THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY

CONTRACT I–19–4495
I–294 WIDENING
RAMP C FLYOVER, DIXIE CREEK BRIDGE, RAMP F2 AND RAMP D

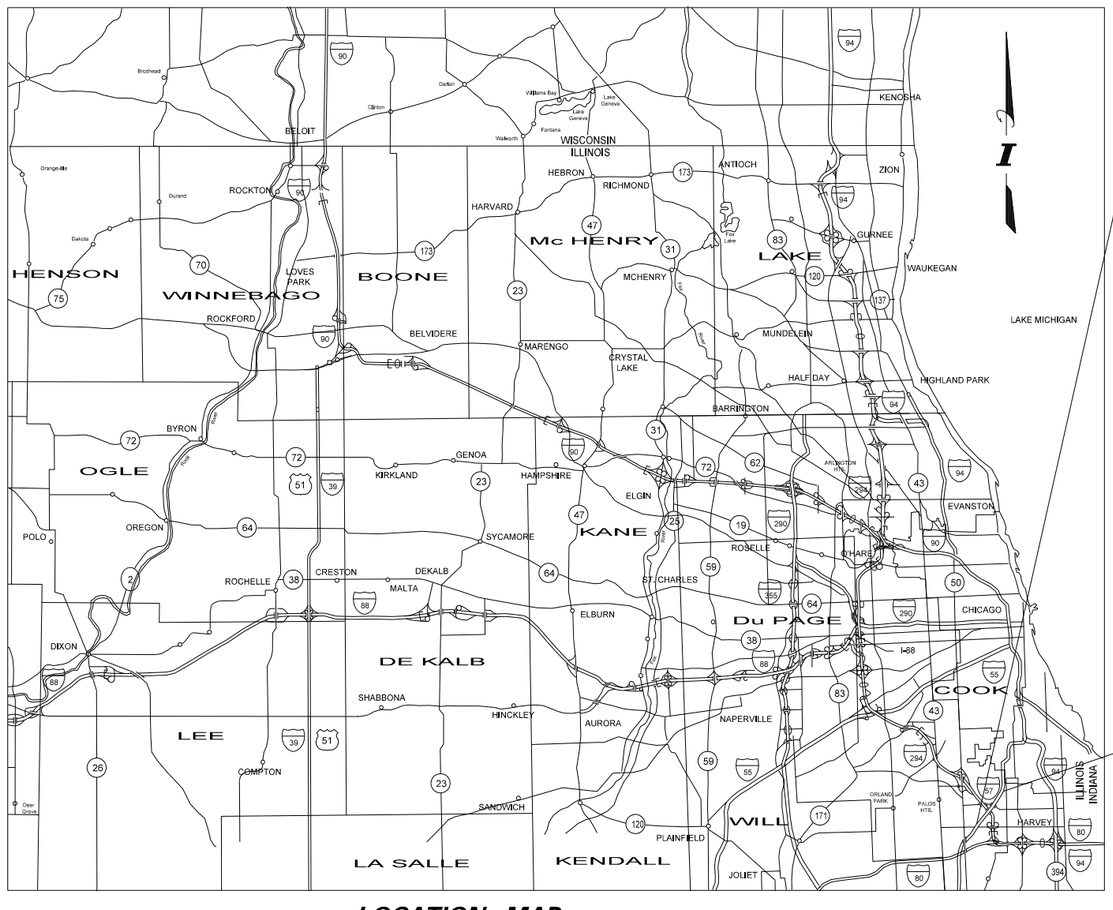
GENERAL NOTES, SUMMARY OF QUANTITIES, ALIGNMENT AND TIES, TYPICAL SECTIONS, MAINTENANCE OF TRAFFIC, REMOVAL PLANS, ROADWAY PLANS AND PROFILES, GRADING PLANS, DRAINAGE PLANS AND PROFILES, PJ&E PLANS, TEMPORARY EROSION CONTROL, PAVEMENT MARKING, SIGNING, AND LANDSCAPE PLANS, LIGHTING PLANS, SURVEILLANCE PLANS, STRUCTURAL PLANS, AND CROSS SECTIONS.

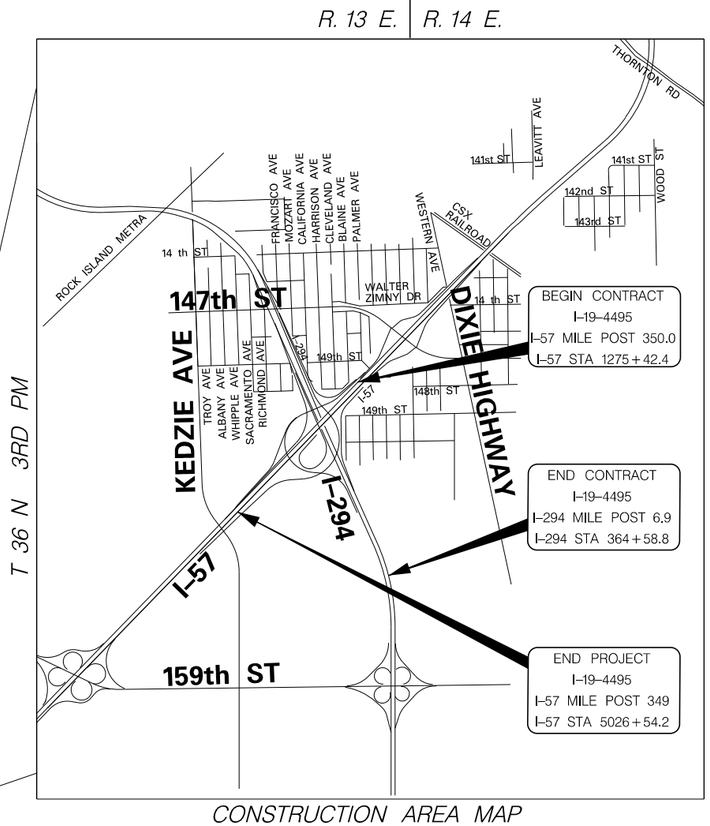
SHEETS BY AMERICAN SURVEY & ENGINEERING (SUE SHEETS).

I–57 MILE POST 350.0 TO I–294 MILE POST 6.9

I–57 STA 1275+43.4 TO I–294 STA 364+58.8

VOLUME II OF III





CONSTRUCTION AREA MAP

VILLAGE OF POSEN

DESIGN SECTION ENGINEER:

TYLIN INTERNATIONAL

200 S. WACKER DR.

SUITE 1400

CHICAGO, IL 60606

TEL: 312–777–2900

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	4	G-004		GENERAL NOTES
	5	G-005		PROGRESS SCHEDULE
	6 - 13	G-006	- G-013	SUMMARY OF QUANTITIES
	14 - 18	G-014	- G-018	SCHEDULE OF QUANTITIES
	19 - 23	G-019	- G-023	ALIGNMENT PLANS
	24	G-024		BENCHMARK DESCRIPTIONS
	25 - 28	G-025	- G-028	SURVEY TIES FOR CONTROL POINTS
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599	DS1-004		TC-09: TRAFFIC CONTROL DETAILS FOR FREEWAY SINGLE & MULTI-LANE WEAVE
600	DS1-005		TC-11: RAISED REFLECTIVE PAVEMENT MARKERS (SNOW PLOW RESISTANT)
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603	DS1-008		TC-13: DISTRICT ONE TYPICAL PAVEMENT MARKINGS
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605	DS1-010		TC-18: SIGNING FOR FLAGGING OPERATIONS AT WORK ZONE OPENINGS
606	DS1-011		TC-22: ARTERIAL ROAD INFORMATION SIGN

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3/12/2020

DRAWN BY KDW
CHECKED BY
DATE 4-3-2020
SCALE NONE

TYLIN INTERNATIONAL

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

I-57 AT 294 RAMPS C AND F2
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280001-07	TEMPORARY EROSION CONTROL SYSTEMS
420001-09	PAVEMENT JOINTS
420201-11	ENTRANCE RAMP TERMINAL (JPCC TO JPCC)
420401-13	PAVEMENT CONNECTOR (PCC) FOR BRIDGE APPROACH SLAB
483001-05	PCC SHOULDER
515001-03	NAME PLATES FOR BRIDGES
542301-03	PRECAST REINFORCED CONCRETE FLARED END SECTION
601001-05	PIPE UNDERDRAINS
601101-02	CONCRETE HEADWALL FOR PIPE UNDERDRAINS
602001-02	CATCH BASIN, TYPE A
602011-02	CATCH BASIN, TYPE C
602106-02	DRAINAGE STRUCTURES TYPES 4 & 5
602401-06	PRECAST MANHOLE TYPE A 4' (1.22m) DIAMETER
602601-06	PRECAST REINFORCED CONCRETE FLAT SLAB TOP
602701-02	MANHOLE STEPS
604001-05	FRAME & LIDS TYPE 1
604036-03	GRATE, TYPE 8
604071-05	FRAME AND GRATE TYPE 20
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630301-09	SHOULDER WIDENING FOR TYPE 1 (SPECIAL) GUARDRAIL TERMINALS
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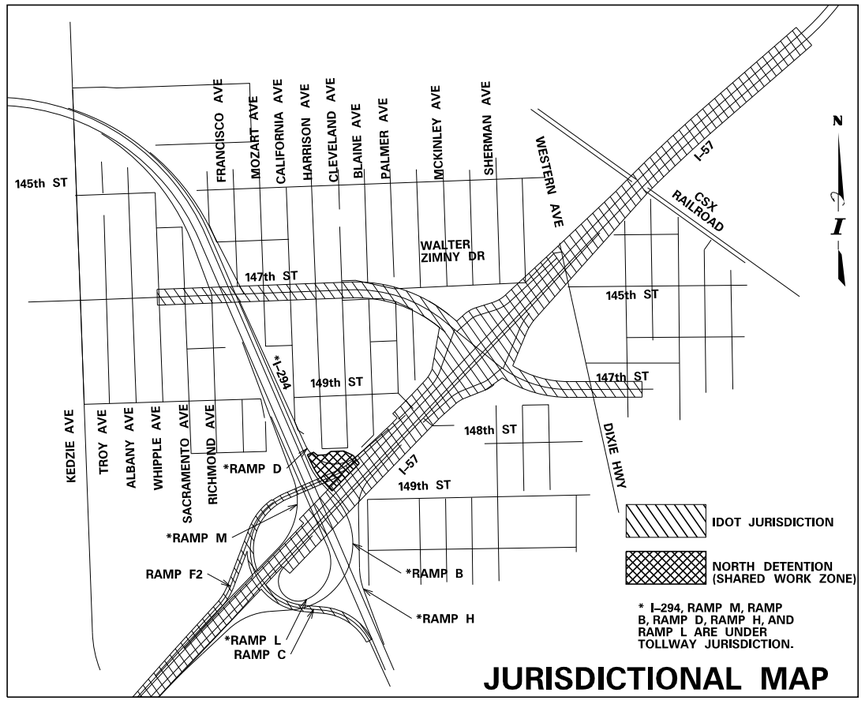
635011-02	REFLECTOR MARKER AND MOUNTING DETAILS
642001-02	SHOULDER RUMBLE STRIPS, 16 IN.
701101-05	OFF-ROAD OPERATIONS, MULTILANE, 15' (4.5m) TO 24" (600mm) FROM PAVEMENT EDGE
701106-02	OFF-ROAD OPERATIONS, MULTILANE, MORE THAN 15' AWAY
701400-09	APPROACH TO LANE CLOSURE, FREEWAY/EXPRESSWAY
701401-12	LANE CLOSURE, FREEWAY/EXPRESSWAY
701402-12	LANE CLOSURE, FREEWAY/EXPRESSWAY, WITH BARRIER
701406-12	LANE CLOSURE, FREEWAY/EXPRESSWAY DAY OPERATIONS ONLY
701411-09	LANE CLOSURE, MULTILANE, AT ENTRANCE OR EXIT RAMPS, FOR SPEEDS >= 45 MPH
701423-10	LANE CLOSURE, MULTILANE, WITH BARRIER, FOR SPEEDS >OR= 45 MPH TO 55 MPH
701426-09	LANE CLOSURE, MULTILANE, INTERMITTENT OR MOVING OPER., FOR SPEEDS >OR= 45 MPH
701428-01	TRAFFIC CONTROL SETUP AND REMOVAL FREEWAY/EXPRESSWAY
701901-08	TRAFFIC CONTROL DEVICES
704001-08	TEMPORARY CONCRETE BARRIER
720001-01	SIGN PANEL MOUNTING DETAILS
720006-04	SIGN PANEL ERECTION DETAILS
720011-01	METAL POSTS FOR SIGNS, MARKERS & DELINEATORS
720021-02	SIGN PANELS - EXTRUDED ALUMINUM TYPE
725001-01	OBJECT AND TERMINAL MARKERS
728001-01	TELESCOPING STEEL SIGN SUPPORT
729001-01	APPLICATIONS OF TYPES A & B METAL POSTS (FOR SIGNS & MARKERS)
780001-05	TYPICAL PAVEMENT MARKINGS
781001-05	TYPICAL APPLICATIONS RAISED REFLECTIVE PAVEMENT MARKERS
782006-01	GUARDRAIL AND BARRIER WALL REFLECTOR MOUNTING DETAILS
812001-01	RACEWAY EMBEDDED IN STRUCTURE
814001-03	HANDHOLES



JURISDICTIONAL MAP

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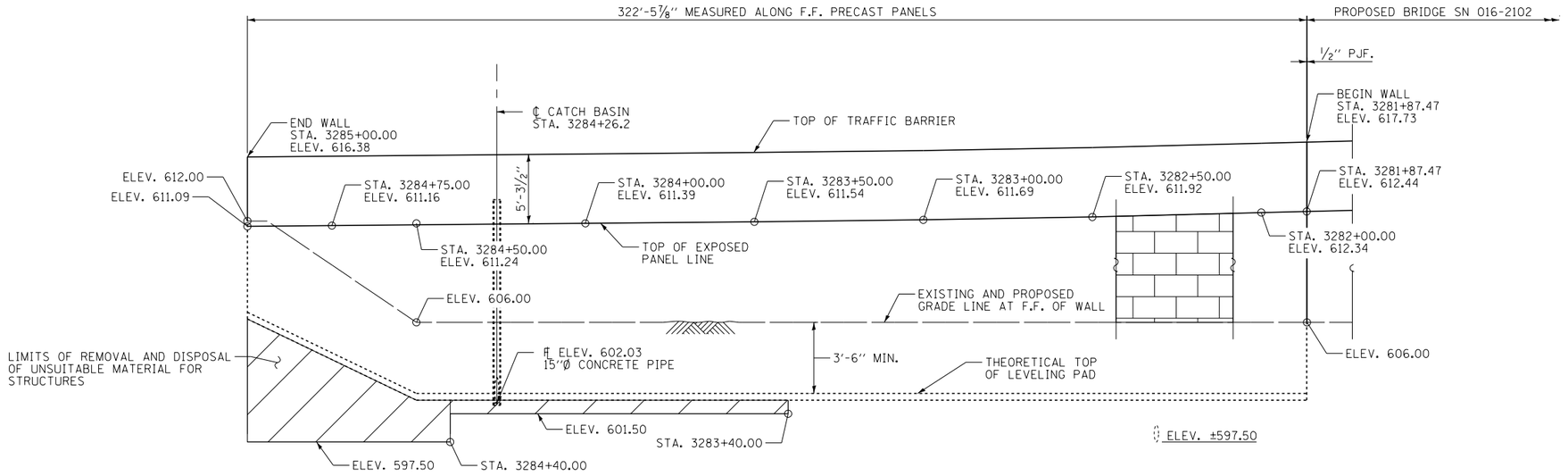
3/12/2020

DRAWN BY . . . KDW . . .	DATE . 4-3-2020 . .	T·Y·LIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	REVISIONS NO. / DATE / DESCRIPTION	CONTRACT I-19-4495	SHEET G-003
CHECKED BY	SCALE . NONE				I-57 AT 294 RAMPS C AND F2 INDEX OF STANDARDS	263 OF 606

BENCHMARK: SET EAST SIDE OF I-57. A SQUARE CUT ON BRIDGE PIER LOCATED AT SOUTH EAST CORNER OF I-294 AND I-57. ELEVATION = 637.99.

EXISTING STRUCTURE: NONE



ELEVATION

(LOOKING AT FRONT FACE OF WALL)

DESIGN SPECIFICATIONS

2017 AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 8TH EDITION

DESIGN STRESSES

FIELD UNITS

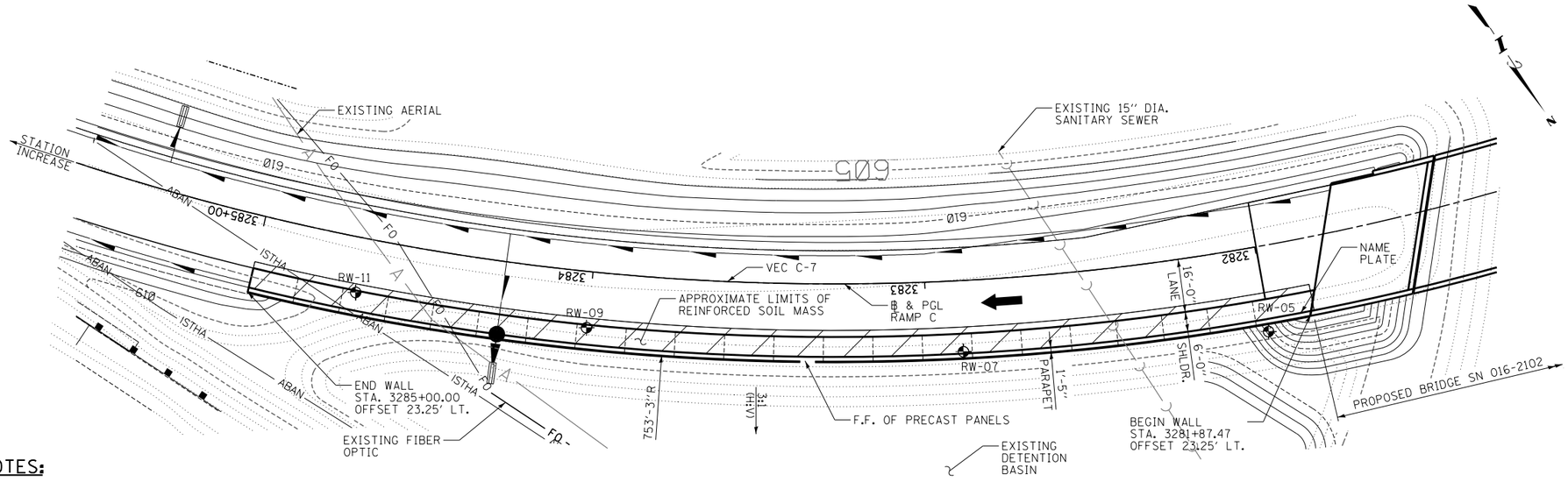
f'c = 4,000 PSI
fy = 60,000 PSI (REINFORCEMENT)

PRECAST UNITS

f'c = 4,500 PSI (PRECAST PANELS)

CURVE VEC C-7

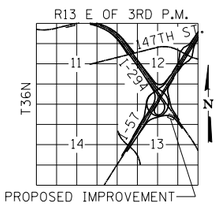
P.I. = STA. 3283+93.44
Δ = 60°47'01" RT
D = 7°50'55"
R = 730.00'
L = 774.44'
T = 428.15'
E = 116.29'
P.C. = STA. 3279+65.29
P.T. = STA. 3287+39.73
S.E. = 6.0%



PLAN

NOTES:

1. OFFSETS ARE MEASURED FROM THE ℄ OF C-D ROAD C TO THE FRONT FACE OF PRECAST CONCRETE WALL PANELS.
2. F.L. - FRONT FACE
3. B.F. - BACK FACE



LOCATION SKETCH

STATE OF ILLINOIS
SPIROS PANTAZIS
081-006448
CHICAGO, ILLINOIS
LICENSED STRUCTURAL ENGINEER

Signed
Spiros Pantazis, S.E. Il. Lic. No. 081-006448
Expires 11-30-2020.

Date 12-5-19

GENERAL PLAN & ELEVATION
RAMP C
F.A.I. ROUTE I-57 - SEC. 1414.4-I-1
COOK COUNTY
STATION 3281+87.42 TO 3285+00.00
STRUCTURE NO. 016-2202

DRAWN BY SP	DATE 4-3-2020	T·Y·LIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	REVISIONS NO. / DATE / DESCRIPTION	CONTRACT I-19-4495	SHEET SA - 1 OF 7
CHECKED BY SP	SCALE NONE				I-57 AT 294 RAMPS C, D, AND F2 SN 016-2202 GENERAL PLAN AND ELEVATION	264 OF 606

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3/30/2020

GENERAL NOTES

REINFORCEMENT BARS DESIGNATED (E) SHALL BE EPOXY COATED.

ALL EXPOSED CONCRETE EDGES SHALL HAVE A ¾"X 45° CHAMFER, EXCEPT WHERE SHOWN OTHERWISE. CHAMFER ON VERTICAL EDGES SHALL BE CONTINUED A MINIMUM OF ONE FOOT BELOW FINISHED GROUND LEVEL.

ALL CONSTRUCTION JOINTS SHALL BE BONDED.

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO STARTING CONSTRUCTION. CONTACT J.U.L.I.E., 800-892-0123.

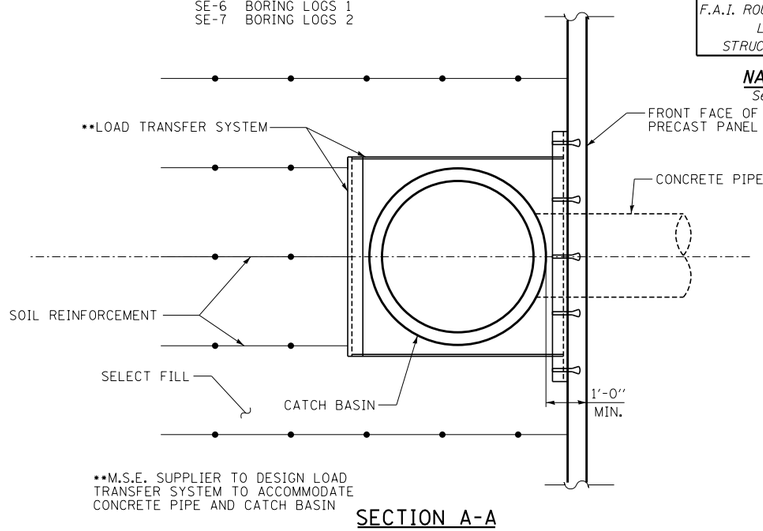
SLIPFORMING OF THE PARAPET IS NOT ALLOWED.

THE MSE WALL PRECAST PANELS SHALL HAVE AN ARCHITECTURAL SURFACE TREATMENT. THE SURFACE SHALL MATCH PATTERN #1104 OR #11016 BY CUSTOM ROCK INTERNATIONAL OR PATTERN #893 OR #894 BY ARCHITECTURAL POLYMERS AS APPROVED BY THE ENGINEER. COST SHALL BE INCLUDED IN MECHANICALLY STABILIZED EARTH RETAINING WALL.

INDEX OF SHEETS

STATION 3281+87.42 TO 3285+00.00
BUILT 20 BY STATE OF ILLINOIS
F.A.I. ROUTE 57 SEC. 1414.4-1-1
LOADING HL-93
STRUCTURE NO. 016-2202

NAME PLATE
See Std. 515001

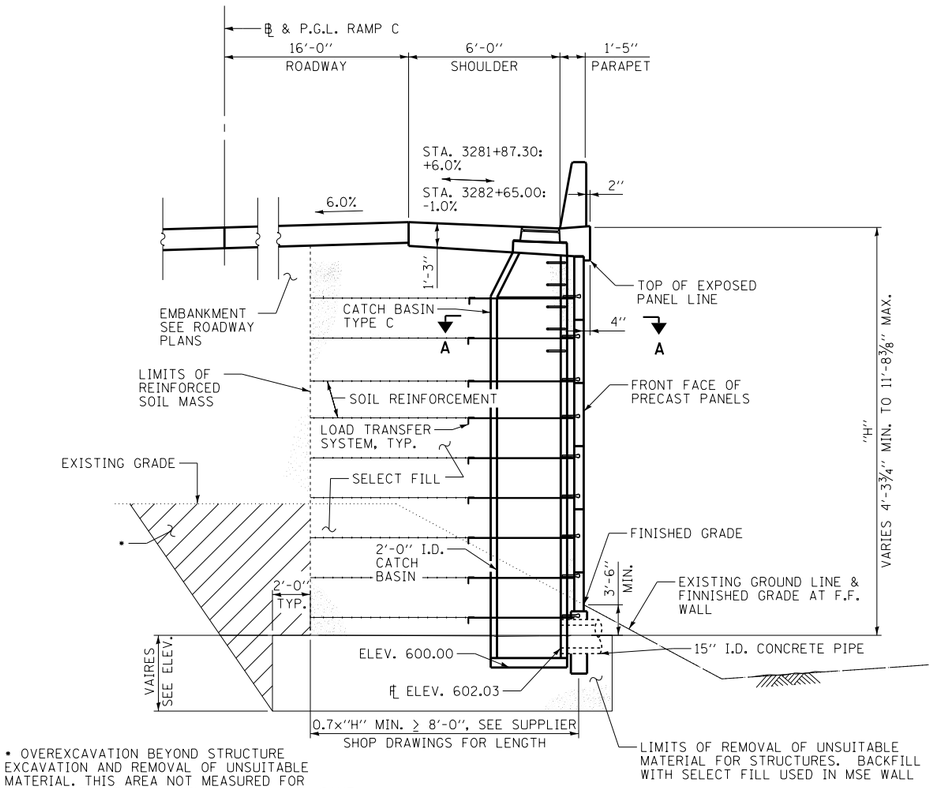


••M.S.E. SUPPLIER TO DESIGN LOAD TRANSFER SYSTEM TO ACCOMMODATE CONCRETE PIPE AND CATCH BASIN

SECTION A-A

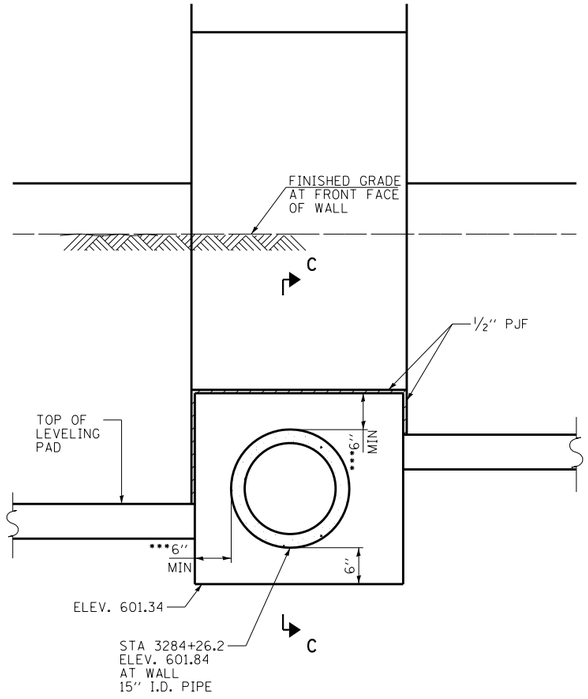
TOTAL BILL OF MATERIAL

PAY ITEM NO.	ITEM	UNIT	TOTAL
50200100	STRUCTURE EXCAVATION	CU YD	639
50200450	REMOVAL AND DISPOSAL OF UNSUITABLE MATERIAL FOR STRUCTURES	CU YD	241
50300225	CONCRETE SUPERSTRUCTURE	CU YD	165.6
50300300	PROTECTIVE COAT	SQ YD	372
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	31,730
52200500	MECHANICALLY STABILIZED EARTH RETAINING WALL	SQ FT	2,810
51500100	NAME PLATES	EACH	1
X0327999	ANTI-GRAFFITI COATING	SQ FT	2,916



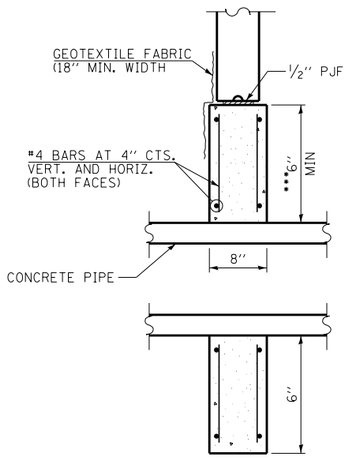
• OVEREXCAVATION BEYOND STRUCTURE EXCAVATION AND REMOVAL OF UNSUITABLE MATERIAL. THIS AREA NOT MEASURED FOR PAYMENT. BACKFILL OVEREXCAVATION WITH SAME MATERIAL USED FOR SELECT FILL USED IN MSE WALL.

TYPICAL WALL SECTION
(LOOKING NORTH)



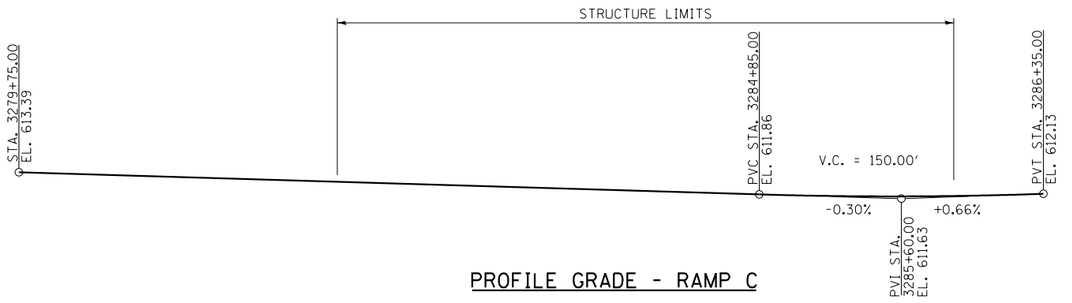
SECTION B-B

••• WALL SUPPLIER TO DETERMINE REQUIRED DIMENSIONS.



SECTION C-C

••• WALL SUPPLIER TO DETERMINE REQUIRED DIMENSIONS.



PROFILE GRADE - RAMP C

DRAWN BY VPS	DATE 4-3-2020	TYLIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	REVISIONS NO. / DATE / DESCRIPTION	CONTRACT I-19-4495	SHEET SA - 2 OF 7
CHECKED BY SP	SCALE NONE				I-57 AT 294 RAMPS C, D, AND F2 SN 016-2202 GENERAL DATA	265 OF 606

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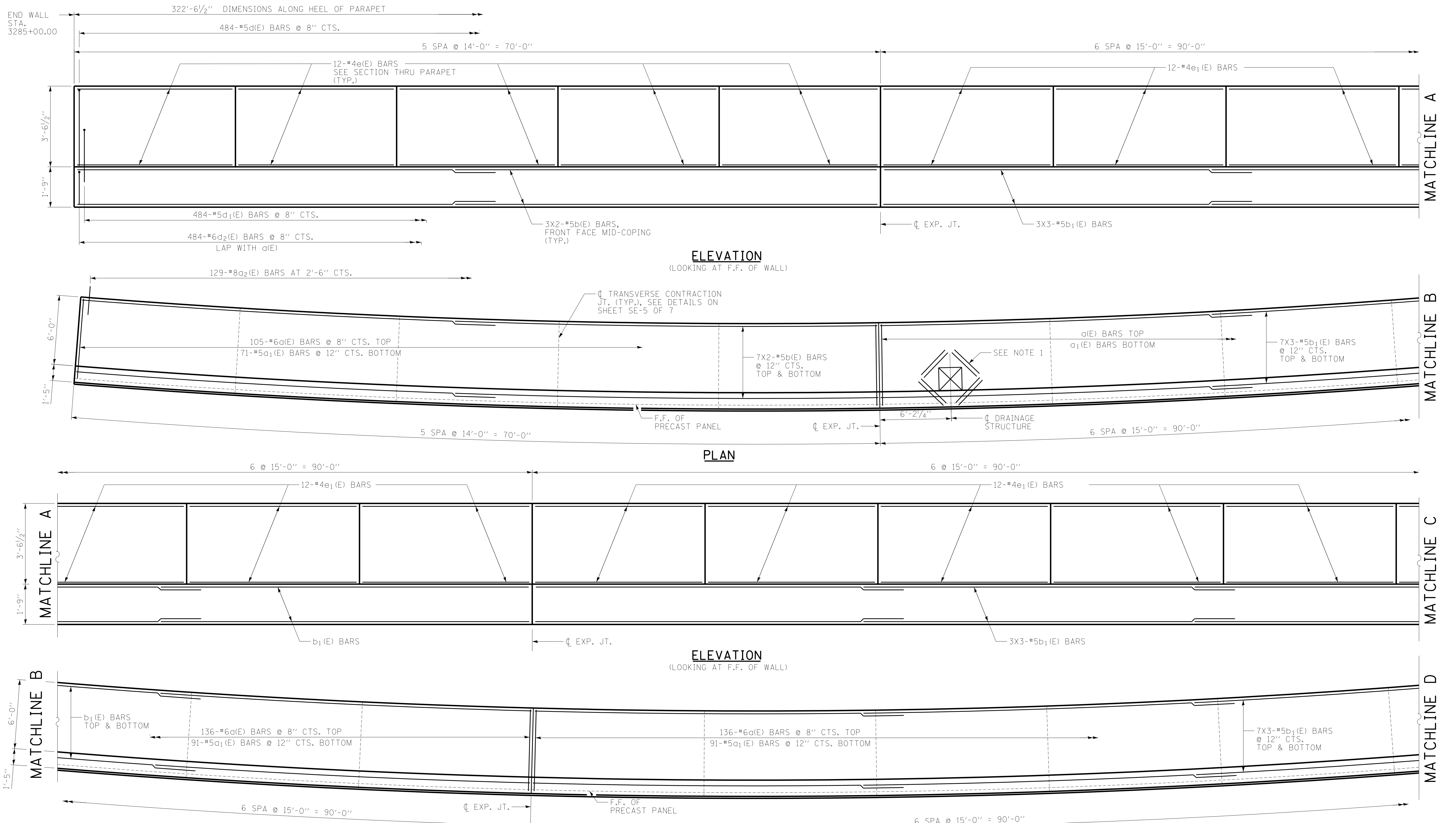
3/30/2020



MIN. LAP LENGTH

#5 = 3'-4"

NOTES:

1. AT EACH DRAINAGE STRUCTURE PLACE 2-#5 b_3(E) BARS AT 4" CTS., TIED TO BOTTOM OF TOP REINFORCEMENT MAT, TYP. CUT LONGITUDINAL AND TRANSVERSE REINFORCEMENT TO CLEAR OPENING.
2. BARS INDICATED THUS 20X3-#5, ETC. INDICATES 20 LINES OF BARS WITH 3 LENGTHS.
3. PARAPET DIMENSIONS ALONG HEEL OF PARAPET.

DRAWN BY VPS	DATE 4-3-2020	TYLIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	REVISIONS: NO. / DATE / DESCRIPTION
CHECKED BY SP	SCALE NONE			

CONTRACT I-19-4495

I-57 AT 294 RAMPS C, D, AND F2
SN 016-2202
PLAN AND PARAPET ELEV. 1

SHEET SA - 3 OF 7

266 OF 606

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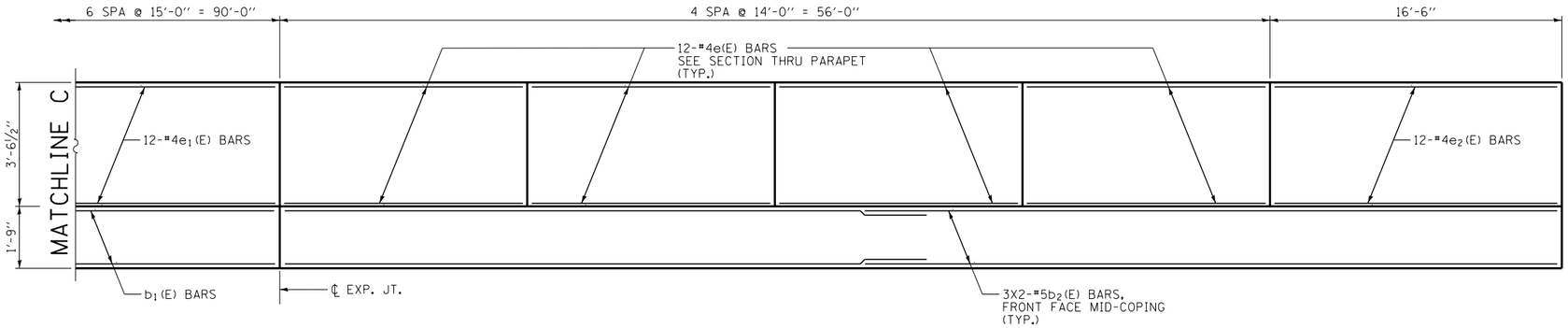
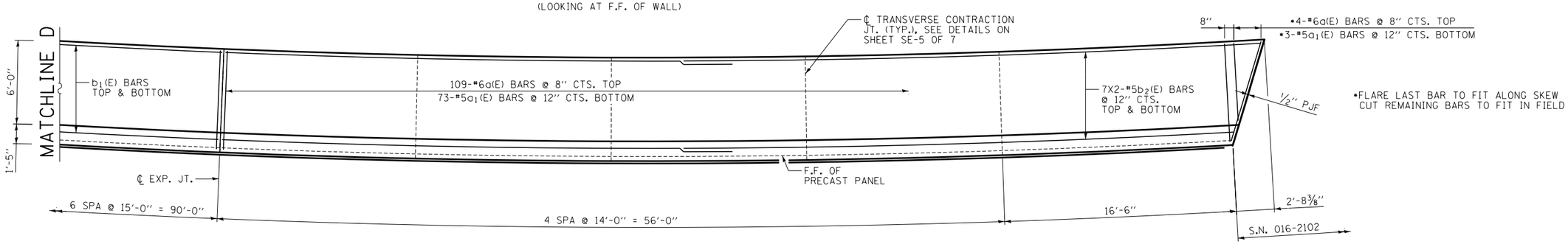
3/30/2020



ELEVATION

(LOOKING AT F.F. OF WALL)



PLAN

MIN. LAP LENGTH

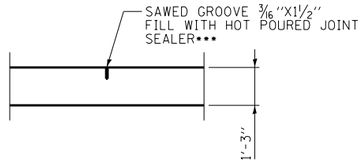
#5 = 3'-4"

NOTES:

1. BARS INDICATED THUS 20X3-#5, ETC. INDICATES 20 LINES OF BARS WITH 3 LENGTHS.
2. PARAPET DIMENSIONS ALONG HEEL OF PARAPET.

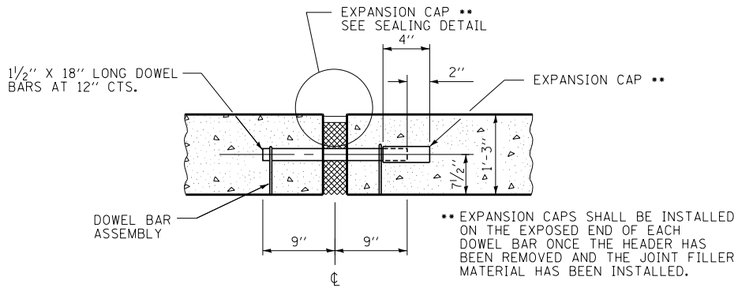
DRAWN BY VPS	DATE 4-3-2020	TY·LIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	REVISIONS NO. / DATE / DESCRIPTION	CONTRACT I-19-4495	SHEET SA - 4 OF 7
CHECKED BY SP	SCALE NONE				I-57 AT 294 RAMPS C, D, AND F2 SN 016-2202 PLAN AND PARAPET ELEV. 2	267 OF 606

P:\682540\57-294,5-9\STRUCTURAL\RESTART_2018\Wall 41\016202.5_plan02.dgn
3/30/2020



SECTION THRU TRANSVERSE CONTRACTION JOINT

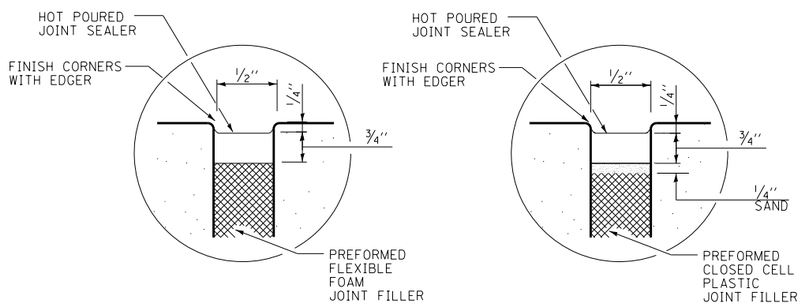
••• COST OF SAWCUTTING AND JOINT SEALER INCLUDED IN THE COST OF CONCRETE SUPERSTRUCTURE



•• EXPANSION CAPS SHALL BE INSTALLED ON THE EXPOSED END OF EACH DOWEL BAR ONCE THE HEADER HAS BEEN REMOVED AND THE JOINT FILLER MATERIAL HAS BEEN INSTALLED.

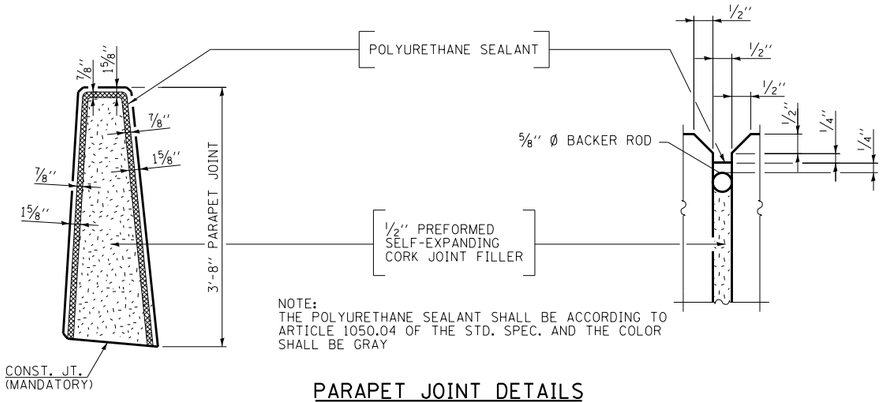
TRANSVERSE EXPANSION JOINT IN ANCHORAGE SLAB

(EXPANSION JOINTS AND DOWEL BARS INCLUDED IN THE COST OF CONCRETE SUPERSTRUCTURE)



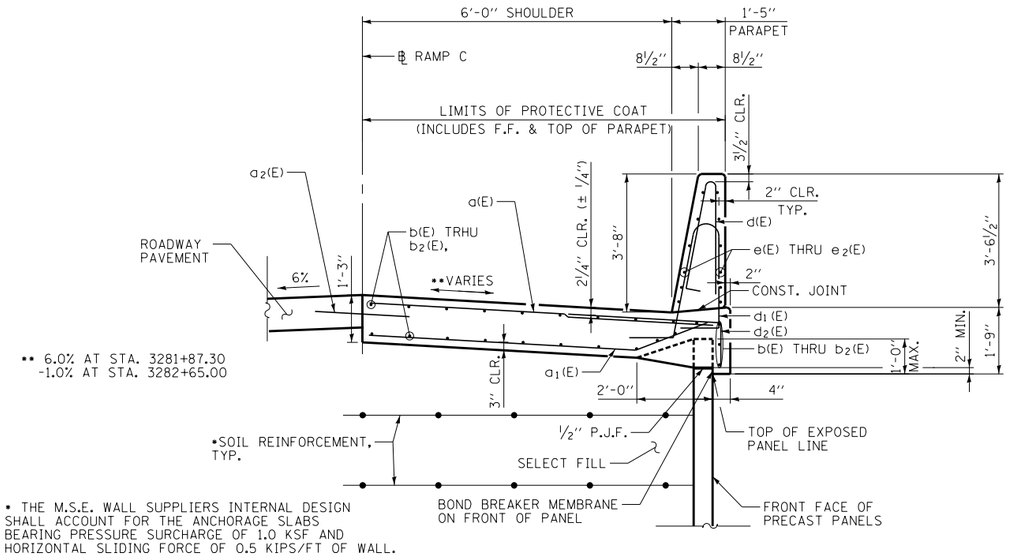
SEALING DETAIL

(INCLUDED IN THE COST OF CONCRETE SUPERSTRUCTURE)



NOTE:
THE POLYURETHANE SEALANT SHALL BE ACCORDING TO ARTICLE 1050.04 OF THE STD. SPEC. AND THE COLOR SHALL BE GRAY

PARAPET JOINT DETAILS



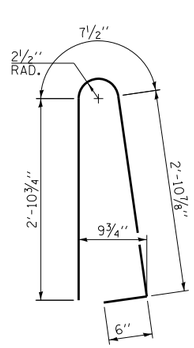
•• 6.0% AT STA. 3281+87.30
-1.0% AT STA. 3282+65.00

• THE M.S.E. WALL SUPPLIERS INTERNAL DESIGN SHALL ACCOUNT FOR THE ANCHORAGE SLABS BEARING PRESSURE SURCHARGE OF 1.0 KSF AND HORIZONTAL SLIDING FORCE OF 0.5 KIPS/FT OF WALL.

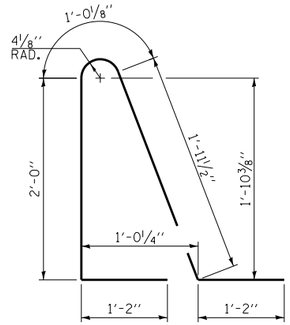
PARAPET AND ANCHORAGE SLAB DETAIL

BILL OF MATERIAL

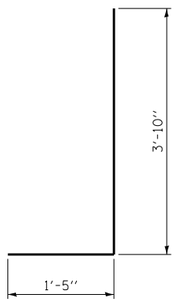
BAR	NO.	SIZE	LENGTH	SHAPE
a (E)	490	#6	7'-3"	
a_1(E)	329	#5	7'-0"	
a_2(E)	129	#8	2'-6"	
b (E)	34	#5	36'-7"	
b_1(E)	102	#5	32'-3"	
b_2(E)	34	#5	39'-3"	
b_3(E)	8	#5	2'-0"	
d (E)	484	#6	6'-11"	
d_1(E)	484	#6	7'-4"	
d_2(E)	484	#6	5'-3"	
e (E)	108	#4	13'-8"	
e_1(E)	144	#4	14'-8"	
e_2(E)	12	#4	16'-2"	
CONCRETE SUPERSTRUCTURE		CU. YD.	165.6	
REINFORCEMENT BARS, EPOXY COATED		POUND	31,440	
PROTECTIVE COAT		SQ. YD.	372	



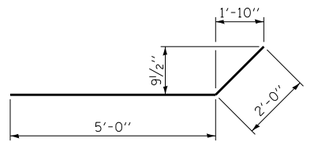
BAR d(E)



BAR d_1(E)



BAR d_2(E)



BAR a_1(E)

P:\68254\057-294.5-91\STRUCTURAL_RESTART_2018\Wall 41\D162202.5_details.dgn
3/30/2020

DRAWN BY . . . . VPS	DATE . 4-3-2020 . . .	TYLIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	REVISIONS: NO. / DATE / DESCRIPTION	CONTRACT I-19-4495	SHEET SA - 5 OF 7
CHECKED BY . . . . SP	SCALE . NONE				I-57 AT 294 RAMPS C, D, AND F2 SN 016-2202 ANCHORAGE SLAB DETAILS	268 OF 606

SOIL BORING LOG

Geo Services, Inc.
Geotechnical, Environmental & Civil Engineering
805 Amherst Court, Suite 204
Naperville, Illinois 60565
(630) 355-2838

PAGE 1 of 1 | DATE 4/20/2010 | LOGGED BY MR
JOB NUMBER P-91-186-08 | GSI JOB No. 08015
ROUTE I-294 & I-57 | DESCRIPTION I-57 & I-294 Interchange Improvements (PTB 146, Item 1)
SECTION – | LOCATION Ramp C Retaining Wall
COUNTY Cook | DRILLING METHOD Hollow Stem Auger/Rotary | HAMMER TYPE Diedrich Automatic

STRUCT. NO. –
Station –
BORING NO. **RW-05**
Station: 3282+01
Offset: 31.5' Left
Ground Surface Elev. 604.2

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter 596.2
Upon Completion n/a
After ____ Hrs.

