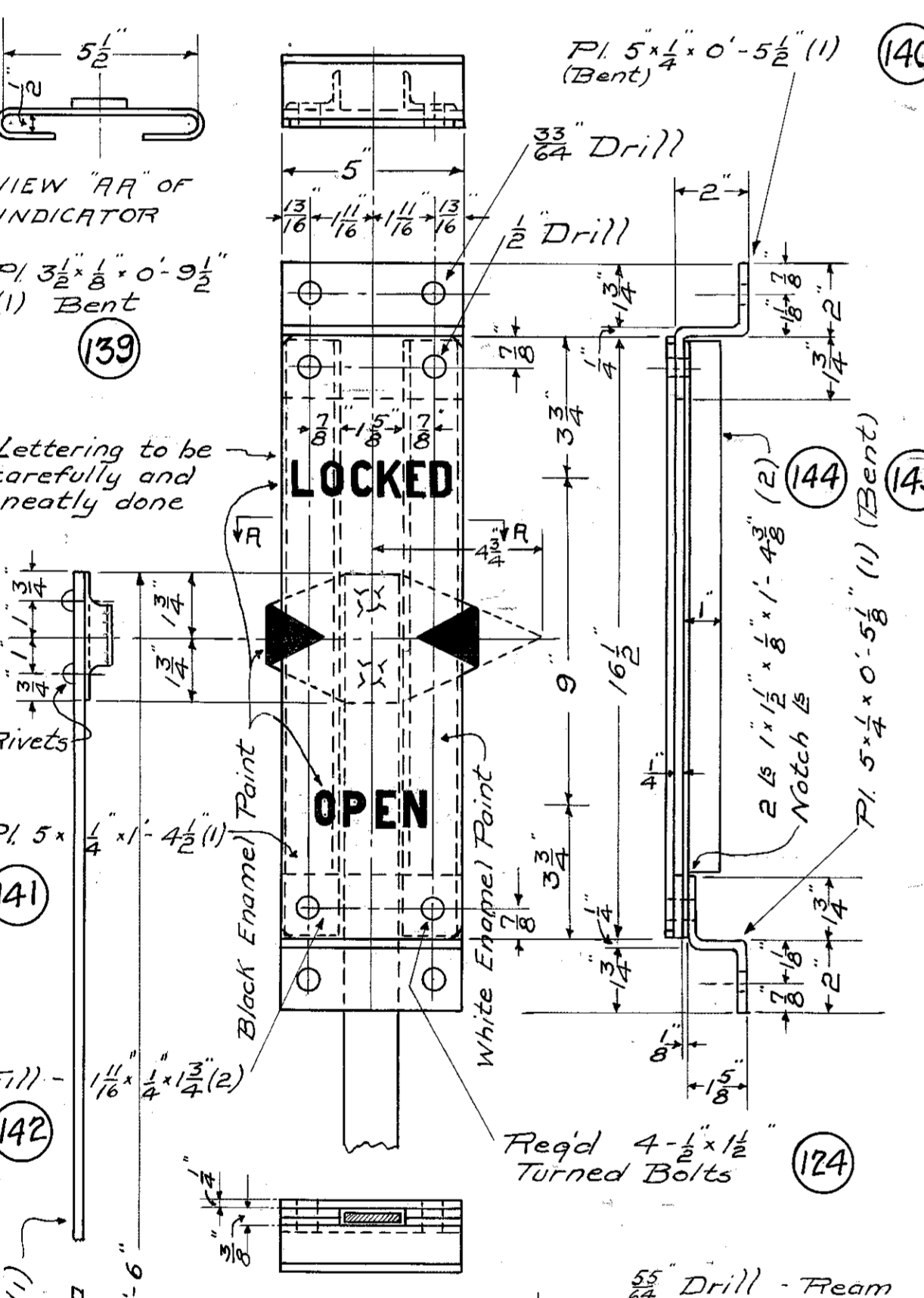
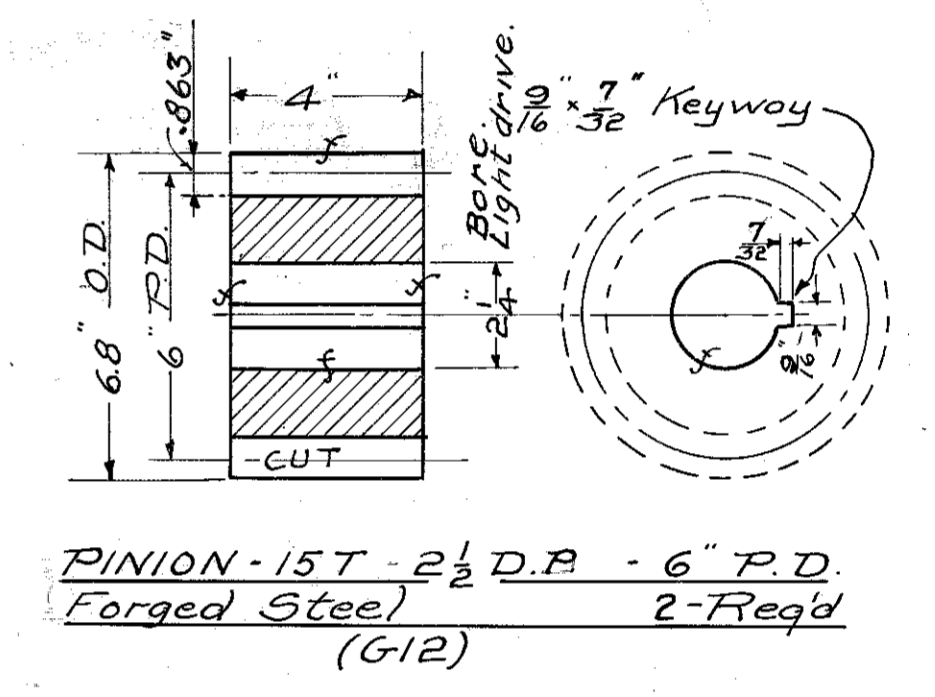
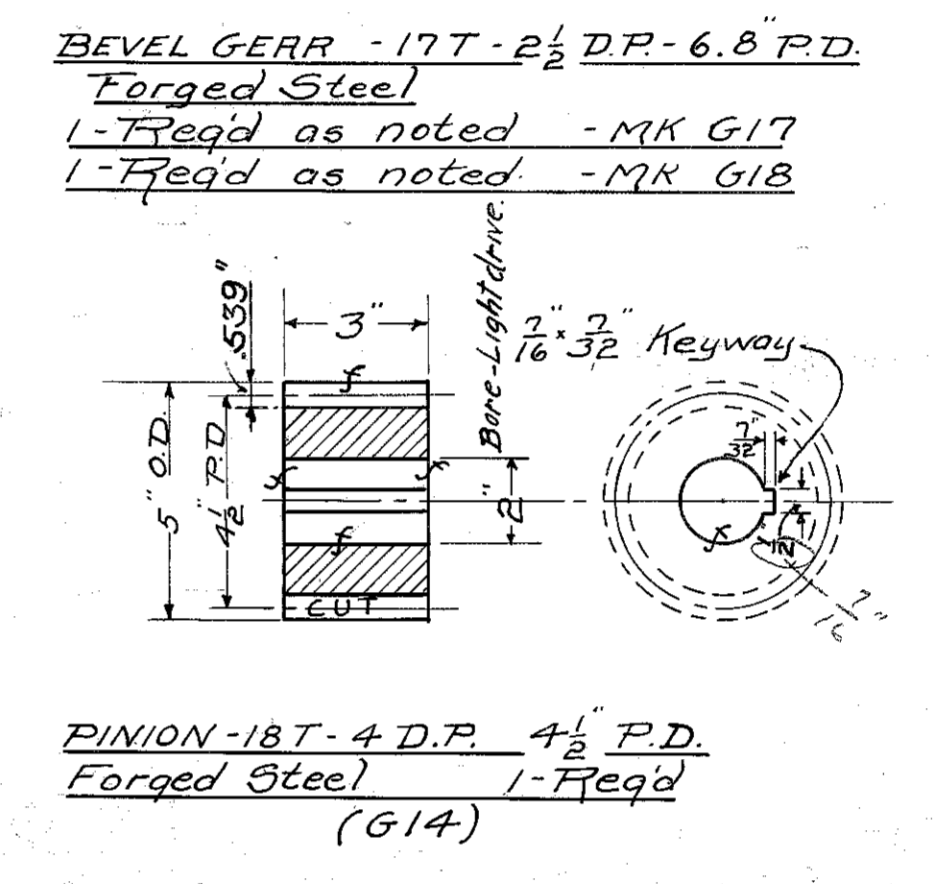
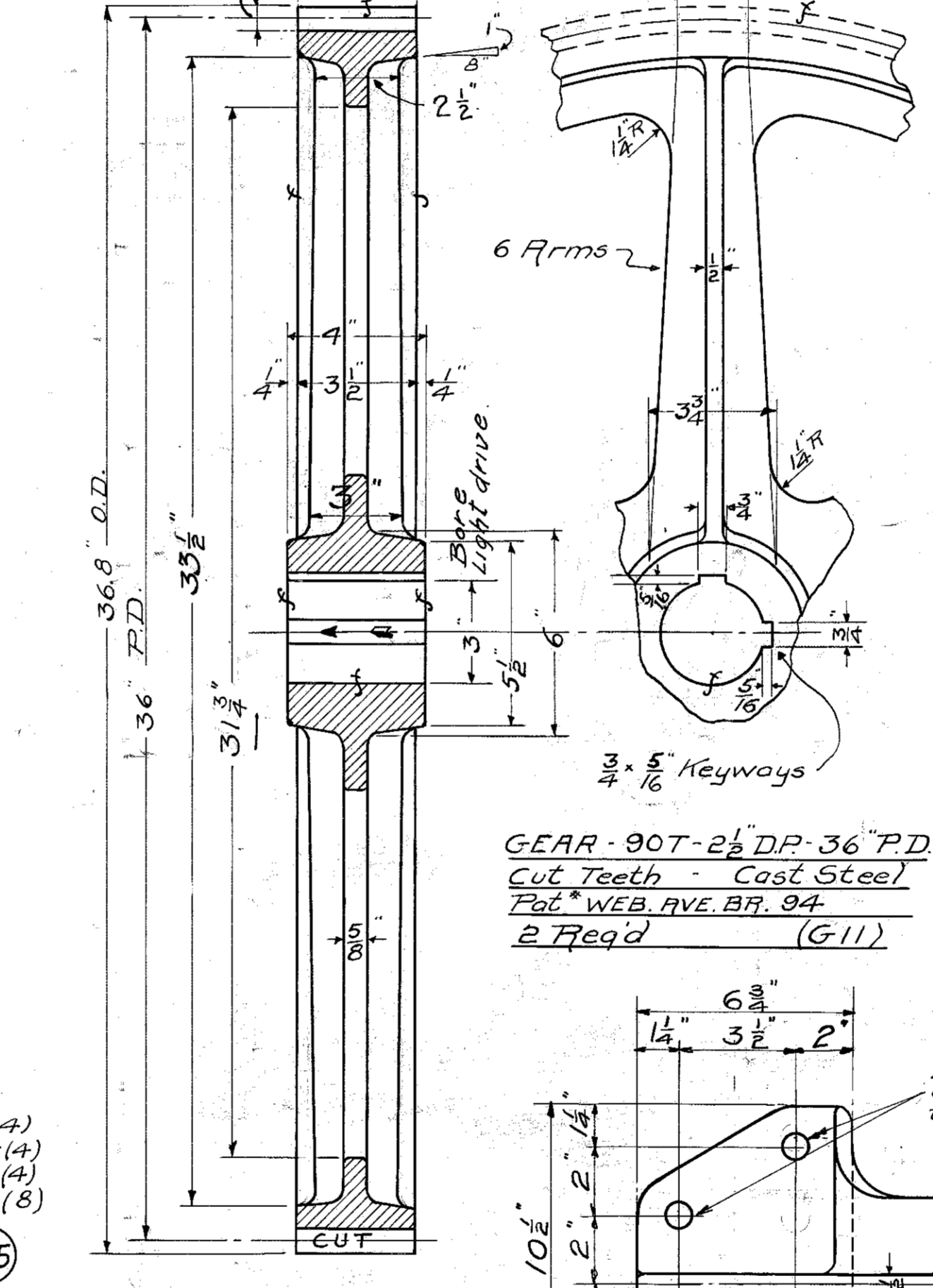
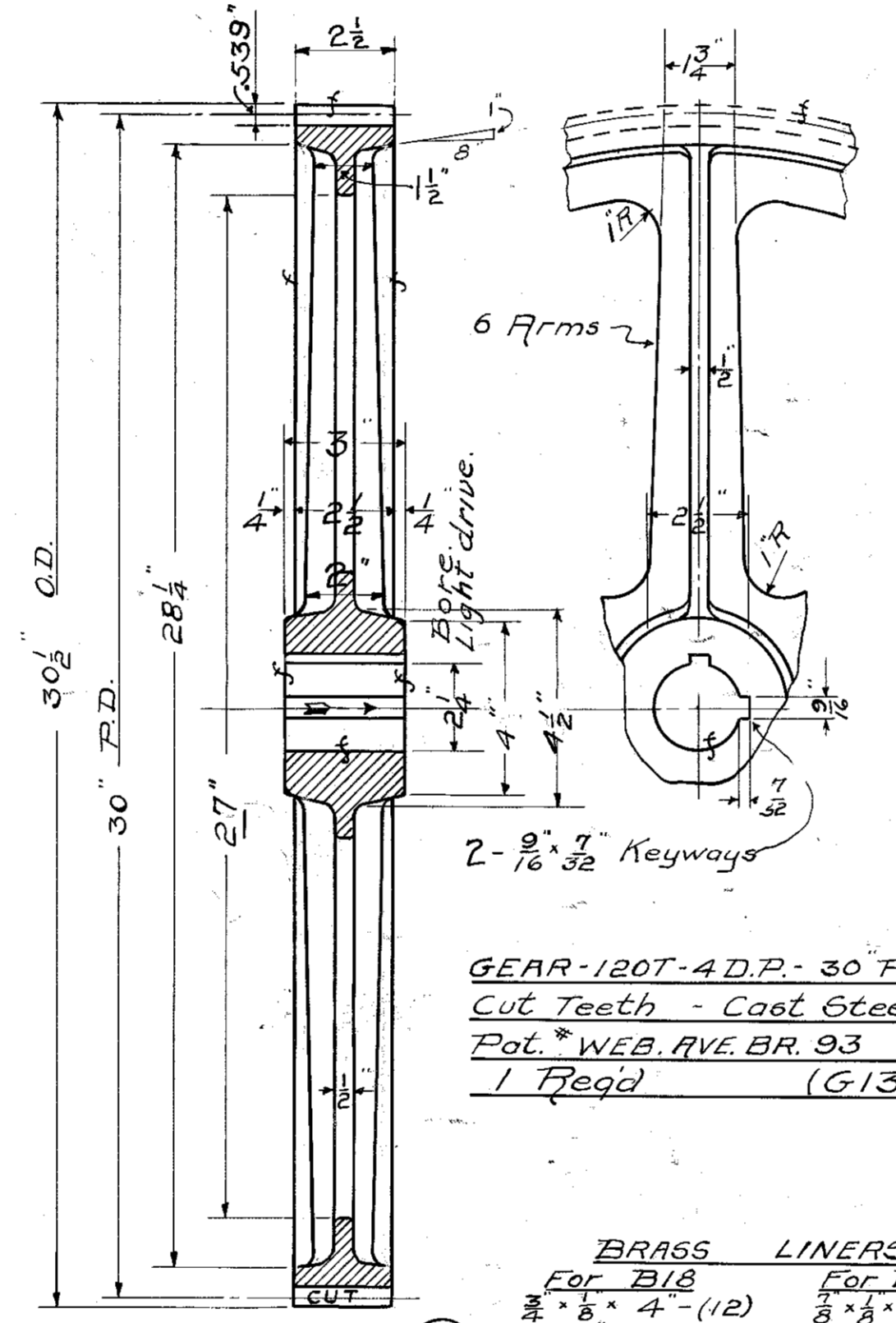


DETAIL OF CROSS SHAFT FOR LOCK GEARING

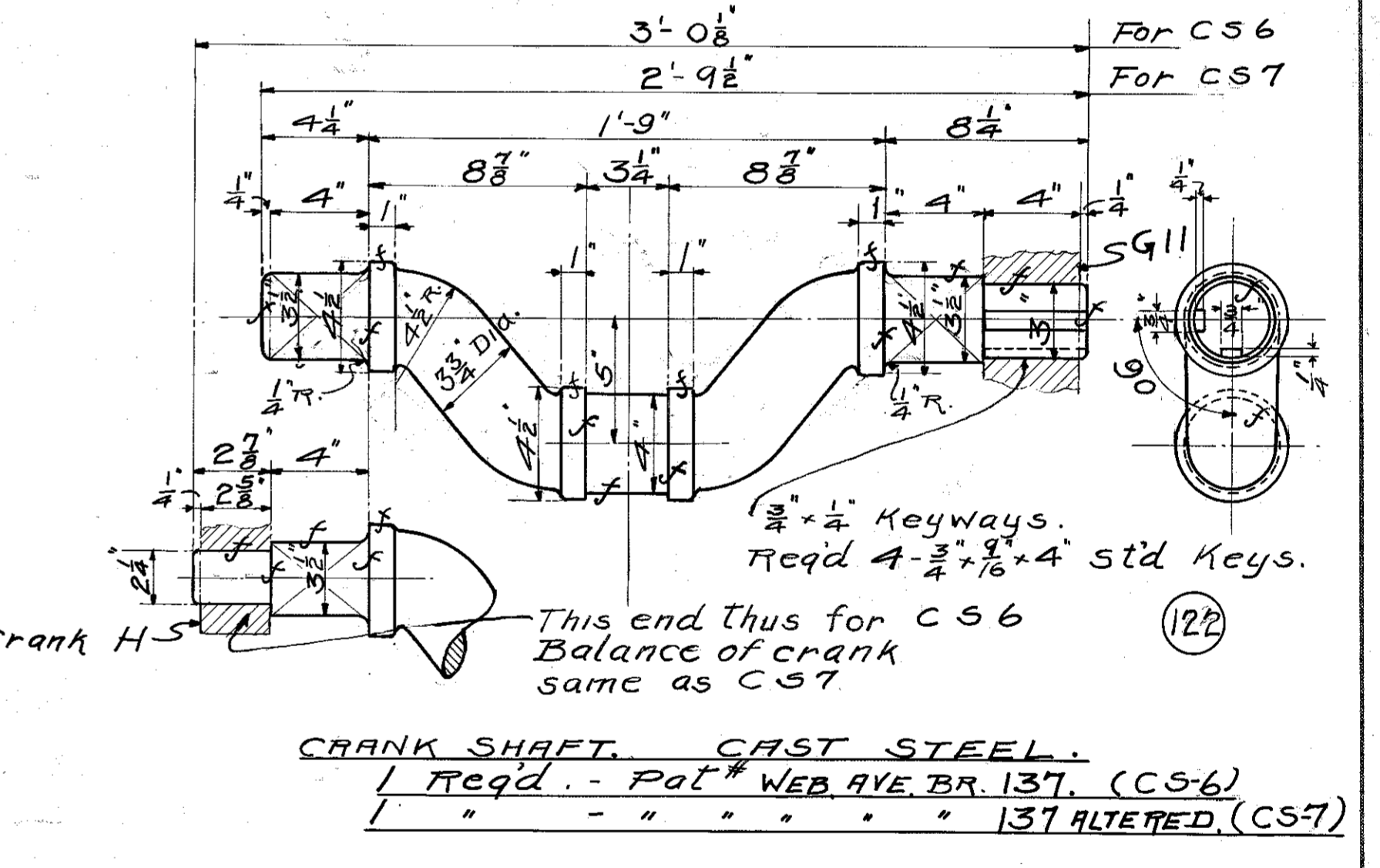
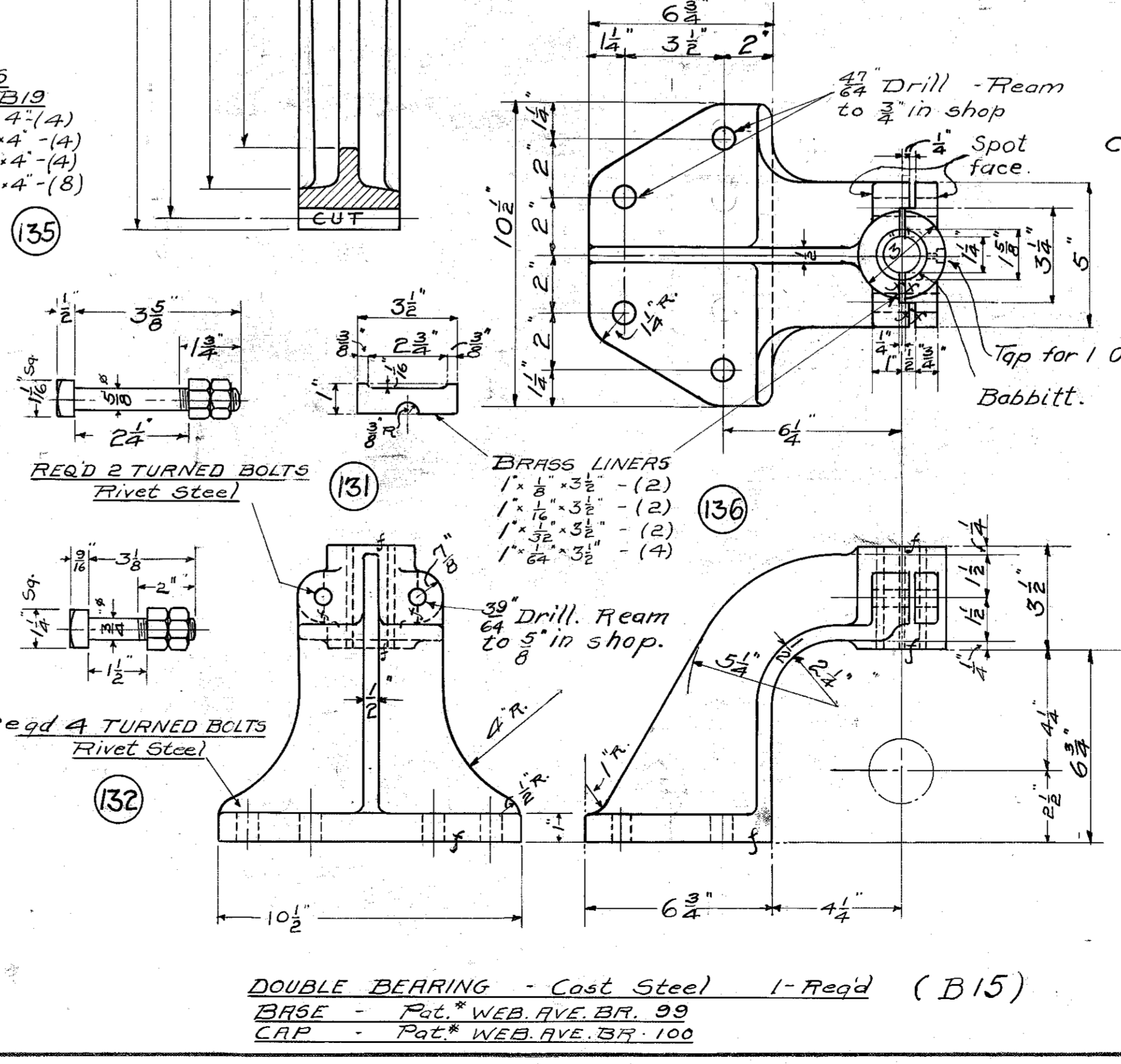
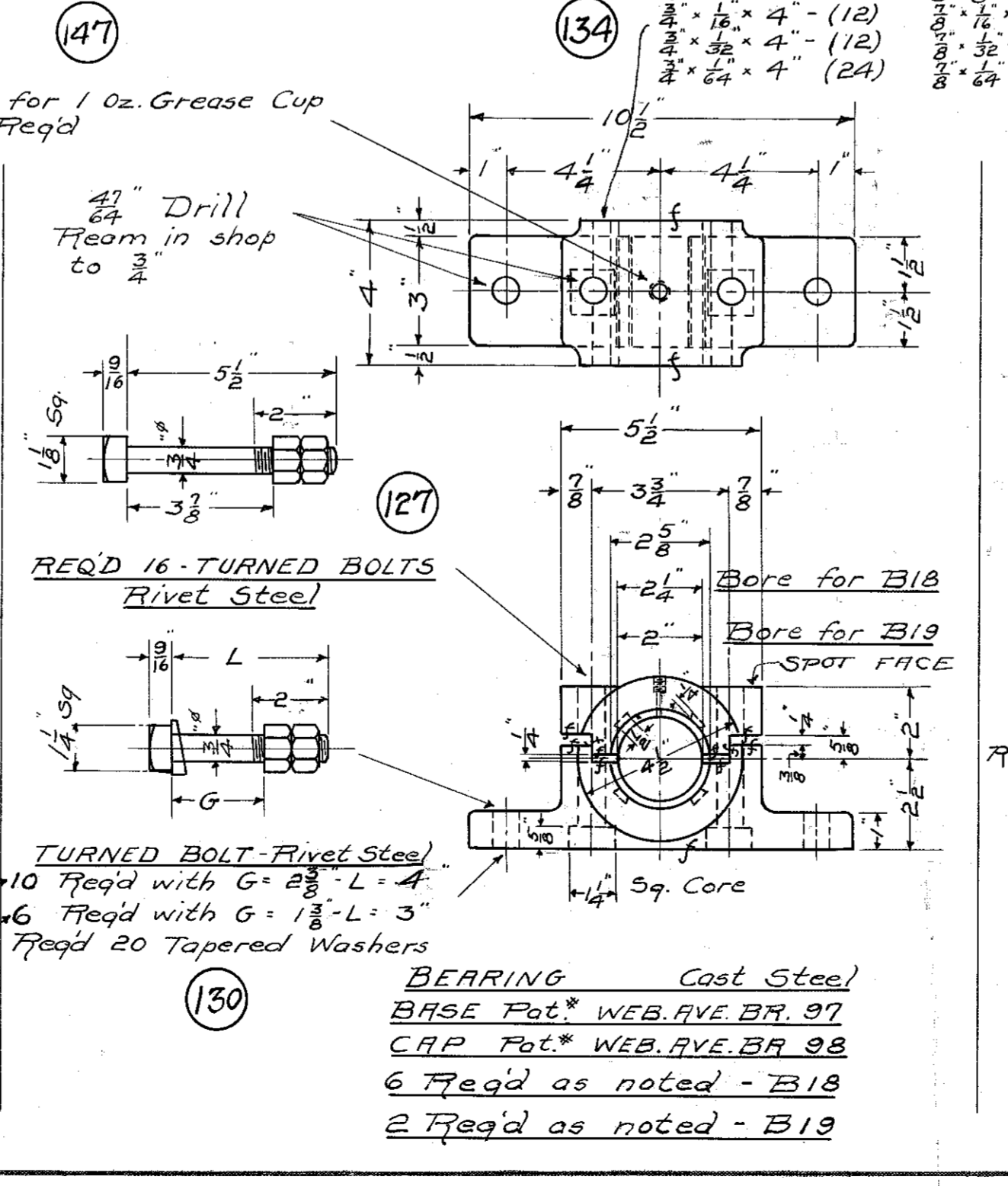
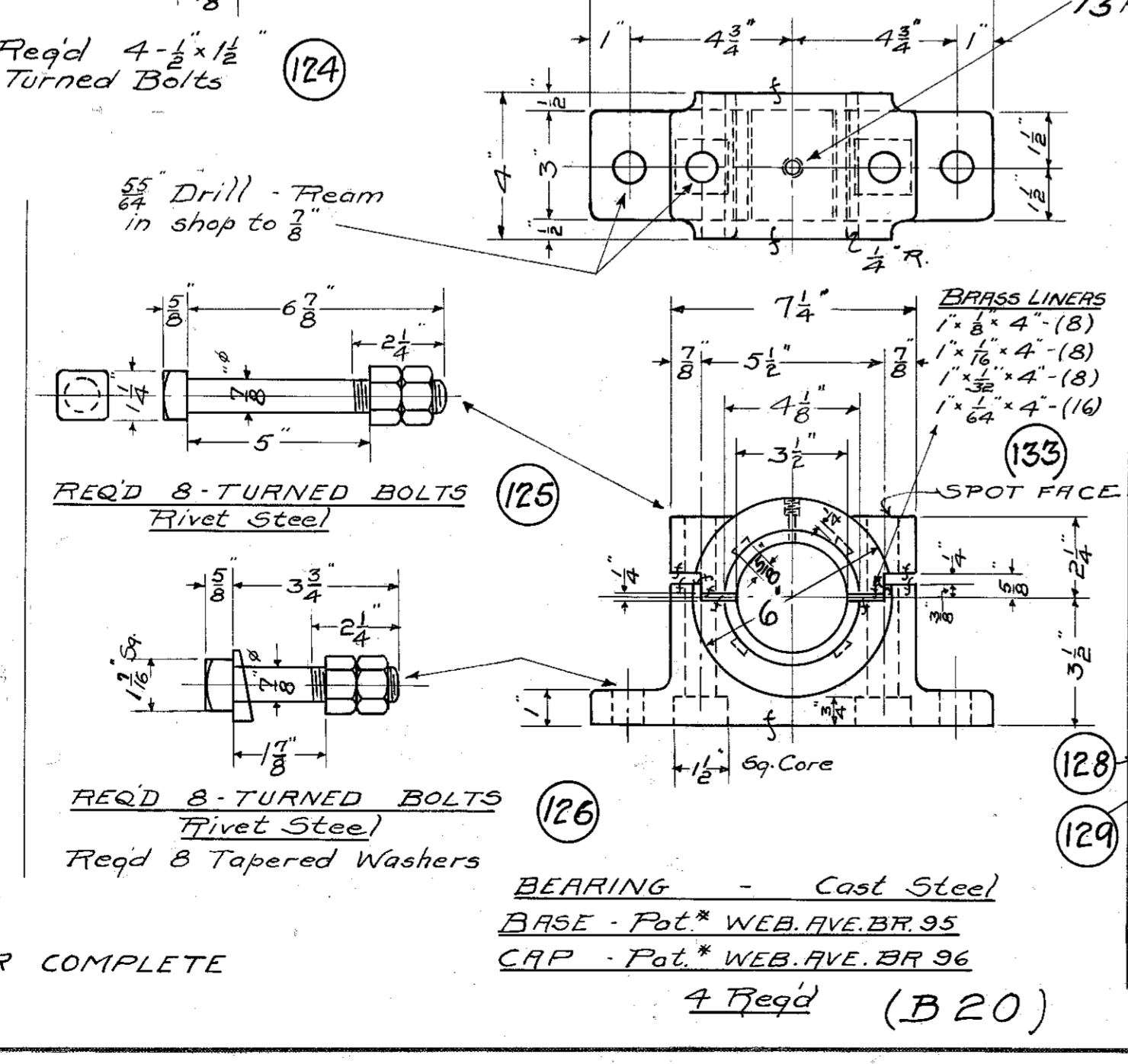
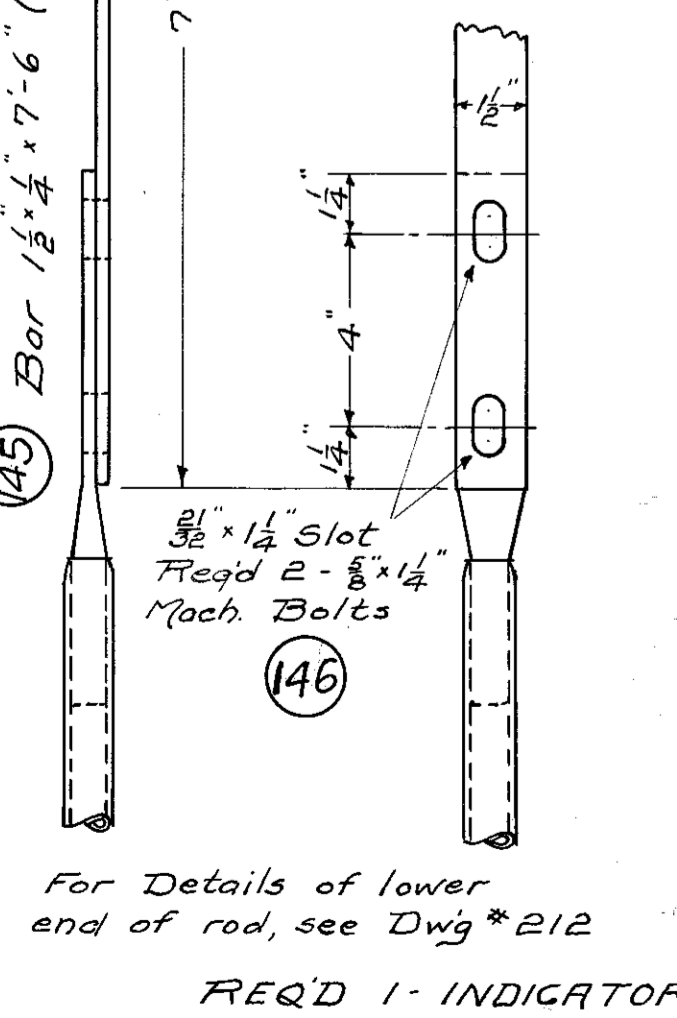


INDICATOR BRACKET - Brass  
Pat. WEB AVE BR 90 2 Req'd

COUPLING - Cast Steel  
Pat. WEB AVE BR 91 - 4 Halves Req'd



BRASS LINERS  
For B18: 1/4" x 1/4" (12), 1/4" x 1/4" (12), 1/4" x 1/4" (12), 1/4" x 1/4" (24)  
For B19: 1/4" x 1/4" (12), 1/4" x 1/4" (12), 1/4" x 1/4" (12), 1/4" x 1/4" (24)

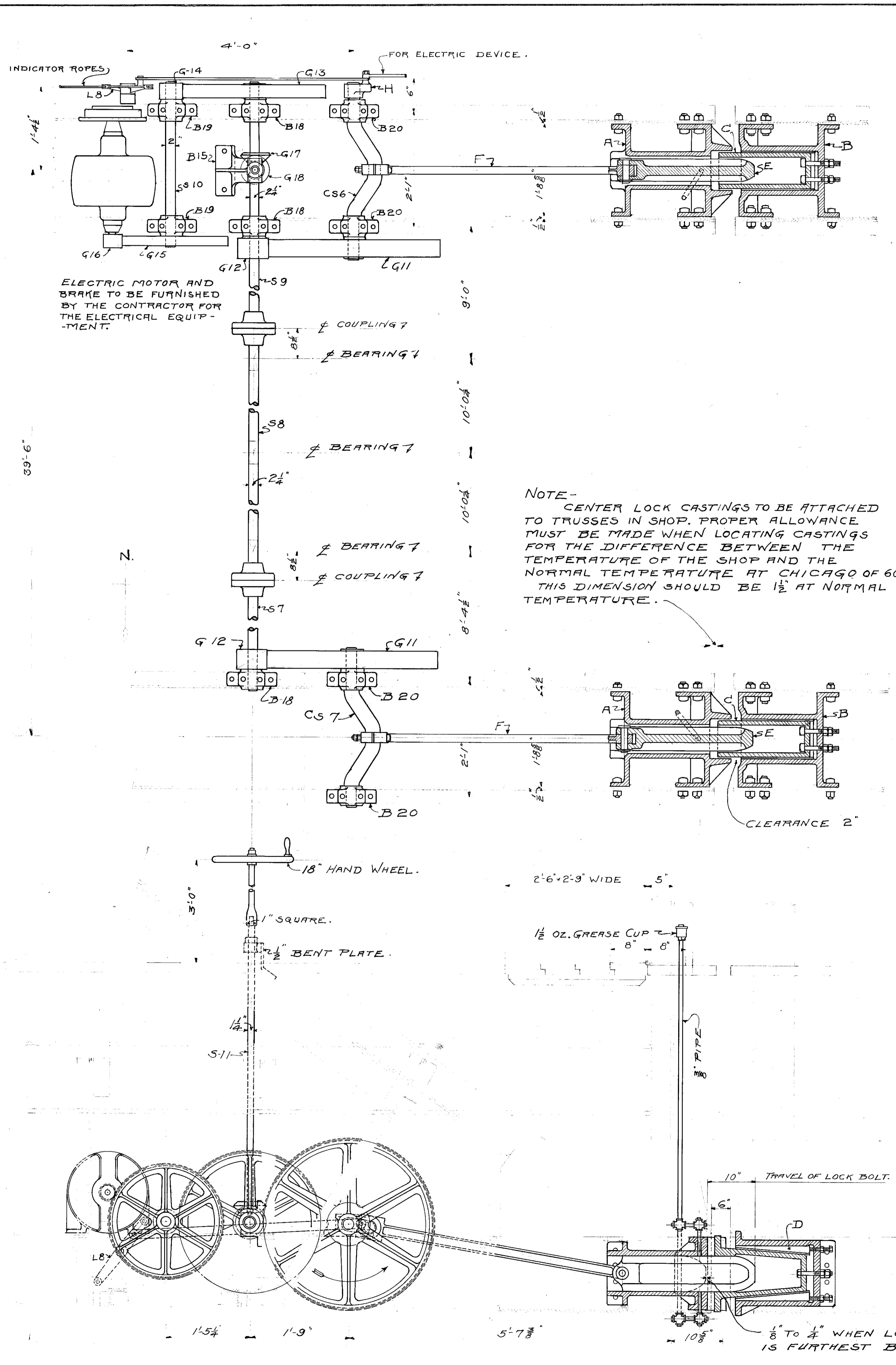


For specifications on Patterns, castings and Turned Bolts, see Dwg. No. 201.  
" Shafts & Keys, " " " 202.  
" Shop Painting, " " " 203.

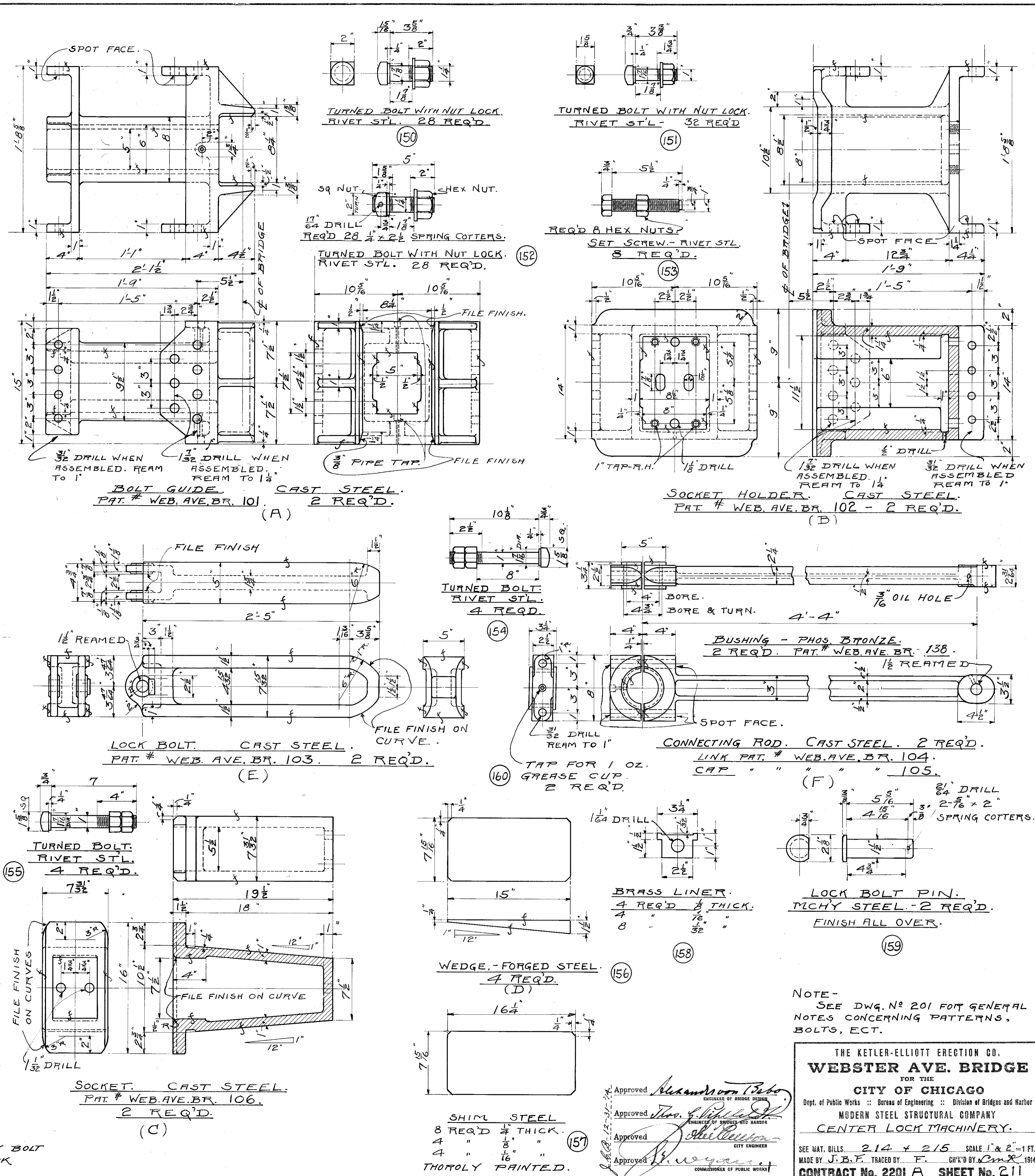
Approved: *Amundson*  
Approved: *...*  
Approved: *...*  
Approved: *...*

THE KELLER-ELLIOTT ERECTION CO.  
**WEBSTER AVE. BRIDGE**  
FOR THE  
**CITY OF CHICAGO**  
Dept. of Public Works :: Bureau of Engineering :: Division of Bridges and Harbor  
**MODERN STEEL STRUCTURAL COMPANY**  
DETAILS OF LOCK GEARING AND BEARINGS  
SEE MAT. BILLS 211, 212 & 213 SCALE 3/4" = 1 FT.  
MADE BY J. B. F. TRAGED BY CARL CH'Y'D BY AMR & S. 1914  
**CONTRACT No. 2201 R SHEET No. 210**  
DRAWING No. 3905  
FILE No. 11-6C-33