Description	Elev.	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
14.0" TOPSOIL-black	603.1		AS	–	20
	602.5		2		
CLAY LOAM-brown & black-very stiff (A-6) Apparent Fill	601.2		2 / 3	3.0P	17
SILTY CLAY LOAM-brown & gray-loose (A-4)	598.7	-5	2 / 3 / 4	1.5P	28
SAND-brown-medium dense (A-3)	▼596.2		2 / 4 / 7	NP	18
SAND & GRAVEL-brown-very dense (A-1)		-10	50/5"	NP	10
	591.2				NR
SILT-gray-dense (A-4)	588.7	-15	9 / 20 / 38	NP	11
SANDY LOAM with Fractured Rock-gray-very dense (A-2)			31 / 43 / 50/4"	NP	11
		-20	27 / 31 / 37	NP	8
SANDY LOAM with Fractured Rock-gray-very dense (A-2)	581.2		21 / 29 / 36	NP	7
FRACTURED ROCK-gray-very dense (A-1)		-25	27 / 39 / 50/5"	NP	7
	576.2		50/5"	NP	8
SILTY LOAM-gray-very dense (A-4)	570.7	-30	24 / 37 / 50/6"	NP	12
Drillers Observation: Possible Bedrock	567.7	-35			
End Of Boring @ -36.5' Hollow Stem Augers to -10.0' Rotary Drilling To Completion 10.0' 4.0"ø Casing Used Diedrich Automatic Hammer		-40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

SOIL BORING LOG

Geo Services, Inc.
Geotechnical, Environmental & Civil Engineering
805 Amherst Court, Suite 204
Naperville, Illinois 60565
(630) 355-2838

PAGE 1 of 1 | DATE 4/16-19/2010 | LOGGED BY MR
JOB NUMBER P-91-186-08 | GSI JOB No. 08015
ROUTE I-294 & I-57 | DESCRIPTION I-57 & I-294 Interchange Improvements (PTB 146, Item 1)
SECTION – | LOCATION Ramp C Retaining Wall
COUNTY Cook | DRILLING METHOD Hollow Stem Auger/ Rotary | HAMMER TYPE Diedrich Automatic

STRUCT. NO. –
Station –
BORING NO. **RW-07**
Station: 3282+89
Offset: 27.5' Left
Ground Surface Elev. 605.5

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter 599.0
Upon Completion n/a
After ____ Hrs.

Description	Elev.	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
14.0" TOPSOIL-black	604.4		AS	–	29
SILTY CLAY-brown & gray-stiff (A-6)	602.5		3 / 3 / 4	1.0P	20
SILTY CLAY LOAM-brown & gray-loose (A-4)		-5	2 / 2 / 3	2.25P	21
▼	597.5		3 / 3 / 3	1.0P	30
SANDY LOAM-gray-medium dense (A-2)	595.0	-10	3 / 5 / 10	NP	20
CLAY LOAM-gray-very stiff to hard (A-6)			14 / 18 / 23	3.7B	*132* 10
	590.0	-15	12 / 19 / 28	4.5+P	10
SILTY LOAM with Fractured Rock-gray-very dense (A-4)	587.5		50/6"	NP	9
SILTY LOAM-gray-dense to very dense (A-4)		-20	29 / 50/5"	NP	14
SILTY LOAM-gray-dense to very dense (A-4)			12 / 19 / 21	NP	13
	580.0	-25	13 / 18 / 23	NP	16
SILTY LOAM with Fractured Rock-gray-very dense (A-2)			13 / 34 / 50/5"	NP	10
	572.5	-30	23 / 31 / 44	NP	10
Drillers Observation: Possible Bedrock	569.5	-35			
End Of Boring @ -36.0' Hollow Stem Augers to -10.0' Rotary Drilling To Completion 10.0' 4.0"ø Casing Used Diedrich Automatic Hammer		-40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

SOIL BORING LOG

Geo Services, Inc.
Geotechnical, Environmental & Civil Engineering
805 Amherst Court, Suite 204
Naperville, Illinois 60565
(630) 355-2838

PAGE 1 of 1 | DATE 4/16/2010 | LOGGED BY MR
JOB NUMBER P-91-186-08 | GSI JOB No. 08015
ROUTE I-294 & I-57 | DESCRIPTION I-57 & I-294 Interchange Improvements (PTB 146, Item 1)
SECTION – | LOCATION Ramp C Retaining Wall
COUNTY Cook | DRILLING METHOD Hollow Stem Auger/ Rotary | HAMMER TYPE Diedrich Automatic

STRUCT. NO. –
Station –
BORING NO. **RW-09**
Station: 3283+99
Offset: 23.0' Left
Ground Surface Elev. 605.2

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter 599.2
Upon Completion n/a
After ____ Hrs.

Description	Elev.	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
10.0" TOPSOIL-black	604.3		AS	–	29
SILTY CLAY LOAM-dark brown-stiff (A-4/A-6)	602.2		2 / 3 / 3	1.5P	24
SANDY LOAM to LOAM-brown & gray-loose (A-4)	▼599.2	-5	2 / 2 / 2	NP	26
SILTY LOAM-brown & gray-loose (A-4)			2 / 2 / 2	NP	25
	594.7	-10	2 / 4 / 4	NP	24
SAND & GRAVEL-gray-loose to medium dense (A-1)			3 / 4 / 4	NP	9
	589.7	-15	5 / 8 / 10	NP	11
SILT-gray-dense (A-4)			19 / 22 / 26	NP	13
		-20	21 / 23 / 24	NP	11
SILT-gray-dense (A-4)	584.7				
SANDY LOAM with Fractured Rock-gray-dense to very dense (A-2)			16 / 19 / 26	NP	11
		-25	19 / 27 / 40	NP	9
			39 / 50/4"	NP	10
	572.7	-30	45 / 50/3"	NP	8
Drillers Observation: Possible Bedrock	569.7	-35			
End Of Boring @ -35.5' Hollow Stem Augers to -10.0' Rotary Drilling To Completion 10.0' 4.0"ø Casing Used Diedrich Automatic Hammer		-40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

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3/30/2020

DRAWN BY VPS | DATE 4-3-2020
CHECKED BY SP | SCALE NONE

TYLIN INTERNATIONAL

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495
I-57 AT 294 RAMPS C, D, AND F2
SN 016-2202
BORING LOGS 1

Geo Services, Inc.
Geotechnical, Environmental & Civil Engineering
805 Amherst Court, Suite 204
Naperville, Illinois 60565
(630) 355-2838

SOIL BORING LOG

PAGE 1 of 1
DATE 4/15/2010
LOGGED BY MR
GSI JOB No. 08015

JOB NUMBER P-91-186-08
ROUTE I-294 & I-57
DESCRIPTION I-57 & I-294 Interchange Improvements (PTB 146, Item 1)
SECTION –
LOCATION Ramp C Retaining Wall
COUNTY Cook
DRILLING METHOD Hollow Stem Auger/Rotary HAMMER TYPE Diedrich Automatic
STRUCT. NO. –
Station –
BORING NO. **RW-11**
Station: 3284+67
Offset: 22.5' Left
Ground Surface Elev. 605.7

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter 600.2
Upon Completion n/a
After ____ Hrs. ____

DEPTH (ft)	BLOWS /6"	UCS Qu (tsf)	MOIST (%)	Description
				10.0" TOPSOIL-black
				604.8
	AS	–	28	
	2			
	3			SILTY CLAY-dark brown, gray & black-
	3	1.0P	22	stiff (A-6) Fill
				602.7
	2		*102*	
	2			SILTY CLAY LOAM-dark brown & gray-
–5	2	0.7B	23	medium stiff (A-4/A-6)
				600.2
	1			
	2			CLAY-gray-
	2	0.5P	32	medium stiff (A-6/A-7) Wet
				597.7
	2			
	3			SAND-gray-loose (A-3)
–10	4	P	22	
				595.2
	5			
	8			SAND & GRAVEL-gray-
	10	NP	9	medium dense (A-1)
				592.7
	10			
	17			
–15	29	NP	16	SILT-gray-
				dense to very dense (A-4)
	19			
	27			
	33	NP	15	
				587.7
	31			SANDY LOAM with Fractured Rock-
	50/5"			gray-very dense (A-2)
–20		NP	11	

DEPTH (ft)	BLOWS /6"	UCS Qu (tsf)	MOIST (%)	Description
				SANDY LOAM with Fractured Rock-
	19			gray-very dense (A-2)
	28			
	35	NP	10	
	27			
	39			
–25	50/4"	NP	10	
	39			
	50/3"			
		NP	10	
	31			
	50/5"			
–30		NP	11	
				572.7
				Drillers Observation: Possible Bedrock
–35				
				569.7
				End Of Boring @ –36.0'
				Hollow Stem Augers to –10.0'
				Rotary Drilling To Completion
				10.0' 4.0"ø Casing Used
				Diedrich Automatic Hammer
–40				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B=Bulge, S=Shear, P=Penetrometer) ST=Shelby Tube Sample VS=Vane Shear Test
The SPT (N-value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR=No Recovery

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3/30/2020

DRAWN BY VPS	DATE 4-3-2020	T·Y·LIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515
CHECKED BY SP	SCALE NONE		

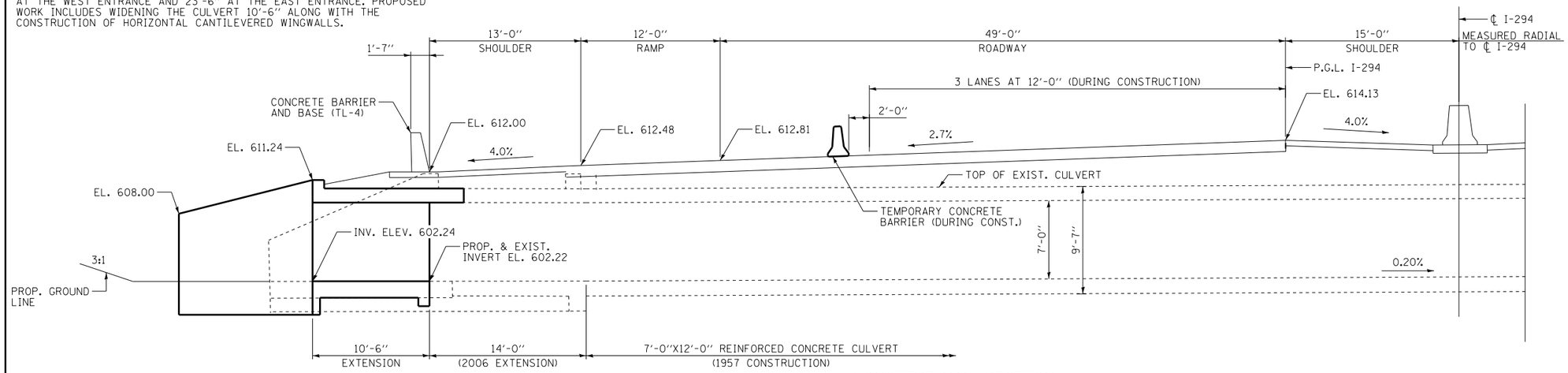
REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495
I-57 AT 294 RAMPS C, D, AND F2
SN 016-2202
BORING LOGS 2

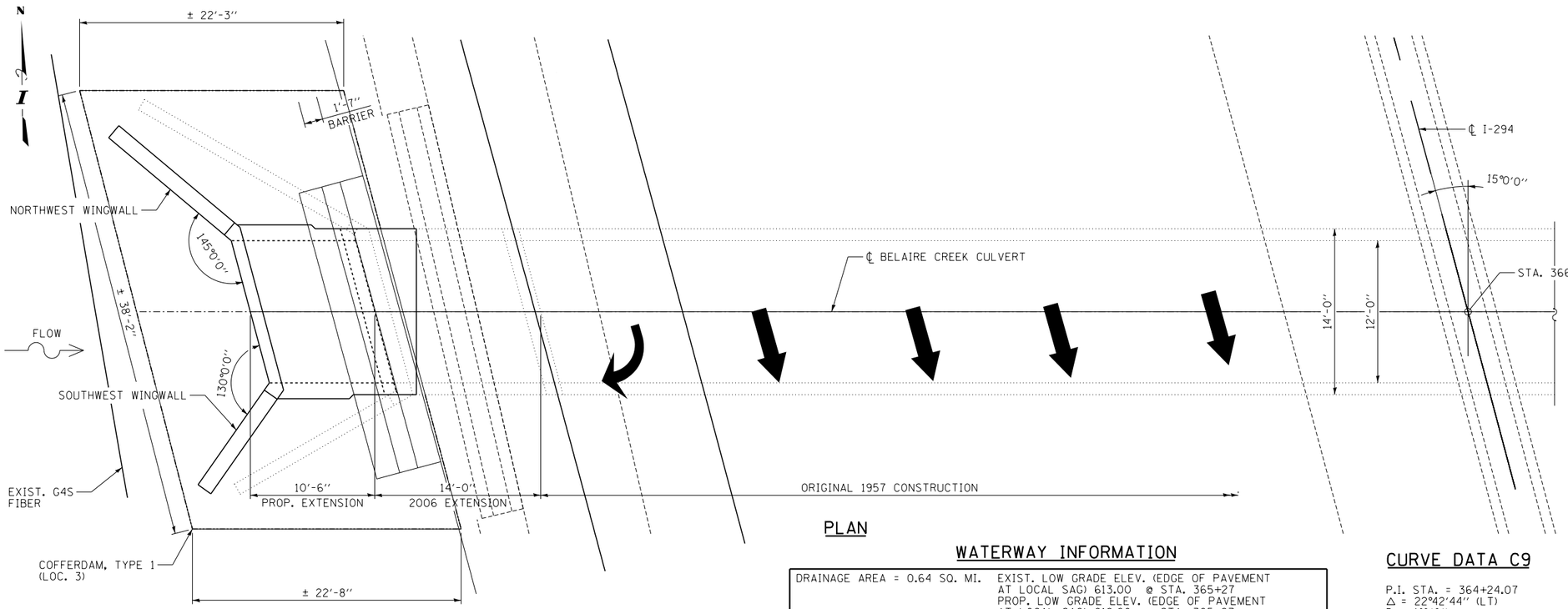
SHEET SA - 7 OF 7
270 OF 606

BENCHMARK: BM 207 - SET EAST SIDE OF I-57, A SQUARE CUT ON BRIDGE PIER LOCATED AT SOUTH EAST CORNER OF I-294 AND I-57.

EXISTING STRUCTURE: ISTHA CULVERT NO. TI-17 CONSTRUCTED IN 1957. A SINGLE CELL CULVERT 12' WIDE BY 7' HIGH, MEASURING 162'-3" FROM HEADWALL TO HEADWALL. THE CULVERT WAS WIDENED IN 2006 BY 14'-0" AT THE WEST ENTRANCE AND 23'-6" AT THE EAST ENTRANCE. PROPOSED WORK INCLUDES WIDENING THE CULVERT 10'-6" ALONG WITH THE CONSTRUCTION OF HORIZONTAL CANTILEVERED WINGWALLS.



LONGITUDINAL SECTION



PLAN

WATERWAY INFORMATION

DRAINAGE AREA = 0.64 SQ. MI. EXIST. LOW GRADE ELEV. (EDGE OF PAVEMENT AT LOCAL SAG) 613.00 @ STA. 365+27
PROP. LOW GRADE ELEV. (EDGE OF PAVEMENT AT LOCAL SAG) 612.60 @ STA. 365+27

FLOOD	FREQ. YR.	Q C.F.S.	OPENING SQ. FT. EXIST.	OPENING SQ. FT. PROP.	NAT. H.W.E.	HEAD - FT. EXIST.	HEAD - FT. PROP.	HEADWATER EL. EXIST.	HEADWATER EL. PROP.
	10	37	51	51	606.5	0.0	0.0	606.5	606.5
DESIGN	50	57	61	61	607.3	0.0	0.0	607.3	607.3
BASE	100	66	65	65	607.6	0.0	0.0	607.6	607.6
MAX. CALC.	500	85	72	72	608.2	0.0	0.0	608.2	608.2

CURVE DATA C9

P.I. STA. = 364+24.07
Δ = 22°42'44" (LT)
D = 1°0'0"
R = 5,730.02'
T = 1,150.80'
L = 2,271.38'
E = 114.42'
e = 2.7%
T.R. = 99.9'
S.E. RUN = 179.8'
P.C. STA. = 352+73.27
P.T. STA. = 375+44.65

DESIGN SPECIFICATIONS

2002 AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES

TOLLWAY STRUCTURES DESIGN MANUAL, MARCH 2019

TOLLWAY GEOTECHNICAL ENGINEER'S MANUAL, MARCH 2019

ILLINOIS DEPARTMENT OF TRANSPORTATION BRIDGE MANUAL, JANUARY 2012

ILLINOIS DEPARTMENT OF TRANSPORTATION CULVERT MANUAL, JANUARY 2017

IDOT ALL BRIDGE DESIGN MEMORANDUMS

DESIGN STRESSES

NEW CONSTRUCTION

f'c = 3,500 PSI (CLASS SI)
fy = 60,000 PSI (REINFORCEMENT)

EXIST. CONSTRUCTION (2006)

f'c = 3,500 PSI (CLASS SP CONCRETE)
fy = 60,000 PSI (REINFORCEMENT)

EXIST. CONSTRUCTION (1957)
(WORKING STRESS)
f'c = 1,200 PSI (CONCRETE)
fy = 20,000 PSI (REINFORCEMENT)

DESIGN LOADING

HS20 & ALT.
EARTH UNIT WEIGHT = 120 PCF
EQUIVALENT FLUID PRESSURE = 40 PCF (ABOVE ROOF)
EQUIVALENT FLUID PRESSURE = 50 PCF (HEIGHT OF BARREL)
MIN. LIVE LOAD SURCHARGE = 2 FEET OF SOIL

CONSTRUCTION SPECIFICATIONS

ILLINOIS DEPARTMENT OF TRANSPORTATION GUIDE BRIDGE SPECIAL PROVISIONS (GBSP's)

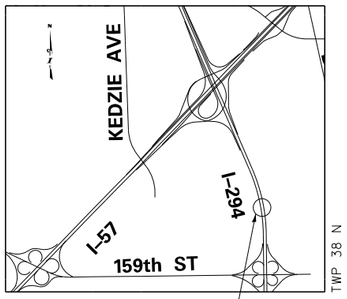
ILLINOIS TOLLWAY SUPPLEMENTAL SPECIFICATIONS TO THE ILLINOIS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION ADOPTED APRIL 1, 2016, ISSUED MARCH 2018

ILLINOIS DEPARTMENT OF TRANSPORTATION SUPPLEMENTAL SPECIFICATIONS AND RECURRING SPECIAL PROVISIONS ADOPTED JANUARY 1, 2019

ILLINOIS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION ADOPTED APRIL 1, 2016

HIGHWAY CLASSIFICATION

SOUTHBOUND I-294
FUNCTIONAL CLASS: INTERSTATE
ADT: 49,200 (2015); 64,610 (2030)
ADTT: 7,400 (2015); 11,000 (2030)
DHV: 7,130 (2030)
DESIGN SPEED: 60 M.P.H.
POSTED SPEED: 55 M.P.H.
ONE-WAY TRAFFIC



LOCATION MAP

STATE OF ILLINOIS
SPIROS PANTAZIS
081-006448
CHICAGO, ILLINOIS
LICENSED STRUCTURAL ENGINEER

Signed
Spiros Pantazis, S.E. Il. Lic. No. 081-006448
Expires 11-30-2020.
Date 4-3-2020

P:\682540\57-294.5-9\STRUCTURAL\RESTART.2018\294 culvert at belaire creek\gp&e.dgn
3/30/2020

DRAWN BY	DATE	TYLIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY	REVISIONS NO.	DATE	DESCRIPTION	CONTRACT I-19-4495	SHEET SB - 1 OF 5
SP	4-3-2020		2700 OGDEN AVENUE				I-57 AT 294 RAMPS C, D, AND F2 BELAIRE CREEK CULVERT GENERAL PLAN AND ELEVATION	271 OF 606
CHECKED BY	SCALE		DOWNERS GROVE, ILLINOIS 60515					
SP	NONE							

GENERAL NOTES

CAST-IN-PLACE CONCRETE

ALL CULVERT CONCRETE SHALL BE CLASS SI.

ALL EXPOSED CONCRETE EDGES SHALL HAVE A ¾ INCH X 45 DEG. CHAMFER, EXCEPT WHERE SHOWN OTHERWISE. CHAMFER ON VERTICAL EDGES SHALL BE CONTINUED A MINIMUM OF ONE FOOT BELOW FINISHED GROUND LEVEL.

REINFORCING BARS

REINFORCEMENT BARS, INCLUDING EPOXY-COATED REINFORCEMENT BARS, SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M-31 (ASTM A706), GRADE 60, DEFORMED BARS.

REINFORCEMENT BARS DESIGNATED "(E)" SHALL BE EPOXY COATED.

REINFORCEMENT BENDING DETAILS SHALL BE IN ACCORDANCE WITH THE LATEST "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES", ACI 315.

REINFORCEMENT BAR BENDING DIMENSIONS ARE OUT TO OUT.

BARS NOTED THUS, 3X2-#5 INDICATES 3 LINES OF BARS WITH 2 LENGTHS OF BARS PER LINE.

COVER FROM FACE OF CONCRETE TO FACE OF REINFORCEMENT BARS SHALL BE 3 INCHES FOR SURFACES CAST AGAINST EARTH AND 2 INCHES FOR ALL OTHER SURFACES UNLESS OTHERWISE SHOWN.

REINFORCEMENT BAR SPLICES SHALL BE IN ACCORDANCE WITH THE FOLLOWING TABLE UNLESS SHOWN OTHERWISE ON THE DRAWING.

CONSTRUCTION

THE CONTRACTOR SHALL NOT SCALE DIMENSIONS FROM THE CONTRACT PLANS FOR CONSTRUCTION. SCALES SHOWN ARE FOR INFORMATION ONLY.

NO CONSTRUCTION JOINTS EXCEPT THOSE SHOWN ON THE PLANS WILL BE ALLOWED UNLESS APPROVED BY THE ENGINEER.

THE CONTRACTOR MAY REQUEST COPIES OF EXISTING CONSTRUCTION PLANS THAT ARE CURRENTLY ON FILE WITH THE TOLLWAY. THE REQUEST SHALL BE IN WRITING WITH THE UNDERSTANDING THAT ANY REPRODUCTION COST WILL BE AT THE CONTRACTORS' EXPENSE.

NO CONCRETE CUTTING WILL BE PERMITTED UNTIL THE CUTTING LIMITS HAVE BEEN OUTLINED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER.

NON-METALLIC WATER SEAL USED IN WINGWALL SHALL EXTEND FROM THE TOP OF FOOTING TO WITHIN 6 INCHES OF TOP OF THE HEADWALL.

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO STARTING CONSTRUCTION. CONTACT J.U.L.I.E., 800-892-0123.

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE LOCATION OF ALL FIBER OPTIC UTILITIES PRIOR TO STARTING CONSTRUCTION. THE CONTRACTOR SHALL INITIATE THE LOCATION PROCESS FOR THE FIBER OPTIC CABLE BY COMPLETING A "REQUEST TOLLWAY UTILITIES LOCATE" FORM FILLED IN ONLINE AT THE TOLLWAY WEBSITE UNDER "DOING BUSINESS" AT LEAST FOUR (4) BUSINESS DAYS PRIOR TO STARTING ANY UNDERGROUND OPERATIONS, EXCAVATIONS OR DIGGING OF ANY TYPE IN THE GENERAL AREA OF THE FIBER OPTIC CABLE.

THE CONTRACTOR SHALL USE CARE WHEN EXCAVATING AROUND EXISTING FOUNDATIONS. ANY DAMAGE TO THE EXISTING STRUCTURE AND/OR SUPPORTING FOUNDATION SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE AT NO ADDITIONAL COST TO THE ILLINOIS TOLLWAY.

EXISTING REINFORCEMENT WHICH IS TO BE INCORPORATED INTO THE NEW CONSTRUCTION SHALL BE BLAST CLEANED TO GREY METAL, STRAIGHTENED (WITHOUT HEATING), AND CUT TO FIT. COST OF WHICH SHALL BE INCLUDED WITH THAT FOR "CONCRETE REMOVAL."

PLAN DIMENSIONS AND DETAILS RELATIVE TO EXISTING STRUCTURE HAVE BEEN TAKEN FROM EXISTING PLANS AND ARE SUBJECT TO NOMINAL CONSTRUCTION VARIATIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY SUCH DIMENSIONS AND DETAILS IN THE FIELD 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 THE SCOPE OF WORK; HOWEVER, THE CONTRACTOR WILL BE PAID FOR THE QUANTITY ACTUALLY FURNISHED AT THE UNIT PRICE FOR THE WORK.

A MINIMUM OF 6 FEET OF THE BARREL SHALL BE POURED MONOLITHICALLY WITH HORIZONTAL CANTILEVER WINGWALLS.

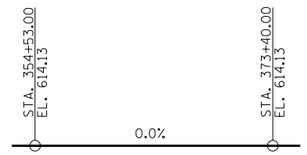
TOTAL BILL OF MATERIAL

PAY ITEM NUMBER	ITEM	UNIT	TOTAL
50200450	REMOVAL AND DISPOSAL OF UNSUITABLE MATERIAL FOR STRUCTURES	CU YD	32
28200200	FILTER FABRIC	SQ YD	95
50102400	CONCRETE REMOVAL	CU YD	23
50201103	COFFERDAM (TYPE 1) (LOCATION-3)	EACH	1
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	5,890
54003000	CONCRETE BOX CULVERTS	CU YD	35.6
59100100	GEOCOMPOSITE WALL DRAIN	SQ. YD.	24
JS121102	DRILL AND INSTALL EXPANSION ANCHORS, DOWEL BARS AND ANCHOR RODS	EACH	26
JT210001	POROUS GRANULAR BACKFILL	CU YD	32
X0900064	MEMBRANE WATERPROOFING SYSTEM FOR BURIED STRUCTURES	SQ. YD.	24
50200100	STRUCTURE EXCAVATION	CU YD	33

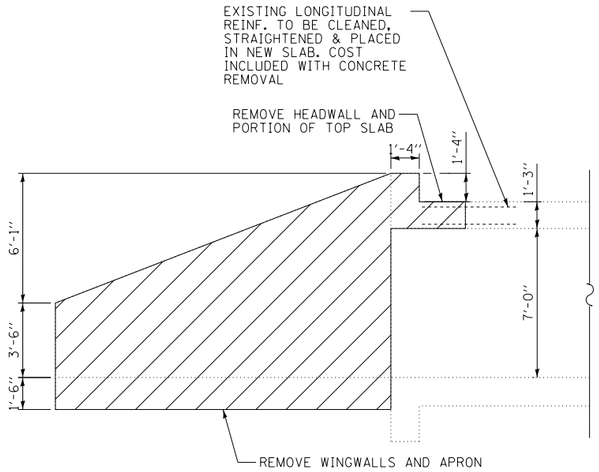
INDEX OF SHEETS

ABBREVIATIONS

P.G.L. - PROFILE GRADE LINE
N.B.L. - NORTH BOUND LANES
S.B.L. - SOUTH BOUND LANES
E.F. - EACH FACE
F.F. - FRONT FACE
B.F. - BACK FACE
I.F. - INSIDE FACE
O.F. - OUTSIDE FACE
P.J.F. - PREFORMED JOINT FILLER
P.J.S. - PREFORMED JOINT SEALER
BK/ - BACK OF
B/ - BOTTOM OF
T/ - TOP OF
PROP. - PROPOSED
EXIST. - EXISTING



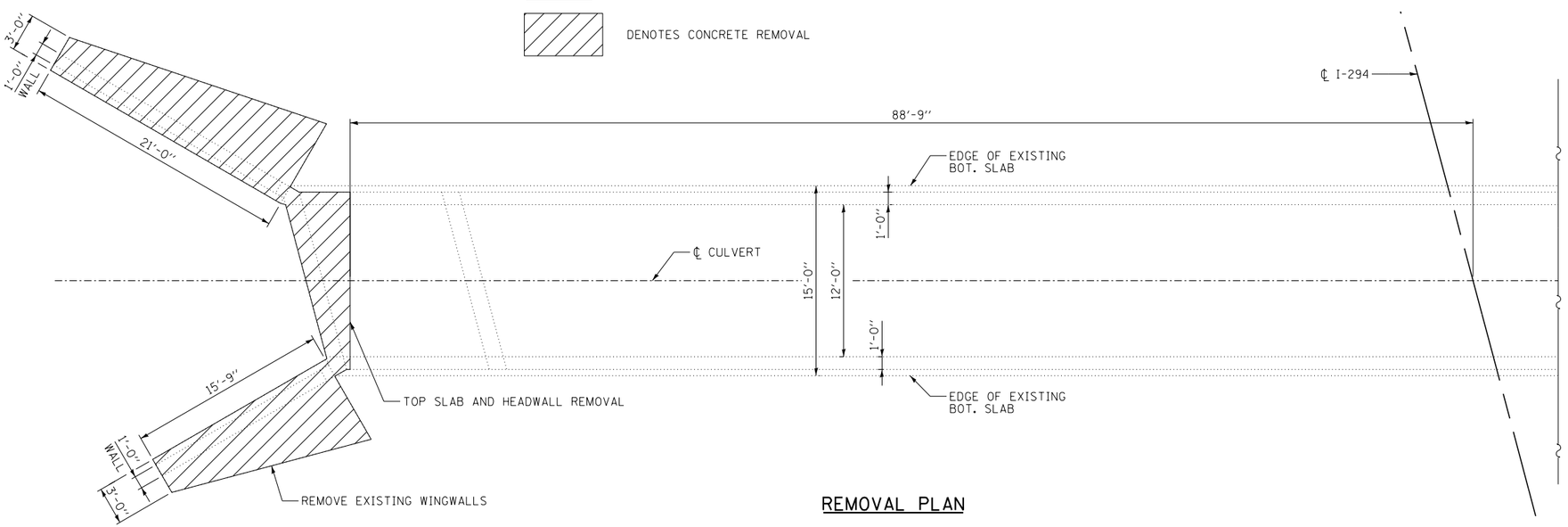
PROFILE GRADE I-294



PARTIAL ELEVATION

LEGEND

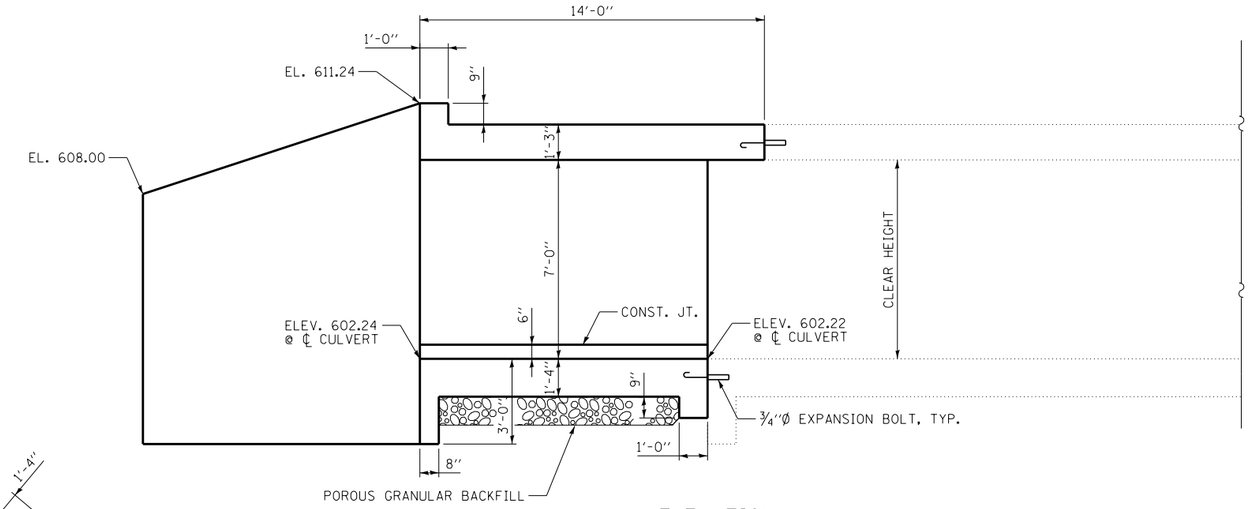
DENOTES CONCRETE REMOVAL



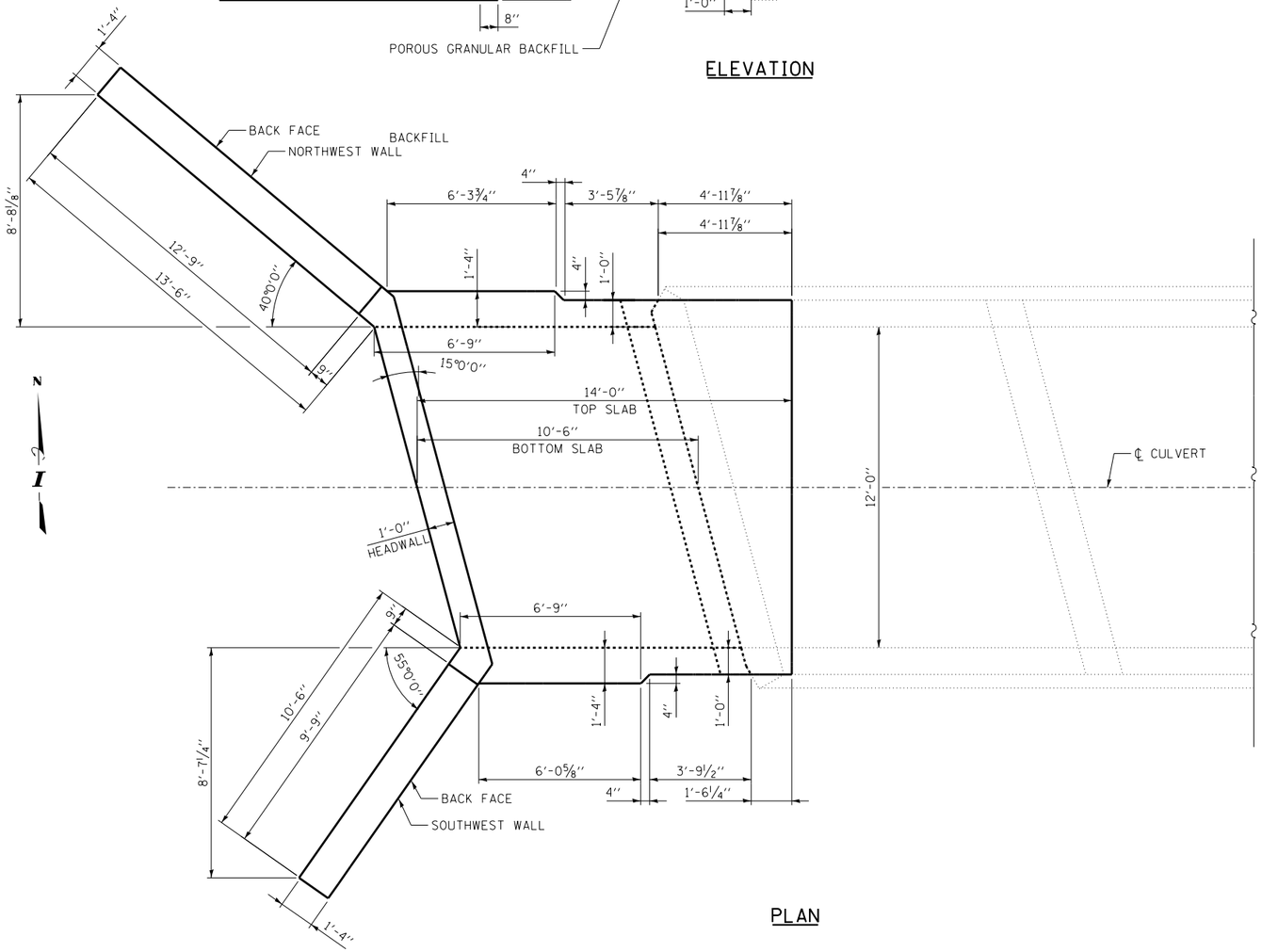
REMOVAL PLAN

P:\68Z540\57-294.5-9\STRUCTURAL\RESTART.2018\294 culvert at belaire creek\data.dgn
3/30/2020

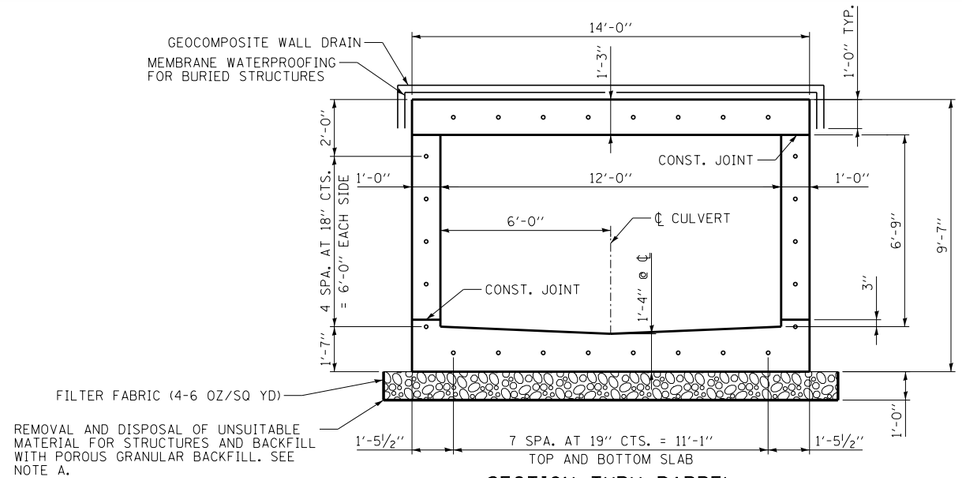
DRAWN BY EKH	DATE 4-3-2020	T·Y·LIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	REVISIONS NO. / DATE / DESCRIPTION	CONTRACT I-19-4495	SHEET SB - 2 OF 5
CHECKED BY SP	SCALE NONE				I-57 AT 294 RAMPS C, D, AND F2 BELAIRE CREEK CULVERT GENERAL DATA	272 OF 606



ELEVATION



PLAN



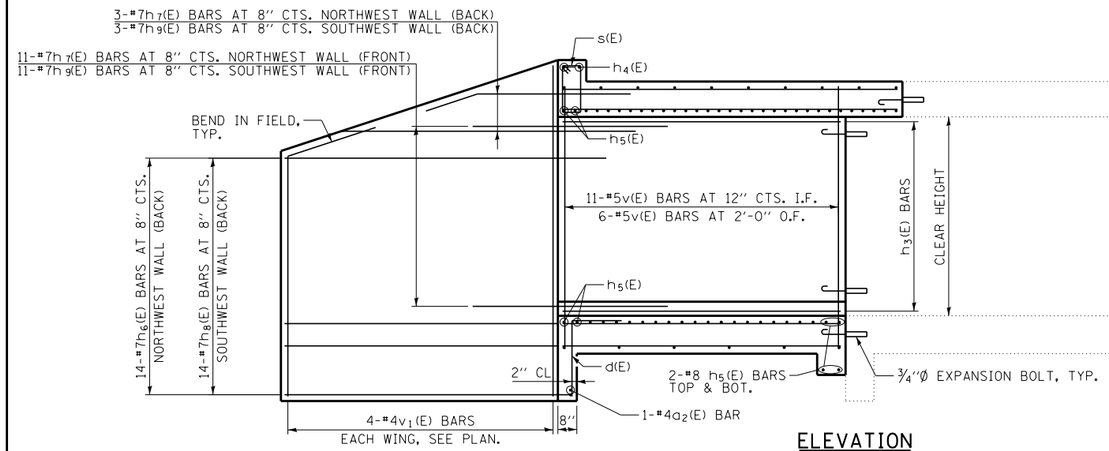
SECTION THRU BARREL

NOTE:
EXPANSION BOLTS SHALL BE GALVANIZED. USE ¾"Ø HOOKED BOLTS. HOOKED BOLTS SHALL EXTEND A MINIMUM OF 9" INTO NEW CONCRETE.

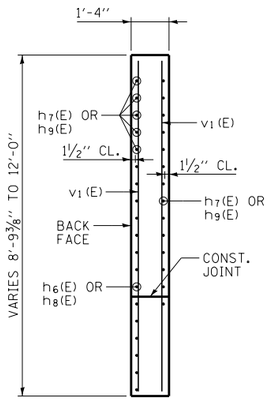
NOTE A:
BASED ON THE PROXIMITY OF THE WATER TABLE AND GRANULAR NATURE OF THE IN SITU SOILS AT THE BASE OF THE CULVERT, THE AREA WITHIN THE COFFERDAM SHALL BE DEWATERED PRIOR TO THE 12" UNDERCUT AS SHOWN. THE POROUS GRANULAR BACKFILL AND FILTER FABRIC SHALL BE PLACED WITHIN THE LIMITS OF THE COFFERDAM.