1660570228



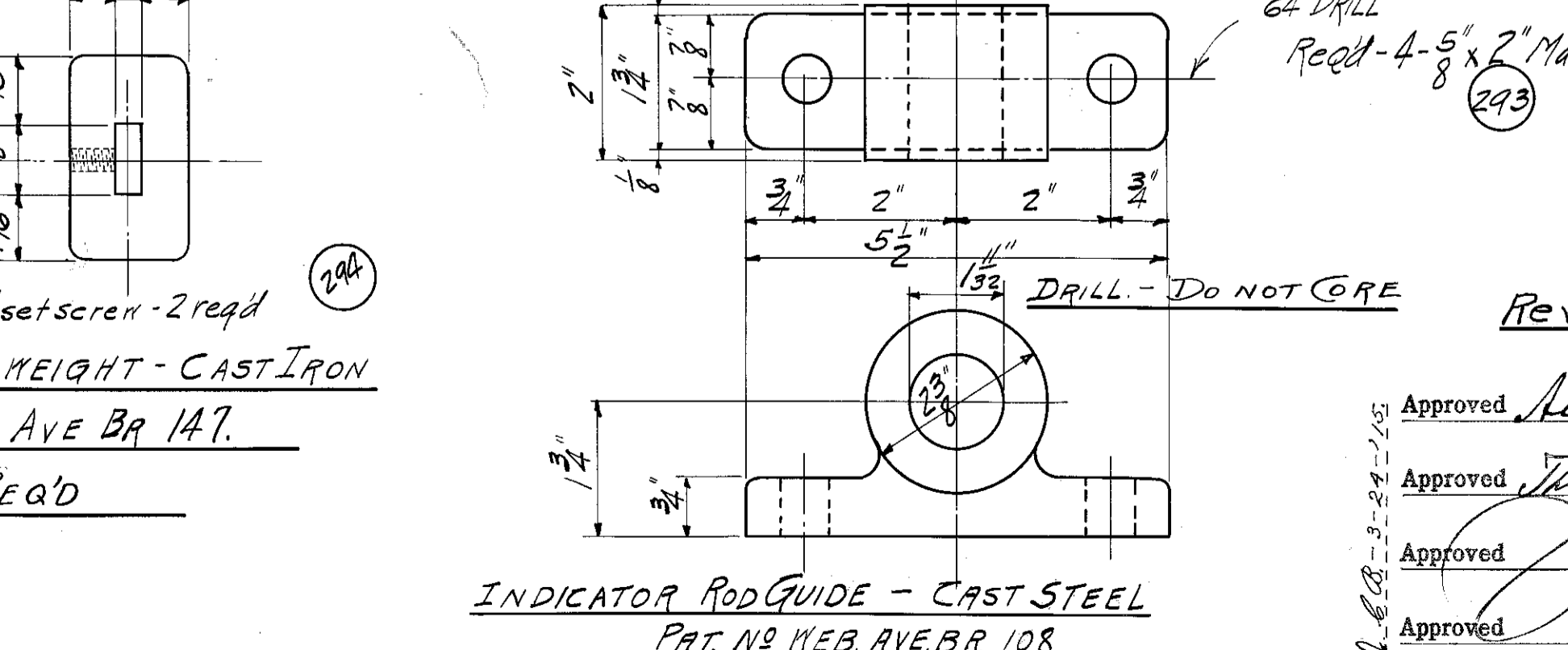
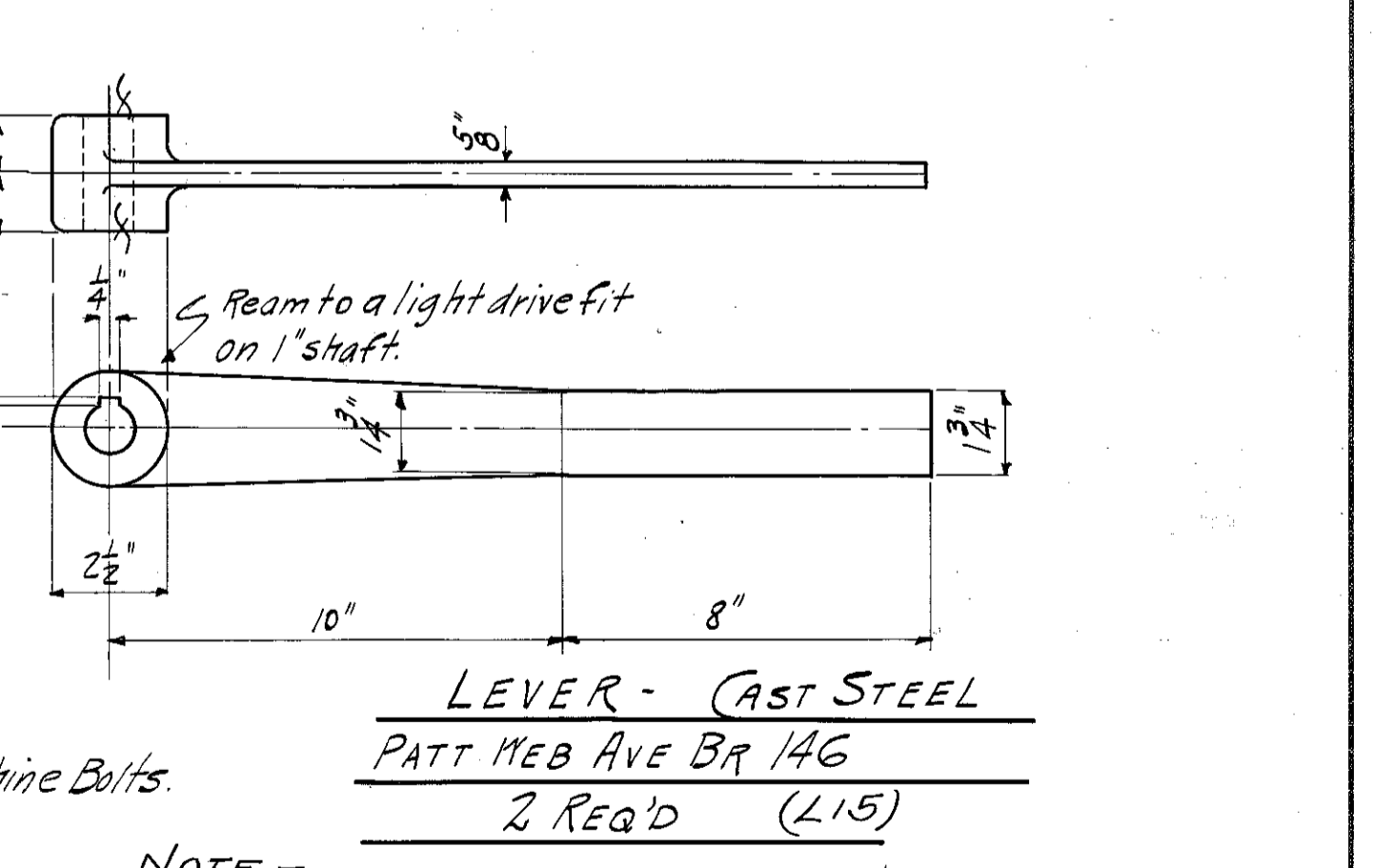
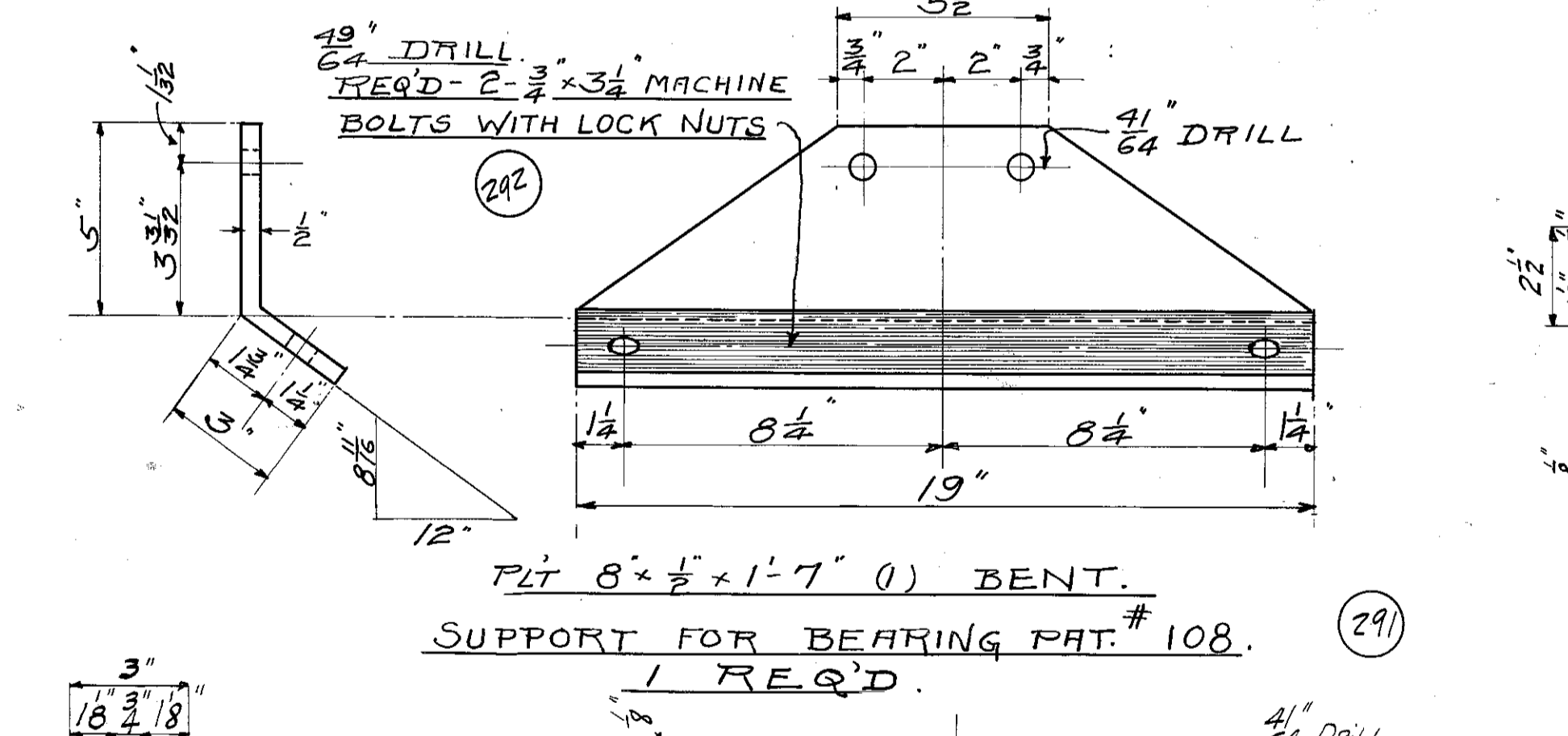
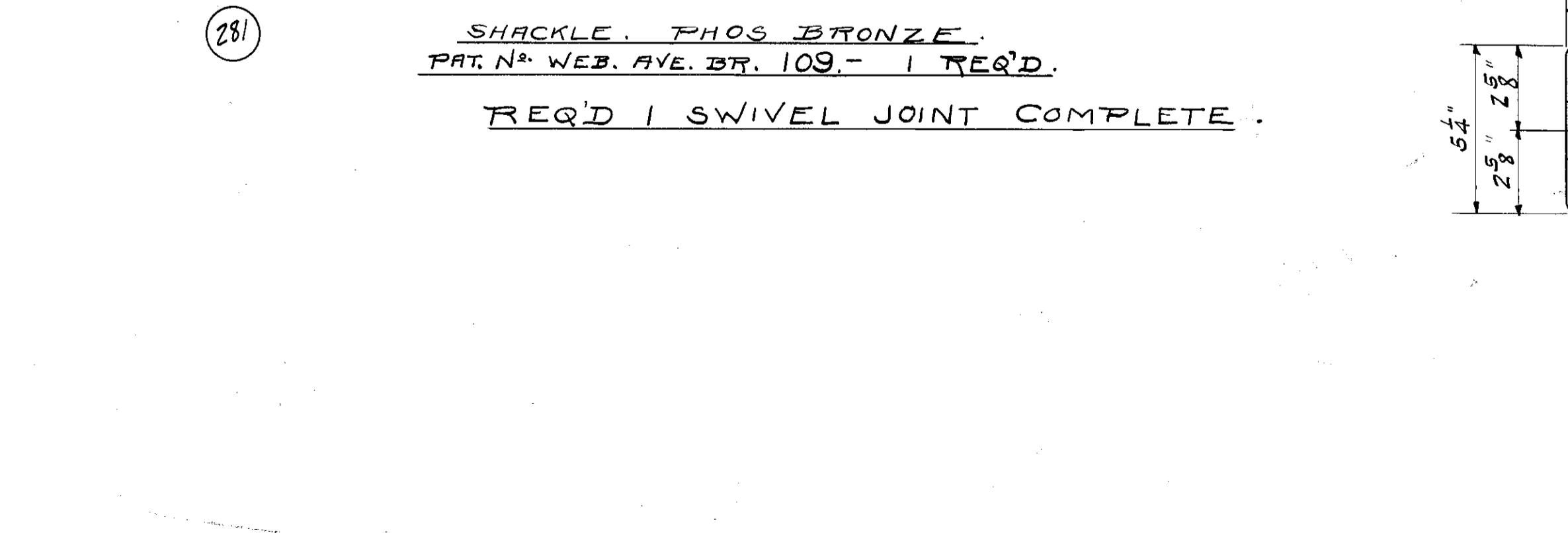
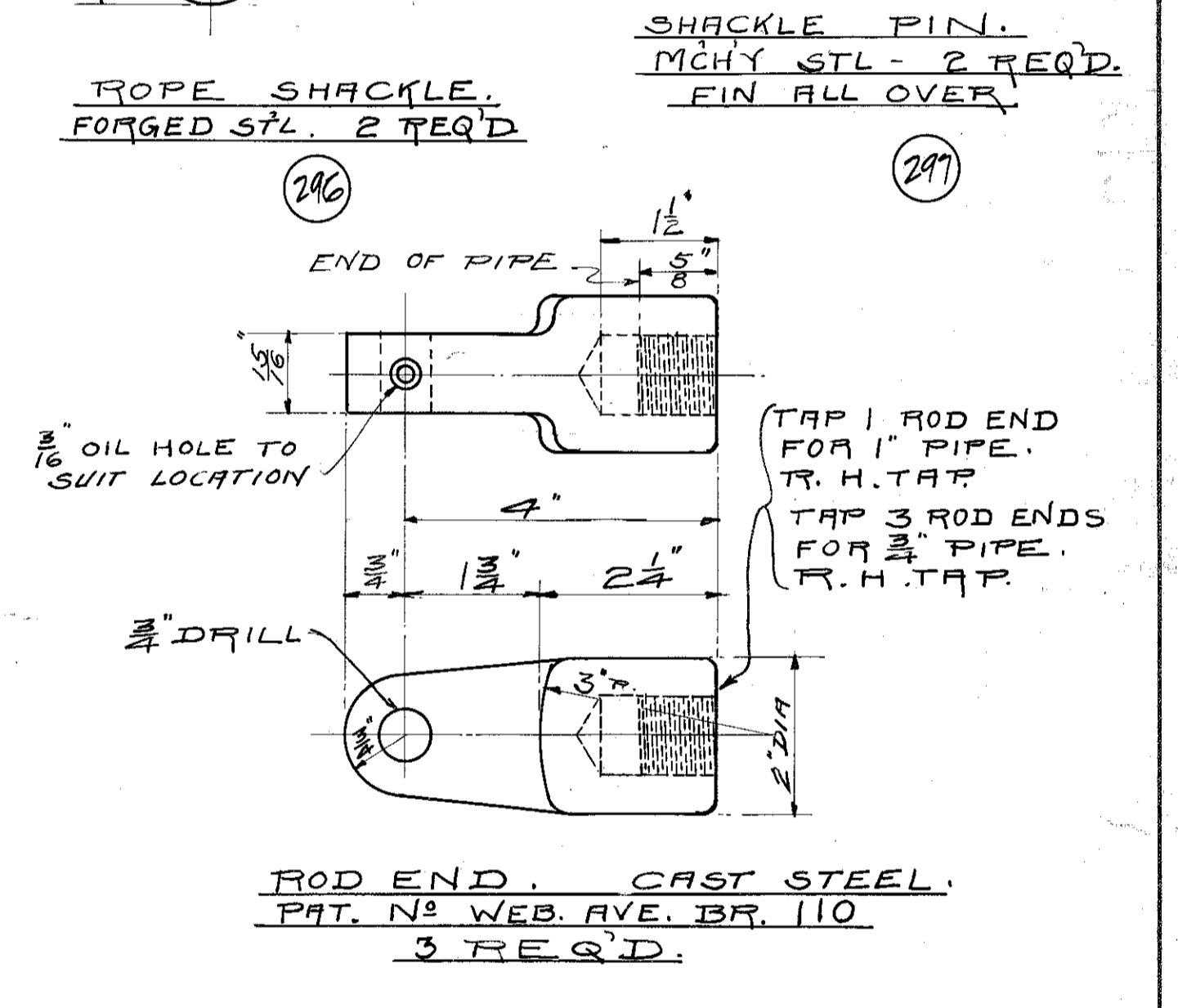
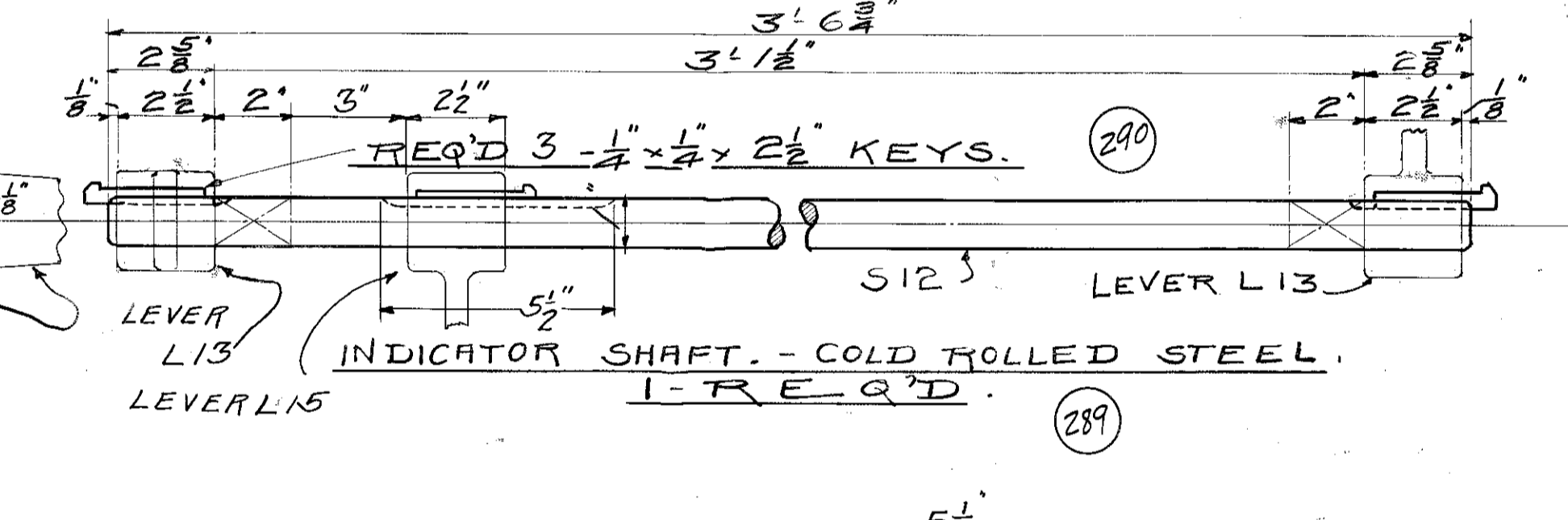
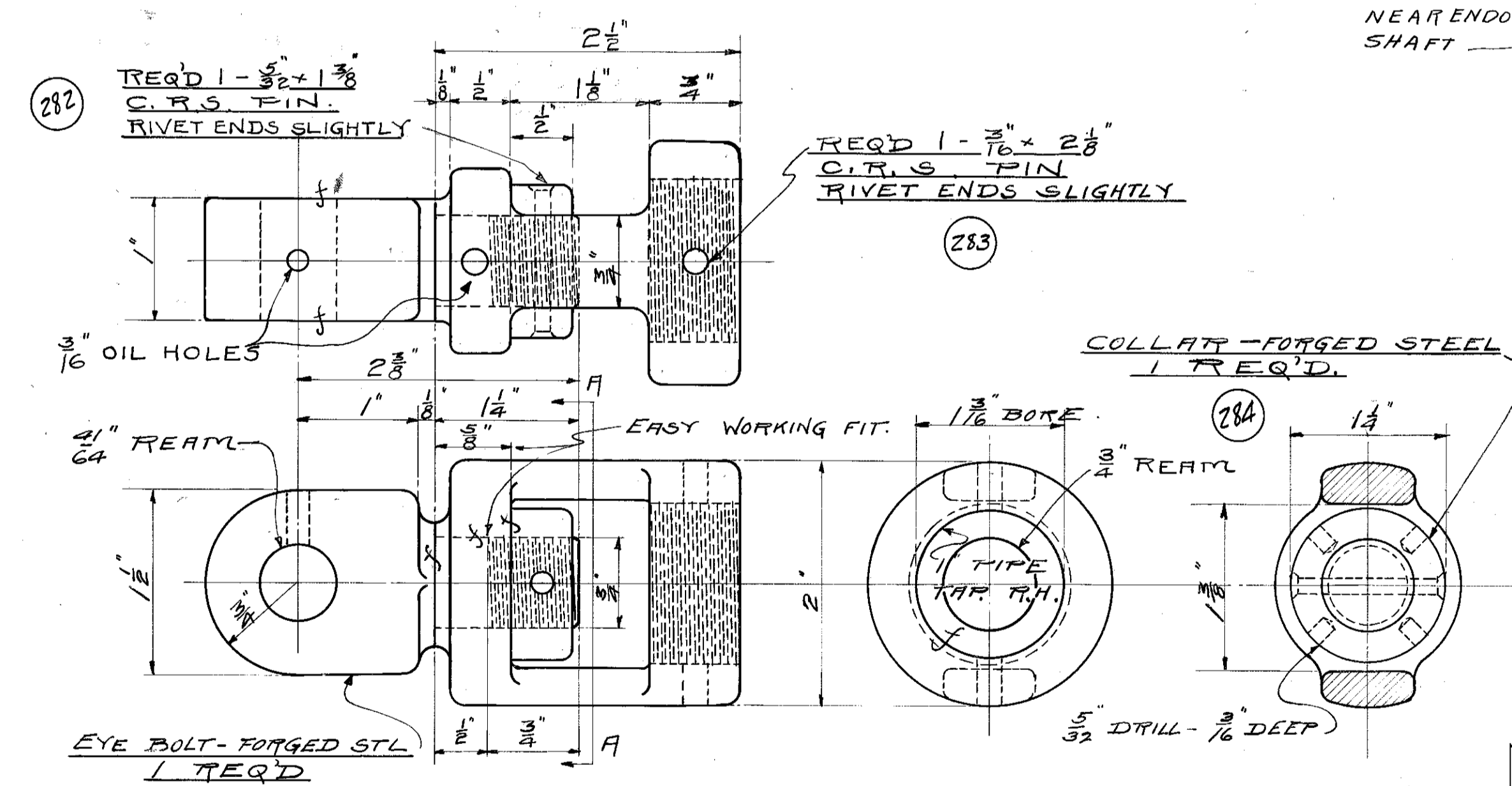
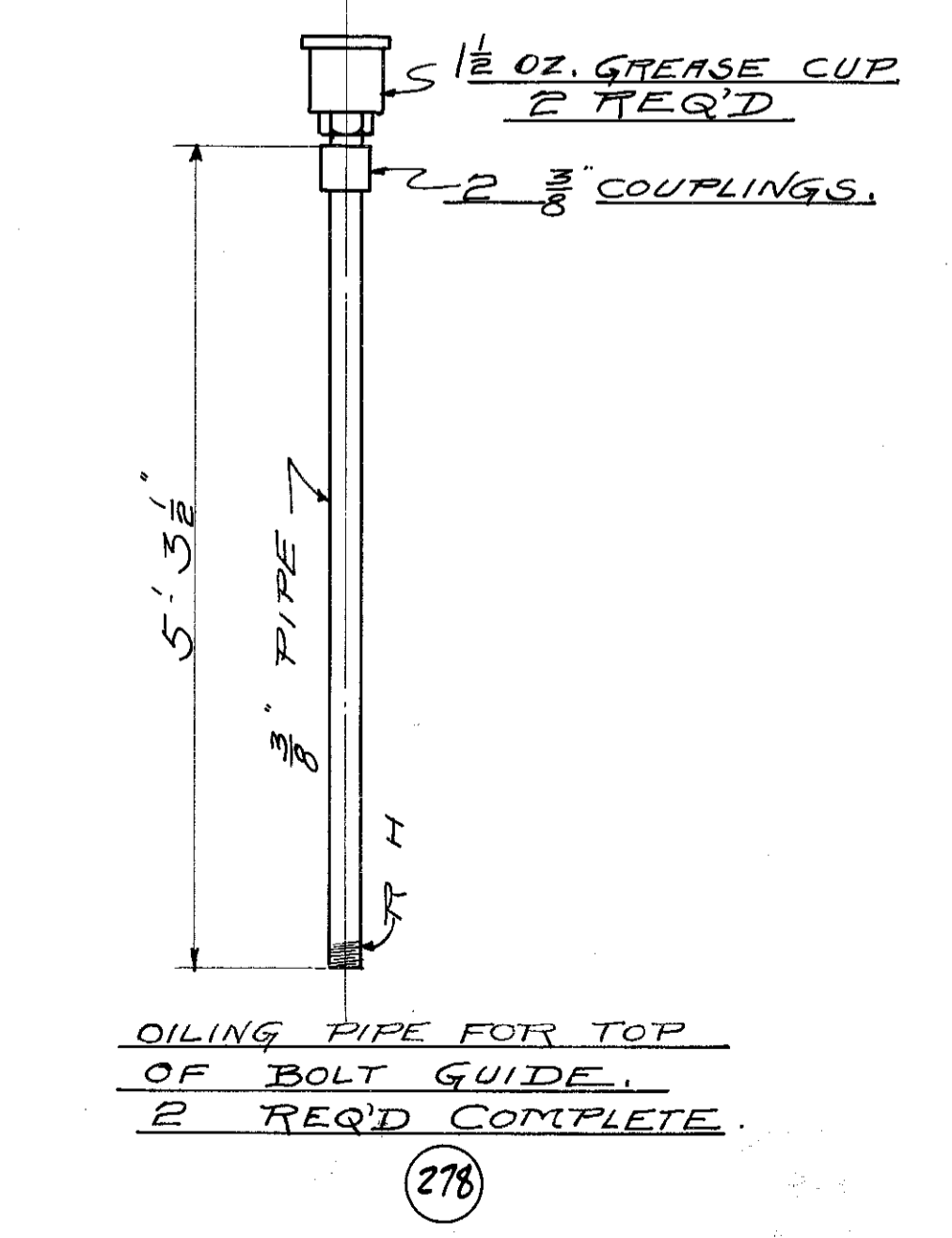
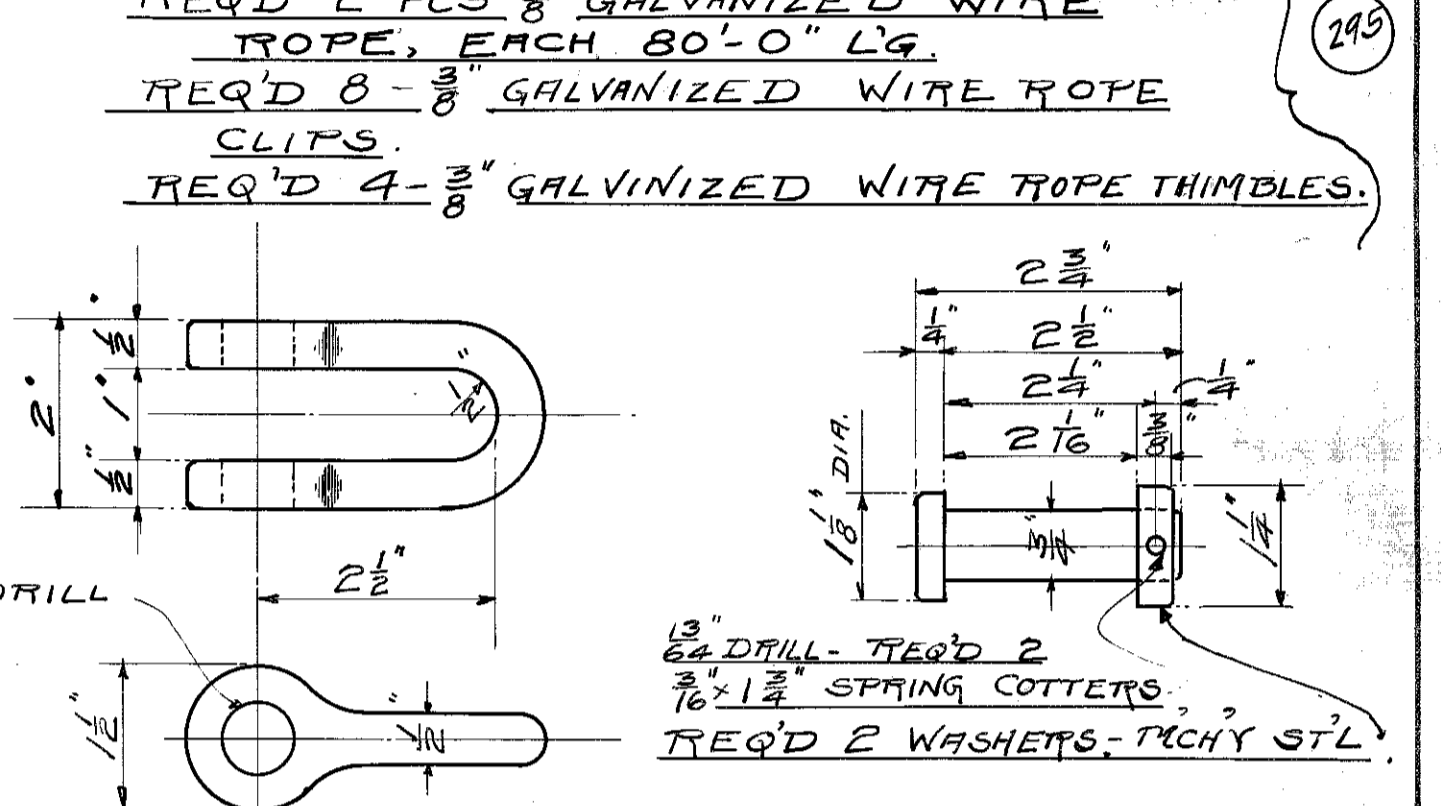
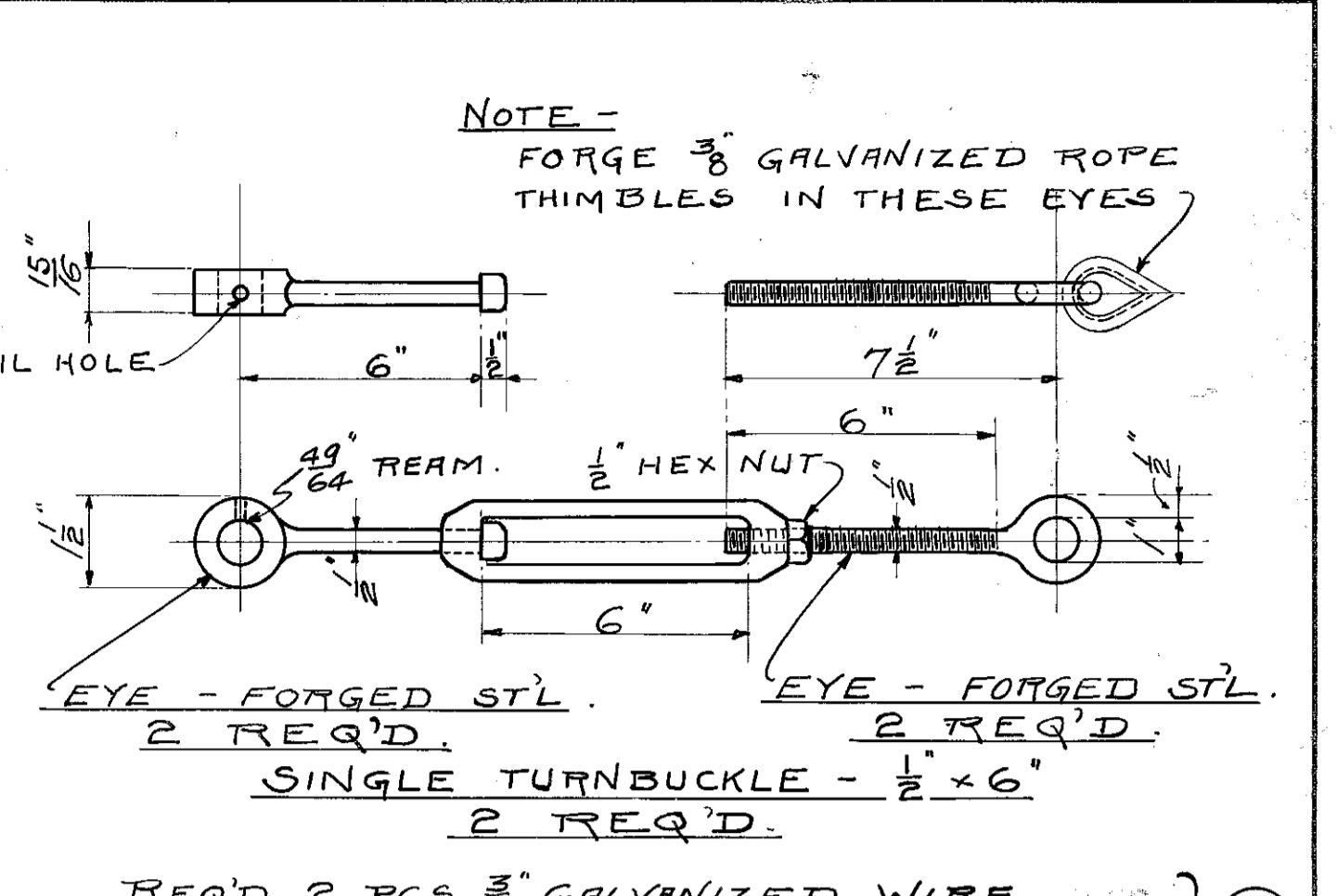
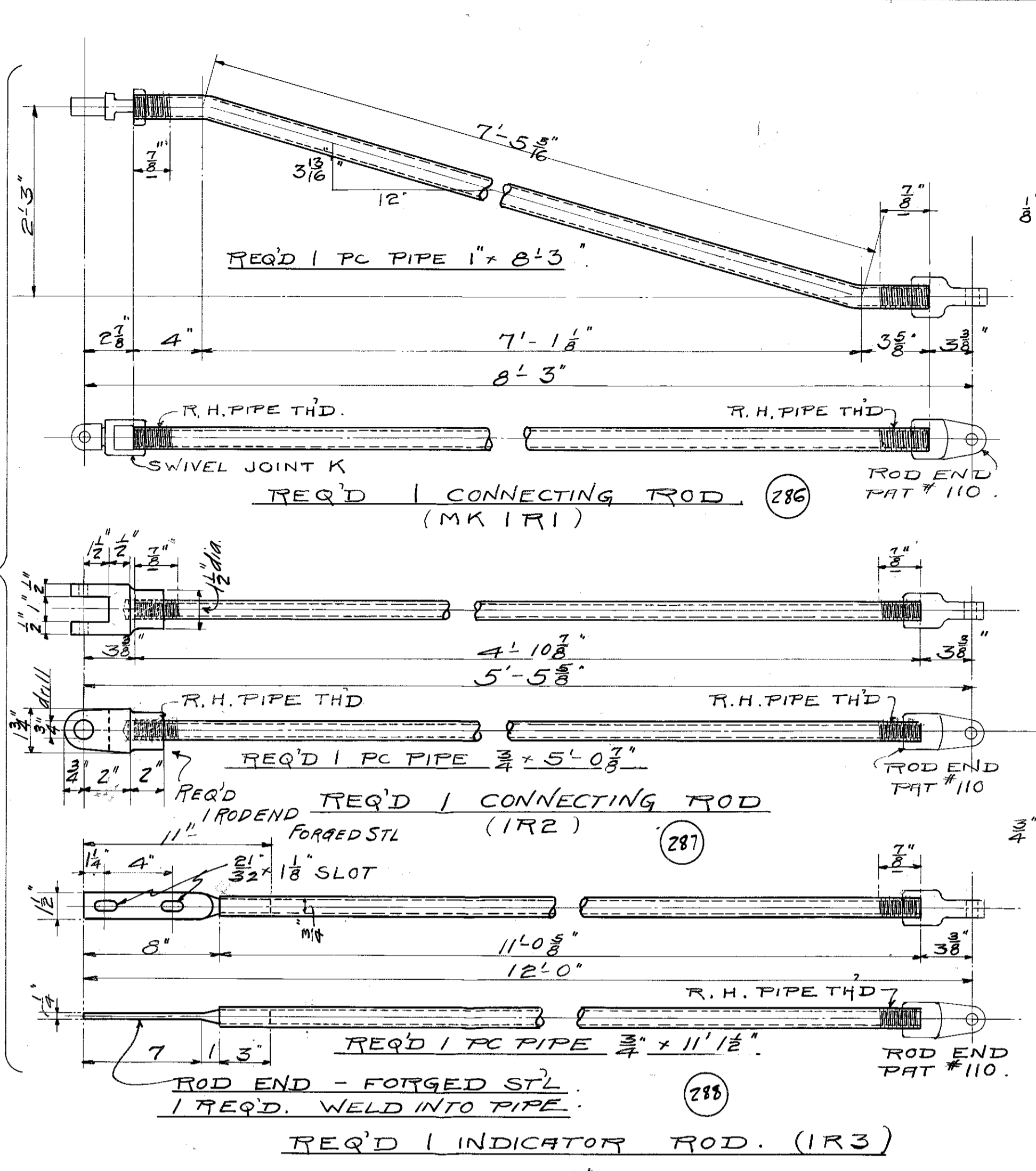
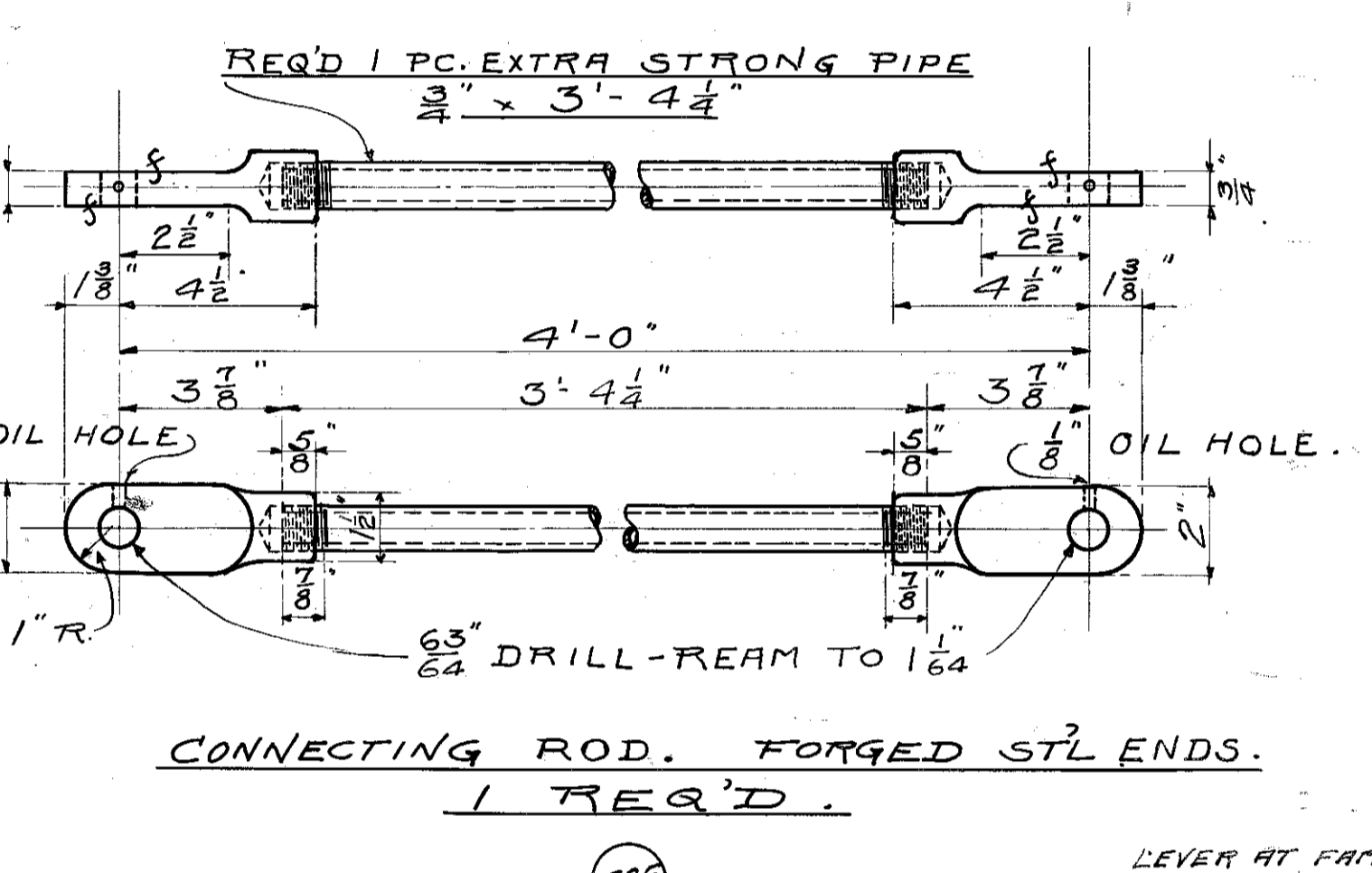
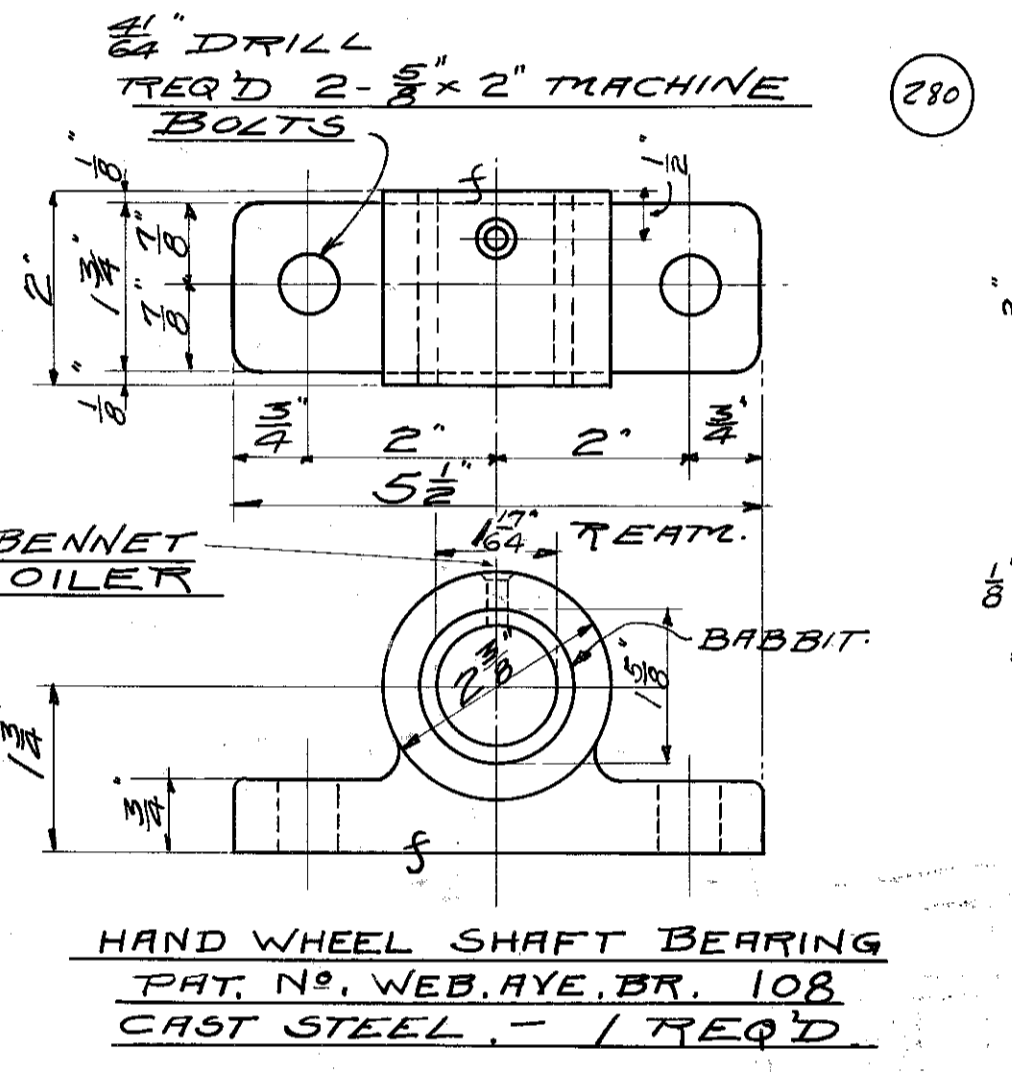
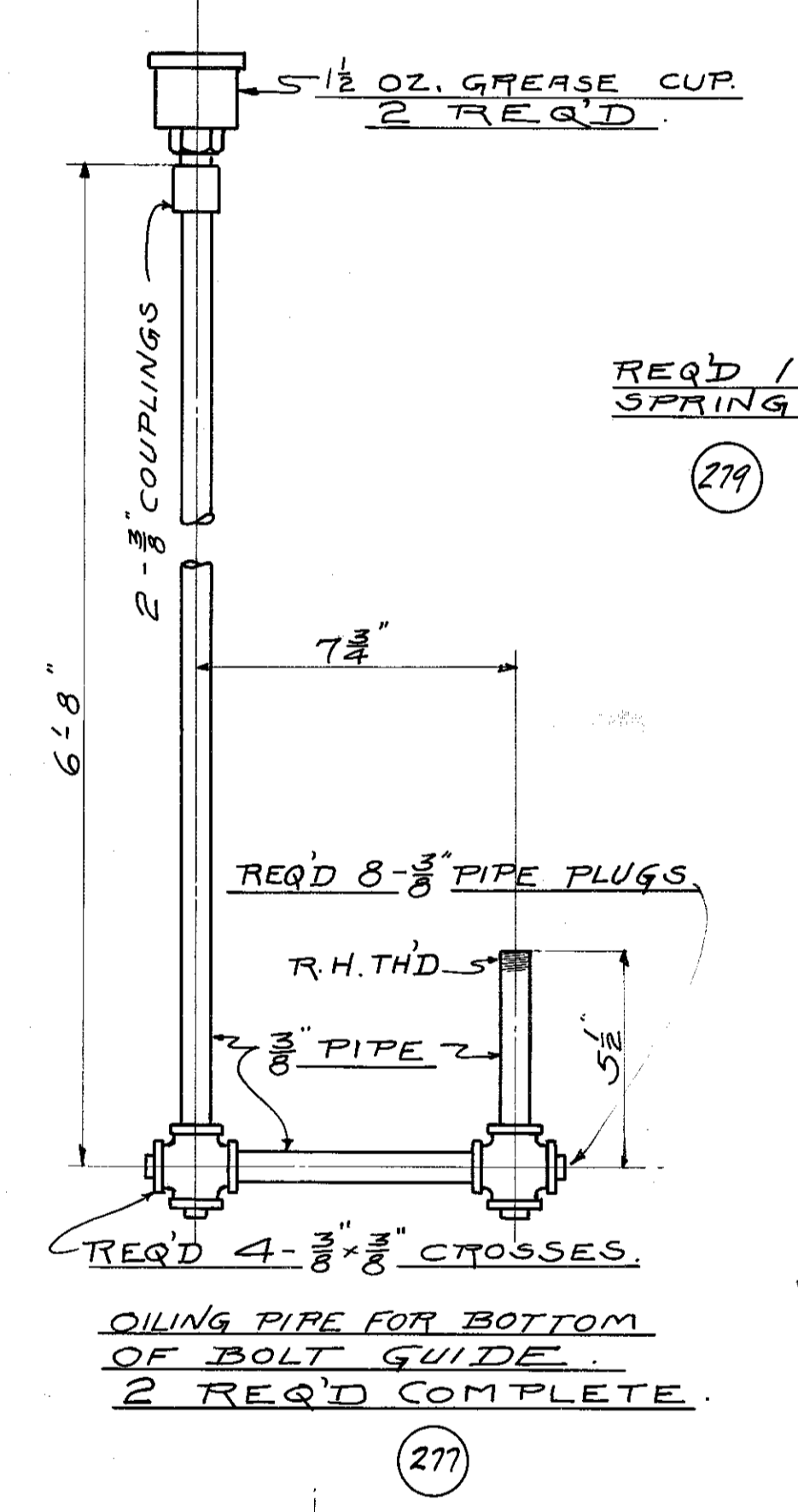
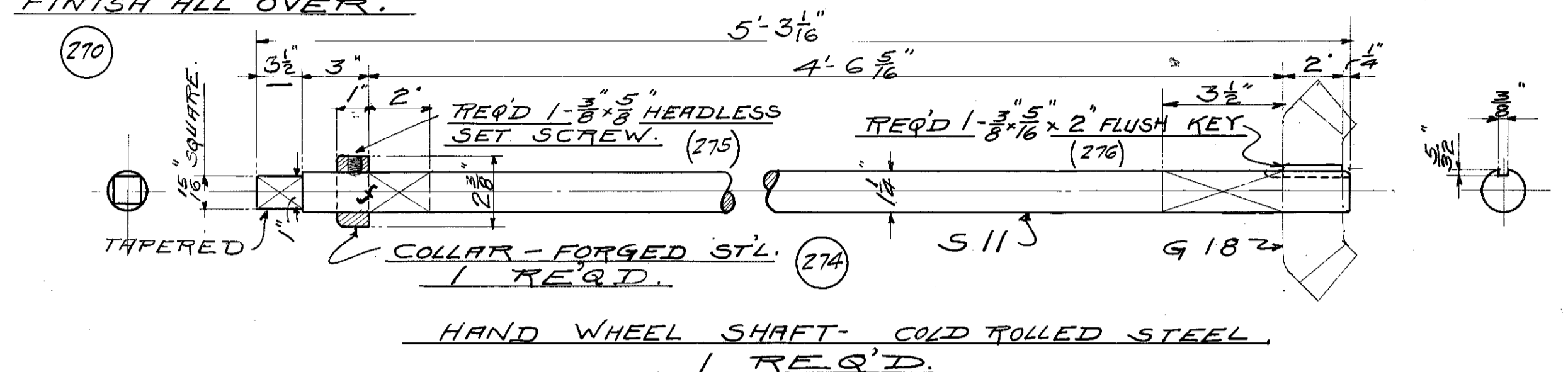
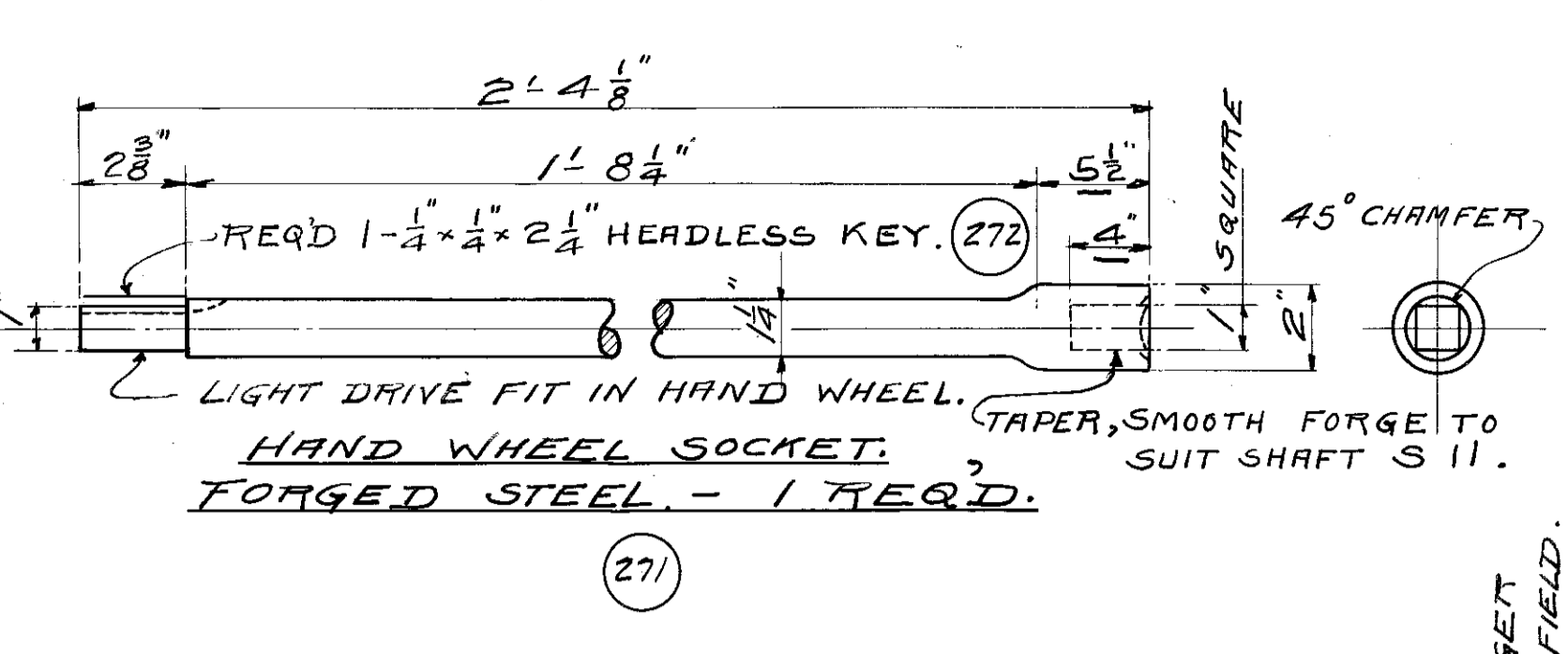
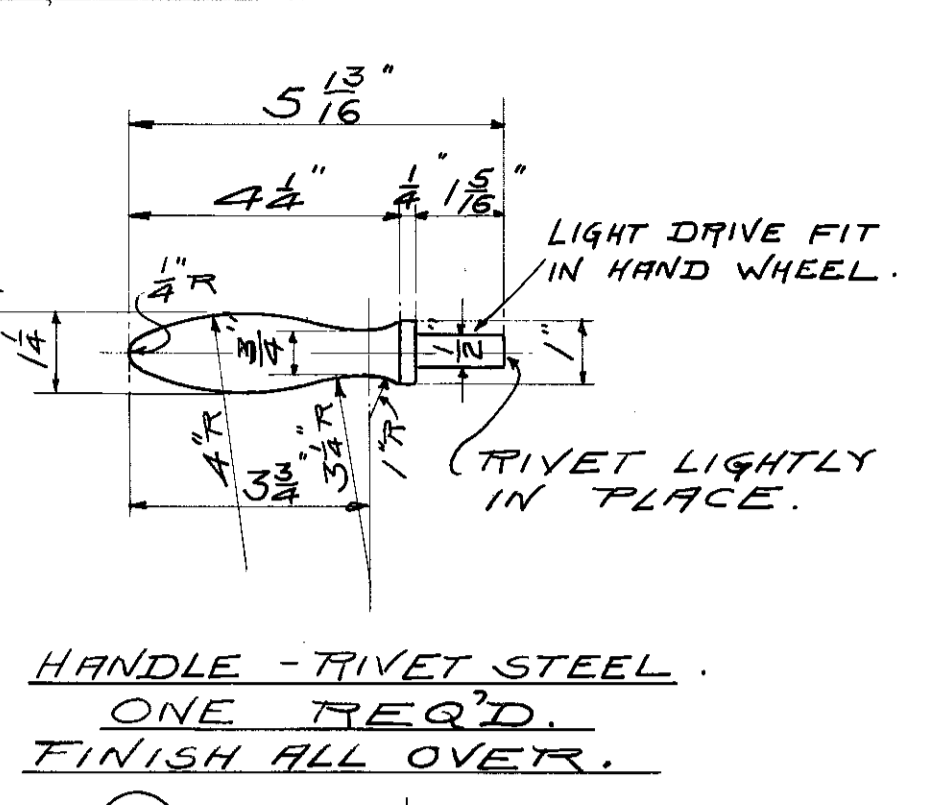
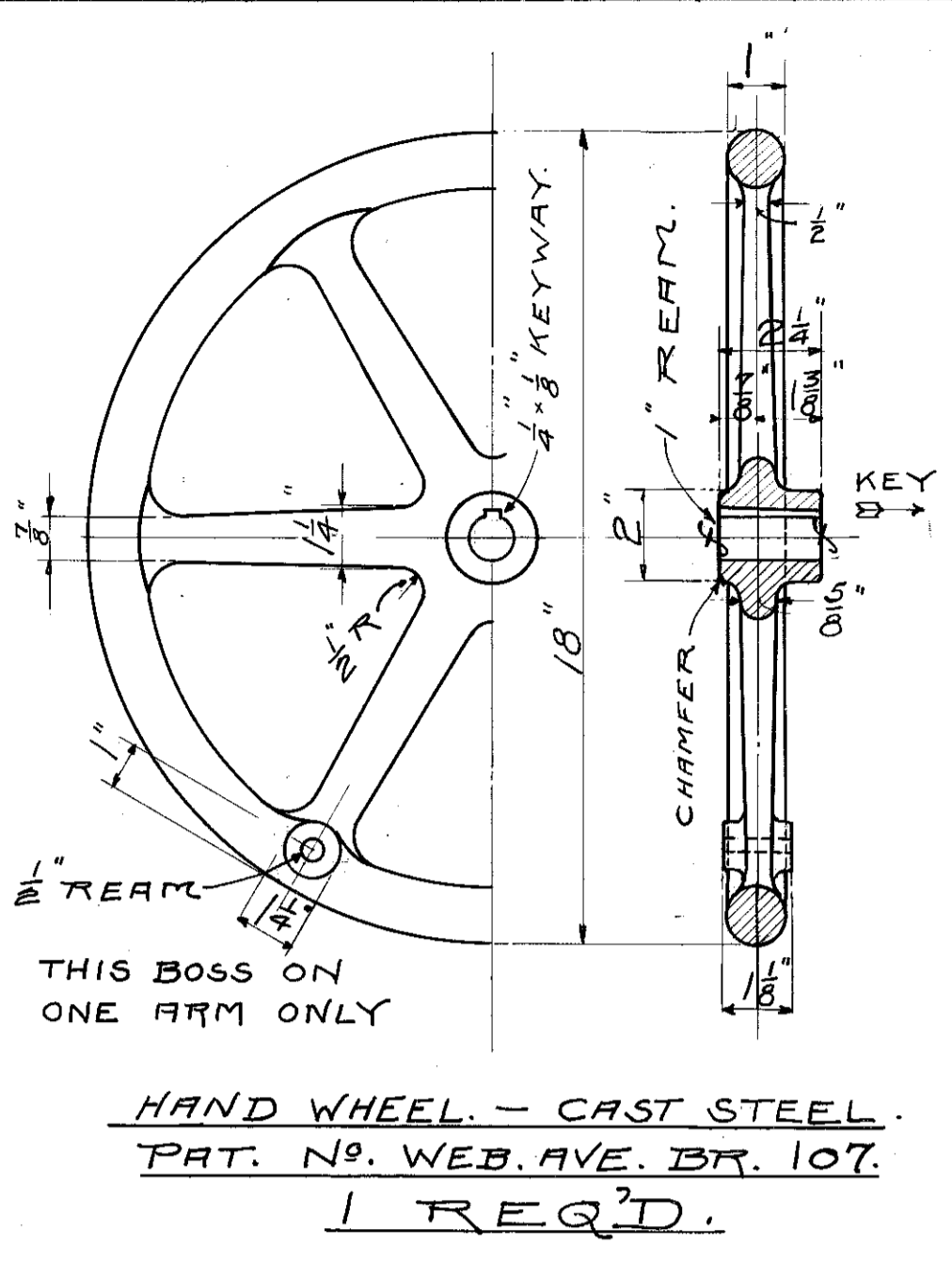
NOTE - CENTER LOCK CASTINGS TO BE ATTACHED TO TRUSSES IN SHOP. PROPER ALLOWANCE MUST BE MADE WHEN LOCATING CASTINGS FOR THE DIFFERENCE BETWEEN THE TEMPERATURE OF THE SHOP AND THE NORMAL TEMPERATURE AT CHICAGO OF 60° F. THIS DIMENSION SHOULD BE 1/2" AT NORMAL TEMPERATURE.



NOTE - SEE DWG. NO. 201 FOR GENERAL NOTES CONCERNING PATTERNS, BOLTS, ETC.

THE KETTLER-ELLIOTT ERECTION CO.  
**WEBSTER AVE. BRIDGE**  
 FOR THE  
**CITY OF CHICAGO**  
 Dept. of Public Works :: Bureau of Engineering :: Division of Bridges and Harbors  
**MODERN STEEL STRUCTURAL COMPANY**  
**CENTER LOCK MACHINERY.**  
 SEE MAT. BILLS 214 & 215 SCALE 1" = 2'-1 FT.  
 MADE BY J. B. F. TRACED BY F. CH'GD BY C.M.K. 1914  
**CONTRACT No. 2201 A SHEET No. 211**

Approved *Alfred W. Patterson*  
 ENGINEER OF BRIDGE DESIGN  
 Approved *John J. ...*  
 Approved *...*  
 Approved *...*



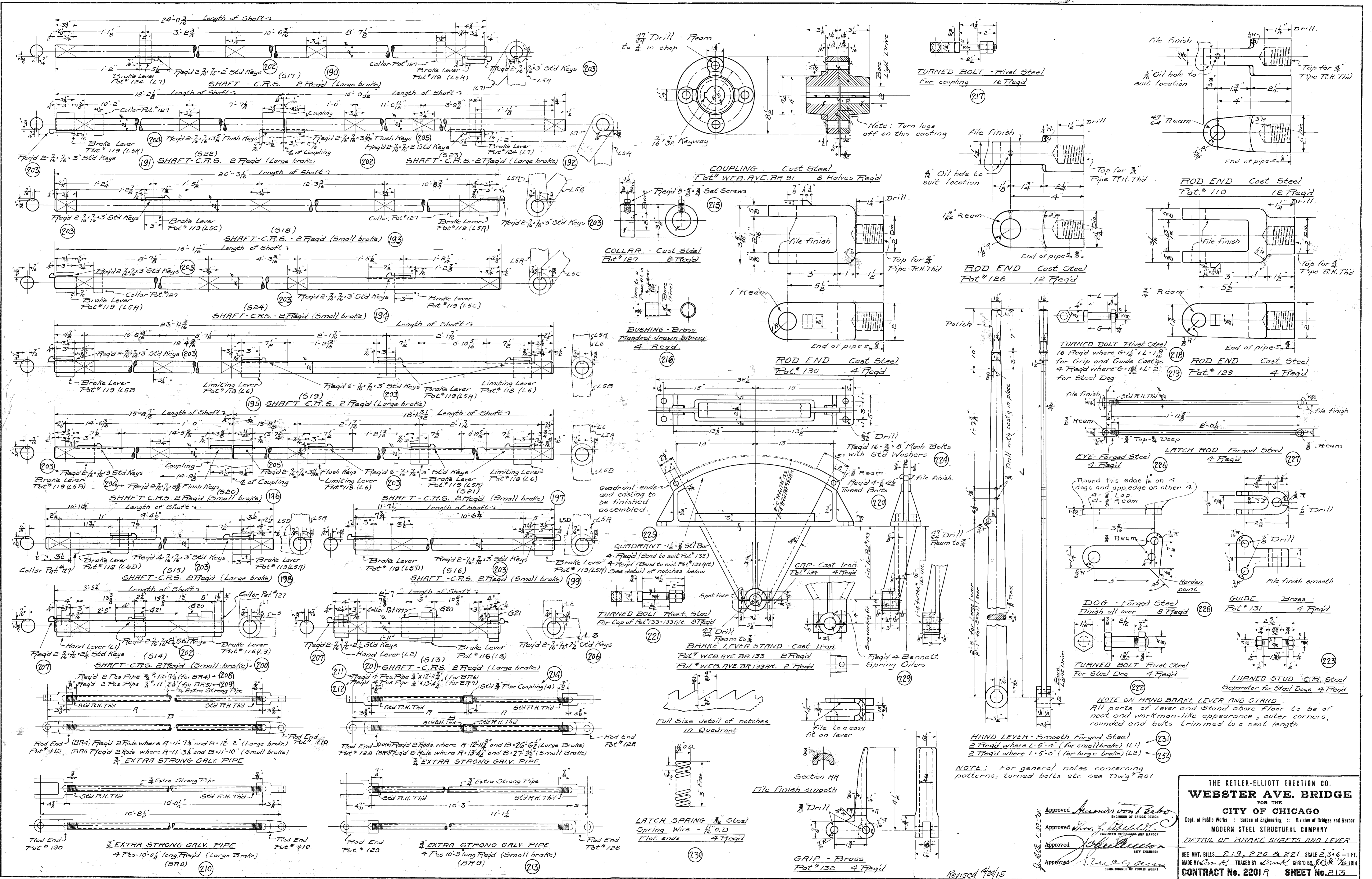
THE KETLER-ELLIOTT ERECTION CO.  
**WEBSTER AVE. BRIDGE**  
FOR THE  
**CITY OF CHICAGO**  
Dept. of Public Works :: Bureau of Engineering :: Division of Bridges and Harbor  
MODERN STEEL STRUCTURAL COMPANY  
DETAILS OF LOCK AND LOCK INDICATOR.

Approved: *[Signature]* ENGINEER IN CHARGE  
Approved: *[Signature]* CHECKED BY  
Approved: *[Signature]* CITY ENGINEER  
Approved: *[Signature]* COMMISSIONER OF PUBLIC WORKS

SCALE 5" = 6' - 1 FT.  
MADE BY J.P.F. TRACED BY C.H.K. BY C.H.K.  
CONTRACT No. 2201/A SHEET No. 212  
DRAWING No. 3907  
FILE No. 11-6C-35

1660570230





THE KETLER-ELLIOTT ERECTION CO.  
**WEBSTER AVE. BRIDGE**  
 FOR THE  
**CITY OF CHICAGO**  
 Dept. of Public Works :: Bureau of Engineering :: Division of Bridges and Harbors  
**MODERN STEEL STRUCTURAL COMPANY**  
 DETAIL OF BRAKE SHAFTS AND LEVER  
 SEE MAT. BILLS 219, 220 & 221 SCALE 2 3/4" = 1 FT.  
 MADE BY *Amk* TRACED BY *Amk* CHECK'D BY *Amk* 1/26/14  
**CONTRACT NO. 2201 A SHEET NO. 213**

Approved *Amk*  
 Approved *Amk*  
 Approved *Amk*  
 Approved *Amk*

**NOTE ON HAND BRAKE LEVER AND STAND:**  
 All parts of Lever and Stand above floor to be of neat and workman-like appearance, outer corners rounded and bolts trimmed to a neat length.

**HAND LEVER - Smooth Forged Steel**  
 2 Req'd where L=5'-4" (For small brake) (L1)  
 2 Req'd where L=5'-0" (for large brake) (L2)

**TURNED BOLT - Rivet Steel**  
 For Steel Dog 4 Req'd

**DOG - Forged Steel**  
 Finish all over 8 Req'd

**GUIDE - Brass**  
 Pat. 131 4 Req'd

**LATCH ROD - Forged Steel**  
 4 Req'd

**EYE - Forged Steel**  
 4 Req'd

**TURNED BOLT - Rivet Steel**  
 16 Req'd where G=1 1/2" + L=1 1/8" for Grip and Guide Castings  
 4 Req'd where G=1 3/8" + L=2" for Steel Dog

**ROD END - Cast Steel**  
 Pat. 110 12 Req'd

**ROD END - Cast Steel**  
 Pat. 128 12 Req'd

**ROD END - Cast Steel**  
 Pat. 130 4 Req'd

**COUPLING - Cast Steel**  
 Pat. WEB. AVE. BR. 91 8 Halves Req'd

**BUSHING - Brass**  
 Mandrel drawn tubing 4 Req'd

**COLLAR - Cast Steel**  
 Pat. 127 8 Req'd

**TURNED BOLT - Rivet Steel**  
 For coupling 16 Req'd

**GRIP - Brass**  
 Pat. 132 4 Req'd

**LATCH SPRING - 3/8" Steel**  
 Spring Wire - 1/4" O.D.  
 Flat ends 4 Req'd

**BRAKE LEVER STAND - Cast Iron**  
 Pat. WEB. AVE. BR. 133 2 Req'd  
 Pat. WEB. AVE. BR. 133 Alt. 2 Req'd

**QUADRANT - 1 1/2" Std. Bar**  
 4 Req'd (Bend to suit Pat. 133)  
 4 Req'd (Bend to suit Pat. 133 Alt.)  
 See detail of notches below

**QUADRANT ENDS**  
 and casting to be finished assembled.

**QUADRANT - 1 1/2" Std. Bar**  
 4 Req'd (Bend to suit Pat. 133)  
 4 Req'd (Bend to suit Pat. 133 Alt.)  
 See detail of notches below

**TURNED BOLT - Rivet Steel**  
 For coupling 16 Req'd

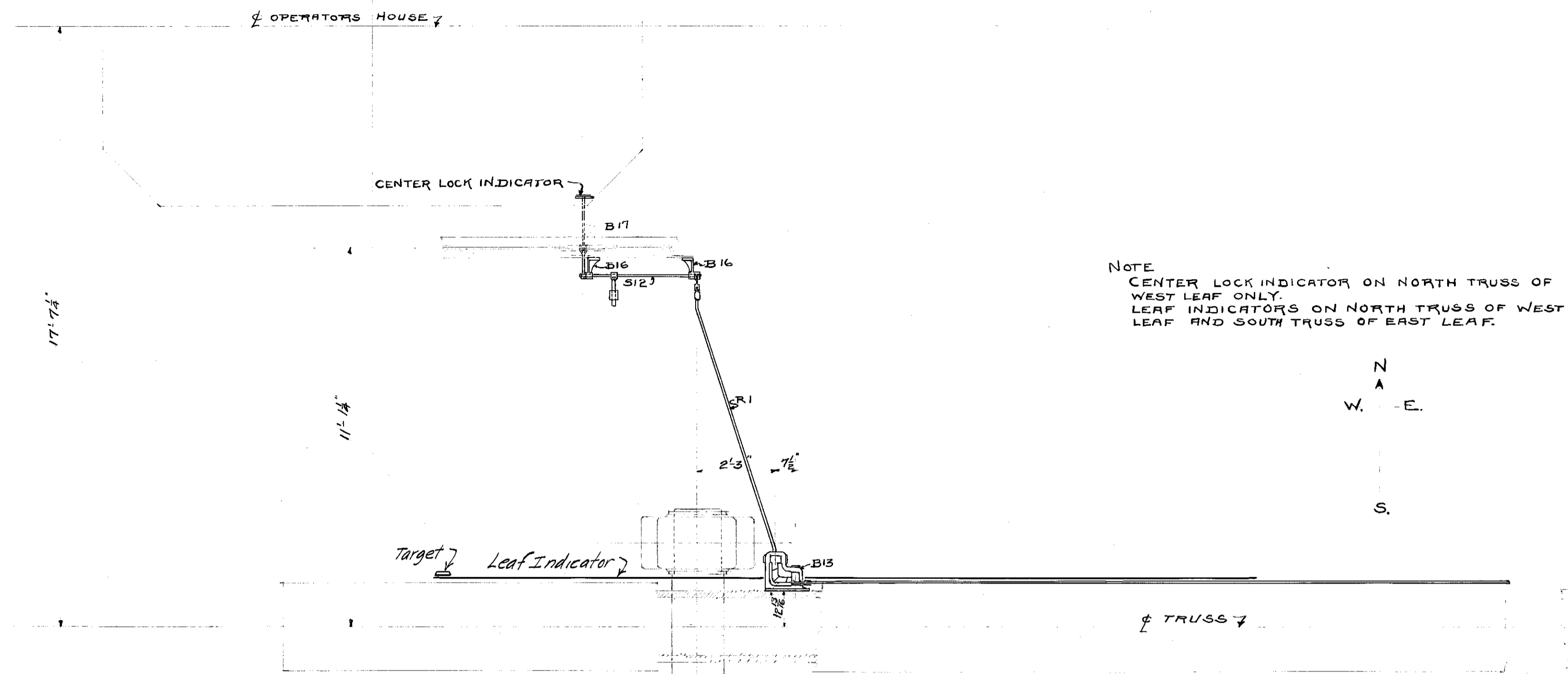
**ROD END - Cast Steel**  
 Pat. 110 12 Req'd

**ROD END - Cast Steel**  
 Pat. 128 12 Req'd

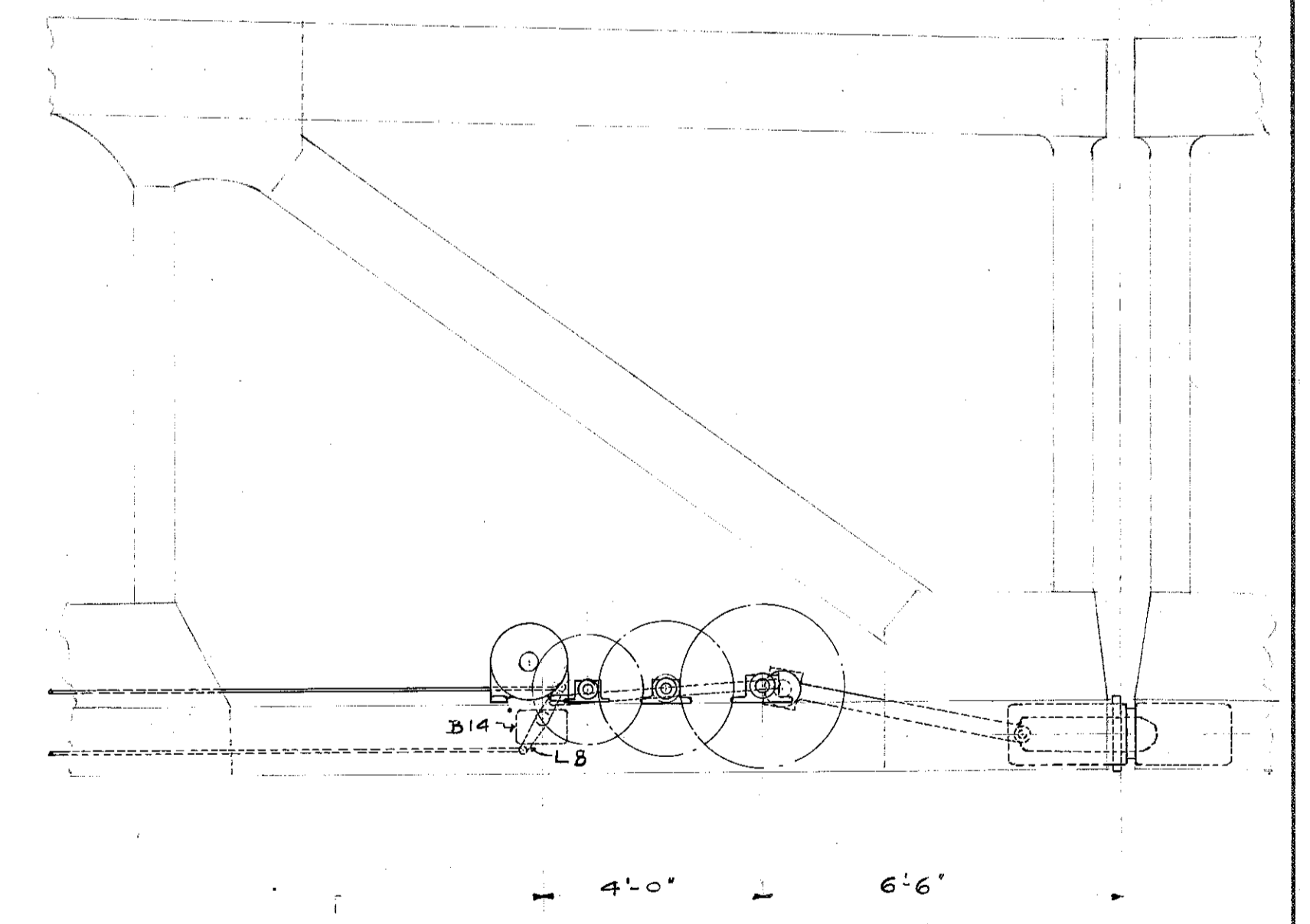
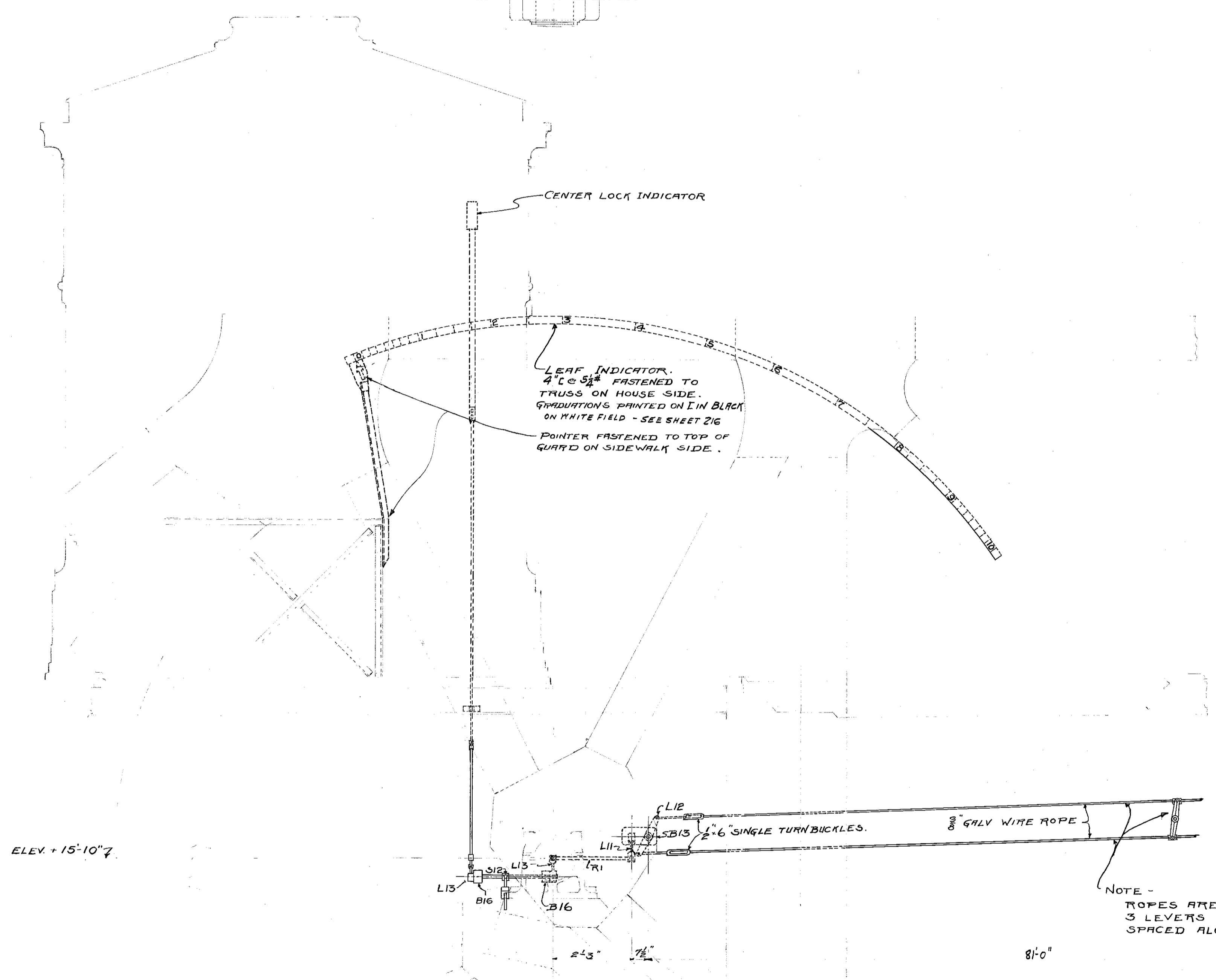
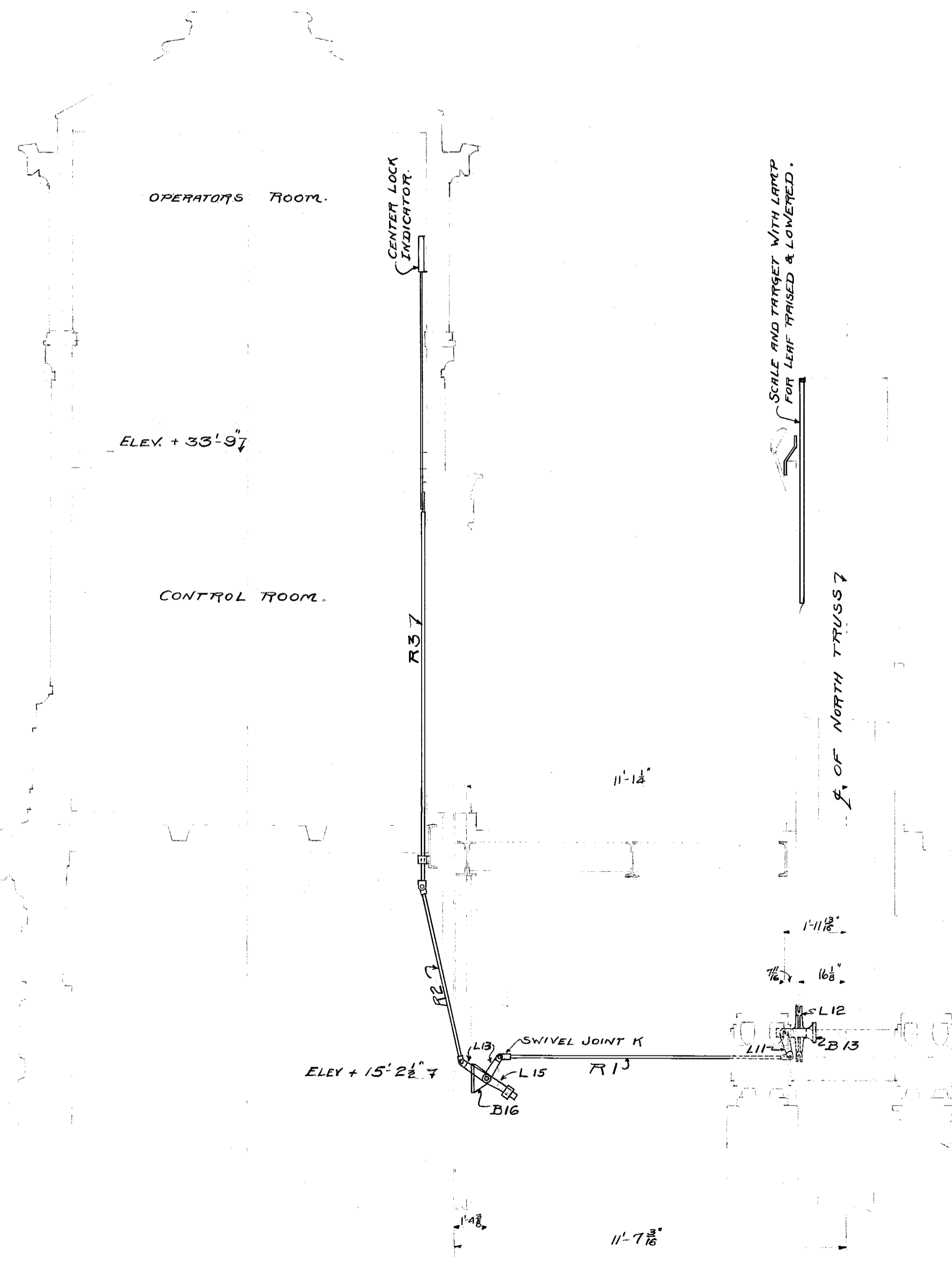
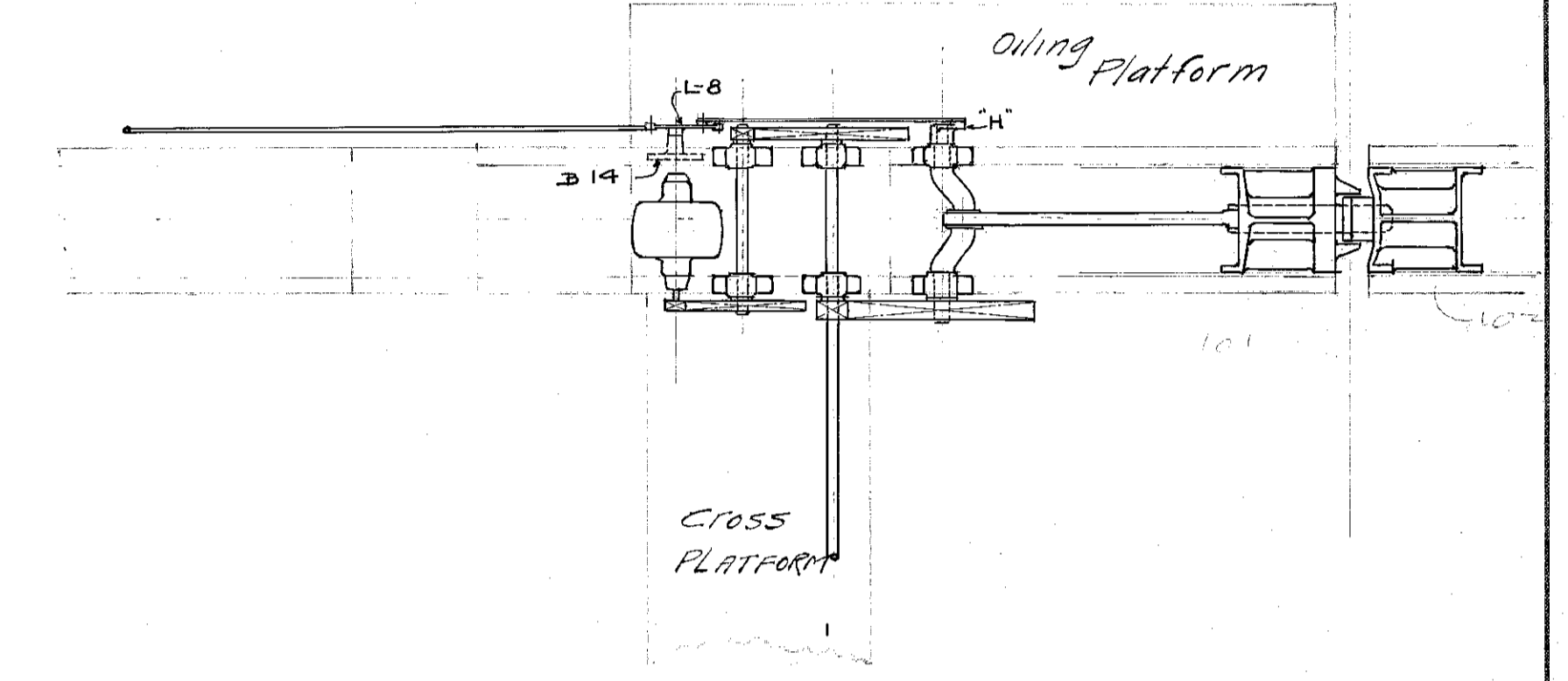
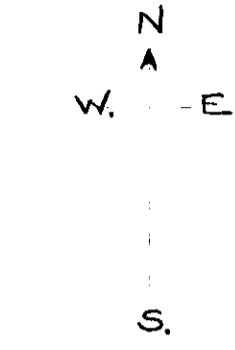
Revised 4/21/15

1660570231

CONTRACT NO. 2201 A SHEET NO. 213  
 DRAWING NO. 3908  
 FILE NO. 11-6C-36



NOTE  
 CENTER LOCK INDICATOR ON NORTH TRUSS OF WEST LEAF ONLY.  
 LEAF INDICATORS ON NORTH TRUSS OF WEST LEAF AND SOUTH TRUSS OF EAST LEAF.