P:\682540\57-294_5-9\STRUCTURAL\RESTART_2018\294 culvert at belaire creek\extension.dgn
3/30/2020

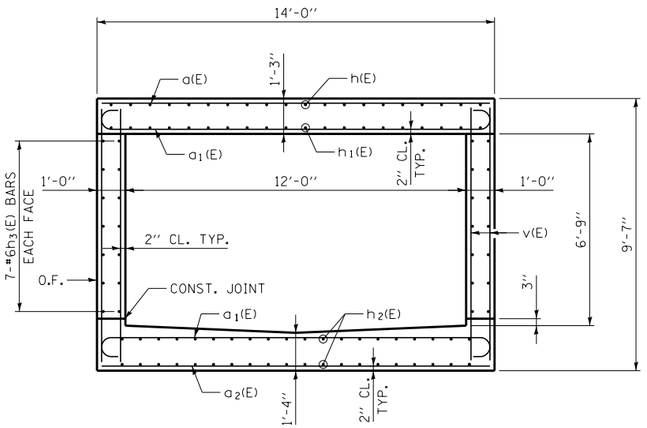
DRAWN BY . . . . EKH	DATE . 4-3-2020 . . .	TYLIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	REVISIONS			CONTRACT I-19-4495	SHEET SB - 3 OF 5
CHECKED BY . . . . SP	SCALE . NONE			NO.	DATE	DESCRIPTION	I-57 AT 294 RAMPS C, D, AND F2 BELAIRE CREEK CULVERT EXTENSION GEOMETRY	273 OF 606



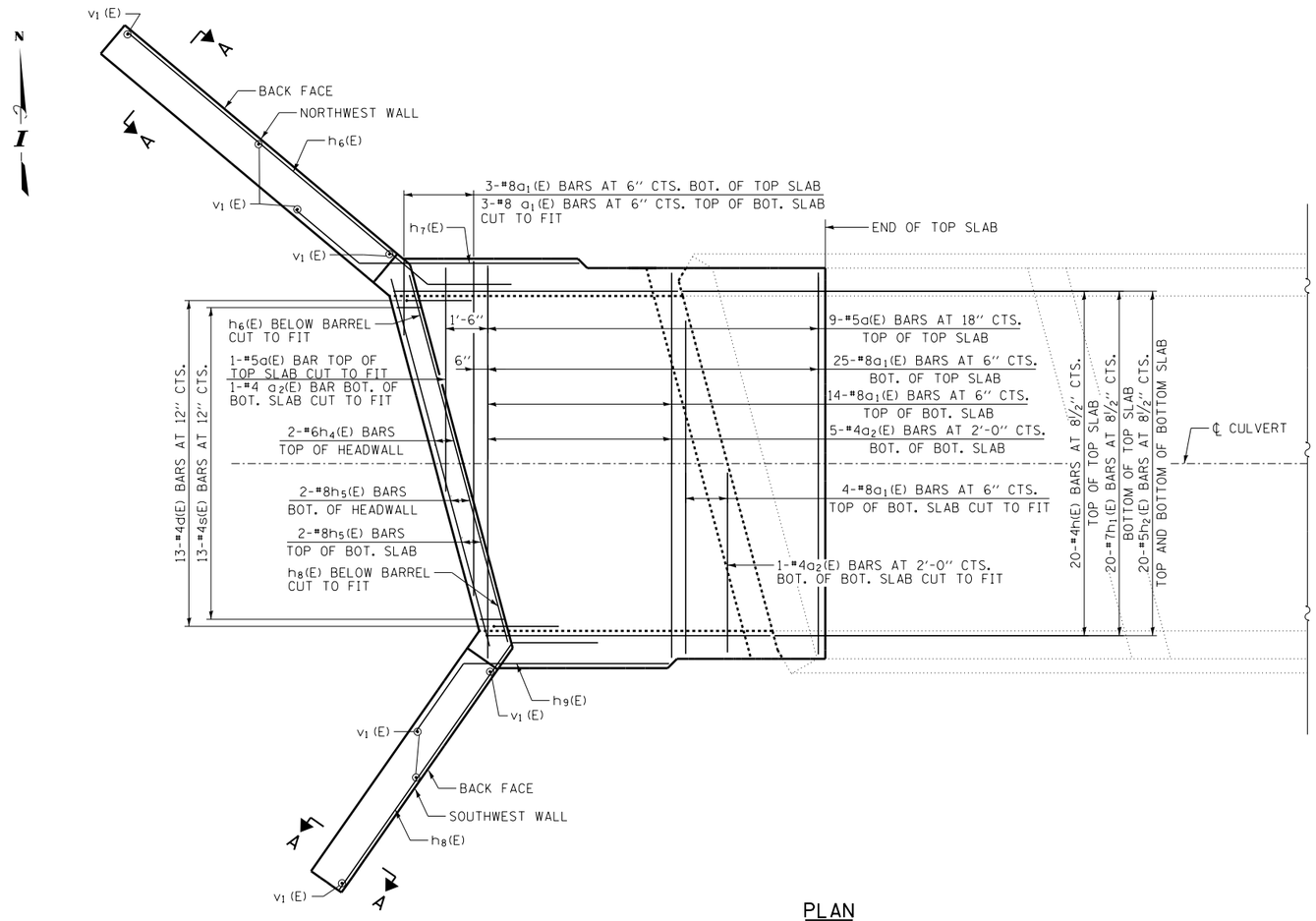
ELEVATION



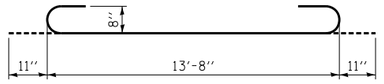
SECTION A-A



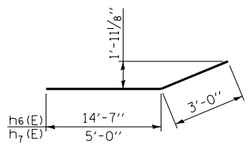
SECTION THRU BARREL



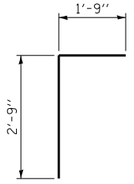
PLAN



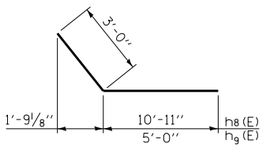
BAR a_1(E)



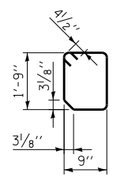
BARS h_6(E) & h_7(E)



BAR d(E)



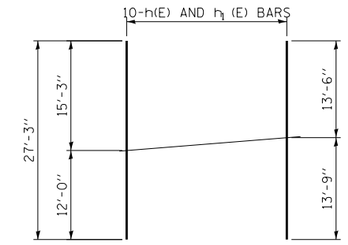
BARS h_8(E) & h_9(E)



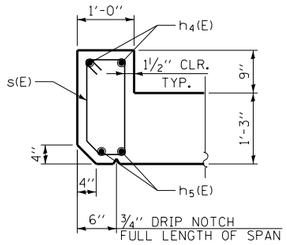
BAR s(E)

BILL OF MATERIAL

BAR	NO.	SIZE	LENGTH	SHAPE
a(E)	10	#5	13'-8"	
a_1(E)	49	#8	15'-6"	
a_2(E)	8	#4	13'-8"	
d(E)	13	#4	4'-6"	
h(E)	10	#4	27'-3"	
h_1(E)	10	#7	27'-3"	
h_2(E)	40	#5	10'-2"	
h_3(E)	28	#6	10'-2"	
h_4(E)	2	#6	13'-11"	
h_5(E)	8	#8	13'-11"	
h_6(E)	14	#7	17'-7"	
h_7(E)	14	#7	8'-0"	
h_8(E)	14	#7	13'-10"	
h_9(E)	14	#7	8'-0"	
s(E)	13	#4	5'-8"	
v(E)	34	#4	9'-3"	
v_1(E)	8	#4	11'-8"	
REINFORCEMENT BARS, EPOXY COATED			POUND	5,890
CONCRETE BOX CULVERTS			CU. YD.	35.6



BAR CUTTING DIAGRAM



UPSTREAM

SECTION THRU HEADWALL

P:\60254057-294_ES-9\STRUCTURAL\RESTART_2018\294 culvert at belaire creek\extension02.dgn
3/30/2020

DRAWN BY . . . . . EKH	DATE . 4-3-2020 . . .	TY·LIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	REVISIONS NO. | DATE | DESCRIPTION	CONTRACT I-19-4495	SHEET SB - 4 OF 5
CHECKED BY . . . . . SP	SCALE . NONE				I-57 AT 294 RAMPS C, D, AND F2 BELAIRE CREEK CULVERT EXTENSION REINFORCEMENT	274 OF 606

Geo Services, Inc.
Geotechnical, Environmental & Civil Engineering
605 Ambriss Court, Suite 204
Naperville, Illinois 60565
(630) 355-2688

SOIL BORING LOG

GSI Job No. 19016

Page 1 of 1

Date 7/22/19

ROUTE I-57/I-294 **DESCRIPTION** ISHTA PSB 18-3 Item 10 **LOGGED BY** ML

SECTION _____ **LOCATION** SE 1/4, **SEC.** 13, **TWP.** T36N, **RNG.** R13E, 3rd **PM**

COUNTY Cook **DRILLING METHOD** Hollow Stem Auger **HAMMER TYPE** Diedrich Automatic

STRUCT. NO. _____
Station _____

BORING NO. CB-001
Station 366+50
Offset 100.00ft Left
Ground Surface Elev. 612.00 ft

Surface Water Elev. n/a ft
Stream Bed Elev. n/a ft

Groundwater Elev.:
First Encounter 603.5 ft ▼
Upon Completion _____ ft
After ____ **Hrs.** _____ ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Material
				14.0" ASPHALT
610.83				
	17			CRUSHED STONE-medium dense
	11		9	
	15			
609.00				
	10			SILTY LOAM-gray-medium dense
	12		10	
-5	13			
	8			becoming brown @ -5.0'
	15		13	
	13			
604.00				
	2			SILTY CLAY LOAM-brown & gray-medium stiff ▼
	2	0.5	26	
-10	2	P		
601.00				
	9			SILTY LOAM-gray-medium dense
	15		32	
	13			
599.00				
	3			SILTY LOAM with Gravel-gray-medium dense
	15		10	
-15	14			
	5			
	14		10	
	15			
	5			
	11		9	
-20	11			

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Material
				SILTY LOAM with Gravel-gray-medium dense *(continued)*
	13			
	15		8	
	31			
589.00				
	14			SILTY LOAM with Gravel-gray-dense to very dense
	20		9	
-25	17			
	16			
	27		8	
	30			
	12			
	28		10	
-30	31			
	37			
	50/2"		8	
-35				
	50/4"			
			9	End Of Boring @ -40.0'. Boring backfilled with cuttings.
572.00	-40			

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)

BBS, from 137 (Rev. 8-99)

Z:\PROJECTS\2019\19016 TY LIN, I-57 AT I-294 RAMP C AND RR BRIDGE, ISTHA PSB 18-3, ITEM 10\19016 BORING LOGS\19016_LOG.GPJ 8/14/19

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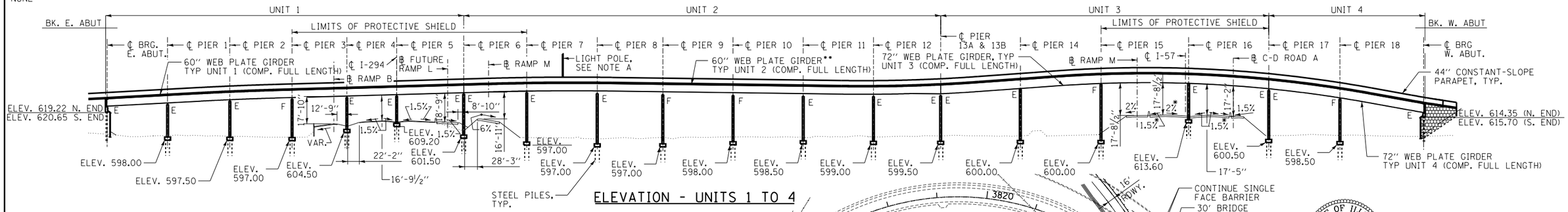
3/30/2020

DRAWN BY AH	DATE 4-3-2020	TY·LIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	REVISIONS NO. / DATE / DESCRIPTION	CONTRACT I-19-4495 I-57 AT 294 RAMPS C, D, AND F2 BELAIRE CREEK CULVERT BORING LOG	SHEET SB - 5 OF 5 275 OF 606
CHECKED BY SP	SCALE NONE					

BENCHMARK: SET EAST SIDE OF I-57. A SQUARE CUT ON CONCRETE WALL LOCATED AT NORTHEAST CORNER OF I-57 AND SIBLEY BLVD/147th ST. ELEV. 626.29

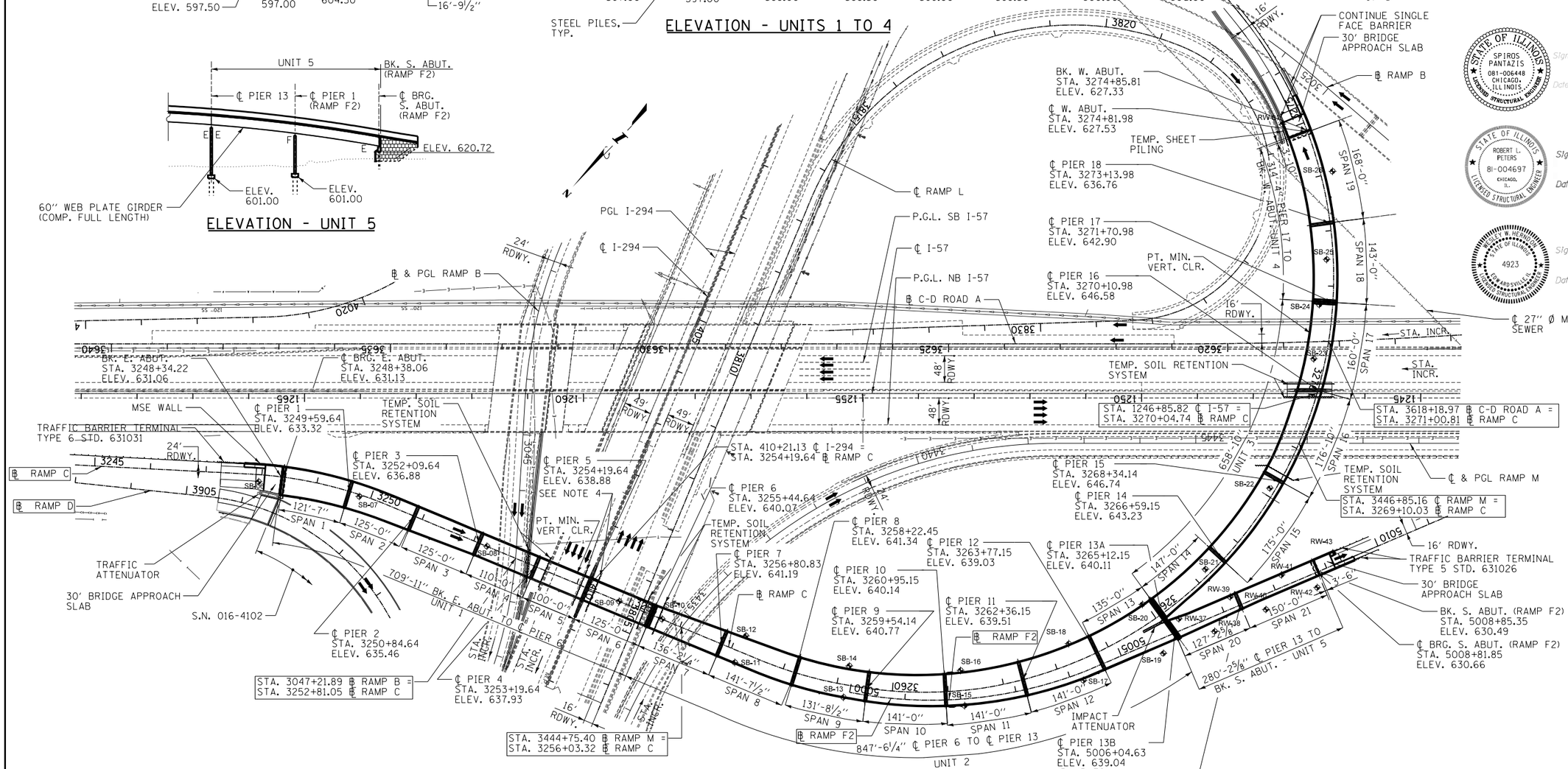
EXISTING STRUCTURE:
NONE

* CONTROLLING CROSS SLOPES SHOWN

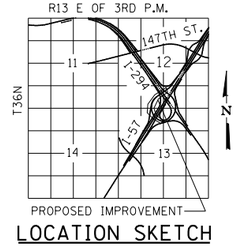


ELEVATION - UNITS 1 TO 4

ELEVATION - UNIT 5



PLAN



LOCATION SKETCH

NOTES:
1. FOR CURVE DATA & PROFILES, SEE SHT. SC-5 OF 234.
2. FOR BRIDGE DRAINAGE LAYOUT, SEE SHT. SC-2 OF 234.
3. OUT TO OUT BRIDGE DECK DIMENSIONS VARIES, SEE CROSS SECTIONS.
4. TEMPORARY SOIL RETENTION SYSTEM
5. UP TO ¼" MAY BE GROUND OFF THE BRIDGE DECK AND THE BRIDGE APPROACH SLABS. SEE SPECIAL PROVISION FOR DIAMOND GRINDING AND SURFACE TESTING BRIDGE SECTIONS.

STATE OF ILLINOIS — SPIROS PANTAZIS — 081-006448 — CHICAGO, ILLINOIS — LICENSED STRUCTURAL ENGINEER

Signed
Spiros Pantazis, S.E. Il. Lic. No. 081-006448 Expires 11-30-2020.
Date 1/22/2020
FOR SHEETS: SC-1 THRU SC-27; SC30; SC31; SC33 THRU SC-72; SC-79 THRU SC-82; SC-85 THRU SC-150; SC-156 THRU SC-181; SC-198 THRU SC-234

STATE OF ILLINOIS — ROBERT L. PETERS — 81-004697 — CHICAGO, IL. — LICENSED STRUCTURAL ENGINEER

Signed
Robert L. Peters, S.E. Il. Lic. No. 081-004697 Expires 11-30-2020.
Date 01/23/2020
FOR SHEETS: SC-28; SC-29; SC-32; SC-73 THRU SC-78; SC-83; SC-84; SC-151 THRU SC-155

STATE OF ILLINOIS — WESLEY W. HERNDON — 4923 — LICENSED STRUCTURAL ENGINEER

Signed
Wesley W. Herndon, S.E. Il. Lic. No. 081-004923 Expires 11-30-2020.
Date 1/23/2020
FOR SHEETS: SC-182 THRU SC-197

DRAWN BY . . . SP	DATE . 4-3-2020	T·Y·LIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515
CHECKED BY . . . SP	SCALE . NONE		

REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
GENERAL PLAN AND ELEVATION

SHEET SC - 1 OF 234

276 OF 606

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3/30/2020

GENERAL NOTES

1. FASTENERS SHALL BE ASTM F3125 GRADE A325 TYPE 1, MECHANICALLY GALVANIZED BOLTS IN METALLIZED AREAS. BOLTS 7/8 IN. Ø, HOLES 15/16 IN. Ø, UNLESS OTHERWISE NOTED.
2. CALCULATED WEIGHT OF STRUCTURAL STEEL = 6,775,680 LBS.
3. ALL STRUCTURAL STEEL SHALL BE AASHTO M 270 GRADE 50.
4. NO FIELD WELDING IS PERMITTED EXCEPT AS SPECIFIED IN THE CONTRACT DOCUMENTS.
5. REINFORCEMENT BARS DESIGNATED (E) SHALL BE EPOXY COATED.
6. BEARING SEAT SURFACES SHALL BE CONSTRUCTED TO THE DESIGNATED ELEVATIONS WITHIN A TOLERANCE OF 1/8 IN. (0.01 FT.). ADJUSTMENTS SHALL BE MADE EITHER BY GRINDING THE SURFACE OR SHIMMING THE BEARINGS.
7. CONCRETE SEALER SHALL BE APPLIED TO DESIGNATED AREAS OF THE ABUTMENTS AND PIERS 5, 6, 13A, 13B, 16, AND 17.
8. ALL NEW STRUCTURAL STEEL SHALL BE METALLIZED. SEE SPECIAL PROVISION FOR "METALLIZING OF STRUCTURAL STEEL."
9. LAYOUT OF THE SLOPE PROTECTION SYSTEM MAY BE VARIED TO SUIT GROUND CONDITIONS IN THE FIELD AS DIRECTED BY THE ENGINEER.
10. THE EMBANKMENT CONFIGURATION SHOWN SHALL BE THE MINIMUM THAT MUST BE PLACED AND COMPACTED PRIOR TO CONSTRUCTION OF THE ABUTMENTS.
11. EXTERIOR FASCIA AND BOTTOM OF BOTTOM FLANGE AREAS SHALL BE METALLIZED AND SHOP PAINTED (SYSTEM 3). SEE SPECIAL PROVISION FOR "METALLIZING OF STRUCTURAL STEEL." THE COLOR OF THE FINAL COAT OF PAINT SHALL BE GRAY, MUNSELL NO. 5B 7/1.
12. SLIPFORMING OF THE PARAPETS IS NOT ALLOWED.

STATION 3270+04.74
BUILT 20__ BY
ILLINOIS TOLLWAY
F.A.I. RT. 57 SEC. 1314.3B
LOADING HL-93
SN 016-2101 (BRIDGE NO. 116)

NAME PLATE

SEE STD. 515001

TOTAL BILL OF MATERIAL

PAY ITEM NO.	ITEM	UNIT	SUPER	SUB	TOTAL	RECORD QUANTITY
30300001	Aggregate Subgrade Improvement	Cu Yd		148	148.0	
50200100	Structure Excavation	Cu Yd		4,181	4,181	
50200450	Removal and Disposal of Unsuitable Material for Structures	Cu Yd		148	148.0	
50300100	Floor Drains	Each	30		30	
50300225	Concrete Structures	Cu Yd		4723	4,723	
50300255	Concrete Superstructure	Cu Yd	4625.3		4,625.3	
50300300	Protective Coat	Sq Yd	17,609		17,609	
50301350	Concrete Superstructure (Approach Slab)	CU YD	179.0		179.0	
50500105	Furnishing and Erecting Structural Steel	L Sum	0.97		0.97	
50500505	Stud Shear Connectors	Each	69,560		69,560	
50800205	Reinforcement Bars, Epoxy Coated	Pound	1,409,930	849,310	2,259,240	
51201800	Furnishing Steel Piles HP 14x73	Foot		21,343	21,343	
51202305	Driving Piles	Foot		21,343	21,343	
51203800	Test Pile Steel HP 14x73	Each		23	23	
51204650	Pile Shoes	Each		678	678	
51500100	Name Plates	Each		1	1	
52000110	Preformed Joint Strip Seal	Foot	73		73	
52100010	Elastomeric Bearing Assemby, Type I	Each	25		25	
52100020	Elastomeric Bearing Assemby, Type II	Each	6		6	
52100510	Anchor Bolts, 3/4"	Each		26	26	
52100520	Anchor Bolts, 1"	Each	488		488	
52100530	Anchor Bolts, 1 1/4"	Each	128		128	
52200010	Temporary Sheet Piling	Sq Ft		5,364	5,364	
52200500	Mechanically Stabilized Earth Retaining Wall	Sq Ft		5,374	5,374	
58700300	Concrete Sealer	Sq Ft		13402	13,402	
X5030250	Bridge Deck Grooving (Longitudinal)	Sq Yd	7621		7,621	
X5210110	High Load Multi-Rotational Bearings, Guided Expansion - 200K	Each	37		37	
X5210120	High Load Multi-Rotational Bearings, Guided Expansion - 250K	Each	12		12	
X5210140	High Load Multi-Rotational Bearings, Guided Expansion - 350K	Each	7		7	
X5210150	High Load Multi-Rotational Bearings, Guided Expansion - 400K	Each	23		23	
X5210160	High Load Multi-Rotational Bearings, Guided Expansion - 450K	Each	17		17	
X5210190	High Load Multi-Rotational Bearings, Guided Expansion - 600K	Each	6		6	
X5210200	High Load Multi-Rotational Bearings, Guided Expansion - 650K	Each	6		6	
X5210330	High Load Multi-Rotational Bearings, Fixed - 400K	Each	8		8	
X5210335	High Load Multi-Rotational Bearings, Fixed - 450K	Each	9		9	
X5210340	High Load Multi-Rotational Bearings, Fixed - 500K	Each	6		6	
X5210350	High Load Multi-Rotational Bearings, Fixed - 600K	Each	6		6	
X5210730	High Load Multi-Rotational Bearings, Non-Guided Expansion - 50K	Each	1		1	
Z0018002	Drainage Scuppers, DS-11	Each	15		15	
Z0018010	Drainage Scuppers, DS-33	Each	7		7	
Z0029090	Diamond Grinding (Bridge Section)	Sq Yd	14,061.0		14,061.0	
Z0034806	Modular Expansion Joint - Swivel 6"	Foot	91.0		91.0	
Z0034812	Modular Expansion Joint - Swivel 12"	Foot	124.0		124.0	
Z0018800	Drainage System	L Sum	1.0		1.0	
52200020	Temporary Soil Retention System	Sq Ft		1,229	1,229	
50157300	Protective Shield	Sq Yd	4,325		4,325	

DESIGN STRESSES

FIELD UNITS

f'c = 3,500 PSI
f'c = 4,000 PSI (SUPERSTRUCTURE CONCRETE)
fy = 60,000 PSI (REINFORCEMENT)
fy = 50,000 PSI (M270 GRADE 50)

SEISMIC DATA

SEISMIC PERFORMANCE ZONE (SPZ) = 1
DESIGN SPECTRAL ACCELERATION AT 1.0 SEC. (S_{D1}) = 0.063
DESIGN SPECTRAL ACCELERATION AT 0.2 SEC. (S_{DS}) = 0.114
SOIL SITE CLASS = C

LOADING HL-93

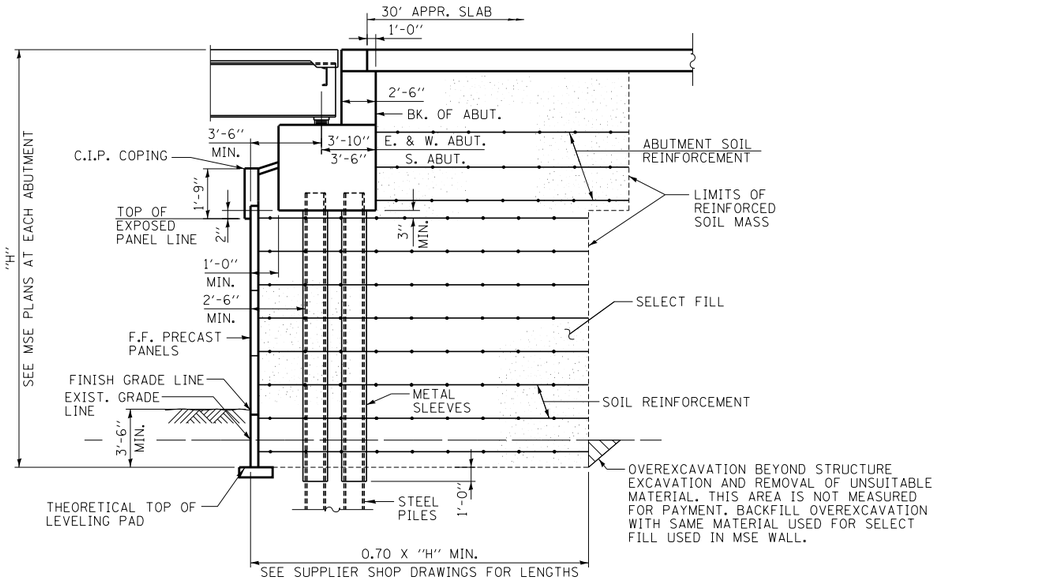
ALLOW 50#/SQ. FT. FOR FUTURE WEARING SURFACE.

DESIGN SPECIFICATIONS

2017 AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 8th EDITION

BRIDGE DRAINAGE LAYOUT TABLE

STATION	UNIT	OFFSET FROM ℄	SCUPPER TYPE	OPEN/CLOSED SYSTEM	NOTES
3248+53	1	RIGHT SHLDR.	DS-33	OPEN	NEAR EXP. JT.
3250+00	1	RIGHT SHLDR.	DS-33	OPEN	
3252+22	1	LEFT SHLDR.	DS-33	OPEN	
3253+48	1	LEFT SHLDR.	DS-33	CLOSED	
3254+14	1	LEFT SHLDR.	DS-33	CLOSED	
3255+59	2	LEFT SHLDR.	DS-11	OPEN	NEAR EXP. JT.
3255+69	2	LEFT SHLDR.	DS-11	OPEN	
3257+20 TO 3263+28	2	LEFT SHLDR.	FLOORDRAIN	OPEN	SPACE EVERY 15 FEET MIN. EXCEPT AT LOCATIONS WITH DS-11 SCUPPERS. INCREASE SPACING AT PIERS TO PROVIDE MIN. 10 FEET CLEAR TO PIER FACE.
3259+00	2	LEFT SHLDR.	DS-11	OPEN	
3259+98	2	LEFT SHLDR.	DS-11	OPEN	
3261+10	2	LEFT SHLDR.	DS-11	OPEN	
3262+00	2	LEFT SHLDR.	DS-11	OPEN	
3262+98	2	LEFT SHLDR.	DS-11	OPEN	
3263+41	2	LEFT SHLDR.	DS-11	OPEN	
3263+56	2	LEFT SHLDR.	DS-11	OPEN	LOW POINT IN PROFILE
3263+90	2	LEFT SHLDR.	DS-11	OPEN	
3264+25	2	LEFT SHLDR.	DS-11	OPEN	
3265+26	3	LEFT SHLDR.	DS-11	OPEN	NEAR EXP. JT.
3271+56	3	LEFT SHLDR.	DS-11	OPEN	NEAR EXP. JT.
3274+68	4	LEFT SHLDR.	DS-11	OPEN	NEAR EXP. JT.
5005+90	2	RIGHT SHLDR.	DS-11	OPEN	NEAR EXP. JT.
5007+94	5	RIGHT SHLDR.	DS-33	OPEN	
5008+68	5	RIGHT SHLDR.	DS-33	OPEN	NEAR EXP. JT.



SECTION THRU ABUTMENT

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3/30/2020

DRAWN BY . . . . JM . . . . . DATE . 4-3-2020 . . .
CHECKED BY . . . SP . . . . . SCALE . NONE . . . . .

T·Y·LIN INTERNATIONAL

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
GENERAL DATA

SHEET SC - 2 OF 234

277 OF 606

INDEX OF SHEETS

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3/30/2020

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T·Y·LIN INTERNATIONAL

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

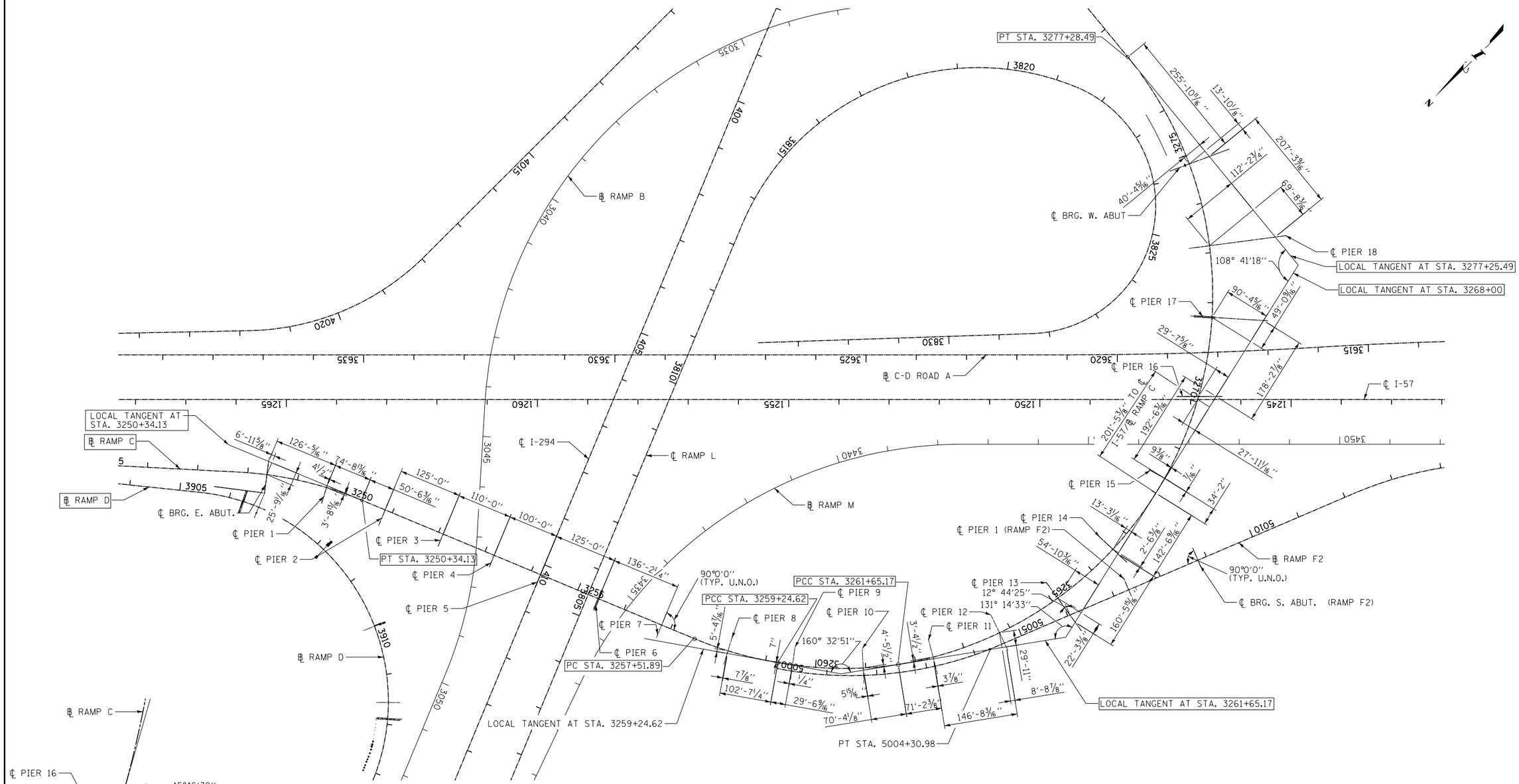
REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
INDEX OF SHEETS

SHEET SC - 3 OF 234

278 OF 606



OFFSET SKETCH

PLAN AT PIER 16

NOTES:

1. U.N.O. = UNLESS NOTED OTHERWISE
2. PIERS AT 90° AT TANGENT SECTIONS. PIERS ARE RADIAL TO RAMP C CURVED SECTIONS U.N.O.

DRAWN BY . . . SP	DATE . 4-3-2020	TY·LIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	REVISIONS NO. / DATE / DESCRIPTION	CONTRACT I-19-4495	SHEET SC - 4 OF 234
CHECKED BY . . . SP	SCALE . NONE				I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 116) OFFSET SKETCH	279 OF 606

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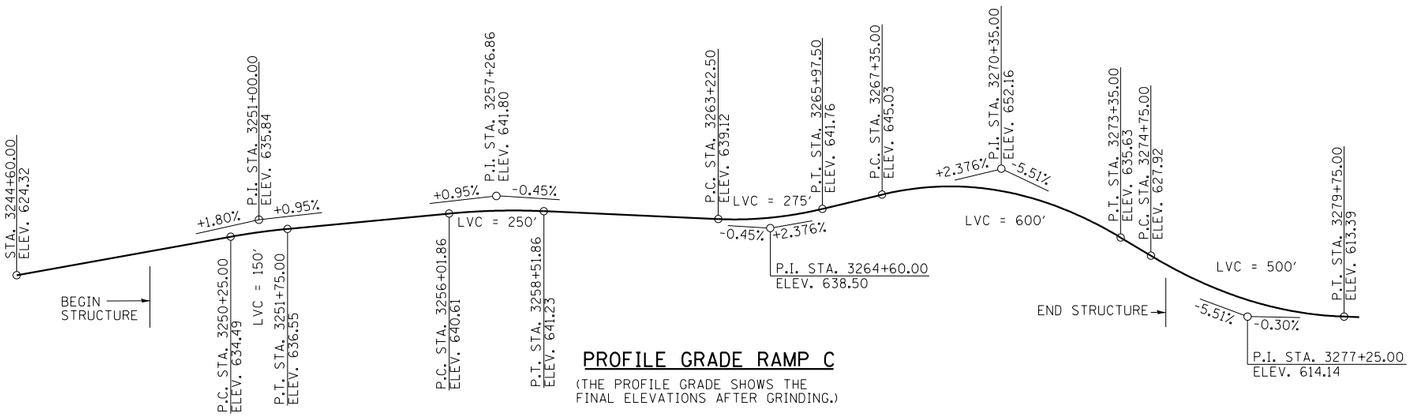
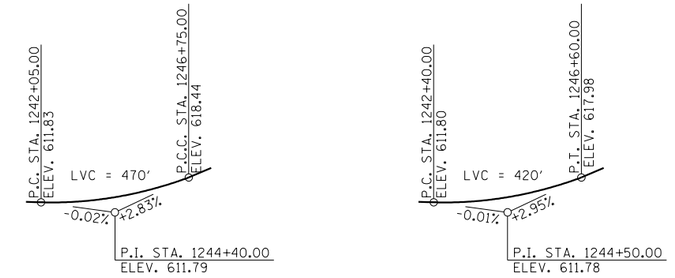
3/30/2020



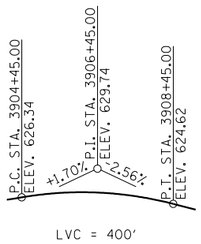
PROFILE GRADE RAMP C

(THE PROFILE GRADE SHOWS THE FINAL ELEVATIONS AFTER GRINDING.)

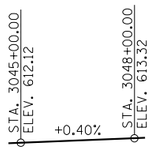


PROFILE GRADE I-57 NB

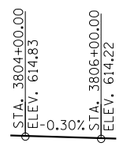
PROFILE GRADE I-57 SB



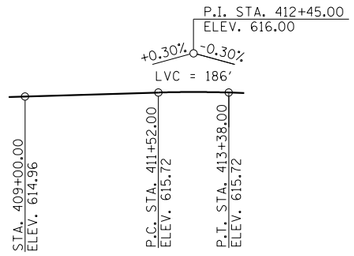
PROFILE GRADE RAMP D



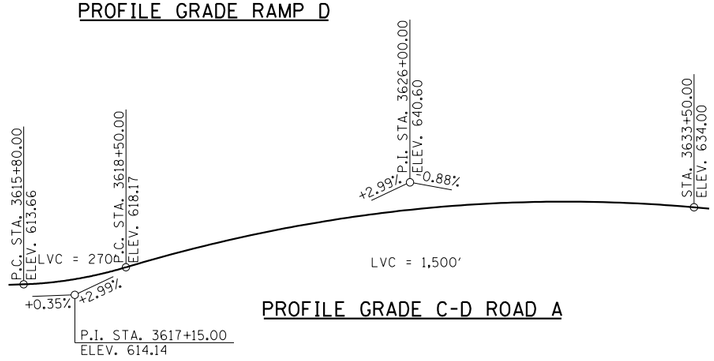
PROFILE GRADE RAMP B



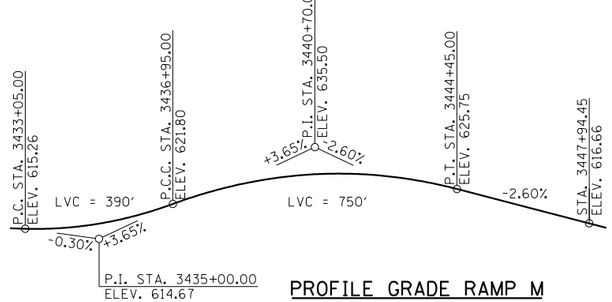
PROFILE GRADE RAMP L



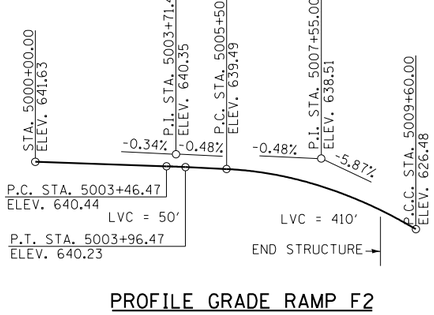
PROFILE GRADE I-294



PROFILE GRADE C-D ROAD A



PROFILE GRADE RAMP M



PROFILE GRADE RAMP F2

CURVE VEC_A-3

PI STA. = 3618+49.69
E = 1,160,185.64
Δ = 3° 27′ 28″ (RT)
D = 0° 42′ 04″
R = 8,171.00′
T = 246.63′
L = 493.11′
E = 3.72′
e = N.C.
T.R. = N/A
S.E. RUN = N/A
P.R.C. STA. = 3616+03.05
P.T. STA. = 3620+96.17

CURVE VEC_B-5

PI STA. = 3042+63.97
Δ = 127° 16′ 04″ (LT)
D = 6° 45′ 52″
R = 847.00′
T = 1,708.81′
L = 1881.39′
E = 1,060.21′
e = 5.9%
ENTERING CURVE:
T.R. = N/A
S.E. RUN = 196.5′
EXITING CURVE:
T.R. = N/A
S.E. RUN = 196.5′
P.C. STA. = 3025+55.16
P.T. STA. = 3044+36.55

CURVE VEC_C-3

PI STA. = 3249+08.47
Δ = 19° 35′ 58″ (RT)
D = 7° 43′ 18″
R = 742.00′
T = 128.16′
L = 253.82′
E = 10.99′
e = 6.0%
ENTERING CURVE:
T.R. = N/A
S.E. RUN = 149.9′
EXITING CURVE:
T.R. = 50.0′
S.E. RUN = 199.8′
P.C. STA. = 3247+80.31
P.T. STA. = 3250+34.13

CURVE VEC_C-4

PI STA. = 3258+38.65
Δ = 13° 20′ 17″ (LT)
D = 7° 43′ 18″
R = 742.00′
T = 86.76′
L = 172.73′
E = 5.05′
e = 6.0%
ENTERING CURVE:
T.R. = N/A
S.E. RUN = 196.5′
EXITING CURVE:
T.R. = N/A
S.E. RUN = 196.5′
P.C. STA. = 3257+51.89
P.C.C. STA. = 3259+24.62

CURVE VEC_C-5

PI STA. = 3260+45.95
Δ = 18° 29′ 38″ (LT)
D = 7° 41′ 18″
R = 745.23′
T = 121.33′
L = 240.54′
E = 9.81′
e = 6.0%
ENTERING CURVE:
T.R. = N/A
S.E. RUN = N/A
EXITING CURVE:
T.R. = N/A
S.E. RUN = N/A
P.C.C. STA. = 3259+24.62
P.C.C. STA. = 3261+65.17

CURVE VEC_C-6

PI STA. = 3274+59.08
Δ = 120° 04′ 09″ (LT)
D = 7° 40′ 49″
R = 746.00′
T = 1,293.91′
L = 1,563.32′
E = 747.56′
e = 6.0%
ENTERING CURVE:
T.R. = N/A
S.E. RUN = N/A
EXITING CURVE:
T.R. = N/A
S.E. RUN = 177.6′
P.C.C. STA. = 3261+65.17
P.T. STA. = 3277+28.49

CURVE VEC_D-1

PI STA. = 3910+90.22
Δ = 105° 27′ 13″ (RT)
D = 13° 42′ 26″
R = 418.00′
T = 549.24′
L = 769.34′
E = 272.21′
e = 6.0%
ENTERING CURVE:
T.R. = N/A
S.E. RUN = 115.9′
EXITING CURVE:
T.R. = N/A
S.E. RUN = 130.4′
P.C. STA. = 3905+40.99
P.T. STA. = 3913+10.32

CURVE VEC_F2-1

PI STA. = 5002+21.45
Δ = 32° 27′ 56″ (LT)
D = 7° 31′ 59″
R = 760.60′
T = 221.45′
L = 430.98′
E = 31.58′
e = 6.0%
ENTERING CURVE:
T.R. = N/A
S.E. RUN = N/A
EXITING CURVE:
T.R. = 44.4′
S.E. RUN = 177.6′
P.C. STA. = 5000+00.00
P.T. STA. = 5004+30.98

CURVE VEC_M-1

PI STA. = 3438+30.63
Δ = 64° 32′ 17″ (RT)
D = 6° 45′ 52″
R = 847.00′
T = 534.81′
L = 954.06′
E = 154.71′
e = 6.0%
ENTERING CURVE:
T.R. = N/A
S.E. RUN = 144.0′
EXITING CURVE:
T.R. = 54.0′
S.E. RUN = 216.0″
P.C. STA. = 3432+95.82
P.T. STA. = 3442+49.88

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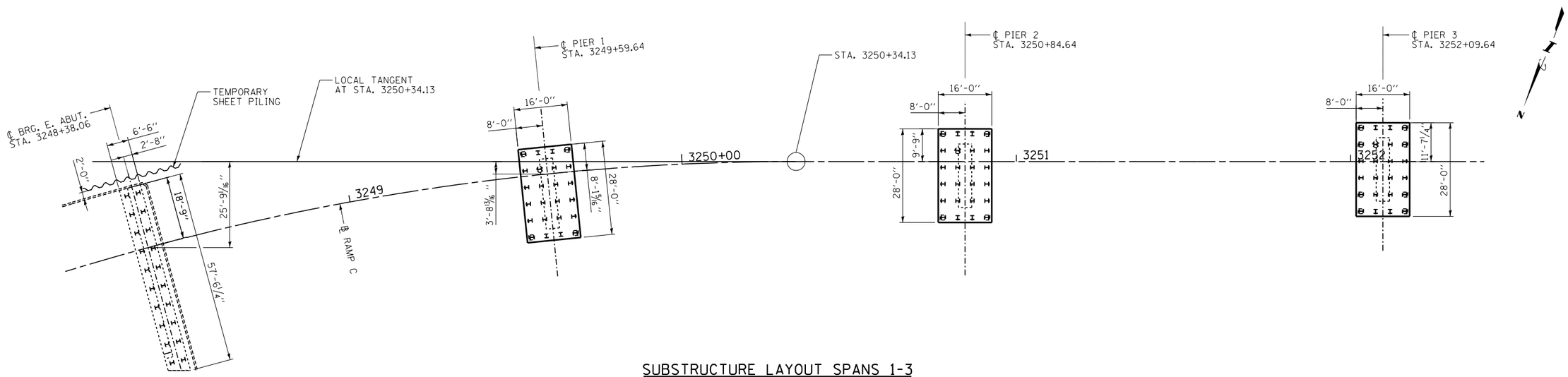
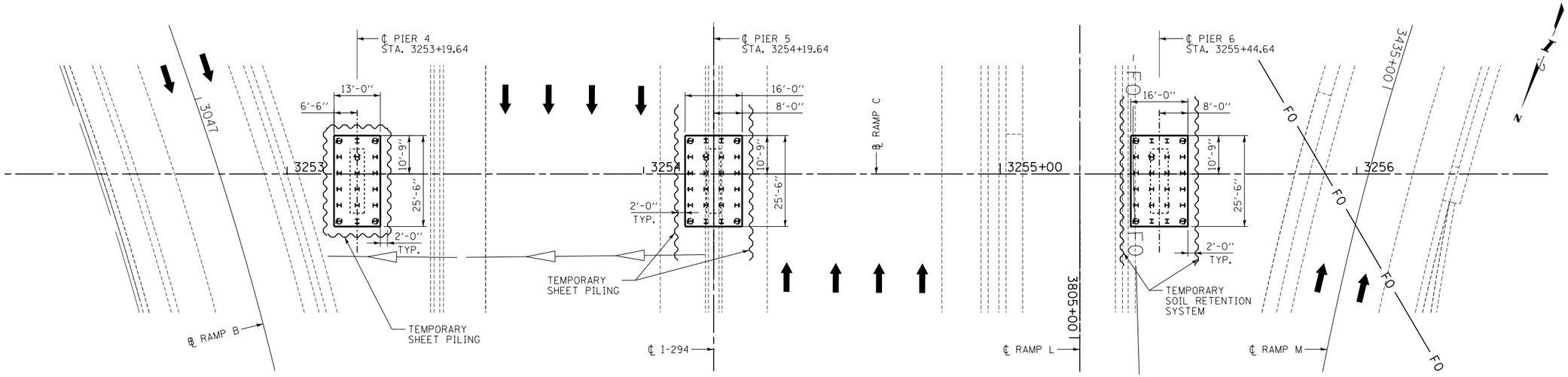
3/30/2020

DRAWN BY . . . SP	DATE . 4-3-2020	TY·LIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	REVISIONS NO. / DATE / DESCRIPTION	CONTRACT I-19-4495 I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 116) PROFILES	SHEET 8C - 5 OF 234 280 OF 606
CHECKED BY . . . SP	SCALE . NONE					



SUBSTRUCTURE LAYOUT SPANS 1-3



SUBSTRUCTURE LAYOUT SPANS 4-6

NOTES:

1. FOR TANGENT OFFSETS OF EACH FOOTING, SEE SHEET SC-4.
2. PIERS AT 90° AT TANGENT SECTIONS. PIERS ARE RADIAL TO RAMP C CURVED SECTIONS U.N.O.
3. FOR EXCAVATION SUPPORT DETAILS, SEE SHEET SC-10.

DRAWN BY . . . . JM	DATE . 4-3-2020	TYLIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	REVISIONS NO.	DATE	DESCRIPTION	CONTRACT I-19-4495	SHEET SC - 6 OF 234
CHECKED BY . . . SP	SCALE . NONE						I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 116) SUBSTRUCTURE LAYOUT UNIT 1	281 OF 606

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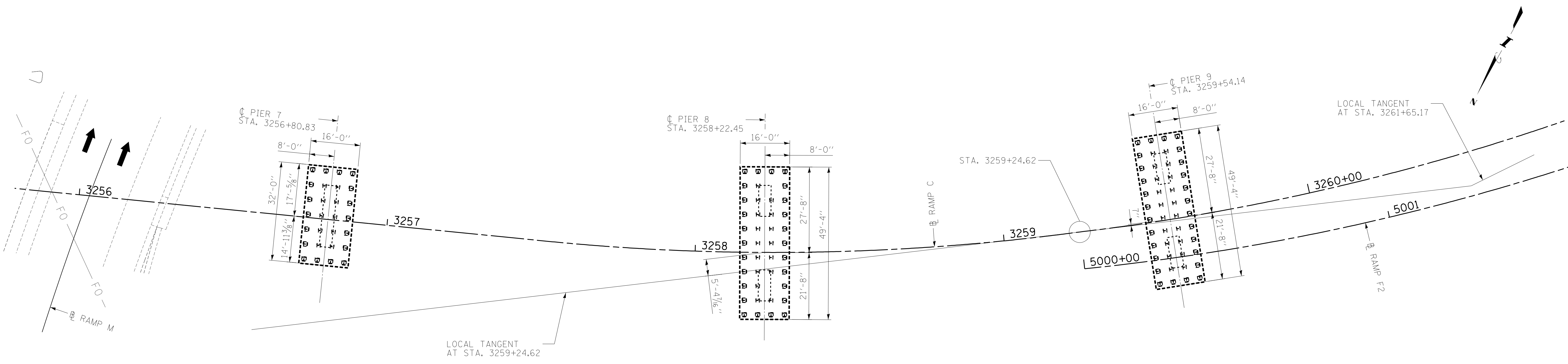
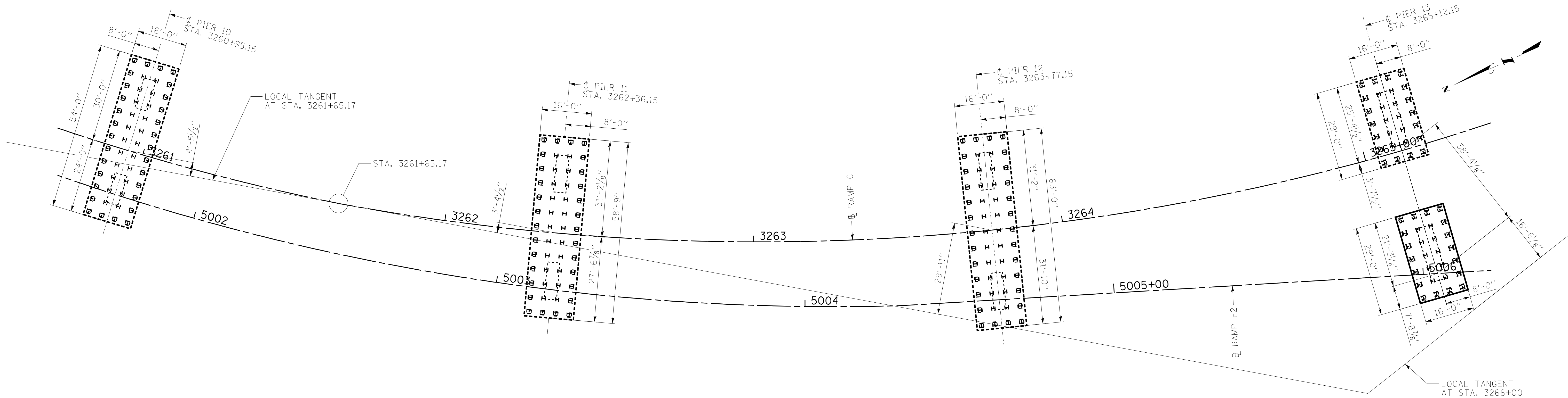
3/30/2020



SUBSTRUCTURE LAYOUT SPANS 7-10



SUBSTRUCTURE LAYOUT SPANS 11-13

NOTES:

1. FOR TANGENT OFFSETS OF EACH FOOTING, SEE SHEET SC-4.
2. PIERS AT 90° AT TANGENT SECTIONS. PIERS ARE RADIAL TO RAMP C CURVED SECTIONS U.N.O.

DRAWN BY JM	DATE 4-3-2020	TYLININTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	CONTRACT I-19-4495
CHECKED BY SP	SCALE NONE			I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 116) SUBSTRUCTURE LAYOUT UNIT 2

REVISIONS

NO.	DATE	DESCRIPTION

SHEET SC - 7 OF 234

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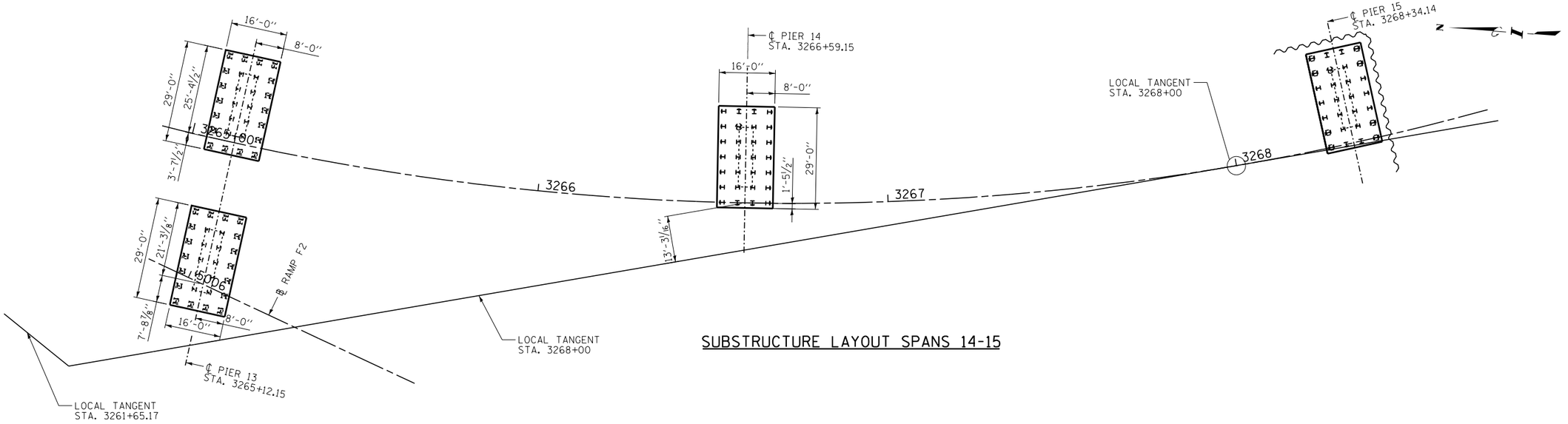
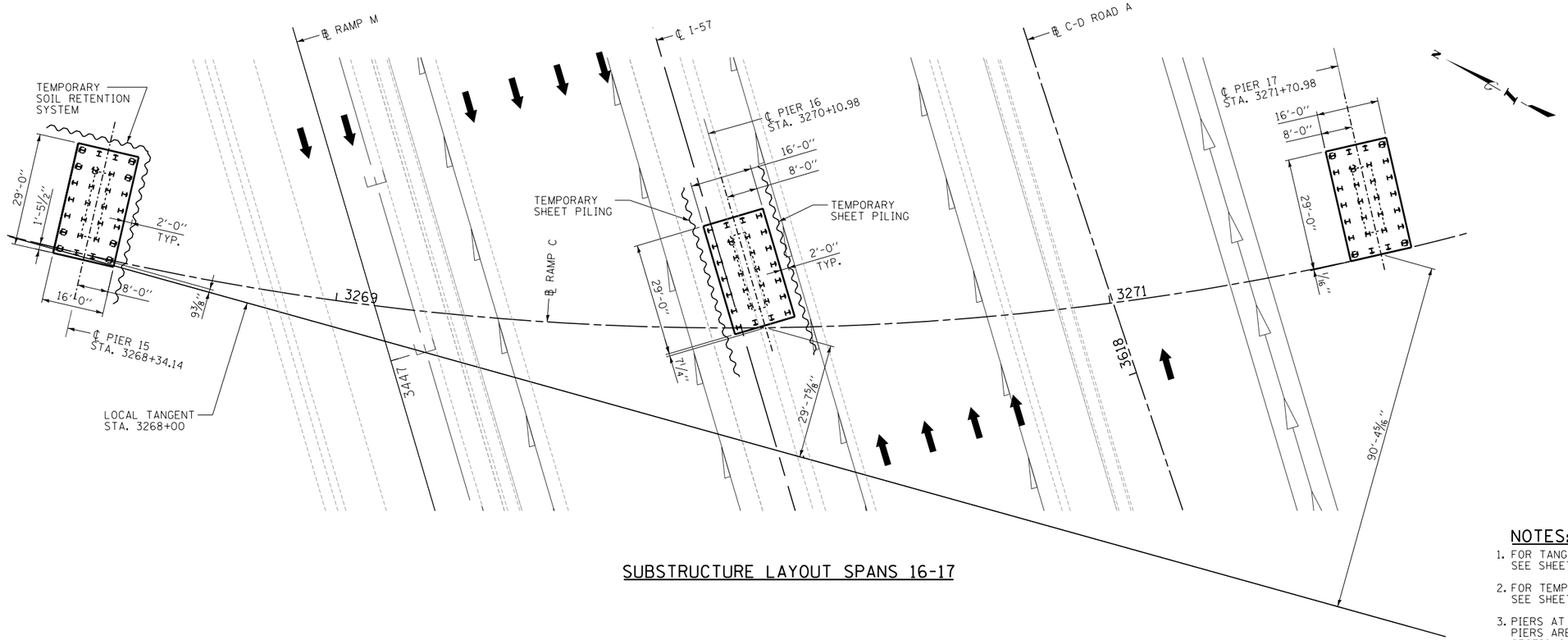


SUBSTRUCTURE LAYOUT SPANS 14-15



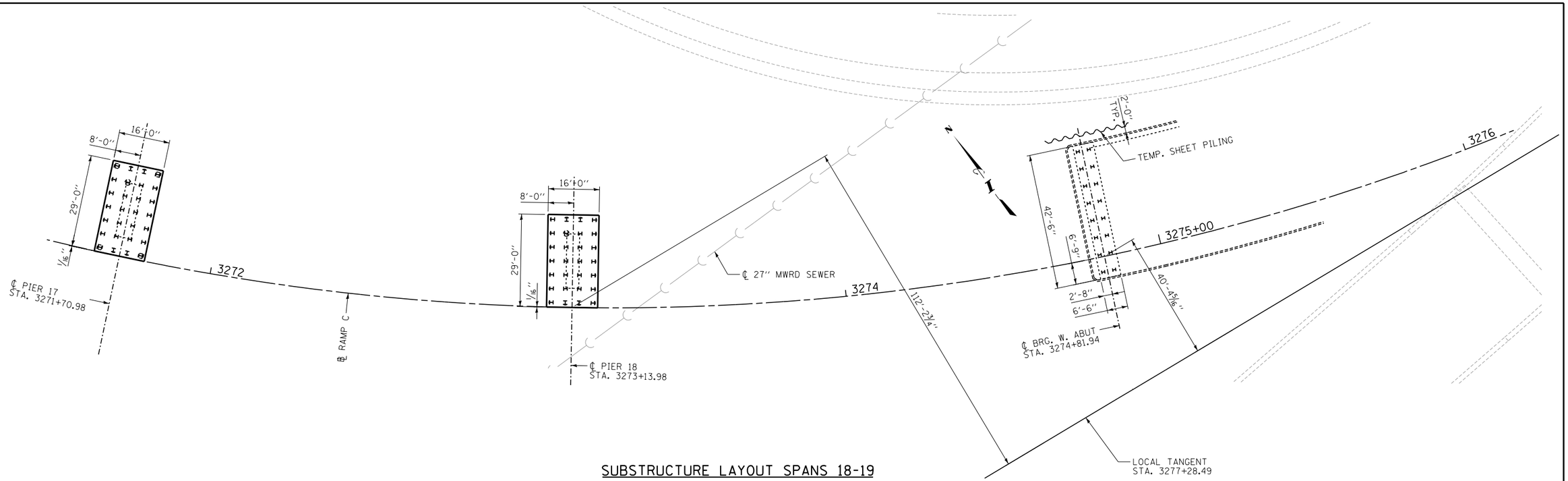
SUBSTRUCTURE LAYOUT SPANS 16-17

NOTES:

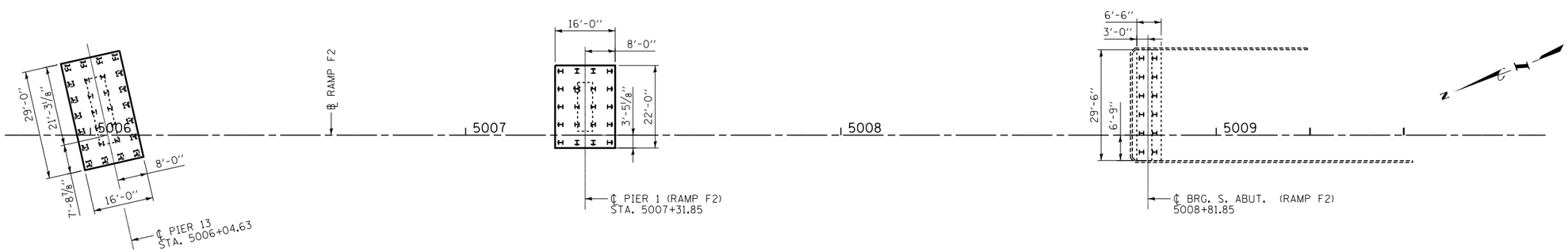
1. FOR TANGENT OFFSETS OF EACH FOOTING, SEE SHEET SC-4.
2. FOR TEMPORARY SHEET PILING DETAILS, SEE SHEET SC-10.
3. PIERS AT 90° AT TANGENT SECTIONS. PIERS ARE RADIAL TO RAMP C CURVED SECTIONS U.N.O.

P:\60254057-294_5-9\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\016210I.5_unit3-fig1layout.dgn
3/30/2020

DRAWN BY . . . JM	DATE . 4-3-2020	TYLIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	REVISIONS NO. / DATE / DESCRIPTION	CONTRACT I-19-4495 I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 116) SUBSTRUCTURE LAYOUT UNIT 3	SHEET SC - 8 OF 234 283 OF 606
CHECKED BY . . . SP	SCALE . NONE					



SUBSTRUCTURE LAYOUT SPANS 18-19



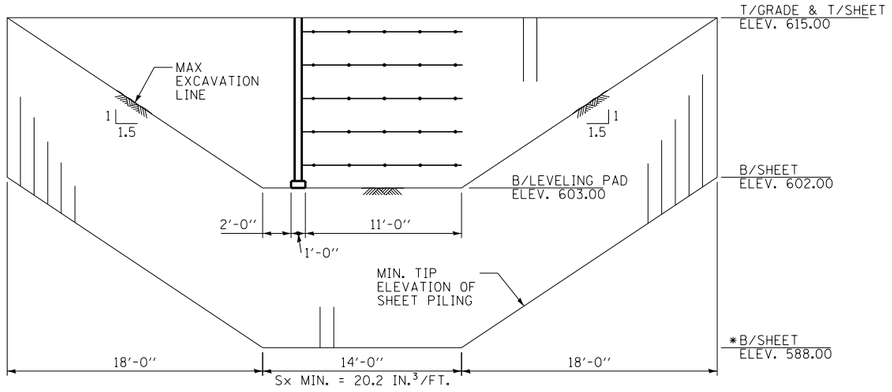
SUBSTRUCTURE LAYOUT SPANS 20-21

NOTES:

1. FOR TANGENT OFFSETS OF EACH FOOTING, SEE SHEET SC-4.
2. FOR EXCAVATION SUPPORT DETAILS, SEE SHEET SC-10.
3. PIERS AT 90° AT TANGENT SECTIONS. PIERS ARE RADIAL TO RAMP C CURVED SECTIONS U.N.O.

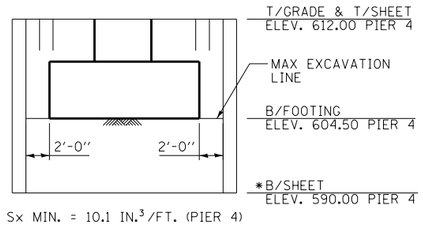
DRAWN BY . . . JM	DATE . 4-3-2020	T·Y·LIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	REVISIONS NO.	DATE	DESCRIPTION	CONTRACT I-19-4495	SHEET SC - 9 OF 234
CHECKED BY . . . SP	SCALE . NONE						I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 116) SUBSTRUCTURE LAYOUT UNITS 4 + 5	284 OF 606

P:\682540\57-294.5-9\STRUCTURAL\RESTART.2018\Ramp C over I-57 and I-294\016210l.5_unit4-fig1layout.dgn
3/30/2020



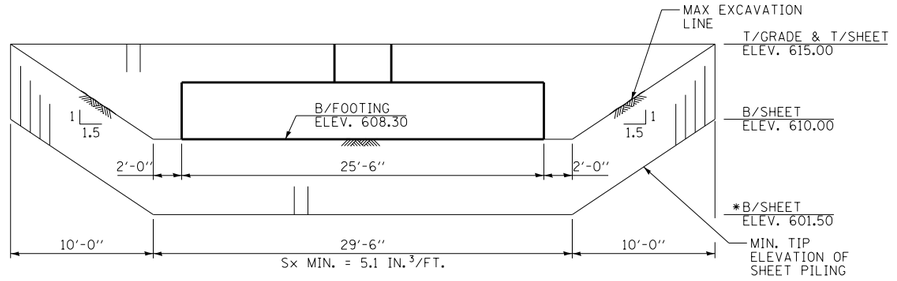
E. ABUT. TEMPORARY SHEET PILING

*SEE NOTE 1



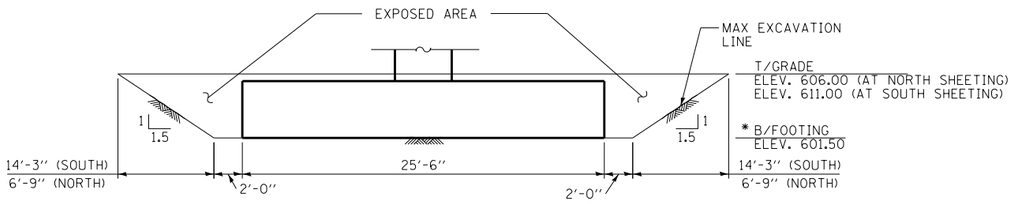
PIER 4 TEMPORARY SHEET PILING

*SEE NOTE 1



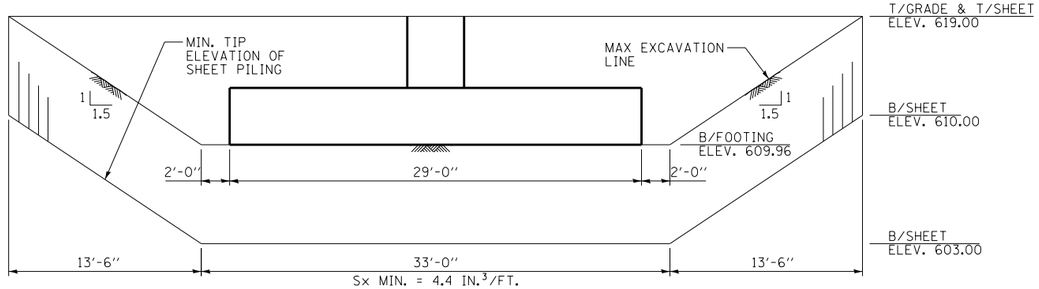
PIER 5 TEMPORARY SHEET PILING

*SEE NOTE 1



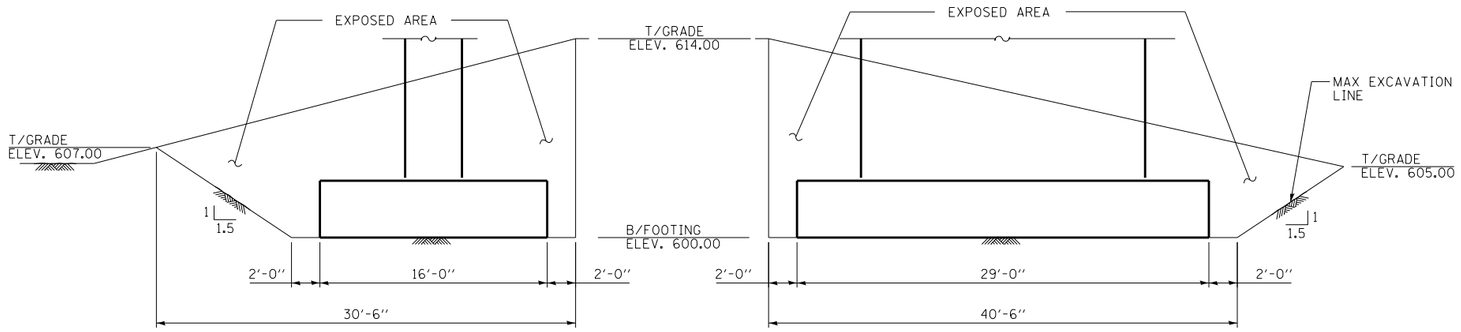
PIER 6 TEMPORARY SOIL RETENTION SYSTEM

*SEE NOTE 2



PIER 16 TEMPORARY SHEET PILING

*SEE NOTE 1

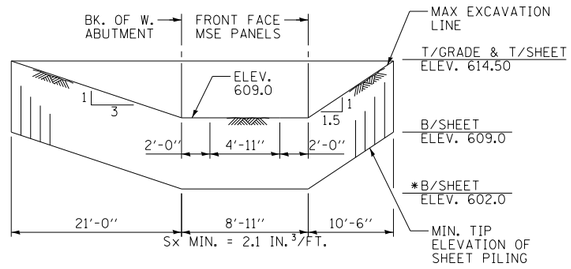


ALONG EAST FACE

ALONG SOUTH FACE

PIER 15 TEMPORARY SOIL RETENTION SYSTEM

*SEE NOTE 2



W. ABUT. TEMPORARY SHEET PILING

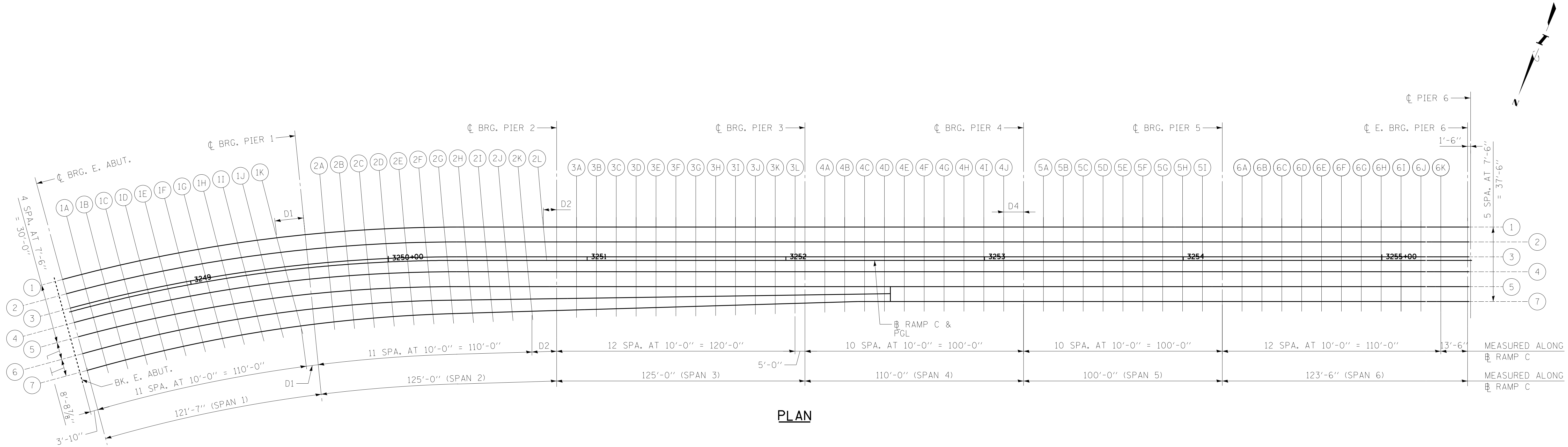
*SEE NOTE 1

NOTES:

1. IF THE CONTRACTOR CHOOSES TO ALTER THE TEMPORARY CANTILEVERED SHEET PILING DESIGN REQUIREMENTS SHOWN ON THE PLANS, A DESIGN SUBMITTAL INCLUDING PLAN DETAILS AND CALCULATIONS WILL BE REQUIRED FOR REVIEW AND ACCEPTANCE BY THE ENGINEER.
2. A CANTILEVERED SHEET PILING DESIGN DOES NOT APPEAR FEASIBLE AND ADDITIONAL MEMBERS OR OTHER RETENTION SYSTEMS MAY BE NECESSARY. THE CONTRACTOR SHALL SUBMIT A TEMPORARY SOIL RETENTION SYSTEM DESIGN INCLUDING PLAN DETAILS AND CALCULATIONS FOR REVIEW AND ACCEPTANCE BY THE ENGINEER.
3. SEE SHEETS SC-06, SC-08, & SC-09 FOR PERIMETER OF SHEETS.

P:\682540\57-294,5-91\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\Q162101.5_TmpShnPile.dgn
3/30/2020

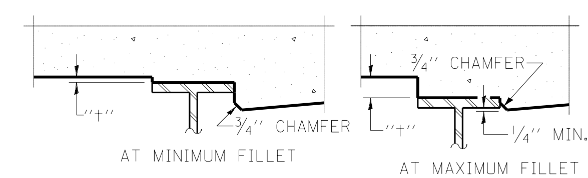
DRAWN BY . . . . VS	DATE . 4-3-2020	TY·LIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	REVISIONS NO. / DATE / DESCRIPTION	CONTRACT I-19-4495	SHEET SC - 10 OF 234
CHECKED BY . . . . SP	SCALE . NONE				I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 116) EXCAVATION SUPPORT DETAILS	285 OF 606



PLAN

END OF SPAN DIMENSIONS

GIRDER	D1	D2
1	14'-4"	6'-8¼"
2	13'-1¼"	5'-11 3/16"
3	11'-10½"	5'-2⅛"
4	10'-7¾"	14'-5⅛"
5	9'-5"	13'-8 1/16"
6	8'-2"	13'-0⅝"
7	6'-10⅝"	12'-5 3/16"



TO DETERMINE "t": AFTER ALL STRUCTURAL STEEL HAS BEEN ERECTED, ELEVATIONS OF THE TOP FLANGES OF THE GIRDERS SHALL BE TAKEN AT INTERVALS SHOWN ON THIS SHEET. THESE ELEVATIONS SUBTRACTED FROM THE "THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION AND GRINDING" SHOWN ON SHEETS SC -12 TO SC-14 OF 234, MINUS 8¼" SLAB THICKNESS, EQUALS THE FILLET HEIGHTS "t" ABOVE TOP FLANGE OF GIRDERS .

THE SLAB IS TO BE GROUND AFTER CURING TO ACHIEVE SMOOTHNESS, BUT THE SLAB IS NOT TO BE GROUND TO ELEVATIONS BELOW THE "THEORETICAL GRADE ELEVATIONS" SHOWN ON SHEETS SC-12 TO SC-14 OF 234. FOR GRINDING THE DECK, SEE SPECIAL PROVISIONS.

FILLET HEIGHTS

NOTES:

1. WORK THIS SHEET WITH SHEETS SC-12 THRU SC-15 OF 234.
2. FOR SPAN LENGTHS, SEE FRAMING PLAN.
3. FOR GIRDER DEAD LOAD DEFLECTION DIAGRAMS SEE SHEET SC-15.

GIRDER 1

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION & GRINDING
BK. E. ABUT.	3248+34.31	-16.750	632.00	632.02
CL. JT. E. ABUT.	3248+37.19	-16.750	632.07	632.09
CL BRG.	3248+38.06	-16.750	632.09	632.11
1A	3248+47.84	-16.750	632.31	632.38
1B	3248+57.62	-16.750	632.48	632.60
1C	3248+67.40	-16.750	632.66	632.81
1D	3248+77.18	-16.750	632.83	633.01
1E	3248+86.96	-16.750	633.01	633.19
1F	3248+96.74	-16.750	633.19	633.37
1G	3249+06.52	-16.750	633.36	633.53
1H	3249+16.31	-16.750	633.54	633.68
1I	3249+26.09	-16.750	633.71	633.83
1J	3249+35.87	-16.750	633.89	633.97
1K	3249+45.65	-16.750	634.07	634.12
CL BRG. PIER 1	3249+59.64	-16.750	634.32	634.34
2A	3249+69.42	-16.750	634.49	634.51
2B	3249+79.20	-16.750	634.67	634.69
2C	3249+88.98	-16.750	634.85	634.87
2D	3249+98.77	-16.750	635.02	635.05
2E	3250+08.55	-16.750	635.20	635.24
2F	3250+18.33	-16.750	635.36	635.41
2G	3250+28.11	-16.750	635.49	635.54
2H	3250+37.97	-16.750	635.61	635.66
2I	3250+47.97	-16.750	635.73	635.77
2J	3250+57.97	-16.750	635.85	635.88
2K	3250+67.97	-16.750	635.96	635.98
2L	3250+77.97	-16.750	636.06	636.08
CL BRG. PIER 2	3250+84.64	-16.750	636.12	636.14
3A	3250+94.64	-16.750	636.22	636.25
3B	3251+04.64	-16.750	636.30	636.35
3C	3251+14.64	-16.750	636.39	636.45
3D	3251+24.64	-16.750	636.46	636.54
3E	3251+34.64	-16.750	636.53	636.62
3F	3251+44.64	-16.750	636.60	636.69
3G	3251+54.64	-16.750	636.66	636.75
3H	3251+64.64	-16.750	636.71	636.79
3I	3251+74.64	-16.750	636.76	636.83
3J	3251+84.64	-16.750	636.81	636.86
3K	3251+94.64	-16.750	636.85	636.89
3L	3252+04.64	-16.750	636.90	636.92
CL BRG. PIER 3	3252+09.64	-16.750	636.92	636.94
4A	3252+19.64	-16.750	636.96	636.99
4B	3252+29.64	-16.750	637.01	637.04
4C	3252+39.64	-16.750	637.05	637.10
4D	3252+49.64	-16.750	637.10	637.15
4E	3252+59.64	-16.750	637.14	637.20
4F	3252+69.64	-16.750	637.20	637.27
4G	3252+79.64	-16.750	637.30	637.36
4H	3252+89.64	-16.750	637.39	637.45
4I	3252+99.64	-16.750	637.49	637.53
4J	3253+09.64	-16.750	637.58	637.62
CL BRG. PIER 4	3253+19.64	-16.750	637.68	637.70
5A	3253+29.64	-16.750	637.77	637.79
5B	3253+39.64	-16.750	637.87	637.88
5C	3253+49.64	-16.750	637.96	637.98
5D	3253+59.64	-16.750	638.06	638.07
5E	3253+69.64	-16.750	638.15	638.16
5F	3253+79.64	-16.750	638.25	638.26
5G	3253+89.64	-16.750	638.34	638.35
5H	3253+99.64	-16.750	638.44	638.44
5I	3254+09.64	-16.750	638.53	638.54
CL BRG. PIER 5	3254+19.64	-16.750	638.63	638.65
6A	3254+29.64	-16.750	638.72	638.77
6B	3254+39.64	-16.750	638.82	638.89
6C	3254+49.64	-16.750	638.91	639.02
6D	3254+59.64	-16.750	639.01	639.15
6E	3254+69.64	-16.750	639.10	639.27
6F	3254+79.64	-16.750	639.20	639.38
6G	3254+89.64	-16.750	639.29	639.47
6H	3254+99.64	-16.750	639.39	639.56
6I	3255+09.64	-16.750	639.48	639.64
6J	3255+19.64	-16.750	639.58	639.70
6K	3255+29.64	-16.750	639.67	639.76
CL W. BRG. PIER 6	3255+43.14	-16.750	639.80	639.82
CL EXP. JT. & PIER 6	3255+44.64	-16.750	639.82	639.84

GIRDER 2

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION & GRINDING
BK. E. ABUT.	3248+34.27	-9.250	631.58	631.60
CL. JT. E. ABUT.	3248+37.18	-9.250	631.64	631.66
CL BRG.	3248+38.06	-9.250	631.66	631.68
1A	3248+47.93	-9.250	631.86	631.92
1B	3248+57.81	-9.250	632.04	632.14
1C	3248+67.68	-9.250	632.21	632.35
1D	3248+77.56	-9.250	632.39	632.55
1E	3248+87.43	-9.250	632.57	632.74
1F	3248+97.31	-9.250	632.75	632.92
1G	3249+07.18	-9.250	632.92	633.08
1H	3249+17.06	-9.250	633.10	633.24
1I	3249+26.93	-9.250	633.28	633.39
1J	3249+36.81	-9.250	633.46	633.54
1K	3249+46.68	-9.250	633.64	633.68
CL BRG. PIER 1	3249+59.64	-9.250	633.87	633.89
2A	3249+69.52	-9.250	634.05	634.06
2B	3249+79.39	-9.250	634.22	634.24
2C	3249+89.27	-9.250	634.40	634.42
2D	3249+99.14	-9.250	634.58	634.61
2E	3250+09.02	-9.250	634.76	634.80
2F	3250+18.89	-9.250	634.93	634.97
2G	3250+28.77	-9.250	635.08	635.12
2H	3250+38.70	-9.250	635.22	635.27
2I	3250+48.70	-9.250	635.37	635.40
2J	3250+58.70	-9.250	635.50	635.53
2K	3250+68.70	-9.250	635.63	635.66
2L	3250+78.70	-9.250	635.76	635.78
CL BRG. PIER 2	3250+84.64	-9.250	635.83	635.85
3A	3250+94.64	-9.250	635.94	635.97
3B	3251+04.64	-9.250	636.05	636.10
3C	3251+14.64	-9.250	636.16	636.22
3D	3251+24.64	-9.250	636.26	636.33
3E	3251+34.64	-9.250	636.35	636.44
3F	3251+44.64	-9.250	636.44	636.53
3G	3251+54.64	-9.250	636.52	636.61
3H	3251+64.64	-9.250	636.59	636.67
3I	3251+74.64	-9.250	636.66	636.73
3J	3251+84.64	-9.250	636.74	636.79
3K	3251+94.64	-9.250	636.80	636.84
3L	3252+04.64	-9.250	636.87	636.90
CL BRG. PIER 3	3252+09.64	-9.250	636.90	636.93
4A	3252+19.64	-9.250	636.97	637.00
4B	3252+29.64	-9.250	637.04	637.07
4C	3252+39.64	-9.250	637.11	637.15
4D	3252+49.64	-9.250	637.17	637.23
4E	3252+59.64	-9.250	637.24	637.30
4F	3252+69.64	-9.250	637.32	637.38
4G	3252+79.64	-9.250	637.41	637.47
4H	3252+89.64	-9.250	637.51	637.56
4I	3252+99.64	-9.250	637.60	637.64
4J	3253+09.64	-9.250	637.70	637.73
CL BRG. PIER 4	3253+19.64	-9.250	637.79	637.81
5A	3253+29.64	-9.250	637.89	637.90
5B	3253+39.64	-9.250	637.98	638.00
5C	3253+49.64	-9.250	638.08	638.09
5D	3253+59.64	-9.250	638.17	638.19
5E	3253+69.64	-9.250	638.27	638.28
5F	3253+79.64	-9.250	638.36	638.37
5G	3253+89.64	-9.250	638.46	638.46
5H	3253+99.64	-9.250	638.55	638.56
5I	3254+09.64	-9.250	638.65	638.66
CL BRG. PIER 5	3254+19.64	-9.250	638.74	638.76
6A	3254+29.64	-9.250	638.84	638.88
6B	3254+39.64	-9.250	638.93	639.01
6C	3254+49.64	-9.250	639.03	639.13
6D	3254+59.64	-9.250	639.12	639.26
6E	3254+69.64	-9.250	639.22	639.38
6F	3254+79.64	-9.250	639.31	639.49
6G	3254+89.64	-9.250	639.41	639.59
6H	3254+99.64	-9.250	639.50	639.68
6I	3255+09.64	-9.250	639.60	639.75
6J	3255+19.64	-9.250	639.69	639.81
6K	3255+29.64	-9.250	639.79	639.87
CL W. BRG. PIER 6	3255+43.14	-9.250	639.92	639.94
CL EXP. JT. & PIER 6	3255+44.64	-9.250	639.93	639.95

GIRDER 3

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION & GRINDING
BK. E. ABUT.	3248+34.23	-1.750	631.15	631.18
CL. JT. E. ABUT.	3248+37.17	-1.750	631.21	631.23
CL BRG.	3248+38.06	-1.750	631.23	631.25
1A	3248+48.03	-1.750	631.41	631.47
1B	3248+58.01	-1.750	631.59	631.69
1C	3248+67.98	-1.750	631.77	631.90
1D	3248+77.96	-1.750	631.95	632.10
1E	3248+87.93	-1.750	632.13	632.29
1F	3248+97.90	-1.750	632.31	632.47
1G	3249+07.88	-1.750	632.49	632.63
1H	3249+17.85	-1.750	632.67	632.79
1I	3249+27.82	-1.750	632.85	632.94
1J	3249+37.80	-1.750	633.03	633.10
1K	3249+47.77	-1.750	633.20	633.25
CL BRG. PIER 1	3249+59.64	-1.750	633.42	633.44
2A	3249+69.61	-1.750	633.60	633.61
2B	3249+79.59	-1.750	633.78	633.80
2C	3249+89.56	-1.750	633.96	633.98
2D	3249+99.54	-1.750	634.14	634.17
2E	3250+09.51	-1.750	634.32	634.36
2F	3250+19.48	-1.750	634.49	634.54
2G	3250+29.46	-1.750	634.67	634.71
2H	3250+39.46	-1.750	634.84	634.88
2I	3250+49.46	-1.750	635.00	635.04
2J	3250+59.46	-1.750	635.16	635.19
2K	3250+69.46	-1.750	635.31	635.34
2L	3250+79.46	-1.750	635.46	635.48
CL BRG. PIER 2	3250+84.64	-1.750	635.53	635.55
3A	3250+94.64	-1.750	635.67	635.70
3B	3251+04.64	-1.750	635.80	635.85
3C	3251+14.64	-1.750	635.93	635.99
3D	3251+24.64	-1.750	636.05	636.12
3E	3251+34.64	-1.750	636.17	636.25
3F	3251+44.64	-1.750	636.28	636.36
3G	3251+54.64	-1.750	636.38	636.47
3H	3251+64.64	-1.750	636.48	636.56
3I	3251+74.64	-1.750	636.57	636.64
3J	3251+84.64	-1.750	636.67	636.72
3K	3251+94.64	-1.750	636.76	636.79
3L	3252+04.64	-1.750	636.84	636.87
CL BRG. PIER 3	3252+09.64	-1.750	636.89	636.91
4A	3252+19.64	-1.750	636.98	637.00
4B	3252+29.64	-1.750	637.07	637.10
4C	3252+39.64	-1.750	637.16	637.20
4D	3252+49.64	-1.750	637.25	637.30
4E	3252+59.64	-1.750	637.34	637.40
4F	3252+69.64	-1.750	637.43	637.49
4G	3252+79.64	-1.750	637.52	637.58
4H	3252+89.64	-1.750	637.62	637.67
4I	3252+99.64	-1.750	637.71	637.76
4J	3253+09.64	-1.750	637.81	637.84
CL BRG. PIER 4	3253+19.64	-1.750	637.90	637.93
5A	3253+29.64	-1.750	638.00	638.02
5B	3253+39.64	-1.750	638.09	638.11
5C	3253+49.64	-1.750	638.19	638.21
5D	3253+59.64	-1.750	638.28	638.30
5E	3253+69.64	-1.750	638.38	638.39
5F	3253+79.64	-1.750	638.47	638.48
5G	3253+89.64	-1.750	638.57	638.58
5H	3253+99.64	-1.750	638.66	638.67
5I	3254+09.64	-1.750	638.76	638.77
CL BRG. PIER 5	3254+19.64	-1.750	638.85	638.88
6A	3254+29.64	-1.750	638.95	638.99
6B	3254+39.64	-1.750	639.04	639.12
6C	3254+49.64	-1.750	639.14	639.25
6D	3254+59.64	-1.750	639.23	639.37
6E	3254+69.64	-1.750	639.33	639.49
6F	3254+79.64	-1.750	639.42	639.60
6G	3254+89.64	-1.750	639.52	639.70
6H	3254+99.64	-1.750	639.61	639.79
6I	3255+09.64	-1.750	639.71	639.86
6J	3255+19.64	-1.750	639.80	639.93
6K	3255+29.64	-1.750	639.90	639.98
CL W. BRG. PIER 6	3255+43.14	-1.750	640.03	640.05
CL EXP. JT. & PIER 6	3255+44.64	-1.750	640.04	640.06

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3/30/2020

DRAWN BY . . . . JM . . . . . .
CHECKED BY . . . SP . . . . . .

DATE . 4-3-2020 . . .
SCALE . NONE . . . . . .

TY·LIN INTERNATIONAL

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
UNIT1-TOP OF SLAB ELEV. - 1

SHEET SC - 12 OF 234

287 OF 606

℄ & P.G.L. RAMP C

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION & GRINDING
BK. E. ABUT.	3248+34.22	0.000	631.06	631.08
CL. JT. E. ABUT.	3248+37.17	0.000	631.11	631.13
CL BRG.	3248+38.06	0.000	631.13	631.15
1A	3248+48.06	0.000	631.31	631.37
1B	3248+58.06	0.000	631.49	631.58
1C	3248+68.06	0.000	631.67	631.79
1D	3248+78.06	0.000	631.85	631.99
1E	3248+88.06	0.000	632.03	632.18
1F	3248+98.06	0.000	632.21	632.36
1G	3249+08.06	0.000	632.39	632.53
1H	3249+18.06	0.000	632.57	632.69
1I	3249+28.06	0.000	632.75	632.84
1J	3249+38.06	0.000	632.93	632.99
1K	3249+48.06	0.000	633.11	633.15
CL BRG. PIER 1	3249+59.64	0.000	633.31	633.33
2A	3249+69.64	0.000	633.49	633.51
2B	3249+79.64	0.000	633.67	633.69
2C	3249+89.64	0.000	633.85	633.88
2D	3249+99.64	0.000	634.03	634.07
2E	3250+09.64	0.000	634.21	634.25
2F	3250+19.64	0.000	634.39	634.44
2G	3250+29.64	0.000	634.57	634.62
2H	3250+39.64	0.000	634.75	634.79
2I	3250+49.64	0.000	634.92	634.95
2J	3250+59.64	0.000	635.08	635.11
2K	3250+69.64	0.000	635.24	635.26
2L	3250+79.64	0.000	635.39	635.40
CL BRG. PIER 2	3250+84.64	0.000	635.46	635.48
3A	3250+94.64	0.000	635.61	635.64
3B	3251+04.64	0.000	635.74	635.79
3C	3251+14.64	0.000	635.88	635.93
3D	3251+24.64	0.000	636.00	636.07
3E	3251+34.64	0.000	636.12	636.20
3F	3251+44.64	0.000	636.24	636.32
3G	3251+54.64	0.000	636.35	636.43
3H	3251+64.64	0.000	636.45	636.53
3I	3251+74.64	0.000	636.55	636.61
3J	3251+84.64	0.000	636.65	636.70
3K	3251+94.64	0.000	636.74	636.78
3L	3252+04.64	0.000	636.84	636.86
CL BRG. PIER 3	3252+09.64	0.000	636.89	636.91
4A	3252+19.64	0.000	636.98	637.01
4B	3252+29.64	0.000	637.08	637.11
4C	3252+39.64	0.000	637.17	637.21
4D	3252+49.64	0.000	637.27	637.32
4E	3252+59.64	0.000	637.36	637.42
4F	3252+69.64	0.000	637.46	637.52
4G	3252+79.64	0.000	637.55	637.61
4H	3252+89.64	0.000	637.65	637.70
4I	3252+99.64	0.000	637.74	637.78
4J	3253+09.64	0.000	637.84	637.87
CL BRG. PIER 4	3253+19.64	0.000	637.93	637.95
5A	3253+29.64	0.000	638.03	638.04
5B	3253+39.64	0.000	638.12	638.14
5C	3253+49.64	0.000	638.22	638.23
5D	3253+59.64	0.000	638.31	638.33
5E	3253+69.64	0.000	638.41	638.42
5F	3253+79.64	0.000	638.50	638.51
5G	3253+89.64	0.000	638.60	638.60
5H	3253+99.64	0.000	638.69	638.70
5I	3254+09.64	0.000	638.79	638.80
CL BRG. PIER 5	3254+19.64	0.000	638.88	638.90
6A	3254+29.64	0.000	638.98	639.02
6B	3254+39.64	0.000	639.07	639.15
6C	3254+49.64	0.000	639.17	639.27
6D	3254+59.64	0.000	639.26	639.40
6E	3254+69.64	0.000	639.36	639.52
6F	3254+79.64	0.000	639.45	639.63
6G	3254+89.64	0.000	639.55	639.73
6H	3254+99.64	0.000	639.64	639.81
6I	3255+09.64	0.000	639.74	639.89
6J	3255+19.64	0.000	639.83	639.95
6K	3255+29.64	0.000	639.93	640.01
CL W. BRG. PIER 6	3255+43.14	0.000	640.05	640.08
CL EXP. JT. & PIER 6	3255+44.64	0.000	640.07	640.09

GIRDER 4

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION & GRINDING
BK. E. ABUT.	3248+34.20	5.750	630.73	630.75
CL. JT. E. ABUT.	3248+37.17	5.750	630.78	630.80
CL BRG.	3248+38.06	5.750	630.80	630.82
1A	3248+48.14	5.750	630.96	631.02
1B	3248+58.21	5.750	631.14	631.24
1C	3248+68.29	5.750	631.32	631.45
1D	3248+78.37	5.750	631.51	631.65
1E	3248+88.45	5.750	631.69	631.84
1F	3248+98.53	5.750	631.87	632.02
1G	3249+08.60	5.750	632.05	632.19
1H	3249+18.68	5.750	632.23	632.35
1I	3249+28.76	5.750	632.41	632.50
1J	3249+38.84	5.750	632.59	632.66
1K	3249+48.92	5.750	632.78	632.82
CL BRG. PIER 1	3249+59.64	5.750	632.97	632.99
2A	3249+69.72	5.750	633.15	633.17
2B	3249+79.80	5.750	633.33	633.35
2C	3249+89.87	5.750	633.51	633.54
2D	3249+99.95	5.750	633.69	633.73
2E	3250+10.03	5.750	633.88	633.91
2F	3250+20.11	5.750	634.06	634.11
2G	3250+30.19	5.750	634.26	634.31
2H	3250+40.22	5.750	634.45	634.50
2I	3250+50.22	5.750	634.64	634.68
2J	3250+60.22	5.750	634.82	634.85
2K	3250+70.22	5.750	634.99	635.02
CL BRG. PIER 2	3250+84.64	5.750	635.24	635.26
3A	3250+94.64	5.750	635.40	635.43
3B	3251+04.64	5.750	635.55	635.59
3C	3251+14.64	5.750	635.70	635.76
3D	3251+24.64	5.750	635.84	635.91
3E	3251+34.64	5.750	635.98	636.06
3F	3251+44.64	5.750	636.11	636.20
3G	3251+54.64	5.750	636.24	636.32
3H	3251+64.64	5.750	636.36	636.44
3I	3251+74.64	5.750	636.48	636.54
3J	3251+84.64	5.750	636.59	636.64
3K	3251+94.64	5.750	636.71	636.74
3L	3252+04.64	5.750	636.82	636.84
CL BRG. PIER 3	3252+09.64	5.750	636.87	636.90
4A	3252+19.64	5.750	636.99	637.01
4B	3252+29.64	5.750	637.10	637.13
4C	3252+39.64	5.750	637.21	637.25
4D	3252+49.64	5.750	637.32	637.37
4E	3252+59.64	5.750	637.44	637.49
4F	3252+69.64	5.750	637.54	637.60
4G	3252+79.64	5.750	637.64	637.69
4H	3252+89.64	5.750	637.73	637.78
4I	3252+99.64	5.750	637.83	637.87
4J	3253+09.64	5.750	637.92	637.95
CL BRG. PIER 4	3253+19.64	5.750	638.02	638.04
5A	3253+29.64	5.750	638.11	638.13
5B	3253+39.64	5.750	638.21	638.22
5C	3253+49.64	5.750	638.30	638.32
5D	3253+59.64	5.750	638.40	638.41
5E	3253+69.64	5.750	638.49	638.51
5F	3253+79.64	5.750	638.59	638.60
5G	3253+89.64	5.750	638.68	638.69
5H	3253+99.64	5.750	638.78	638.78
5I	3254+09.64	5.750	638.87	638.88
CL BRG. PIER 5	3254+19.64	5.750	638.97	638.99
6A	3254+29.64	5.750	639.06	639.11
6B	3254+39.64	5.750	639.16	639.23
6C	3254+49.64	5.750	639.25	639.36
6D	3254+59.64	5.750	639.35	639.48
6E	3254+69.64	5.750	639.44	639.60
6F	3254+79.64	5.750	639.54	639.71
6G	3254+89.64	5.750	639.63	639.81
6H	3254+99.64	5.750	639.73	639.90
6I	3255+09.64	5.750	639.82	639.98
6J	3255+19.64	5.750	639.92	640.04
6K	3255+29.64	5.750	640.01	640.10
CL W. BRG. PIER 6	3255+43.14	5.750	640.14	640.16
CL EXP. JT. & PIER 6	3255+44.64	5.750	640.15	640.18

GIRDER 5

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION & GRINDING
BK. E. ABUT.	3248+34.16	13.250	630.31	630.33
CL. JT. E. ABUT.	3248+37.16	13.250	630.35	630.37
CL BRG.	3248+38.06	13.250	630.37	630.39
1A	3248+48.24	13.250	630.51	630.57
1B	3248+58.42	13.250	630.70	630.79
1C	3248+68.60	13.250	630.88	631.00
1D	3248+78.79	13.250	631.06	631.20
1E	3248+88.97	13.250	631.25	631.39
1F	3248+99.15	13.250	631.43	631.57
1G	3249+09.33	13.250	631.61	631.74
1H	3249+19.52	13.250	631.80	631.90
1I	3249+29.70	13.250	631.98	632.06
1J	3249+39.88	13.250	632.16	632.22
1K	3249+50.06	13.250	632.35	632.38
CL BRG. PIER 1	3249+59.64	13.250	632.52	632.54
2A	3249+69.82	13.250	632.70	632.72
2B	3249+80.00	13.250	632.89	632.90
2C	3249+90.19	13.250	633.07	633.09
2D	3250+00.37	13.250	633.25	633.28
2E	3250+10.55	13.250	633.43	633.47
2F	3250+20.73	13.250	633.64	633.68
2G	3250+30.92	13.250	633.86	633.90
2H	3250+40.94	13.250	634.07	634.12
2I	3250+50.94	13.250	634.28	634.32
2J	3250+60.94	13.250	634.48	634.51
2K	3250+70.94	13.250	634.68	634.70
CL BRG. PIER 2	3250+84.64	13.250	634.94	634.96
3A	3250+94.64	13.250	635.12	635.15
3B	3251+04.64	13.250	635.30	635.34
3C	3251+14.64	13.250	635.47	635.53
3D	3251+24.64	13.250	635.64	635.70
3E	3251+34.64	13.250	635.80	635.87
3F	3251+44.64	13.250	635.95	636.03
3G	3251+54.64	13.250	636.10	636.18
3H	3251+64.64	13.250	636.25	636.32
3I	3251+74.64	13.250	636.38	636.44
3J	3251+84.64	13.250	636.52	636.57
3K	3251+94.64	13.250	636.66	636.69
3L	3252+04.64	13.250	636.79	636.82
CL BRG. PIER 3	3252+09.64	13.250	636.86	636.88
4A	3252+19.64	13.250	636.99	637.02
4B	3252+29.64	13.250	637.13	637.16
4C	3252+39.64	13.250	637.26	637.30
4D	3252+49.64	13.250	637.40	637.45
4E	3252+59.64	13.250	637.53	637.59
4F	3252+69.64	13.250	637.65	637.71
4G	3252+79.64	13.250	637.75	637.80
4H	3252+89.64	13.250	637.84	637.89
4I	3252+99.64	13.250	637.94	637.98
4J	3253+09.64	13.250	638.03	638.06
CL BRG. PIER 4	3253+19.64	13.250	638.13	638.15
5A	3253+29.64	13.250	638.22	638.24
5B	3253+39.64	13.250	638.32	638.34
5C	3253+49.64	13.250	638.41	638.43
5D	3253+59.64	13.250	638.51	638.53
5E	3253+69.64	13.250	638.60	638.62
5F	3253+79.64	13.250	638.70	638.71
5G	3253+89.64	13.250	638.79	638.80
5H	3253+99.64	13.250	638.89	638.90
5I	3254+09.64	13.250	638.98	639.00
CL BRG. PIER 5	3254+19.64	13.250	639.08	639.10
6A	3254+29.64	13.250	639.17	639.22
6B	3254+39.64	13.250	639.27	639.34
6C	3254+49.64	13.250	639.36	639.47
6D	3254+59.64	13.250	639.46	639.59
6E	3254+69.64	13.250	639.55	639.71
6F	3254+79.64	13.250	639.65	639.83
6G	3254+89.64	13.250	639.74	639.92
6H	3254+99.64	13.250	639.84	640.01
6I	3255+09.64	13.250	639.93	640.09
6J	3255+19.64	13.250	640.03	640.15
6K	3255+29.64	13.250	640.12	640.21
CL W. BRG. PIER 6	3255+43.14	13.250	640.25	640.27
CL EXP. JT. & PIER 6	3255+44.64	13.250	640.27	640.29