NOTE -  
 ROPES ARE SUPPORTED BY 3 LEVERS L9 EQUALLY SPACED ALONG TRUSS.

THE KETLER-ELLIOTT ERECTION CO.  
**WEBSTER AVE. BRIDGE**  
 FOR THE  
**CITY OF CHICAGO**  
 Dept. of Public Works :: Bureau of Engineering :: Division of Bridges and Harbor  
**MODERN STEEL STRUCTURAL COMPANY**  
 GENERAL ARRANGEMENT OF INDICATORS.

Approved *William von Rebo*  
 ENGINEER OF BRIDGE DESIGN  
 Approved *John G. ...*  
 CHIEF OF BRIDGES AND HARBOR  
 Approved *...*  
 CITY ENGINEER  
 Approved *...*  
 COMMISSIONER OF PUBLIC WORKS

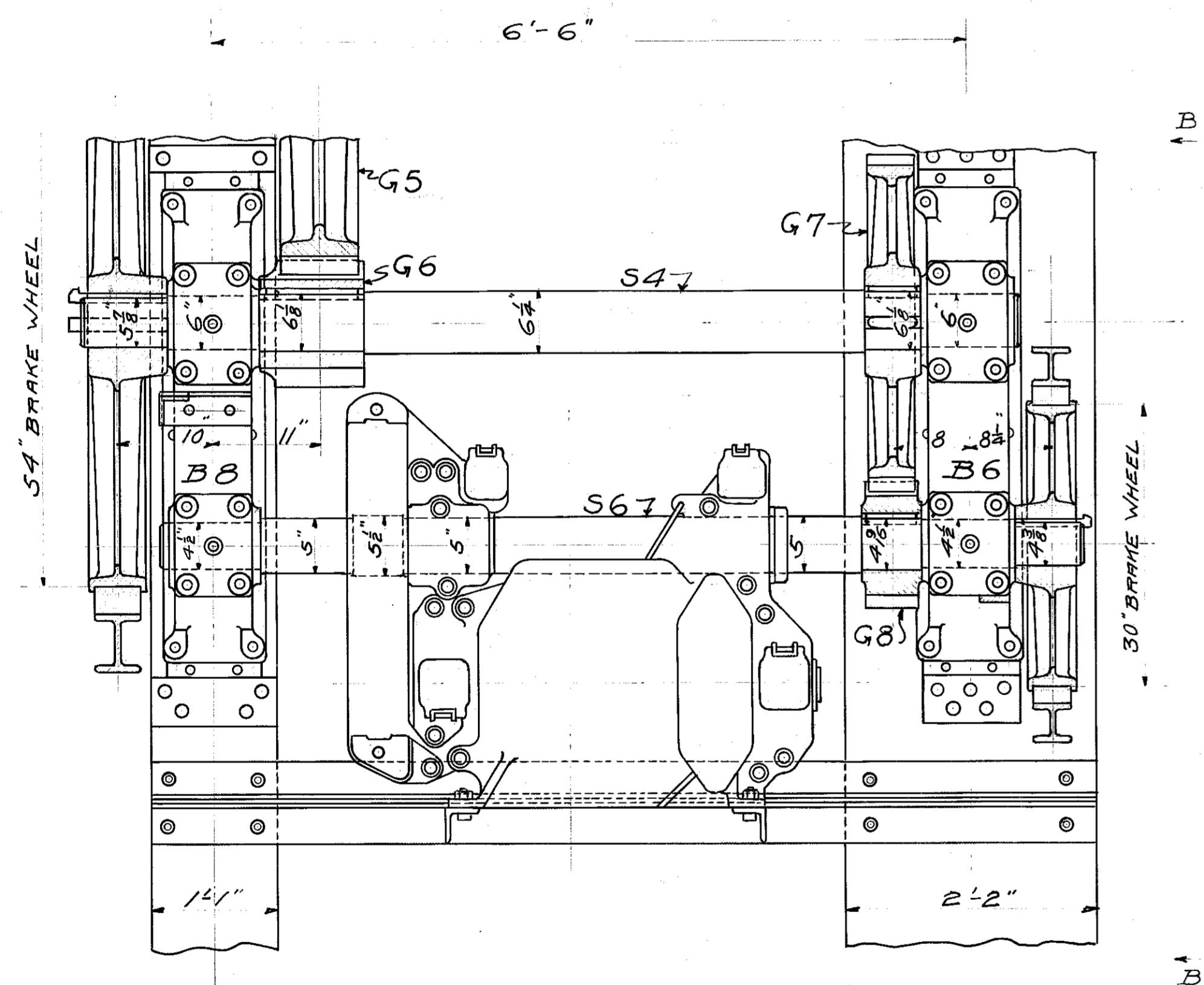
SEE MAT. BILLS. SCALE = 1 FT.  
 MADE BY J.B.F. TRACED BY F. CH'ED BY *...* 1914  
**CONTRACT No. 2201 A SHEET No. 214**

1660570232

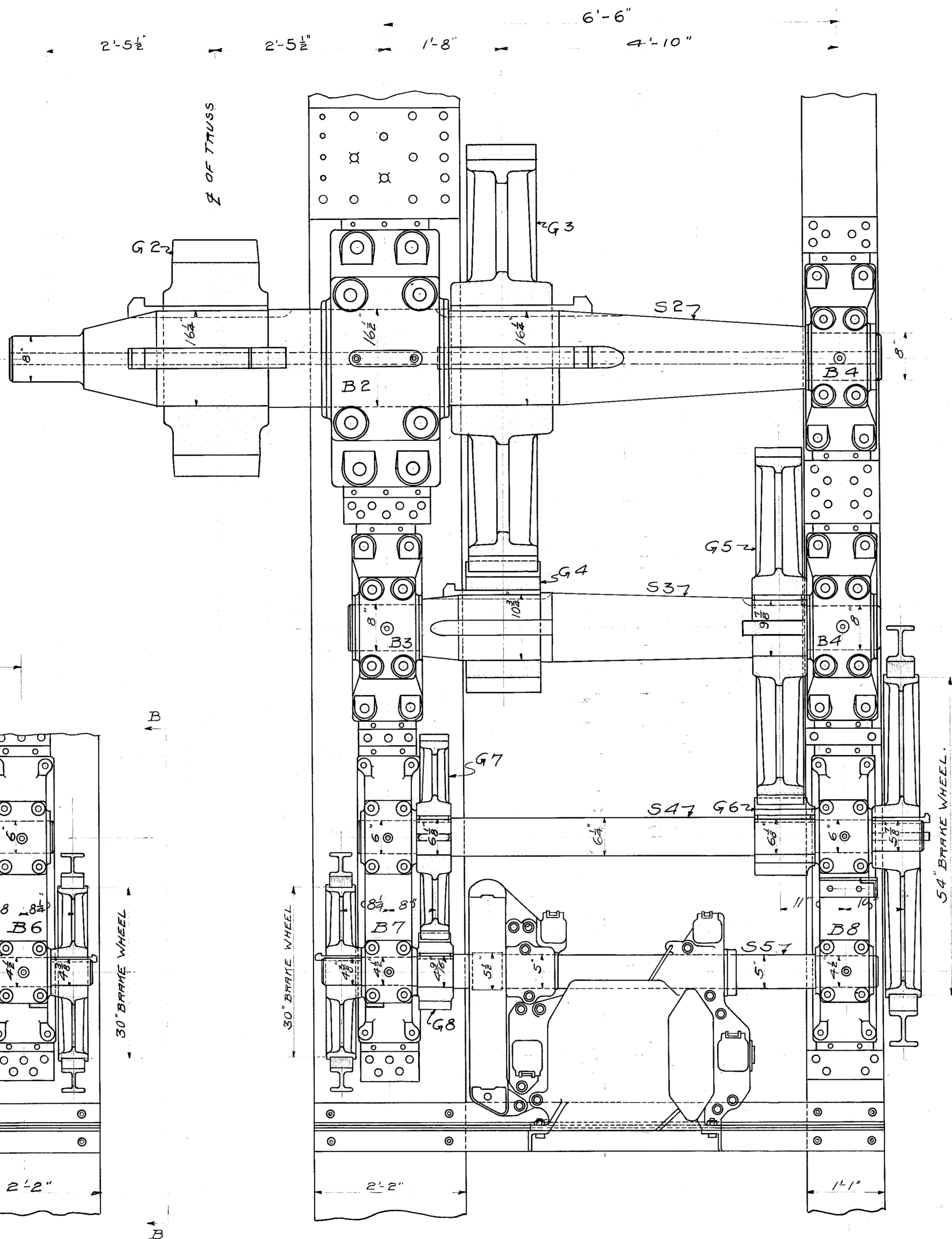
DRAWING No. 3909  
 FILE No. 11-6C-37

LIST OF MACHINERY DRAWINGS.

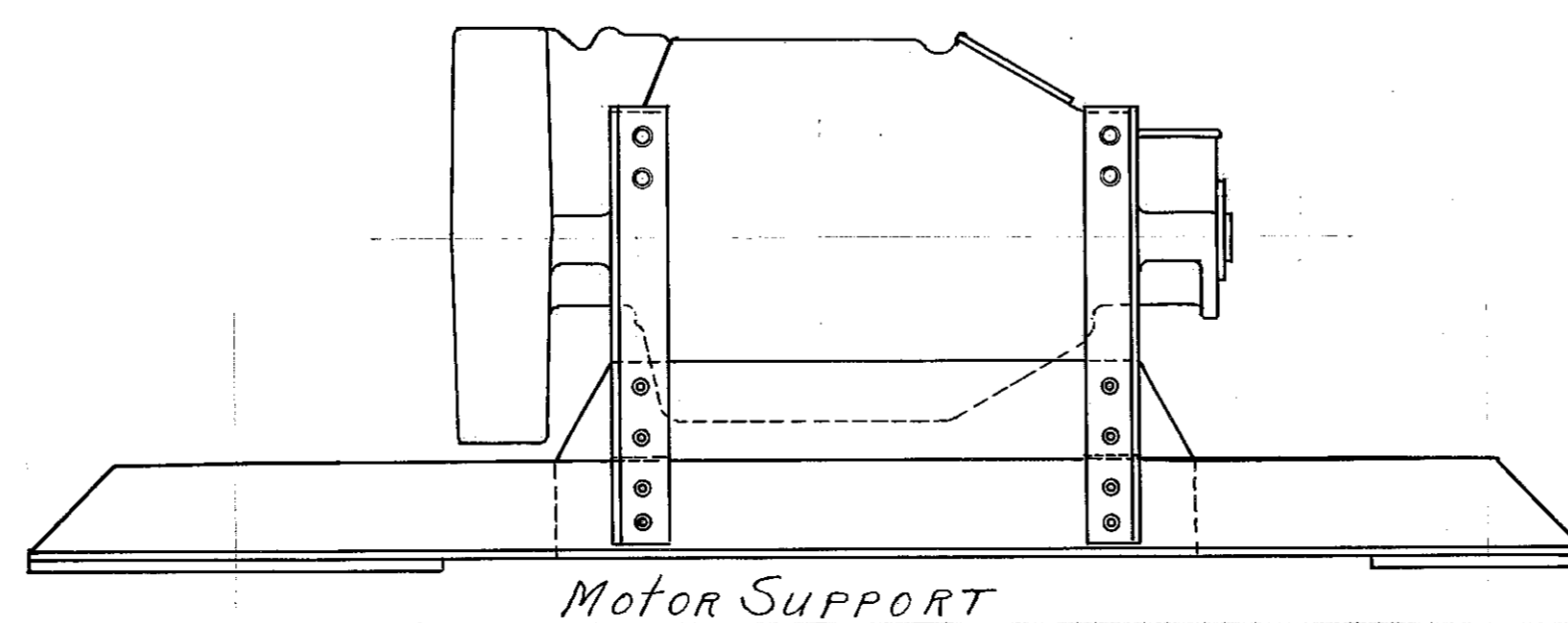
DWG. No.	TITLE.
201	MAIN DRIVE SHAFT AND TRUNNION BEARINGS.
202	DETAILS OF TRUNNION AND SHAFTS.
203	DETAILS OF INTERMEDIATE SHAFT BEARINGS.
204	DETAILS OF GEARING.
205	DETAILS OF RACKS.
205A	LAYOUT OF RACKS.
205B	LAYOUT OF RACKS.
206	GENERAL ARRANGEMENT OF HAND BRAKES.
207	DETAILS OF HAND BRAKES.
208	DETAILS OF BRAKE LEVERS AND SUPPORTS.
209	DETAILS OF LOCK INDICATOR.
210	DETAILS OF LOCK GEARING AND BEARINGS.
211	CENTER LOCK MACHINERY.
212	DETAILS OF LOCK AND LOCK INDICATOR.
213	DETAILS OF BRAKE SHAFTS AND LEVERS.
214	GENERAL ARRANGEMENT OF INDICATORS.
215	GEAR TRAIN.
216	DETAILS OF LEAF INDICATOR.
217	DETAILS OF BRAKE SUPPORTS.



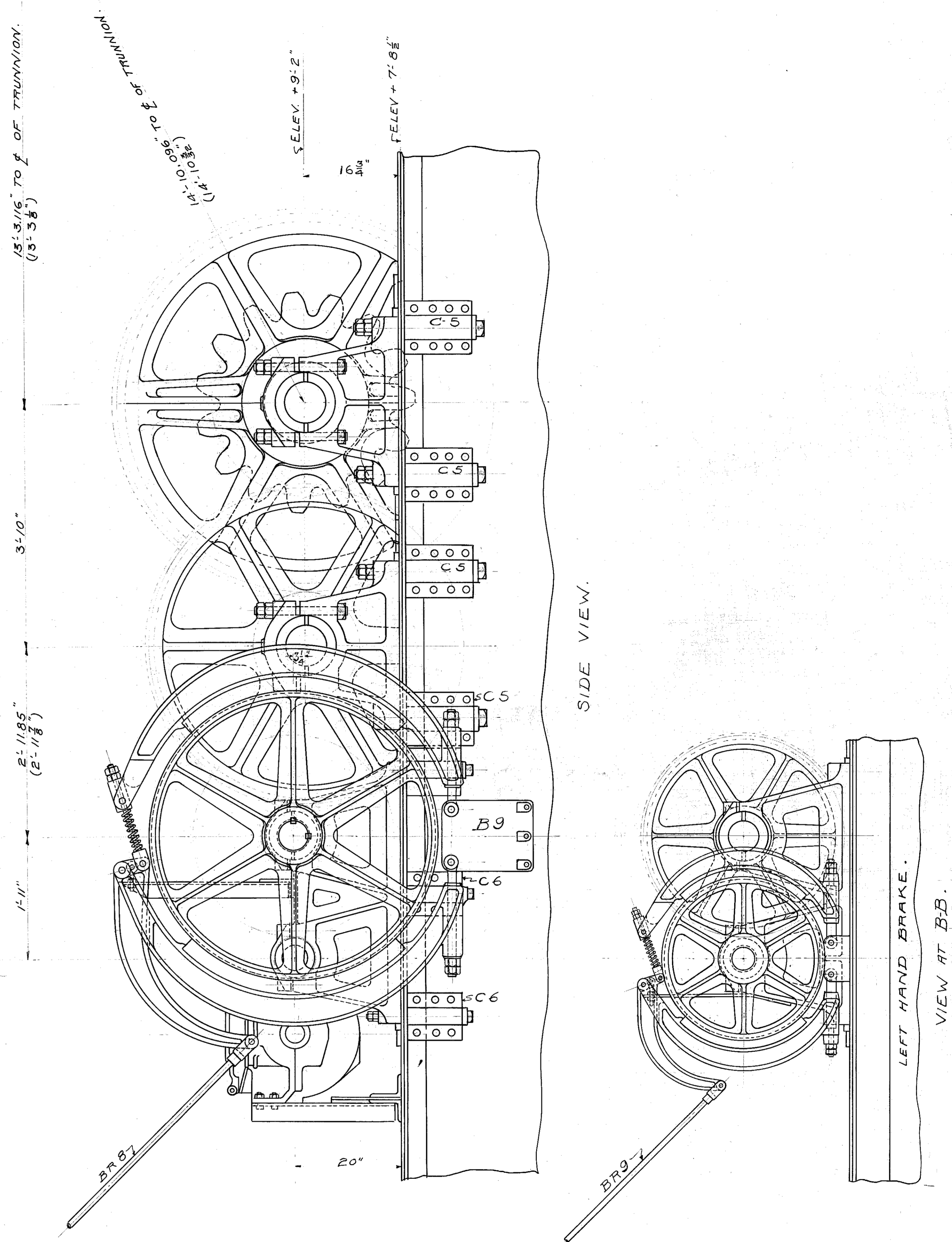
TOP VIEW OF GEAR TRAIN.  
LEFT HAND.  
FOR NORTH WEST AND SOUTH  
EAST CORNERS OF BRIDGE.  
- DETAILS NOT SHOWN ARE OPPOSITE  
HAND FROM RIGHT HAND GEAR TRAIN.



TOP VIEW OF GEAR TRAIN.  
RIGHT HAND.  
FOR SOUTH WEST AND NORTH  
EAST CORNERS OF BRIDGE.



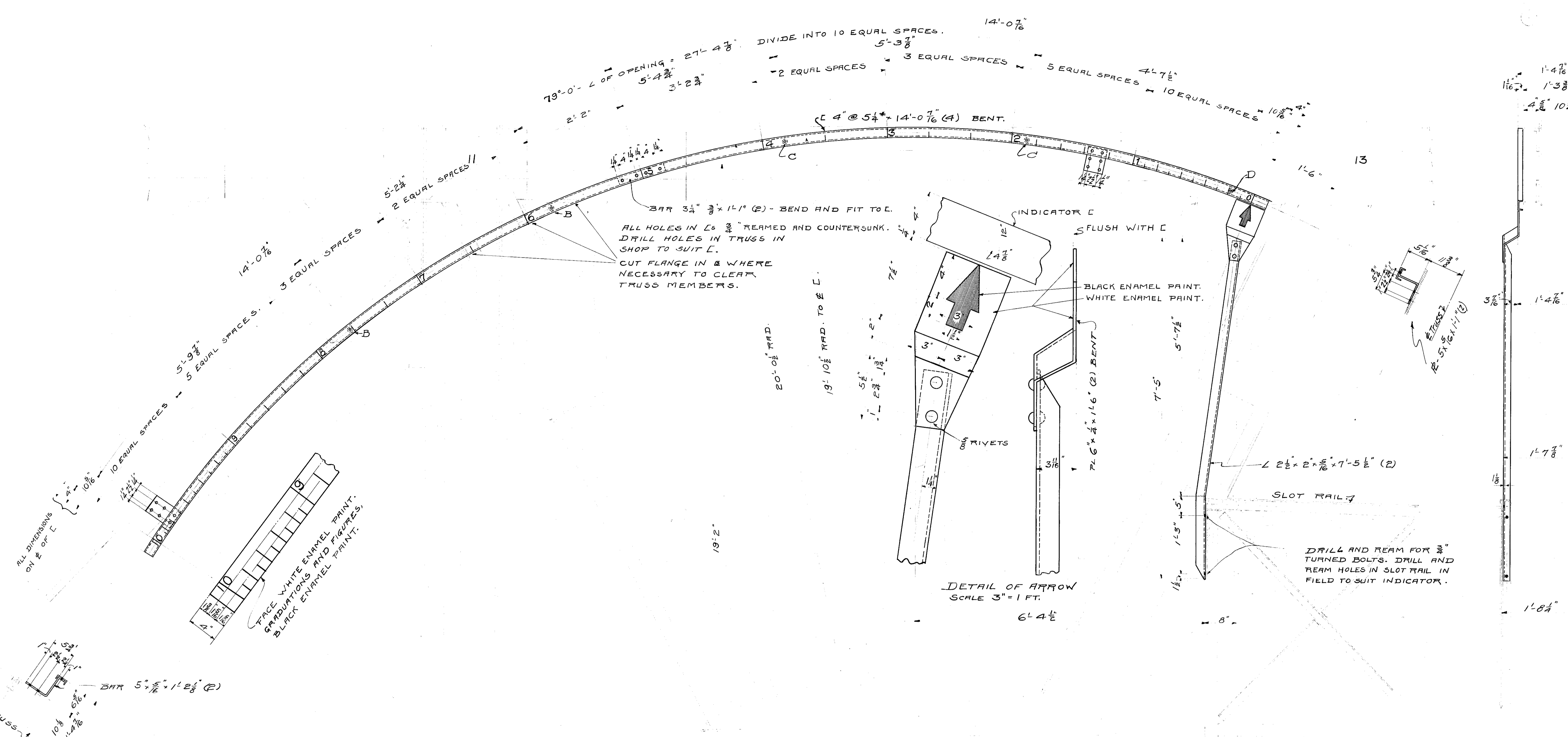
MOTOR SUPPORT



Approved *[Signature]*  
ENGINEER OF BRIDGE DESIGN  
Approved *[Signature]*  
ENGINEER OF BRIDGES AND HARBOR  
Approved *[Signature]*  
CITY ENGINEER  
Approved *[Signature]*  
COMMISSIONER OF PUBLIC WORKS

THE KETLER-ELLIOTT ERECTION CO.  
**WEBSTER AVE. BRIDGE**  
FOR THE  
**CITY OF CHICAGO**  
Dept. of Public Works :: Bureau of Engineering :: Division of Bridges and Harbor  
**MODERN STEEL STRUCTURAL COMPANY**  
GEAR TRAIN.  
SEE MAT. BILLS - SCALE 1" = 1 FT.  
MADE BY J.B.F. TRACED BY J.B.F. CHK'D BY *[Signature]* 1914  
**CONTRACT No. 2201 A SHEET No. 215**  
DRAWING No. 3910  
FILE No. 11-6C-38

1660570233



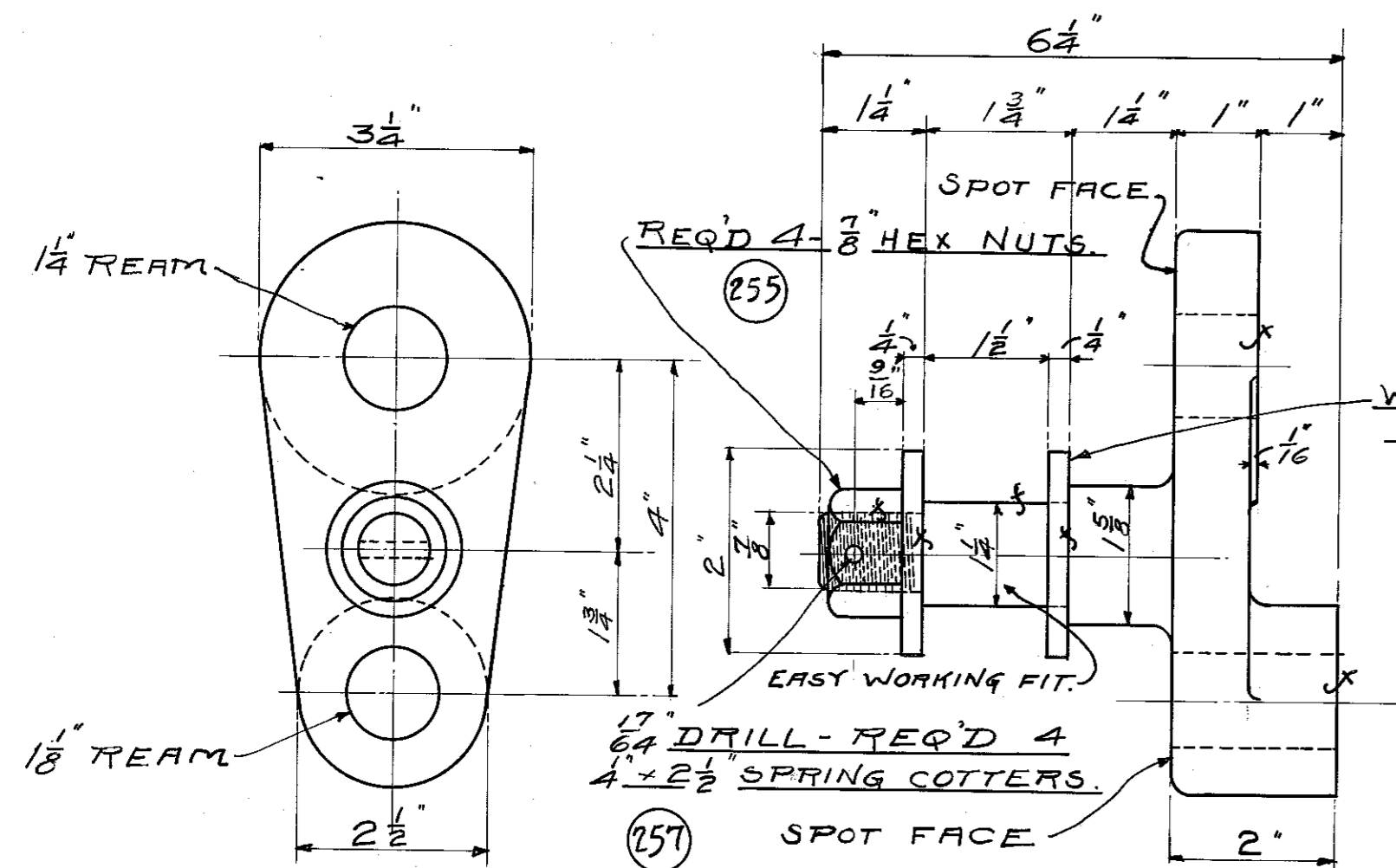
NOTE -  
 GRADUATIONS TO BE CAREFULLY AND NEATLY  
 PAINTED ON C IN BLACK ON WHITE FIELD.  
 INDICATORS TO BE PLACED ON NORTH SIDE  
 OF NORTH TRUSS OF WEST LEAF AND ON  
 SOUTH SIDE OF SOUTH TRUSS OF EAST  
 LEAF.

THE KETTLER-ELLIOTT ERECTION CO.  
**WEBSTER AVE. BRIDGE**  
 FOR THE  
**CITY OF CHICAGO**  
 Dept. of Public Works :: Bureau of Engineering :: Division of Bridges and Harbor  
**MODERN STEEL STRUCTURAL COMPANY**  
**LEAF INDICATOR.**

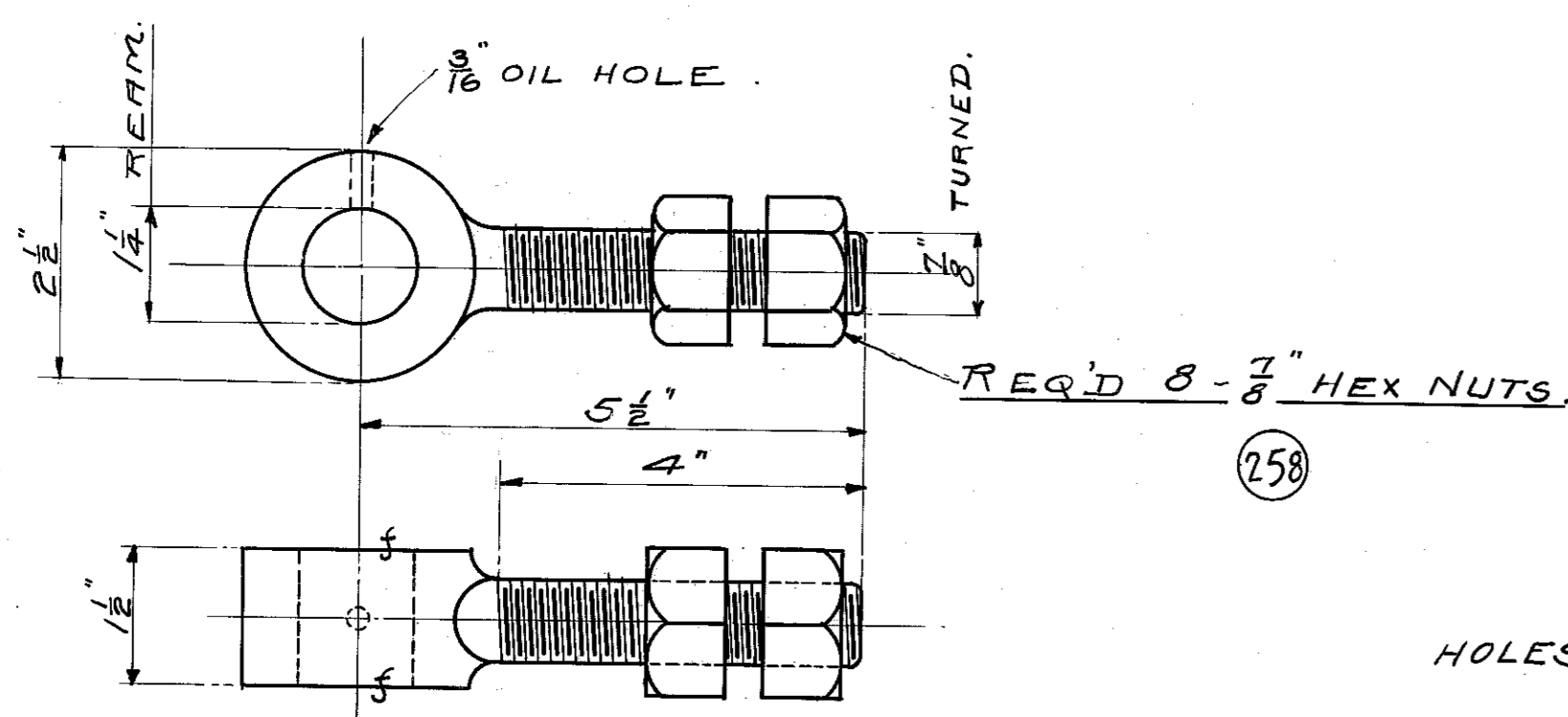
Approved *Harold W. Beck*  
 ENGINEER OF BRIDGE DESIGN  
 Approved *John G. ...*  
 CHIEF OF BRIDGES AND HARBOR  
 Approved *...*  
 CITY ENGINEER  
 Approved *...*  
 COMMISSIONER OF PUBLIC WORKS

SEE MAT. BILLS SCALE 1" = 3" = 1 FT.  
 MADE BY J. B. F. TRACED BY J. B. F. CHK'D BY *...* 1914  
**CONTRACT No. 2201A SHEET No. 216.**  
 DRAWING No. 3911  
 FILE No. 11-GC-39

1660570234



SUPPORT LEVER - CAST STEEL.  
PAT. NO. WEB. AVE. BR. 143  
4 REQ'D.

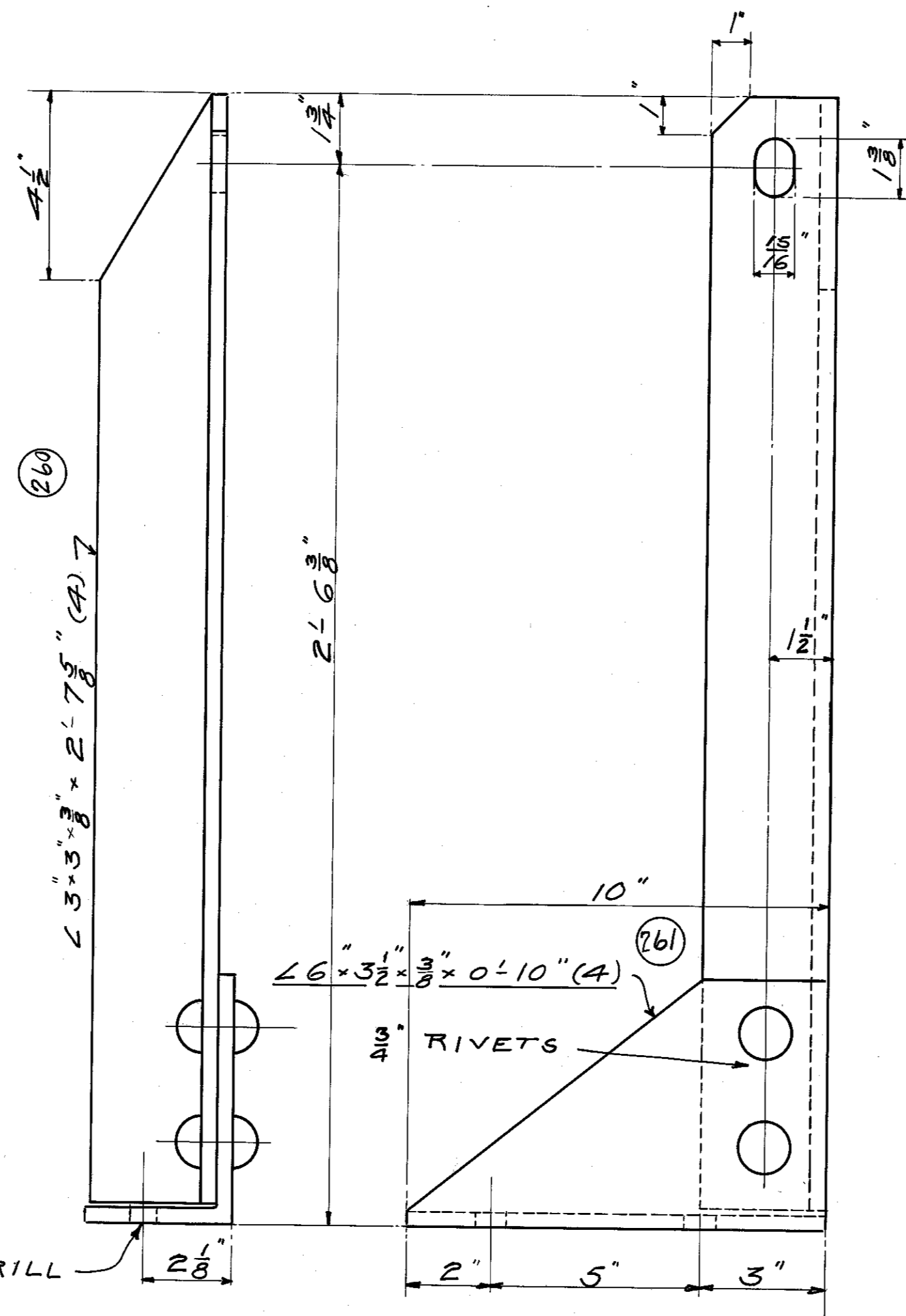


EYE BOLT, FORGED STEEL.  
4 REQ'D.

(259)

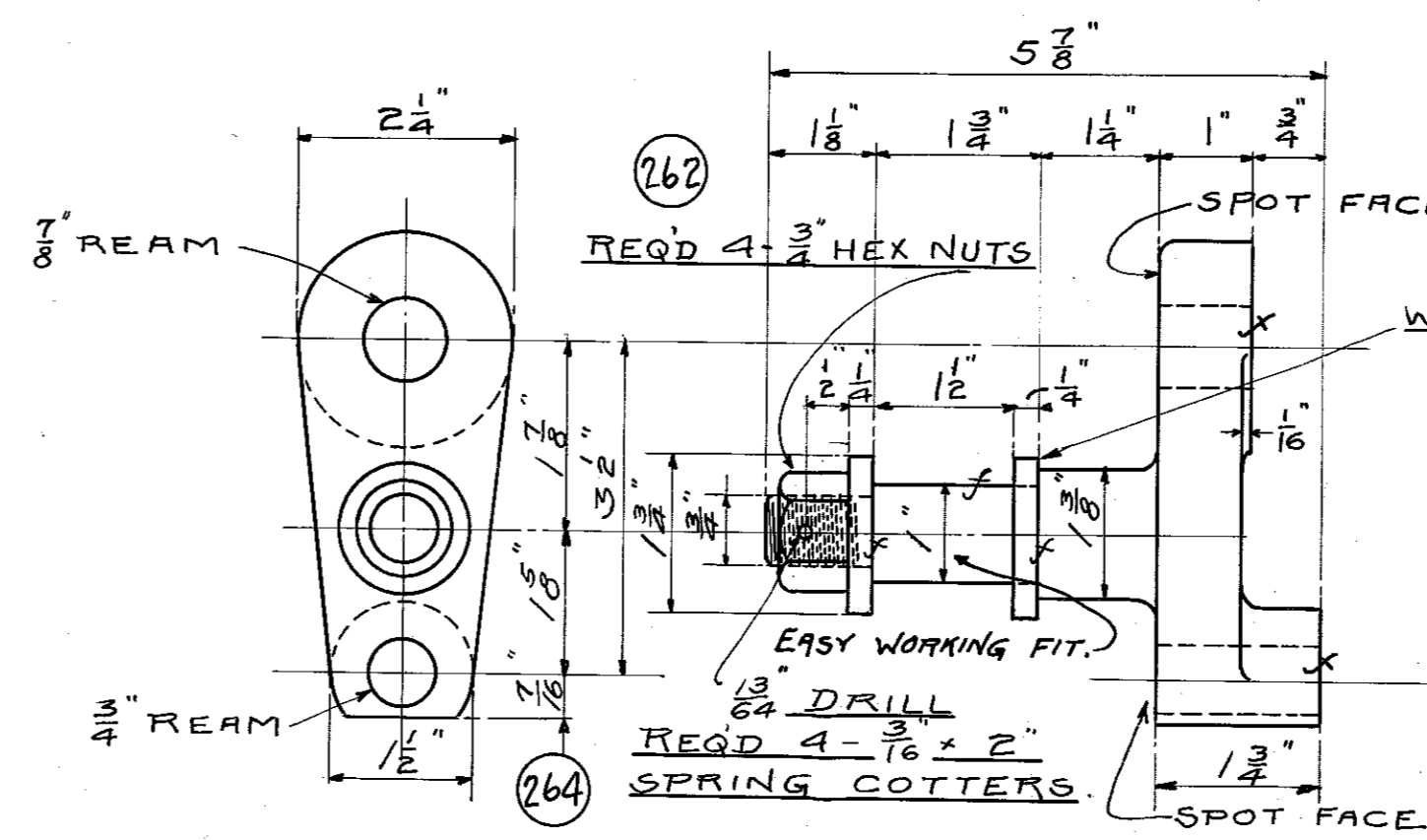
WASHER MCHY STL.  
7 ALL OVER.  
8 REQ'D.

(256)

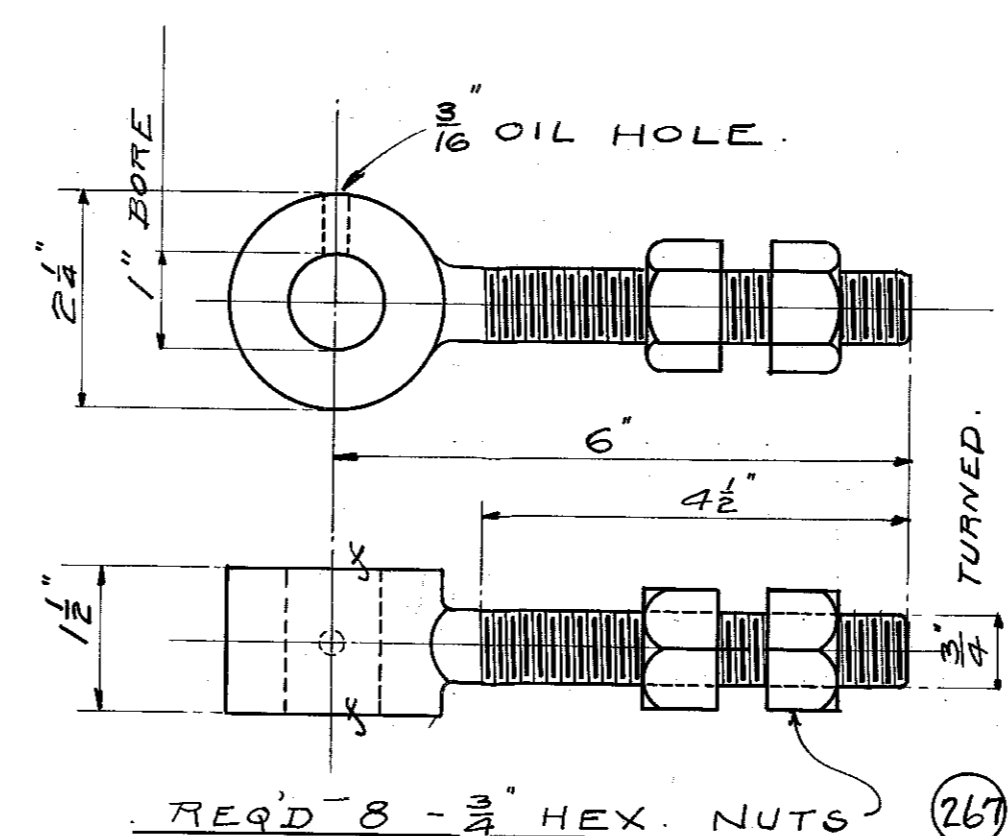


LARGE BRAKE SUPPORT.  
2 REQ'D AS SHOWN.  
2 REQ'D OPPOSITE HAND.

(260)



SUPPORT LEVER - CAST STEEL.  
PAT. NO. WEB. AVE. BR. 144.  
4 REQ'D.

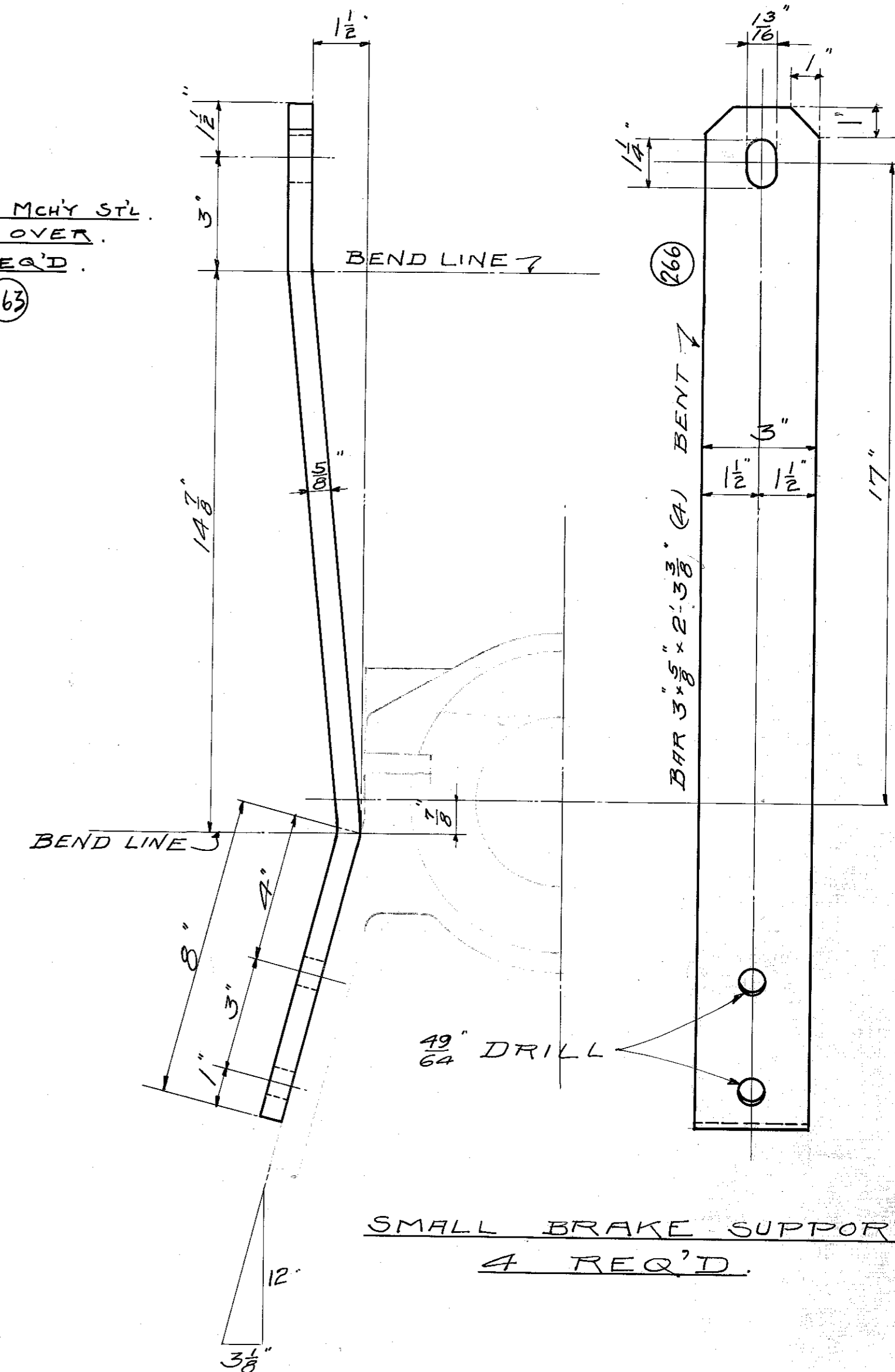


EYE BOLT, FORGED STEEL.  
4 REQ'D.

(265)

WASHER MCHY STL.  
7 ALL OVER.  
8 REQ'D.

(262)



SMALL BRAKE SUPPORT  
4 REQ'D.

49" DRILL

BEND LINE

BEND LINE

(266)

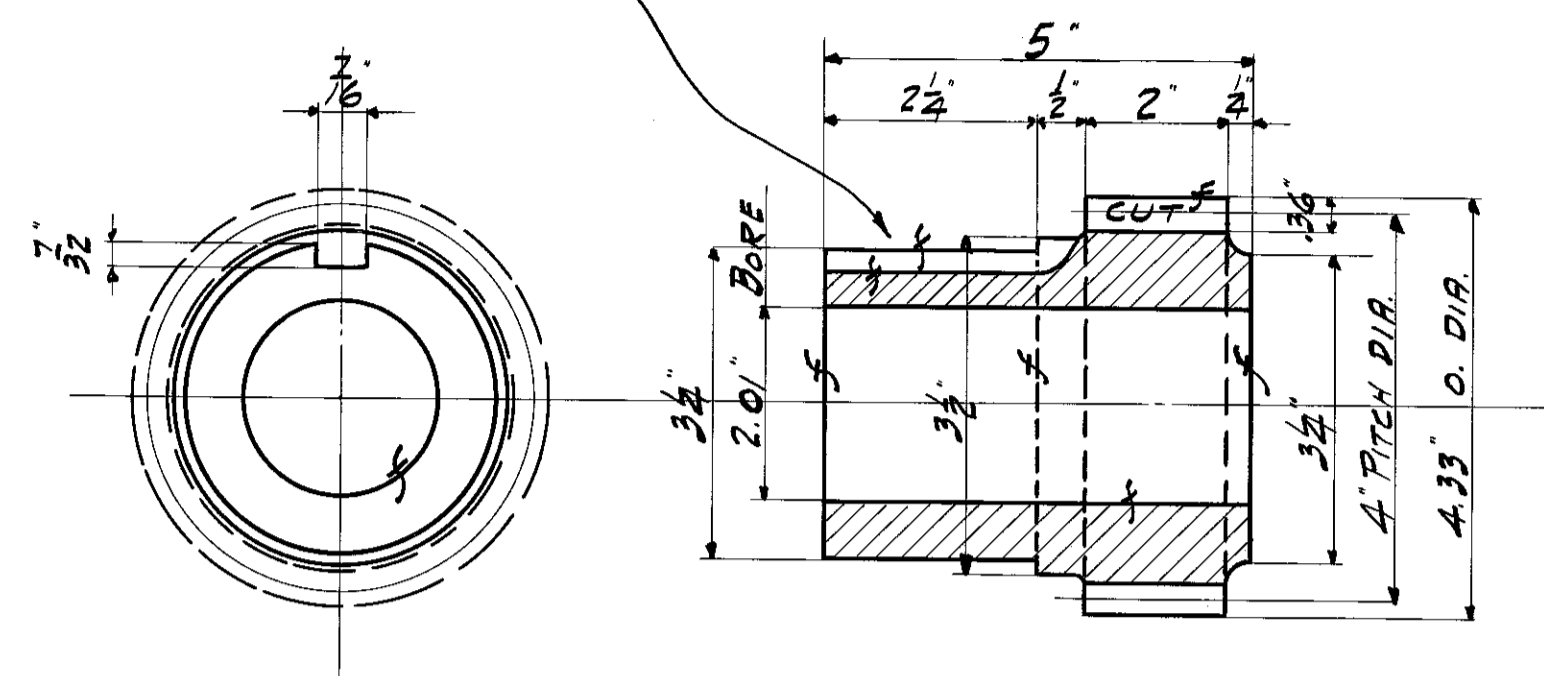
SEE DWG # 201 FOR GENERAL NOTES CONCERNING PATTERNS,  
TURNED BOLTS, ECT., # 203 FOR CASTINGS, PAINTING, ECT.  
SEE DWG # 207 FOR DETAILS OF BRAKES.

Approved *Alexander von Tsch...*  
Approved *...*  
Approved *...*  
Approved *...*

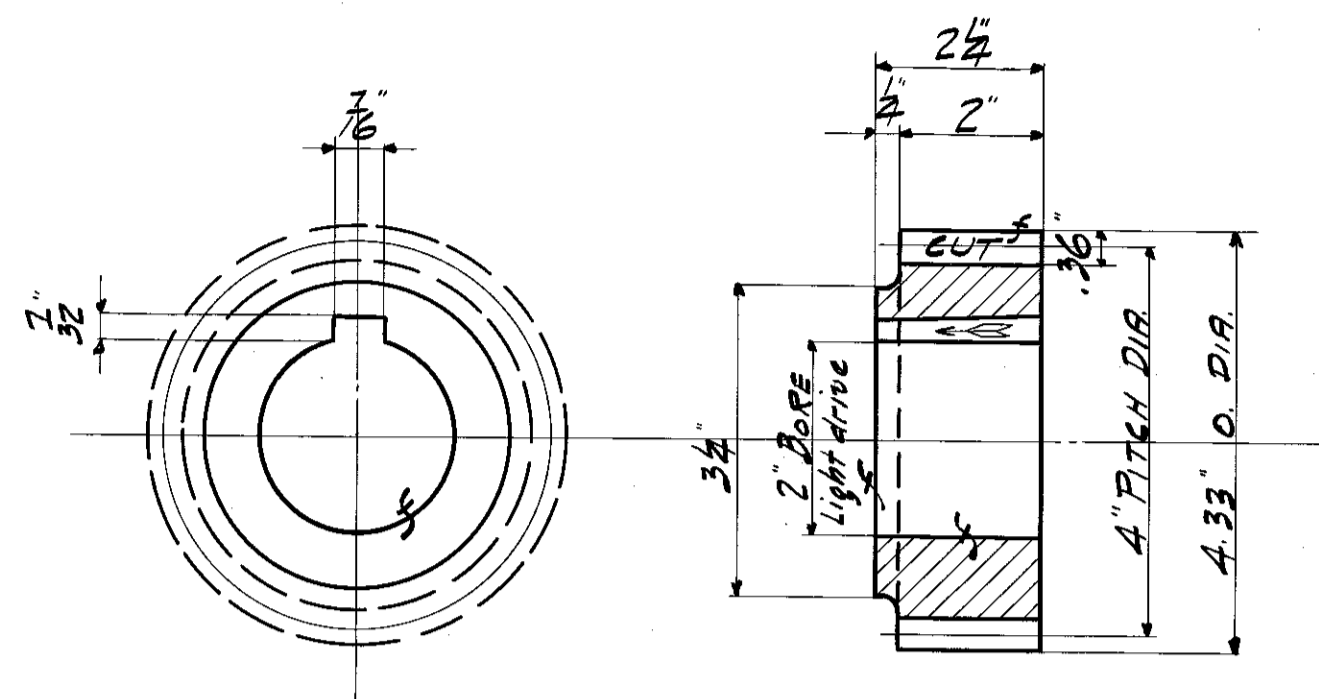
THE KETLER-ELLIOTT ERECTION CO.  
**WEBSTER AVE. BRIDGE**  
FOR THE  
**CITY OF CHICAGO**  
Dept. of Public Works :: Bureau of Engineering :: Division of Bridges and Harbor  
MODERN STEEL STRUCTURAL COMPANY  
BRAKE SUPPORTS.