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3/30/2020

DRAWN BY . . . . JM . . . . . | DATE . 4-3-2020 . . . | TY·LIN INTERNATIONAL

CHECKED BY . . . SP . . . . . | SCALE . NONE . . . . . |

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

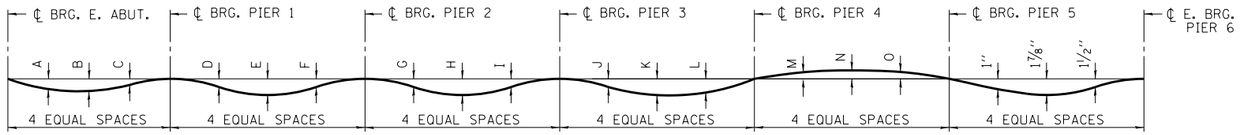
I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
UNIT1-TOP OF SLAB ELEV. - 2

GIRDER 6

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION & GRINDING
BK. E. ABUT.	3248+34.11	22.017	629.82	629.84
CL. JT. E. ABUT.	3248+37.15	21.998	629.85	629.87
CL BRG.	3248+38.06	21.990	629.86	629.89
1A	3248+48.36	21.894	630.00	630.05
1B	3248+58.66	21.797	630.19	630.28
1C	3248+68.96	21.699	630.38	630.49
1D	3248+79.26	21.600	630.57	630.70
1E	3248+89.55	21.500	630.76	630.89
1F	3248+99.84	21.399	630.95	631.08
1G	3249+10.13	21.297	631.14	631.26
1H	3249+20.41	21.194	631.34	631.43
1I	3249+30.69	21.091	631.53	631.60
1J	3249+40.97	20.986	631.72	631.77
1K	3249+51.24	20.881	631.91	631.94
CL BRG. PIER 1	3249+59.64	20.794	632.07	632.09
2A	3249+69.93	20.687	632.31	632.33
2B	3249+72.77	20.579	632.50	632.52
2C	3249+83.05	20.470	632.51	632.53
2D	3249+93.33	20.361	632.70	632.73
2E	3250+03.60	20.251	632.89	632.93
2F	3250+13.87	20.140	633.08	633.12
2G	3250+24.14	20.028	633.32	633.36
2H	3250+34.19	19.889	633.57	633.61
2I	3250+44.18	19.741	633.81	633.84
2J	3250+54.16	19.593	634.04	634.07
2K	3250+64.15	19.444	634.26	634.29
CL BRG. PIER 2	3250+84.64	19.251	634.70	634.72
3A	3250+94.64	19.102	634.91	634.94
3B	3251+04.64	18.954	635.11	635.15
3C	3251+14.64	18.806	635.30	635.36
3D	3251+24.64	18.657	635.49	635.55
3E	3251+34.64	18.509	635.67	635.74
3F	3251+44.64	18.360	635.84	635.92
3G	3251+54.64	18.212	636.01	636.09
3H	3251+64.64	18.064	636.17	636.24
3I	3251+74.64	17.915	636.33	636.38
3J	3251+84.64	17.767	636.48	636.53
3K	3251+94.64	17.618	636.63	636.66
3L	3252+04.64	17.470	636.78	636.80
CL BRG. PIER 3	3252+09.64	17.369	636.85	636.87
4A	3252+19.64	14.248	637.00	637.02
4B	3252+29.64	17.099	637.15	637.17
4C	3252+39.64	16.651	637.29	637.33
4D	3252+49.64	16.802	637.43	637.48

GIRDER 7

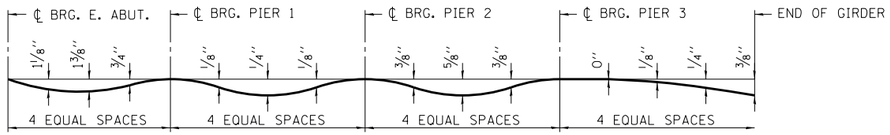
LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION & GRINDING
BK. E. ABUT.	3248+34.06	30.772	629.33	629.35
CL. JT. E. ABUT.	3248+37.13	30.743	629.35	629.38
CL BRG.	3248+38.06	30.730	629.36	629.38
1A	3248+48.49	30.577	629.48	629.53
1B	3248+58.91	30.418	629.68	629.76
1C	3248+69.33	30.252	629.87	629.98
1D	3248+79.75	30.079	630.07	630.19
1E	3248+90.16	29.899	630.27	630.39
1F	3249+00.56	29.713	630.47	630.59
1G	3249+10.96	29.521	630.67	630.77
1H	3249+21.35	29.322	630.86	630.96
1I	3249+31.74	29.117	631.06	631.13
1J	3249+42.11	28.905	631.26	631.31
1K	3249+52.48	28.687	631.46	631.49
CL BRG. PIER 1	3249+59.64	28.533	631.60	631.62
2A	3249+70.04	28.303	631.80	631.82
2B	3249+80.43	28.068	632.00	632.02
2C	3249+90.81	27.826	632.21	632.23
2D	3250+01.19	27.578	632.41	632.44
2E	3250+11.55	27.324	632.61	632.65
2F	3250+21.91	27.064	632.86	632.90
2G	3250+32.27	26.798	633.14	633.18
2H	3250+42.30	26.507	633.41	633.45
2I	3250+52.27	26.211	633.67	633.71
2J	3250+62.24	25.915	633.92	633.95
2K	3250+71.94	25.620	634.16	634.19
CL BRG. PIER 2	3250+84.64	25.251	634.47	634.49
3A	3250+94.64	24.954	634.70	634.72
3B	3251+04.64	24.658	634.92	634.96
3C	3251+14.64	24.361	635.13	635.18
3D	3251+24.64	24.064	635.34	635.40
3E	3251+34.64	23.768	635.54	635.61
3F	3251+44.64	23.471	635.73	635.81
3G	3251+54.64	23.175	635.92	635.99
3H	3251+64.64	22.878	636.10	636.16
3I	3251+74.64	22.581	636.27	636.32
3J	3251+84.64	22.285	636.44	636.48
3K	3251+94.64	21.988	636.60	636.63
3L	3252+04.64	21.691	636.76	636.79
CL BRG. PIER 3	3252+09.64	21.543	636.84	636.86
4A	3252+19.64	21.246	637.00	637.03
4B	3252+29.64	20.950	637.16	637.19
4C	3252+39.64	20.750	637.32	637.35
4D	3252+49.64	20.750	637.47	637.52
4E	3252+59.64	20.750	637.63	637.68
4F	3252+69.64	20.750	637.77	637.82
4G	3252+79.64	20.750	637.86	637.91
4H	3252+89.64	20.750	637.96	638.00
4I	3252+99.64	20.750	638.05	638.09
4J	3253+09.64	20.750	638.15	638.18
CL BRG. PIER 4	3253+19.64	20.750	638.24	638.26
5A	3253+29.64	20.750	638.34	638.36
5B	3253+39.64	20.750	638.43	638.45
5C	3253+49.64	20.750	638.53	638.55
5D	3253+59.64	20.750	638.62	638.64
5E	3253+69.64	20.750	638.72	638.73
5F	3253+79.64	20.750	638.81	638.82
5G	3253+89.64	20.750	638.91	638.91
5H	3253+99.64	20.750	639.00	639.01
5I	3254+09.64	20.750	639.10	639.11
CL BRG. PIER 5	3254+19.64	20.750	639.19	639.21
6A	3254+29.64	20.750	639.29	639.33
6B	3254+39.64	20.750	639.38	639.46
6C	3254+49.64	20.750	639.48	639.58
6D	3254+59.64	20.750	639.57	639.71
6E	3254+69.64	20.750	639.67	639.83
6F	3254+79.64	20.750	639.76	639.94
6G	3254+89.64	20.750	639.86	640.04
6H	3254+99.64	20.750	639.95	640.12
6I	3255+09.64	20.750	640.05	640.20
6J	3255+19.64	20.750	640.14	640.26
6K	3255+29.64	20.750	640.24	640.32
CL W. BRG. PIER 6	3255+43.14	20.750	640.37	640.39
CL EXP. JT. & PIER 6	3255+44.64	20.750	640.38	640.40



GIRDER	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	1 5/8"	1 7/8"	1"	0"	1/4"	1/8"	1/2"	7/8"	1/2"	1/4"	1/2"	3/8"	1/8"	1/8"	1/4"
2	1 1/2"	1 3/4"	1"	0"	1/4"	1/8"	1/2"	7/8"	1/2"	1/4"	1/2"	3/8"	1/8"	1/8"	1/4"
3	1 3/8"	1 5/8"	7/8"	0"	1/4"	1/8"	1/2"	3/4"	1/2"	1/4"	1/2"	3/8"	0"	1/8"	1/4"
4	1 1/4"	1 1/2"	7/8"	0"	1/4"	1/8"	1/2"	3/4"	1/2"	1/4"	1/2"	3/8"	0"	1/8"	1/8"
5	1 1/8"	1 1/2"	3/4"	0"	1/4"	1/8"	3/8"	3/4"	3/8"	1/8"	3/8"	1/4"	0"	1/8"	1/8"
7	1"	1 1/4"	5/8"	1/8"	1/4"	1/8"	3/8"	5/8"	3/8"	1/8"	3/8"	1/4"	0"	1/8"	1/8"

DEAD LOAD DEFLECTION DIAGRAM - GIRDER 1 THRU 5 & 7

(INCLUDES WEIGHT OF CONCRETE ONLY.)



DEAD LOAD DEFLECTION DIAGRAM - GIRDER 6

(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 AND GRIDING.

P:\682540\57-294.5-9\STRUCTURAL\RESTART.2018\Ramp C over I-57 and I-294\016201.5_unit1-tse04.dgn
3/30/2020

DRAWN BY . . . . JM . . . . .
CHECKED BY . . . SP . . . . .

DATE . 4-3-2020 . . .
SCALE . NONE . . . . .

T·Y·LIN INTERNATIONAL

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

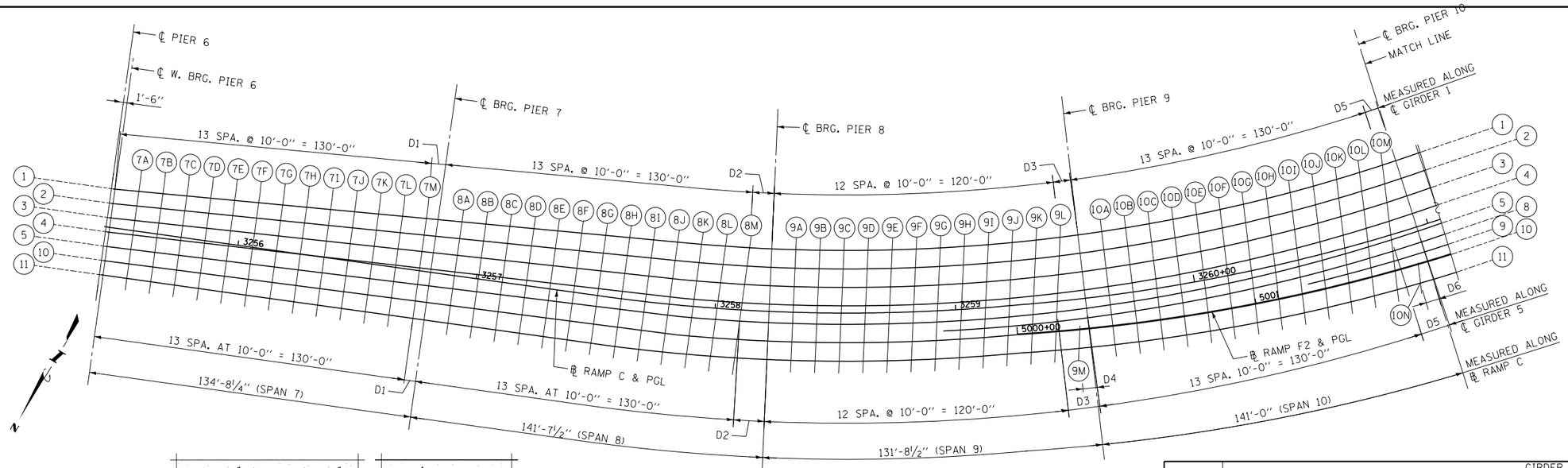
REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

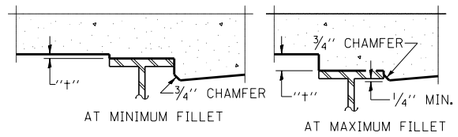
I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
UNIT1-TOP OF SLAB ELEV. - 4

SHEET SC - 15 OF 234

290 OF 606



PLAN

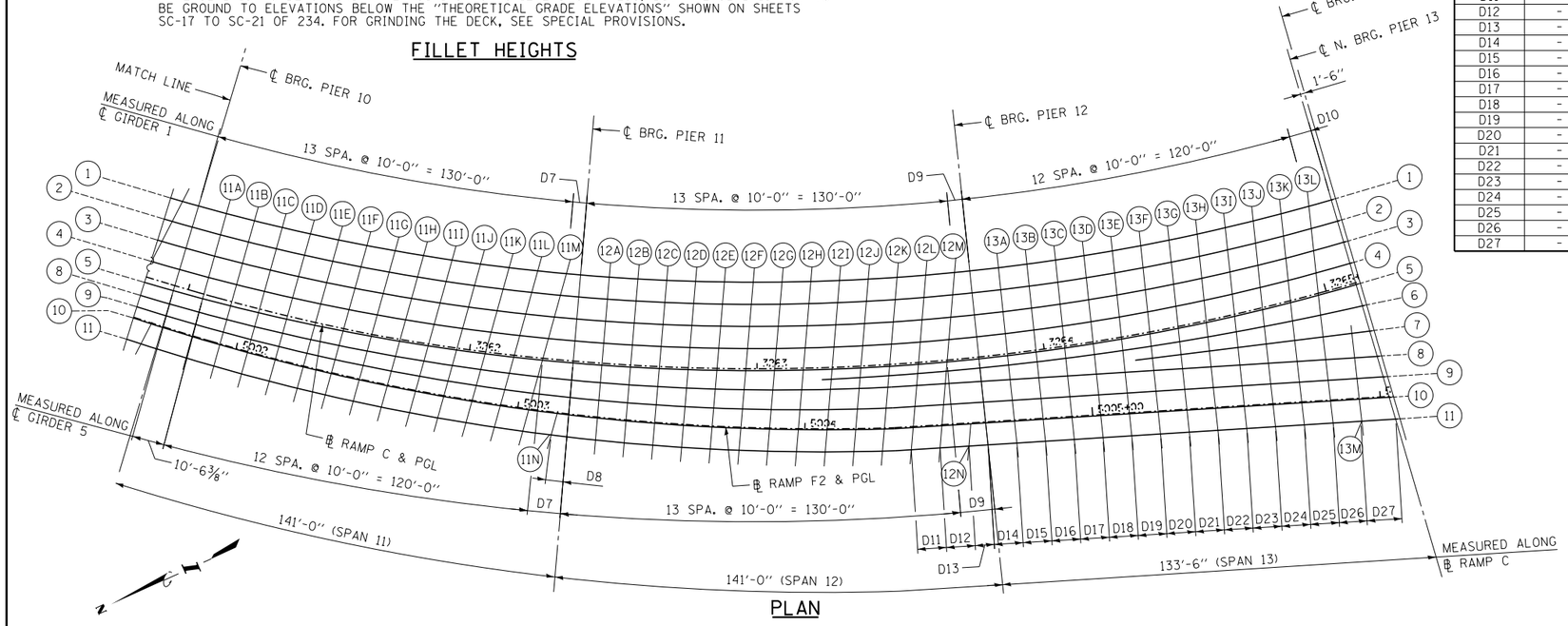


TO DETERMINE "+": AFTER ALL STRUCTURAL STEEL HAS BEEN ERECTED, ELEVATIONS OF THE TOP FLANGES OF THE GIRDERS SHALL BE TAKEN AT INTERVALS SHOWN ON THIS SHEET. THESE ELEVATIONS SUBTRACTED FROM THE "THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION AND GRINDING" SHOWN ON SHEETS SC -17 TO SC-21 OF 234, MINUS 8 1/4" SLAB THICKNESS, EQUALS THE FILLET HEIGHTS "+" ABOVE TOP FLANGE OF GIRDERS.

THE SLAB IS TO BE GROUND AFTER CURING TO ACHIEVE SMOOTHNESS, BUT THE SLAB IS NOT TO BE GROUND TO ELEVATIONS BELOW THE "THEORETICAL GRADE ELEVATIONS" SHOWN ON SHEETS SC-17 TO SC-21 OF 234. FOR GRINDING THE DECK, SEE SPECIAL PROVISIONS.

FILLET HEIGHTS

	GIRDER										
	1	2	3	4	5	6	7	8	9	10	11
D1	4'-9 11/16"	4'-9 1/2"	4'-9 3/16"	4'-8 13/16"	4'-8 1/2"	-	-	-	-	4'-8 3/16"	4'-7 13/16"
D2	9'-2 7/8"	9'-11 3/8"	10'-7 7/8"	11'-4 3/8"	12'-0 13/16"	-	-	-	-	12'-9 5/16"	13'-5 13/16"
D3	7'-6 7/8"	8'-8 15/16"	9'-11 1/4"	11'-2 9/16"	12'-5 3/8"	-	-	13'-1 11/16"	-	-	-
D4	-	-	-	-	-	-	-	-	-	3'-9 13/16"	5'-0 3/16"
D5	5'-9 7/16"	7'-2 7/8"	8'-8 1/4"	10'-1 11/16"	11'-7 1/16"	-	-	12'-5 11/16"	13'-3"	-	-
D6	-	-	-	-	-	-	-	-	-	4'-0 15/16"	5'-6 1/4"
D7	4'-10 11/16"	6'-4"	7'-9 5/16"	9'-2 11/16"	10'-8"	-	-	11'-9 1/4"	12'-10 5/8"	-	-
D8	-	-	-	-	-	-	-	-	-	4'-0 1/2"	5'-5 3/4"
D9	5'-3 15/16"	6'-9 3/8"	8'-2 3/4"	9'-8 1/8"	11'-1 1/2"	11'-8 5/8"	-	12'-6 7/16"	13'-10 5/8"	-	-
D10	8'-0 7/8"	9'-5 1/2"	10'-10 7/16"	12'-2 15/16"	13'-7 1/16"	14'-10 5/8"	-	9'-11 11/16"	9'-11 7/16"	-	-
D11	-	-	-	-	-	-	-	-	-	9'-11 7/8"	10'-0"
D12	-	-	-	-	-	-	-	-	-	10'-0"	10'-0"
D13	-	-	-	-	-	-	-	-	-	5'-2 13/16"	6'-8"
D14	-	-	-	-	-	10'-0"	-	10'-0 1/16"	10'-0 1/16"	10'-0"	
D15	-	-	-	-	-	10'-0"	-	10'-0 1/16"	10'-0 1/16"	10'-0"	
D16	-	-	-	-	-	9'-11 15/16"	-	10'-0"	10'-0"	10'-0"	
D17	-	-	-	-	-	9'-11 15/16"	-	10'-0"	10'-0"	10'-0"	
D18	-	-	-	-	-	9'-11 7/8"	-	9'-11 15/16"	9'-11 15/16"	9'-11 15/16"	
D19	-	-	-	-	-	9'-11 15/16"	-	9'-11 13/16"	9'-11 7/8"	9'-11 15/16"	
D20	-	-	-	-	-	9'-11 3/4"	9'-11 5/8"	9'-11 3/4"	9'-11 13/16"	9'-11 15/16"	10'-0"
D21	-	-	-	-	-	9'-11 5/8"	9'-11 1/2"	9'-11 11/16"	9'-11 3/4"	9'-11 7/8"	
D22	-	-	-	-	-	9'-11 3/16"	9'-11 1/8"	9'-11 3/16"	9'-11 3/4"	9'-11 7/8"	
D23	-	-	-	-	-	9'-11 1/16"	9'-11 1/4"	9'-11 1/2"	9'-11 11/16"	9'-11 13/16"	
D24	-	-	-	-	-	9'-11 5/16"	9'-11 1/16"	9'-11 1/16"	9'-11 5/8"	9'-11 13/16"	
D25	-	-	-	-	-	9'-11 3/16"	9'-10 15/16"	9'-11 5/16"	9'-11 3/16"	9'-11 3/4"	
D26	-	-	-	-	-	-	10'-0 3/4"	10'-0 1/16"	10'-0 1/16"	10'-0 1/4"	
D27	-	-	-	-	-	-	6'-3 1/2"	7'-10 1/16"	9'-1 3/4"	10'-5 1/16"	11'-9 5/16"



PLAN

NOTES:

1. WORK THIS SHEET WITH SHEETS SC-17 THRU SC-21 OF SC-234.
2. FOR SPAN LENGTHS, SEE FRAMING PLAN.
3. FOR GIRDER DEAD LOAD DEFLECTION DIAGRAMS SEE SHEET SC-21.

P:\60254057-294.5-9\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\01602101.5_unit2-tsel\layout.dgn
3/30/2020

DRAWN BY . . . . JM	DATE . 4-3-2020	TY·LIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	REVISIONS NO. / DATE / DESCRIPTION	CONTRACT I-19-4495
CHECKED BY . . . . SP	SCALE . NONE				I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 116) UNIT2-TOP OF SLAB ELEV. LAYOUT

SHEET SC - 16 OF 234

291 OF 606

GIRDER 1

LOCATION	STATION ℄ RAMP C	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION & GRINDING
CL. EXP. JT. & PIER 6	3255+44.64	-15.998	639.83	639.85
CL W. BRG. PIER 6	3255+46.14	-16.065	639.84	639.86
7A	3255+56.13	-16.513	639.93	639.99
7B	3255+66.12	-16.960	640.02	640.13
7C	3255+76.11	-17.408	640.10	640.24
7D	3255+86.10	-17.855	640.19	640.36
7E	3255+96.09	-18.303	640.28	640.46
7F	3256+06.08	-18.750	640.37	640.56
7G	3256+16.07	-19.198	640.45	640.63
7H	3256+26.06	-19.645	640.53	640.69
7I	3256+36.05	-20.093	640.60	640.74
7J	3256+46.04	-20.540	640.67	640.77
7K	3256+56.03	-20.988	640.73	640.80
7L	3256+66.02	-21.435	640.78	640.83
7M	3256+76.01	-21.883	640.78	640.81
CL BRG. PIER 7	3256+80.83	-22.099	640.77	640.79
8A	3256+90.82	-22.546	640.74	640.76
8B	3257+00.81	-22.994	640.71	640.73
8C	3257+10.80	-23.441	640.66	640.70
8D	3257+20.79	-23.889	640.61	640.66
8E	3257+30.78	-24.336	640.55	640.61
8F	3257+40.77	-24.784	640.48	640.55
8G	3257+50.76	-25.231	640.40	640.48
8H	3257+61.07	-25.624	640.32	640.39
8I	3257+71.42	-25.993	640.22	640.29
8J	3257+81.78	-26.000	640.14	640.20
8K	3257+92.15	-26.000	640.05	640.10
8L	3258+02.51	-26.000	639.95	639.99
8M	3258+12.87	-26.000	639.85	639.88
CL BRG. PIER 8	3258+22.45	-26.000	639.78	639.80
9A	3258+32.81	-26.000	639.75	639.78
9B	3258+43.18	-26.000	639.71	639.75
9C	3258+53.54	-26.000	639.67	639.71
9D	3258+63.90	-26.000	639.62	639.67
9E	3258+74.27	-26.000	639.57	639.64
9F	3258+84.63	-26.000	639.53	639.59
9G	3258+94.99	-26.000	639.48	639.55
9H	3259+05.35	-26.000	639.43	639.49
9I	3259+15.72	-26.000	639.39	639.44
9J	3259+26.08	-26.020	639.34	639.38
9K	3259+36.01	-26.189	639.28	639.32
9L	3259+46.37	-26.358	639.23	639.25
CL BRG. PIER 9	3259+54.15	-26.486	639.19	639.21
10A	3259+64.52	-26.656	639.13	639.16
10B	3259+74.89	-26.827	639.07	639.11
10C	3259+85.26	-26.998	639.01	639.07
10D	3259+95.64	-27.170	638.96	639.03
10E	3260+06.02	-27.342	638.90	638.98
10F	3260+16.40	-27.514	638.84	638.93
10G	3260+26.78	-27.687	638.79	638.88
10H	3260+37.17	-27.860	638.73	638.81
10I	3260+47.55	-28.034	638.67	638.75
10J	3260+57.95	-28.207	638.62	638.68
10K	3260+68.34	-28.381	638.56	638.61
10L	3260+78.73	-28.556	638.50	638.53
10M	3260+89.13	-28.730	638.44	638.49
CL BRG. PIER 10	3260+95.15	-28.831	638.41	638.43
11A	3261+05.56	-29.005	638.35	638.38
11B	3261+15.56	-29.180	638.30	638.34
11C	3261+26.37	-29.354	638.24	638.29
11D	3261+36.78	-29.529	638.18	638.25
11E	3261+47.19	-29.703	638.12	638.20
11F	3261+57.61	-29.878	638.07	638.15
11G	3261+68.54	-30.000	638.01	638.10
11H	3261+78.96	-30.000	637.96	638.05
11I	3261+89.38	-30.000	637.92	637.99
11J	3261+99.80	-30.000	637.87	637.93
11K	3262+10.22	-30.000	637.82	637.87
11L	3262+20.64	-30.000	637.78	637.81
11M	3262+31.06	-30.000	637.73	637.79
CL BRG. PIER 11	3262+36.15	-30.000	637.71	637.73
12A	3262+46.57	-30.000	637.66	637.68
12B	3262+56.99	-30.000	637.61	637.64
12C	3262+67.41	-30.000	637.56	637.61
12D	3262+77.83	-30.000	637.52	637.57
12E	3262+88.25	-30.000	637.47	637.53
12F	3262+98.66	-30.000	637.42	637.49
12G	3263+09.08	-30.000	637.38	637.44
12H	3263+19.50	-30.000	637.33	637.39
12I	3263+29.92	-30.000	637.29	637.33
12J	3263+40.34	-30.000	637.25	637.29
12K	3263+50.76	-30.000	637.23	637.26
12L	3263+61.18	-30.000	637.22	637.24
12M	3263+71.60	-30.000	637.22	637.24
CL BRG. PIER 12	3263+77.15	-30.000	637.22	637.25
13A	3263+87.57	-30.000	637.24	637.28
13B	3263+97.99	-30.000	637.27	637.33
13C	3264+08.41	-30.000	637.31	637.39
13D	3264+18.83	-30.000	637.36	637.47
13E	3264+29.25	-30.000	637.42	637.55
13F	3264+39.66	-30.000	637.50	637.63
13G	3264+50.08	-30.000	637.58	637.73
13H	3264+60.50	-30.000	637.67	637.82
13I	3264+70.92	-30.000	637.78	637.91
13J	3264+81.34	-30.000	637.90	638.01
13K	3264+91.76	-30.000	638.03	638.11
13L	3265+02.18	-30.000	638.17	638.22
CL N. BRG. PIER 13	3265+10.65	-30.000	638.29	638.31
CL. EXP. JT. & PIER 13	3265+12.15	-30.000	638.31	638.33

GIRDER 2

LOCATION	STATION ℄ RAMP C	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION & GRINDING
CL. EXP. JT. & PIER 6	3255+44.64	-9.943	639.92	639.94
CL W. BRG. PIER 6	3255+46.14	-10.000	639.93	639.95
7A	3255+56.13	-10.380	640.02	640.09
7B	3255+66.13	-10.760	640.11	640.22
7C	3255+76.12	-11.141	640.20	640.34
7D	3255+86.11	-11.520	640.29	640.45
7E	3255+96.10	-11.900	640.38	640.56
7F	3256+06.09	-12.280	640.47	640.65
7G	3256+16.09	-12.660	640.55	640.73
7H	3256+26.08	-13.041	640.63	640.79
7I	3256+36.07	-13.421	640.70	640.84
7J	3256+46.06	-13.801	640.77	640.87
7K	3256+56.06	-14.181	640.83	640.91
7L	3256+66.05	-14.561	640.89	640.93
7M	3256+76.04	-14.941	640.90	640.93
CL BRG. PIER 7	3256+80.83	-15.123	640.90	640.92
8A	3256+90.82	-15.503	640.90	640.92
8B	3257+00.81	-15.883	640.88	640.91
8C	3257+10.81	-16.264	640.86	640.90
8D	3257+20.80	-16.644	640.83	640.88
8E	3257+30.79	-17.024	640.80	640.85
8F	3257+40.78	-17.404	640.75	640.82
8G	3257+50.78	-17.184	640.72	640.80
8H	3257+60.99	-18.110	640.64	640.72
8I	3257+71.24	-18.298	640.58	640.65
8J	3257+81.49	-18.349	640.52	640.58
8K	3257+91.74	-18.333	640.45	640.50
8L	3258+02.00	-18.333	640.38	640.42
8M	3258+12.25	-18.333	640.30	640.33
CL BRG. PIER 8	3258+22.45	-18.333	640.24	640.26
9A	3258+32.70	-18.333	640.21	640.24
9B	3258+42.96	-18.333	640.17	640.21
9C	3258+53.21	-18.333	640.13	640.17
9D	3258+63.46	-18.333	640.08	640.14
9E	3258+73.72	-18.333	640.04	640.10
9F	3258+83.97	-18.333	639.99	640.06
9G	3258+94.22	-18.333	639.94	640.01
9H	3259+04.47	-18.333	639.90	639.96
9I	3259+14.73	-18.333	639.85	639.91
9J	3259+24.68	-18.340	639.81	639.85
9K	3259+34.93	-18.500	639.75	639.78
9L	3259+45.18	-18.670	639.69	639.72
CL BRG. PIER 9	3259+54.15	-18.820	639.65	639.67
10A	3259+64.41	-18.990	639.59	639.62
10B	3259+74.67	-19.160	639.53	639.57
10C	3259+84.93	-19.320	639.48	639.53
10D	3259+95.20	-19.490	639.42	639.49
10E	3260+05.47	-19.660	639.36	639.45
10F	3260+15.74	-19.840	639.31	639.40
10G	3260+26.01	-20.010	639.25	639.34
10H	3260+36.29	-20.180	639.19	639.28
10I	3260+46.57	-20.350	639.14	639.22
10J	3260+56.85	-20.520	639.08	639.15
10K	3260+67.13	-20.690	639.02	639.07
10L	3260+77.41	-20.870	638.97	639.00
10M	3260+87.70	-21.040	638.91	638.94
CL BRG. PIER 10	3260+95.15	-21.170	638.87	638.89
11A	3261+05.58	-21.340	638.81	638.84
11B	3261+15.88	-24.510	638.58	638.62
11C	3261+26.18	-21.680	638.70	638.75
11D	3261+36.48	-21.860	638.64	638.71
11E	3261+46.78	-22.030	638.59	638.67
11F	3261+57.08	-22.200	638.53	638.62
11G	3261+67.77	-22.330	638.47	638.57
11H	3261+78.08	-22.330	638.43	638.51
11I	3261+88.39	-22.330	638.38	638.46
11J	3261+98.70	-22.330	638.33	638.40
11K	3262+09.01	-22.330	638.29	638.34
11L	3262+19.32	-22.330	638.24	638.28
11M	3262+29.62	-22.330	638.20	638.22
CL BRG. PIER 11	3262+36.15	-22.330	638.17	638.19
12A	3262+46.46	-22.330	638.12	638.14
12B	3262+56.77	-22.330	638.07	638.10
12C	3262+67.08	-22.330	638.03	638.07
12D	3262+77.39	-22.330	637.98	638.03
12E	3262+87.70	-22.330	637.93	637.99
12F	3262+98.00	-22.330	637.89	637.95
12G	3263+08.31	-22.330	637.84	637.90
12H	3263+18.62	-22.330	637.79	637.85
12I	3263+28.93	-22.330	637.75	637.80
12J	3263+39.24	-22.330	637.72	637.75
12K	3263+49.55	-22.330	637.69	637.72
12L	3263+59.86	-22.330	637.68	637.70
12M	3263+70.17	-22.330	637.68	637.70
CL BRG. PIER 12	3263+77.15	-22.330	637.68	637.71
13A	3263+87.46	-22.330	637.70	637.74
13B	3263+97.77	-22.330	637.73	637.79
13C	3264+08.08	-22.330	637.77	637.86
13D	3264+18.39	-22.330	637.82	637.93
13E	3264+28.70	-22.330	637.88	638.01
13F	3264+39.00	-22.330	637.95	638.10
13G	3264+49.31	-22.330	638.03	638.19
13H	3264+59.62	-22.330	638.13	638.29
13I	3264+69.93	-22.330	638.23	638.38
13J	3264+80.24	-22.330	638.35	638.47
13K	3264+90.55	-22.330	638.47	638.57
13L	3265+00.86	-22.330	638.61	638.67
CL N. BRG. PIER 13	3265+10.65	-22.330	638.75	638.77
CL. EXP. JT. & PIER 13	3265+12.15	-22.330	638.77	638.79

GIRDER 3

LOCATION	STATION ℄ RAMP C	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION & GRINDING
CL. EXP. JT. & PIER 6	3255+44.64	-3.953	640.01	640.03
CL W. BRG. PIER 6	3255+46.14	-4.000	640.02	640.04
7A	3255+56.14	-4.310	640.11	640.18
7B	3255+66.13	-4.620	640.20	640.31
7C	3255+76.12	-4.930	640.29	640.43
7D	3255+86.12	-5.240	640.38	640.54
7E	3255+96.11	-5.550	640.47	640.65
7F	3256+06.11	-5.860	640.56	640.75
7G	3256+16.10	-6.170	640.65	640.82
7H	3256+26.10	-6.480	640.73	640.88
7I	3256+36.09	-6.790	640.80	640.93
7J	3256+46.08	-7.100	640.87	640.97
7K	3256+56.08	-7.410	640.93	641.01
7L	3256+66.07	-7.720	640.99	641.04
7M	3256+76.07	-8.030	641.02	641.05
CL BRG. PIER 7	3256+80.83	-8.180	641.03	641.05
8A	3256+90.82	-8.490	641.05	641.07
8B	3257+00.82	-8.800	641.06	641.08
8C	3257+10.81	-9.110	641.06	641.09
8D	3257+20.81	-9.420	641.05	641.10
8E	3257+30.80	-9.730	641.04	641.10
8F	3257+40.80	-10.040	641.02	641.09
8G	3257+50.79	-10.350	640.99	641.07
8H	3257+60.91	-10.610	640.96	641.04
8I	3257+71.06	-10.730	640.92	641.00
8J	3257+81.20	-10.710	640.89	640.95
8K	3257+91.35	-10.670	640.85	640.90
8L	3258+01.49	-10.670	640.80	640.84
8M	3258+11.64	-10.670	640.75	640.78
CL BRG. PIER 8	3258+22.45	-10.670	640.70	640.72
9A	3258+32.60	-10.670	640.67	640.70
9B	3258+42.75	-10.670	640.63	640.67
9C	3258+52.90	-10.670	640.59	640.64
9D	3258+63.05	-10.670	640.54	640.60
9E	3258+73.18	-10.670	640.50	640.57
9F	3258+83.33	-10.670	640.45	640.52
9G	3258+93.47	-10.670	640.41	640.48
9H	3259+03.62	-10.670	640.36	640.43
9I	3259+13.77	-10.670	640.32	640.37
9J	3259+23.92	-10.670	640.27	640.32
9K	3259+33.88	-10.820	640.22	640.25
9L	3259+44.03	-10.980	640.16	640.19
CL BRG. PIER 9	3259+54.15	-11.150	640.11	640.13
10A	3259+64.30	-11.320	640.05	640.08
10B	3259+74.45	-11.480	639.99	640.04
10C	3259+84.61	-11.650	639.94	640.00
10D	3259+94.77	-11.820	639.88	639.95
10E	3260+04.93	-11.990	639.83	639.91
10F	3260+15.09	-12.160	639.77	639.86
10G	3260+25.26	-12.330	639.71	639.81
10H	3260+35.43	-12.500	639.66	639.75
10I	3260+45.60	-12.670	639.60	639.68
10J	3260+55.77	-12.840	639.55	639.61
10K	3260+65.94	-13.010	639.49	639.54
10L	3260+76.12	-13.180	639.43	639.47
10M	3260+86.30	-13.350	639.38	639.40
CL BRG. PIER 10	3260+95.15	-13.500	639.33	639.35
11A	3261+05.33	-13.670	639.27	639.30
11B	3261+15.80	-13.840	639.22	639.26
11C	3261+25.98	-14.010	639.16	639.22
11D	3261+36.18	-14.180	639.10	639.17
11E	3261+46.37	-14.350	639.05	639.13
11F	3261+56.57	-14.520	638.99	639.09
11G	3261+67.01	-14.670	638.94	639.03
11H	3261+77.22	-14.670	638.89	638.98
11I	3261+87.42	-14.670	638.84	638.93
11J	3261+97.62	-14.670	638.80	638.87
11K	3262+07.82	-14.670	638.75	638.81
11L	3262+18.02	-14.670	638.71	638.75
11M	3262+28.22	-14.670	638.66	638.69
CL BRG. PIER 11	3262+36.15	-14.670	638.63	638.65
12A	3262+46.35	-14.670	638.58	638.60
12B	3262+56.55	-14.670	638.53	638.56
12C	3262+66.75	-14.670	638.49	638.53
12D	3262+76.95	-14.670	638.44	638.49
12E	3262+87.15	-14.670	638.40	638.45
12F	3262+97.35	-14.670	638.35	638.41
12G	3263+07.55	-14.670	638.30	638.36
12H	3263+17.75	-14.670	638.26	638.31
12I	3263+27.95	-14.670	638.21	638.26
12J	3263+38.15	-14.670	638.18	638.21
12K	3263+48.35	-14.670	638.15	638.18
12L	3263+58.55	-14.670	638.14	638.16
12M	3263+68.75	-14.670	638.14	638.16
CL BRG. PIER 12	3263+77.15	-14.670	638.14	638.17
13A	3263+87.35	-14.670	638.16	638.20
13B	3263+97.55	-14.670	638.19	638.25
13C	3264+07.75	-14.670	638.23	638.32
13D	3264+17.95	-14.670	638.28	638.40
13E	3264+28.15	-14.670	638.33	638.48
13F	3264+38.35	-14.670	638.41	638.57
13G	3264+48.55	-14.670	638.49	638.66
13H	3264+58.75	-14.670	638.58	638.75
13I	3264+68.95	-14.670	638.68	638.84
13J	3264+79.15	-14.670	638.79	638.93
13K	3264+89.35	-14.670	638.92	639.02
13L	3264+99.55	-14.670	639.05	639.12
CL N. BRG. PIER 13	3265+10.65	-14.670	639.21	639.23
CL. EXP. JT. & PIER 13	3265+12.15	-14.670	639.23	639.25

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3/30/2020

DRAWN BY . . . . JM . . . . . | DATE . 4-3-2020 . . . | CHECKED BY . . SP . . . . . | SCALE . NONE . . . . .

T·Y·LIN INTERNATIONAL

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
UNIT2-TOP OF SLAB ELEV. - 1

SHEET SC - 17 OF 234

292 OF 606

BL AND P.G.L. RAMP C

LOCATION	STATION BL RAMP C	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION & GRINDING
CL. EXP. JT. & PIER 6	3255+44.64	0.000	640.07	640.09
CL W. BRG. PIER 6	3255+46.14	0.000	640.08	640.10
7A	3255+56.14	0.000	640.18	640.24
7B	3255+66.13	0.000	640.27	640.38
7C	3255+76.13	0.000	640.37	640.50
7D	3255+86.13	0.000	640.46	640.62
7E	3255+96.12	0.000	640.56	640.74
7F	3256+06.12	0.000	640.65	640.83
7G	3256+16.12	0.000	640.74	640.91
7H	3256+26.11	0.000	640.82	640.98
7I	3256+36.11	0.000	640.90	641.03
7J	3256+46.11	0.000	640.98	641.08
7K	3256+56.10	0.000	641.04	641.12
7L	3256+66.10	0.000	641.10	641.15
7M	3256+76.10	0.000	641.16	641.19
CL BRG. PIER 7	3256+80.83	0.000	641.19	641.21
8A	3256+90.83	0.000	641.23	641.25
8B	3257+00.82	0.000	641.28	641.30
8C	3257+10.82	0.000	641.31	641.35
8D	3257+20.82	0.000	641.34	641.39
8E	3257+30.81	0.000	641.37	641.43
8F	3257+40.81	0.000	641.39	641.46
8G	3257+50.81	0.000	641.40	641.48
8H	3257+60.81	0.000	641.41	641.49
8I	3257+70.81	0.000	641.42	641.49
8J	3257+80.81	0.000	641.41	641.48
8K	3257+90.81	0.000	641.41	641.46
8L	3258+00.81	0.000	641.39	641.43
8M	3258+10.81	0.000	641.37	641.40
CL BRG. PIER 8	3258+22.45	0.000	641.34	641.36
9A	3258+32.45	0.000	641.31	641.34
9B	3258+42.45	0.000	641.27	641.31
9C	3258+52.45	0.000	641.23	641.28
9D	3258+62.45	0.000	641.19	641.25
9E	3258+72.45	0.000	641.14	641.22
9F	3258+82.45	0.000	641.10	641.18
9G	3258+92.45	0.000	641.05	641.13
9H	3259+02.45	0.000	641.01	641.08
9I	3259+12.45	0.000	640.96	641.02
9J	3259+22.45	0.000	640.92	640.97
9K	3259+32.43	0.000	640.87	640.91
9L	3259+42.41	0.000	640.83	640.85
CL BRG. PIER 9	3259+54.15	0.000	640.77	640.80
10A	3259+64.15	0.000	640.73	640.76
10B	3259+74.14	0.000	640.68	640.73
10C	3259+84.14	0.000	640.64	640.70
10D	3259+94.13	0.000	640.59	640.67
10E	3260+04.12	0.000	640.55	640.64
10F	3260+14.10	0.000	640.50	640.60
10G	3260+24.09	0.000	640.46	640.56
10H	3260+34.07	0.000	640.41	640.51
10I	3260+44.05	0.000	640.37	640.45
10J	3260+54.03	0.000	640.33	640.39
10K	3260+64.00	0.000	640.28	640.33
10L	3260+73.97	0.000	640.24	640.27
10M	3260+83.94	0.000	640.19	640.24
CL BRG. PIER 10	3260+95.15	0.000	640.14	640.16
11A	3261+05.66	0.000	640.09	640.12
11B	3261+15.66	0.000	640.05	640.09
11C	3261+25.65	0.000	640.00	640.06
11D	3261+35.65	0.000	639.96	640.03
11E	3261+45.64	0.000	639.91	640.00
11F	3261+55.63	0.000	639.87	639.97
11G	3261+65.62	0.000	639.82	639.93
11H	3261+75.62	0.000	639.78	639.88
11I	3261+85.62	0.000	639.73	639.83
11J	3261+95.62	0.000	639.69	639.77
11K	3262+05.62	0.000	639.64	639.71
11L	3262+15.62	0.000	639.60	639.65
11M	3262+25.62	0.000	639.55	639.63
CL BRG. PIER 11	3262+36.15	0.000	639.51	639.53
12A	3262+46.15	0.000	639.46	639.48
12B	3262+56.15	0.000	639.42	639.45
12C	3262+66.15	0.000	639.37	639.41
12D	3262+76.15	0.000	639.33	639.38
12E	3262+86.15	0.000	639.28	639.34
12F	3262+96.15	0.000	639.24	639.29
12G	3263+06.15	0.000	639.19	639.23
12H	3263+16.15	0.000	639.15	639.17
12I	3263+26.15	0.000	639.10	639.12
12J	3263+36.15	0.000	639.07	639.08
12K	3263+46.15	0.000	639.04	639.06
12L	3263+56.15	0.000	639.02	639.07
12M	3263+66.15	0.000	639.02	639.10
CL BRG. PIER 12	3263+77.15	0.000	639.02	639.05
13A	3263+87.15	0.000	639.04	639.08
13B	3263+97.15	0.000	639.07	639.14
13C	3264+07.15	0.000	639.10	639.21
13D	3264+17.15	0.000	639.15	639.29
13E	3264+27.15	0.000	639.21	639.37
13F	3264+37.15	0.000	639.28	639.46
13G	3264+47.15	0.000	639.35	639.55
13H	3264+57.15	0.000	639.44	639.63
13I	3264+67.15	0.000	639.54	639.72
13J	3264+77.15	0.000	639.65	639.81
13K	3264+87.15	0.000	639.77	639.90
13L	3264+97.15	0.000	639.90	639.99
CL N. BRG. PIER 13	3265+10.65	0.000	640.09	640.11
CL. EXP. JT. & PIER 13	3265+12.15	0.000	640.11	640.13

GIRDER 4

LOCATION	STATION BL RAMP C	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION & GRINDING
CL. EXP. JT. & PIER 6	3255+44.64	2.036	640.10	640.12
CL W. BRG. PIER 6	3255+46.14	2.000	640.11	640.13
7A	3255+56.14	1.760	640.20	640.27
7B	3255+66.13	1.520	640.29	640.40
7C	3255+76.13	1.280	640.38	640.52
7D	3255+86.13	1.040	640.48	640.64
7E	3255+96.12	0.800	640.57	640.75
7F	3256+06.12	0.560	640.66	640.84
7G	3256+16.12	0.320	640.74	640.92
7H	3256+26.11	0.080	640.83	640.98
7I	3256+36.11	-0.160	640.90	641.03
7J	3256+46.11	-0.400	640.97	641.07
7K	3256+56.10	-0.643	641.03	641.11
7L	3256+66.10	-0.880	641.09	641.14
7M	3256+76.09	-1.124	641.14	641.17
CL BRG. PIER 7	3256+80.83	-1.240	641.16	641.18
8A	3256+90.83	-1.480	641.20	641.22
8B	3257+00.82	-1.720	641.23	641.26
8C	3257+10.82	-1.960	641.26	641.29
8D	3257+20.81	-2.200	641.28	641.32
8E	3257+30.81	-2.440	641.29	641.35
8F	3257+40.81	-2.690	641.29	641.36
8G	3257+50.80	-2.920	641.29	641.37
8H	3257+60.84	-3.110	641.28	641.36
8I	3257+70.88	-3.160	641.27	641.34
8J	3257+80.92	-3.070	641.26	641.33
8K	3257+90.96	-3.000	641.25	641.30
8L	3258+01.00	-3.000	641.23	641.27
8M	3258+11.04	-3.000	641.20	641.23
CL BRG. PIER 8	3258+22.45	-3.000	641.16	641.18
9A	3258+32.49	-3.000	641.13	641.16
9B	3258+42.53	-3.000	641.09	641.13
9C	3258+52.57	-3.000	641.05	641.10
9D	3258+62.61	-3.000	641.01	641.07
9E	3258+72.65	-3.000	640.96	641.03
9F	3258+82.69	-3.000	640.92	640.99
9G	3258+92.73	-3.000	640.87	640.95
9H	3259+02.77	-3.000	640.83	640.89
9I	3259+12.81	-3.000	640.78	640.84
9J	3259+22.85	-3.000	640.74	640.78
9K	3259+32.85	-3.130	640.68	640.72
9L	3259+42.89	-3.300	640.63	640.65
CL BRG. PIER 9	3259+54.15	-3.480	640.57	640.59
10A	3259+64.20	-3.650	640.51	640.54
10B	3259+74.25	-3.810	640.46	640.50
10C	3259+84.30	-3.980	640.40	640.46
10D	3259+94.35	-4.140	640.35	640.42
10E	3260+04.41	-4.310	640.29	640.38
10F	3260+14.47	-4.480	640.23	640.33
10G	3260+24.53	-4.650	640.18	640.27
10H	3260+34.59	-4.850	640.12	640.21
10I	3260+44.65	-4.980	640.07	640.15
10J	3260+54.72	-5.150	640.01	640.08
10K	3260+64.79	-5.320	639.96	640.01
10L	3260+74.86	-5.490	639.90	639.94
10M	3260+84.93	-5.660	639.85	639.87
CL BRG. PIER 10	3260+95.15	-5.830	639.79	639.81
11A	3261+05.64	-6.000	639.73	639.76
11B	3261+15.72	-6.170	639.68	639.72
11C	3261+25.80	-6.340	639.62	639.68
11D	3261+35.89	-6.510	639.57	639.64
11E	3261+45.98	-6.680	639.51	639.60
11F	3261+56.07	-6.850	639.45	639.55
11G	3261+66.27	-7.000	639.40	639.50
11H	3261+76.36	-7.000	639.35	639.45
11I	3261+86.45	-7.000	639.31	639.40
11J	3261+96.54	-7.000	639.26	639.34
11K	3262+06.63	-7.000	639.22	639.28
11L	3262+16.72	-7.000	639.17	639.22
11M	3262+26.84	-7.000	639.13	639.16
CL BRG. PIER 11	3262+36.15	-7.000	639.09	639.11
12A	3262+46.25	-7.000	639.04	639.06
12B	3262+56.34	-7.000	638.99	639.02
12C	3262+66.44	-7.000	638.95	638.99
12D	3262+76.53	-7.000	638.90	638.95
12E	3262+86.63	-7.000	638.86	638.91
12F	3262+96.72	-7.000	638.81	638.87
12G	3263+06.81	-7.000	638.77	638.82
12H	3263+16.91	-7.000	638.72	638.77
12I	3263+27.00	-7.000	638.68	638.72
12J	3263+37.10	-7.000	638.64	638.67
12K	3263+47.19	-7.000	638.62	638.64
12L	3263+57.29	-7.000	638.60	638.62
12M	3263+67.38	-7.000	638.60	638.61
CL BRG. PIER 12	3263+77.15	-7.000	638.60	638.63
13A	3263+87.25	-7.000	638.62	638.66
13B	3263+97.34	-7.000	638.65	638.72
13C	3264+07.44	-7.000	638.69	638.78
13D	3264+17.53	-7.000	638.73	638.86
13E	3264+27.63	-7.000	638.79	638.95
13F	3264+37.72	-7.000	638.86	639.03
13G	3264+47.81	-7.000	638.94	639.12
13H	3264+57.91	-7.000	639.03	639.21
13I	3264+68.00	-7.000	639.13	639.30
13J	3264+78.10	-7.000	639.24	639.39
13K	3264+88.19	-7.000	639.36	639.48
13L	3264+98.29	-7.000	639.49	639.57
CL N. BRG. PIER 13	3265+10.65	-7.000	639.67	639.69
CL. EXP. JT. & PIER 13	3265+12.15	-7.000	639.69	639.71

GIRDER 5

LOCATION	STATION BL RAMP C	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION & GRINDING
CL. EXP. JT. & PIER 6	3255+44.64	8.026	640.19	640.21
CL W. BRG. PIER 6	3255+46.14	8.000	640.20	640.22
7A	3255+56.14	7.830	640.29	640.36
7B	3255+66.14	7.660	640.39	640.50
7C	3255+76.14	7.490	640.48	640.62
7D	3255+86.13	7.320	640.57	640.73
7E	3255+96.13	7.150	640.66	640.84
7F	3256+06.13	6.980	640.75	640.94
7G	3256+16.13	6.810	640.84	641.02
7H	3256+26.13	6.640	640.92	641.08
7I	3256+36.13	6.460	641.00	641.13
7J	3256+46.13	6.290	641.07	641.17
7K	3256+56.12	6.120	641.13	641.21
7L	3256+66.12	5.950	641.19	641.24
7M	3256+76.12	5.780	641.26	641.29
CL BRG. PIER 7	3256+80.83	5.700	641.29	641.31
8A	3256+90.83	5.530	641.35	641.37
8B	3257+00.83	5.360	641.41	641.43
8C	3257+10.82	5.190	641.46	641.49
8D	3257+20.82	5.020	641.50	641.55
8E	3257+30.82	4.850	641.53	641.59
8F	3257+40.82	4.680	641.56	641.63
8G	3257+50.82	4.510	641.58	641.66
8H	3257+60.77	4.390	641.60	641.68
8I	3257+70.71	4.410	641.62	641.69
8J	3257+80.65	4.560	641.64	641.70
8K	3257+90.58	4.670	641.65	641.70
8L	3258+00.52	4.670	641.65	641.69
8M	3258+10.46	4.670	641.64	641.67
CL BRG. PIER 8	3258+22.45	4.670	641.62	641.64
9A	3258+32.39	4.670	641.59	641.62
9B	3258+42.33	4.670	641.56	641.59
9C	3258+52.27	4.670	641.51	641.56
9D	3258+62.21	4.670	641.47	641.53
9E	3258+72.15	4.670	641.42	641.50
9F	3258+82.09	4.670	641.38	641.46
9G	3258+92.03	4.670	641.33	641.41
9H	3259+01.97	4.670	641.29	641.36
9I	3259+11.91	4.670	641.24	641.31
9J	3259+21.85	4.670	641.20	641.25
9K	3259+31.84	4.550	641.15	641.18
9L	3259+41.78	4.390	641.09	641.12
CL BRG. PIER 9	3259+54.15	4.190	641.03	641.05
10A	3259+64.09	4.020	640.97	641.00
10B	3259+74.04	3.860	640.92	640.96
10C	3259+83.99	3.690	640.86	640.92
10D	3259+93.94	3.530	640.81	640.88
10E	3260+03.89	3.360	640.75	640.84
10F	3260+13.84	3.200	640.70	640.79
10G	3260+23.80	3.030	640.64	640.74
10H	3260+33.76	2.870	640.59	640.68
10I	3260+43.72	2.700	640.53	640.62
10J	3260+53.68	2.530	640.48	640.55
10K	3260+63.65	5.370	640.60	640.66
10L	3260+73.62	2.200	640.37	640.41
10M	3260+83.59	2.030	640.31	640.34
CL BRG. PIER 10	3260+95.15	1.840	640.25	640.27
11A	3261+05.66	1.660	640.19	640.22
11B	3261+15.64	1.500	640.14	640.18
11C	3261+25.62	1.330	640.08	640.14
11D	3261+35.60	1.160	640.03	640.10
11E	3261+45.58	0.990	639.97	640.06
11F	3261+55.57	0.830	639.92	640.02
11G	3261+65.55	0.670	639.86	639.97
11H	3261+75.54	0.670	639.82	639.92
11I	3261+85.53	0.670	639.76	639.85
11J	3261+95.52	0.670	639.71	639.79
11K	3262+05.51	0.670	639.66	639.73
11L	3262+15.50	0.670	639.62	639.67
11M	3262+25.49	0.670	639.57	639.61
CL BRG. PIER 11	3262+36.15	0.670	639.53	639.55
12A	3262+46.14	0.670	639.48	639.50
12B	3262+56.13	0.670	639.44	639.46
12C	3262+66.12	0.670	639.39	639.43
12D	3262+76.11	0.670	639.35	639.39
12E	3262+86.10	0.670	639.30	639.35
12F	3262+96.09	0.670	639.26	639.31
12G	3263+06.08	0.670	639.22	639.28
12H	3263+16.07	0.670	639.18	639.23
12I	3263+26.06	0.670	639.14	639.18
12J	3263+36.05	0.670	639.11	639.14
12K	3263+46.04	0.670	639.08	639.10
12L	3263+56.03	0.670	639.07	639.09
12M	3263+66.02	0.670	639.06	639.08
CL BRG. PIER 12	3263+77.15	0.670	639.07	639.09
13A	3263+87.14	0.670	639.08	639.12
13B	3263+97.13	0.670	639.10	639.17
13C	3264+07.12	0.670	639.13	639.24
13D	3264+17.11	0.670	639.17	639.31
13E	3264+27.10	0.670	639.23	639.39
13F	3264+37.09	0.670	639.29	639.47
13G	3264+47.08	0.670	639.36	639.56
13H	3264+57.07	0.670	639.44	639.64
13I	3264+67.06	0.670	639.54	639.72
13J	3264+77.05	0.670	639.64	639.80
13K	3264+87.04	0.670	639.76	639.88
13L	3264+97.03	0.670	639.88	639.97
CL N. BRG. PIER 13	3265+10.65	0.670	640.07	640.09
CL. EXP. JT. & PIER 13	3265+12.15	0.670	640.09	640.11

GIRDER 6

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION & GRINDING
START OF GIRDER	3263+22.41	4.13	639.35	639.40
12I	3263+25.66	4.08	639.34	639.38
12J	3263+35.62	3.95	639.31	639.34
12K	3263+45.59	3.87	639.29	639.31
12L	3263+55.54	3.82	639.28	639.29
12M	3263+65.49	3.81	639.27	639.29
CL BRG. PIER 12	3263+77.15	3.86	639.27	639.29
13A	3263+87.10	3.94	639.27	639.31
13B	3263+97.04	4.06	639.27	639.34
13C	3264+06.98	4.22	639.28	639.39
13D	3264+16.92	4.42	639.30	639.44
13E	3264+26.84	4.67	639.33	639.49
13F	3264+36.76	4.95	639.36	639.55
13G	3264+46.66	5.27	639.41	639.61
13H	3264+56.55	5.64	639.46	639.66
13I	3264+66.43	6.04	639.52	639.71
13J	3264+76.29	6.48	639.59	639.75
13K	3264+86.14	6.96	639.66	639.79
13L	3264+95.96	7.48	639.73	639.82
CL N. BRG. PIER 13	3265+10.67	8.33	639.84	639.86
CL. EXP. JT. & PIER 13	3265+12.15	8.42	639.84	639.87

GIRDER 7

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION & GRINDING
START OF GIRDER	3264+30.47	8.73	639.43	639.61
13F	3264+36.43	9.07	639.44	639.63
13G	3264+46.25	9.74	639.45	639.66
13H	3264+56.05	10.54	639.48	639.68
13I	3264+65.81	11.47	639.51	639.69
13J	3264+75.53	12.53	639.53	639.70
13K	3264+85.22	13.71	639.56	639.68
13L	3264+94.86	15.02	639.57	639.65
13M	3265+04.67	16.48	639.58	639.61
CL N. BRG. PIER 13	3265+10.69	17.46	639.56	639.58
CL. EXP. JT. & PIER 13	3265+12.15	17.70	639.55	639.57

GIRDER 8

LOCATION	*STATION ℄ RAMP C ℄ RAMP F2	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION & GRINDING
START OF GIRDER	3258+94.45	8.499	641.55	641.63
9H	3258+01.54	8.515	641.86	641.93
9I	3258+11.42	8.539	641.87	641.93
9J	3258+21.31	8.566	641.86	641.91
9K	5000+06.50	-3.617	641.39	641.43
9L	5000+16.60	-3.907	641.34	641.36
CL BRG. PIER 9	5000+29.75	-4.286	641.27	641.29
10A	5000+39.81	-4.573	641.22	641.25
10B	5000+49.87	-4.859	641.17	641.21
10C	5000+59.93	-5.143	641.11	641.17
10D	5000+69.99	-5.426	641.06	641.14
10E	5000+80.06	-5.707	641.01	641.10
10F	5000+90.13	-5.987	640.96	641.05
10G	5001+00.20	-6.265	640.91	641.01
10H	5001+10.27	-6.541	640.86	640.95
10I	5001+20.35	-6.815	640.81	640.89
10J	5001+30.43	-7.087	640.76	640.83
10K	5001+40.51	-7.358	640.70	640.76
10L	5001+50.60	-7.626	640.65	640.69
10M	5001+60.69	-7.893	640.60	640.63
CL BRG. PIER 10	5001+73.29	-8.223	640.54	640.56
11A	5001+84.02	-8.501	640.49	640.52
11B	5001+94.13	-8.761	640.44	640.48
11C	5002+04.25	-9.019	640.39	640.45
11D	5002+14.36	-9.274	640.34	640.41
11E	5002+24.48	-9.527	640.29	640.38
11F	5002+34.60	-9.778	640.24	640.34
11G	5002+44.72	-10.026	640.19	640.29
11H	5002+54.84	-10.272	640.14	640.24
11I	5002+64.97	-10.516	640.09	640.18
11J	5002+75.10	-10.757	640.04	640.12
11K	5002+85.23	-10.995	639.99	640.06
11L	5002+95.36	-11.231	639.94	639.99
11M	5003+05.49	-11.464	639.89	639.93
CL BRG. PIER 11	5003+17.44	-11.735	639.83	639.85
12A	5003+27.59	-11.963	639.78	639.81
12B	5003+37.75	-12.187	639.74	639.76
12C	5003+47.91	-12.409	639.69	639.72
12D	5003+58.07	-12.628	639.64	639.68
12E	5003+68.23	-12.844	639.59	639.64
12F	5003+78.39	-13.057	639.56	639.61
12G	5003+88.56	-13.268	639.55	639.60
12H	5003+98.72	-13.475	639.53	639.58
12I	5004+08.89	-13.679	639.52	639.56
12J	5004+19.06	-13.880	639.51	639.54
12K	5004+29.23	-14.078	639.50	639.52
12L	5004+39.70	-14.110	639.50	639.52
12M	5004+49.67	-14.110	639.50	639.51
CL BRG. PIER 12	5004+62.21	-14.110	639.50	639.52
13A	5004+72.22	-14.110	639.50	639.54
13B	5004+82.22	-14.110	639.50	639.57
13C	5004+92.22	-14.110	639.50	639.61
13D	5005+02.22	-14.110	639.50	639.64
13E	5005+12.21	-14.110	639.50	639.67
13F	5005+22.20	-14.110	639.50	639.69
13G	5005+32.18	-14.110	639.50	639.71
13H	5005+42.15	-14.110	639.50	639.71
13I	5005+52.12	-14.110	639.50	639.70
13J	5005+62.08	-14.110	639.49	639.67
13K	5005+72.03	-14.110	639.47	639.62
13L	5005+81.97	-14.110	639.43	639.55
13M	5005+92.03	-14.110	639.38	639.45
CL N. BRG. PIER 13	5005+99.90	-14.110	639.30	639.33
CL. EXP. JT. & PIER 13	5006+01.44	-14.110	639.29	639.31

*SCREED POINTS FROM START OF GIRDER THRU 9J ARE BASED ON ℄ RAMP C.
SCREED POINTS FROM 9K THRU ℄ N. BRG. PIER 13 ARE BASED ON ℄ RAMP F2.

GIRDER 9

LOCATION	STATION ℄ RAMP F2	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION & GRINDING
START OF GIRDER	5001+22.86	-3.273	641.01	641.09
10J	5001+30.00	-3.369	640.98	641.05
10K	5001+40.01	-3.503	640.94	640.99
10L	5001+50.03	-3.637	640.89	640.94
10M	5001+60.04	-3.769	640.85	640.88
CL BRG. PIER 10	5001+73.36	-3.944	640.80	640.82
11A	5001+84.11	-4.083	640.75	640.78
11B	5001+94.16	-4.212	640.71	640.75
11C	5002+04.21	-4.340	640.67	640.73
11D	5002+14.26	-4.467	640.62	640.70
11E	5002+24.31	-4.593	640.58	640.68
11F	5002+34.36	-4.717	640.54	640.65
11G	5002+44.41	-4.841	640.50	640.61
11H	5002+54.45	-4.963	640.46	640.56
11I	5002+64.50	-5.083	640.41	640.52
11J	5002+74.54	-5.030	640.38	640.47
11K	5002+84.58	-5.321	640.33	640.40
11L	5002+94.62	-5.438	640.29	640.34
11M	5003+04.66	-5.553	640.25	640.28
CL BRG. PIER 11	5003+17.64	-5.701	640.19	640.22
12A	5003+27.71	-5.814	640.15	640.18
12B	5003+37.79	-5.925	640.11	640.14
12C	5003+47.86	-6.035	640.07	640.11
12D	5003+57.94	-6.143	640.03	640.07
12E	5003+68.01	-6.250	639.98	640.03
12F	5003+78.08	-6.356	639.95	640.00
12G	5003+88.14	-6.460	639.92	639.97
12H	5003+98.21	-6.563	639.89	639.94
12I	5004+08.28	-6.664	639.86	639.90
12J	5004+18.34	-6.763	639.83	639.86
12K	5004+46.74	-6.861	639.75	639.77
12L	5004+38.64	-6.889	639.77	639.79
12M	5004+48.62	-6.889	639.75	639.76
CL BRG. PIER 12	5004+62.51	-6.889	639.71	639.73
13A	5004+72.51	-6.889	639.69	639.73
13B	5004+82.52	-6.889	639.66	639.74
13C	5004+92.52	-6.889	639.64	639.75
13D	5005+02.52	-6.889	639.61	639.76
13E	5005+12.51	-6.889	639.59	639.76
13F	5005+22.50	-6.889	639.57	639.76
13G	5005+32.49	-6.889	639.54	639.76
13H	5005+42.47	-6.889	639.52	639.73
13I	5005+52.45	-6.889	639.49	639.70
13J	5005+62.42	-6.889	639.46	639.65
13K	5005+72.39	-6.889	639.41	639.57
13L	5005+82.35	-6.889	639.35	639.47
13M	5005+92.39	-6.889	639.27	639.34
CL N. BRG. PIER 13	5006+01.53	-6.889	639.18	639.20
CL. EXP. JT. & PIER 13	5006+03.07	-6.889	639.16	639.18

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3/30/2020

DRAWN BY . . . . JM . . . . .
CHECKED BY . . . . SP . . . . .
DATE . 4-3-2020 . . .
SCALE . NONE . . . . .

T·Y·LIN INTERNATIONAL

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
UNIT2-TOP OF SLAB ELEV. - 3

℄ & P.G.L. RAMP F2

LOCATION	STATION ℄ RAMP F2	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION & GRINDING
START OF BL	5000+00.00	0.000	641.63	641.68
9K	5000+06.15	0.000	641.61	641.65
9L	5000+16.11	0.000	641.57	641.61
9M	5000+26.59	0.000	641.54	641.56
CL BRG. PIER 9	5000+29.82	0.000	641.53	641.55
10A	5000+39.82	0.000	641.49	641.52
10B	5000+49.82	0.000	641.46	641.50
10C	5000+59.81	0.000	641.42	641.48
10D	5000+69.79	0.000	641.39	641.46
10E	5000+79.77	0.000	641.35	641.44
10F	5000+89.75	0.000	641.32	641.42
10G	5000+99.72	0.000	641.29	641.39
10H	5001+09.69	0.000	641.25	641.35
10I	5001+19.65	0.000	641.22	641.30
10J	5001+29.61	0.000	641.18	641.26
10K	5001+39.57	0.000	641.15	641.21
10L	5001+49.52	0.000	641.11	641.16
10M	5001+59.46	0.000	641.08	641.11
10N	5001+69.41	0.000	641.05	641.07
CL BRG. PIER 10	5001+73.42	0.000	641.03	641.05
11A	5001+84.11	0.000	641.00	641.03
11B	5001+94.19	0.000	640.96	641.01
11C	5002+04.18	0.000	640.93	640.99
11D	5002+14.17	0.000	640.89	640.98
11E	5002+24.16	0.000	640.86	640.96
11F	5002+34.14	0.000	640.82	640.94
11G	5002+44.12	0.000	640.79	640.91
11H	5002+54.09	0.000	640.75	640.87
11I	5002+64.06	0.000	640.72	640.83
11J	5002+74.03	0.000	640.69	640.78
11K	5002+83.99	0.000	640.65	640.73
11L	5002+93.94	0.000	640.62	640.67
11M	5003+03.90	0.000	640.58	640.62
11N	5003+13.84	0.000	640.55	640.57
CL BRG. PIER 11	5003+17.82	0.000	640.54	640.56
12A	5003+27.83	0.000	640.50	640.52
12B	5003+37.83	0.000	640.47	640.49
12C	5003+47.82	0.000	640.43	640.47
12D	5003+57.81	0.000	640.40	640.44
12E	5003+67.80	0.000	640.36	640.41
12F	5003+77.78	0.000	640.32	640.37
12G	5003+87.76	0.000	640.27	640.33
12H	5003+97.73	0.000	640.23	640.28
12I	5004+07.70	0.000	640.18	640.22
12J	5004+17.67	0.000	640.13	640.16
12K	5004+27.63	0.000	640.08	640.10
12L	5004+37.63	0.000	640.03	640.05
12M	5004+47.62	0.000	639.99	640.00
12N	5004+57.62	0.000	639.94	639.96
CL BRG. PIER 12	5004+62.79	0.000	639.91	639.93
13A	5004+72.80	0.000	639.87	639.91
13B	5004+82.80	0.000	639.82	639.89
13C	5004+92.80	0.000	639.77	639.88
13D	5005+02.80	0.000	639.72	639.87
13E	5005+12.79	0.000	639.67	639.85
13F	5005+22.79	0.000	639.63	639.83
13G	5005+32.78	0.000	639.58	639.80
13H	5005+42.77	0.000	639.53	639.75
13I	5005+52.76	0.000	639.48	639.70
13J	5005+62.75	0.000	639.42	639.62
13K	5005+72.73	0.000	639.35	639.52
13L	5005+82.71	0.000	639.27	639.40
13M	5005+92.65	0.000	639.17	639.25
CL N. BRG. PIER 13	5006+03.09	0.000	639.06	639.08
CL. EXP. JT. & PIER 13	5006+04.63	0.000	639.04	639.06

GIRDER 10

LOCATION	*STATION ℄ RAMP C ℄ RAMP F2	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION & GRINDING
CL. EXP. JT. & PIER 6	3255+44.64	14.015	640.28	640.30
CL W. BRG. PIER 6	3255+46.14	14.000	640.29	640.31
7A	3255+56.14	13.899	640.38	640.45
7B	3255+66.14	13.798	640.48	640.59
7C	3255+76.14	13.697	640.57	640.71
7D	3255+86.14	13.596	640.66	640.83
7E	3255+96.14	13.494	640.76	640.94
7F	3256+06.14	13.393	640.85	641.03
7G	3256+16.14	13.292	640.94	641.11
7H	3256+26.15	13.191	641.02	641.18
7I	3256+36.15	13.090	641.10	641.23
7J	3256+46.15	12.989	641.17	641.27
7K	3256+56.15	12.888	641.24	641.31
7L	3256+66.15	12.787	641.30	641.34
7M	3256+76.15	12.685	641.38	641.41
CL BRG. PIER 7	3256+80.83	12.638	641.42	641.44
8A	3256+90.83	12.537	641.51	641.53
8B	3257+00.83	12.436	641.58	641.61
8C	3257+10.83	12.334	641.65	641.69
8D	3257+20.83	12.233	641.72	641.77
8E	3257+30.83	12.132	641.78	641.84
8F	3257+40.83	12.031	641.83	641.90
8G	3257+50.83	11.930	641.88	641.96
8H	3257+60.69	11.882	641.92	642.00
8I	3257+70.54	11.965	641.96	642.04
8J	3257+80.37	12.181	642.00	642.07
8K	3257+90.21	12.333	642.04	642.10
8L	3258+00.05	12.333	642.06	642.11
8M	3258+09.88	12.333	642.08	642.11
CL BRG. PIER 8	3258+22.45	12.333	642.08	642.10
9A	3258+32.29	12.333	642.05	642.08
9B	3258+42.12	12.333	642.02	642.05
9C	3258+51.96	12.333	641.97	642.03
9D	3258+61.80	12.333	641.93	642.00
9E	3258+71.63	12.333	641.89	641.96
9F	3258+81.47	12.333	641.84	641.92
9G	3258+91.31	12.333	641.80	641.88
9H	3259+01.14	12.333	641.75	641.83
9I	3259+10.98	12.333	641.71	641.77
9J	3259+20.82	12.333	641.66	641.72
9K	5000+06.11	0.333	641.63	641.67
9L	5000+16.06	0.333	641.59	641.63
9M	5000+26.01	0.333	641.56	641.58
CL BRG. PIER 9	5000+29.83	0.333	641.55	641.57
10A	5000+39.82	0.333	641.51	641.54
10B	5000+49.81	0.333	641.48	641.52
10C	5000+59.80	0.333	641.44	641.50
10D	5000+69.78	0.333	641.41	641.48
10E	5000+79.75	0.333	641.37	641.46
10F	5000+89.73	0.333	641.34	641.44
10G	5000+99.69	0.333	641.31	641.41
10H	5001+09.66	0.333	641.27	641.37

GIRDER 10 (CONTINUED)

LOCATION	*STATION ℄ RAMP C ℄ RAMP F2	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION & GRINDING
10I	5001+19.62	0.333	641.24	641.32
10J	5001+29.57	0.333	641.20	641.28
10K	5001+39.52	0.333	641.17	641.23
10L	5001+49.47	0.333	641.13	641.18
10M	5001+59.41	0.333	641.10	641.13
10N	5001+69.35	0.333	641.07	641.09
CL BRG. PIER 10	5001+73.43	0.333	641.05	641.07
11A	5001+84.20	0.333	641.02	641.05
11B	5001+94.19	0.333	640.98	641.03
11C	5002+04.18	0.333	640.95	641.01
11D	5002+14.17	0.333	640.91	641.00
11E	5002+24.15	0.333	640.88	640.98
11F	5002+34.13	0.333	640.84	640.96
11G	5002+44.10	0.333	640.81	640.93
11H	5002+54.07	0.333	640.77	640.89
11I	5002+64.03	0.333	640.74	640.85
11J	5002+73.99	0.333	640.71	640.80
11K	5002+83.95	0.333	640.67	640.75
11L	5002+93.90	0.333	640.64	640.69
11M	5003+03.85	0.333	640.60	640.64
11N	5003+13.79	0.333	640.57	640.59
CL BRG. PIER 11	5003+17.84	0.333	640.56	640.58
12A	5003+27.83	0.333	640.52	640.54
12B	5003+37.83	0.333	640.49	640.51
12C	5003+47.82	0.333	640.45	640.49
12D	5003+57.81	0.333	640.42	640.46
12E	5003+67.79	0.333	640.38	640.43
12F	5003+77.77	0.333	640.34	640.39
12G	5003+87.74	0.333	640.29	640.35
12H	5003+97.71	0.333	640.24	640.29
12I	5004+07.68	0.333	640.19	640.24
12J	5004+17.64	0.333	640.14	640.18
12K	5004+27.60	0.333	640.10	640.12
12L	5004+37.58	0.333	640.05	640.06
12M	5004+47.57	0.333	640.00	640.01
12N	5004+57.57	0.333	639.95	639.97
CL BRG. PIER 12	5004+62.81	0.333	639.92	639.94
13A	5004+72.81	0.333	639.87	639.92
13B	5004+82.81	0.333	639.83	639.90
13C	5004+92.81	0.333	639.78	639.89
13D	5005+02.81	0.333	639.73	639.87
13E	5005+12.81	0.333	639.68	639.85
13F	5005+22.80	0.333	639.63	639.83
13G	5005+32.80	0.333	639.58	639.80
13H	5005+42.79	0.333	639.53	639.75
13I	5005+52.78	0.333	639.48	639.70
13J	5005+62.76	0.333	639.42	639.62
13K	5005+72.74	0.333	639.35	639.52
13L	5005+82.72	0.333	639.27	639.39
13M	5005+92.74	0.333	639.17	639.24
CL N. BRG. PIER 13	5006+03.17	0.333	639.05	639.07
CL. EXP. JT. & PIER 13	5006+04.70	0.333	639.03	639.05

* SCREED POINTS FROM ℄ W. BRG. PIER 6 THRU 9J ARE BASED ON ℬ RAMP C.
SCREED POINTS FROM 9K THRU ℄ N. BRG. PIER 13 ARE BASED ON ℬ RAMP F2.

P:\62540\57-294_5-9\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\016201_5_unit2-tse04.dgn
3/30/2020

DRAWN BY . . . . JM . . . . . | DATE . 4-3-2020 . . .
CHECKED BY . . . SP . . . . . | SCALE . NONE . . . . .

TY·LIN INTERNATIONAL

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
UNIT2-TOP OF SLAB ELEV. - 4

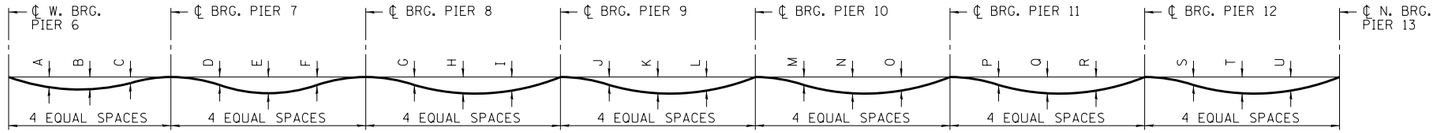
GIRDER 11

LOCATION	*STATION ℄ RAMP C ℄ RAMP F2	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION & GRINDING
CL. EXP. JT. & PIER 6	3255+44.64	20.000	640.37	640.39
CL W. BRG. PIER 6	3255+46.14	20.000	640.38	640.40
7A	3255+56.14	20.000	640.48	640.54
7B	3255+66.15	20.000	640.57	640.68
7C	3255+76.15	20.000	640.67	640.80
7D	3255+86.15	20.000	640.76	640.92
7E	3255+96.15	20.000	640.86	641.04
7F	3256+06.16	20.000	640.95	641.13
7G	3256+16.16	20.000	641.04	641.21
7H	3256+26.16	20.000	641.12	641.28
7I	3256+36.17	20.000	641.20	641.33
7J	3256+46.17	20.000	641.28	641.38
7K	3256+56.17	20.000	641.34	641.42
7L	3256+66.17	20.000	641.41	641.45
7M	3256+76.18	20.000	641.51	641.54
CL BRG. PIER 7	3256+80.83	20.000	641.56	641.58
8A	3256+90.83	20.000	641.67	641.69
8B	3257+00.83	20.000	641.77	641.80
8C	3257+10.84	20.000	641.87	641.90
8D	3257+20.84	20.000	641.96	642.01
8E	3257+30.84	20.000	642.04	642.10
8F	3257+40.85	20.000	642.12	642.20
8G	3257+50.85	20.000	642.20	642.28
8H	3257+60.62	20.000	642.26	642.35
8I	3257+70.36	20.000	642.33	642.40
8J	3257+80.10	20.000	642.38	642.45
8K	3257+89.85	20.000	642.43	642.49
8L	3257+99.58	20.000	642.48	642.52
8M	3258+09.32	20.000	642.52	642.55
CL BRG. PIER 8	3258+22.45	20.000	642.54	642.56
9A	3258+32.19	20.000	642.51	642.54
9B	3258+41.93	20.000	642.48	642.52
9C	3258+51.66	20.000	642.44	642.49
9D	3258+61.40	20.000	642.39	642.46
9E	3258+71.14	20.000	642.35	642.43
9F	3258+80.88	20.000	642.30	642.39
9G	3258+90.61	20.000	642.26	642.35
9H	3259+00.35	20.000	642.22	642.30
9I	3259+10.09	20.000	642.17	642.24
9J	3259+19.83	20.000	642.13	642.19
9K	5000+05.25	8.000	642.09	642.13
9L	5000+15.11	8.000	642.06	642.09
9M	5000+24.96	8.000	642.02	642.05
CL BRG. PIER 9	5000+29.95	8.000	642.01	642.03
10A	5000+39.85	8.000	641.97	642.00
10B	5000+49.74	8.000	641.94	641.98
10C	5000+59.62	8.000	641.90	641.96
10D	5000+69.50	8.000	641.87	641.95
10E	5000+79.38	8.000	641.84	641.93
10F	5000+89.25	8.000	641.80	641.90
10G	5000+99.12	8.000	641.77	641.87
10H	5001+08.99	8.000	641.73	641.83
10I	5001+18.85	8.000	641.70	641.79
10J	5001+28.70	8.000	641.67	641.74
10K	5001+38.56	8.000	641.63	641.69
10L	5001+48.41	8.000	641.60	641.64
10M	5001+58.25	8.000	641.56	641.60
10N	5001+68.09	8.000	641.53	641.55
CL BRG. PIER 10	5001+73.56	8.000	641.51	641.53
11A	5001+84.35	8.000	641.47	641.51
11B	5001+94.24	8.000	641.44	641.49
11C	5002+04.13	8.000	641.41	641.47
11D	5002+14.02	8.000	641.37	641.46
11E	5002+23.90	8.000	641.34	641.44
11F	5002+33.78	8.000	641.30	641.42
11G	5002+43.65	8.000	641.27	641.40
11H	5002+53.52	8.000	641.24	641.36
11I	5002+63.39	8.000	641.20	641.32
11J	5002+73.25	8.000	641.17	641.27
11K	5002+83.11	8.000	641.14	641.22
11L	5002+92.96	8.000	641.10	641.16
11M	5003+02.82	8.000	641.07	641.11
11N	5003+12.66	8.000	641.03	641.06
CL BRG. PIER 11	5003+18.08	8.000	641.01	641.04
12A	5003+27.98	8.000	640.98	641.00
12B	5003+37.87	8.000	640.95	640.97
12C	5003+47.77	8.000	640.91	640.94
12D	5003+57.65	8.000	640.88	640.92
12E	5003+67.34	8.000	640.84	640.89
12F	5003+77.41	8.000	640.78	640.84
12G	5003+87.29	8.000	640.71	640.77
12H	5003+97.16	8.000	640.64	640.70
12I	5004+07.03	8.000	640.57	640.61
12J	5004+16.89	8.000	640.49	640.53
12K	5004+26.75	8.000	640.42	640.45
12L	5004+36.46	8.000	640.34	640.36
12M	5004+46.46	8.000	640.27	640.28
12N	5004+56.46	8.000	640.20	640.21

GIRDER 11 (CONTINUED)

LOCATION	*STATION ℄ RAMP C ℄ RAMP F2	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION & GRINDING
CL BRG. PIER 12	5004+63.12	8.000	640.15	640.17
13A	5004+73.12	8.000	640.07	640.12
13B	5004+83.12	8.000	640.00	640.07
13C	5004+93.12	8.000	639.92	640.03
13D	5005+03.12	8.000	639.85	639.99
13E	5005+13.12	8.000	639.77	639.95
13F	5005+23.12	8.000	639.70	639.90
13G	5005+33.12	8.000	639.62	639.85
13H	5005+43.12	8.000	639.55	639.78
13I	5005+53.12	8.000	639.47	639.70
13J	5005+63.12	8.000	639.38	639.59
13K	5005+73.12	8.000	639.29	639.46
13L	5005+83.12	8.000	639.17	639.31
13M	5005+93.12	8.000	639.05	639.14
CL N. BRG. PIER 13	5006+04.90	8.000	638.91	638.94
CL. EXP. JT. & PIER 13	5006+06.44	8.000	638.90	638.92

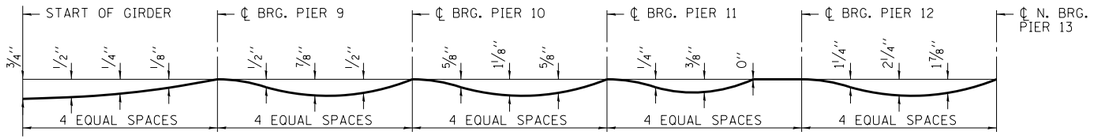
* SCREED POINTS FROM ℄ W. BRG. PIER 6 THRU 9J ARE BASED ON ℄ RAMP C.
SCREED POINTS FROM 9K THRU ℄ N. BRG. PIER 13 ARE BASED ON ℄ RAMP F2.



GIRDER	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
1	1½''	1⅛''	1''	¼''	⅝''	⅜''	⅜''	½''	¼''	½''	⅞''	½''	⅜''	¾''	½''	¼''	½''	⅛''	¾''	1½''	1¼''
2	1½''	1⅛''	1''	¼''	⅝''	⅜''	⅜''	⅝''	¼''	½''	⅞''	½''	½''	⅞''	½''	¼''	½''	⅛''	⅛''	1⅜''	1⅜''
3	1½''	1⅛''	1''	¼''	⅝''	⅜''	⅜''	⅝''	⅜''	½''	⅞''	½''	½''	⅞''	½''	¼''	½''	⅛''	1''	1¾''	1½''
4	1½''	1⅛''	1''	¼''	¾''	½''	⅜''	⅝''	⅜''	½''	⅞''	½''	½''	1''	⅝''	¼''	⅜''	⅛''	1''	1⅞''	1⅝''
5	1½''	1⅛''	1''	¼''	¾''	½''	⅜''	¾''	⅜''	½''	⅞''	½''	½''	1''	⅝''	¼''	⅜''	0''	1⅛''	2''	1⅝''
10	1½''	1⅛''	1''	¼''	¾''	½''	½''	¾''	⅜''	⅝''	1''	½''	⅝''	1⅛''	¾''	¼''	⅜''	0''	1¼''	2⅜''	2''
11	1½''	1⅛''	1''	¼''	¾''	½''	½''	¾''	⅜''	⅝''	1''	½''	¾''	1¼''	¾''	¼''	½''	0''	1⅜''	2½''	2''

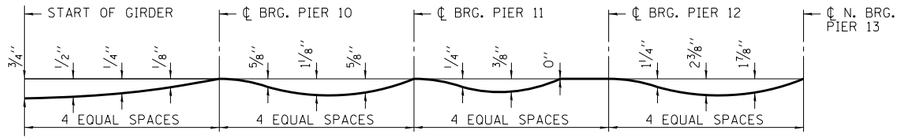
DEAD LOAD DEFLECTION DIAGRAM - GIRDERS 1 THRU 5, 10 & 11

(INCLUDES WEIGHT OF CONCRETE ONLY.)



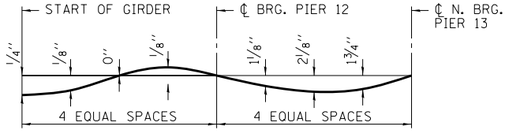
DEAD LOAD DEFLECTION DIAGRAM - GIRDER 8

(INCLUDES WEIGHT OF CONCRETE ONLY.)



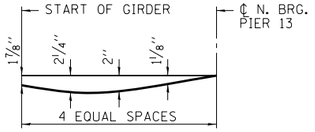
DEAD LOAD DEFLECTION DIAGRAM - GIRDER 9

(INCLUDES WEIGHT OF CONCRETE ONLY.)



DEAD LOAD DEFLECTION DIAGRAM - GIRDER 6

(INCLUDES WEIGHT OF CONCRETE ONLY.)



DEAD LOAD DEFLECTION DIAGRAM - GIRDER 7

(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 AND GRIDING.

P:\682540\57-294_5-9\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\Q162101.5_unit2-tse05.dgn
3/30/2020

DRAWN BY . . . . JM . . . . . DATE . 4-3-2020 . . . .
CHECKED BY . . . SP . . . . . SCALE . NONE . . . . .

TY·LIN INTERNATIONAL

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

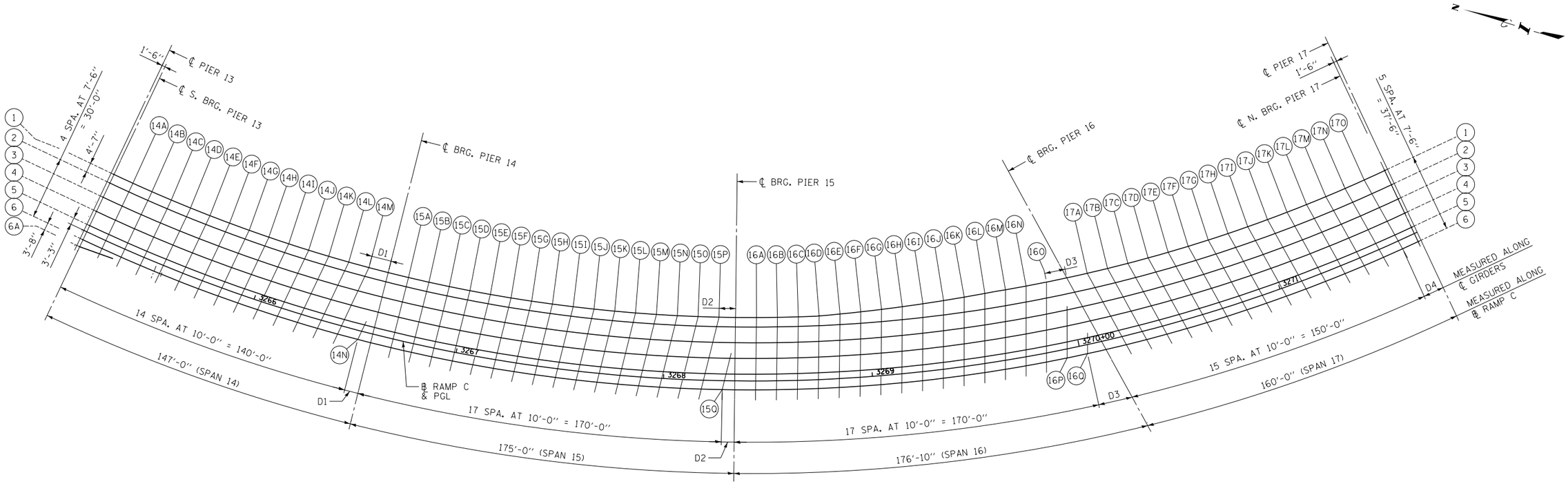
REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

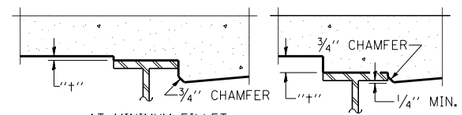
I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
UNIT2-TOP OF SLAB ELEV. - 5

SHEET SC - 21 OF 234

296 OF 606



PLAN



TO DETERMINE "t": AFTER ALL STRUCTURAL STEEL HAS BEEN ERECTED, ELEVATIONS OF THE TOP FLANGES OF THE GIRDERS SHALL BE TAKEN AT INTERVALS SHOWN ON THIS SHEET. THESE ELEVATIONS SUBTRACTED FROM THE "THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION AND GRINDING" SHOWN ON SHEETS SC -23 TO SC-25 OF 234, MINUS 8 1/4" SLAB THICKNESS, EQUALS THE FILLET HEIGHTS "t" ABOVE TOP FLANGE OF GIRDERS.

THE SLAB IS TO BE GROUND AFTER CURING TO ACHIEVE SMOOTHNESS, BUT THE SLAB IS NOT TO BE GROUND TO ELEVATIONS BELOW THE "THEORETICAL GRADE ELEVATIONS" SHOWN ON SHEETS SC-23 TO SC-25 OF 234. FOR GRINDING THE DECK, SEE SPECIAL PROVISIONS.

FILLET HEIGHTS

END OF SPAN DIMENSIONS

GIRDER	D1	D2	D3	D4
1	9'-6 1/4"	7'-10 1/2"	9'-10 7/8"	10'-9 3/8"
2	10'-5 1/8"	8'-11 3/8"	13'-8 1/8"	10'-3 1/4"
3	11'-10 1/8"	10'-8 1/2"	7'-6 5/8"	9'-9"
4	13'-4 5/8"	2'-5 1/2"	11'-4 5/8"	9'-2 1/8"
5	4'-10 1/4"	4'-2 3/4"	5'-2 1/2"	8'-8 3/4"
6	6'-4"	5'-11 1/8"	9'-0 1/2"	8'-2 1/2"

NOTES:

1. WORK THIS SHEET WITH SHEETS SC-23 THRU SC-25 OF SC-234.
2. FOR SPAN LENGTHS, SEE FRAMING PLAN.
3. FOR GIRDER DEAD LOAD DEFLECTION DIAGRAMS SEE SHEET SC-25.