SEE MAT. BILLS 224 SCALE 1/8" = 1 FT.  
MADE BY J.B.F. TRACED BY F. CHK'D BY *...*  
**CONTRACT No. 2201A SHEET No. 217.**

REQD. 4-7/16 x 2" FLUSH KEY



PINION - 24 T- 6 DP- 4" PITCH DIA.  
FORGED STEEL 4" REQD.  
(G20)

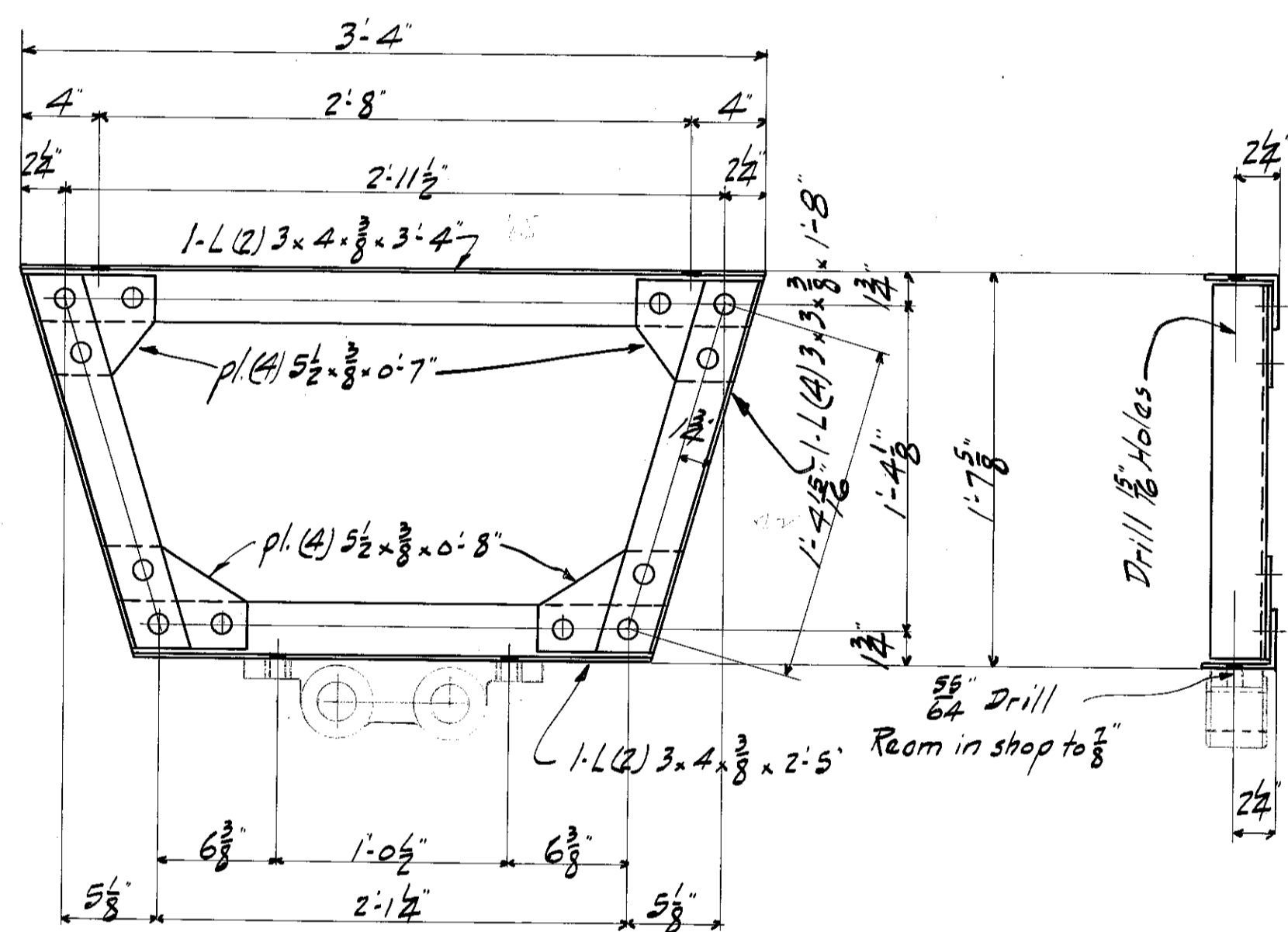


PINION 24 T- 6 DP- 4" PITCH DIA.  
FORGED STEEL 4" REQD.  
(G21)

NOTE

The following extra material  
reqd. for brakes. See drawings  
for details.

Nº	NAME	MATL.	PAT. OR P.C. Nº	DWG.
6	Collars	C.S.	127	213
6	Set Screws	5/8 x 3/4	215	"
2	Bearings	C.I.	112	208
4	Set Screws	1/2 x 3/4	168	"
4	Grease Cups	3/8 x 1/2	169	"
4	Turned Bolts	7/8 x 3 1/2	171	"



BEARING HANGER 2- REQD.  
Roots 3/4 DIA

Note -

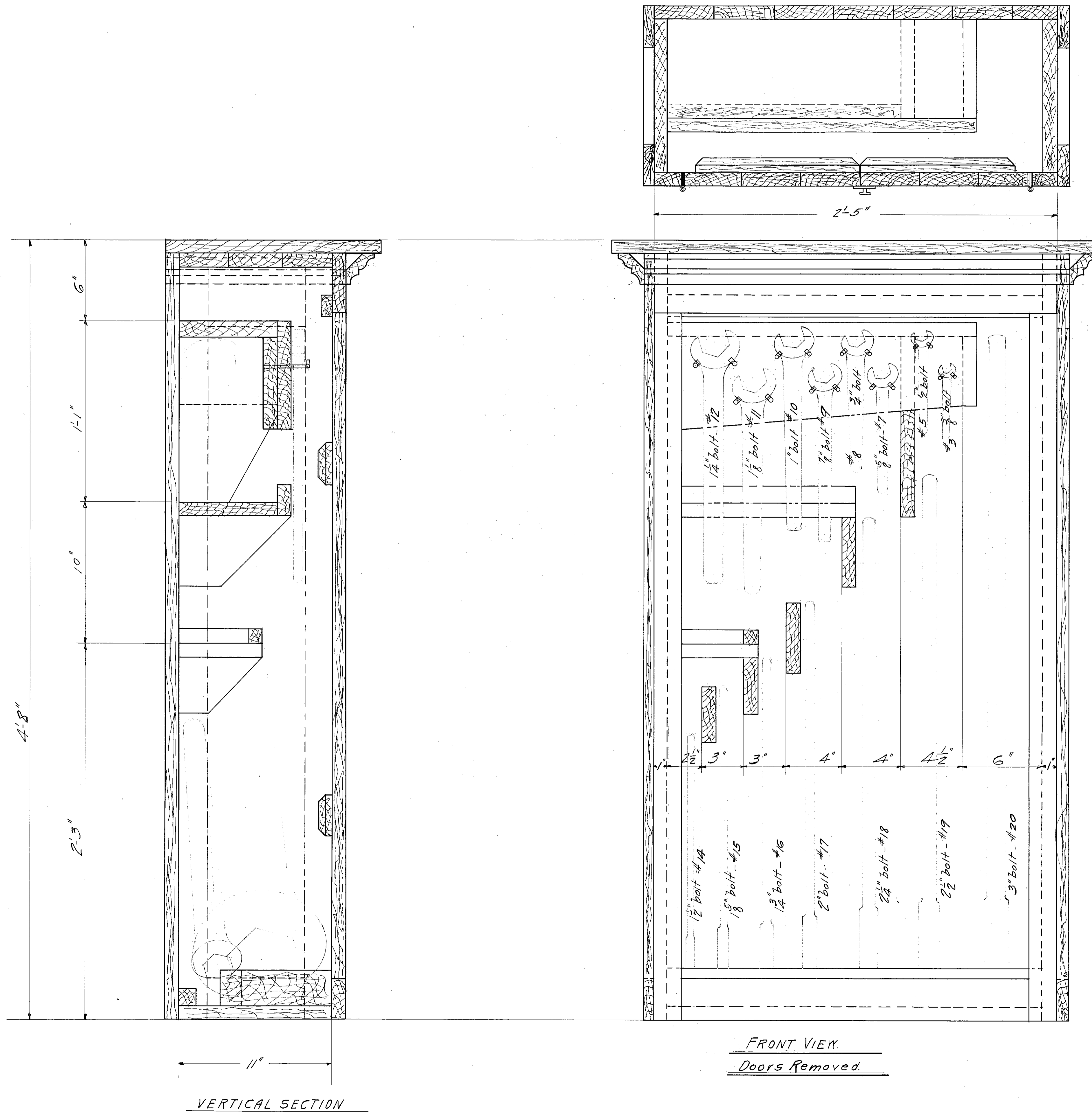
These details are extra parts required  
by change in design of brake mechanism.

Approved *[Signature]*  
ENGINEER OF BRIDGE DESIGN  
Approved *[Signature]*  
ENGINEER OF BRIDGES AND HARBOUR  
Approved *[Signature]*  
CITY ENGINEER  
Approved *[Signature]*  
COMMISSIONER OF PUBLIC WORKS

THE KETLER-ELLIOTT ERECTION CO.  
**WEBSTER AVE. BRIDGE**  
FOR THE  
**CITY OF CHICAGO**  
Dept. of Public Works :: Bureau of Engineering :: Division of Bridges and Harbor  
MODERN STEEL STRUCTURAL COMPANY  
DETAILS OF HAND BRAKES  
SEE MAT. BILLS. SCALE 1/2" = 1 FT.  
MADE BY I.B.F. TRACED BY C.E.M. CH'Y'D BY [Signature] 1914  
**CONTRACT No. 2201 AEX. SHEET No. 21B**

1660570234

DRAWING No. 3913  
FILE No. 11-6C-41.



HORIZONTAL SECTION

DIA BOLT	WRENCH NO.	NO WRENCHES
3/8"	3	2
1/2"	5	"
5/8"	7	"
3/4"	8	"
7/8"	9	"
1"	10	"
1 1/8"	11	"
1 1/4"	12	"
1 1/2"	14	"
1 3/8"	15	"
1 3/4"	16	"
2"	17	"
2 1/4"	18	"
2 1/2"	19	"
3"	20	"

Wrenches to be Whitman & Barnes Mfg Co.  
make, 15° Angle, Semi-finished.

Cabinet to be made of straight-grained  
Georgia Pine - S4S and free from knots.  
Provide brass hinges and lock.  
Cabinet to receive 2 coats of varnish-  
natural-color finish.

MAKE 1 CABINET AS SHOWN FOR EAST SIDE OF BRIDGE.

" 1 " " " " WEST " " "

FRONT VIEW.  
Doors Removed.

VERTICAL SECTION

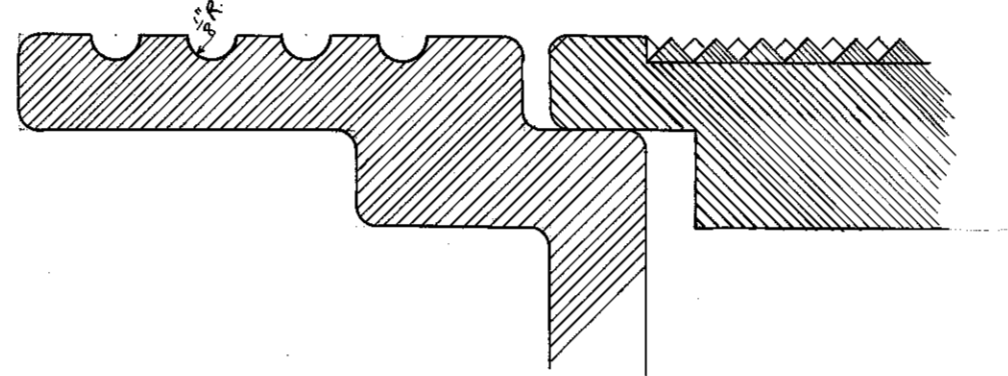
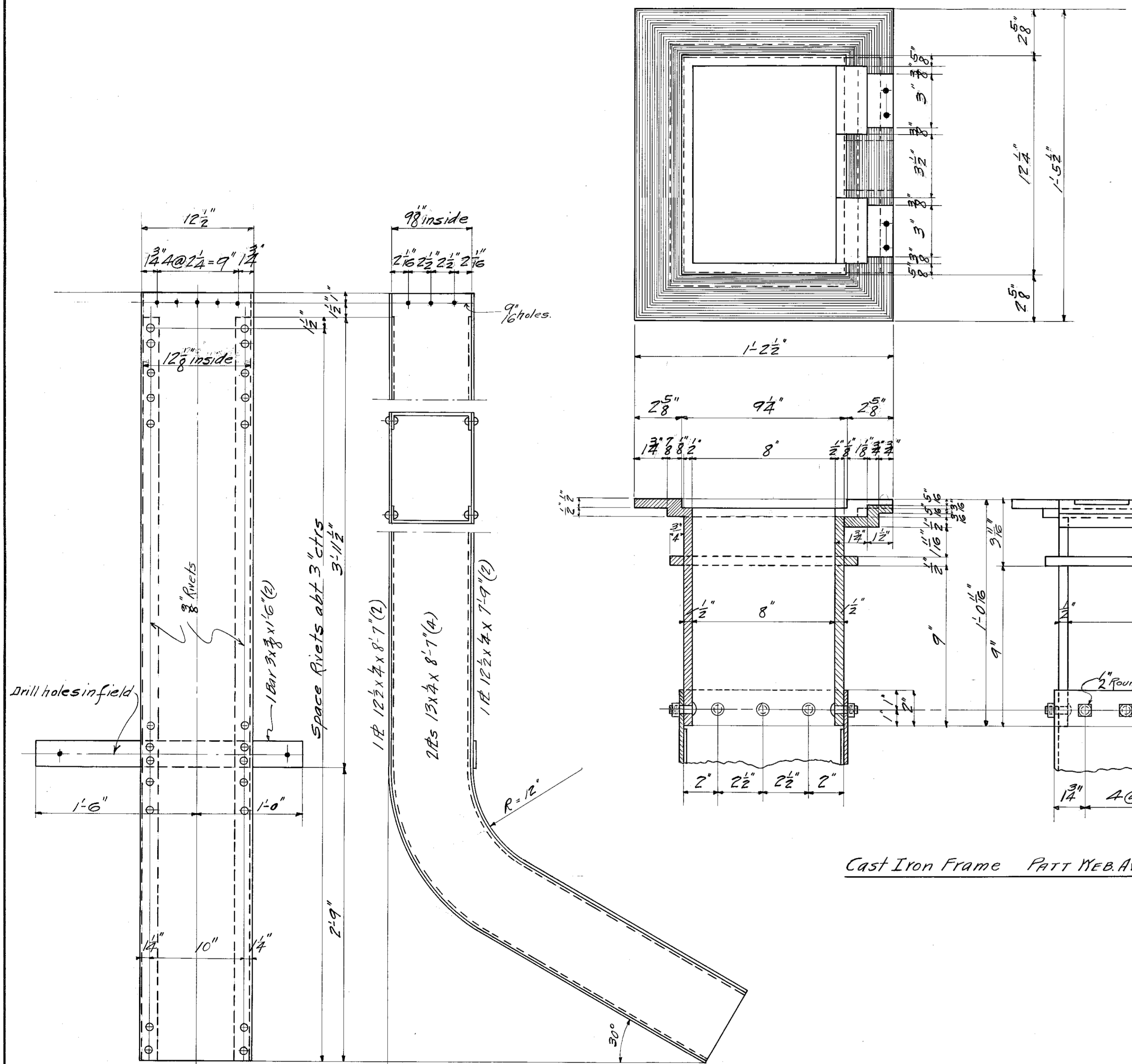
7 Japs  
1/2" clear 3/4"

Approved *Hugh B. Young*  
CITY ENGINEER  
Approved *John G. ...*  
CITY ENGINEER  
Approved *...*  
CITY ENGINEER

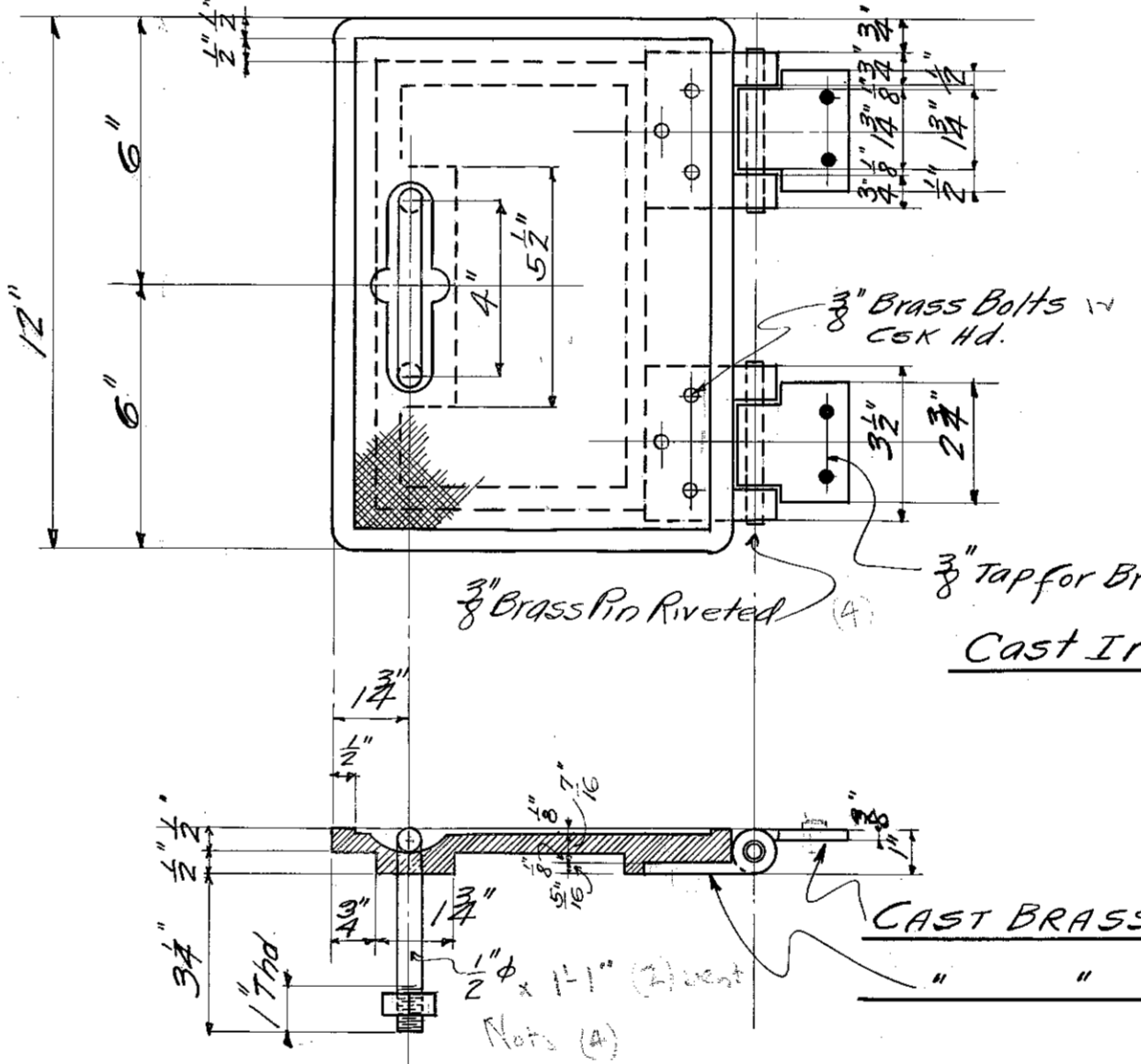
THE KETLER-ELLIOTT ERECTION CO.  
**WEBSTER AVE. BRIDGE**  
FOR THE  
**CITY OF CHICAGO**  
Dept. of Public Works :: Bureau of Engineering :: Division of Bridges and Harbor  
MODERN STEEL STRUCTURAL COMPANY  
**WRENCH CABINETS**  
SEE MAT. BILLS. SCALE 3" = 1 FT.  
MADE BY *Wheeler* TRACED BY *J.B.H.* CHECK'D BY  
**CONTRACT No. 2201-A SHEET No. 219**

1660570237

DRAWING No. 3914  
FILE No. 11-6C-42



Full Size detail showing rib and checker



Cast Iron Cover Patt Web Ave Br # 146

Cast Brass Hinge Patt Web Ave Br # 147

" " " " " " # 148

MAKE 1 FRAME & CHUTE COMPLETE FOR EAST SIDE OF BRIDGE.  
 " " " " " " WEST " " "

SCALE - 3" = 1 FT.

If plates do not bend satisfactorily  
 2x2x1/4 angles may be used.

COAL CHUTE Scale 1/2" = 1 FT.

Approved *[Signature]*  
 Approved *[Signature]*  
 Approved *[Signature]*  
 Approved *[Signature]*

THE KETLER-ELLIOTT ERECTION CO.  
**WEBSTER AVE. BRIDGE**  
 FOR THE  
**CITY OF CHICAGO**  
 Dept. of Public Works :: Bureau of Engineering :: Division of Bridges and Harbor  
**MODERN STEEL STRUCTURAL COMPANY**  
**COAL FRAME & CHUTE**  
 SEE MAT. BILLS REVISION SCALE 3/16" = 1 FT.  
 MADE BY *[Signature]* CHECK'D BY *[Signature]* 1914  
**CONTRACT No. 2201 A SHEET No. 220**  
 DRAWING No. 3915  
 FILE No. 11-6C-43

166057023A



**LIST OF APPARATUS**

- #1 - Solenoid Switch for Center Lock Motor, Back Connected.
- #2 - Solenoid Switch for Main Operating Motors, Back Connected.
- #3 - Overload Relay for Main Operating Motors, Back Connected.
- #4 - Main Switch.
- #5 - Overload Relay for Main Operating Motor #1, Back Connected.
- #6 - Starting Rheostat for Pump Motor.
- #7 - Overload Relay for Main Operating Motor #2, Back Connected.
- #8 - Snap Switch for Machine Lights.
- #9 - Same as #8.
- #10 - Same as #23.
- #11 - Blank Switch.
- #12 - Snap Switch for Basement and Indicator Lights.
- #13 - Snap Switch for Passageway Lights.
- #14 - Snap Switch for Bridge Lights.
- #15 - Snap Switch for Pier Lights.
- #16 - Blank Snap Switch.
- #17 - Snap Switch for Basement Lights.
- #18 - Snap Switch for Operator's Room Lights.
- #19 - Switch for Center Lock Motor.
- #20 - Switch for Main Operating Motor #1.
- #21 - Switch for Main Operating Motor #2.
- #22 - Switch for Pump Motor.
- #23 - Fuse for Machine Lights.
- #24 - Fuse for Passageway Lights.
- #25 - Fuse for Bridge Lights.
- #26 - Fuse for Pier Lights.
- #27 - Fuse for Roadway Signal.
- #28 - Fuse for Basement Lights.
- #29 - Fuse for Operator's Room Lights.
- #30 - Fuse for Basement and Indicator Lights.
- #31 - Fuse for Center Lock Motor.
- #32 - Fuse for Pump Motor.
- #33 - Blank Fuse.
- #34 - Name Plate.
- #35 - Snap Switch for Shunt Coil of Contactor.
- #36 - Fuse for Shunt Coil of Contactor.

**SWITCHBOARD**

MATERIAL - 1/2" Black Monson Slate (1/4" Bevel)  
 FRAME - 2x2x1/2" Angle Iron  
 SWITCHES - 600V. Q.B. Polished Knife Switches Trumbull Type #1  
 H-H. S.P. 600V. No. 257 Snap Switches  
 H-H. Two Circuit 600V. No. 257 Snap Switches  
 FUSES - N.E.C. Enclosed 600 Volt  
 MOUNTED ON FRONT OF BOARD

**INSTRUMENT PANEL**

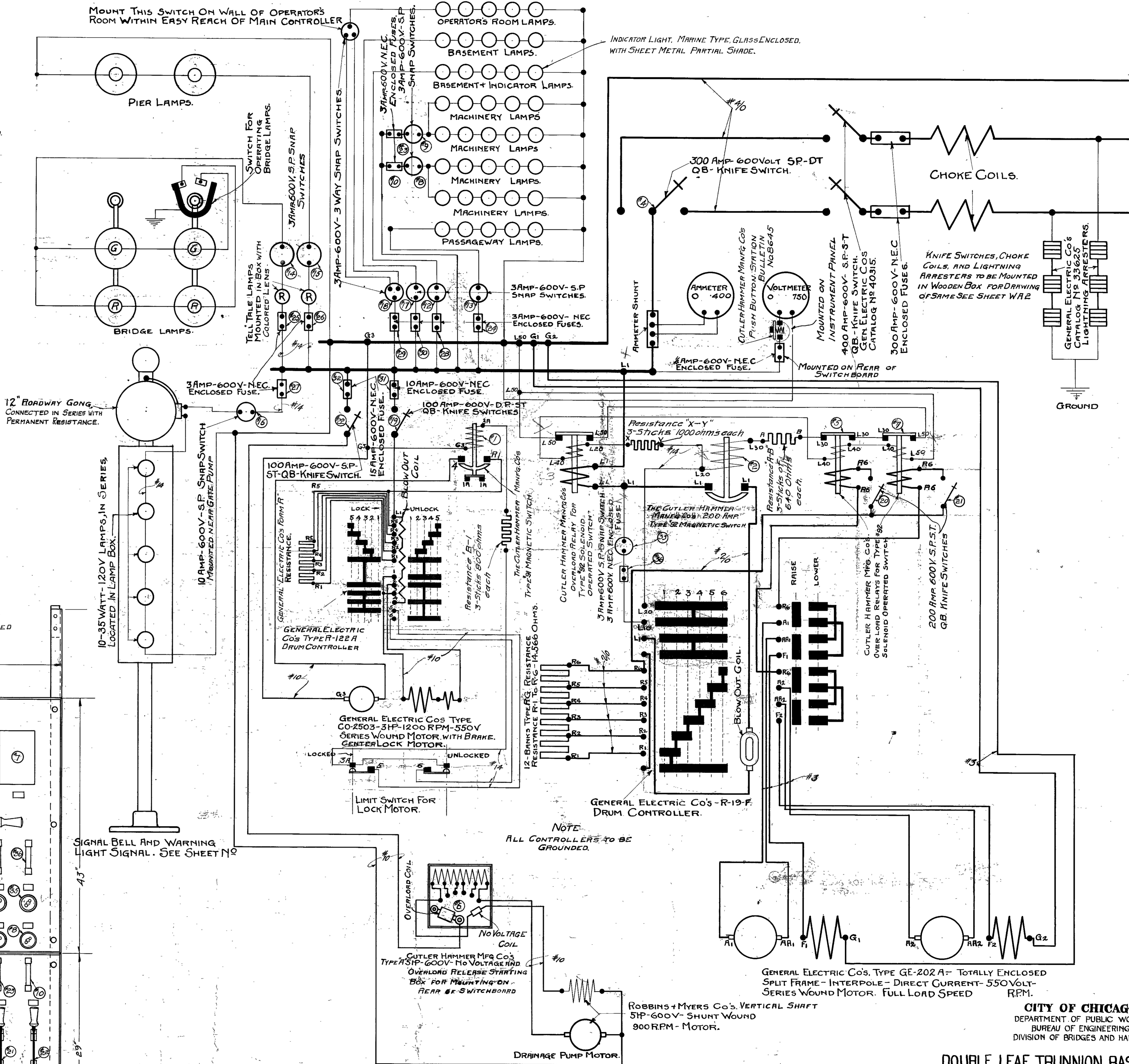
MATERIAL - 1/2" Black Monson Slate (1/4" Bevel)  
 SUPPORTS - 2x1/2" Iron  
 INSTRUMENTS - Weston Elect. Inst. Co's Model 57  
 0-750 Back Connected Standard Finish  
 VOLT METER  
 Weston Elect. Inst. Co's Model 57  
 0-400 Back Connected Standard Finish  
 AMP METER  
 SWITCH - CH. Hammer Mfg. Co's Push Button Switch  
 Bulletin No. B645

**WANTED**

TO BE MOUNTED IN FRONT OF MAIN CONTROLLER  
 SUITABLE SUPPORTS TO BE PROVIDED FOR MOUNTING  
 SWITCH.

SKETCH OF FASTENING OF INSTRUMENT PANEL  
 TO WALL TO BE SUBMITTED FOR APPROVAL  
 BEFORE PANEL IS INSTALLED.

MOUNT THIS SWITCH ON WALL OF OPERATOR'S  
 ROOM WITHIN EASY REACH OF MAIN CONTROLLER



12" ROADWAY GONG,  
 CONNECTED IN SERIES WITH  
 PERMANENT RESISTANCE.

SIGNAL BELL AND WARNING  
 LIGHT SIGNAL. SEE SHEET NO

NOTE  
 ALL CONTROLLERS TO BE  
 GROUNDED.

GENERAL ELECTRIC Co's. TYPE GE-202 A-1 TOTALLY ENCLOSED  
 SPLIT FRAME - INTERPOLE - DIRECT CURRENT - 550VOLT -  
 SERIES WOUND MOTOR. FULL LOAD SPEED  
 RPM.

Approved: *Maxwell*  
 Engineer of Bridge Design.

Approved: *Tracy*  
 Engineer of Bridges and Harbor

Approved: *W.C. Wood*  
 City Engineer

Approved: *W.C. Wood*  
 Commissioner of Public Works.

**CITY OF CHICAGO.**  
 DEPARTMENT OF PUBLIC WORKS  
 BUREAU OF ENGINEERING  
 DIVISION OF BRIDGES AND HARBOR

**DOUBLE LEAF TRUNNION BASCULE BRIDGE**  
 AT  
**WEBSTER AVENUE**  
 OVER  
 NORTH BRANCH OF THE CHICAGO RIVER  
 Diagram of Electrical Connections  
**C.H. NORWOOD**  
 CONTRACTING ENGINEER  
 CHICAGO

Drawn by J.S.M.  
 Traced by J.S.M.  
 Checked by J.S.M.  
 Dec. 1914.  
 DRAWING NO 3916  
 FILE NO. 11-CC-44

W-A  
 1

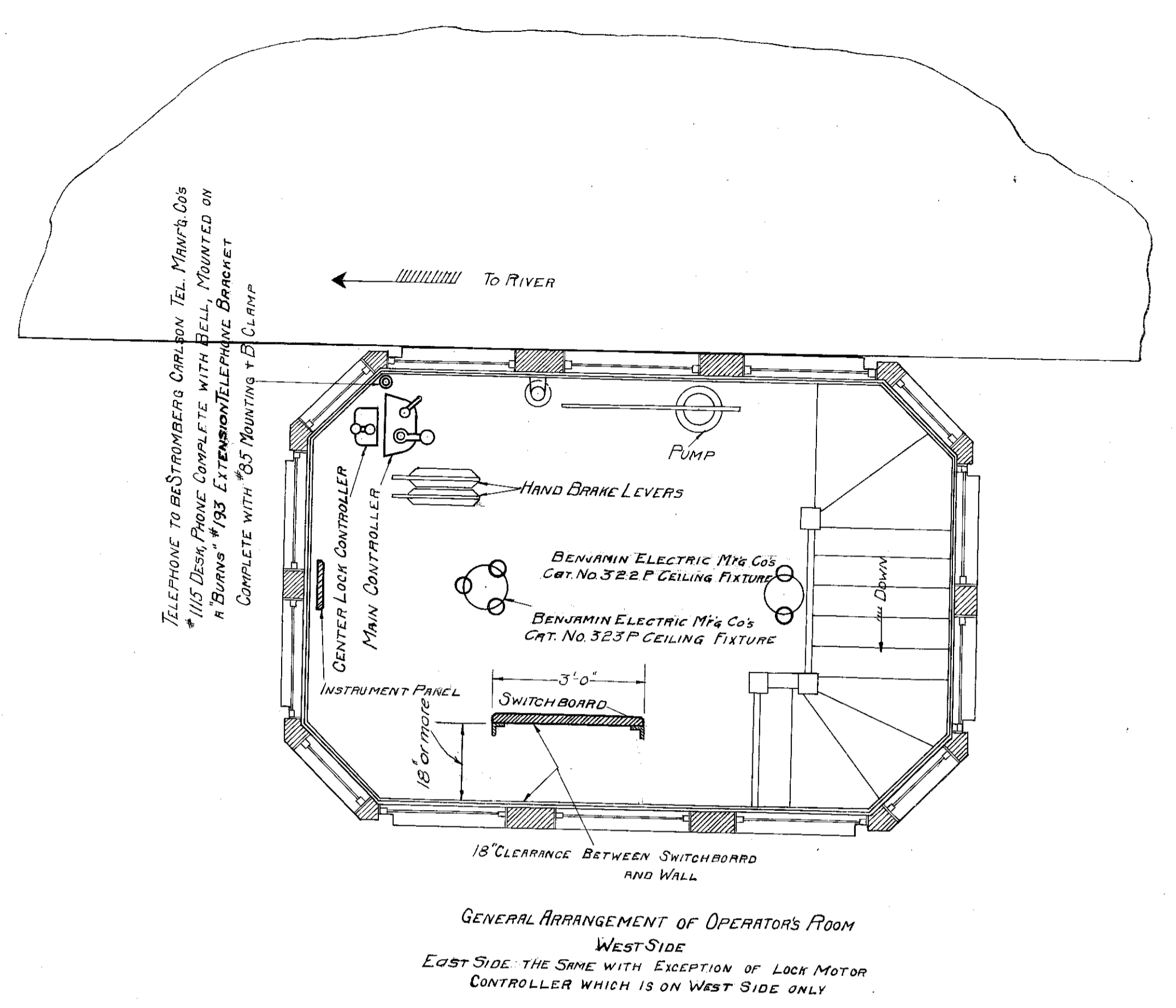
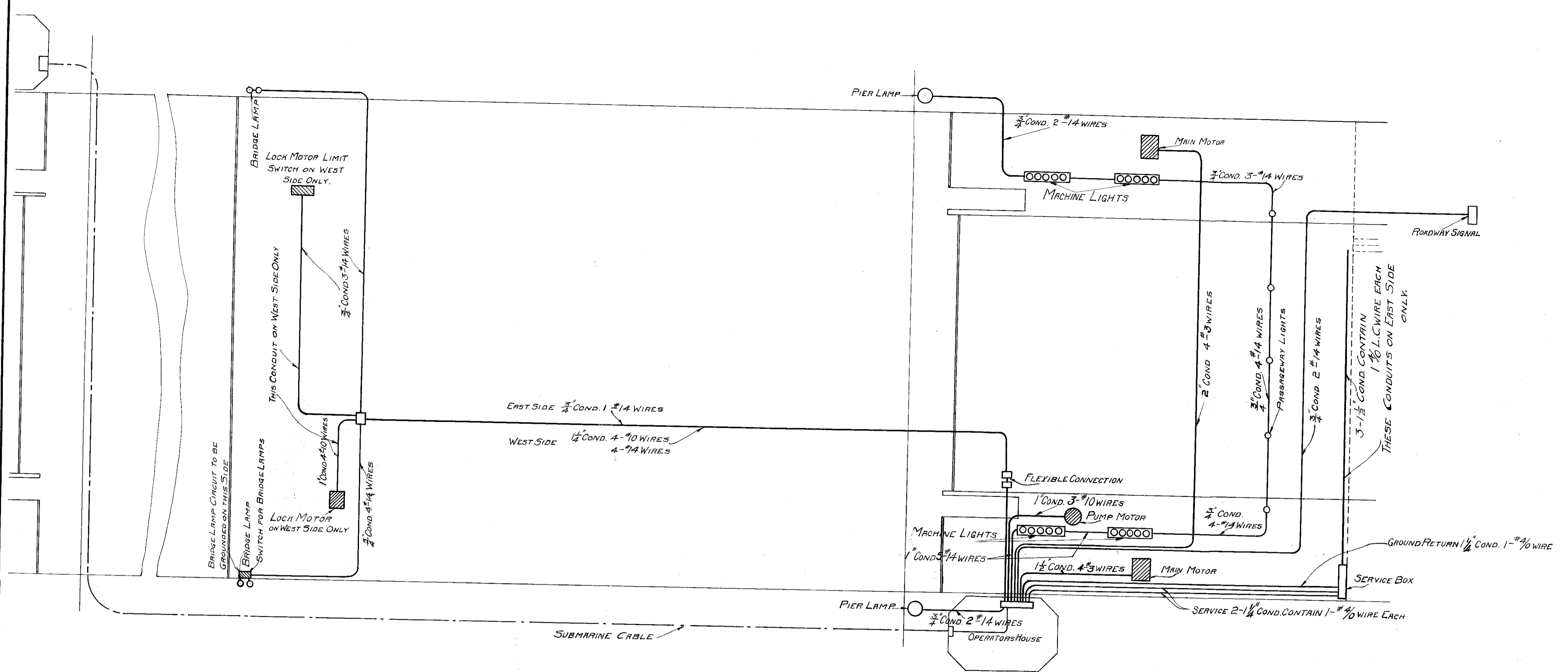
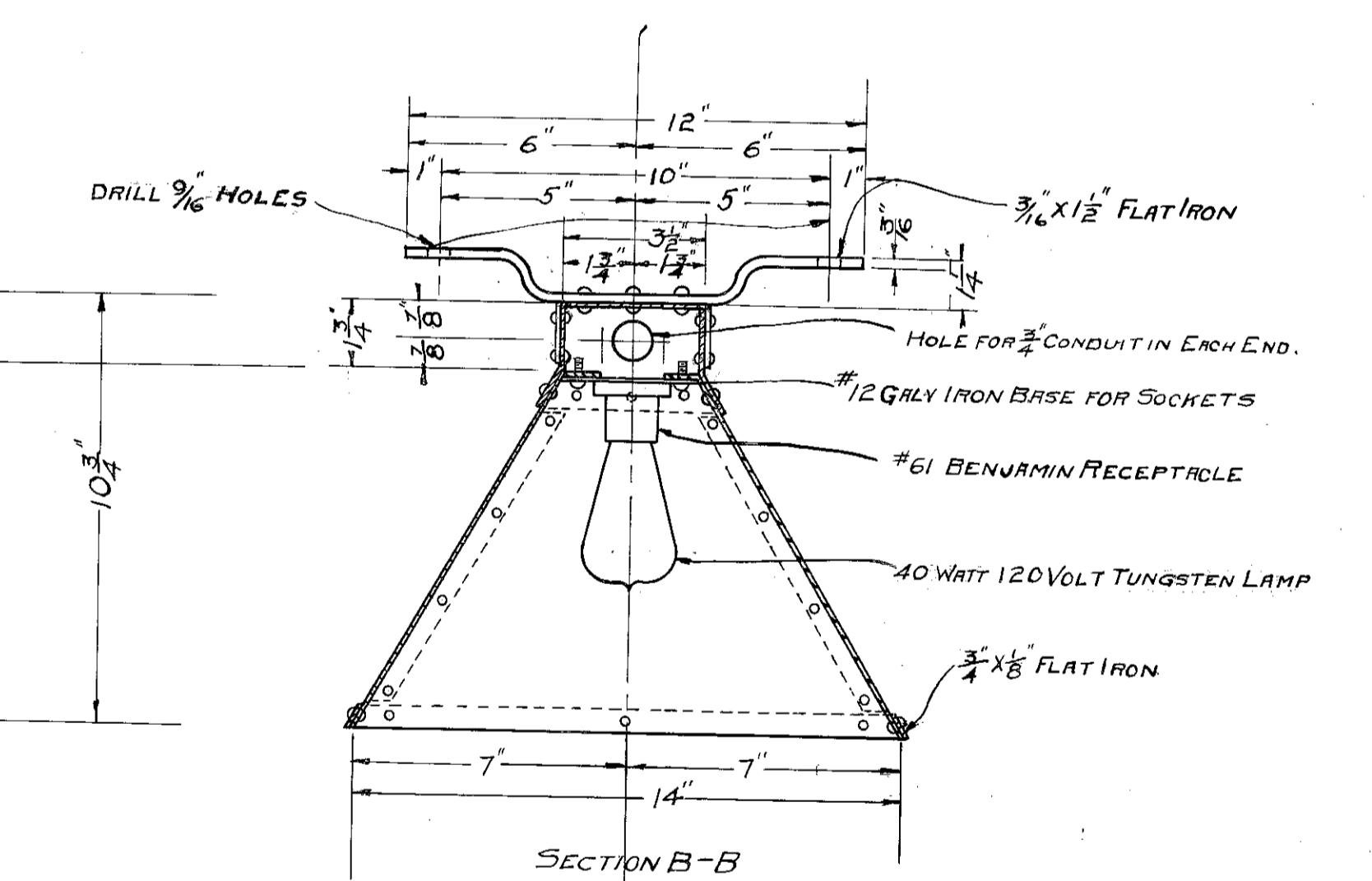
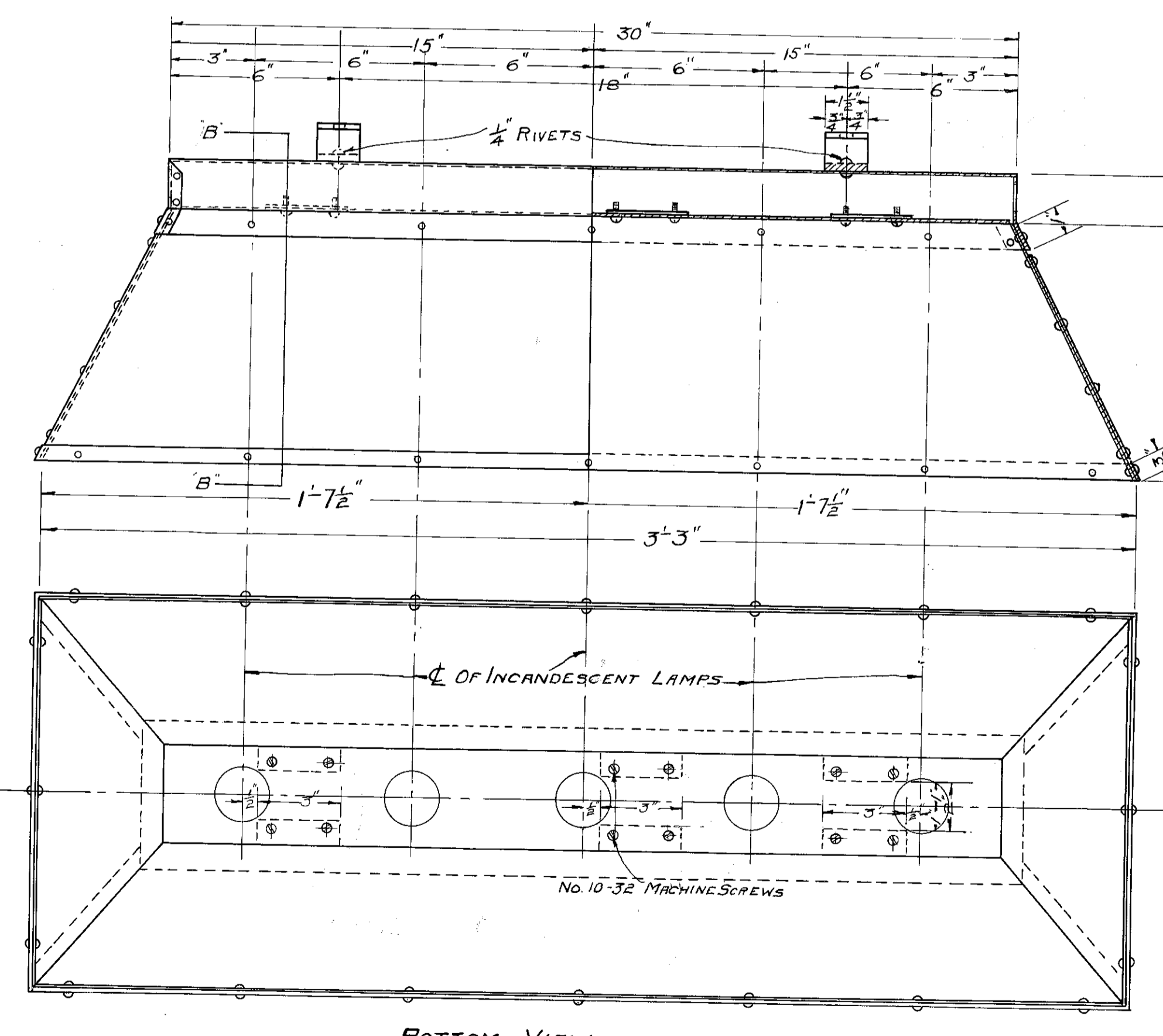
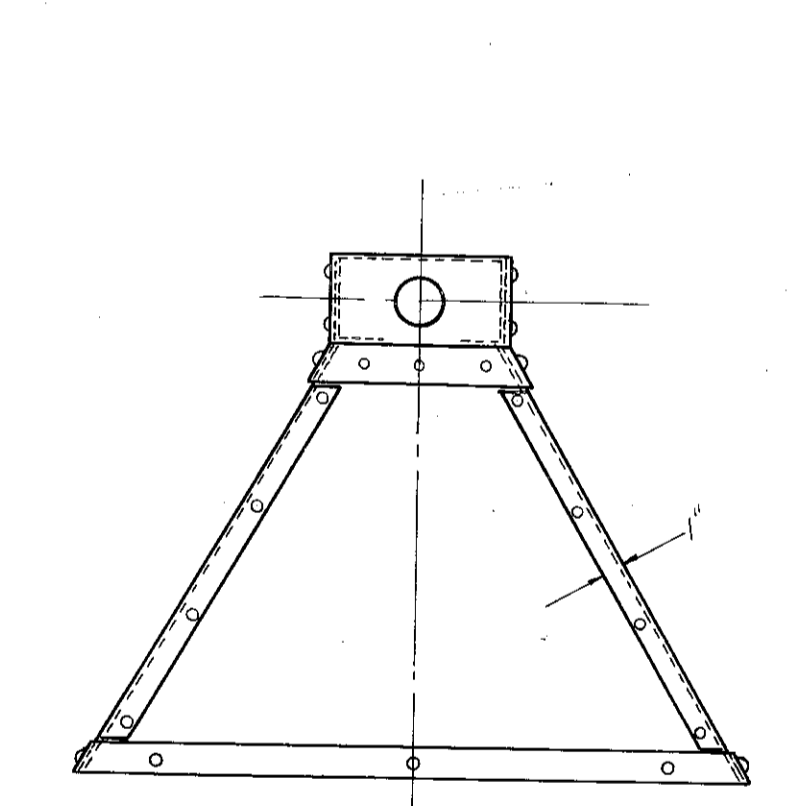
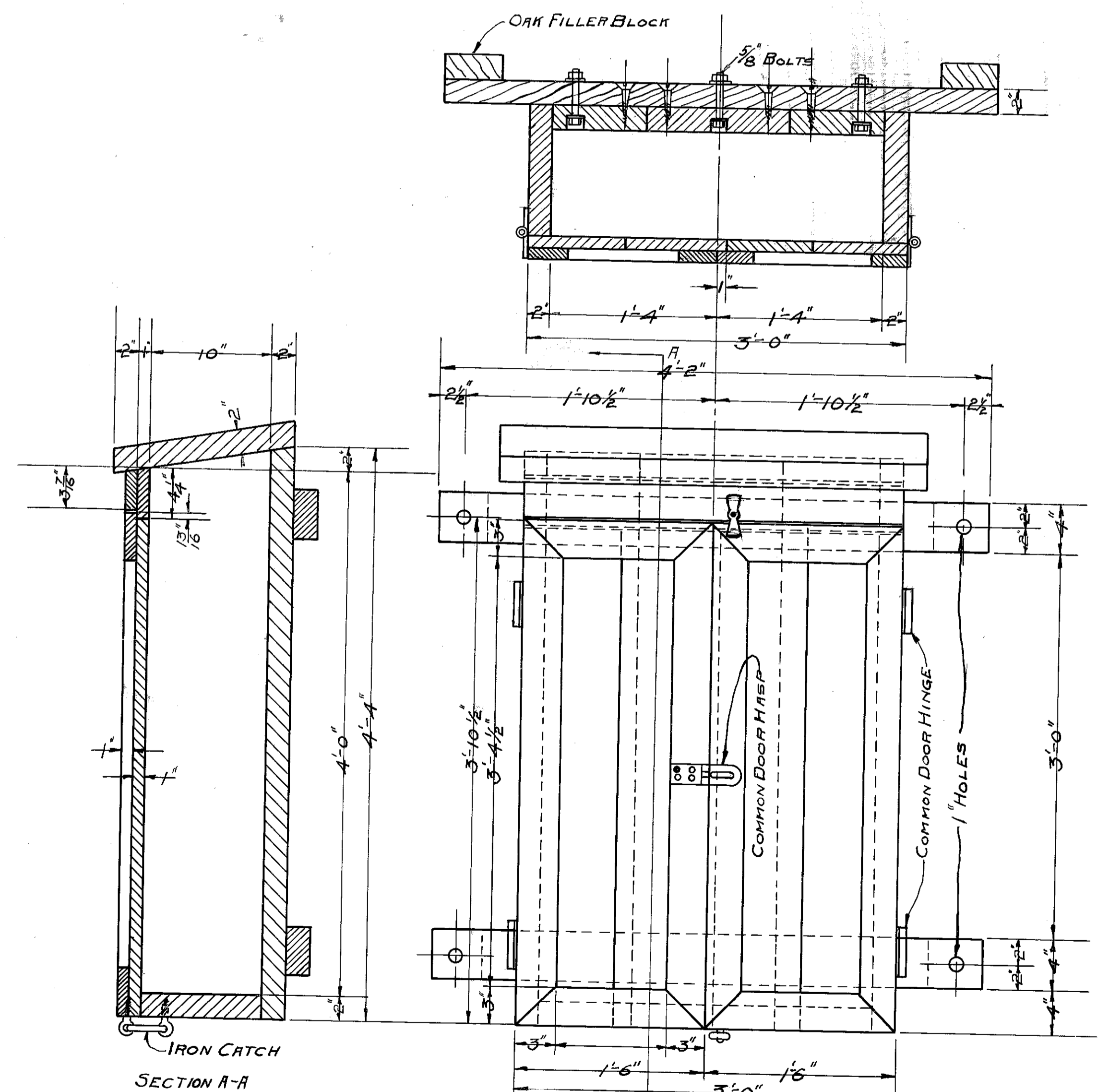


DIAGRAM OF CONDUIT CONNECTIONS  
 WEST SIDE  
 EAST SIDE THE SAME EXCEPT AS NOTED  
 ALL CONDUIT TO BE "SPRAGUE" GREENFIELDUCT



REFLECTOR FOR PAN LIGHTS  
 8 REQD #16 GALV. IRON  
 ALL RIVETS 3/8" EXCEPT AS NOTED

OUTSIDE TO RECEIVE ONE COAT OF GALV. IRON PRIMER, AND TWO COATS OF GREEN PAINT.  
 INSIDE TO RECEIVE ONE COAT OF GALV. IRON PRIMER, TWO COATS OF FLAT WHITE PAINT, AND ONE COAT OF WHITE ENAMEL.

SERVICE BOX  
 TWO WANTED - OAK  
 BOX IS TO RECEIVE ONE COAT OF BLACK PAINT IN SHOP  
 AND ONE COAT OF BLACK PAINT AFTER IT IS IN PLACE

APPROVED: *Arthur W. ...*  
 ENGINEER OF BRIDGE DESIGN  
 APPROVED: *...*  
 CHIEF ENGINEER  
 APPROVED: *...*  
 COMMISSIONER OF PUBLIC WORKS