P:\682540\57-294_5-9\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\016201.5_unit3-tsealayout.dgn
3/30/2020

DRAWN BY . . . . JM	DATE . 4-3-2020 . . .	T·Y·LIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	REVISIONS NO. / DATE / DESCRIPTION	CONTRACT I-19-4495	SHEET SC - 22 OF 234
CHECKED BY . . . SP	SCALE . NONE				I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 116) UNIT 3-TOP OF SLAB ELEV. LAYOUT	297 OF 606

GIRDER 1

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION & GRINDING
CL. EXP. JT. & PIER 13	3265+12.15	-30.335	638.29	638.31
CL S. BRG. PIER 13	3265+13.72	-30.333	638.31	638.34
14A	3265+24.14	-30.333	638.48	638.52
14B	3265+34.56	-30.333	638.65	638.72
14C	3265+44.99	-30.333	638.84	638.93
14D	3265+55.41	-30.333	639.04	639.14
14E	3265+65.83	-30.333	639.24	639.35
14F	3265+76.26	-30.333	639.46	639.58
14G	3265+86.68	-30.333	639.69	639.80
14H	3265+97.11	-30.333	639.94	640.03
14I	3266+07.53	-30.333	640.18	640.27
14J	3266+17.95	-30.333	640.43	640.50
14K	3266+28.38	-30.333	640.68	640.73
14L	3266+38.80	-30.333	640.93	640.96
14M	3266+49.23	-30.333	641.17	641.20
CL BRG. PIER 14.	3266+59.15	-30.333	641.41	641.43
15A	3266+69.58	-30.333	641.66	641.68
15B	3266+80.00	-30.333	641.90	641.94
15C	3266+90.42	-30.333	642.15	642.21
15D	3267+00.85	-30.333	642.40	642.47
15E	3267+11.27	-30.333	642.65	642.74
15F	3267+21.69	-30.333	642.89	643.00
15G	3267+32.12	-30.333	643.14	643.26
15H	3267+42.54	-30.333	643.39	643.50
15I	3267+52.97	-30.333	643.62	643.73
15J	3267+63.39	-30.333	643.83	643.94
15K	3267+73.81	-30.333	644.03	644.13
15L	3267+84.24	-30.333	644.22	644.31
15M	3267+94.66	-30.333	644.39	644.46
15N	3268+05.09	-30.333	644.55	644.60
15O	3268+15.51	-30.333	644.70	644.73
15P	3268+25.93	-30.333	644.83	644.85
CL BRG. PIER 15.	3268+34.14	-30.333	644.92	644.94
16A	3268+44.57	-30.333	645.02	645.05
16B	3268+54.99	-30.333	645.12	645.14
16C	3268+65.42	-30.333	645.19	645.23
16D	3268+75.84	-30.533	645.24	645.29
16E	3268+86.26	-30.873	645.27	645.33
16F	3268+96.69	-31.213	645.28	645.35
16G	3269+07.12	-31.553	645.28	645.35
16H	3269+17.56	-31.893	645.26	645.34
16I	3269+28.00	-32.233	645.23	645.31
16J	3269+38.45	-32.573	645.19	645.26
16K	3269+48.90	-32.913	645.13	645.19
16L	3269+59.36	-33.250	645.06	645.10
16M	3269+69.83	-33.250	644.99	645.02
16N	3269+80.30	-33.250	644.91	644.93
16O	3269+90.76	-33.250	644.81	644.83
CL BRG. PIER 16.	3270+01.13	-33.250	644.70	644.72
17A	3270+11.59	-33.250	644.58	644.62
17B	3270+22.06	-33.250	644.44	644.50
17C	3270+32.53	-33.250	644.29	644.38
17D	3270+42.99	-33.250	644.12	644.24
17E	3270+53.46	-33.250	643.94	644.09
17F	3270+63.93	-33.250	643.74	643.92
17G	3270+74.39	-33.250	643.53	643.73
17H	3270+84.86	-33.250	643.30	643.52
17I	3270+95.33	-33.250	643.06	643.29
17J	3271+05.79	-33.250	642.81	643.03
17K	3271+16.26	-33.250	642.54	642.75
17L	3271+26.73	-33.250	642.26	642.45
17M	3271+37.19	-33.250	641.96	642.12
17N	3271+47.66	-33.250	641.65	641.77
17O	3271+58.13	-33.250	641.32	641.40
CL N. BRG. PIER 17	3271+69.41	-33.250	640.95	640.98
CL EXP. JT. & PIER 17	3271+70.97	-33.250	640.90	640.92

GIRDER 2

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION & GRINDING
CL. EXP. JT. & PIER 13	3265+12.15	-25.750	638.57	638.59
CL S. BRG. PIER 13	3265+13.71	-25.750	638.59	638.61
14A	3265+24.06	-25.750	638.75	638.80
14B	3265+34.42	-25.750	638.93	639.00
14C	3265+44.78	-25.750	639.11	639.20
14D	3265+55.14	-25.750	639.31	639.42
14E	3265+65.49	-25.750	639.51	639.63
14F	3265+75.85	-25.750	639.73	639.85
14G	3265+86.21	-25.750	639.96	640.08
14H	3265+96.57	-25.750	640.20	640.31
14I	3266+06.92	-25.750	640.44	640.54
14J	3266+17.28	-25.750	640.69	640.77
14K	3266+27.64	-25.750	640.94	641.00
14L	3266+38.00	-25.750	641.18	641.22
14M	3266+48.35	-25.750	641.43	641.46
CL BRG. PIER 14.	3266+59.15	-25.750	641.68	641.70
15A	3266+69.51	-25.750	641.93	641.96
15B	3266+79.87	-25.750	642.18	642.21
15C	3266+90.23	-25.750	642.42	642.48
15D	3267+00.58	-25.750	642.67	642.74
15E	3267+10.94	-25.750	642.91	643.01
15F	3267+21.30	-25.750	643.16	643.27
15G	3267+31.66	-25.750	643.41	643.53
15H	3267+42.01	-25.750	643.65	643.78
15I	3267+52.37	-25.750	643.88	644.01
15J	3267+62.73	-25.750	644.09	644.22
15K	3267+73.08	-25.750	644.30	644.41
15L	3267+83.44	-25.750	644.48	644.58
15M	3267+93.80	-25.750	644.66	644.73
15N	3268+04.16	-25.750	644.81	644.87
15O	3268+14.51	-25.750	644.96	645.00
15P	3268+24.87	-25.750	645.09	645.12
CL BRG. PIER 15.	3268+34.15	-25.750	645.20	645.22
16A	3268+44.50	-25.750	645.30	645.32
16B	3268+54.86	-25.750	645.39	645.42
16C	3268+65.22	-25.750	645.46	645.51
16D	3268+75.56	-25.750	645.53	645.58
16E	3268+85.90	-25.750	645.57	645.64
16F	3268+96.23	-25.750	645.61	645.68
16G	3269+06.55	-25.750	645.63	645.71
16H	3269+16.88	-25.750	645.63	645.72
16I	3269+27.19	-25.750	645.62	645.70
16J	3269+37.51	-25.750	645.60	645.67
16K	3269+47.82	-25.750	645.57	645.63
16L	3269+58.13	-25.750	645.51	645.56
16M	3269+68.49	-25.750	645.45	645.48
16N	3269+78.85	-25.750	645.37	645.40
16O	3269+89.21	-25.750	645.28	645.30
CL BRG. PIER 16.	3270+03.43	-25.750	645.13	645.15
17A	3270+13.79	-25.750	645.00	645.04
17B	3270+24.15	-25.750	644.86	644.93
17C	3270+34.50	-25.750	644.71	644.80
17D	3270+44.86	-25.750	644.54	644.67
17E	3270+55.22	-25.750	644.35	644.52
17F	3270+65.58	-25.750	644.16	644.35
17G	3270+75.93	-25.750	643.95	644.16
17H	3270+86.29	-25.750	643.72	643.95
17I	3270+96.65	-25.750	643.48	643.71
17J	3270+07.01	-25.750	645.09	645.32
17K	3271+17.36	-25.750	642.96	643.18
17L	3271+27.72	-25.750	642.68	642.87
17M	3271+38.08	-25.750	642.38	642.55
17N	3271+48.43	-25.750	642.07	642.20
17O	3271+58.79	-25.750	641.75	641.83
CL N. BRG. PIER 17	3271+69.15	-25.750	641.41	641.44
CL EXP. JT. & PIER 17	3271+69.43	-25.750	641.40	641.43
	3271+70.97	-25.750	641.35	641.37

GIRDER 3

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION & GRINDING
CL. EXP. JT. & PIER 13	3265+12.15	-18.250	639.02	639.04
CL S. BRG. PIER 13	3265+13.69	-18.250	639.04	639.06
14A	3265+23.94	-18.250	639.20	639.25
14B	3265+34.19	-18.250	639.37	639.45
14C	3265+44.44	-18.250	639.55	639.66
14D	3265+54.69	-18.250	639.75	639.87
14E	3265+64.94	-18.250	639.95	640.08
14F	3265+75.19	-18.250	640.17	640.30
14G	3265+85.44	-18.250	640.39	640.52
14H	3265+95.70	-18.250	640.63	640.75
14I	3266+05.95	-18.250	640.87	640.98
14J	3266+16.20	-18.250	641.11	641.20
14K	3266+26.45	-18.250	641.36	641.42
14L	3266+36.70	-18.250	641.60	641.65
14M	3266+46.95	-18.250	641.84	641.88
CL BRG. PIER 14.	3266+59.15	-18.250	642.13	642.15
15A	3266+69.40	-18.250	642.38	642.41
15B	3266+79.65	-18.250	642.62	642.66
15C	3266+89.90	-18.250	642.86	642.92
15D	3267+00.16	-18.250	643.11	643.18
15E	3267+10.41	-18.250	643.35	643.45
15F	3267+20.66	-18.250	643.60	643.71
15G	3267+30.91	-18.250	643.84	643.96
15H	3267+41.16	-18.250	644.08	644.21
15I	3267+51.41	-18.250	644.31	644.44
15J	3267+61.66	-18.250	644.52	644.65
15K	3267+71.91	-18.250	644.72	644.84
15L	3267+82.16	-18.250	644.91	645.02
15M	3267+92.41	-18.250	645.08	645.17
15N	3268+02.66	-18.250	645.24	645.31
15O	3268+12.91	-18.250	645.39	645.43
15P	3268+23.16	-18.250	645.52	645.55
CL BRG. PIER 15.	3268+34.15	-18.250	645.65	645.67
16A	3268+44.40	-18.250	645.75	645.77
16B	3268+54.65	-18.250	645.84	645.87
16C	3268+64.90	-18.250	645.91	645.96
16D	3268+75.14	-18.250	645.97	646.03
16E	3268+85.37	-18.250	646.02	646.09
16F	3268+95.60	-18.250	646.06	646.14
16G	3269+05.83	-18.250	646.08	646.16
16H	3269+16.05	-18.250	646.08	646.17
16I	3269+26.28	-18.250	646.08	646.16
16J	3269+36.50	-18.250	646.05	646.13
16K	3269+46.71	-18.250	646.02	646.09
16L	3269+56.93	-18.250	645.97	646.02
16M	3269+67.18	-18.250	645.91	645.95
16N	3269+77.43	-18.250	645.83	645.86
16O	3269+87.68	-18.250	645.74	645.76
CL BRG. PIER 16.	3269+97.94	-18.250	645.64	645.66
17A	3270+05.69	-18.250	645.55	645.57
17B	3270+15.94	-18.250	645.42	645.46
17C	3270+26.19	-18.250	645.28	645.35
17D	3270+36.44	-18.250	645.13	645.22
17E	3270+46.69	-18.250	644.96	645.09
17F	3270+56.94	-18.250	644.77	644.94
17G	3270+67.19	-18.250	644.58	644.77
17H	3270+77.44	-18.250	644.36	644.58
17I	3270+87.69	-18.250	644.14	644.37
17J	3270+97.94	-18.250	643.90	644.14
17K	3271+08.19	-18.250	643.65	643.88
17L	3271+18.44	-18.250	643.38	643.60
17M	3271+28.69	-18.250	643.10	643.30
17N	3271+38.94	-18.250	642.81	642.97
17O	3271+49.19	-18.250	642.50	642.62
CL N. BRG. PIER 17	3271+59.44	-18.250	642.18	642.26
CL EXP. JT. & PIER 17	3271+69.44	-18.250	641.85	641.88
	3271+70.97	-18.250	641.80	641.82

DRAWN BY JM
CHECKED BY SP
DATE 4-3-2020
SCALE NONE

TYLININTERNATIONAL

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
UNIT 3 - TOP OF SLAB ELEV. - 1

SHEET SC - 23 OF 234

298 OF 606

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3/30/2020

GIRDER 4

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION & GRINDING
CL. EXP. JT. & PIER 13.	3265+12.15	-10.750	639.47	639.49
CL S. BRG. PIER 13	3265+13.67	-10.750	639.49	639.52
14A	3265+23.82	-10.750	639.65	639.70
14B	3265+33.97	-10.750	639.82	639.90
14C	3265+44.11	-10.750	640.00	640.11
14D	3265+54.26	-10.750	640.19	640.32
14E	3265+64.40	-10.750	640.39	640.53
14F	3265+74.55	-10.750	640.60	640.75
14G	3265+84.70	-10.750	640.82	640.96
14H	3265+94.84	-10.750	641.06	641.19
14I	3266+04.99	-10.750	641.30	641.41
14J	3266+15.14	-10.750	641.54	641.63
14K	3266+25.28	-10.750	641.78	641.85
14L	3266+35.43	-10.750	642.02	642.07
14M	3266+45.57	-10.750	642.26	642.29
CL BRG. PIER 14	3266+59.15	-10.750	642.58	642.60
15A	3266+69.30	-10.750	642.83	642.85
15B	3266+79.44	-10.750	643.07	643.10
15C	3266+89.59	-10.750	643.31	643.36
15D	3266+99.74	-10.750	643.55	643.62
15E	3267+09.88	-10.750	643.79	643.89
15F	3267+20.03	-10.750	644.03	644.15
15G	3267+30.18	-10.750	644.27	644.40
15H	3267+40.32	-10.750	644.51	644.65
15I	3267+50.47	-10.750	644.74	644.88
15J	3267+60.41	-10.750	644.95	645.09
15K	3267+70.76	-10.750	645.15	645.28
15L	3267+80.91	-10.750	645.34	645.45
15M	3267+91.05	-10.750	645.51	645.60
15N	3268+01.20	-10.750	645.67	645.74
15O	3268+11.34	-10.750	645.82	645.87
15P	3268+21.49	-10.750	645.95	645.98
15Q	3268+31.65	-10.750	646.07	646.09
CL BRG. PIER 15	3268+34.14	-10.750	646.10	646.12
16A	3268+44.29	-10.750	646.20	646.22
16B	3268+54.44	-10.750	646.29	646.32
16C	3268+64.58	-10.750	646.36	646.40
16D	3268+74.72	-10.750	646.42	646.48
16E	3268+84.86	-10.750	646.47	646.54
16F	3268+94.99	-10.750	646.50	646.59
16G	3269+05.12	-10.750	646.53	646.62
16H	3269+15.25	-10.750	646.53	646.63
16I	3269+25.38	-10.750	646.53	646.62
16J	3269+35.50	-10.750	646.51	646.59
16K	3269+45.63	-10.750	646.47	646.55
16L	3269+55.75	-10.750	646.43	646.49
16M	3269+65.90	-10.750	646.37	646.41
16N	3269+76.04	-10.750	646.29	646.32
16O	3269+86.19	-10.750	646.21	646.23
16P	3269+96.34	-10.750	646.11	646.12
CL BRG. PIER 16	3270+07.90	-10.750	645.97	646.00
17A	3270+18.04	-10.750	645.85	645.89
17B	3270+28.19	-10.750	645.70	645.77
17C	3270+38.33	-10.750	645.55	645.64
17D	3270+48.48	-10.750	645.38	645.51
17E	3270+58.62	-10.750	645.19	645.36
17F	3270+68.77	-10.750	644.99	645.19
17G	3270+78.92	-10.750	644.78	645.00
17H	3270+89.06	-10.750	644.56	644.80
17I	3270+99.21	-10.750	644.32	644.56
17J	3271+09.35	-10.750	644.07	644.31
17K	3271+19.50	-10.750	643.80	644.03
17L	3271+29.65	-10.750	643.53	643.73
17M	3271+39.79	-10.750	643.23	643.40
17N	3271+49.94	-10.750	642.93	643.05
17O	3271+60.08	-10.750	642.61	642.69
CL N. BRG. PIER 17	3271+69.46	-10.750	642.30	642.33
CL EXP. JT. & PIER 17.	3271+70.97	-10.750	642.25	642.27

GIRDER 5

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION & GRINDING
CL. EXP. JT. & PIER 13	3265+12.15	-3.250	639.92	639.94
CL S. BRG. PIER 13	3265+13.66	-3.250	639.94	639.96
14A	3265+23.70	-3.250	640.10	640.15
14B	3265+33.75	-3.250	640.26	640.35
14C	3265+43.79	-3.250	640.44	640.56
14D	3265+53.83	-3.250	640.63	640.77
14E	3265+63.88	-3.250	640.83	640.98
14F	3265+73.92	-3.250	641.04	641.19
14G	3265+83.96	-3.250	641.26	641.41
14H	3265+94.01	-3.250	641.49	641.62
14I	3266+04.52	-3.250	641.74	641.86
14J	3266+14.10	-3.250	641.96	642.06
14K	3266+24.14	-3.250	642.20	642.28
14L	3266+34.18	-3.250	642.44	642.50
14M	3266+44.23	-3.250	642.68	642.72
14N	3266+54.27	-3.250	642.92	642.94
CL BRG. PIER 14	3266+59.15	-3.250	643.03	643.05
15A	3266+69.20	-3.250	643.27	643.30
15B	3266+79.24	-3.250	643.51	643.55
15C	3266+89.28	-3.250	643.75	643.81
15D	3266+99.33	-3.250	643.99	644.07
15E	3267+09.37	-3.250	644.23	644.33
15F	3267+19.41	-3.250	644.47	644.58
15G	3267+29.46	-3.250	644.70	644.84
15H	3267+39.50	-3.250	644.94	645.09
15I	3267+49.55	-3.250	645.17	645.32
15J	3267+59.59	-3.250	645.38	645.53
15K	3267+69.63	-3.250	645.58	645.72
15L	3267+79.68	-3.250	645.77	645.89
15M	3267+89.72	-3.250	645.94	646.04
15N	3267+99.76	-3.250	646.10	646.18
15O	3268+09.81	-3.250	646.25	646.30
15P	3268+19.85	-3.250	646.38	646.42
15Q	3268+29.90	-3.250	646.50	646.52
CL BRG. PIER 15	3268+34.15	-3.250	646.55	646.57
16A	3268+44.19	-3.250	646.65	646.67
16B	3268+54.23	-3.250	646.73	646.77
16C	3268+64.28	-3.250	646.81	646.86
16D	3268+74.32	-3.250	646.87	646.93
16E	3268+84.36	-3.250	646.92	646.98
16F	3268+94.39	-3.250	646.95	647.03
16G	3269+04.36	-3.250	646.97	647.06
16H	3269+14.46	-3.250	646.98	647.08
16I	3269+24.50	-3.250	646.98	647.08
16J	3269+34.53	-3.250	646.96	647.05
16K	3269+44.56	-3.250	646.93	647.01
16L	3269+54.60	-3.250	646.88	646.95
16M	3269+64.64	-3.250	646.83	646.88
16N	3269+74.68	-3.250	646.75	646.79
16O	3269+84.73	-3.250	646.67	646.69
16P	3269+94.78	-3.250	646.57	646.59
16Q	3270+04.82	-3.250	646.46	646.48
CL BRG. PIER 16	3270+10.06	-3.250	646.40	646.42
17A	3270+20.10	-3.250	646.27	646.31
17B	3270+30.14	-3.250	646.12	646.19
17C	3270+40.19	-3.250	645.97	646.06
17D	3270+50.23	-3.250	645.79	645.93
17E	3270+60.27	-3.250	645.61	645.78
17F	3270+70.32	-3.250	645.41	645.61
17G	3270+80.36	-3.250	645.20	645.43
17H	3270+90.40	-3.250	644.98	645.22
17I	3271+00.45	-3.250	644.74	644.99
17J	3271+10.49	-3.250	644.49	644.74
17K	3271+20.54	-3.250	644.23	644.46
17L	3271+30.58	-3.250	643.95	644.15
17M	3271+40.62	-3.250	643.66	643.83
17N	3271+50.67	-3.250	643.36	643.48
17O	3271+60.71	-3.250	643.04	643.11
CL N. BRG. PIER 17	3271+69.47	-3.250	642.75	642.78
CL. EXP. JT. & PIER 17	3271+70.97	-3.250	642.70	642.72

℄ & P.G.L. RAMP C

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION & GRINDING
CL. EXP. JT. & PIER 13	3265+12.15	0.000	640.11	640.13
CL S. BRG. PIER 13	3265+13.65	0.000	640.13	640.16
14A	3265+23.65	0.000	640.29	640.35
14B	3265+33.65	0.000	640.46	640.55
14C	3265+43.65	0.000	640.63	640.75
14D	3265+53.65	0.000	640.82	640.96
14E	3265+63.65	0.000	641.02	641.17
14F	3265+73.65	0.000	641.23	641.39
14G	3265+83.65	0.000	641.45	641.60
14H	3265+93.65	0.000	641.67	641.82
14I	3266+03.65	0.000	641.91	642.03
14J	3266+13.65	0.000	642.15	642.25
14K	3266+23.65	0.000	642.39	642.46
14L	3266+33.65	0.000	642.62	642.68
14M	3266+43.65	0.000	642.86	642.90
14N	3266+53.65	0.000	643.10	643.13
CL BRG. PIER 14	3266+59.15	0.000	643.23	643.25
15A	3266+69.15	0.000	643.47	643.50
15B	3266+79.15	0.000	643.70	643.75
15C	3266+89.15	0.000	643.94	644.00
15D	3266+99.15	0.000	644.18	644.26
15E	3267+09.15	0.000	644.42	644.52
15F	3267+19.15	0.000	644.65	644.77
15G	3267+29.15	0.000	644.89	645.03
15H	3267+39.15	0.000	645.13	645.28
15I	3267+49.15	0.000	645.35	645.51
15J	3267+59.15	0.000	645.57	645.72
15K	3267+69.15	0.000	645.77	645.91
15L	3267+79.15	0.000	645.95	646.08
15M	3267+89.15	0.000	646.12	646.23
15N	3267+99.15	0.000	646.28	646.36
15O	3268+09.15	0.000	646.43	646.49
15P	3268+19.15	0.000	646.56	646.60
15Q	3268+29.15	0.000	646.68	646.71
CL BRG. PIER 15	3268+34.15	0.000	646.74	646.76
16A	3268+44.15	0.000	646.84	646.87
16B	3268+54.15	0.000	646.93	646.96
16C	3268+64.15	0.000	647.00	647.05
16D	3268+74.15	0.000	647.06	647.13
16E	3268+84.15	0.000	647.11	647.18
16F	3268+94.15	0.000	647.15	647.23
16G	3269+04.15	0.000	647.17	647.26
16H	3269+14.15	0.000	647.18	647.28
16I	3269+24.15	0.000	647.17	647.27
16J	3269+34.15	0.000	647.16	647.25
16K	3269+44.15	0.000	647.12	647.21
16L	3269+54.15	0.000	647.08	647.15
16M	3269+64.15	0.000	647.02	647.07
16N	3269+74.15	0.000	646.95	646.99
16O	3269+84.15	0.000	646.87	646.89
16P	3269+94.15	0.000	646.77	646.79
16Q	3270+04.15	0.000	646.66	646.68
CL BRG. PIER 16	3270+10.98	0.000	646.58	646.60
17A	3270+20.98	0.000	646.45	646.49
17B	3270+30.98	0.000	646.31	646.37
17C	3270+40.98	0.000	646.15	646.25
17D	3270+50.98	0.000	645.98	646.11
17E	3270+60.98	0.000	645.79	645.96
17F	3270+70.98	0.000	645.59	645.80
17G	3270+80.98	0.000	645.38	645.61
17H	3270+90.98	0.000	645.16	645.41
17I	3271+00.98	0.000	644.92	645.17
17J	3271+10.98	0.000	644.67	644.92
17K	3271+20.98	0.000	644.41	644.64
17L	3271+30.98	0.000	644.13	644.34
17M	3271+40.98	0.000	643.84	644.02
17N	3271+50.98	0.000	643.54	643.67
17O	3271+60.98	0.000	643.23	643.30
CL N. BRG. PIER 17	3271+69.48	0.000	642.95	642.98
CL. EXP. JT. & PIER 17	3271+70.97	0.000	642.90	642.92

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3/30/2020

DRAWN BY JM — DATE 4-3-2020
CHECKED BY SP — SCALE NONE

TYLIN INTERNATIONAL

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

REVISIONS

NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
UNIT3-TOP OF SLAB ELEV. - 2

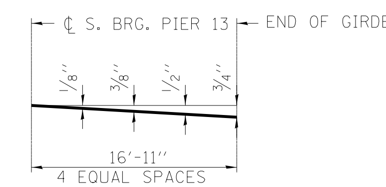
SHEET SC - 24 OF 234

GIRDER 6

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION & GRINDING
CL. EXP. JT. & PIER 13	3265+12.15	4.250	639.98	640.01
CL S. BRG. PIER 13	3265+13.64	4.250	640.01	640.04
14A	3265+23.59	4.250	640.19	640.25
14B	3265+33.53	4.250	640.37	640.47
14C	3265+43.47	4.250	640.57	640.69
14D	3265+53.42	4.250	640.77	640.92
14E	3265+63.36	4.250	640.99	641.15
14F	3265+73.30	4.250	641.22	641.38
14G	3265+83.25	4.250	641.45	641.61
14H	3265+93.19	4.250	641.70	641.85
14I	3266+03.13	4.250	641.96	642.08
14J	3266+13.08	4.250	642.21	642.32
14K	3266+23.02	4.250	642.47	642.55
14L	3266+32.96	4.250	642.72	642.78
14M	3266+42.91	4.250	642.98	643.02
14N	3266+52.85	4.250	643.24	643.27
CL BRG. PIER 14	3266+59.15	4.250	643.40	643.42
15A	3266+69.10	4.250	643.66	643.69
15B	3266+79.04	4.250	643.91	643.96
15C	3266+88.98	4.250	644.17	644.23
15D	3266+98.93	4.250	644.43	644.50
15E	3267+08.87	4.250	644.67	644.76
15F	3267+18.81	4.250	644.90	645.02
15G	3267+28.76	4.250	645.14	645.28
15H	3267+38.70	4.250	645.37	645.52
15I	3267+48.64	4.250	645.60	645.76
15J	3267+58.59	4.250	645.81	645.96
15K	3267+68.53	4.250	646.01	646.15
15L	3267+78.47	4.250	646.19	646.32
15M	3267+88.42	4.250	646.37	646.47
15N	3267+98.36	4.250	646.53	646.61
15O	3268+08.30	4.250	646.67	646.73
15P	3268+18.25	4.250	646.81	646.85
15Q	3268+28.19	4.250	646.93	646.96
CL BRG. PIER 15	3268+34.15	4.250	647.00	647.02
16A	3268+44.09	4.250	647.10	647.12
16B	3268+54.03	4.250	647.18	647.21
16C	3268+63.98	4.250	647.26	647.30
16D	3268+73.92	4.250	647.32	647.38
16E	3268+83.86	4.250	647.37	647.44
16F	3268+93.81	4.250	647.40	647.49
16G	3269+03.75	4.250	647.42	647.52
16H	3269+13.69	4.250	647.43	647.54
16I	3269+23.64	4.250	647.43	647.53
16J	3269+33.58	4.250	647.41	647.51
16K	3269+43.52	4.250	647.38	647.47
16L	3269+53.47	4.250	647.34	647.41
16M	3269+63.41	4.250	647.28	647.33
16N	3269+73.35	4.250	647.21	647.25
16O	3269+83.30	4.250	647.13	647.16
16P	3269+93.24	4.250	647.04	647.05
16Q	3270+03.18	4.250	646.93	646.95
CL BRG. PIER 16	3270+12.17	4.250	646.82	646.84
17A	3270+22.12	4.250	646.69	646.73
17B	3270+32.06	4.250	646.54	646.61
17C	3270+42.00	4.250	646.39	646.49
17D	3270+51.95	4.250	646.21	646.35
17E	3270+61.89	4.250	646.03	646.20
17F	3270+71.83	4.250	645.83	646.04
17G	3270+81.78	4.250	645.62	645.85
17H	3270+91.72	4.250	645.40	645.65
17I	3271+01.66	4.250	645.16	645.42
17J	3271+10.98	4.250	644.93	645.18
17K	3271+20.98	4.250	644.67	644.90
17L	3271+31.49	4.250	644.37	644.58
17M	3271+41.44	4.250	644.09	644.26
17N	3271+51.38	4.250	643.78	643.91
17O	3271+60.98	4.250	643.48	643.56
CL N. BRG. PIER 17	3271+69.49	4.250	643.20	643.23
CL. EXP. JT. & PIER 17	3271+70.97	4.250	643.15	643.17

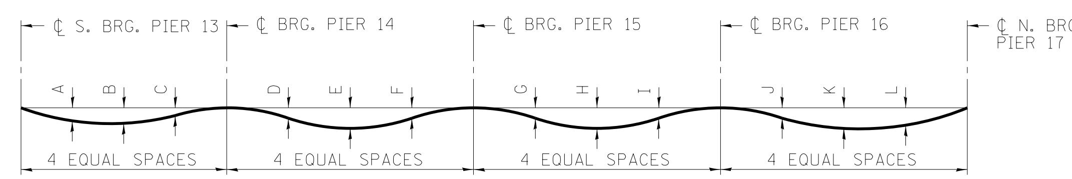
GIRDER 6A

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION & GRINDING
CL. EXP. JT. & PIER 13	3265+12.52	7.915	639.88	639.90
CL S. BRG. PIER 13	3265+13.64	7.917	639.90	639.92
14A	3265+23.54	7.007	640.12	640.18
End of Girder	3265+29.82	6.500	640.25	640.34



DEAD LOAD DEFLECTION DIAGRAM - GIRDER 6A

(INCLUDES WEIGHT OF CONCRETE ONLY.)



DEAD LOAD DEFLECTION DIAGRAM - GIRDER 1 THRU 6

(INCLUDES WEIGHT OF CONCRETE ONLY.)

DIMENSIONS

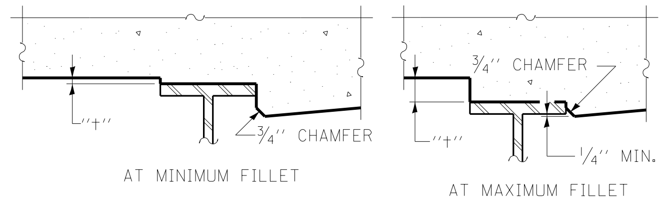
GIRDER	A	B	C	D	E	F	G	H	I	J	K	L
1	7/8"	1 1/8"	1/2"	5/8"	1 1/8"	3/4"	3/8"	5/8"	1/4"	1 1/4"	2 3/8"	2"
2	1"	1 1/4"	1/2"	5/8"	1 1/4"	3/4"	3/8"	3/4"	1/4"	1 1/4"	2 1/2"	2"
3	1 1/8"	1 3/8"	5/8"	3/4"	1 3/8"	7/8"	1/2"	7/8"	1/4"	1 3/8"	2 5/8"	2 1/8"
4	1 1/4'	1 3/8"	5/8"	3/4"	1 1/2"	7/8"	1/2"	7/8"	1/4"	1 3/8"	2 5/8"	2 1/8"
5	1 1/4"	1 1/2"	5/8"	3/4"	1 1/2"	7/8"	1/2"	1"	1/4"	1 3/8"	2 5/8"	2 1/8"
6	1 3/8"	1 5/8"	3/4"	3/4"	1 5/8"	1"	5/8"	1"	1/4"	1 3/8"	2 3/4"	2 1/4"

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 AND GRINDING.

END OF SPAN DIMENSIONS

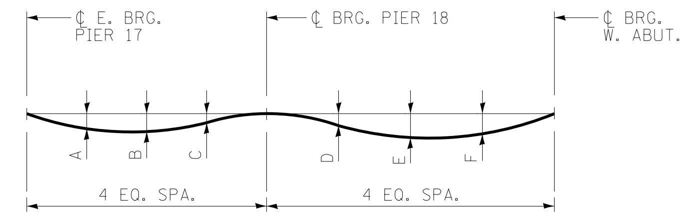
GIRDER	D1	D2
1	5'-2⅜"	10'-6⅛"
2	6'-7⅜"	12'-2⅜"
3	8'-0½"	13'-10¾"
4	9'-5½"	5'-7"
5	10'-10⅝"	7'-3¼"
6	12'-3⅝"	8'-11½"



TO DETERMINE "t": AFTER ALL STRUCTURAL STEEL HAS BEEN ERECTED, ELEVATIONS OF THE TOP FLANGES OF THE GIRDERS SHALL BE TAKEN AT INTERVALS SHOWN ON THIS SHEET. THESE ELEVATIONS SUBTRACTED FROM THE "THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION AND GRINDING" SHOWN ON SHEETS SC -26 AND SC-27 OF 234, MINUS 8¼" SLAB THICKNESS, EQUALS THE FILLET HEIGHTS "t" ABOVE TOP FLANGE OF GIRDERS.

THE SLAB IS TO BE GROUND AFTER CURING TO ACHIEVE SMOOTHNESS, BUT THE SLAB IS NOT TO BE GROUND TO ELEVATIONS BELOW THE "THEORETICAL GRADE ELEVATIONS" SHOWN ON SHEETS SC-26 TO SC-27 OF 234. FOR GRINDING THE DECK, SEE SPECIAL PROVISIONS.

FILLET HEIGHTS

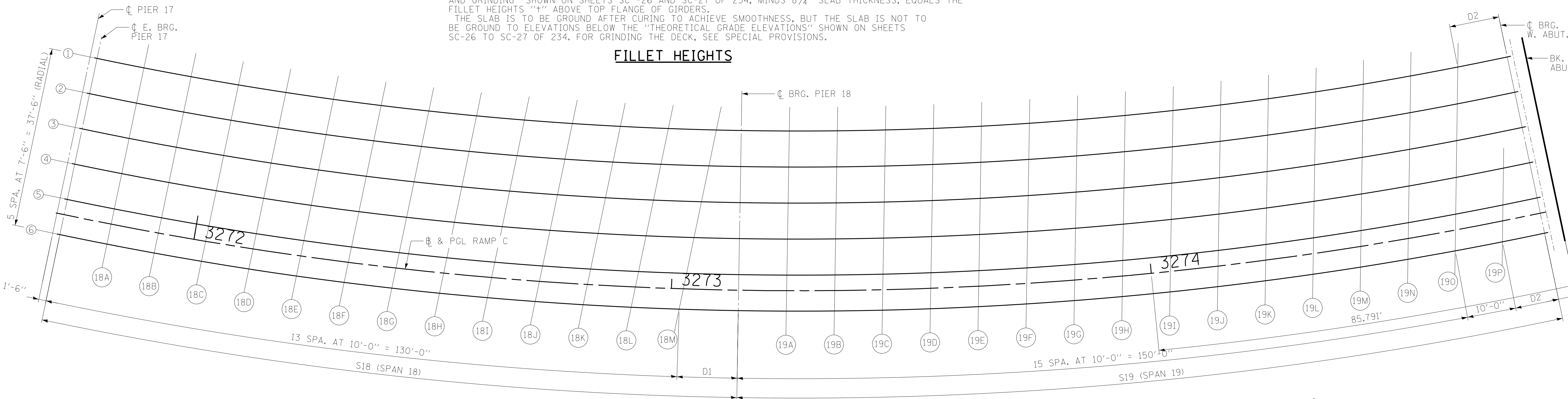


DEAD LOAD DEFLECTION DIAGRAM

(INCLUDES WEIGHT OF CONCRETE ONLY.)

GIRDER	A	B	C	D	E	F
1	¾"	¾"	¼"	1⅛"	1⅛"	1⅜"
2	⅞"	⅞"	⅛"	1¼"	2½"	2"
3	⅞"	⅞"	⅛"	1⅜"	2¾"	2¼"
4	⅞"	⅞"	⅛"	1½"	2⅞"	2⅜"
5	⅞"	⅞"	⅛"	1⅝"	3⅛"	2⅝"
6	⅞"	⅞"	⅛"	1⅝"	3¼"	2¾"

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 AND GRINDING.



PLAN

℞ & P.G.L. RAMP C

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION & GRINDING
CL. EXP. JT. & PIER 17	3271+70.98	0.000	642.90	642.92
CL. E. BRG. PIER 17.	3271+72.48	0.000	642.85	642.87
18A	3271+82.48	0.000	642.50	642.55
18B	3271+92.48	0.000	642.15	642.22
18C	3272+02.48	0.000	641.78	641.87
18D	3272+12.48	0.000	641.39	641.50
18E	3272+22.48	0.000	641.00	641.11
18F	3272+32.48	0.000	640.59	640.70
18G	3272+42.48	0.000	640.16	640.27
18H	3272+52.48	0.000	639.73	639.83
18I	3272+62.48	0.000	639.28	639.36
18J	3272+72.48	0.000	638.82	638.88
18K	3272+82.48	0.000	638.34	638.39
18L	3272+92.48	0.000	637.85	637.89
18M	3273+02.48	0.000	637.35	637.37
CL BRG. PIER 18.	3273+13.98	0.000	636.76	636.78
19A	3273+23.98	0.000	636.23	636.27
19B	3273+33.98	0.000	635.68	635.75
19C	3273+43.98	0.000	635.13	635.23
19D	3273+53.98	0.000	634.58	634.72
19E	3273+63.98	0.000	634.03	634.20
19F	3273+73.98	0.000	633.48	633.69
19G	3273+83.98	0.000	632.93	633.17
19H	3273+93.98	0.000	632.38	632.65
19I	3274+03.98	0.000	631.83	632.11
19J	3274+13.98	0.000	631.28	631.57
19K	3274+23.98	0.000	630.72	631.02
19L	3274+33.98	0.000	630.17	630.45
19M	3274+43.98	0.000	629.62	629.88
19N	3274+53.98	0.000	629.07	629.29
19O	3274+63.98	0.000	628.52	628.70
19P	3274+73.98	0.000	627.97	628.09
CL Brg. W. Abut.	3274+81.98	0.000	627.53	627.55
CL. EXP. JT. W. ABUT.	3274+83.19	0.000	627.47	627.49
Bk. of W. Abut.	3274+85.81	0.000	627.32	627.34

NOTE:

1. FOR SPAN LENGTHS, SEE FRAMING PLAN.

GIRDER 1

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION & GRINDING
CL. EXP. JT. & PIER 17	3271+70.98	-33.250	640.90	640.92
CL. E. BRG. PIER 17.	3271+72.55	-33.250	640.85	640.87
18A	3271+82.95	-33.250	640.49	640.54
18B	3271+93.41	-33.250	640.12	640.19
18C	3272+03.88	-33.250	639.73	639.82
18D	3272+14.35	-33.250	639.32	639.43
18E	3272+24.81	-33.250	638.91	639.01
18F	3272+35.28	-33.250	638.47	638.58
18G	3272+45.75	-33.250	638.03	638.13
18H	3272+56.21	-33.250	637.57	637.65
18I	3272+66.68	-33.250	637.09	637.16
18J	3272+77.14	-33.250	636.60	636.66
18K	3272+87.61	-33.250	636.10	636.13
18L	3272+98.08	-33.250	635.58	635.60
18M	3273+08.54	-33.250	635.04	635.07
CL BRG. PIER 18.	3273+13.98	-33.250	634.76	634.78
19A	3273+24.45	-33.250	634.21	634.24
19B	3273+34.91	-33.250	633.64	633.69
19C	3273+45.38	-33.250	633.06	633.14
19D	3273+55.85	-33.250	632.48	632.59
19E	3273+66.31	-33.250	631.91	632.04
19F	3273+76.78	-33.250	631.33	631.49
19G	3273+87.24	-33.250	630.75	630.93
19H	3273+97.71	-33.250	630.18	630.37
19I	3274+08.18	-33.250	629.60	629.79
19J	3274+18.64	-33.250	629.02	629.22
19K	3274+29.11	-33.250	628.45	628.63
19L	3274+39.58	-33.250	627.87	628.03
19M	3274+50.04	-33.250	627.29	627.43
19N	3274+60.51	-33.250	626.72	626.82
19O	3274+70.98	-33.250	626.14	626.20
CL BRG. W. ABUT.	3274+81.98	-33.250	625.54	625.56
CL. EXP. JT. W. ABUT.	3274+83.25	-33.250	625.47	625.49
BK. OF W. ABUT.	3274+85.99	-33.250	625.32	625.34

GIRDER 2

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION & GRINDING
CL. EXP. JT. & PIER 17	3271+70.98	-25.750	641.35	641.37
CL. E. BRG. PIER 17.	3271+72.55	-25.750	641.30	641.32
18A	3271+82.84	-25.750	640.94	640.99
18B	3271+93.19	-25.750	640.57	640.64
18C	3272+03.55	-25.750	640.19	640.28
18D	3272+13.91	-25.750	639.79	639.90
18E	3272+24.27	-25.750	639.38	639.49
18F	3272+34.62	-25.750	638.95	639.06
18G	3272+44.98	-25.750	638.51	638.61
18H	3272+55.34	-25.750	638.05	638.14
18I	3272+65.70	-25.750	637.59	637.66
18J	3272+76.05	-25.750	637.10	637.16
18K	3272+86.41	-25.750	636.60	636.64
18L	3272+96.77	-25.750	636.09	636.12
18M	3273+07.13	-25.750	635.57	635.59
CL BRG. PIER 18.	3273+13.98	-25.750	635.21	635.23
19A	3273+24.34	-25.750	634.66	634.70
19B	3273+34.69	-25.750	634.10	634.16
19C	3273+45.05	-25.750	633.53	633.61
19D	3273+55.41	-25.750	632.96	633.07
19E	3273+65.77	-25.750	632.39	632.53
19F	3273+76.12	-25.750	631.82	631.99
19G	3273+86.48	-25.750	631.25	631.44
19H	3273+96.84	-25.750	630.68	630.89
19I	3274+07.20	-25.750	630.10	630.32
19J	3274+17.55	-25.750	629.53	629.75
19K	3274+27.90	-25.750	628.96	629.17
19L	3274+38.27	-25.750	628.39	628.58
19M	3274+48.63	-25.750	627.82	627.98
19N	3274+58.98	-25.750	627.25	627.37
19O	3274+69.34	-25.750	626.68	626.76
CL BRG. W. ABUT.	3274+81.98	-25.750	625.99	626.01
CL. EXP. JT. W. ABUT.	3274+83.24	-25.750	625.92	625.94
BK. OF W. ABUT.	3274+85.95	-25.750	625.77	625.79

GIRDER 3

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION & GRINDING
CL. EXP. JT. & PIER 17	3271+70.98	-18.250	641.80	641.82
CL. E. BRG. PIER 17.	3271+72.55	-18.250	641.75	641.77
18A	3271+82.73	-18.250	641.40	641.45
18B	3271+92.98	-18.250	641.03	641.10
18C	3272+03.23	-18.250	640.65	640.74
18D	3272+13.48	-18.250	640.26	640.36
18E	3272+23.73	-18.250	639.85	639.96
18F	3272+33.98	-18.250	639.43	639.54
18G	3272+44.23	-18.250	638.99	639.09
18H	3272+54.49	-18.250	638.54	638.63
18I	3272+64.74	-18.250	638.08	638.15
18J	3272+74.99	-18.250	637.60	637.66
18K	3272+85.24	-18.250	637.11	637.15
18L	3272+95.49	-18.250	636.61	636.63
18M	3273+05.74	-18.250	636.09	636.11
CL BRG. PIER 18.	3273+13.98	-18.250	635.66	635.68
19A	3273+24.23	-18.250	635.12	635.16
19B	3273+34.48	-18.250	634.56	634.62
19C	3273+44.73	-18.250	634.00	634.09
19D	3273+54.98	-18.250	633.43	633.55
19E	3273+65.23	-18.250	632.87	633.02
19F	3273+75.48	-18.250	632.30	632.49
19G	3273+85.73	-18.250	631.74	631.95
19H	3273+95.99	-18.250	631.17	631.40
19I	3274+06.24	-18.250	630.61	630.84
19J	3274+16.49	-18.250	630.04	630.28
19K	3274+26.74	-18.250	629.48	629.70
19L	3274+36.99	-18.250	628.91	629.12
19M	3274+47.24	-18.250	628.35	628.52
19N	3274+57.49	-18.250	627.78	627.92
19O	3274+67.74	-18.250	627.22	627.31
CL BRG. W. ABUT.	3274+81.98	-18.250	626.44	626.46
CL. EXP. JT. W. ABUT.	3274+83.22	-18.250	626.37	626.39
BK. OF W. ABUT.	3274+85.91	-18.250	626.22	626.24

GIRDER 4

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION & GRINDING
CL. EXP. JT. & PIER 17	3271+70.98	-10.750	642.25	642.27
CL. E. BRG. PIER 17.	3271+72.55	-10.750	642.20	642.22
18A	3271+82.63	-10.750	641.85	641.90
18B	3271+92.77	-10.750	641.49	641.56
18C	3272+02.92	-10.750	641.11	641.21
18D	3272+13.06	-10.750	640.72	640.83
18E	3272+23.21	-10.750	640.32	640.43
18F	3272+33.36	-10.750	639.90	640.01
18G	3272+43.50	-10.750	639.47	639.58
18H	3272+53.65	-10.750	639.03	639.12
18I	3272+63.79	-10.750	638.57	638.65
18J	3272+73.94	-10.750	638.10	638.16
18K	3272+84.09	-10.750	637.62	637.65
18L	3272+94.23	-10.750	637.12	637.14
18M	3273+04.38	-10.750	636.61	636.63
CL BRG. PIER 18.	3273+13.98	-10.750	636.11	636.13
19A	3273+24.13	-10.750	635.57	635.61
19B	3273+34.27	-10.750	635.02	635.09
19C	3273+44.42	-10.750	634.46	634.56
19D	3273+54.56	-10.750	633.90	634.04
19E	3273+64.71	-10.750	633.35	633.51
19F	3273+74.86	-10.750	632.79	632.99
19G	3273+85.00	-10.750	632.23	632.46
19H	3273+95.15	-10.750	631.67	631.92
19I	3274+05.29	-10.750	631.11	631.37
19J	3274+15.44	-10.750	630.55	630.81
19K	3274+25.59	-10.750	629.99	630.24
19L	3274+35.73	-10.750	629.43	629.66
19M	3274+45.88	-10.750	628.87	629.07
19N	3274+56.02	-10.750	628.31	628.47
19O	3274+66.17	-10.750	627.75	627.86
19P	3274+76.32	-10.750	627.20	627.25
CL BRG. W. ABUT.	3274+81.98	-10.750	626.89	626.91
CL. EXP. JT. W. ABUT.	3274+83.21	-10.750	626.82	626.84
BK. OF W. ABUT.	3274+85.87	-10.750	626.68	626.70

GIRDER 5

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION & GRINDING
CL. EXP. JT. & PIER 17	3271+70.98	-3.250	642.70	642.72
CL. E. BRG. PIER 17.	3271+72.49	-3.250	642.65	642.67
18A	3271+82.52	-3.250	642.31	642.35
18B	3271+92.57	-3.250	641.95	642.02
18C	3272+02.61	-3.250	641.58	641.66
18D	3272+12.65	-3.250	641.19	641.29
18E	3272+22.70	-3.250	640.79	640.90
18F	3272+32.74	-3.250	640.38	640.49
18G	3272+42.79	-3.250	639.95	640.07
18H	3272+52.83	-3.250	639.52	639.62
18I	3272+62.87	-3.250	639.06	639.16
18J	3272+72.92	-3.250	638.60	638.68
18K	3272+82.96	-3.250	638.12	638.18
18L	3272+93.00	-3.250	637.63	637.68
18M	3273+03.05	-3.250	637.13	637.16
CL BRG. PIER 18.	3273+13.98	-3.250	636.56	636.58
19A	3273+24.02	-3.250	636.03	636.07
19B	3273+34.07	-3.250	635.48	635.54
19C	3273+44.11	-3.250	634.93	635.02
19D	3273+54.15	-3.250	634.38	634.50
19E	3273+64.20	-3.250	633.82	633.98
19F	3273+74.24	-3.250	633.27	633.46
19G	3273+84.29	-3.250	632.72	632.94
19H	3273+94.33	-3.250	632.16	632.41
19I	3274+04.37	-3.250	631.61	631.88
19J	3274+14.42	-3.250	631.06	631.34
19K	3274+24.46	-3.250	630.50	630.79
19L	3274+34.50	-3.250	629.95	630.22
19M	3274+44.55	-3.250	629.40	629.66
19N	3274+54.59	-3.250	628.84	629.07
19O	3274+64.63	-3.250	628.29	628.49
19P	3274+74.68	-3.250	627.74	627.89
CL BRG. W. ABUT.	3274+81.98	-3.250	627.34	627.36
CL. EXP. JT. W. ABUT.	3274+83.20	-3.250	627.27	627.29
BK. OF W. ABUT.	3274+85.83	-3.250	627.13	627.15

GIRDER 6

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION
CL. EXP. JT. & PIER 17	3271+70.98	4.250	643.15	643.17
CL. E. BRG. PIER 17.	3271+72.48	4.250	643.10	643.12
18A	3271+82.42	4.250	642.76	642.81
18B	3271+92.37	4.250	642.40	642.48
18C	3272+02.31	4.250	642.04	642.14
18D	3272+12.25	4.250	641.66	641.77
18E	3272+22.20	4.250	641.26	641.38
18F	3272+32.14	4.250	640.85	640.97
18G	3272+42.08	4.250	640.43	640.54
18H	3272+52.03	4.250	640.00	640.09
18I	3272+61.97	4.250	639.56	639.63
18J	3272+71.91	4.250	639.10	639.15
18K	3272+81.86	4.250	638.62	638.66
18L	3272+91.80	4.250	638.14	638.16
18M	3273+01.74	4.250	637.64	637.66
CL BRG. PIER 18.	3273+13.98	4.250	637.01	637.03
19A	3273+23.92	4.250	636.48	636.53
19B	3273+33.87	4.250	635.94	636.02
19C	3273+43.81	4.250	635.40	635.50
19D	3273+53.75	4.250	634.85	635.00
19E	3273+63.70	4.250	634.30	634.49
19F	3273+73.64	4.250	633.75	633.98
19G	3273+83.58	4.250	633.21	633.47
19H	3273+93.53	4.250	632.66	632.95
19I	3274+03.47	4.250	632.11	632.41
19J	3274+13.41	4.250	631.56	631.87
19K	3274+23.36	4.250	631.01	631.31
19L	3274+33.30	4.250	630.47	630.74
19M	3274+43.24	4.250	629.92	630.16
19N	3274+53.19	4.250	629.37	629.57
19O	3274+63.13	4.250	628.82	628.96
19P	3274+73.07	4.250	628.27	628.35
CL BRG. W. ABUT.	3274+81.98	4.250	627.79	627.81
CL. EXP. JT. W. ABUT.	3274+83.19	4.250	627.72	627.74
BK. OF W. ABUT.	3274+85.79	4.250	627.58	627.60

P:\60254\0\57-294.5-9\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\016210_5_unit4-tse01.dgn
3/30/2020

DRAWN BY ME
CHECKED BY SP
DATE 4-3-2020
SCALE NONE

TYLIN INTERNATIONAL

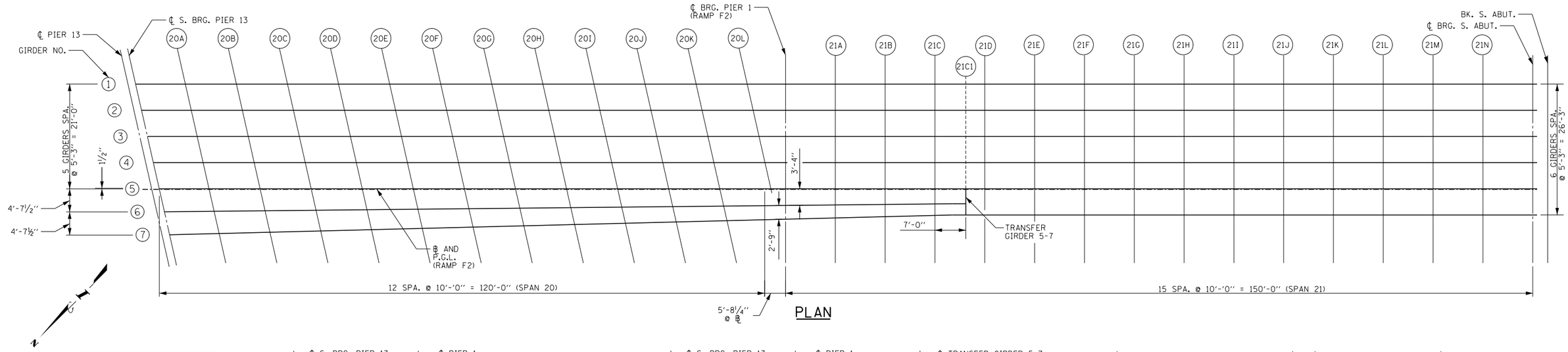
THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
UNIT 4 - TOP OF SLAB ELEV.