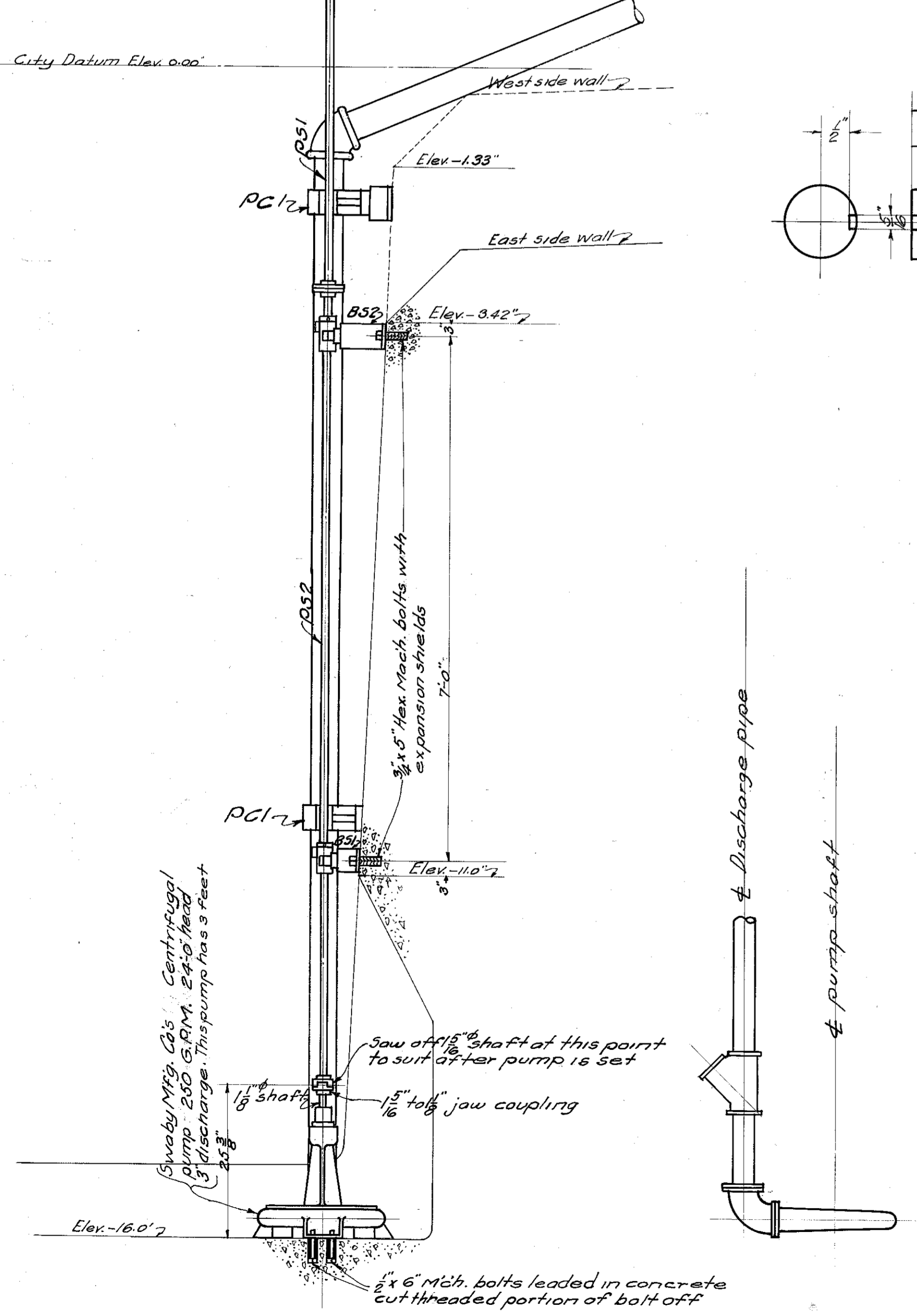
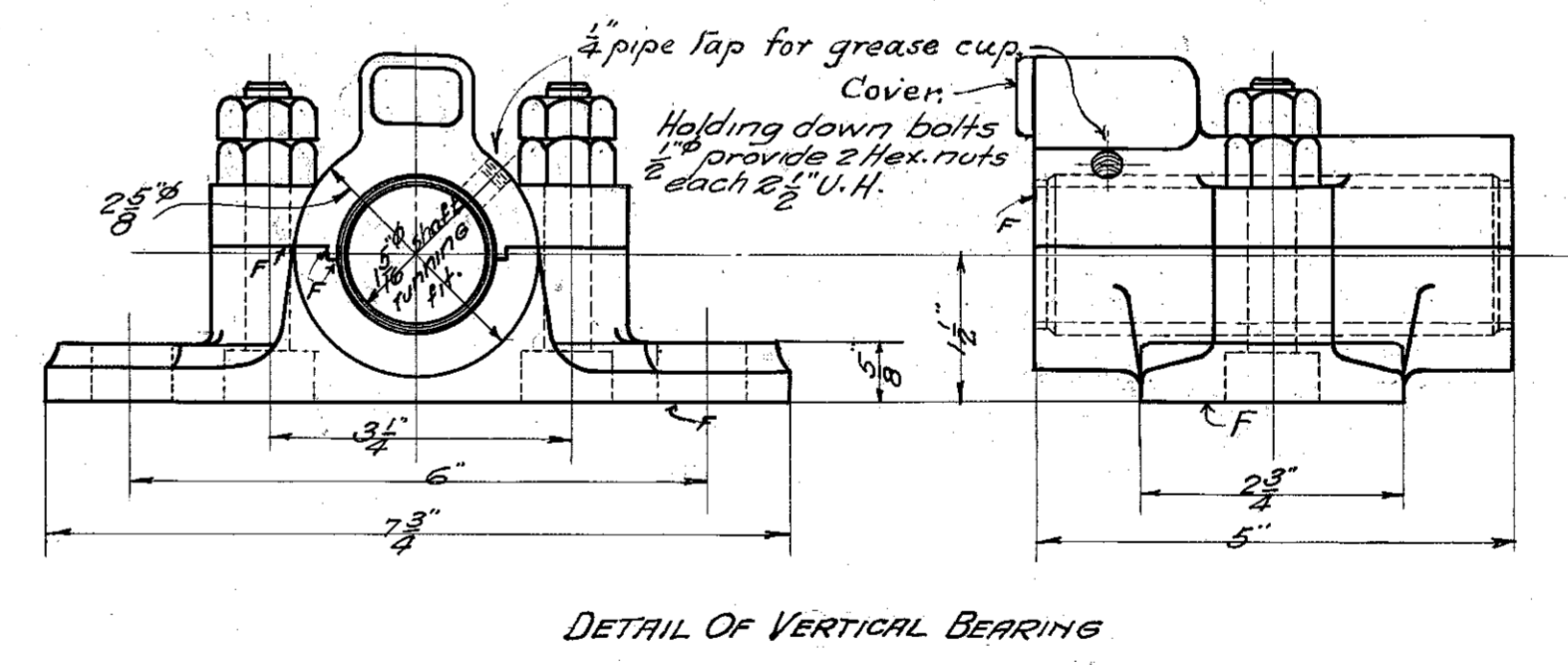
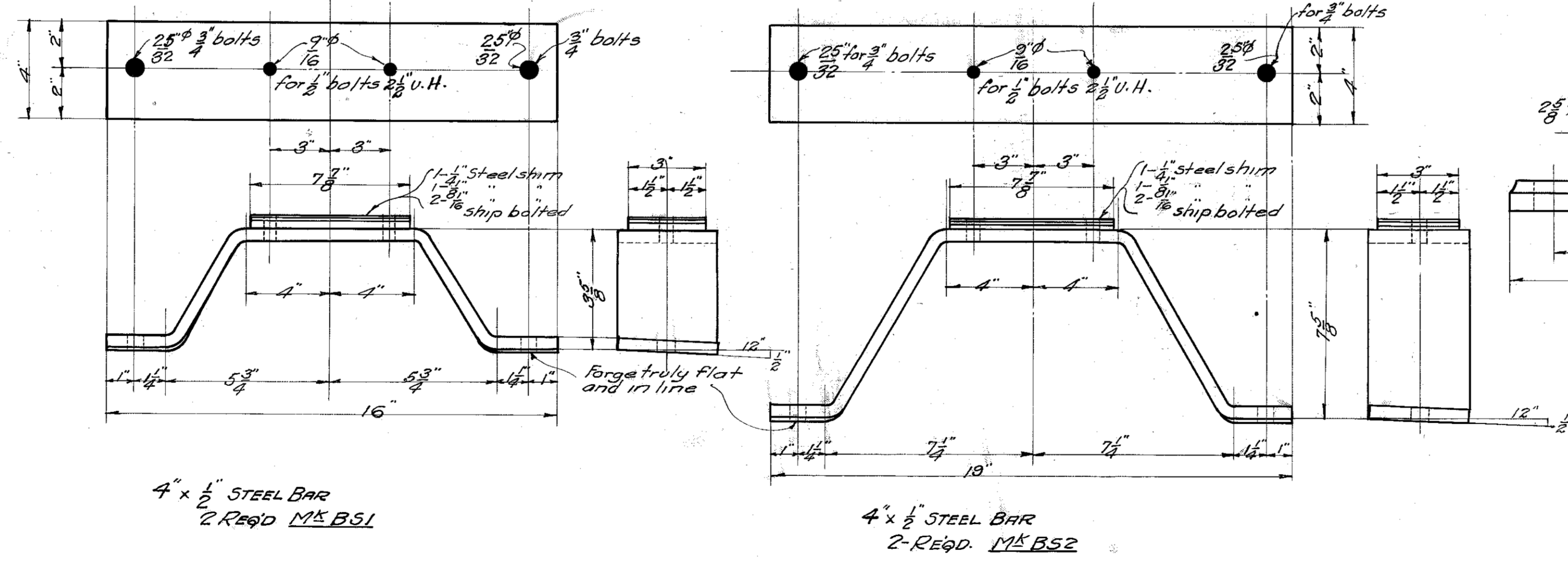
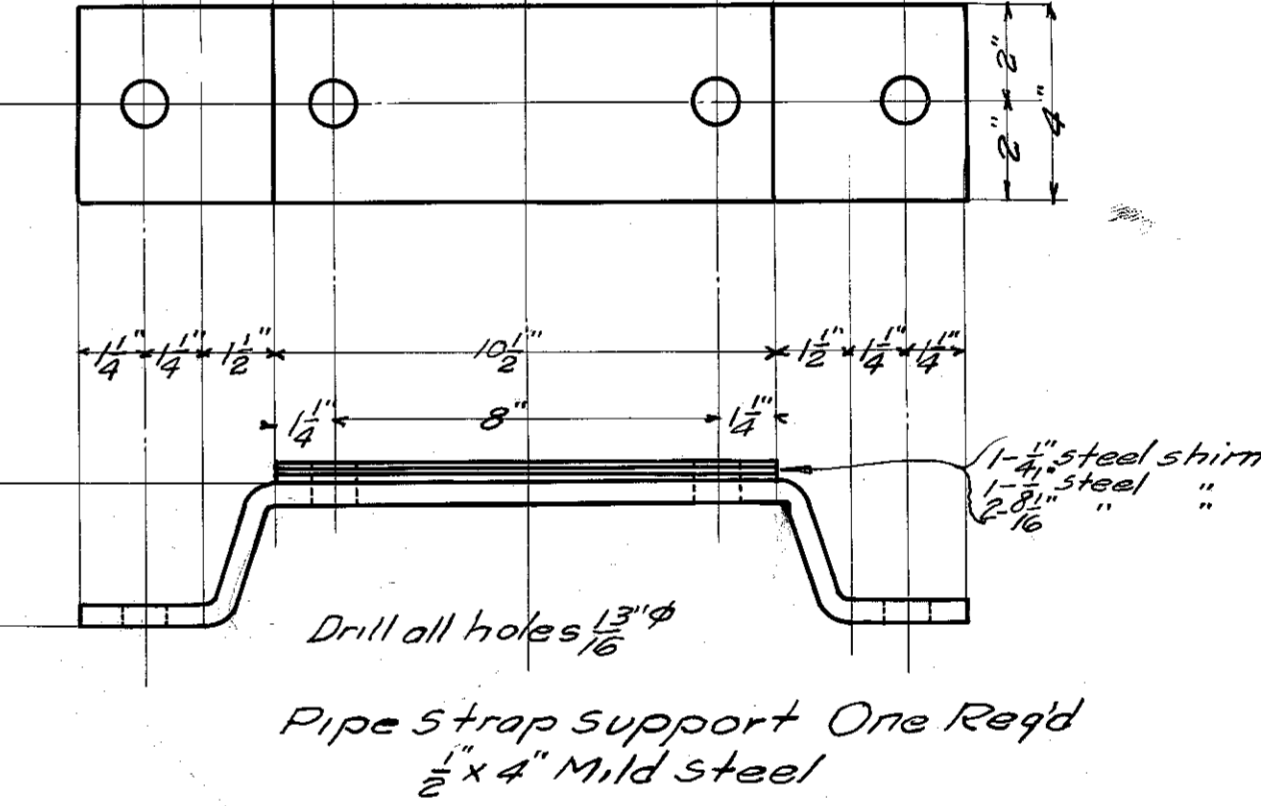
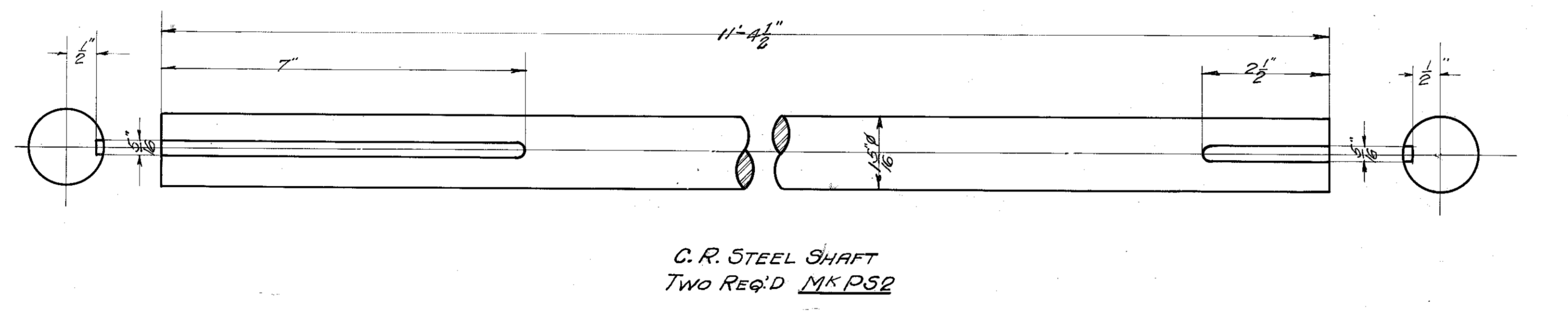
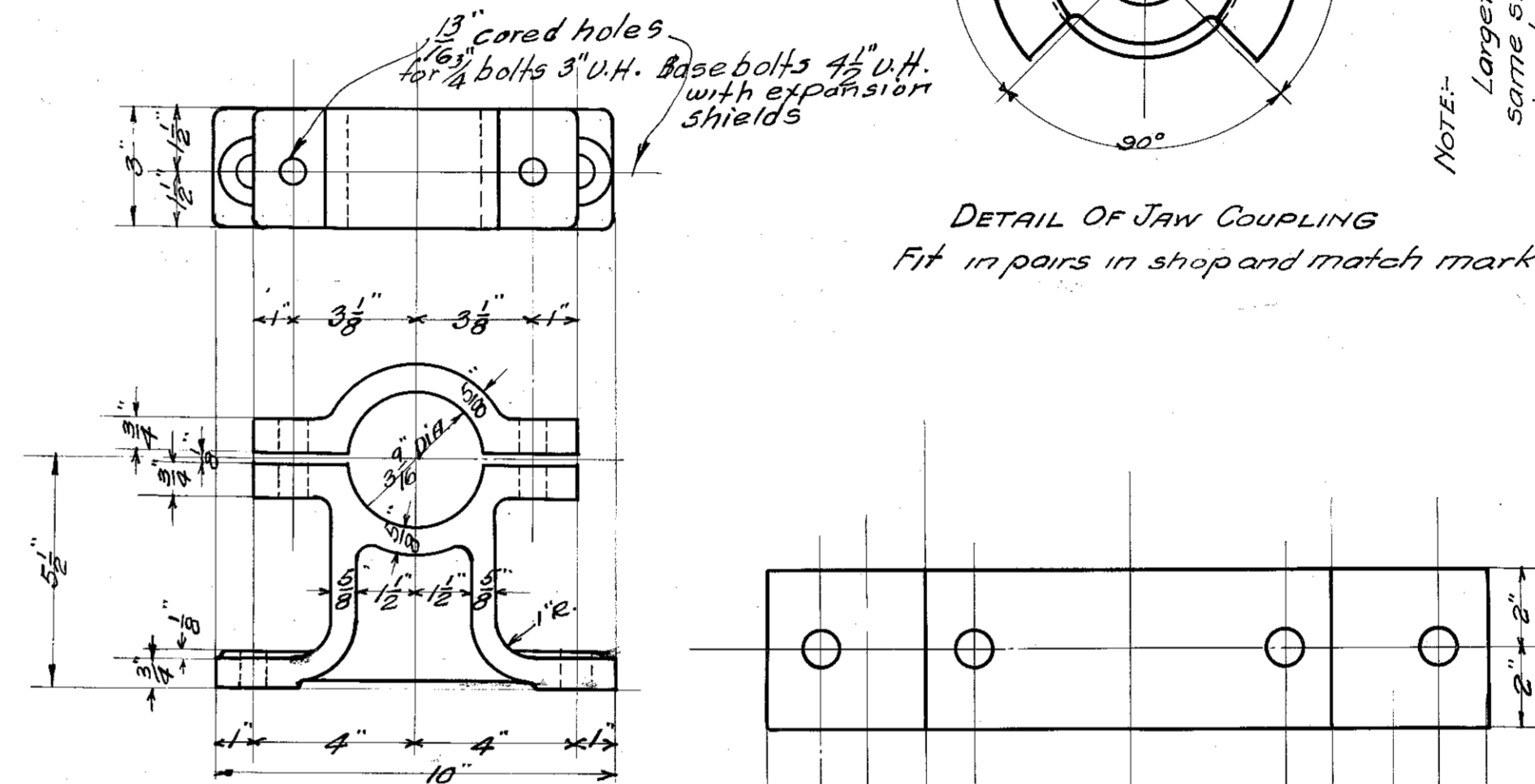
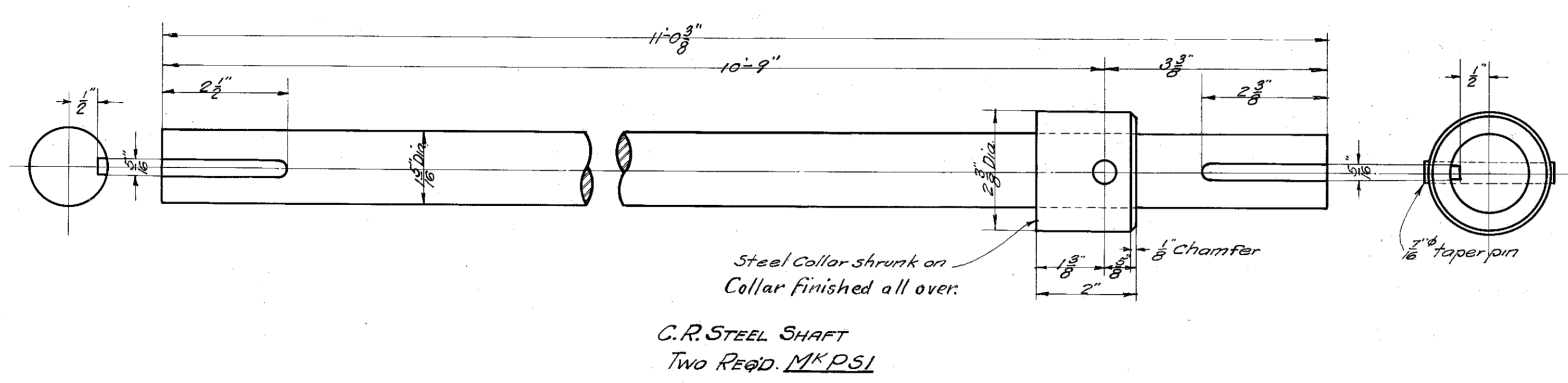
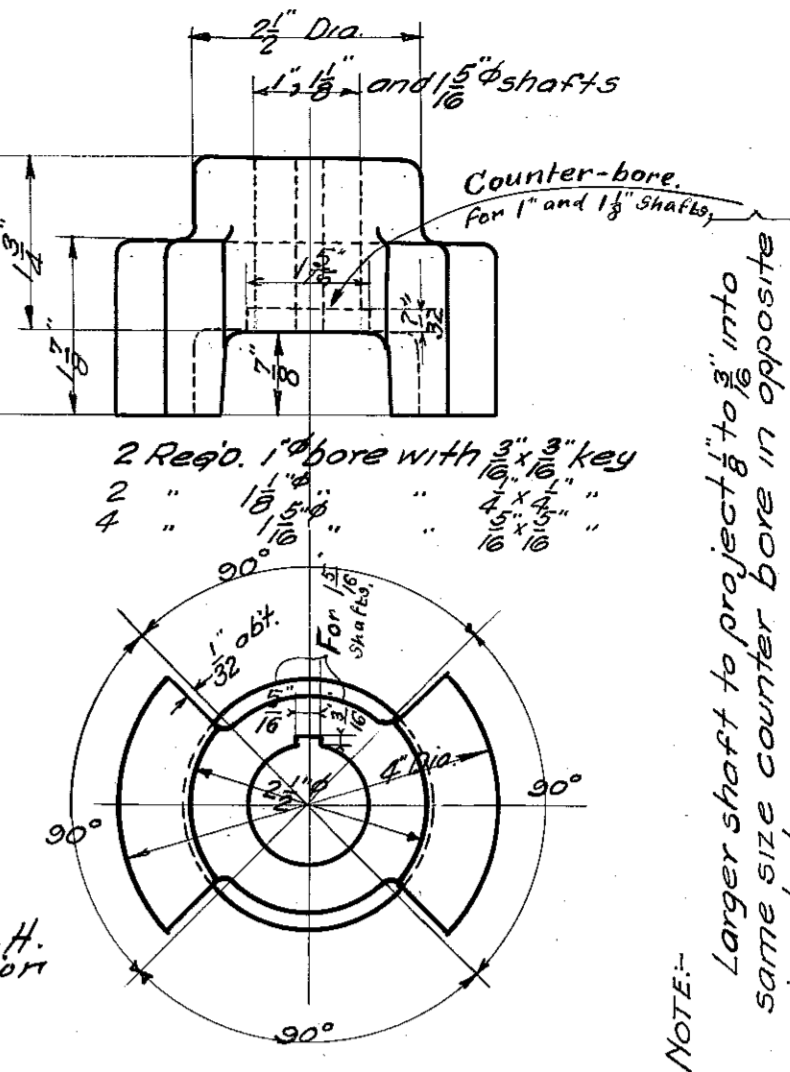
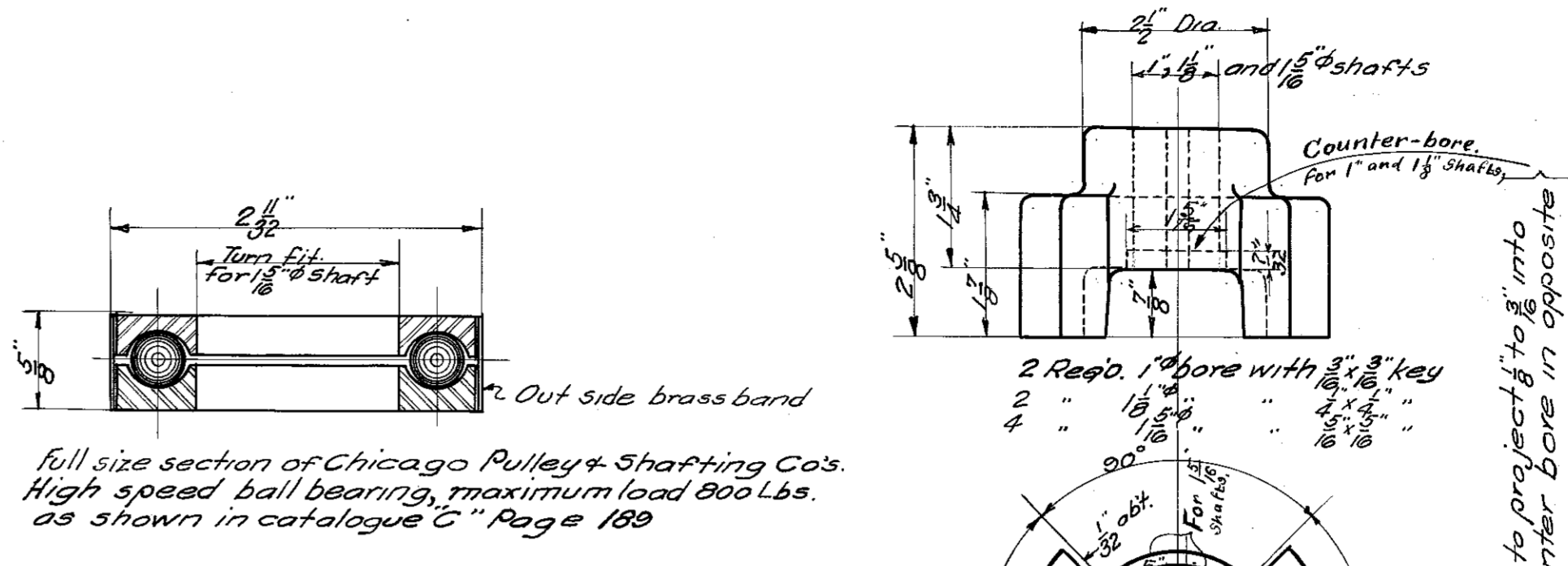
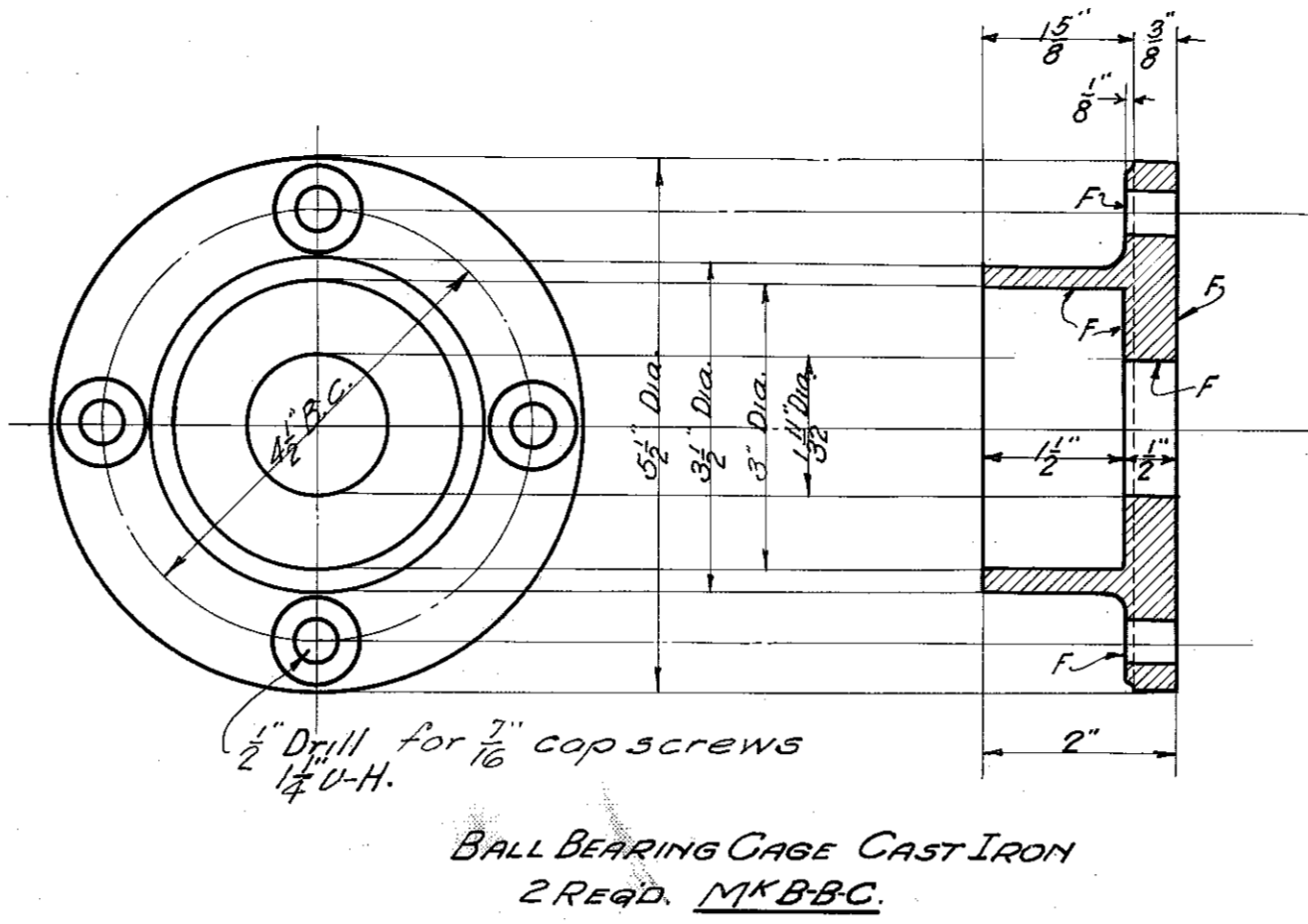
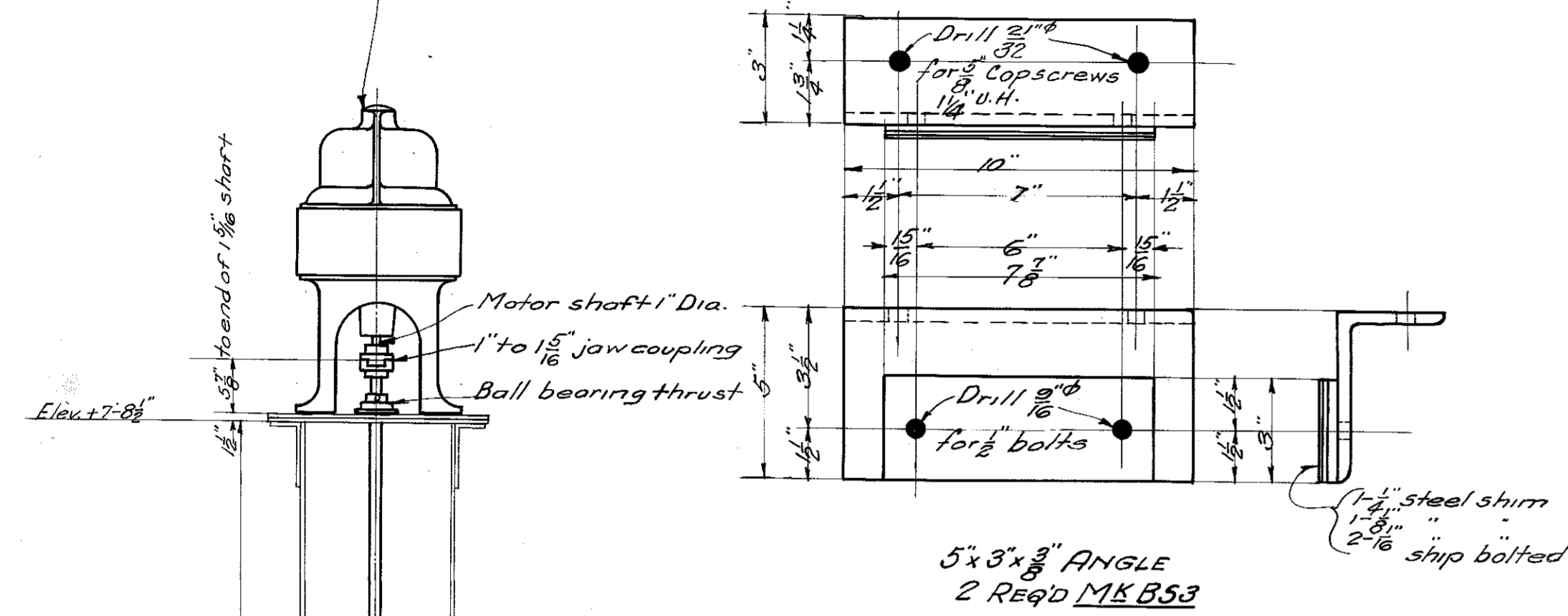
CITY OF CHICAGO  
 DEPARTMENT OF PUBLIC WORKS  
 BUREAU OF ENGINEERING  
 DIVISION OF BRIDGES AND HARBOR

DOUBLE LEAF TRUNNION BASCULE BRIDGE  
 AT  
 WEBSTER AVENUE  
 OVER  
 NORTH BRANCH OF THE CHICAGO RIVER  
 DIAGRAM OF CONDUIT CONNECTIONS AND MISC. DETAILS

C. H. NORWOOD  
 CONTRACTING ENGINEER  
 CHICAGO

DRAWING No. 3917  
 FILE No. 11-GC-45

Robbins & Myers Co's  
Frame # 51P 900R.P.M.  
550 V. D.C. Vertical type motor



GITY OF CHICAGO.  
DEPARTMENT OF PUBLIC WORKS  
BUREAU OF ENGINEERING  
DIVISION OF BRIDGES AND HARBOR

DOUBLE LEAF TRUNNION BASCULE BRIDGE  
WEBSTER AVENUE  
OVER  
NORTH BRANCH OF THE CHICAGO RIVER  
General Drawing of Drainage Pump  
C.H. NORWOOD  
CONTRACTING ENGINEER  
CHICAGO

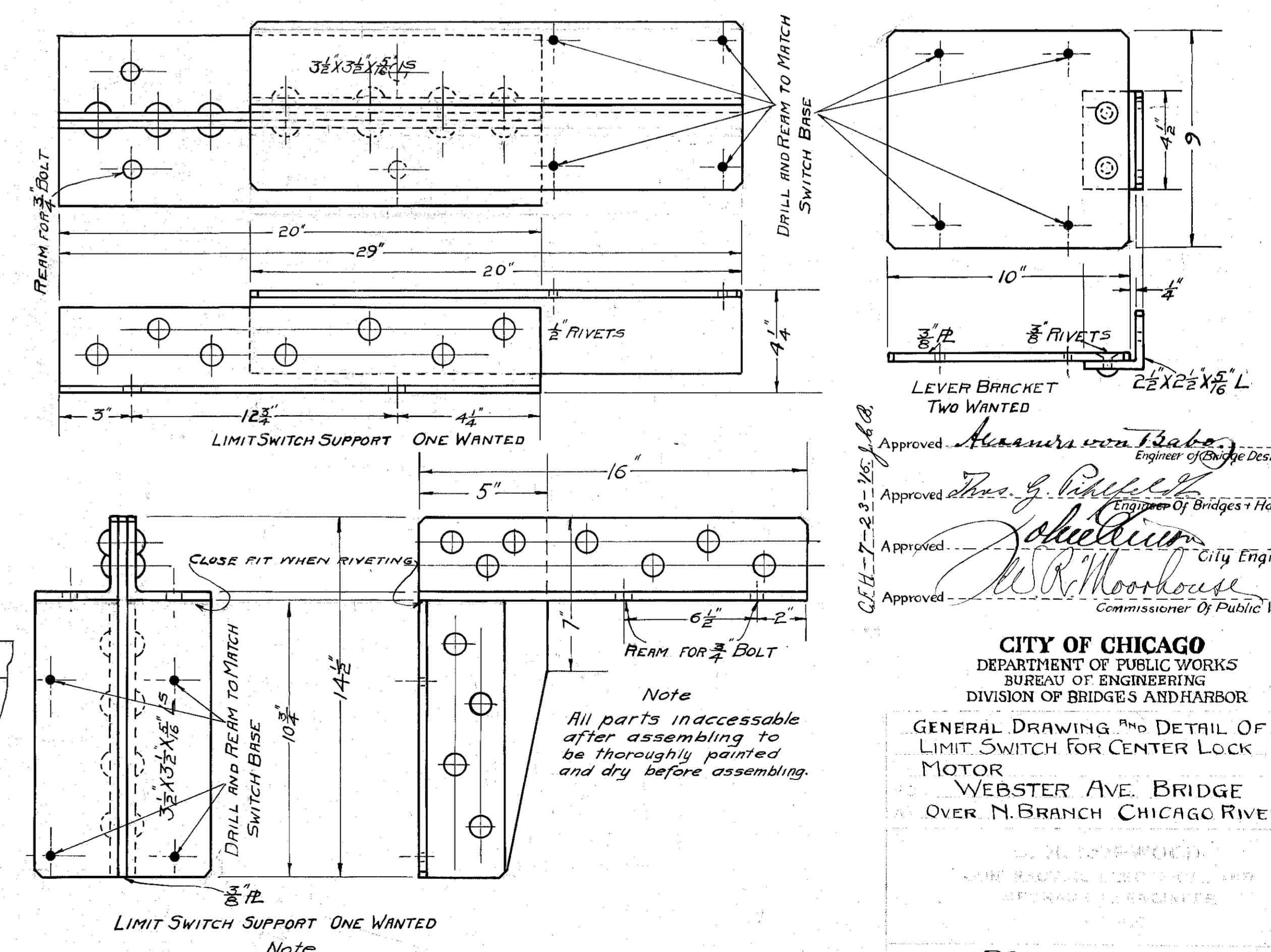
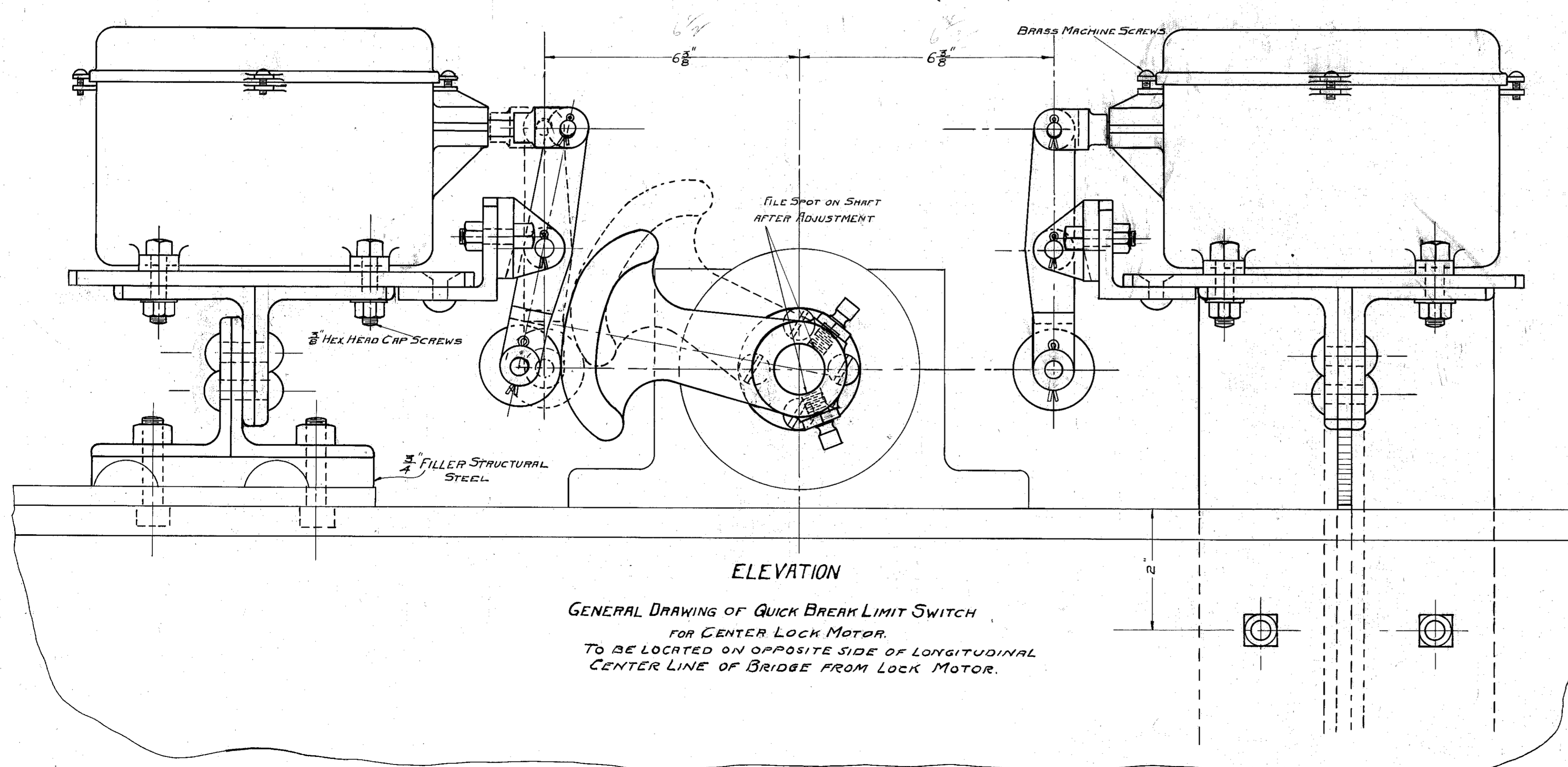
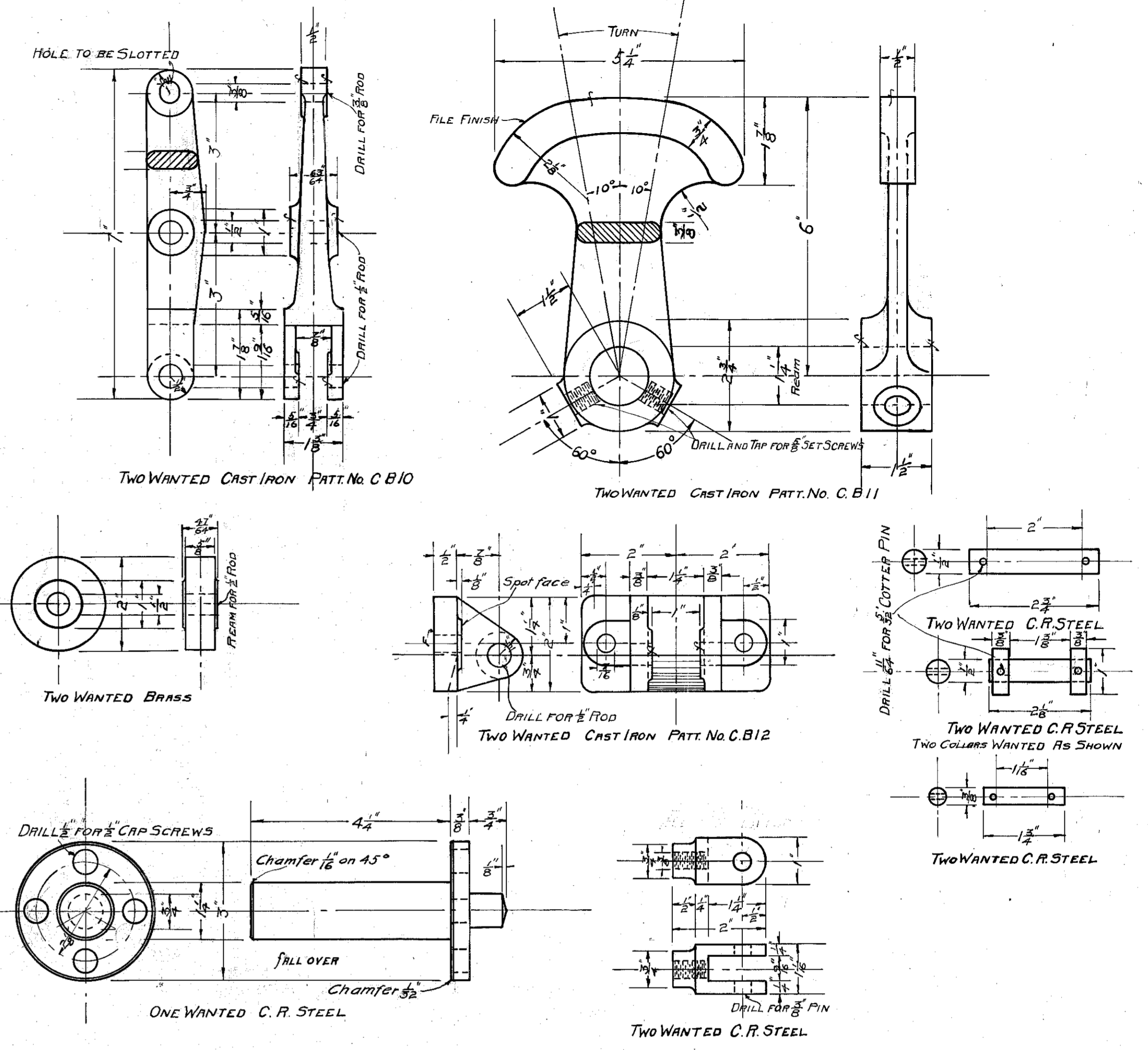
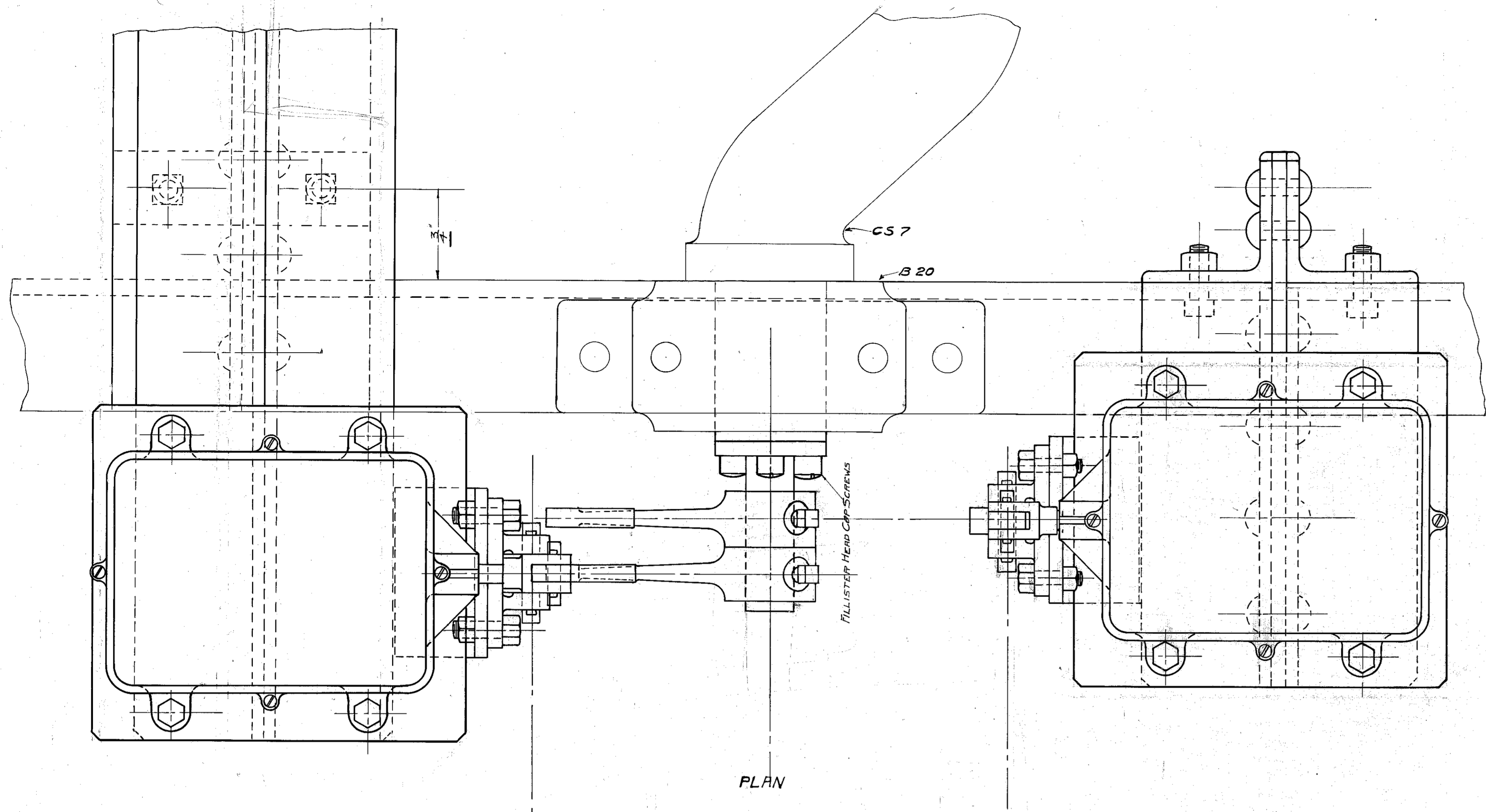
Approved: *Alvin J. ...*  
Engineer of Bridge Design

Approved: *John J. ...*  
Engineer of Bridges and Harbor

Approved: *John ...*  
City Engineer

Approved: *W.S. ...*  
Commissioner of Public Works

Drawn by: L.A.R.  
Traced by: L.A.R.  
Checked by: *...*  
May 20 1915  
DRAWING No. 3918  
FILE No. 11-6C-46



GENERAL DRAWING OF QUICK BREAK LIMIT SWITCH FOR CENTER LOCK MOTOR. TO BE LOCATED ON OPPOSITE SIDE OF LONGITUDINAL CENTER LINE OF BRIDGE FROM LOCK MOTOR.

Note  
All parts inaccessible after assembling to be thoroughly painted and dry before assembling.

LIMIT SWITCH SUPPORT ONE WANTED  
Note  
All exposed corners chamfered.

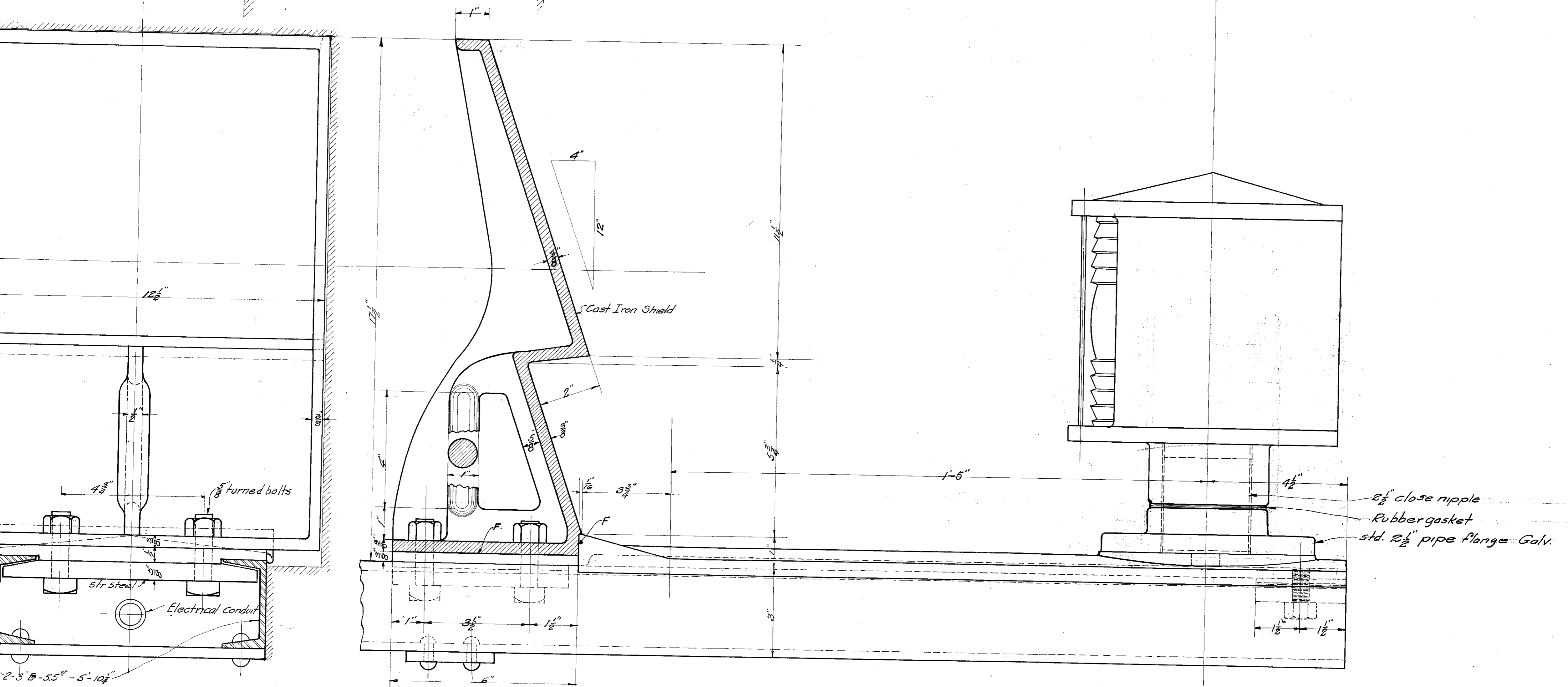
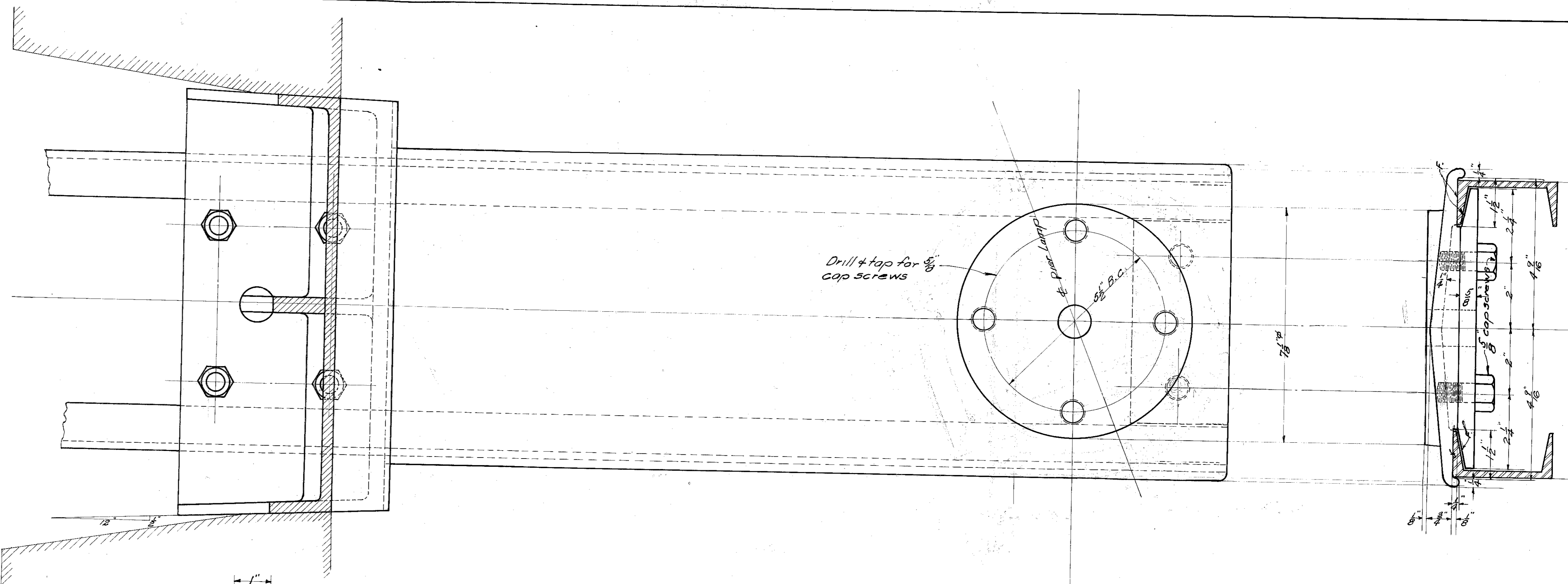
Approved: *Arthur W. Baker*  
Engineer of Bridge Design  
Approved: *Wm. G. ...*  
Approved: *John ...*  
Approved: *W.R. Moorhouse*  
Commissioner of Public Works

CITY OF CHICAGO  
DEPARTMENT OF PUBLIC WORKS  
BUREAU OF ENGINEERING  
DIVISION OF BRIDGES AND HARBOR  
GENERAL DRAWING AND DETAIL OF  
LIMIT SWITCH FOR CENTER LOCK  
MOTOR  
WEBSTER AVE. BRIDGE  
OVER N. BRANCH CHICAGO RIVER.

R.S.  
R.S.  
J. L. ...  
June 1915  
WA-4

1660570242

DRAWING No. 3919  
FILE No. 11-6C-47



Cast Iron 2 Req'd.  
Pat# L.M.

Approved *Hugh E. Young*  
Engineer in Charge design

Approved *Thos. J. Pugh*  
Engineer of bridges & Harbor

Approved *John E. ...*  
City Engineer

Approved *W. R. Moorhouse*  
Commissioner of Public Works

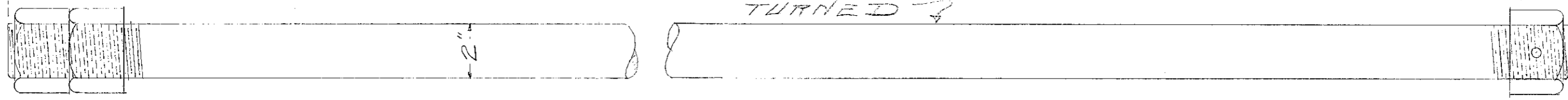
CITY  
DEPARTMENT OF  
BUILDINGS  
DIVISION OF  
DETAILS

FOR CITY  
AT Webster

CONTRACT  
NO.

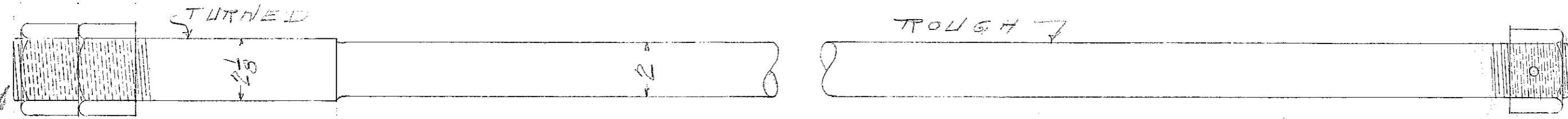
DRAWN BY K.O.O.  
CHECKED BY

{ 8 REQD - 5'-8" LONG  
 { 8 REQD - 6'-9" LONG  
 { 16 REQD - 14'-5" LONG



BOLT DETAIL AS SHOWN ON ENGINEERS DRAWINGS

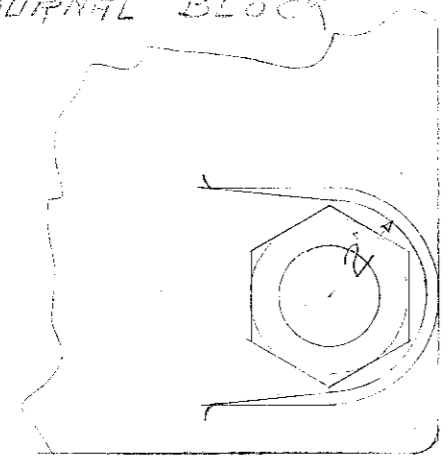
{ 8 REQD - 5'-8" LONG  
 { 8 " 6'-9" "  
 { 16 " 14'-5" "



BOLT DETAIL AS PROPOSED BY CONTRACTOR.

1'-2"

THIS END OF BOLT THROUGH JOURNAL BLOCK



LAYOUT SHOWING 2 1/8" NUT AND BOSS ON TRUNNION BEARING

REFERENCES

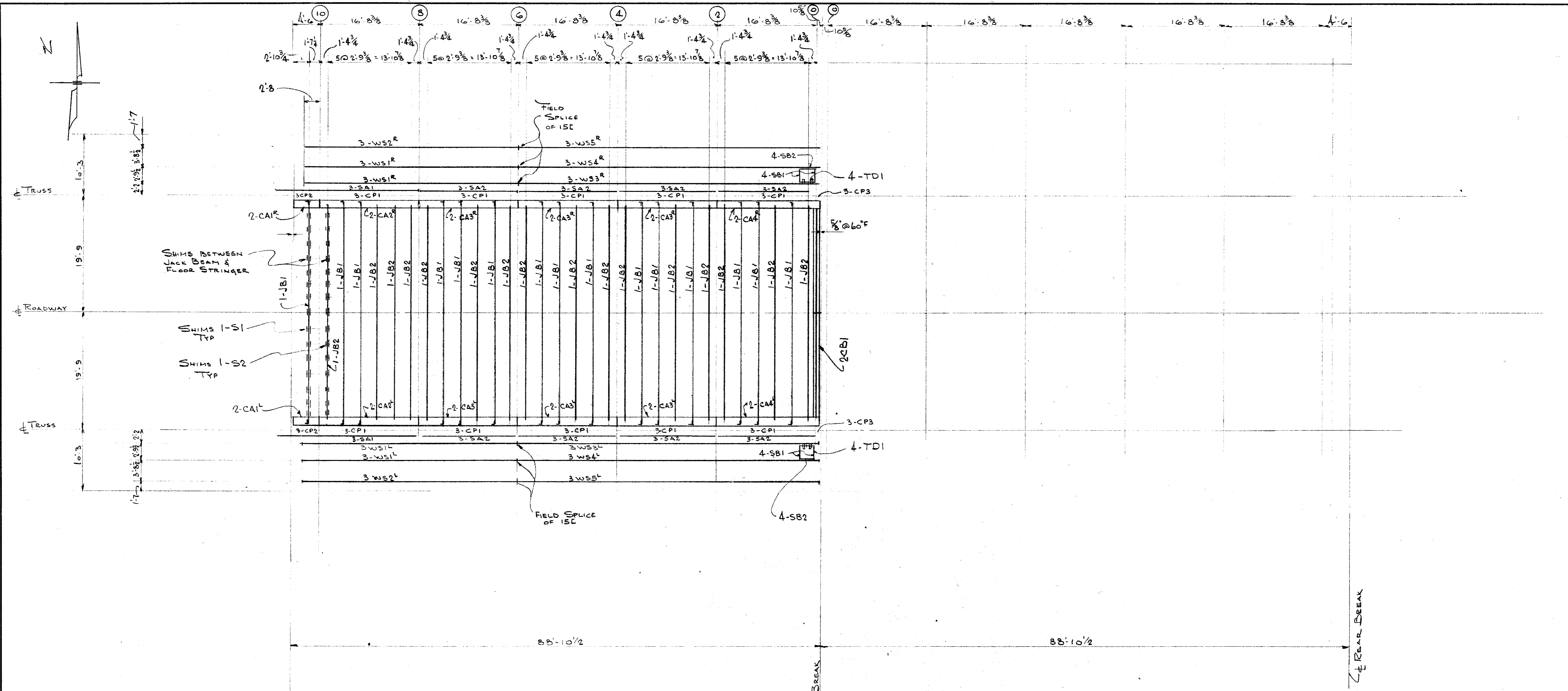
ENGINEERS DRAWING # 796  
 " " 800  
 " " 811  
 MOD. STL STR. @ DRG 201

BOLTS FOR MAIN TRUNNION BEARINGS

MODERN STEEL STRUCTURAL CO.

CUSTOMER \_\_\_\_\_  
 STRUCTURE WEBSTER AVE BRIDGE  
 REAM'G. \_\_\_\_\_ SCALE 3/4" = 1 FT.  
 RIVETS \_\_\_\_\_ HOLES \_\_\_\_\_ EXCEPT AS NOTED  
 PAINT SHOP \_\_\_\_\_ FIELD \_\_\_\_\_  
 SEE MAT. BILLS \_\_\_\_\_ SHIP BILLS \_\_\_\_\_  
 FIELD CONNECTIONS MADE WITH \_\_\_\_\_  
 MADE *MS* TRACED *J* CHK'D \_\_\_\_\_ 1914  
 CONTRACT NO. 2201 SH'T NO. 201  
 DRAWING NO. 3921

1660570244



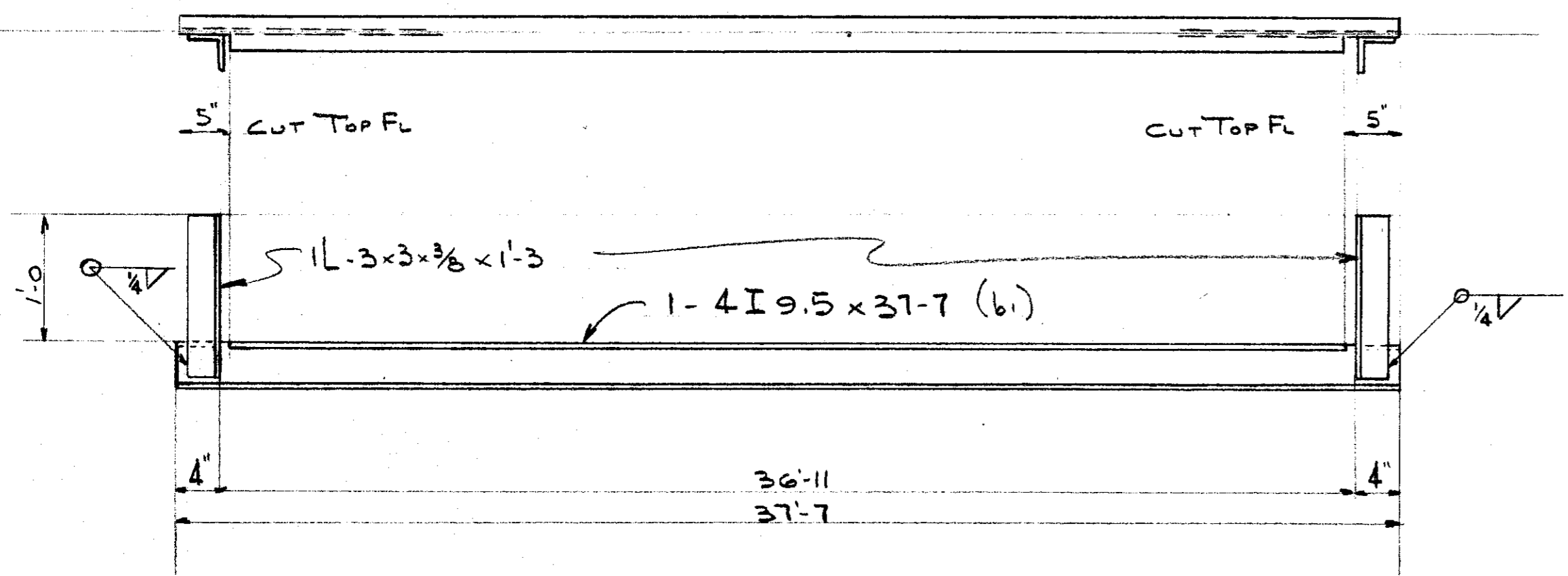
**ERECTION PLAN VIEW**

**NOTE**  
ERECTION BY GENERAL CONTRACTOR

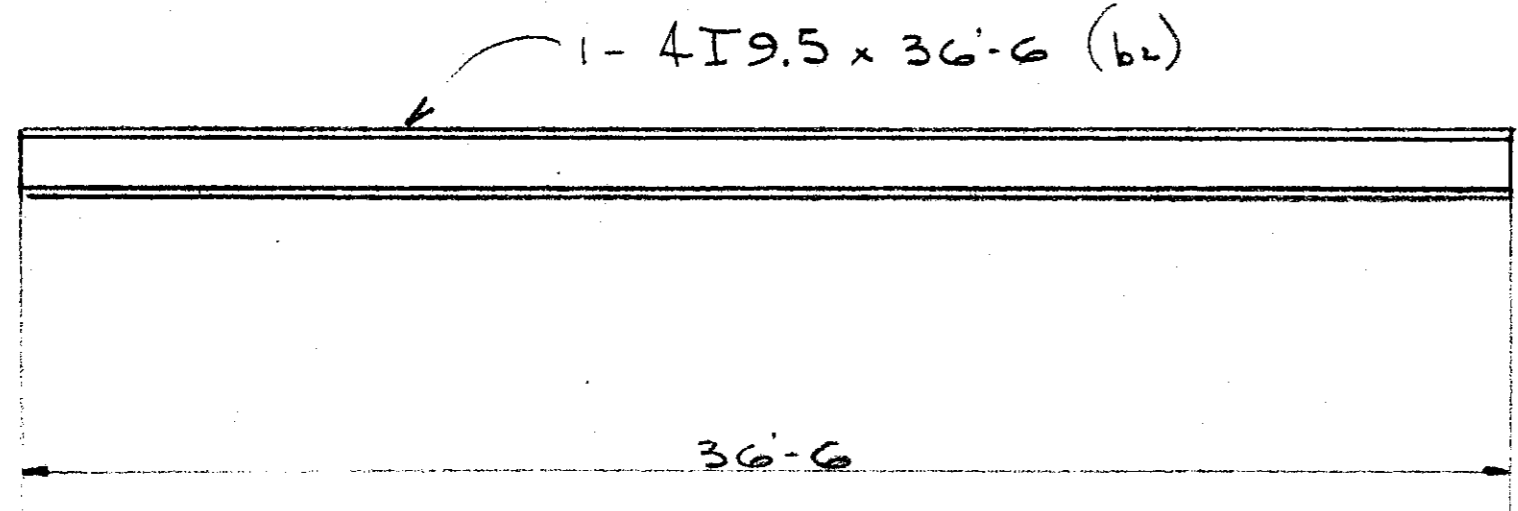
CITY OF CHICAGO DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING DIVISION OF BRIDGES & VIADUCTS		
REPAIR OF WEBSTER AVE BRIDGE OVER NO. BRANCH OF CHICAGO RIVER		
PATHMAN CONST - GEN CONTRACTOR SUBCONTRACTORS		
FRANK'S ARCH. IRON - FABRICATORS		
ERECTION PLAN		
MADE BY O.I.L	TRACED BY N.S	CHECKED BY N.S
ORDER CONTRACT OR DWG. NO. 28610	SCALE SHEET	FILE NO.
CITY DWG. NO.		

SHOP DRAWING	
CORRECT	DATE
RECOM. BY	DATE
SEC. HEAD	ASST. CHIEF
APPROVED AS TO GEN. ARRANGEMENT & DESIGN	
DATE	DIVISION OF BRIDGES & VIADUCTS
CHIEF BRIDGE ENGINEER	

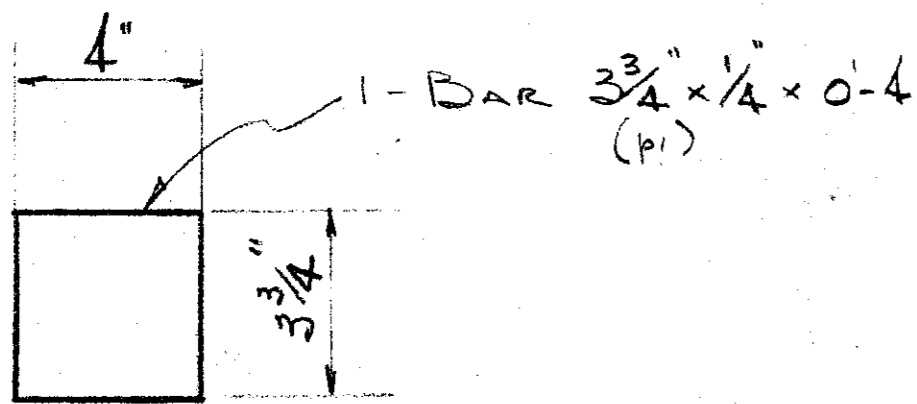
1660570245	
SCALE:	APPROVED BY:
DATE: 10-2-67	DRAWN BY:
FRANK'S ARCHITECTURAL IRON WK'S 4020 W. TAYLOR CHICAGO, ILL	REVISOR:
DRAWING NUMBER	E1



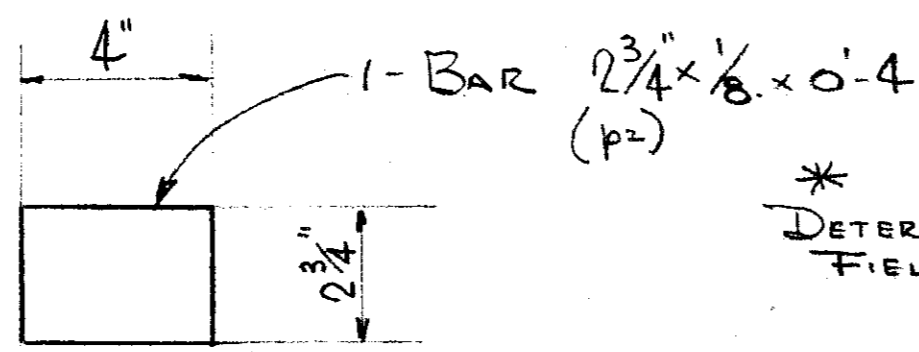
**JACK BEAM - MK 1-JB1**  
30 - REQUIRED



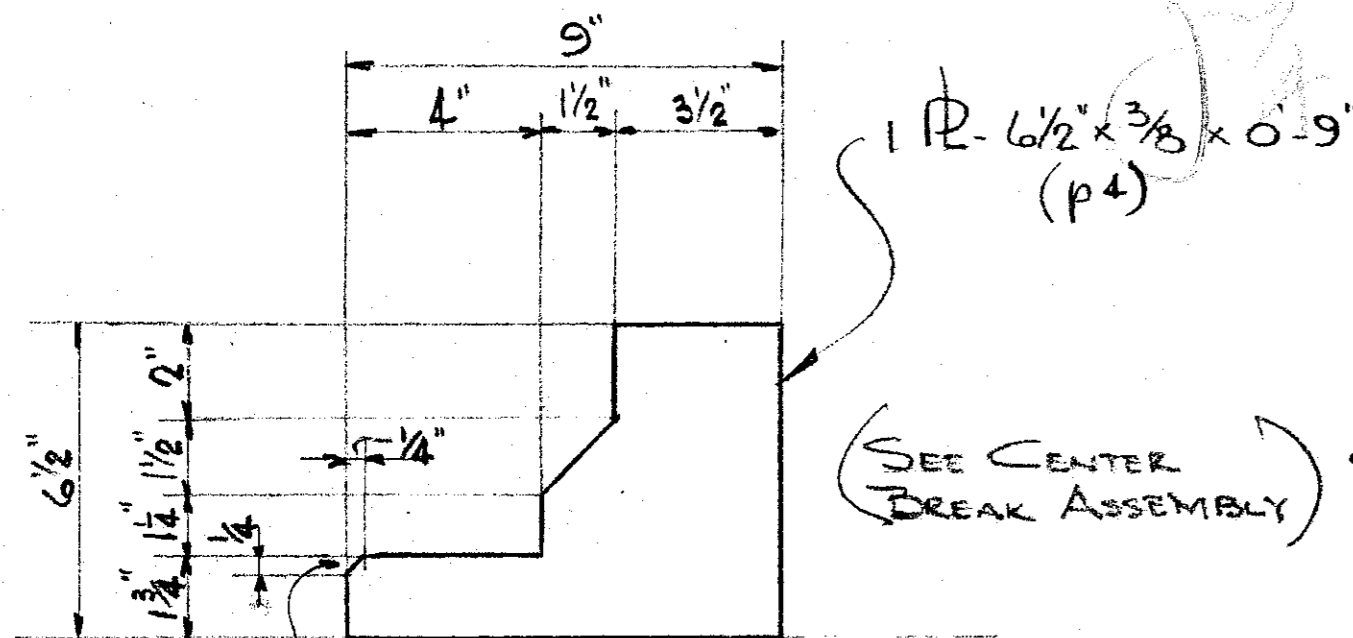
**JACK BEAM - MK 1-JB2**  
32 - REQUIRED



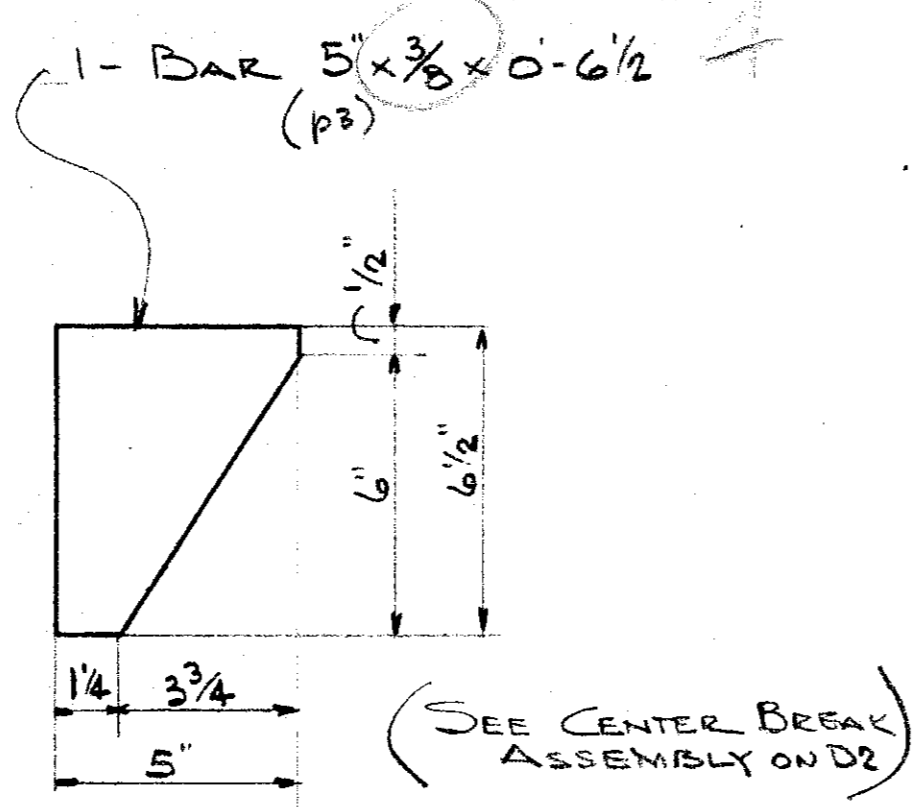
**SHIMS - MK 1-S1**  
30 - REQUIRED



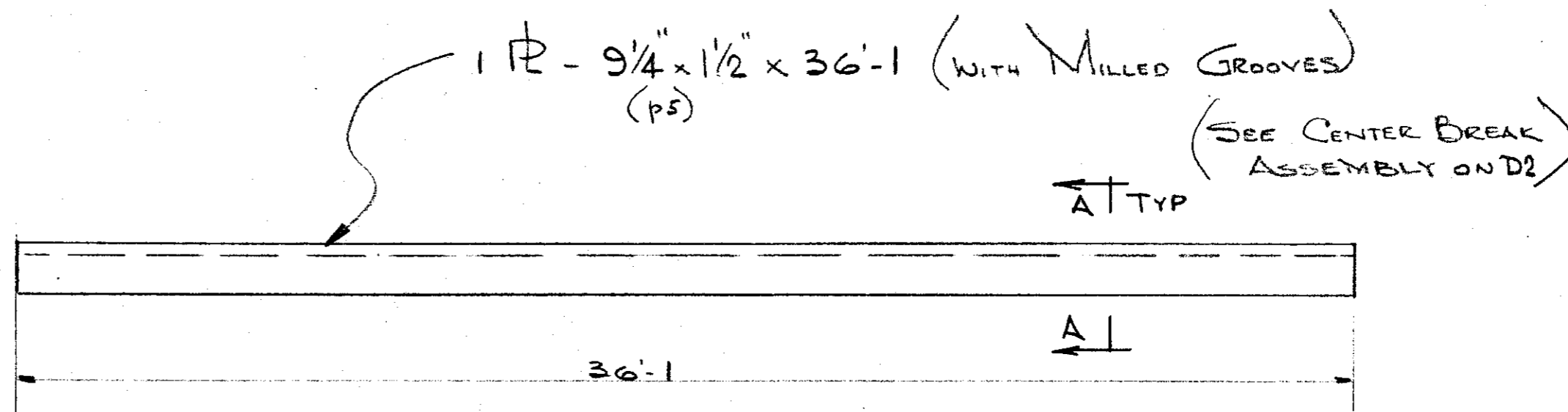
**SHIMS - MK 1-S2**  
30 - REQUIRED



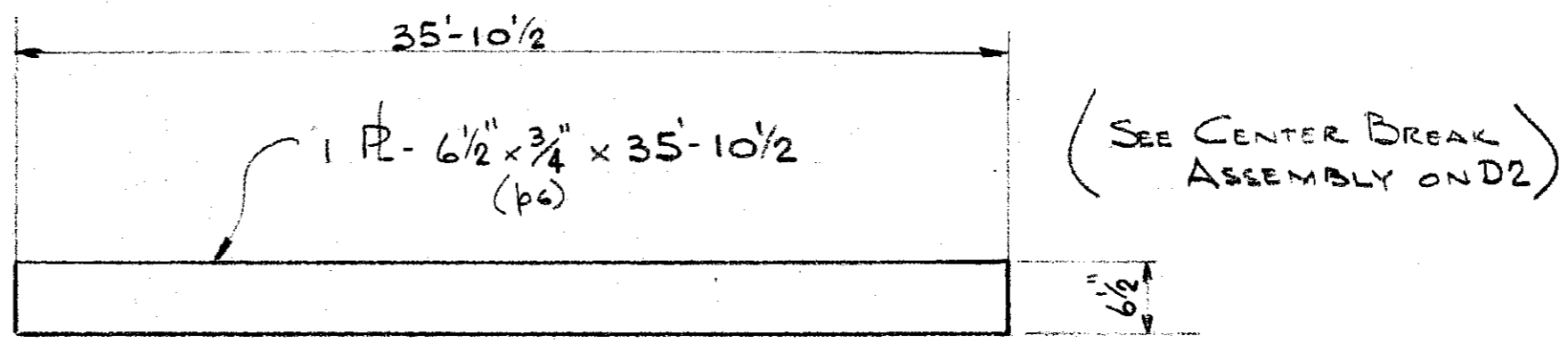
**DIAPHRAGMS FOR CENTER BREAK MK 1-D1**  
68 - REQUIRED



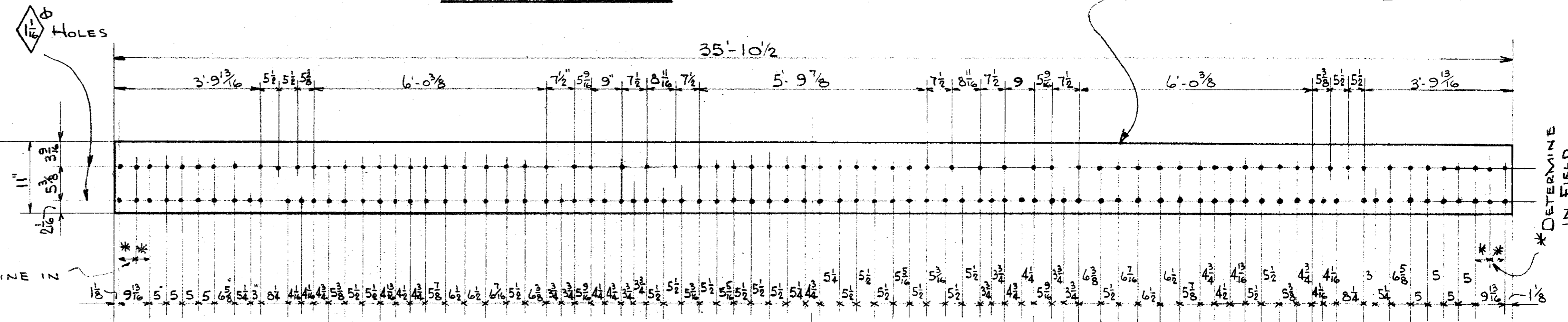
**DIAPHRAGMS FOR CENTER BREAK MK 1-D2**  
68 - REQUIRED



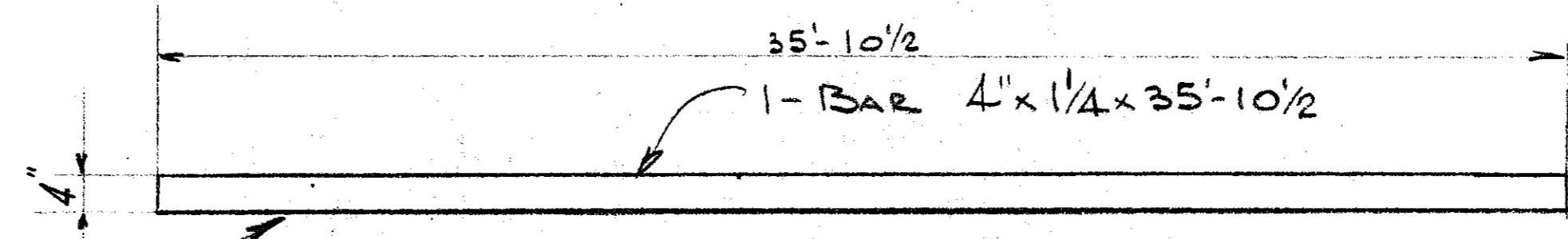
**TOP PLATE FOR CENTER BREAK MK 1-P1**  
2 - REQUIRED



**VERTICAL SUPPORT BAR MK 1-P2**  
2 - REQUIRED



**BOTTOM PLATE FOR CENTER BREAK MK 1-P3**  
2 - REQUIRED

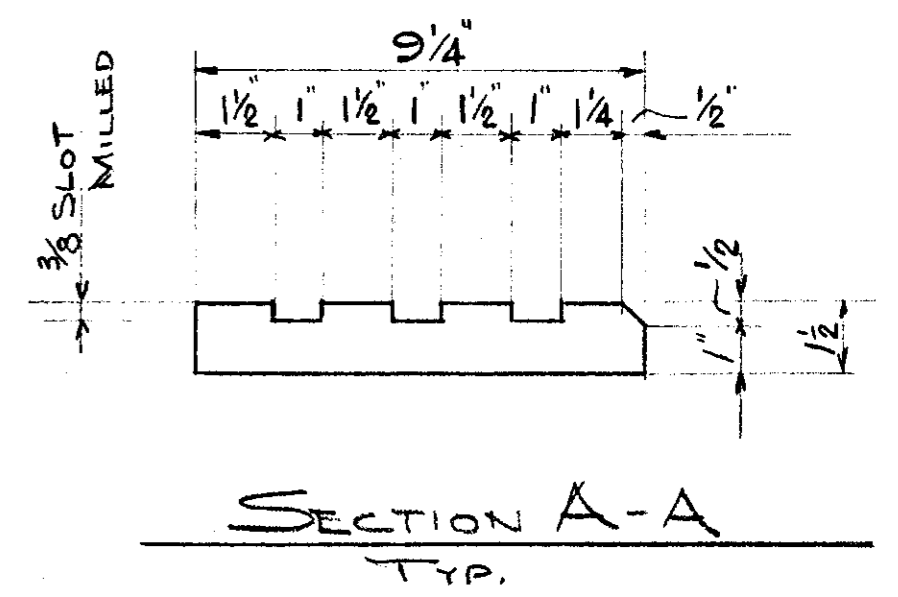


**GRATING SUPPORT BAR FOR CTR BREAK MK 1-B1**  
2 - REQUIRED

**NOTE:** THIS SUPPORT BAR MUST BE INSTALLED & FIELD WELDED TO CENTER BREAK AFTER CENTER BREAK IS BOLTED IN POSITION

**NOTE:** ERECTION BY GENERAL CONTRACTOR

SHOP DRAWING  
CORRECT BY \_\_\_\_\_ DATE \_\_\_\_\_  
RECOM. BY \_\_\_\_\_  
APPROVED AS TO GEN. ARRANGEMENT & DESIGN DATE \_\_\_\_\_  
CHIEF BRIDGE ENGINEER

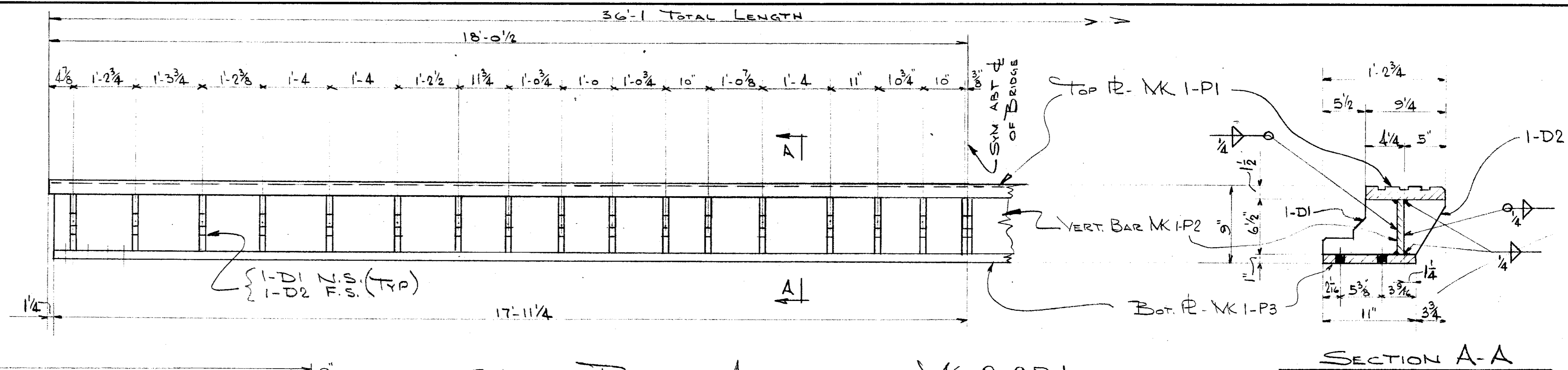


RETURNED for corrections.  
DIVISION City of Chicago  
By \_\_\_\_\_ Date \_\_\_\_\_

CITY OF CHICAGO  
DEPARTMENT OF PUBLIC WORKS  
BUREAU OF ENGINEERING  
DIVISION OF BRIDGES & VIADUCTS  
**REPAIR OF WEBSTER AVE BRIDGE OVER NO. BRANCH OF CHICAGO RIVER**  
PATHMAN CONST. - GEN. CONTRACTOR  
FRANKS ARCH IRON - FABRICATORS  
JACK BEAMS AND CENTER BREAK DETAILS  
MADE BY O.T.L. TRACED BY N.S. CHECKED BY N.S.  
ORDER CONTRACT 28610 OR DWG. NO. \_\_\_\_\_ SCALE: \_\_\_\_\_ SHEET \_\_\_\_\_  
CITY DWG. NO. \_\_\_\_\_ FILE NO. \_\_\_\_\_

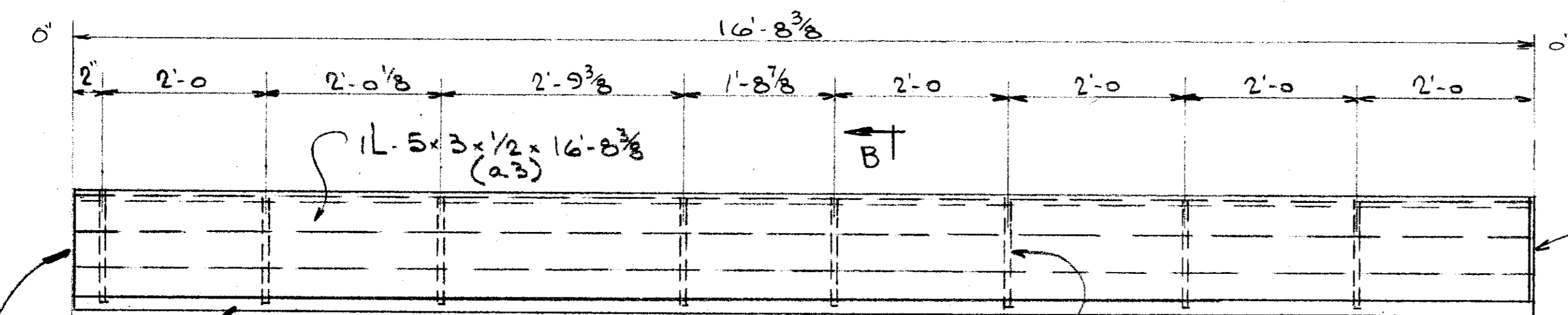
DATE: 10-2-67  
FRANK'S ARCHITECTURAL IRON WORKS  
4020 W. TAYLOR CHICAGO, ILL.  
DRAWING NUMBER 1660570246  
DRAWN BY DI



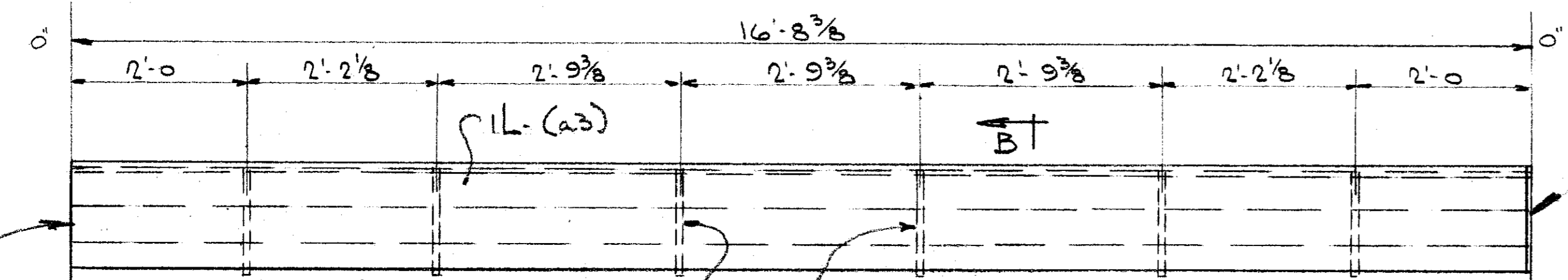


**CENTER BREAK ASSEMBLY MK 2-CB1**

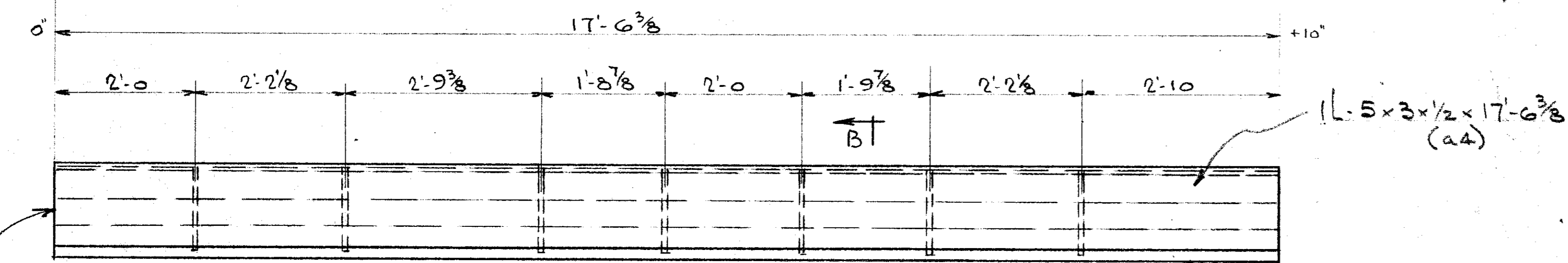
**2 - REQUIRED**



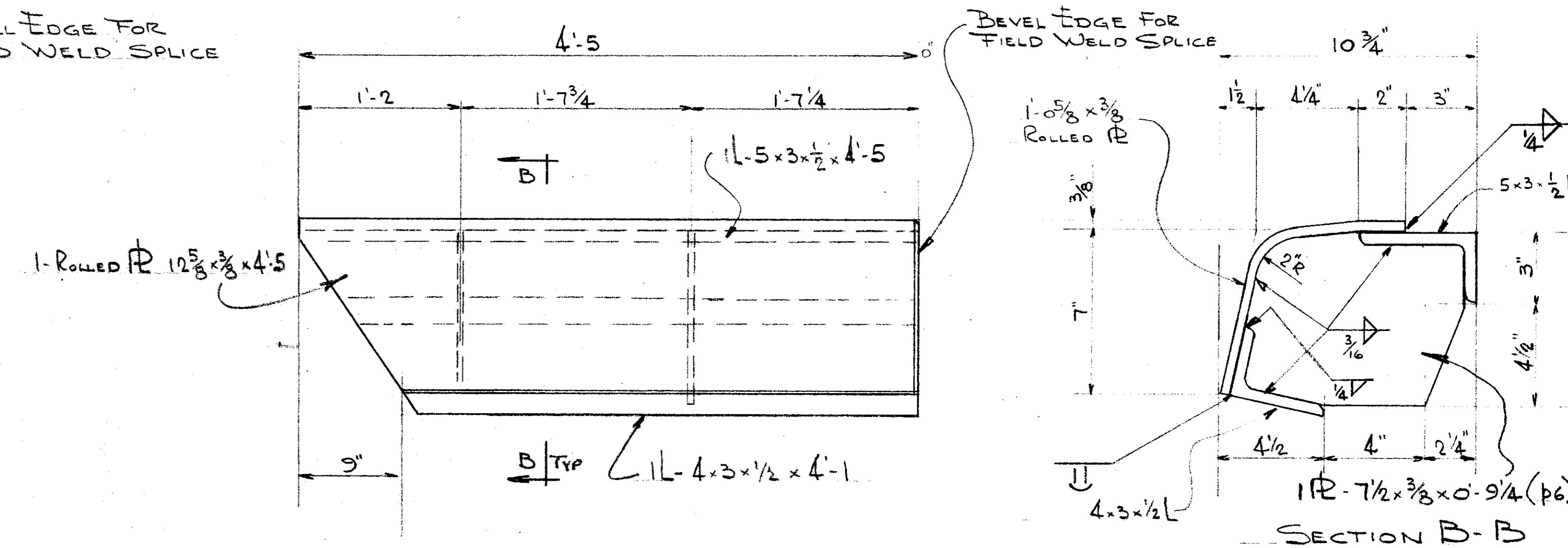
**2 - CURB ASSEMBLIES MK 2-CA2<sup>R</sup> AS SHOWN**  
**2 - CURB ASSEMBLIES MK 2-CA2<sup>L</sup> OPPOSITE HAND**



**6 - CURB ASSEMBLIES MK 2-CA3<sup>R</sup> AS SHOWN**  
**6 - CURB ASSEMBLIES MK 2-CA3<sup>L</sup> OPPOSITE HAND**



**2 - CURB ASSEMBLIES MK 2-CA4<sup>R</sup> AS SHOWN**  
**2 - CURB ASSEMBLIES MK 2-CA4<sup>L</sup> OPPOSITE HAND**



**2 - CURB ASSEMBLIES MK 2-CA1<sup>R</sup> AS SHOWN**  
**2 - CURB ASSEMBLIES MK 2-CA1<sup>L</sup> OPPOSITE HAND**

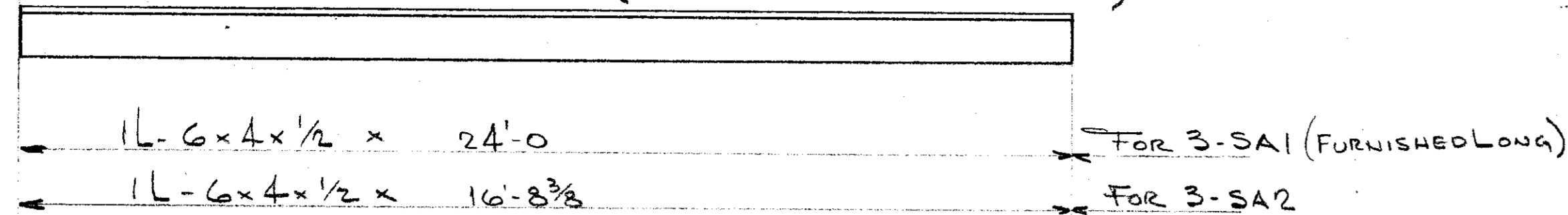
**NOTE**  
**ERECTION BY GENERAL CONTRACTOR**

SHOP DRAWING	
CORRECT RECOM. BY _____	DATE 11/11
APPROVED AS TO GEN. ARRANGEMENT & DESIGN DATE _____	SEC. HEAD _____ ASST. CHIEF _____ DIVISION OF BRIDGES & VIADUCTS
CHIEF BRIDGE ENGINEER	

CITY OF CHICAGO DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING DIVISION OF BRIDGES & VIADUCTS		
REPAIR OF WEBSTER AVE. BRIDGE OVER NO. BRANCH OF CHICAGO RIVER		
PATHMAN CONST - GEN. CONTRACTOR		
FRANK'S ARCH. IRON - FABRICATOR		
CURB ASSEMBLY DETAILS		
MADE BY G.L.L.	TRACTED BY 28610	BY H.S.
ORDER CONTRACT OR DWG. NO.	SCALE:	SHEET
CITY DWG. NO.	FILE NO.	

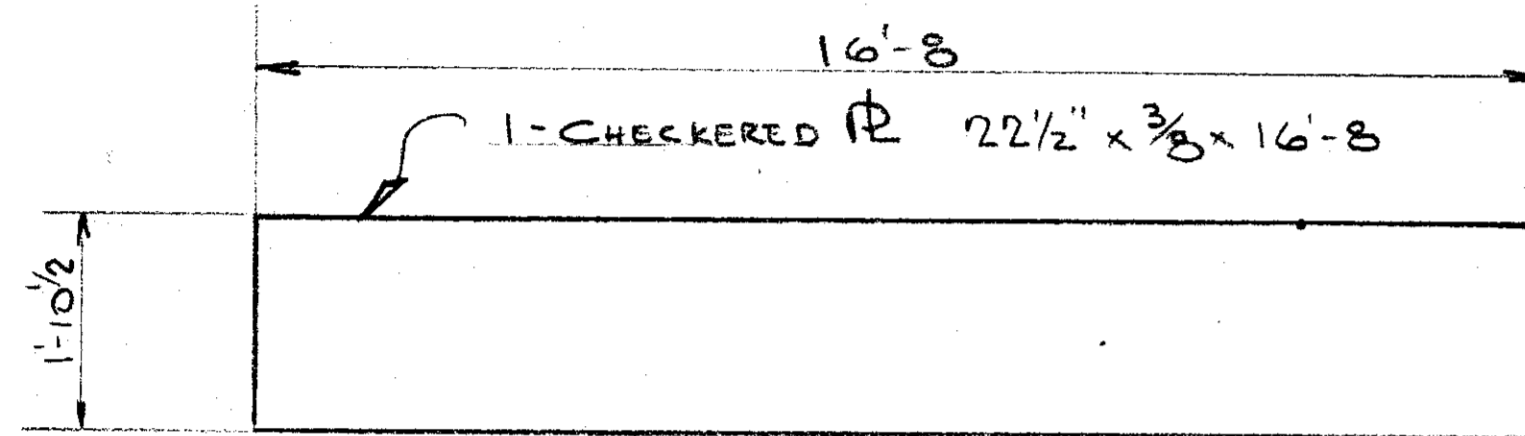
DATE 10-2-67	APPROVED BY:	DRAWN BY
FRANK'S ARCHITECTURAL IRON WORKS 4020 W. TAYLOR CHICAGO, ILL.	REVIS	
1660570247	DRAWING NUMBER	D2

FIELD FABRICATE TO CLEAR TRUSS MEMBERS (4" LEG MUST BE COPED)

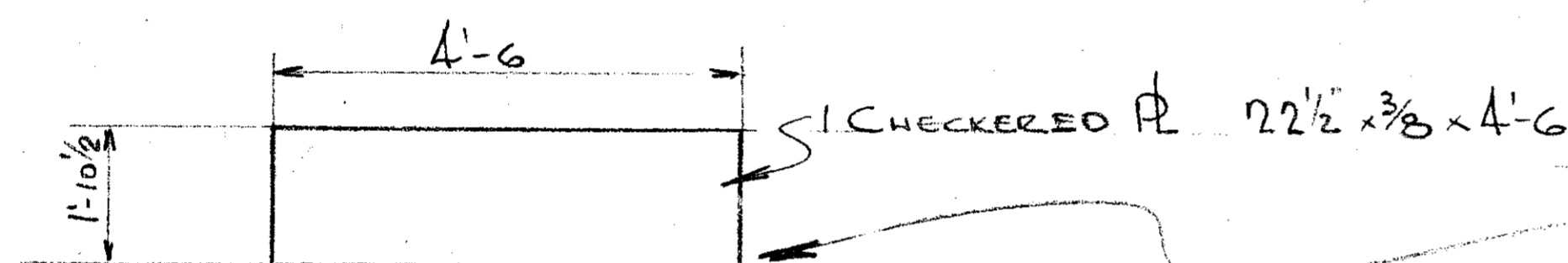


4- SUPPORTING ANGLE - MK 3-SA1

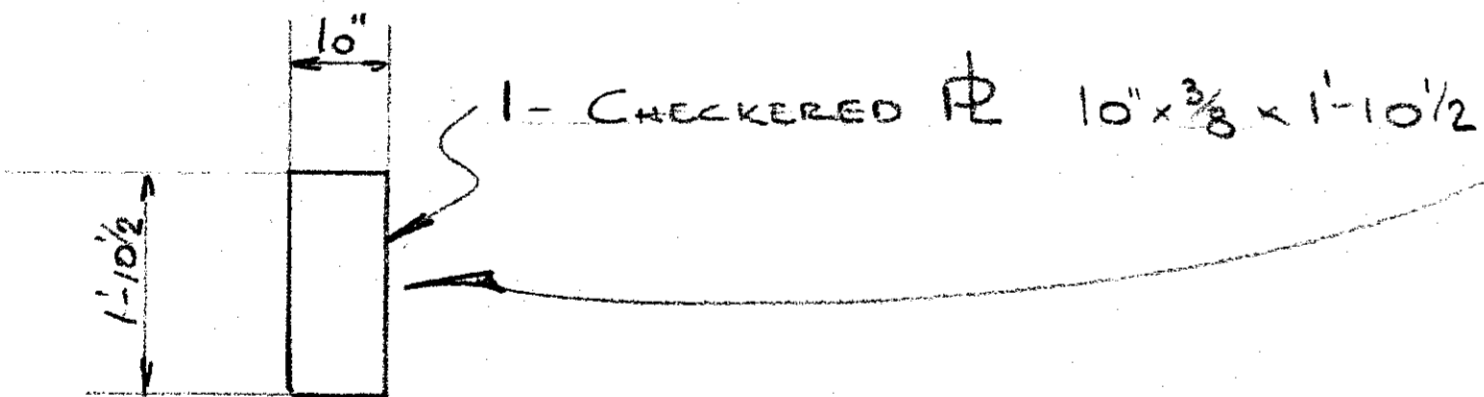
16- SUPPORTING ANGLE - MK 3-SA2



20- COVER PLS MK 3-CP1

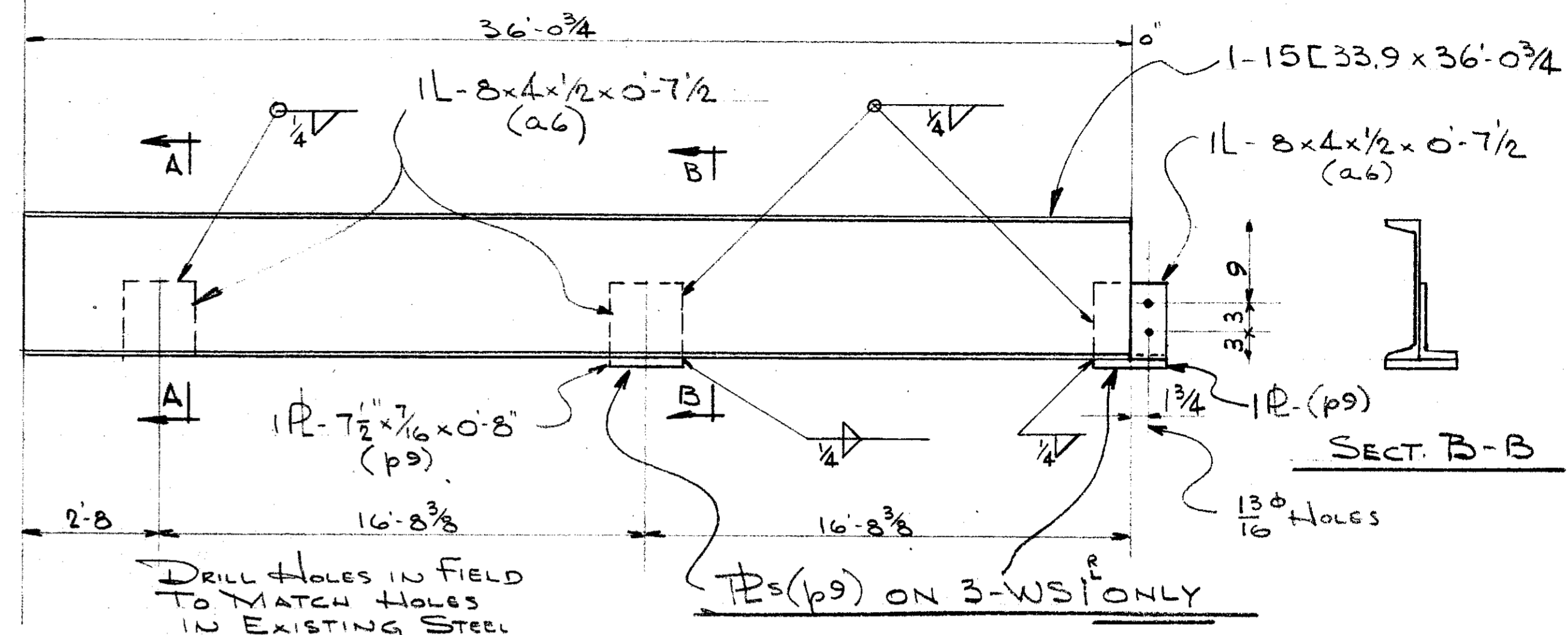
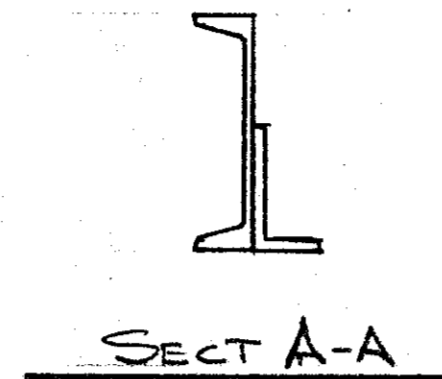


4- COVER PLS MK 3-CP2



4 CHECKERED PLS MK 3-CP3

NOTE: FIELD FABRICATE COVER PLS TO CLEAR TRUSS MEMBERS

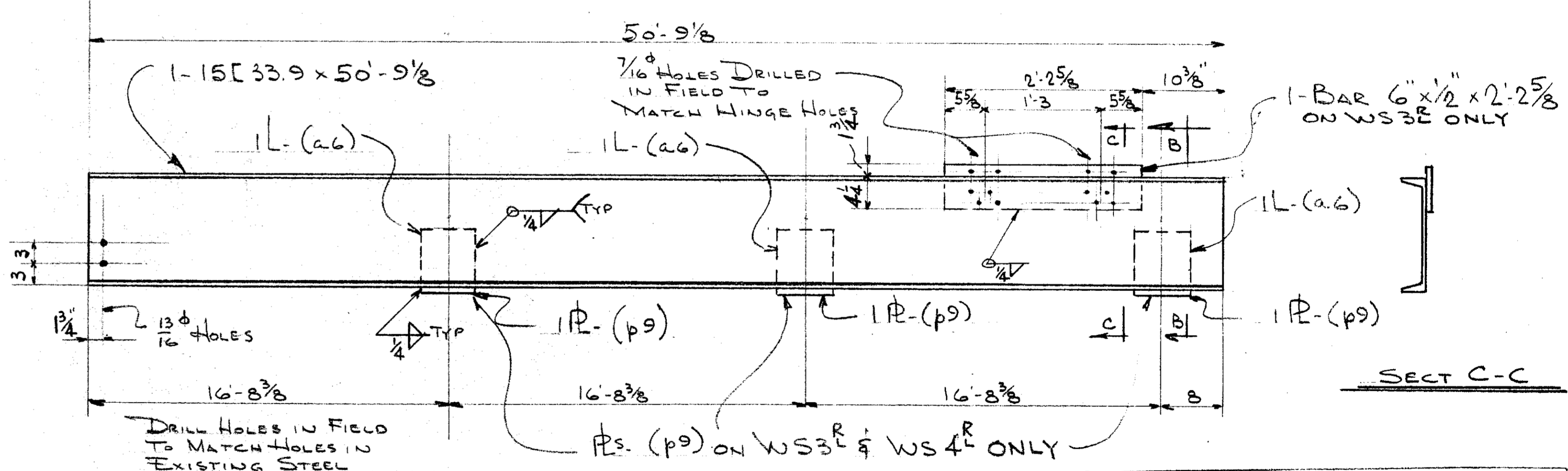


4- WALKWAY STRINGER MK 3-WS1<sup>R</sup> AS SHOWN

4- WALKWAY STRINGER MK 3-WS1<sup>L</sup> OPPOSITE HAND

2- WALKWAY STRINGER MK 3-WS2<sup>R</sup> AS SHOWN

2- WALKWAY STRINGER MK 3-WS2<sup>L</sup> OPPOSITE HAND



2- WALKWAY STRINGERS MK 3-WS3<sup>R</sup> AS SHOWN & NOTED

2- WALKWAY STRINGERS MK 3-WS3<sup>L</sup> OPPOSITE HAND

2- WALKWAY STRINGERS MK 3-WS4<sup>R</sup> AS SHOWN & NOTED

2- WALKWAY STRINGERS MK 3-WS4<sup>L</sup> OPPOSITE HAND

2- WALKWAY STRINGERS MK 3-WS5<sup>R</sup> AS SHOWN & NOTED

2- WALKWAY STRINGERS MK 3-WS5<sup>L</sup> OPPOSITE HAND

24 - 3/4" x 2" MACH. BOLTS WITH ONE WASHER & ONE HEX NUT

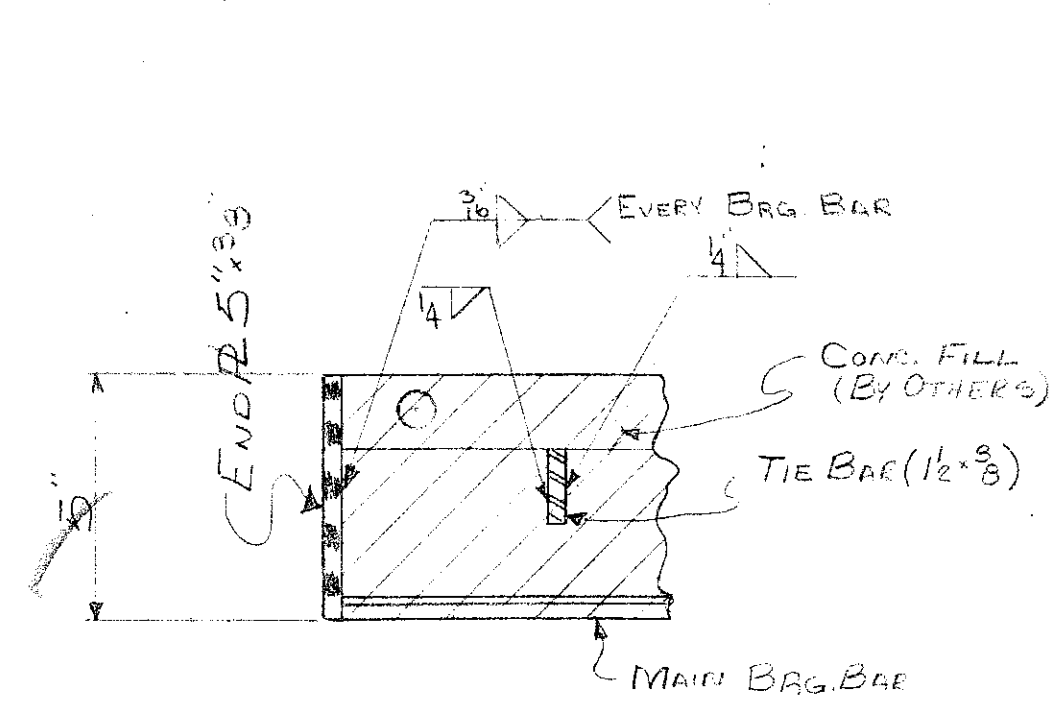
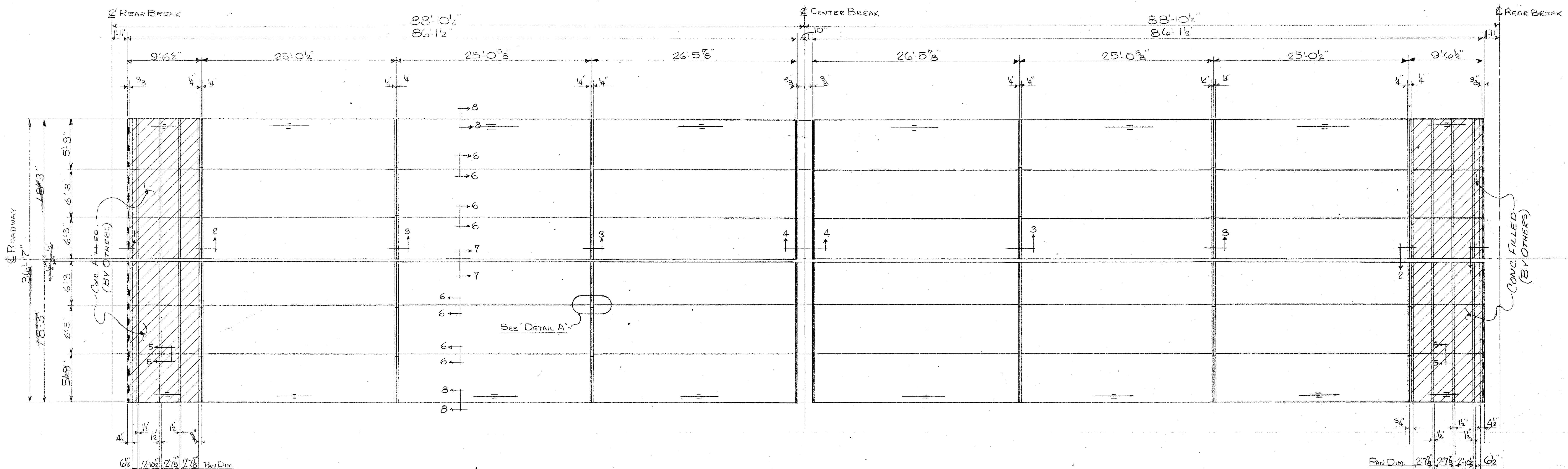
NOTE  
ERECTION BY GENERAL CONTRACTOR

SHOP DRAWING	
CORRECT RECOM. BY	DATE
APPROVED AS TO GEN. ARRANGEMENT & DESIGN DATE	SEC. CHIEF ASST. CHIEF DIVISION OF BRIDGES & VIADUCTS
CHIEF BRIDGE ENGINEER	

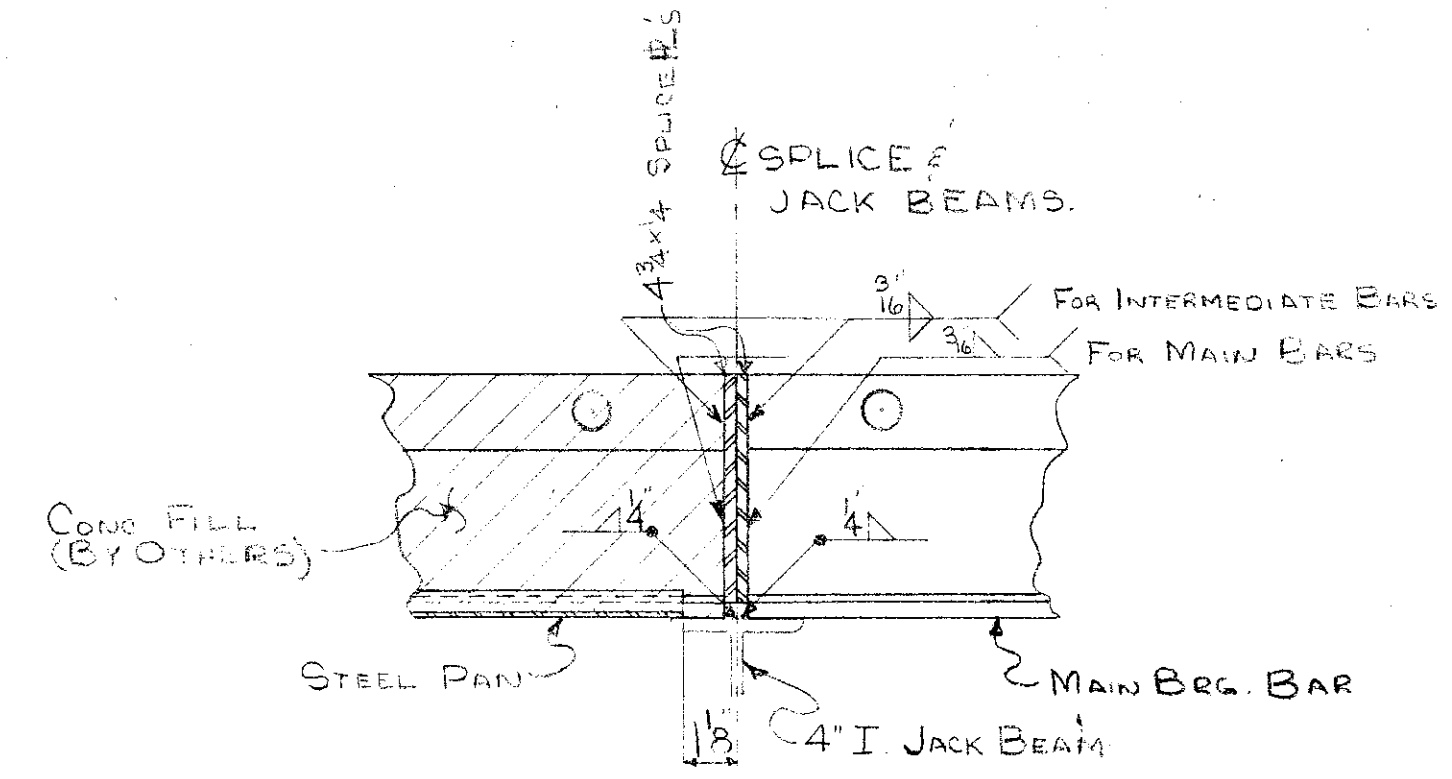
CITY OF CHICAGO DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING DIVISION OF BRIDGES & VIADUCTS		
REPAIR OF WEBSTER AVE BRIDGE OVER NO. BRANCH OF CHICAGO RIVER		
PATHMAN CONST - GEN. CONTRACTOR SUBCONTRACTORS FRANK'S ARCH IRON - FABRICATORS		
WALKWAY STRINGERS AND COVER PLATE DETAILS		
MADE BY O.I.L.	TRACED BY	CHECKED BY N.S.
ORDER CONTRACT OR DWG. NO. 28610	CITY DWG. NO.	SCALE: SHEET FILE NO.

SCALE: 10-2-67	APPROVED BY:	DRAWN BY
FRANK'S ARCHITECTURAL IRON WK'S 4020 W. TAYLOR CHICAGO, ILL	REVIEWED	
1660570248	DRAWING NUMBER	D3

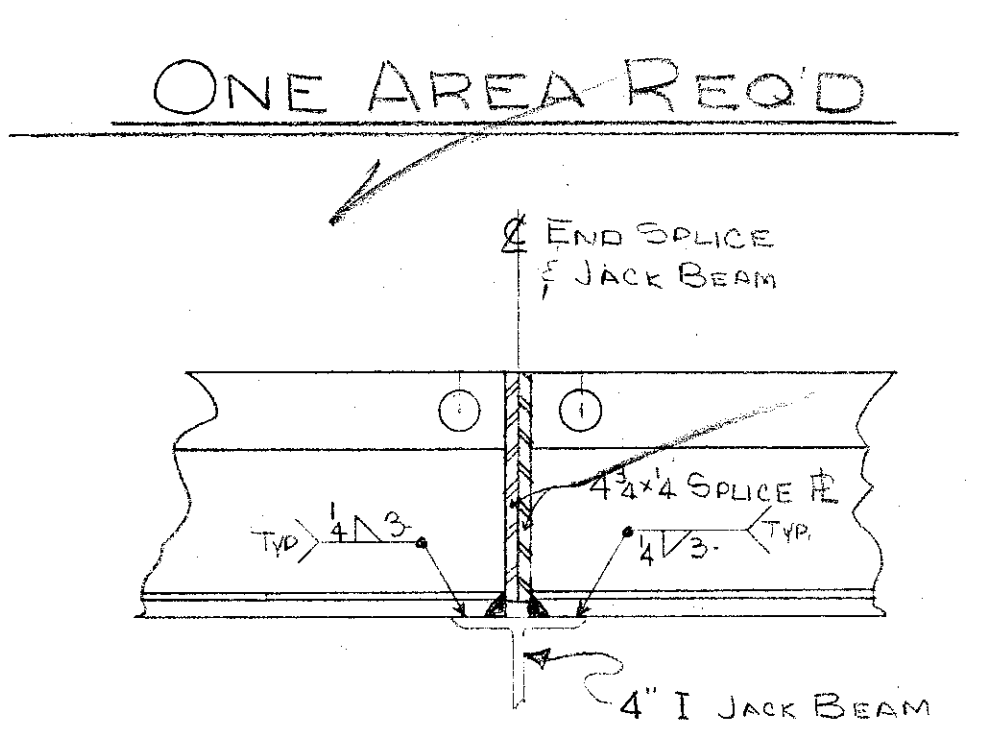




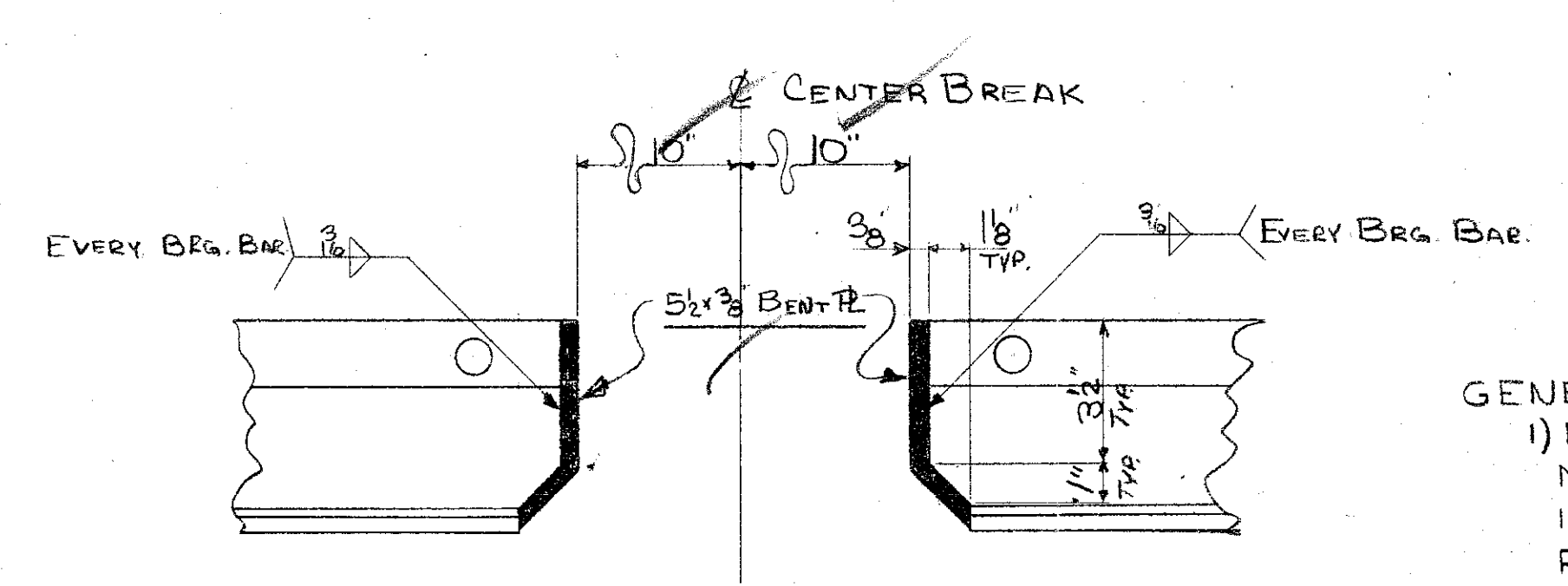
SECTION 1-1



SECTION 2-2

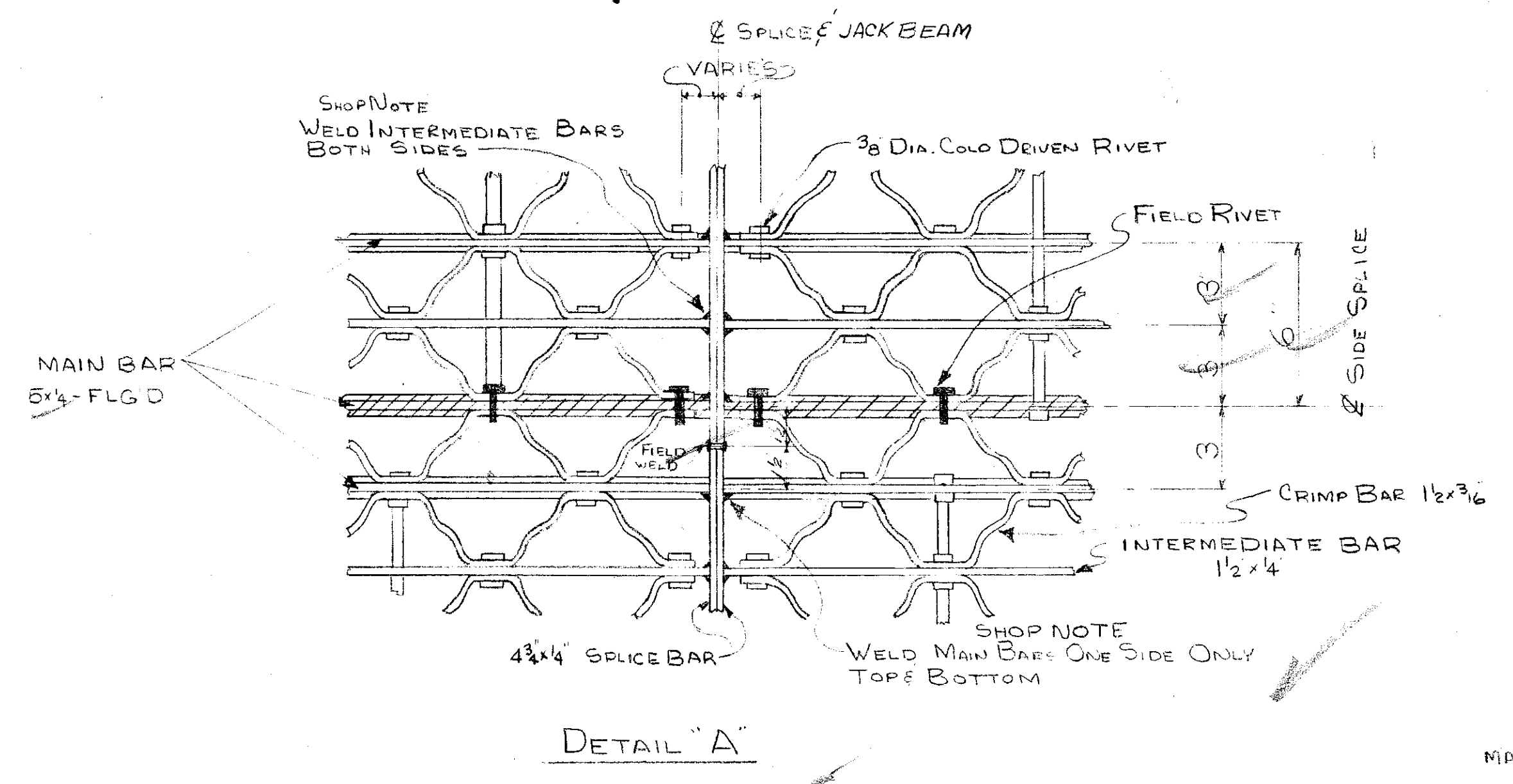


SECTION 3-3

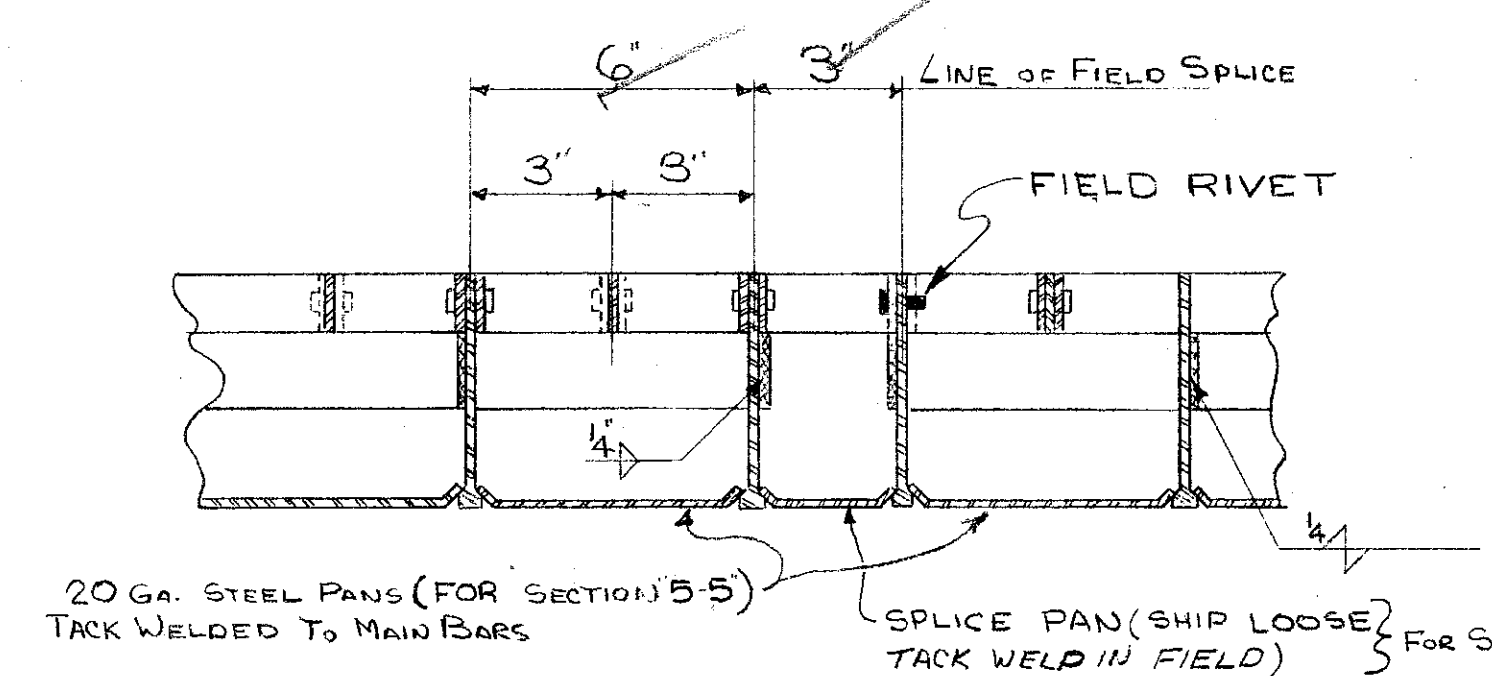


SECTION 4-4

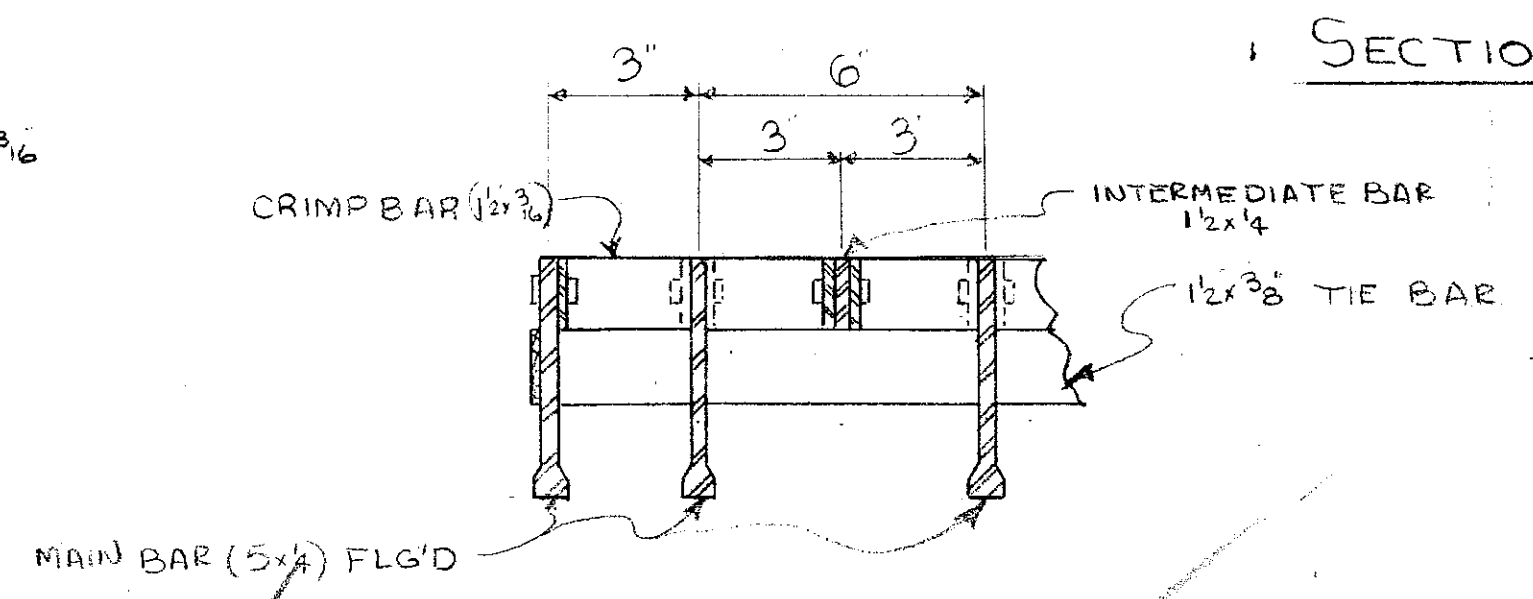
- GENERAL NOTES**
- 1) ROADWAY DECKING TYPE-#RH-204-F RIV-DEXTEEL MAIN BEARING BARS-5x4 FLANGED SECT. ON 6" CENTERS INTERMEDIATE BAR-1/2x4" ON ALTERN. 6" CENTERS RETICULINE BAR-1/2x3/8 RIVETED 7/8" DIA. RIVETS ON 6" CENTERS- TRANSVERSE BARS-1/2x3/8 ON 12" CENTERS- EXTENDING THRU & WELDED TO MAIN FLANGED SECTIONS.
  - 2) MATERIAL TO BE- ASTM-A36, COPPER BEARING STL.
  - 3) SEE SPECS. FOR METAL MARKING TAGS
  - 4) FINISH- PER. SPECS. INSIDE OF CONC. FILLED AREAS NOT TO BE PAINTED.
  - 5) ——— INDICATES 4 3/4 x 4" SPLICE BAR (PER SECT. 3)
  - 6) ——— INDICATES 5 1/2 x 3/8 BENT PL (PER SECT. 4-4)
  - 7) ——— INDICATES 5 x 3/8 DAM BAR (PER SECT. 1)
  - 8) ——— INDICATES DIRECTION OF MAIN BRG. BARS- ALSO FLOW OF TRAFFIC.
  - 9) ▨ INDICATES CONC. FILL (BY OTHERS)



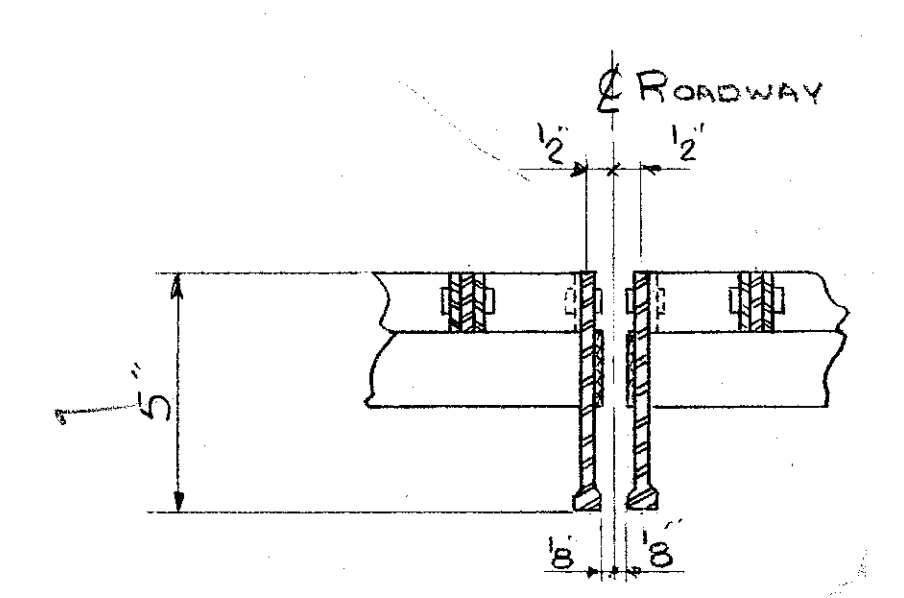
DETAIL A



SECTION 5-5 (AS NOTED)



SECTION 6-6



SECTION 7-7

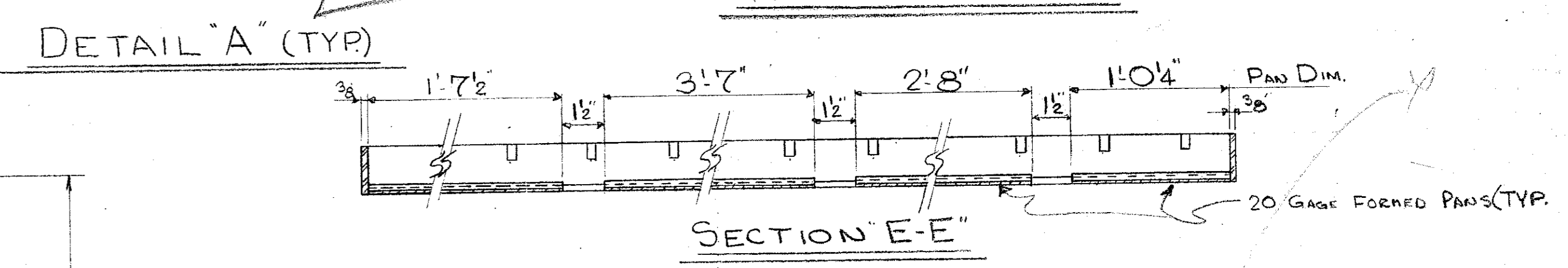
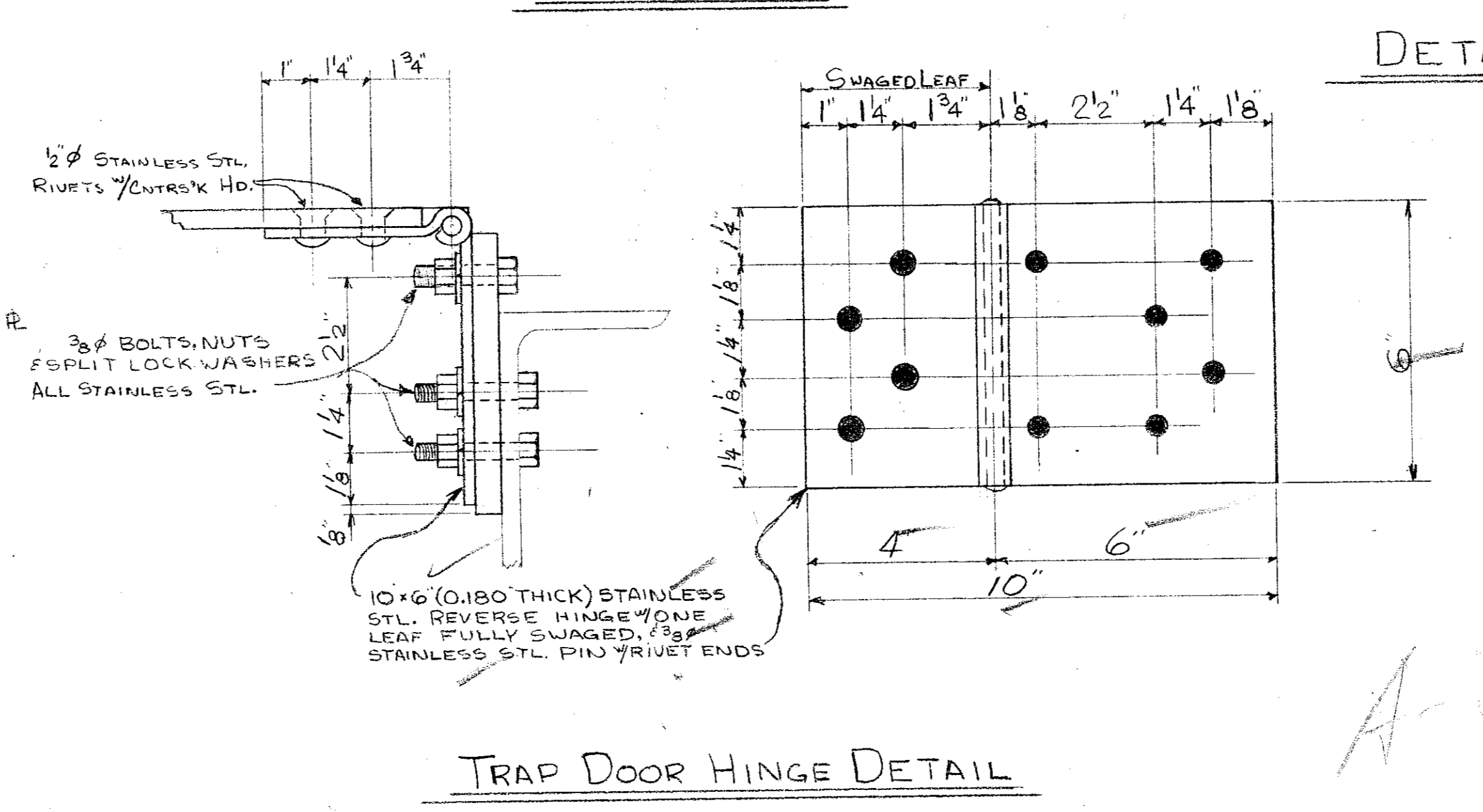
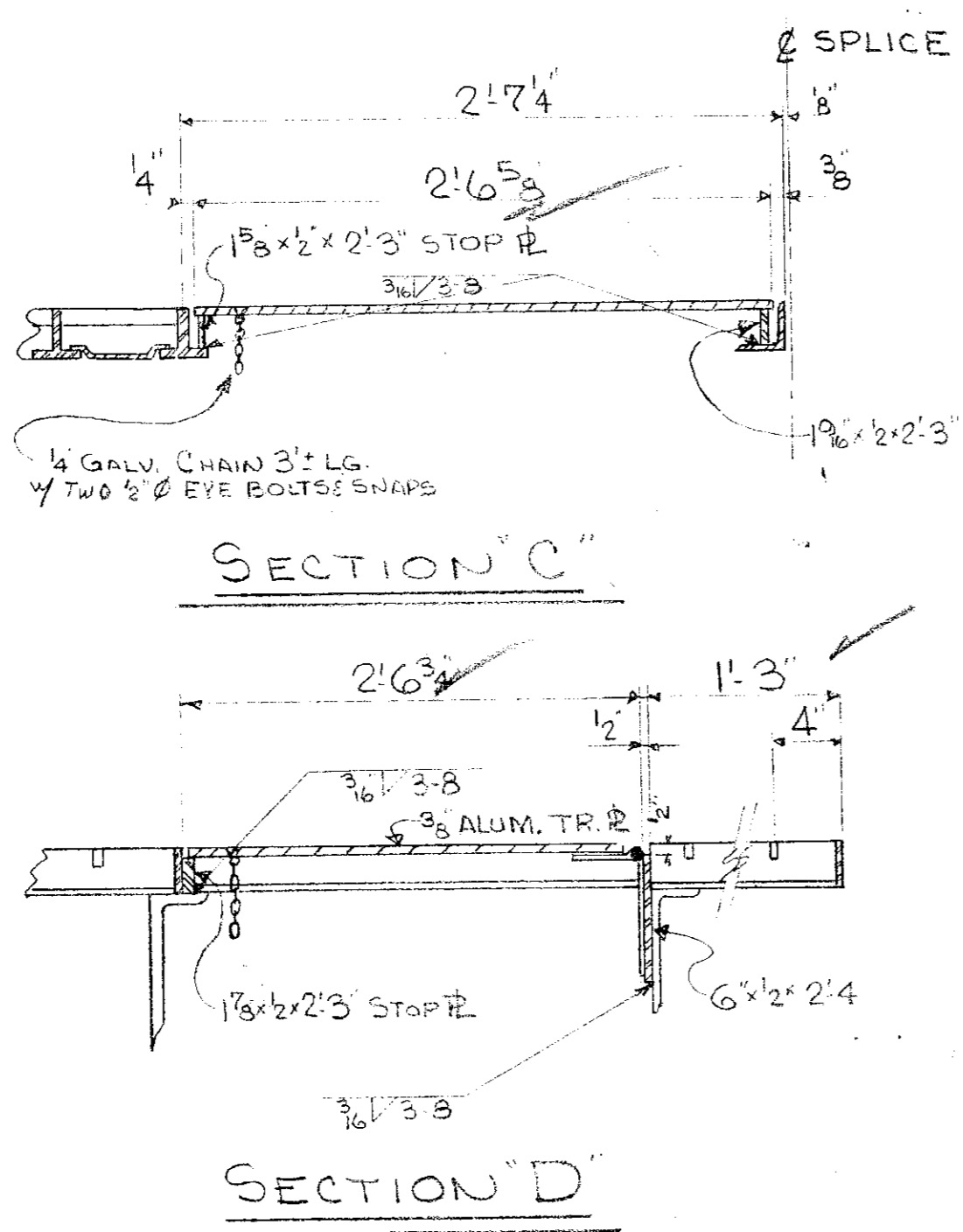
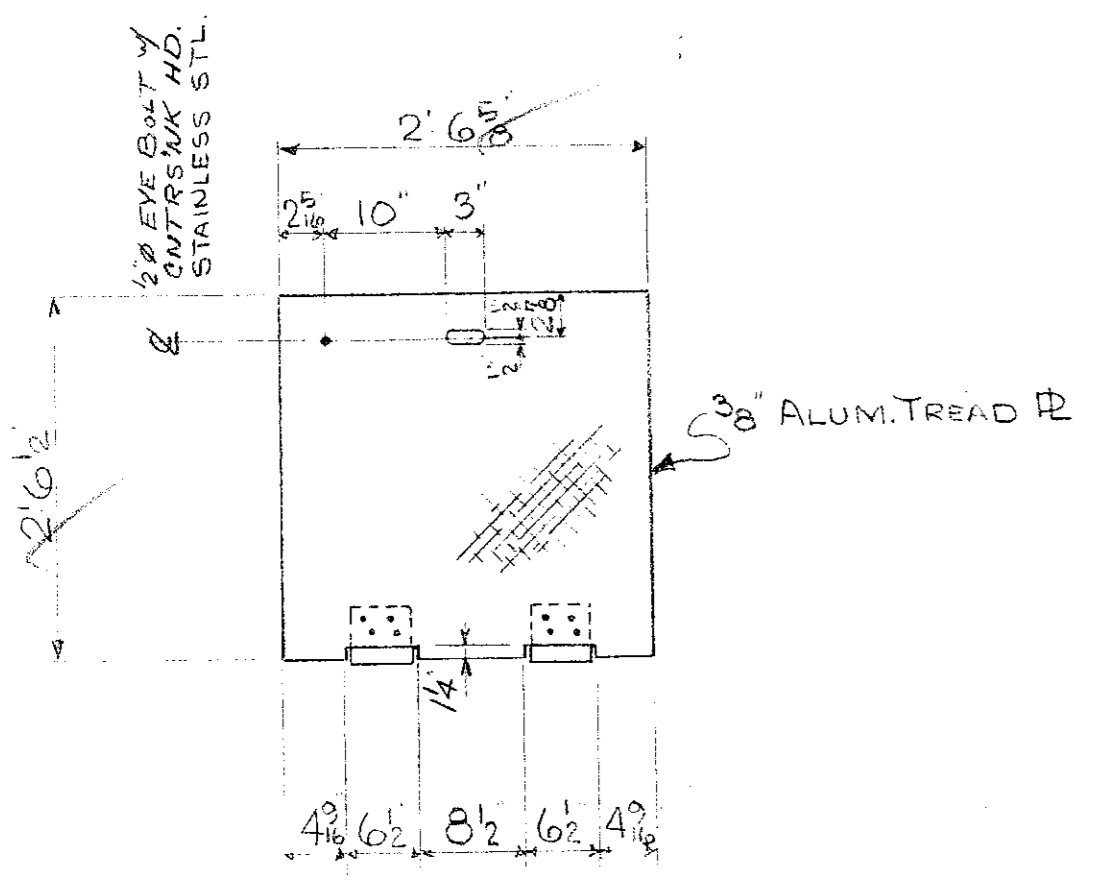
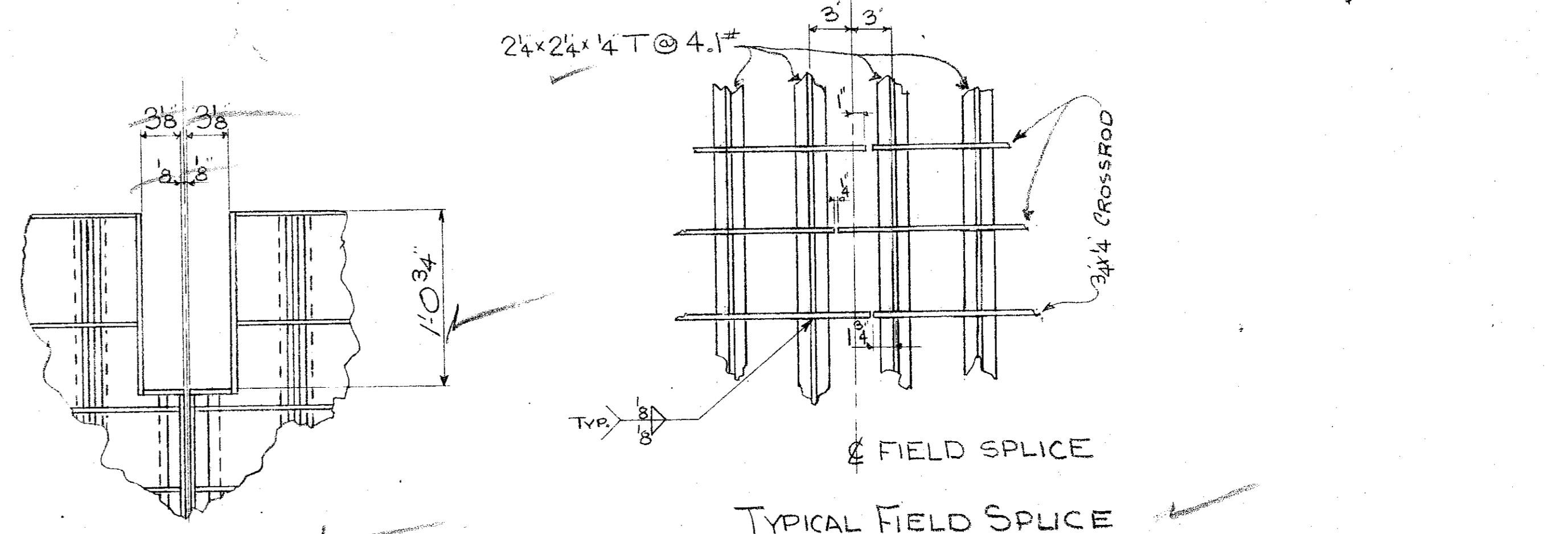
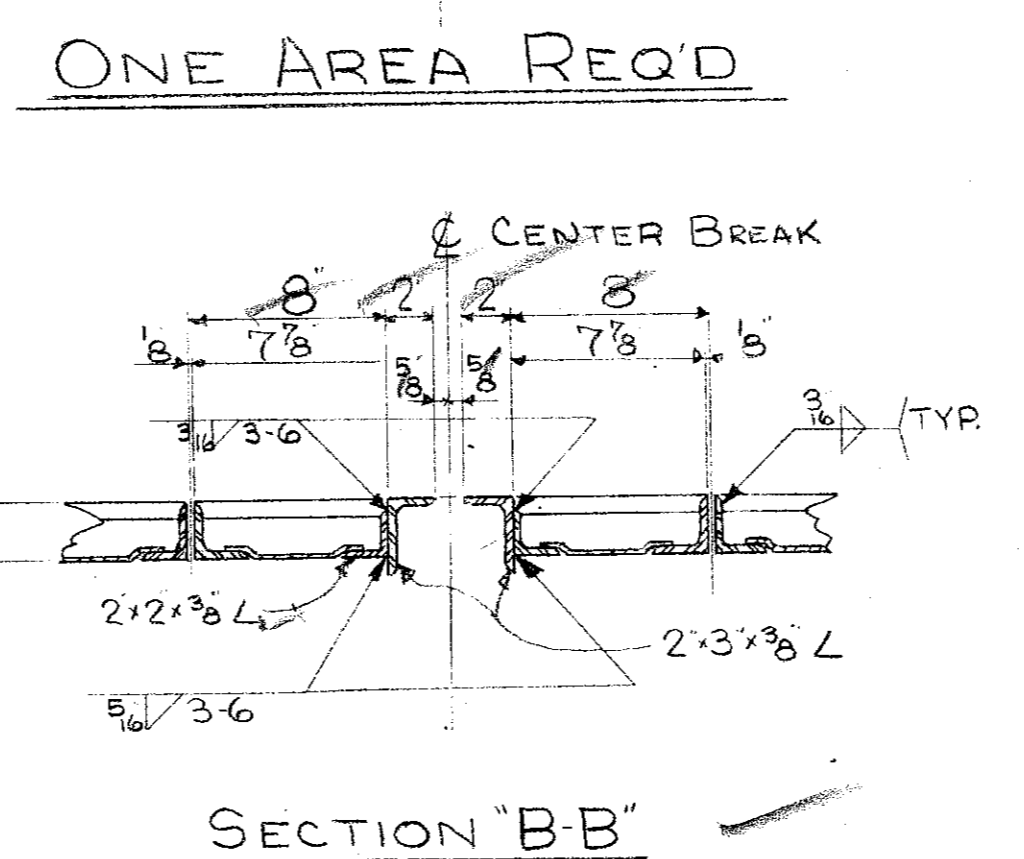
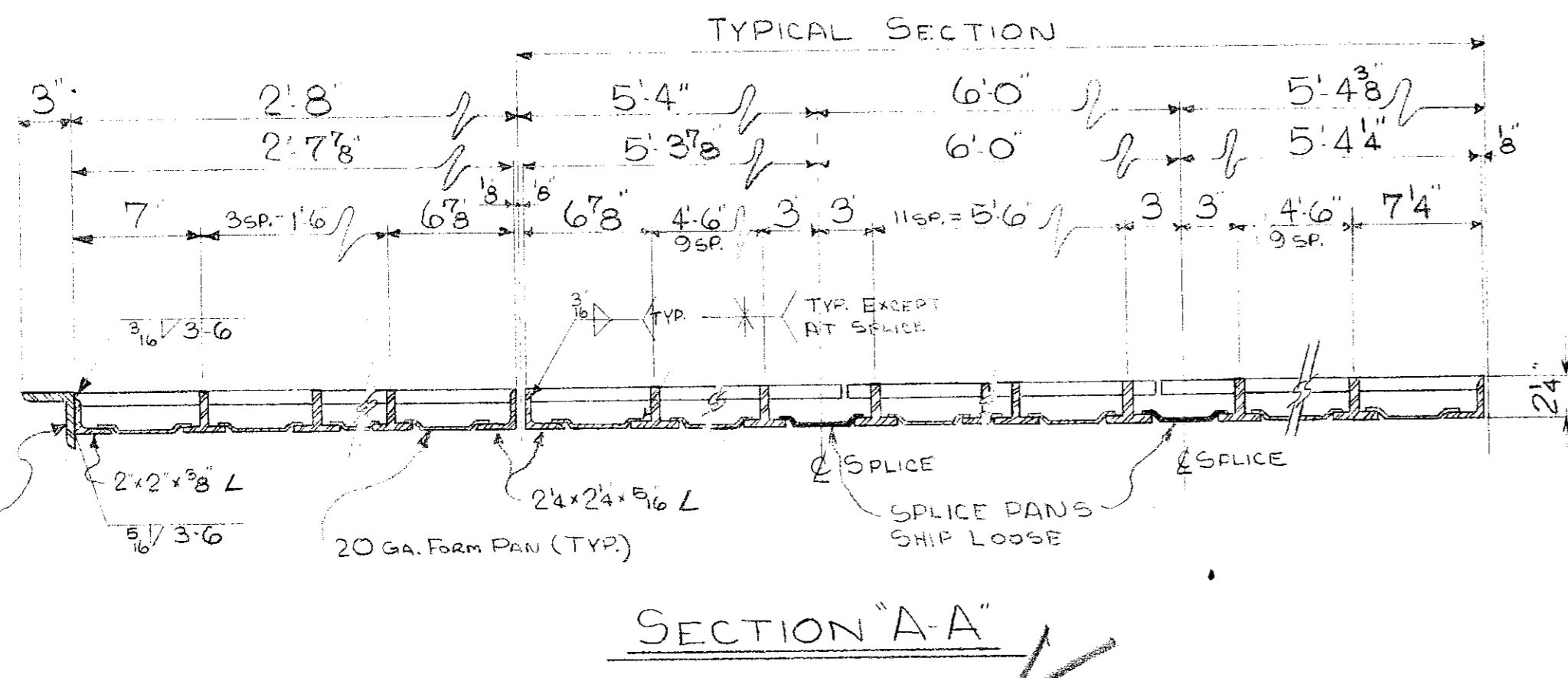
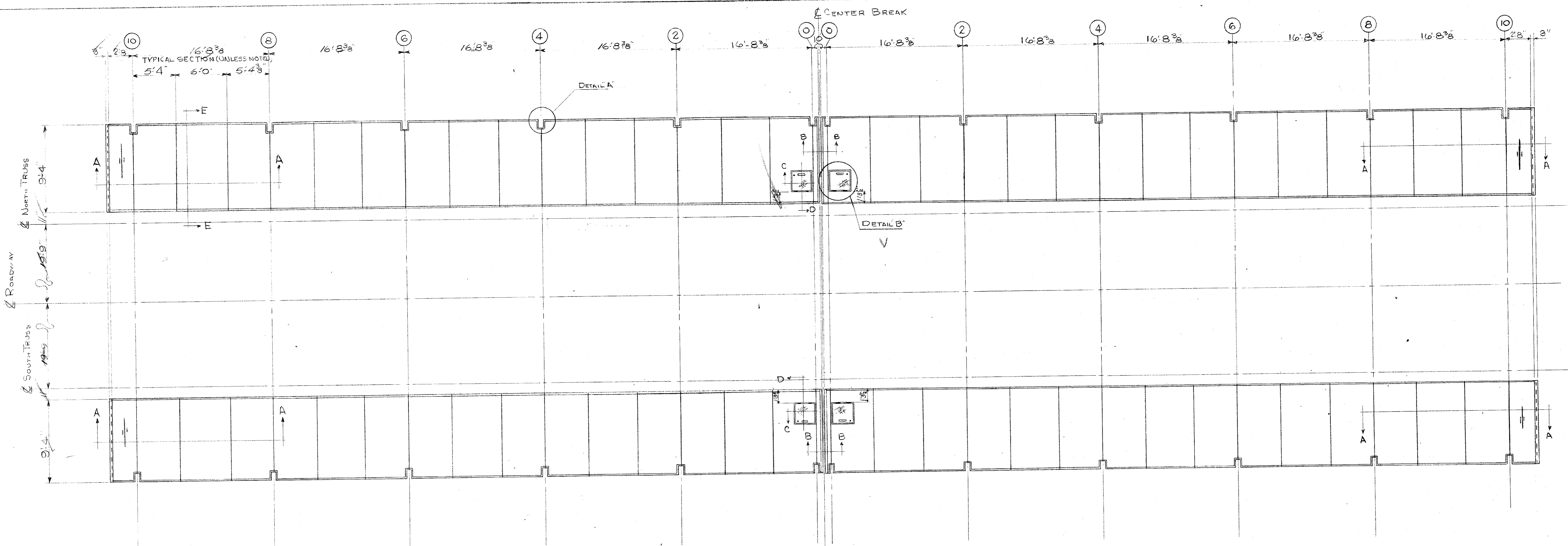


SECTION 8-8

APPROVAL STAMP

CONTRACT No. 3773-RD  
 CITY Dwg. No. 30230 of 30231  
 1660570250

No.	DATE	REV. DESCRIPTION	BY	APP'D
CITY OF CHICAGO DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERS DIVISION OF BRIDGES & VIADUCTS WEST WEBSTER AVENUE BRIDGE				
CONTRACTORS				
SUB-CONTRACTORS				
FABRICATOR KLEMP CORPORATION				
SUBJECT DETAILS OF #RH-204-F ROADWAY STEEL DECKING				
MADE BY R.J.		CHECKED BY		
DATE 10-31-67		DATE		
CONTRACT No. 3773-RD		SHEET No. 1 of 2		
CITY Dwg. No. 30230 of 30231				



- NOTES:**
- SIDEWALK DECKING TYPE #KT-24 TEE-PAN DECK MAIN BEARING SUPPORTS STR. TEES 24x24x1/4 @ 4.1" CROSS BAR 2x24x3/8 20 GA. STRIP PANS, FORMED.
  - MATERIAL - M-1020
  - FINISH - ONE SHOP COAT ALKYD RED LEAD DO NOT PAINT INNER AREAS TO BE CONC. FILLED.
  - INDICATES 24x3/8 CLOSURE R
  - INDICATES DIRECTION OF BEARING BARS

**APPROVAL STAMP**

DESIGNED BY: [Signature] DATE: 10-4-67  
 CHECKED BY: [Signature] DATE: 10-4-67  
 APPROVED BY: [Signature] DATE: 10-4-67

No.	DATE	REV. DESCRIPTION	BY	APP'D
<b>CITY OF CHICAGO</b> DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERS DIVISION OF BRIDGES & VIADUCTS WEST WEBSTER AVENUE BRIDGE				
CONTRACTORS				
SUB-CONTRACTORS				
FABRICATOR KLEMP CORPORATION				
SUBJECT DETAILS OF KT-24 SIDEWALK DECKING				
MADE BY R.J.			CHECKED BY	
DATE 10-4-67			DATE	
CONTRACT No. 3773-RD		SHEET No. 2 of 2		
CITY DWG. No. 30230		1660570251		

# CITY OF CHICAGO

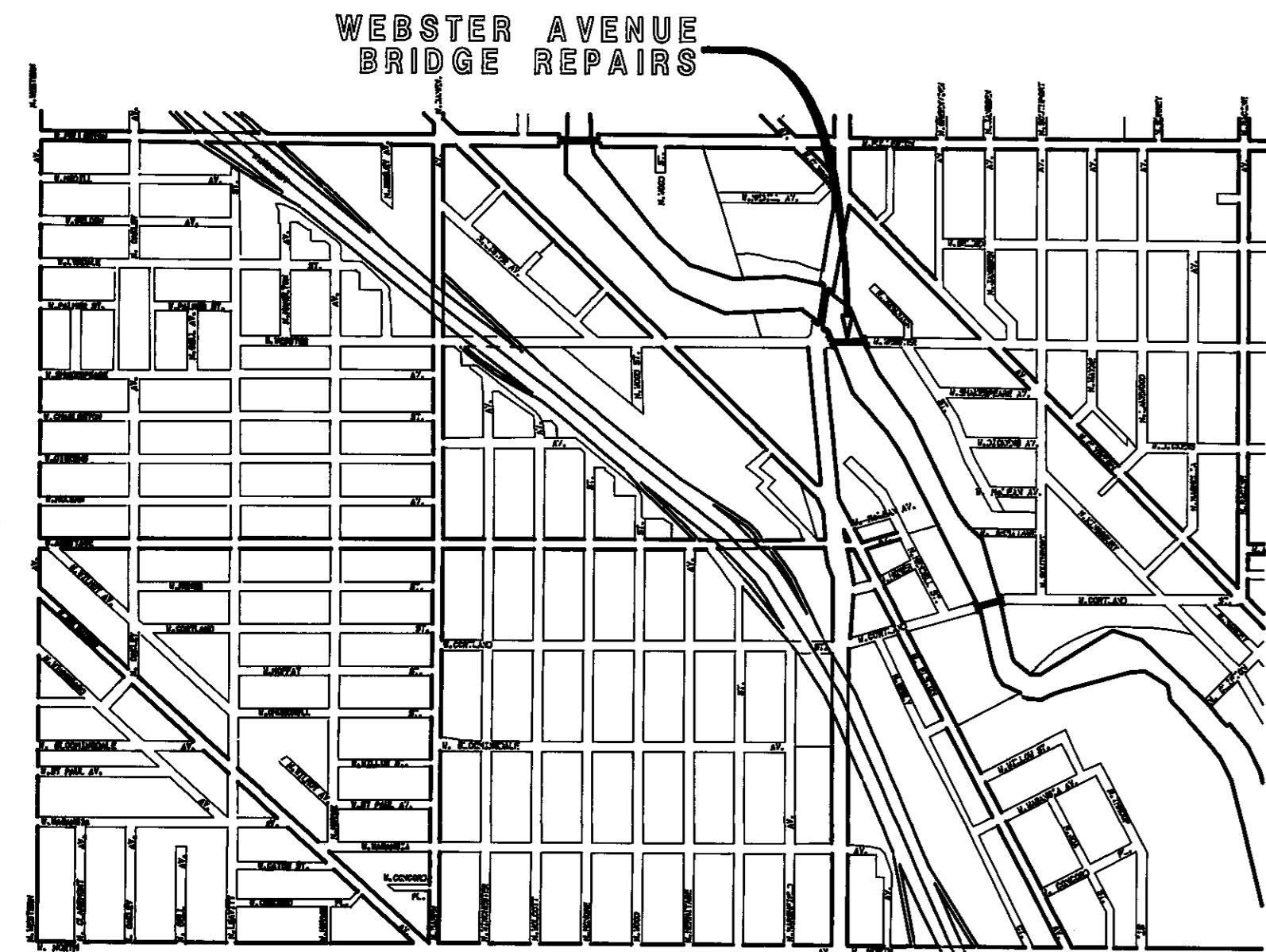
RICHARD M. DALEY

MAYOR

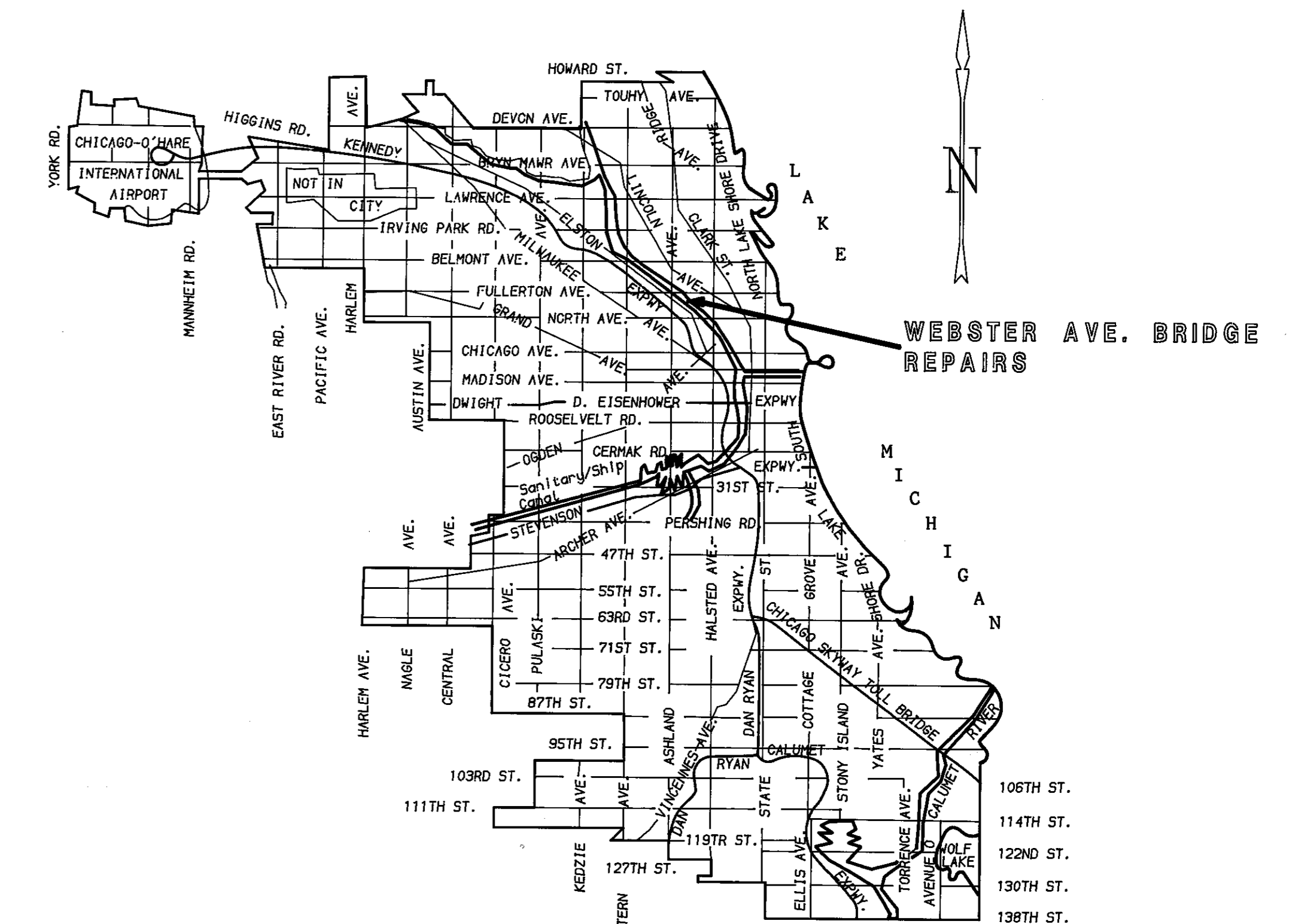
DEPARTMENT OF TRANSPORTATION

J. F. BOYLE, Jr., Commissioner

BUREAU OF BRIDGES



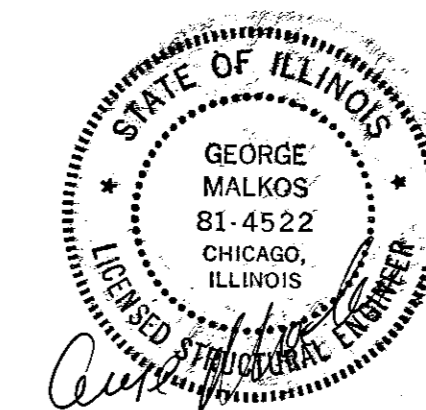
PROJECT MAP



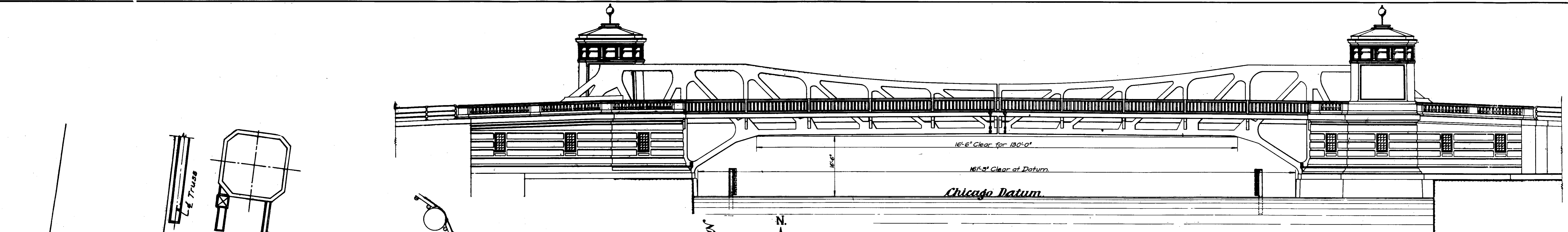
PROJECT LOCATION

## FORCE ACCOUNT PLANS FOR WEBSTER AVENUE BRIDGE REPAIRS

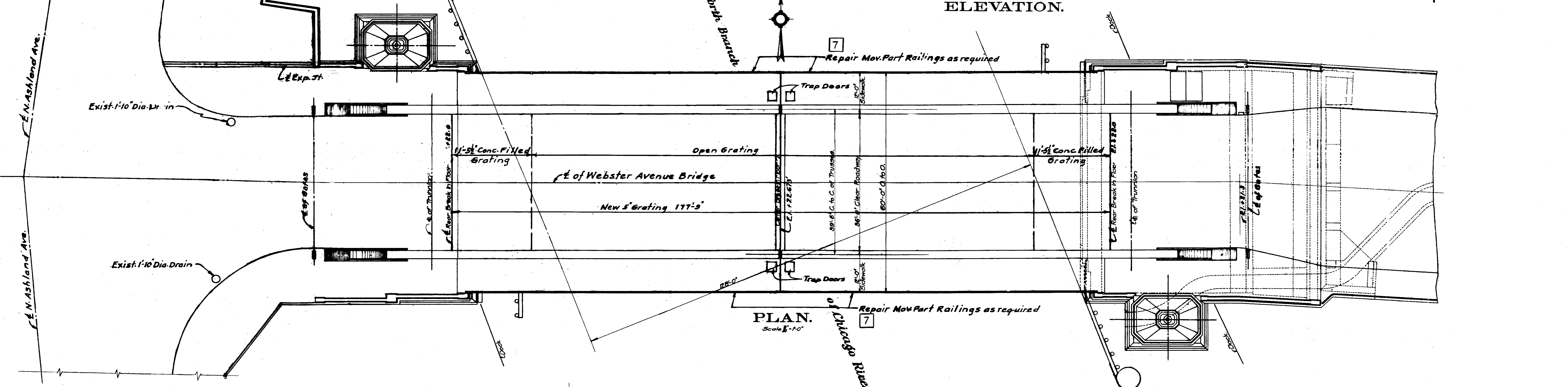
1992 G.O. BOND PROGRAM



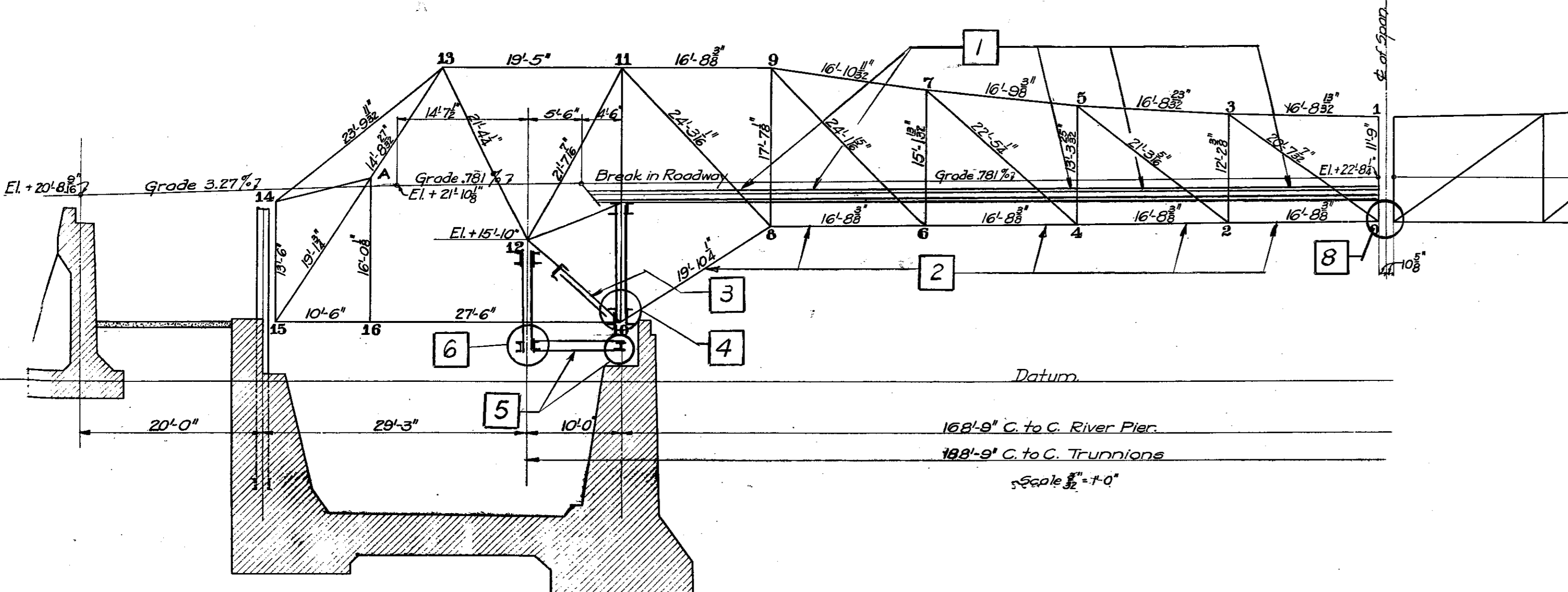
CITY OF CHICAGO DEPARTMENT OF TRANSPORTATION BUREAU OF BRIDGES	
DATE:	<i>December 22, 1992</i>
APPROVED:	<i>Richard M. Daley</i> PROJECT MANAGER
APPROVED:	<i>George H. Hales</i> PROJECT COORDINATOR
APPROVED:	CHIEF ENGINEER/BRIDGES
APPROVED:	DEPUTY COMMISSIONER
APPROVED:	COMMISSIONER



ELEVATION.



PLAN.  
Scale 1/8" = 1'-0"

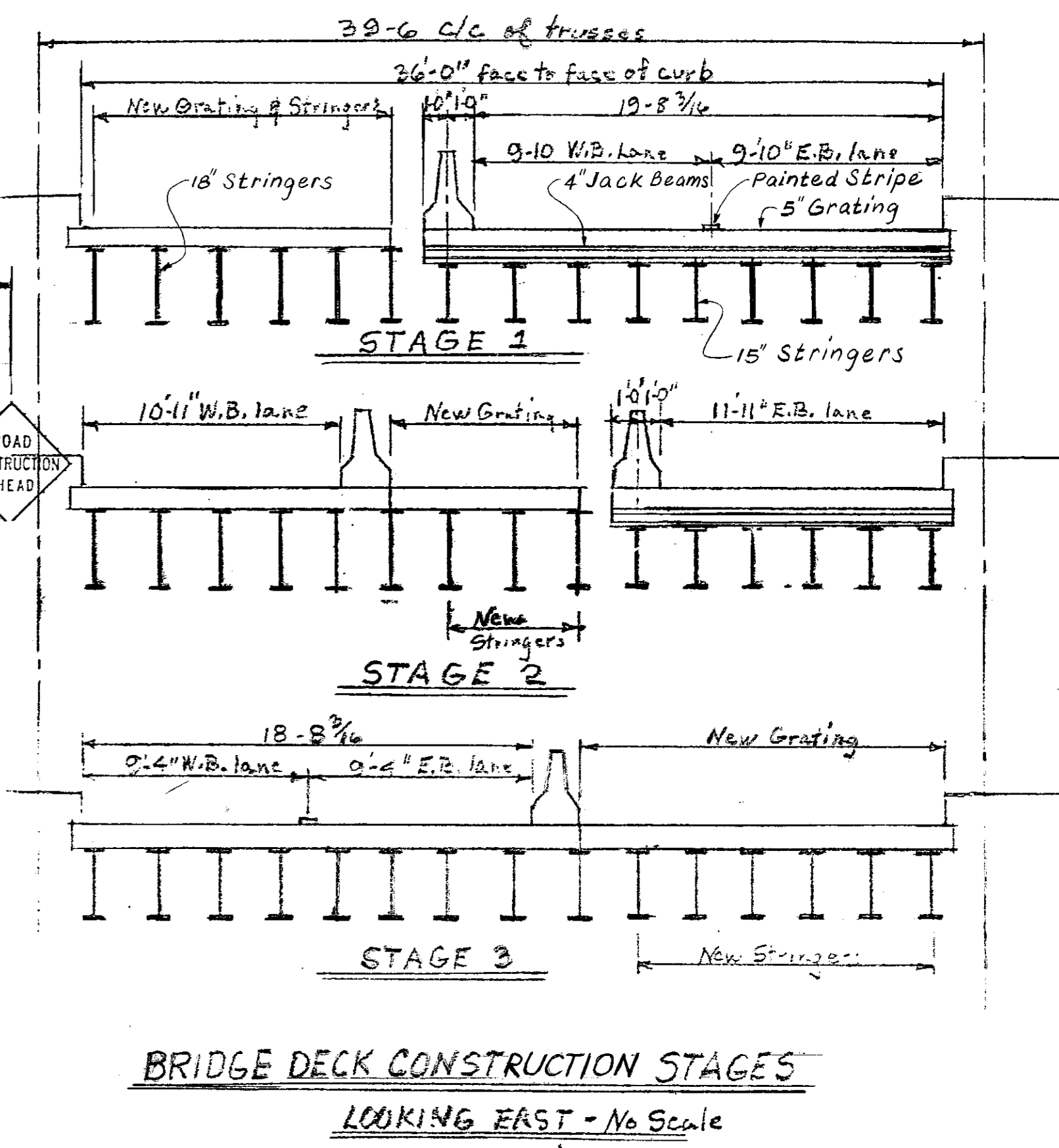
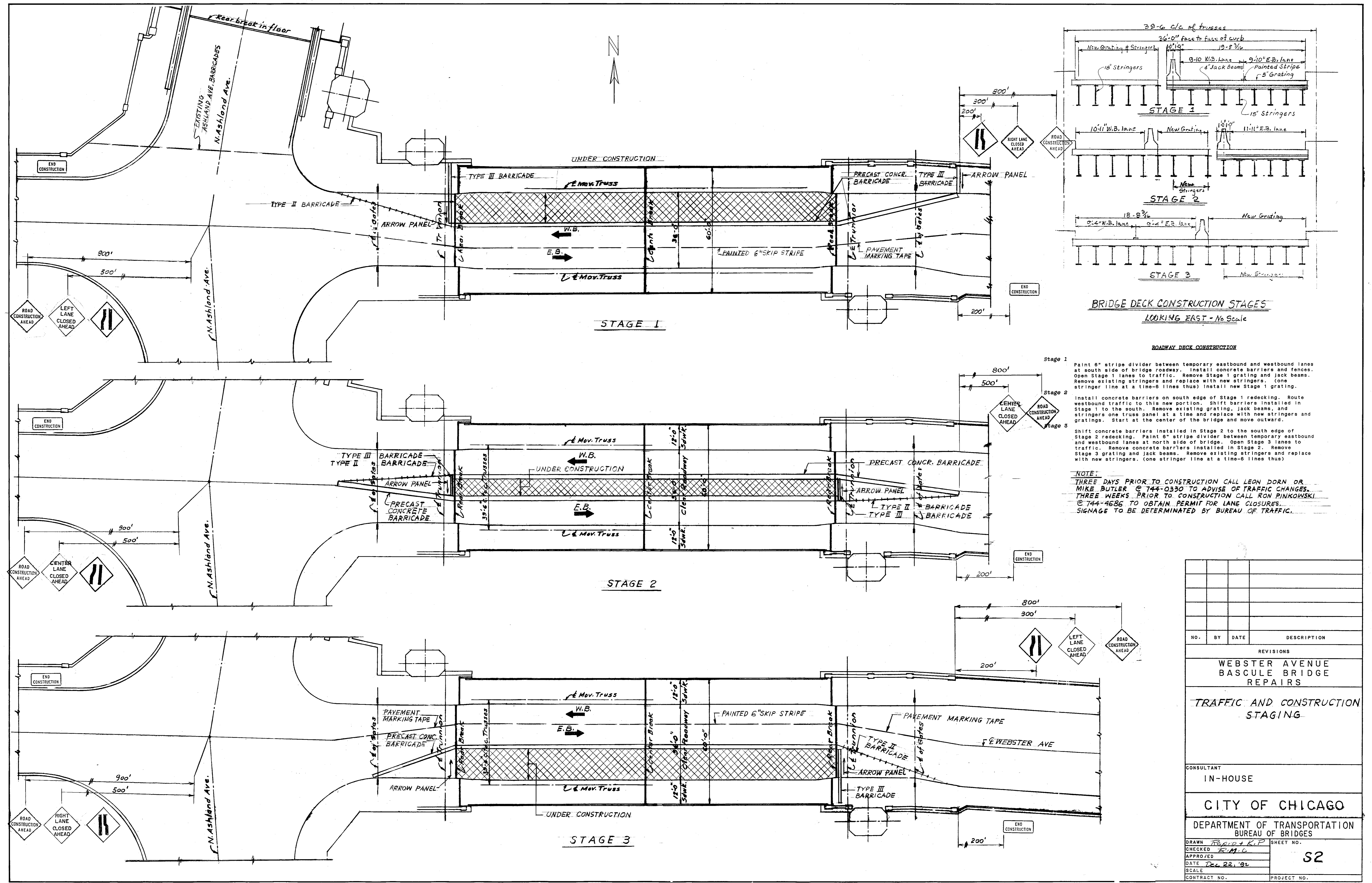


ELEVATION - REPAIR ITEMS

NOTE: ITEMS 1 THRU 6 APPLY TO BOTH EAST & WEST LEAVES.  
 ITEMS 7 AND 8 APPLY TO NORTH AND SOUTH SIDE TRUSSES.  
 ALL REPLACEMENT STEEL SHALL CONFORM TO ASTM A36.  
 ALL BOLTS OR RIVETS REMOVED SHALL BE REPLACED  
 WITH ASTM A325 HIGH STRENGTH BOLTS.  
 REPLACEMENT STEEL SHALL BE SHOP PAINTED WITH ONE  
 COAT OF INORGANIC ZINC.

REPAIR ITEM NUMBER	DESCRIPTION	REFERENCES			
		CONTRACT SHEET NO.	ERECTOR DRAWING FILE NO.	PARTS	PART FILE NO.
1	REMOVE AND DISPOSE OF EXISTING 5" GRATING, 4" JACK BEAMS AND 15" ROADWAY STRINGERS. REPLACE WITH NEW 18" ROADWAY STRINGERS AND NEW 5" GRATING. SEE CONTRACT SHEET S3 FOR MODIFICATIONS.	S3	11-6C-1	S1, S2, S3, S19, S4, S5, S6, S7, S8	11-6C-14
2	REPLACE, IN KIND, ALL LOWER CHORD TRUSS BRACING MEMBERS AND THEIR GUSSET PLATES.		11-6C-1	SS2, L2 R/L, L3 R/L, SS4, SS5, SS6, B148, B15R/L, B16R/L, LP42, LP43, LP44, LP45, LP47, LP48, LP53 R/L, LP54, LP52, LP55 R/L, LP46, LP48, LP56, LP57, LP58, LP59 R/L.	11-6C-15 11-6C-20
3	REMOVE AND REPLACE IN KIND ALL DETERIORATED LATTICE TRUSS MEMBERS AND LATTICE TRUSS GUSSET PLATES. DETERMINATION TO BE MADE IN FIELD.			SS17	11-6C-15
4	REMOVE AND REPLACE IN KIND LOWER CHORD OF FLOOR BEAM 10. SEE CONTRACT SHEET S4 FOR TEMPORARY SHORING.	S4		SS1	11-6C-13
5	REMOVE AND REPLACE IN KIND RIVERSIDE CHORD OF HORIZONTAL TRUNNION TRUSS BRACING, DIAGONALS AND GUSSET PLATES. NOTE: ORIGINAL DIAGONALS HAVE BEEN REPLACED WITH SOLID ROLLED SECTIONS WITH NO RECORD OF THE CHANGE. REPLACEMENT CAN BE MADE WITH EITHER THE ORIGINAL LACED SECTION OR EXISTING ROLLED SECTION.			B20, SS8, LP40, LP41	11-6B-31
6	REMOVE AND REPLACE IN KIND LOWER CHORD OF VERTICAL TRUNNION TRUSS BRACING. SEE CONTRACT SHEET 55 FOR TEMPORARY SUPPORT OF TRUSS.	S5		VB1	11-6B-32
7	REPAIR MOVABLE PART RAILING AS REQUIRED				
8	REPAIR CENTER LOCKS.				

NO.	BY	DATE	DESCRIPTION
REVISIONS			
WEBSTER AVENUE BASCULE BRIDGE REPAIRS			
PLAN AND REPAIR ITEMS			
CONSULTANT			
IN-HOUSE			
CITY OF CHICAGO			
DEPARTMENT OF TRANSPORTATION BUREAU OF BRIDGES			
DRAWN	REPRO	CHECKED	RMC
APPROVED		DATE	7-22
SCALE			AS SHOWN
CONTRACT NO.			PROJECT NO.
DRAWG. No.			FILE No.



**BRIDGE DECK CONSTRUCTION STAGES**  
LOOKING EAST - No Scale

**ROADWAY DECK CONSTRUCTION**

Stage 1  
Paint 6" stripe divider between temporary eastbound and westbound lanes at south side of bridge roadway. Install concrete barriers and fences. Open Stage 1 lanes to traffic. Remove Stage 1 grating and jack beams. Remove existing stringers and replace with new stringers. (one stringer line at a time - 6 lines thus) install new Stage 1 grating.

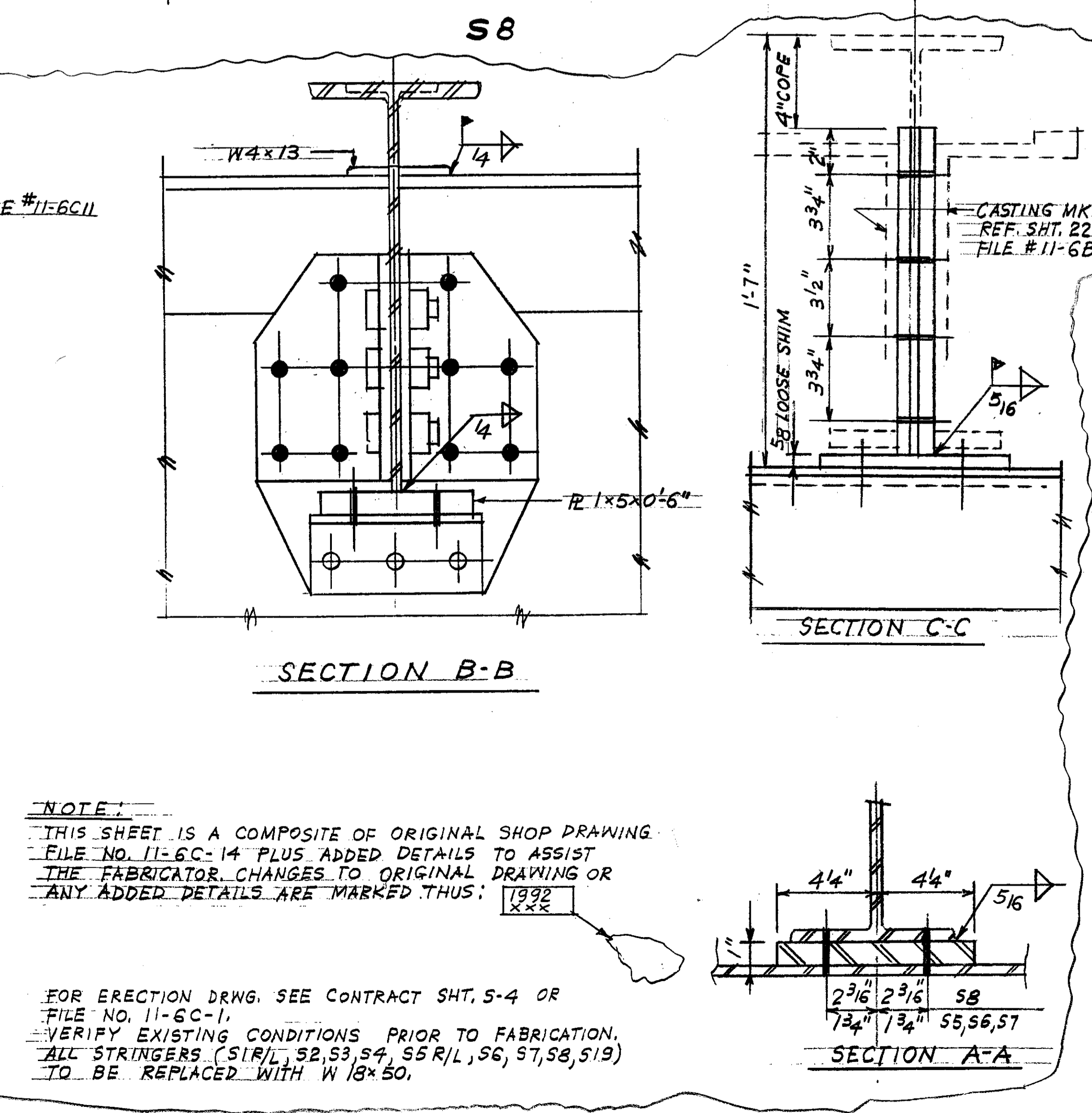
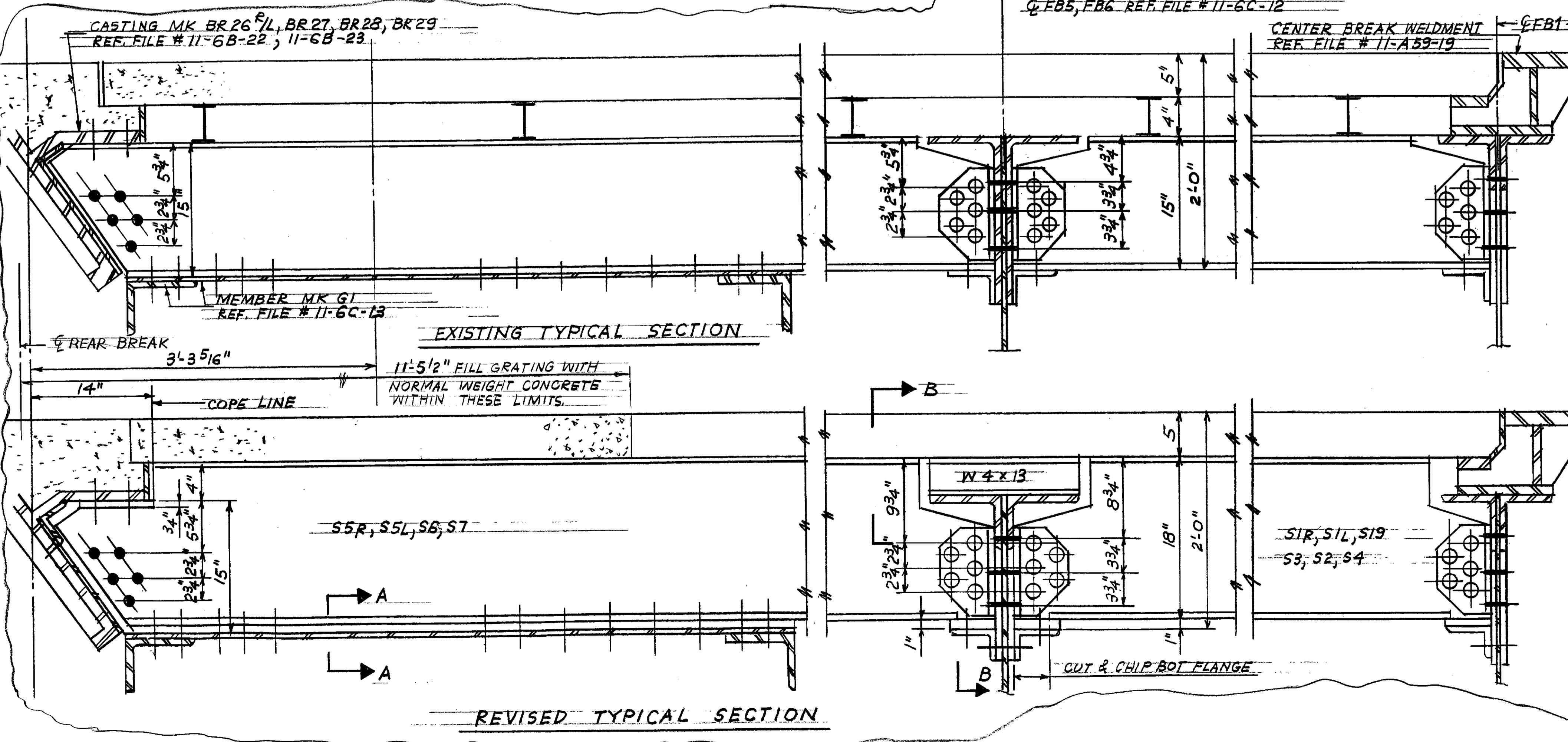
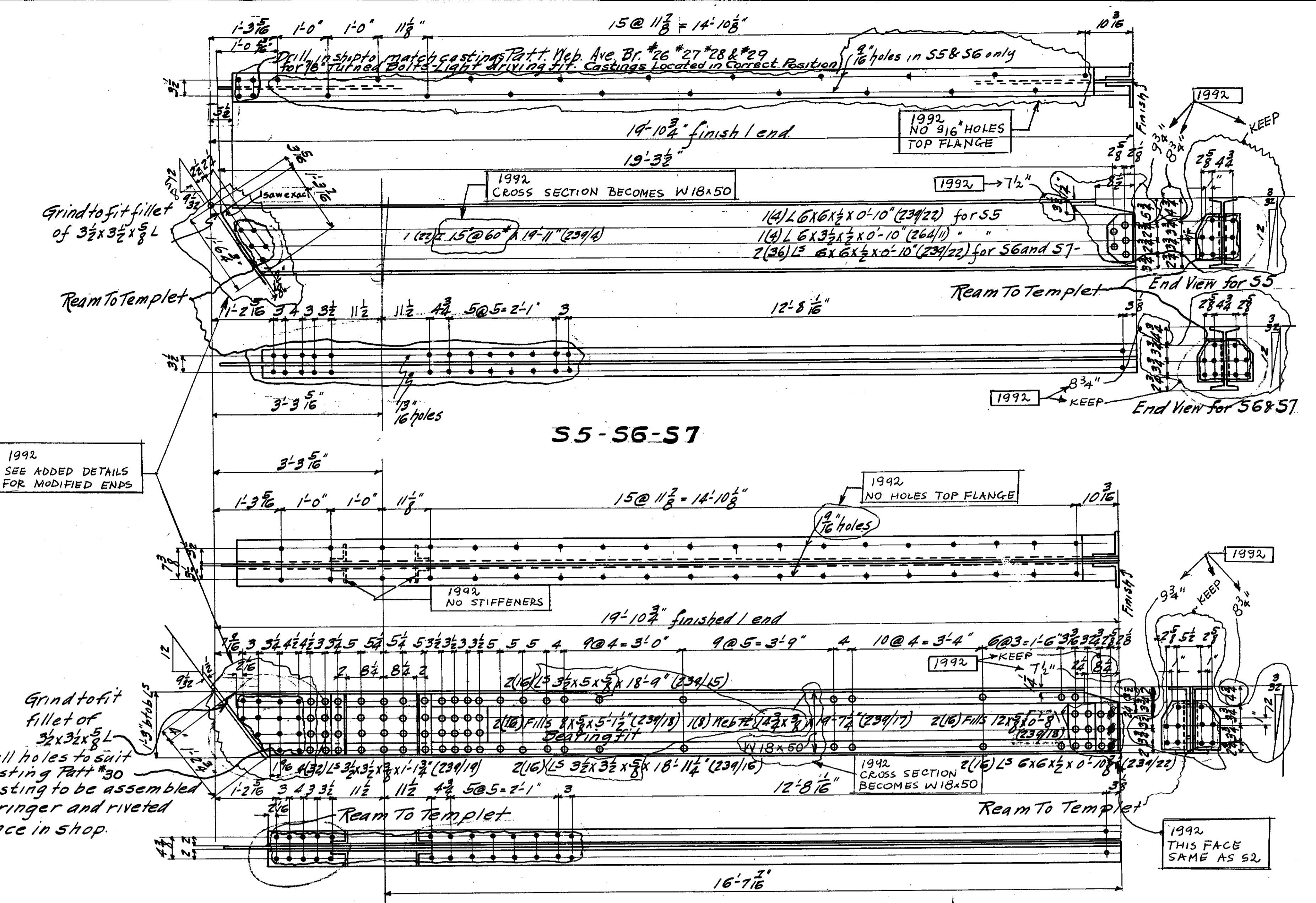
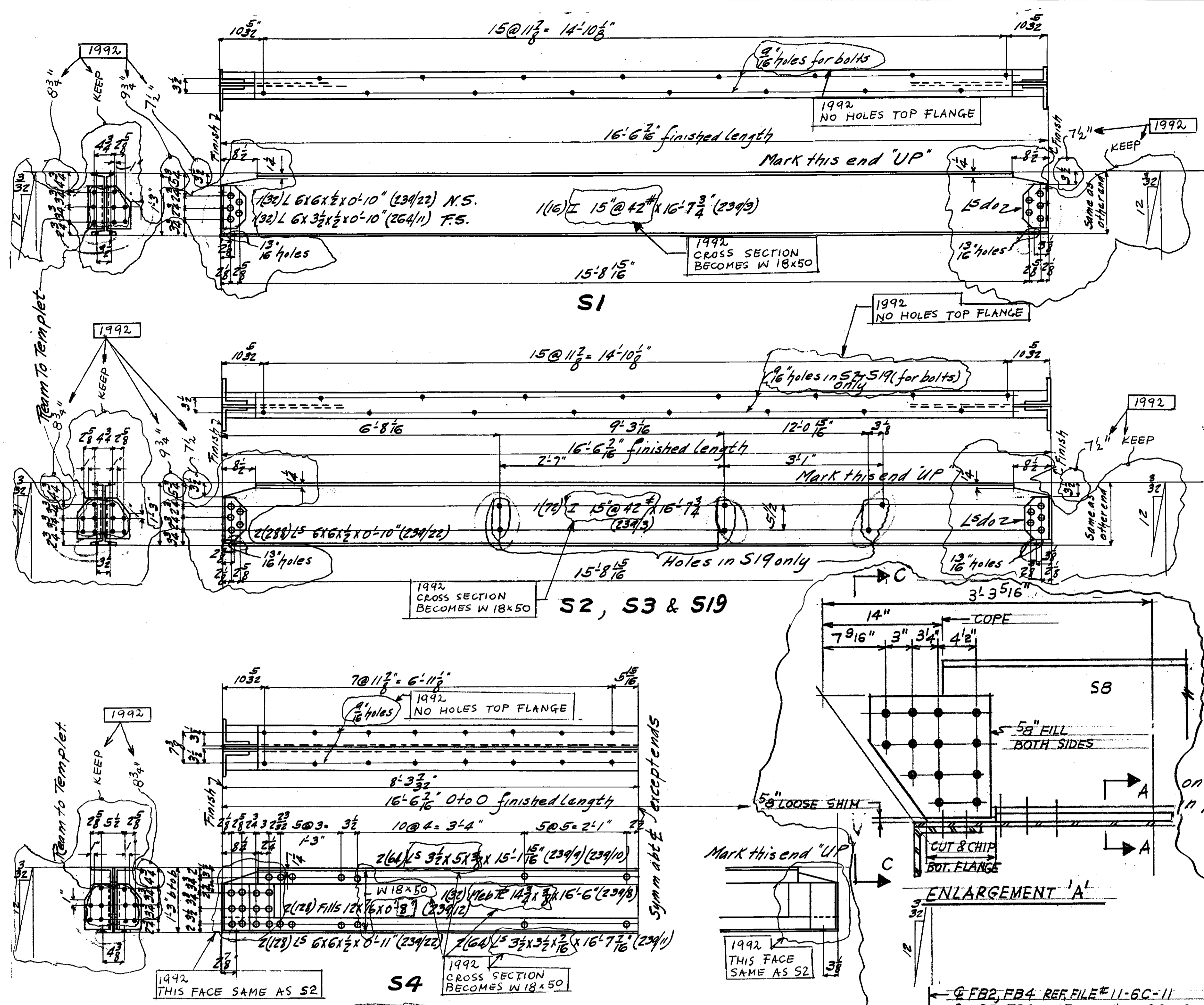
Stage 2  
Install concrete barriers on south edge of Stage 1 redecking. Route westbound traffic to this new portion. Shift barriers installed in Stage 1 to the south. Remove existing grating, jack beams, and stringers one truss panel at a time and replace with new stringers and grating. Start at the center of the bridge and move outward.

Stage 3  
Shift concrete barriers installed in Stage 2 to the south edge of Stage 2 redecking. Paint 6" stripe divider between temporary eastbound and westbound lanes at north side of bridge. Open Stage 3 lanes to traffic. Remove concrete barriers installed in Stage 2. Remove Stage 3 grating and jack beams. Remove existing stringers and replace with new stringers. (one stringer line at a time - 6 lines thus)

**NOTE:**  
THREE DAYS PRIOR TO CONSTRUCTION CALL LEON DORN OR MIKE BUTLER @ 744-0330 TO ADVISE OF TRAFFIC CHANGES.  
THREE WEEKS PRIOR TO CONSTRUCTION CALL RON PINKOWSKI @ 744-4686 TO OBTAIN PERMIT FOR LANE CLOSURES.  
SIGNAGE TO BE DETERMINATED BY BUREAU OF TRAFFIC.

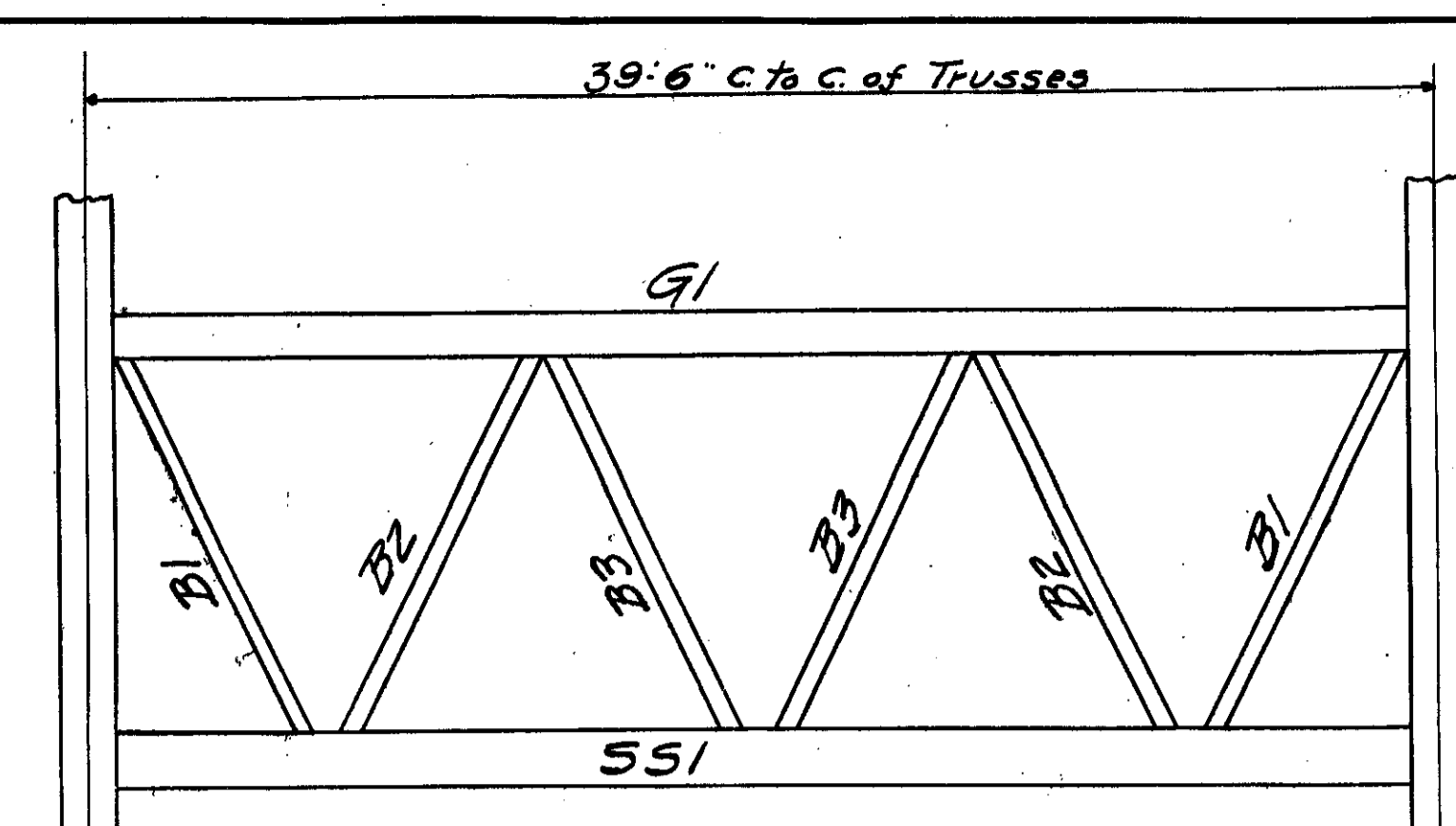
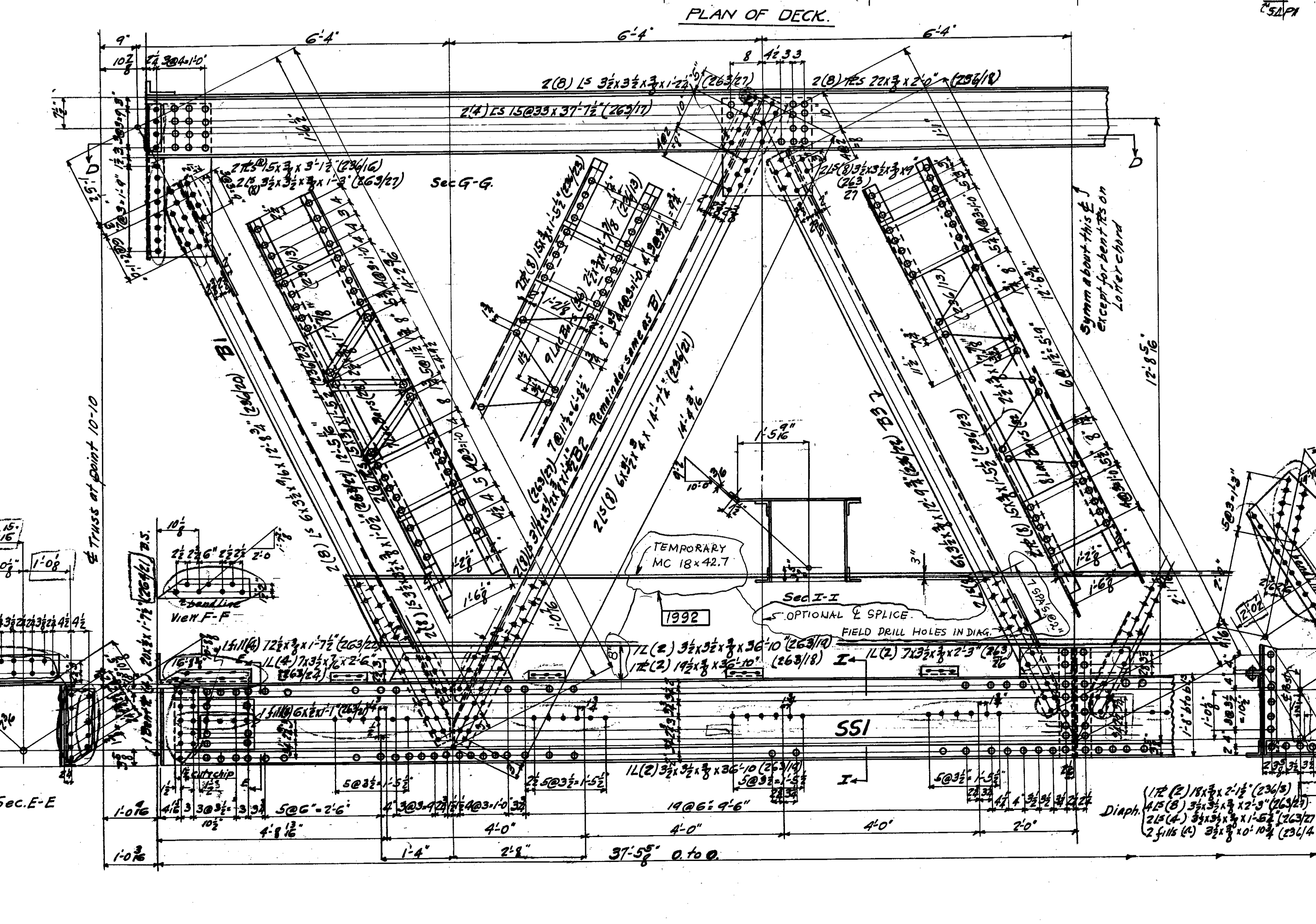
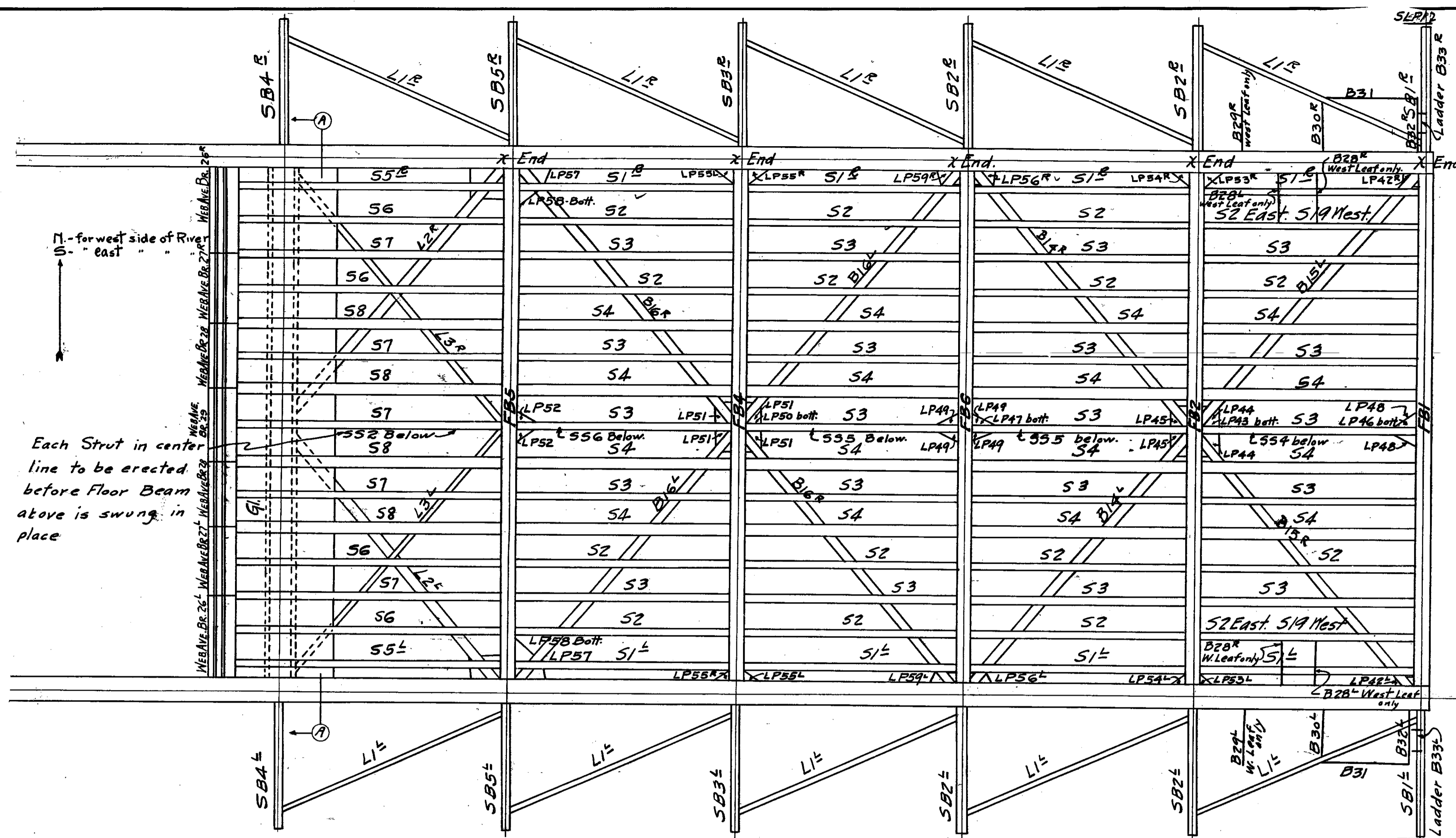
NO.	BY	DATE	DESCRIPTION
REVISIONS			
WEBSTER AVENUE BASCULE BRIDGE REPAIRS			
TRAFFIC AND CONSTRUCTION STAGING			
CONSULTANT			
IN-HOUSE			
CITY OF CHICAGO			
DEPARTMENT OF TRANSPORTATION BUREAU OF BRIDGES			
DRAWN	R. J. P.		SHEET NO.
CHECKED	R. M. G.		
APPROVED			
DATE	Dec 22, '92		<b>52</b>
SCALE			
CONTRACT NO.			PROJECT NO.





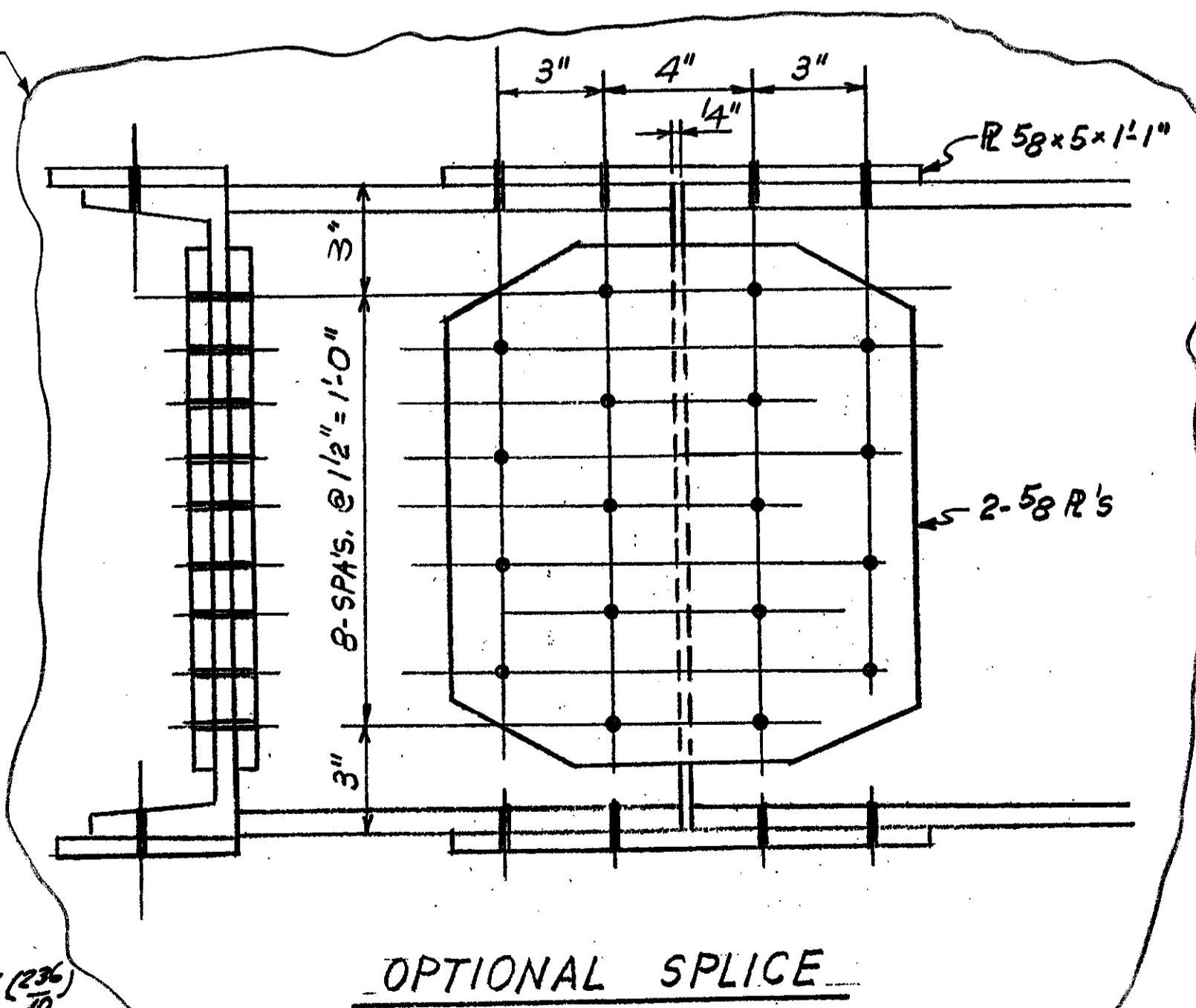
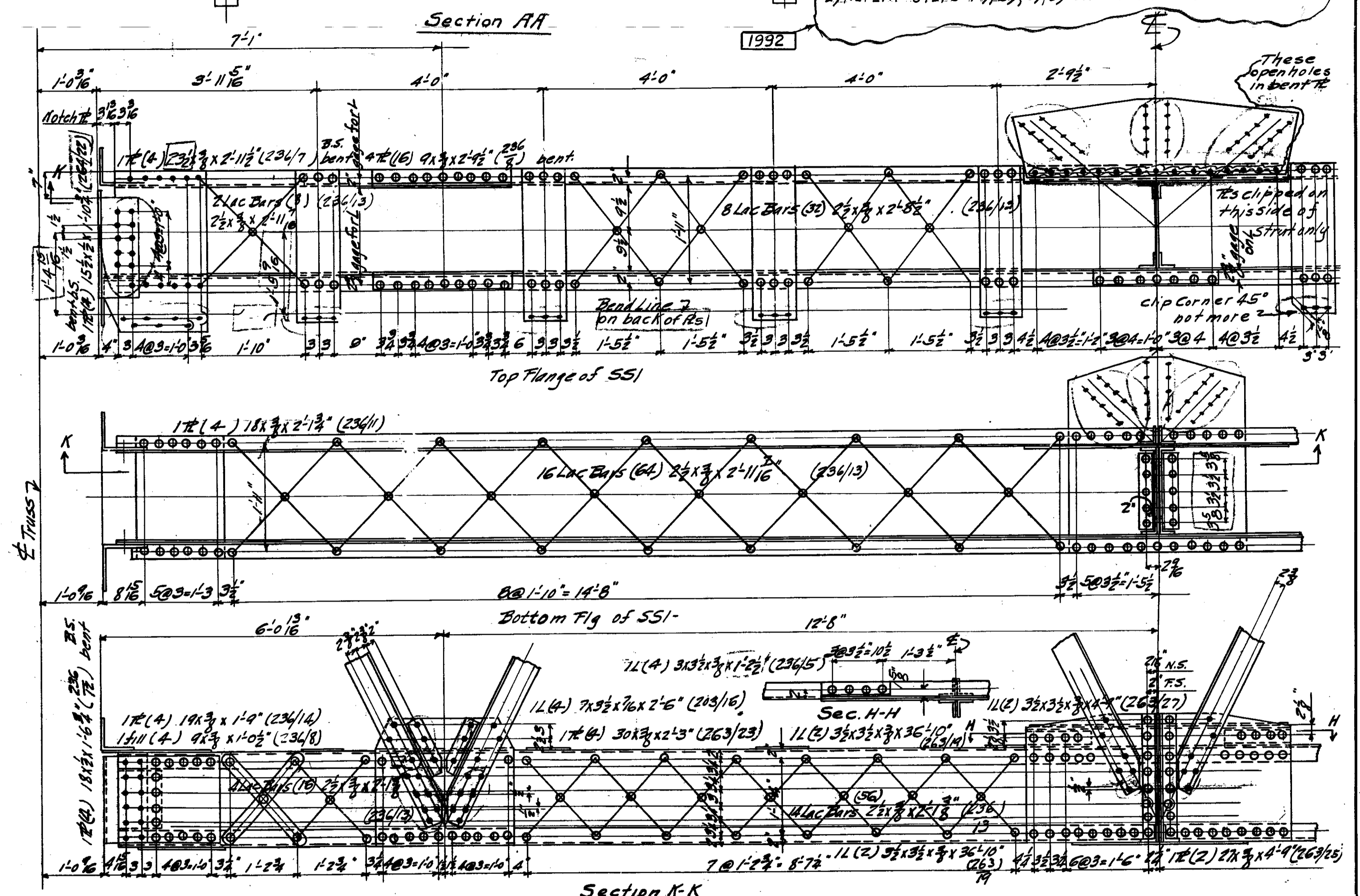
**NOTE:**  
 THIS SHEET IS A COMPOSITE OF ORIGINAL SHOP DRAWING FILE NO. 11-6C-14 PLUS ADDED DETAILS TO ASSIST THE FABRICATOR CHANGES TO ORIGINAL DRAWING OR ANY ADDED DETAILS ARE MARKED THUS: 1992  
 FOR ERECTION DRWG. SEE CONTRACT SHT. 5-4 OR FILE NO. 11-6C-1.  
 VERIFY EXISTING CONDITIONS PRIOR TO FABRICATION.  
 ALL STRINGERS (S1R/L, S2, S3, S4, S5R/L, S6, S7, S8, S19) TO BE REPLACED WITH W 18x50.

NO.	BY	DATE	DESCRIPTION
REVISIONS			
WEBSTER AVENUE BASCULE BRIDGE REPAIRS			
REPAIR ITEM I BRIDGE DECK REPAIR			
CONSULTANT			
IN-HOUSE			
CITY OF CHICAGO			
DEPARTMENT OF TRANSPORTATION BUREAU OF BRIDGES			
DRAWN: REPRO + K.F.			SHEET NO.
CHECKED: R.M.C.			<b>S3</b>
APPROVED: G.M.			
DATE: DEC. 18, 1992			
SCALE			
CONTRACT NO.			PROJECT NO.
DRWG. NO.			FILE NO.



NOTE:  
THIS SHEET IS A COMPOSITE OF ORIGINAL SHOP DRAWINGS, FILE NUMBERS 11-6C-1 AND 11-6G-3 PLUS ADDED DETAILS TO INDICATE TEMPORARY SUPPORT OF FLOOR BM. TO MARK SS1 DURING REPLACEMENT OF THE LOWER CHORD. CHANGES TO THE ORIGINAL DRAWING OR ANY ADDED DETAILS ARE MARKED THUS: 1992 XXXX

PROCEDURE:  
A) INSTALL TEMPORARY MC 18 TO ONE SIDE OF CHORD.  
B) REMOVE PORTION OF CHORD ON SAME SIDE OF TEMP. MC 18.  
C) REPLACE IN KIND WITH NEW PORTION OF CHORD.  
D) REMOVE TEMPORARY MC 18, PLUG ABANDONED HOLES W/BOLTS.  
E) REPEAT STEPS A), B), C), D) ON OTHER SIDE OF CHORD.



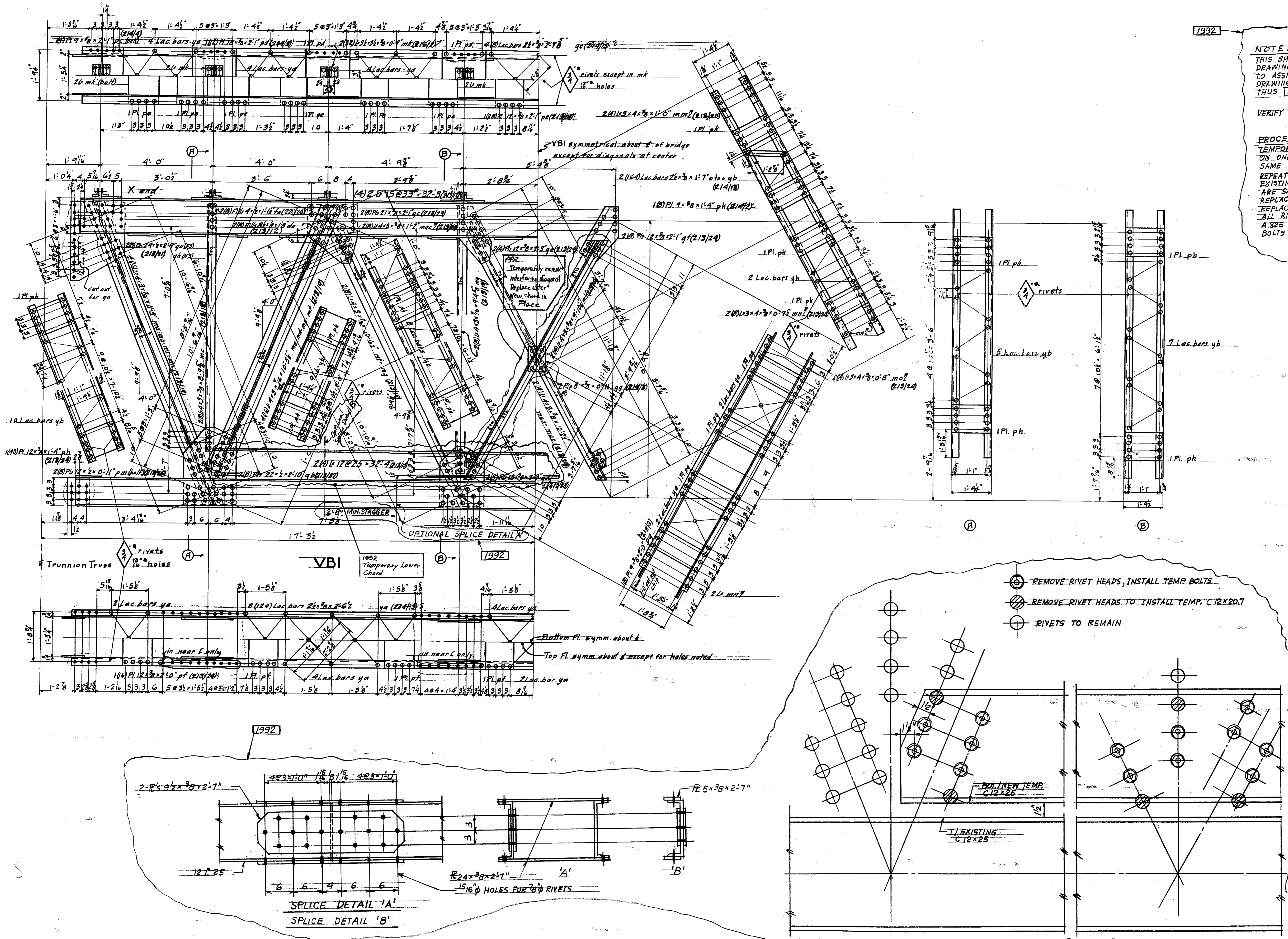
NO.	BY	DATE	DESCRIPTION
REVISIONS			
WEBSTER AVENUE BASCULE BRIDGE REPAIRS			
REPAIR ITEM 4 LOWER CHORD REPLACEMENT OF FLOOR BEAM TO (SS 1)			
CONSULTANT			
IN-HOUSE			
CITY OF CHICAGO			
DEPARTMENT OF TRANSPORTATION BUREAU OF BRIDGES			
DRAWN REPO + K.P.			SHEET NO.
CHECKED R.M.C.			S4
APPROVED G.M.			
DATE DEC. 18, 1992			
SCALE			PROJECT NO.
CONTRACT NO.			

1992

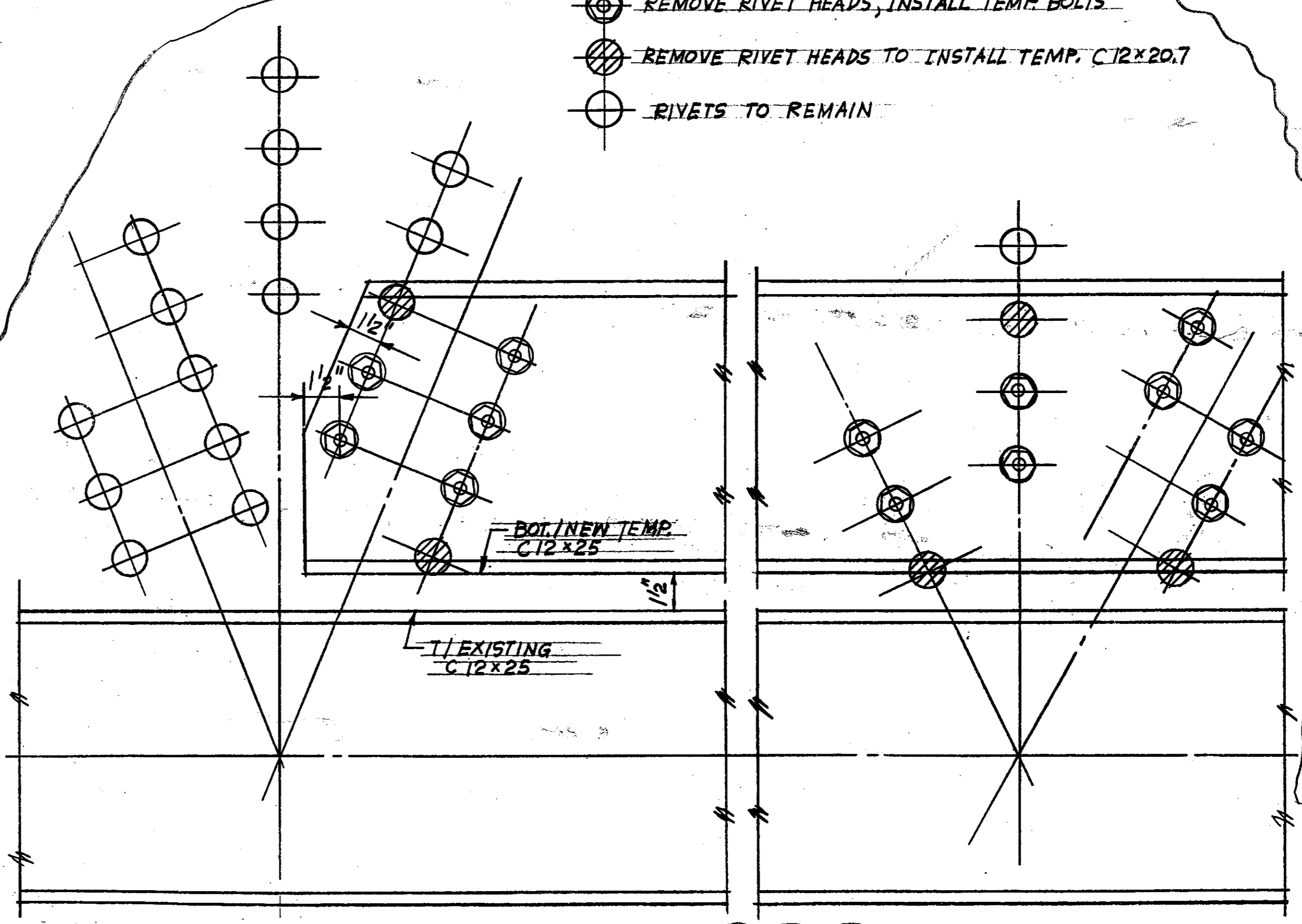
NOTE:  
THIS SHEET IS A COMPOSITE OF ORIGINAL SHOP DRAWING FILE NO. 11-6B-32 PLUS ADDED DETAILS TO ASSIST THE FABRICATOR CHANGES TO THE ORIGINAL DRAWING OR ANY ADDED DETAILS ARE MARKED THUS 1992

VERIFY EXISTING CONDITIONS PRIOR TO FABRICATION.

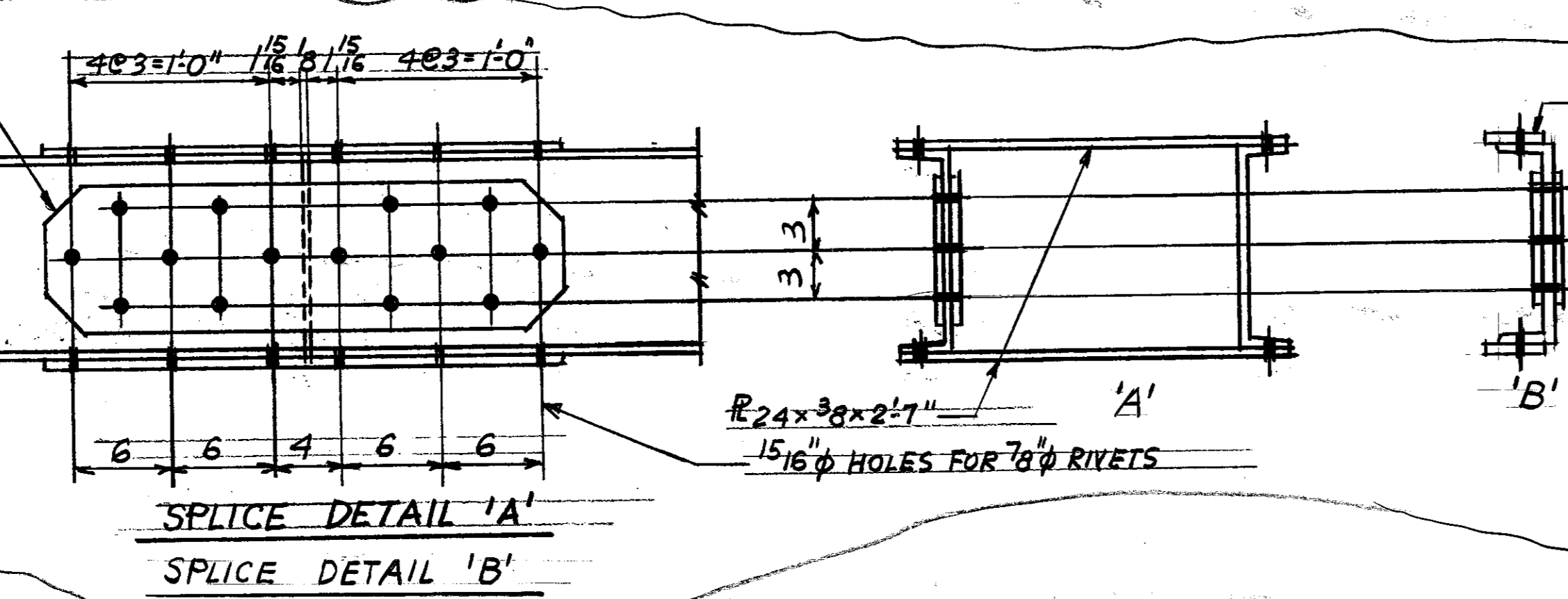
PROCEDURE:  
TEMPORARILY ATTACH NEW C12x25 LOWER CHORD ON ONE SIDE ONLY. REMOVE AND REPLACE WITH NEW SAME SIDE OF LOWER CHORD OF VBI.  
REPEAT FOR OPPOSITE SIDE OF CHORD. RECONNECT ALL EXISTING BATTEN PLATES AND LACING BARS IF THEY ARE SALVAGEABLE.  
REPLACE PARTS IF THEY SHOW SIGNIFICANT DETERIORATION.  
REPLACEMENT STEEL SHALL CONFORM TO ASTM A36.  
ALL RIVETS REMOVED SHALL BE REPLACED WITH ASTM A325 BOLTS. BOLTS SHALL BE TORQUED TO FRICTION BOLTS SPECS.



- ⊗ REMOVE RIVET HEADS, INSTALL TEMP BOLTS
- ⊗ REMOVE RIVET HEADS TO INSTALL TEMP. C12x20.7
- ⊙ RIVETS TO REMAIN



1992



NO.	BY	DATE	DESCRIPTION
REVISIONS			
WEBSTER AVENUE BASCULE BRIDGE REPAIRS			
REPAIR ITEM 6 REPLACEMENT OF LOWER CHORD OF VERTICAL TRUNNION TRUSS			
CONSULTANT			
IN-HOUSE			
CITY OF CHICAGO			
DEPARTMENT OF TRANSPORTATION BUREAU OF BRIDGES			
DRAWN <i>REPRO + K.P.</i>			SHEET NO.
CHECKED <i>R.M.C.</i>			<b>S5</b>
APPROVED <i>G.M.</i>			
DATE <i>DEC. 18, 1992</i>			
SCALE			PROJECT NO.
CONTRACT NO.			FILE No.



WILLIAM HALE THOMPSON  
MAYOR

JOHN ERICSON  
CITY ENGINEER

WM. R. MOORHOUSE  
COMMISSIONER OF PUBLIC WORKS

THOS. G. PIHLFELDT  
ENGINEER OF BRIDGES AND HARBOR

WM. BURKHARDT  
DEPUTY COMMISSIONER OF PUBLIC WORKS

ALEX. VON BABO  
ENGINEER OF BRIDGE DESIGN

SUBSTRUCTURE BUILT BY  
GREAT LAKES DREDGE AND DOCK CO.  
CHICAGO, ILL.

SUPERSTRUCTURE BUILT BY  
THE KETLER-ELLIOTT ERECTION CO.  
CHICAGO, ILL.

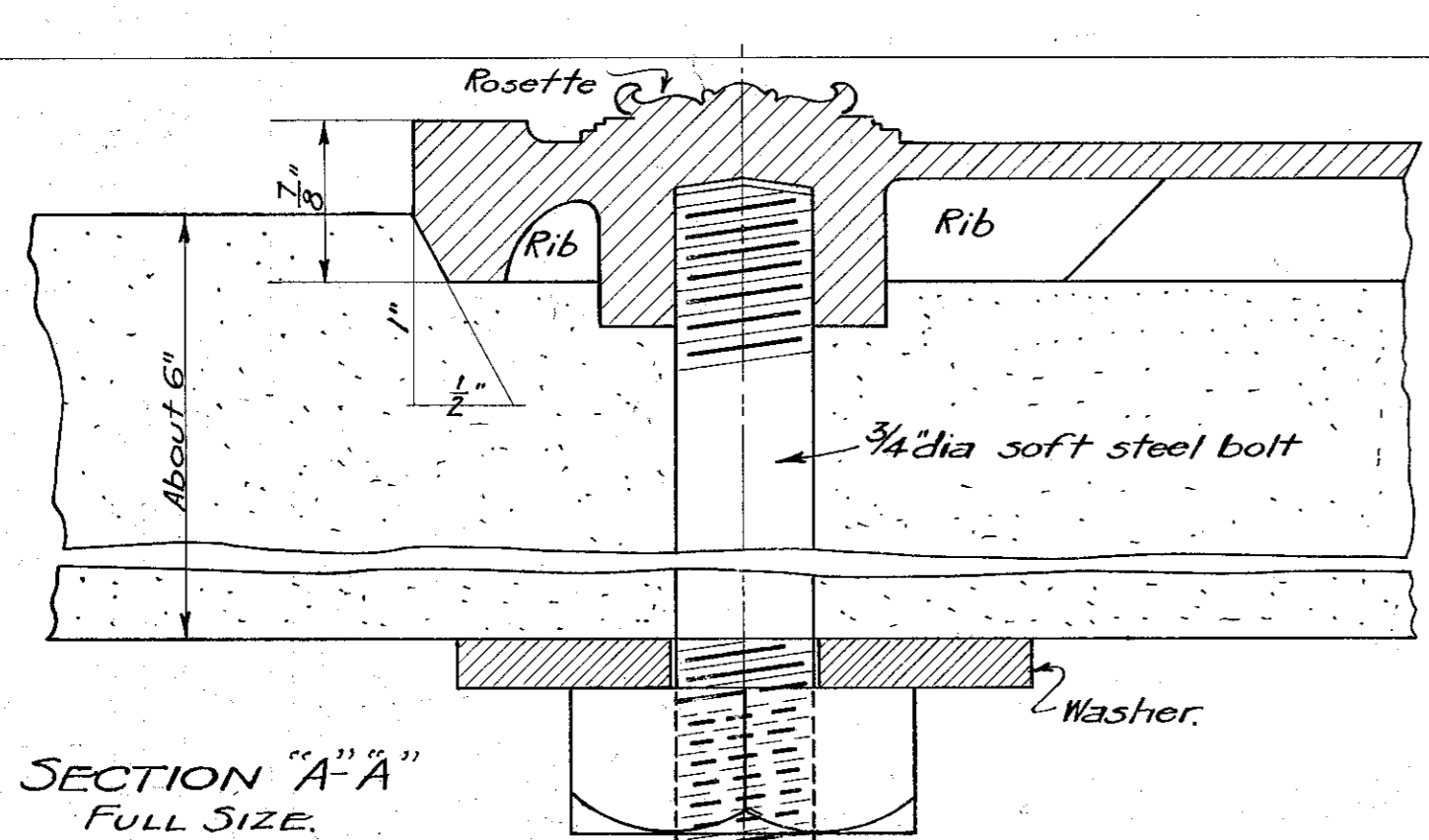
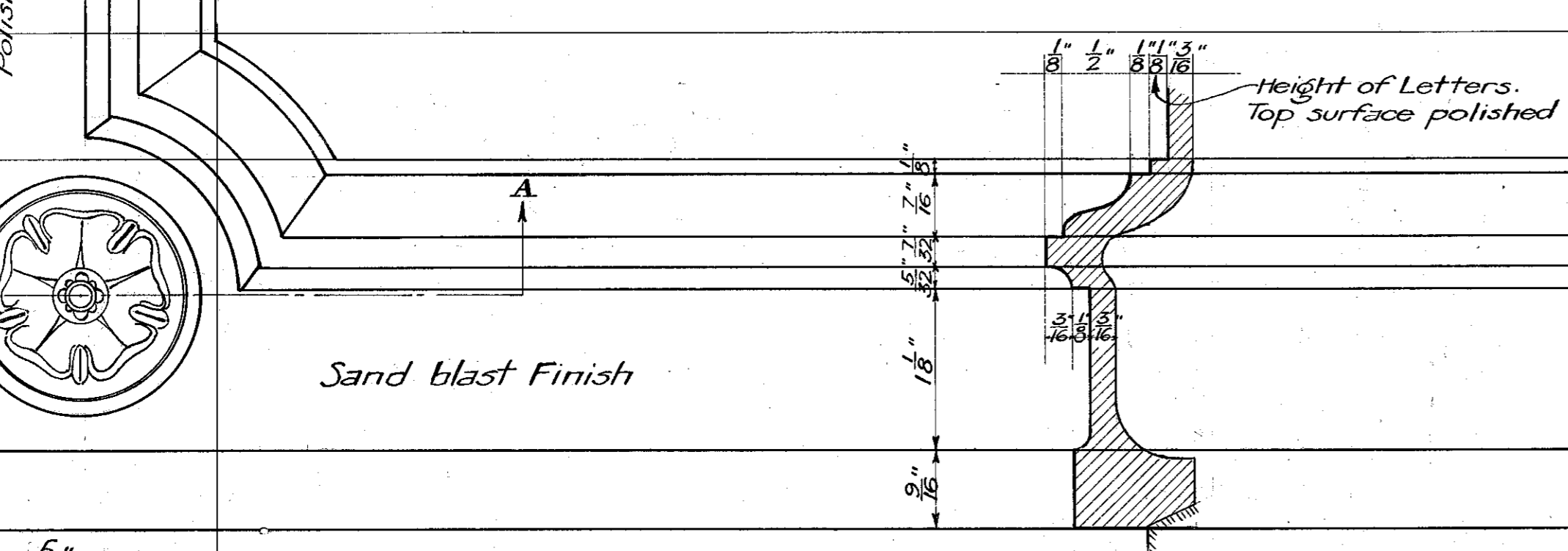
ELECTRICAL EQUIPMENT INSTALLED BY  
C. H. NORWOOD  
CHICAGO, ILL.

1916

2'-5"

Edge of Concrete

Edge of Concrete



**NOTES:**  
**Material:** The metal to be used for these plates shall be strongite (alloy of nickel) or a metal equally as good.  
**Workmanship:** The straight surfaces of the frame or border shall be polished unless otherwise noted. The letters shall be raised one-eighth (8) of an inch and their upper surface shall be polished. The surfaces of the visible parts of the name plate shall be neatly treated. The thickness of the metal shall not in any case be less than three-sixteenths (3/16) of an inch thick.

**2 NAME PLATES REQUIRED**

*void superseded by Drawing No. 1796*

Correct *Alexander von Babo*  
Engineer of Bridge Design  
Approved *Thos. G. Pihlfeldt*  
Engineer of Bridges and Harbor  
Approved *[Signature]*  
City Engineer  
Approved \_\_\_\_\_  
Commissioner of Public Works

CITY OF CHICAGO  
DEPARTMENT OF PUBLIC WORKS  
BUREAU OF ENGINEERING  
DIVISION OF BRIDGES AND HARBOR  
**WEBSTER AVE. BRIDGE**  
NAME PLATE  
Scale: Full Size. Oct. 13, 1915  
Drawn By I.E.M.  
Traced By \_\_\_\_\_  
Checked By *[Signature]*