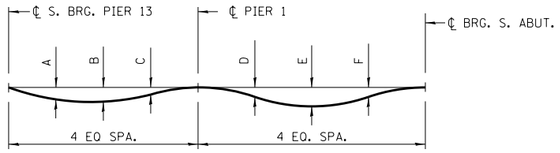
SHEET SC - 27 OF 234



GIRDER	A	B	C	D	E	F
1	1	1	¼	1⅛	2¼	2
2	⅞	⅞	¼	1⅜	2⅜	2¼
3	⅞	⅞	¼	1⅜	2¾	2¼
4	⅞	¾	⅛	1⅜	2¾	2¼
5	⅝	½	⅛	1⅜	2¾	2⅜
7	⅜	¼	⅛	1¼	2⅜	2

GIRDER DEFLECTIONS (INCHES)

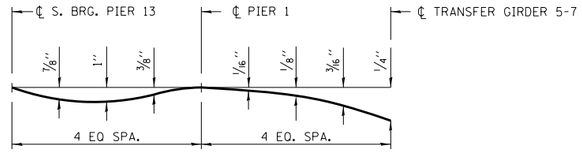
(INCLUDES WEIGHT OF CONCRETE ONLY.)



DEAD LOAD DEFLECTION DIAGRAM

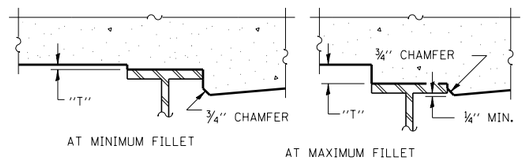
(INCLUDES WEIGHT OF CONCRETE ONLY.)

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 AND GRINDING AS SHOWN BELOW.



DEAD LOAD DEFLECTION DIAGRAM - GIRDER 6

(INCLUDES WEIGHT OF CONCRETE ONLY.)



FILLET HEIGHTS

TO DETERMINE "T": AFTER ALL STRUCTURAL STEEL HAS BEEN ERECTED, ELEVATIONS OF THE TOP FLANGES OF THE GIRDERS SHALL BE TAKEN AT INTERVALS SHOWN BELOW. THESE ELEVATIONS SUBTRACTED FROM THE "THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION AND GRINDING" SHOWN BELOW, MINUS 8¼" SLAB, EQUALS THE FILLET HEIGHTS "T" ABOVE TOP FLANGE OF GIRDERS.
THE SLAB IS TO BE GROUND AFTER CURING TO ACHIEVE SMOOTHNESS, BUT THE SLAB IS NOT TO BE GROUND TO ELEVATIONS BELOW THE "THEORETICAL GRADE ELEVATIONS" SHOWN BELOW. FOR GRINDING THE DECK, SEE SPECIAL PROVISIONS.

GIRDER 1

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEV. ADJUSTED FOR DEAD LOAD DEFLECTION AND GRINDING
℄ PIER 13	5005+99.85	-21.13	639.49	639.51
℄ S. BRG. PIER 13	5006+01.38	-21.13	639.47	639.49
20A	5006+11.38	-21.13	639.32	639.37
20B	5006+21.38	-21.13	639.17	639.25
20C	5006+31.38	-21.13	639.00	639.10
20D	5006+41.38	-21.13	638.82	638.93
20E	5006+51.38	-21.13	638.64	638.76
20F	5006+61.38	-21.13	638.46	638.56
20G	5006+71.38	-21.13	638.26	638.35
20H	5006+81.38	-21.13	638.04	638.12
20I	5006+91.38	-21.13	637.81	637.88
20J	5007+01.38	-21.13	637.57	637.62
20K	5007+11.38	-21.13	637.32	637.35
20L	5007+21.38	-21.13	637.05	637.07
℄ BRG. PIER 1 (RAMP F2)	5007+31.85	-21.13	636.76	636.78
21A	5007+41.85	-21.13	636.47	636.50
21B	5007+51.85	-21.13	636.16	636.22
21C	5007+61.85	-21.13	635.84	635.93
21D	5007+71.85	-21.13	635.51	635.64
21E	5007+81.85	-21.13	635.17	635.32
21F	5007+91.85	-21.13	634.81	634.99
21G	5008+01.85	-21.13	634.44	634.64
21H	5008+11.85	-21.13	634.05	634.27
21I	5008+21.85	-21.13	633.65	633.87
21J	5008+31.85	-21.13	633.24	633.45
21K	5008+41.85	-21.13	632.81	633.00
21L	5008+51.85	-21.13	632.38	632.54
21M	5008+61.85	-21.13	631.93	632.04
21N	5008+71.85	-21.13	631.46	631.53
℄ BRG. S. ABUT.	5008+81.85	-21.13	630.98	631.00
BK. S. ABUT.	5008+85.35	-21.13	630.81	630.83

GIRDER 2

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEV. ADJUSTED FOR DEAD LOAD DEFLECTION AND GRINDING
℄ PIER 13	5006+01.04	-15.88	639.31	639.33
℄ S. BRG. PIER 13	5006+02.57	-15.88	639.29	639.31
20A	5006+12.57	-15.88	639.17	639.22
20B	5006+22.57	-15.88	639.03	639.11
20C	5006+32.57	-15.88	638.88	638.98
20D	5006+42.57	-15.88	638.72	638.83
20E	5006+52.57	-15.88	638.54	638.65
20F	5006+62.57	-15.88	638.35	638.46
20G	5006+72.57	-15.88	638.15	638.24
20H	5006+82.57	-15.88	637.94	638.01
20I	5006+92.57	-15.88	637.71	637.76
20J	5007+02.57	-15.88	637.47	637.50
20K	5007+12.57	-15.88	637.21	637.23
20L	5007+22.57	-15.88	636.94	636.96
℄ BRG. PIER 1 (RAMP F2)	5007+31.85	-15.88	636.68	636.70
21A	5007+41.85	-15.88	636.39	636.43
21B	5007+51.85	-15.88	636.08	636.15
21C	5007+61.85	-15.88	635.76	635.86
21D	5007+71.85	-15.88	635.44	635.58
21E	5007+81.85	-15.88	635.09	635.27
21F	5007+91.85	-15.88	634.73	634.94
21G	5008+01.85	-15.88	634.36	634.59
21H	5008+11.85	-15.88	633.97	634.22
21I	5008+21.85	-15.88	633.57	633.82
21J	5008+31.85	-15.88	633.16	633.40
21K	5008+41.85	-15.88	632.74	632.95
21L	5008+51.85	-15.88	632.30	632.48
21M	5008+61.85	-15.88	631.85	631.98
21N	5008+71.85	-15.88	631.38	631.46
℄ BRG. S. ABUT.	5008+81.85	-15.88	630.90	630.92
BK. S. ABUT.	5008+85.35	-15.88	630.73	630.75

GIRDER 3

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEV. ADJUSTED FOR DEAD LOAD DEFLECTION AND GRINDING
℄ PIER 13	5006+02.23	-10.63	639.22	639.24
℄ S. BRG. PIER 13	5006+03.76	-10.63	639.20	639.22
20A	5006+13.76	-10.63	639.08	639.12
20B	5006+23.76	-10.63	638.94	639.01
20C	5006+33.76	-10.63	638.79	638.88
20D	5006+43.76	-10.63	638.62	638.72
20E	5006+53.76	-10.63	638.44	638.55
20F	5006+63.76	-10.63	638.25	638.35
20G	5006+73.76	-10.63	638.05	638.13
20H	5006+83.76	-10.63	637.83	637.90
20I	5006+93.76	-10.63	637.60	637.65
20J	5007+03.76	-10.63	637.36	637.39
20K	5007+13.76	-10.63	637.10	637.12
20L	5007+23.76	-10.63	636.83	636.85
℄ BRG. PIER 1 (RAMP F2)	5007+31.85	-10.63	636.60	636.62
21A	5007+41.85	-10.63	636.31	636.35
21B	5007+51.85	-10.63	636.00	636.07
21C	5007+61.85	-10.63	635.68	635.79
21D	5007+71.85	-10.63	635.36	635.50
21E	5007+81.85	-10.63	635.01	635.19
21F	5007+91.85	-10.63	634.65	634.86
21G	5008+01.85	-10.63	634.28	634.51
21H	5008+11.85	-10.63	633.89	634.14
21I	5008+21.85	-10.63	633.49	633.75
21J	5008+31.85	-10.63	633.08	633.32
21K	5008+41.85	-10.63	632.66	632.87
21L	5008+51.85	-10.63	632.22	632.40
21M	5008+61.85	-10.63	631.77	631.90
21N	5008+71.85	-10.63	631.30	631.38
℄ BRG. S. ABUT.	5008+81.85	-10.63	630.83	630.85
BK. S. ABUT.	5008+85.35	-10.63	630.66	630.68

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3/30/2020

DRAWN BY . . . . MG . . . . . DATE . 3-11-2020 . .
CHECKED BY . . . . CK . . . . . SCALE . NONE . . . .

TranSmart/EJM
411 South Wells Street Suite 1000
Chicago, Illinois 60607

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

I-57 AT 294 RAMPS C, D, AND F2
S.N. 016-2101
UNIT 5-TOP OF SLAB ELEV.-1

GIRDER 4

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION AND GRINDING
℄ PIER 13	5006+03.41	-5.38	639.13	639.15
℄ S. BRG. PIER 13	5006+04.94	-5.38	639.11	639.13
20A	5006+14.94	-5.38	638.98	639.03
20B	5006+24.94	-5.38	638.84	638.91
20C	5006+34.94	-5.38	638.69	638.77
20D	5006+44.94	-5.38	638.52	638.62
20E	5006+54.94	-5.38	638.34	638.44
20F	5006+64.94	-5.38	638.15	638.24
20G	5006+74.94	-5.38	637.94	638.02
20H	5006+84.94	-5.38	637.73	637.79
20I	5006+94.94	-5.38	637.49	637.54
20J	5007+04.94	-5.38	637.25	637.28
20K	5007+14.94	-5.38	636.99	637.01
20L	5007+24.94	-5.38	636.72	636.74
℄ BRG. PIER 1 (RAMP F2)	5007+31.85	-5.38	636.52	636.54
21A	5007+41.85	-5.38	636.23	636.27
21B	5007+51.85	-5.38	635.92	635.99
21C	5007+61.85	-5.38	635.60	635.71
21D	5007+71.85	-5.38	635.28	635.42
21E	5007+81.85	-5.38	634.93	635.11
21F	5007+91.85	-5.38	634.57	634.79
21G	5008+01.85	-5.38	634.20	634.44
21H	5008+11.85	-5.38	633.81	634.06
21I	5008+21.85	-5.38	633.42	633.67
21J	5008+31.85	-5.38	633.00	633.24
21K	5008+41.85	-5.38	632.58	632.79
21L	5008+51.85	-5.38	632.14	632.32
21M	5008+61.85	-5.38	631.69	631.82
21N	5008+71.85	-5.38	631.22	631.30
℄ BRG. S. ABUT.	5008+81.85	-5.38	630.75	630.77
BK. S. ABUT.	5008+85.35	-5.38	630.58	630.60

GIRDER 5

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION AND GRINDING
℄ PIER 13	5006+04.60	-0.13	639.03	639.05
℄ S. BRG. PIER 13	5006+06.13	-0.13	639.02	639.04
20A	5006+16.13	-0.13	638.89	638.93
20B	5006+26.13	-0.13	638.75	638.80
20C	5006+36.13	-0.13	638.59	638.66
20D	5006+46.13	-0.13	638.42	638.50
20E	5006+56.13	-0.13	638.24	638.32
20F	5006+66.13	-0.13	638.05	638.12
20G	5006+76.13	-0.13	637.84	637.90
20H	5006+86.13	-0.13	637.62	637.66
20I	5006+96.13	-0.13	637.39	637.42
20J	5007+06.13	-0.13	637.14	637.16
20K	5007+16.13	-0.13	636.88	636.89
20L	5007+26.13	-0.13	636.61	636.62
℄ BRG. PIER 1 (RAMP F2)	5007+31.85	-0.13	636.45	636.47
21A	5007+41.85	-0.13	636.15	636.20
21B	5007+51.85	-0.13	635.84	635.92
21C	5007+61.85	-0.13	635.52	635.63
21D	5007+71.85	-0.13	635.20	635.35
21E	5007+81.85	-0.13	634.85	635.04
21F	5007+91.85	-0.13	634.49	634.71
21G	5008+01.85	-0.13	634.12	634.36
21H	5008+11.85	-0.13	633.74	633.99
21I	5008+21.85	-0.13	633.34	633.60
21J	5008+31.85	-0.13	632.92	633.17
21K	5008+41.85	-0.13	632.50	632.72
21L	5008+51.85	-0.13	632.06	632.25
21M	5008+61.85	-0.13	631.61	631.75
21N	5008+71.85	-0.13	631.15	631.23
℄ BRG. S. ABUT.	5008+81.85	-0.13	630.67	630.69
BK. S. ABUT.	5008+85.35	-0.13	630.50	630.52

℄ RAMP F2 AND PGL

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEV. ADJUSTED FOR DEAD LOAD DEFLECTION AND GRINDING
℄ PIER 13	5006+04.63	0	639.03	639.05
℄ S. BRG. PIER 13	5006+06.16	0	639.01	639.03
20A	5006+16.16	0	638.88	638.93
20B	5006+26.16	0	638.74	638.80
20C	5006+36.16	0	638.59	638.66
20D	5006+46.16	0	638.42	638.50
20E	5006+56.16	0	638.24	638.32
20F	5006+66.16	0	638.05	638.11
20G	5006+76.16	0	637.84	637.90
20H	5006+86.16	0	637.62	637.66
20I	5006+96.16	0	637.38	637.41
20J	5007+06.16	0	637.14	637.16
20K	5007+16.16	0	636.88	636.89
20L	5007+26.16	0	636.60	636.62
℄ BRG. PIER 1 (RAMP F2)	5007+31.85	0	636.44	636.46
21A	5007+41.85	0	636.15	636.19
21B	5007+51.85	0	635.84	635.92
21C	5007+61.85	0	635.52	635.63
21D	5007+71.85	0	635.20	635.35
21E	5007+81.85	0	634.85	635.04
21F	5007+91.85	0	634.49	634.71
21G	5008+01.85	0	634.12	634.36
21H	5008+11.85	0	633.73	633.99
21I	5008+21.85	0	633.33	633.60
21J	5008+31.85	0	632.92	633.17
21K	5008+41.85	0	632.50	632.72
21L	5008+51.85	0	632.06	632.25
21M	5008+61.85	0	631.61	631.74
21N	5008+71.85	0	631.14	631.22
℄ BRG. S. ABUT.	5008+81.85	0	630.67	630.69
BK. S. ABUT.	5008+85.35	0	630.50	630.52

GIRDER 6

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION AND GRINDING
℄ PIER 13	5006+05.65	4.51	638.95	638.97
℄ S. BRG. PIER 13	5006+07.18	4.51	638.93	638.95
20A	5006+17.18	4.40	638.80	638.85
20B	5006+27.18	4.30	638.66	638.73
20C	5006+37.18	4.20	638.51	638.60
20D	5006+47.18	4.10	638.34	638.44
20E	5006+57.18	4.00	638.16	638.27
20F	5006+67.18	3.89	637.97	638.07
20G	5006+77.18	3.79	637.76	637.85
20H	5006+87.18	3.69	637.54	637.62
20I	5006+97.18	3.59	637.31	637.37
20J	5007+07.18	3.48	637.06	637.11
20K	5007+17.18	3.38	636.80	636.83
℄ BRG. PIER 1 (RAMP F2)	5007+31.85	3.22	636.40	636.42
21A	5007+41.85	3.11	636.10	636.13
21B	5007+51.85	3.01	635.80	635.83
21C	5007+61.85	2.91	635.49	635.52
21C1	5007+68.85	2.84	635.26	635.30

GIRDER 7

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION AND GRINDING
℄ PIER 13	5006+06.70	9.38	638.87	638.89
℄ S. BRG. PIER 13	5006+08.22	9.38	638.85	638.87
20A	5006+18.22	8.94	638.72	638.76
20B	5006+28.22	8.68	638.58	638.63
20C	5006+38.21	8.42	638.43	638.48
20D	5006+48.21	8.16	638.26	638.32
20E	5006+58.21	7.90	638.08	638.14
20F	5006+68.20	7.64	637.89	637.94
20G	5006+78.20	7.38	637.68	637.72
20H	5006+88.20	7.12	637.46	637.49
20I	5006+98.20	6.86	637.23	637.25
20J	5007+08.19	6.60	636.99	637.00
20K	5007+18.19	6.34	636.73	636.74
℄ BRG. PIER 1 (RAMP F2)	5007+31.85	5.97	636.35	636.37
21A	5007+41.85	5.72	636.06	636.11
21B	5007+51.85	5.46	635.76	635.83
21C	5007+61.85	5.21	635.44	635.55
21D	5007+71.85	5.13	635.12	635.26
21E	5007+81.85	5.13	634.77	634.94
21F	5007+91.85	5.13	634.42	634.61
21G	5008+01.85	5.13	634.04	634.26
21H	5008+11.85	5.13	633.66	633.88
21I	5008+21.85	5.13	633.26	633.49
21J	5008+31.85	5.13	632.85	633.06
21K	5008+41.85	5.13	632.42	632.61
21L	5008+51.85	5.13	631.98	632.15
21M	5008+61.85	5.13	631.53	631.65
21N	5008+71.85	5.13	631.07	631.14
℄ BRG. S. ABUT.	5008+81.85	5.13	630.59	630.61
BK. S. ABUT.	5008+85.35	5.13	630.42	630.44

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3/30/2020

DRAWN BY . . . . MG . . . . . DATE . . 3-11-2020 . .
CHECKED BY . . . . CK . . . . . SCALE . . NONE . . . .

TranSmart/EJM
411 South Wells Street Suite 1000
Chicago, Illinois 60607

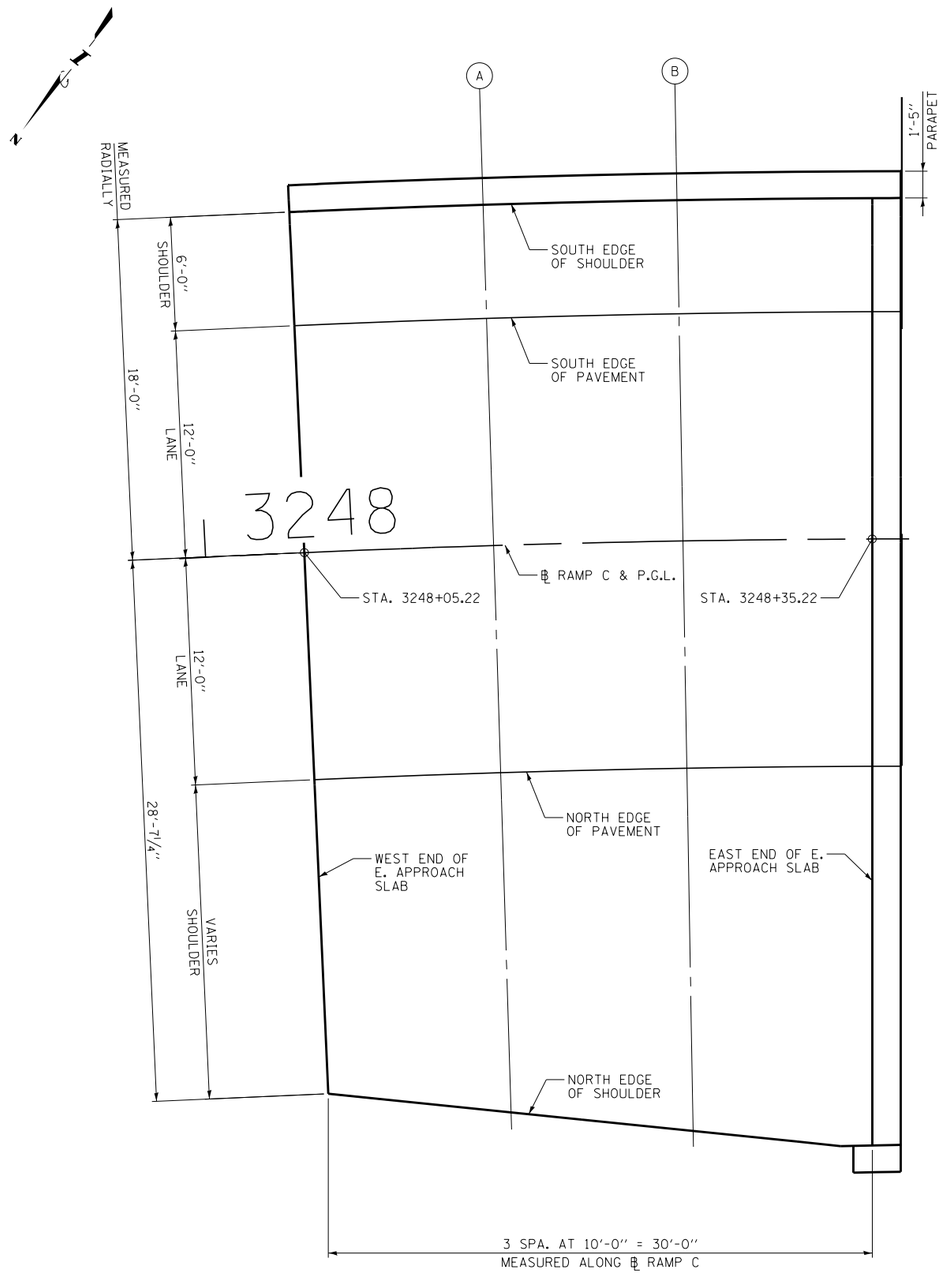
THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

REVISIONS

NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

I-57 AT 294 RAMPS C, D, AND F2
S.N. 016-2101
UNIT 5-TOP OF SLAB ELEV.-2



SOUTH EDGE OF SHOULDER

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR GRINDING
WEST END OF E. APPROACH SLAB	3248+05.23	-18.000	631.39	631.41
A	3248+15.23	-18.000	631.62	631.64
B	3248+25.23	-18.000	631.86	631.88
EAST END OF E. APPROACH SLAB	3248+35.29	-18.000	632.09	632.11

SOUTH EDGE OF PAVEMENT

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR GRINDING
WEST END OF E. APPROACH SLAB	3248+05.23	-12.000	631.10	631.12
A	3248+15.23	-12.000	631.32	631.34
B	3248+25.23	-12.000	631.54	631.56
EAST END OF E. APPROACH SLAB	3248+35.27	-12.000	631.75	631.77

℄ RAMP C

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR GRINDING
WEST END OF E. APPROACH SLAB	3248+05.23	0.000	630.53	630.55
A	3248+15.23	0.000	630.71	630.73
B	3248+25.23	0.000	630.89	630.91
EAST END OF E. APPROACH SLAB	3248+35.23	0.000	631.07	631.09

NORTH EDGE OF PAVEMENT

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR GRINDING
WEST END OF E. APPROACH SLAB	3248+05.23	12.000	629.96	629.99
A	3248+15.23	12.000	630.11	630.13
B	3248+25.23	12.000	630.25	630.27
EAST END OF E. APPROACH SLAB	3248+35.18	12.000	630.40	630.42

NORTH EDGE OF SHOULDER

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR GRINDING
WEST END OF E. APPROACH SLAB	3248+05.23	28.601	629.18	629.20
A	3248+15.23	29.947	629.20	629.22
B	3248+25.23	31.160	629.23	629.25
EAST END OF E. APPROACH SLAB	3248+35.10	32.023	629.26	629.29

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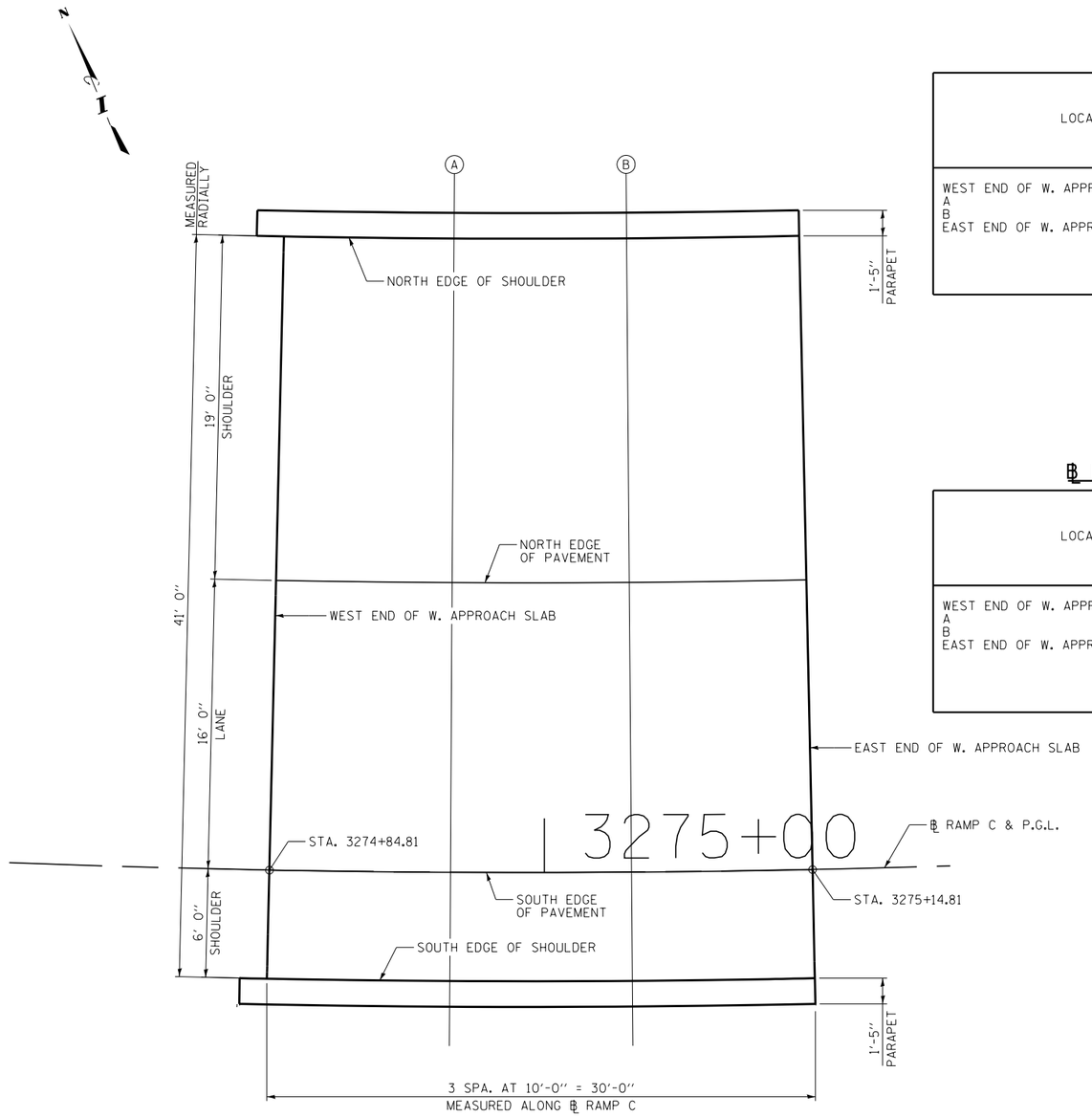
3/30/2020

DRAWN BY . . . . JM	DATE . 4-3-2020	TYLIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	REVISIONS NO. / DATE / DESCRIPTION	CONTRACT I-19-4495
CHECKED BY . . . . SP	SCALE . NONE				I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 116) TOP OF E. APPROACH SLAB ELEV.

SHEET SC - 30 OF 234

305 OF 606



PLAN

NORTH EDGE OF SHOULDER

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR GRINDING
WEST END OF W. APPROACH SLAB	3274+84.95	-35.000	625.27	625.29
A	3274+94.81	-35.000	624.72	624.74
B	3275+04.81	-35.000	624.17	624.19
EAST END OF W. APPROACH SLAB	3275+14.81	-35.000	623.62	623.64

NORTH EDGE OF PAVEMENT

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR GRINDING
WEST END OF W. APPROACH SLAB	3274+84.88	-16.000	626.41	626.43
A	3274+94.81	-16.000	625.86	625.88
B	3275+04.81	-16.000	625.31	625.33
EAST END OF W. APPROACH SLAB	3275+14.81	-16.000	624.76	624.78

℄ RAMP C & SOUTH EDGE OF PAVEMENT

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR GRINDING
WEST END OF W. APPROACH SLAB	3274+84.81	0.000	627.37	627.39
A	3274+94.81	0.000	626.82	626.84
B	3275+04.81	0.000	626.27	626.29
EAST END OF W. APPROACH SLAB	3275+14.81	0.000	625.72	625.74

SOUTH EDGE OF SHOULDER

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR GRINDING
WEST END OF W. APPROACH SLAB	3274+84.79	6.000	627.73	627.75
A	3274+94.81	6.000	627.18	627.20
B	3275+04.81	6.000	626.63	626.65
EAST END OF W. APPROACH SLAB	3275+14.81	6.000	626.08	626.10

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3/30/2020

DRAWN BY . . . . ME . . . . .
CHECKED BY . . . . SP . . . . .
DATE . 4-3-2020 . . . .
SCALE . NONE . . . . .

T·Y·LIN INTERNATIONAL

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

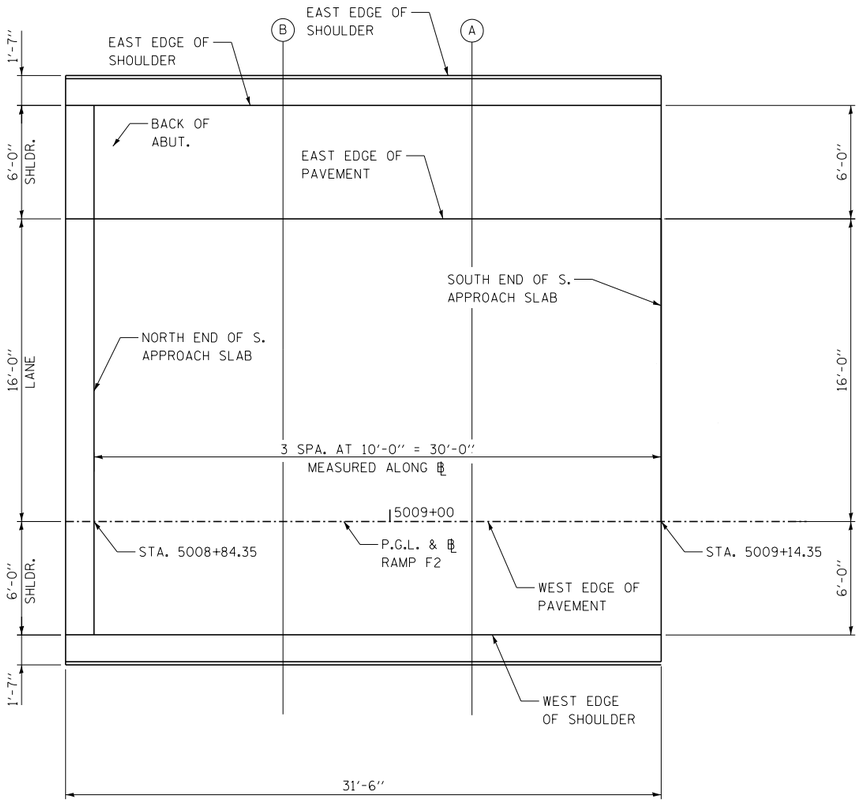
REVISIONS NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

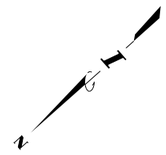
I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
TOP OF W. APPROACH SLAB ELEV.

SHEET SC - 31 OF 234

306 OF 606



PLAN AT SOUTH ABUTMENT



EAST EDGE OF SHOULDER

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR GRINDING
END OF APPROACH SLAB	STA. 5008+84.35	-22.00	630.87	630.89
B	STA. 5008+94.35	-22.00	630.38	630.40
A	STA. 5009+04.35	-22.00	629.87	629.89
START OF APPROACH SLAB	STA. 5009+14.35	-22.00	629.35	629.37

EAST EDGE OF PAVEMENT

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR GRINDING
END OF APPROACH SLAB	STA. 5008+84.35	-16.00	630.78	630.80
B	STA. 5008+94.35	-16.00	630.29	630.31
A	STA. 5009+04.35	-16.00	629.78	629.80
START OF APPROACH SLAB	STA. 5009+14.35	-16.00	629.26	629.28

WEST EDGE OF PAVEMENT & ℄ RAMP F2

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR GRINDING
END OF APPROACH SLAB	STA. 5008+84.35	0.00	630.54	630.56
B	STA. 5008+94.35	0.00	630.05	630.07
A	STA. 5009+04.35	0.00	629.54	629.56
START OF APPROACH SLAB	STA. 5009+14.35	0.00	629.02	629.04

WEST EDGE OF SHOULDER

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATIONS ADJUSTED FOR GRINDING
END OF APPROACH SLAB	STA. 5008+84.35	6.00	630.45	630.47
B	STA. 5008+94.35	6.00	629.96	629.98
A	STA. 5009+04.35	6.00	629.45	629.47
START OF APPROACH SLAB	STA. 5009+14.35	6.00	628.93	628.95

P:\68254\I57-294_5-9\STRUCTURAL\RESTART.2018\Ramp C over I-57 and I-294\Reference\EJM\4419-sht-appr_slab_elev.dgn
3/30/2020

DRAWN BY . . . . . MG . . . . . | DATE . 3-11-2020 . . . .
CHECKED BY . . . . RP . . . . . | SCALE . NONE . . . .

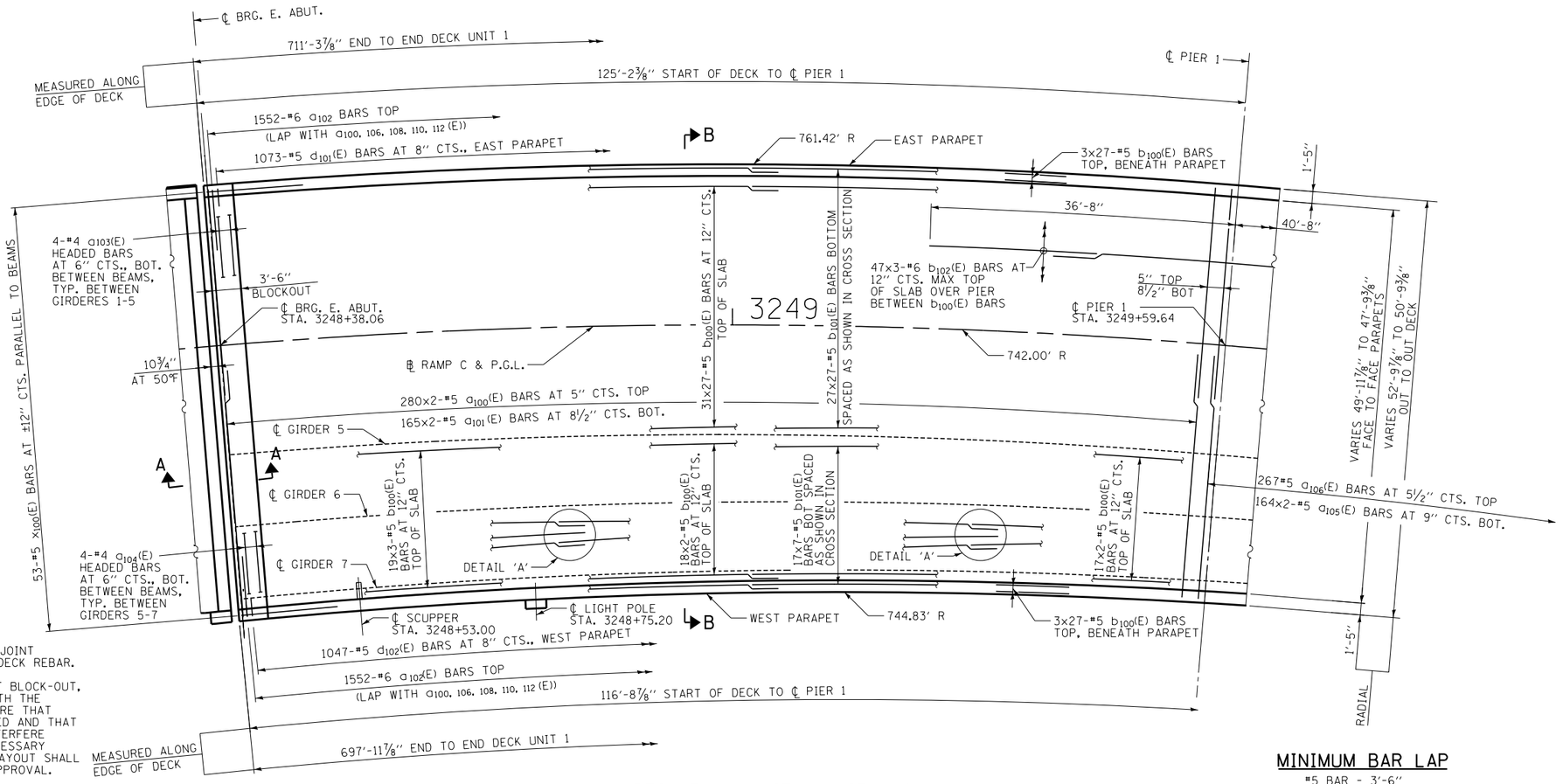
TranSmart/EJM
411 South Wells Street Suite 1000
Chicago, Illinois 60607

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

REVISIONS		
NO.	DATE	DESCRIPTION

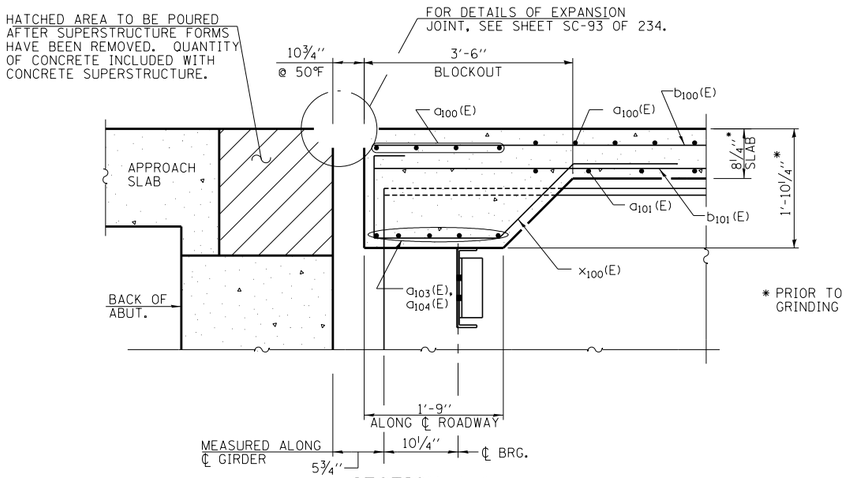
CONTRACT I-19-4495

I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101
TOP OF S. APPROACH SLAB ELEV.



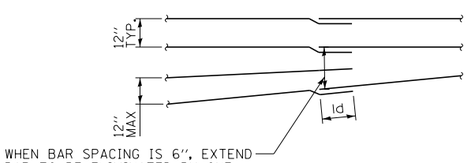
MODULAR JOINT NOTES:

1. CONTRACTOR SHALL USE THE APPROVED JOINT SHOP DRAWINGS WHEN LAYING OUT THE DECK REBAR.
2. PRIOR TO THE PLACEMENT OF THE JOINT BLOCK-OUT, THE CONTRACTOR SHALL COORDINATE WITH THE MODULAR JOINT MANUFACTURER TO ENSURE THAT THE JOINT WILL BE PROPERLY SUPPORTED AND THAT THE REINFORCEMENT BARS WILL NOT INTERFERE WITH THE JOINT COMPONENTS. ANY NECESSARY ADJUSTMENTS TO THE REINFORCEMENT LAYOUT SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.



SECTION A-A

DECK PLAN UNIT 1 - SPAN 1



DETAIL "A": (TOP LONGITUDINAL BARS)
DETAIL "B": (BOT. LONGITUDINAL BARS)

$b_{100,\ 101}$(E) ELIMINATION DETAILS

MINIMUM BAR LAP

#5 BAR - 3'-6"
#6 BAR - 3'-7"

NOTES:

1. FOR SECTION B-B, SEE SHEET SC-39.
2. FOR PARAPET REINFORCEMENT, SEE SHEET SC-41 AND SC-42.
3. FOR SCUPPER DETAILS, SEE SHEET SC-97 THRU SC-99.
4. BARS INDICATED THUS 20X3-#5, ETC INDICATES 20 LINES OF BARS WITH 3 LENGTHS PER LINE.
5. LONGITUDINAL BARS SHALL BE SPRUNG INTO PLACE TO BE CONCENTRIC AT THE SPACING NOTED.
6. TRANSVERSE BARS SHALL BE PLACED RADIALLY AT THE SPACING NOTED. THE SPACING IS MEASURED ALONG THE EDGE OF DECK ALONG THE EAST PARAPET.

SUGGESTED PLACEMENT OF TOP LONGITUDINAL BARS:

STEP 1: AT EACH FASCIA, PLACE THE TOP THREE BARS LOCATED UNDER THE PARAPET PARALLEL TO EACH FASCIA.

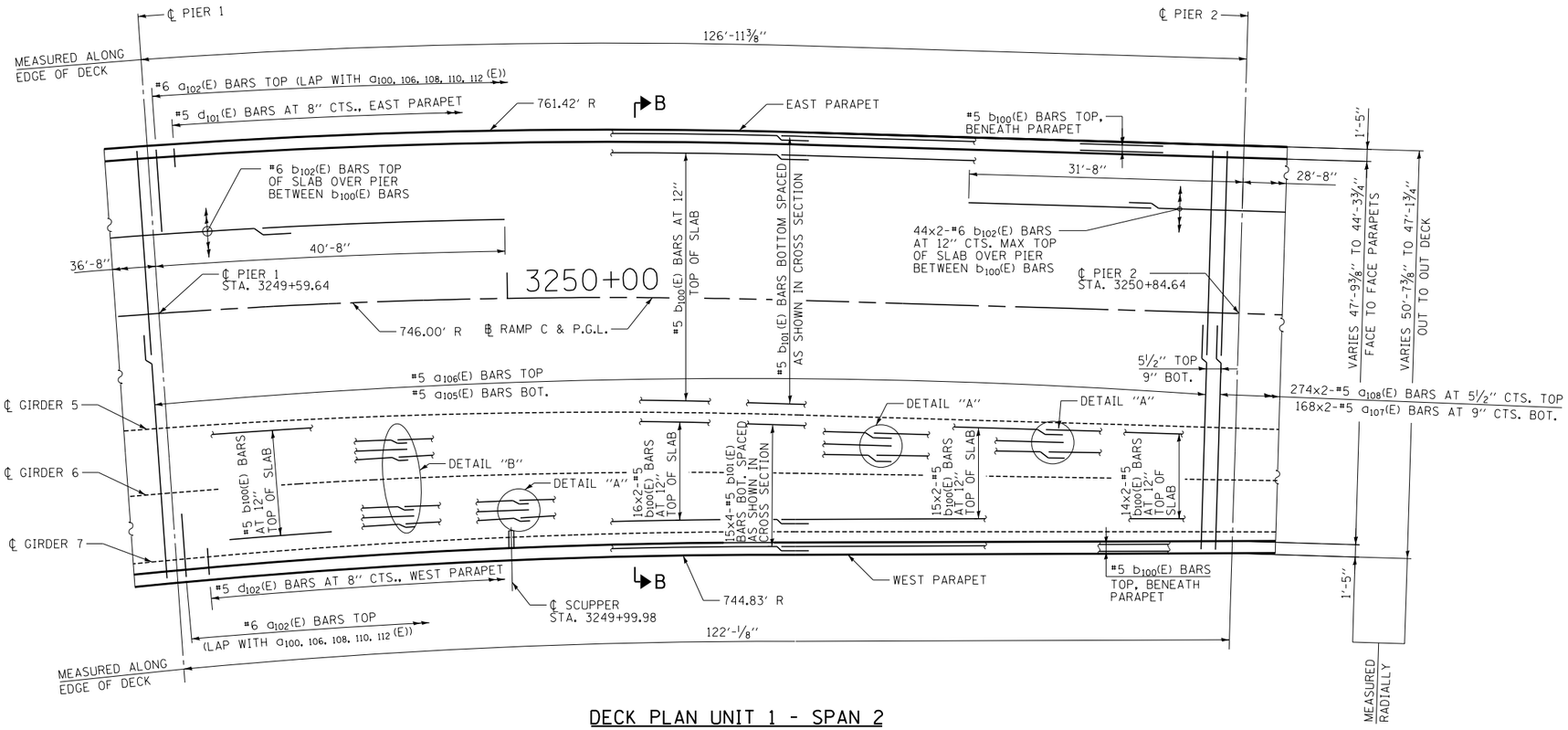
STEP 2: STARTING AT 6 " FROM THE FACE OF PARAPET AT THE EAST FASCIA, PLACE THE TOP BARS AT 1'-0" ON-CENTER PARALLEL TO THE BARS PLACED UNDER THE EAST PARAPET.

STEP 3: CONTINUE PLACING BARS UNTIL BAR SPACING IS 6".

STEP 4: AS THE DECK NARROWS, ELIMINATION OF BARS ARE NEEDED. ELIMINATE BARS AS SHOWN IN DETAIL "A"

P:\682540\57-294,5-9\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\0162101.5_unit1_dkpln-span1.dgn
3/30/2020

DRAWN BY JM	DATE 4-3-2020	TYLIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	REVISIONS NO. / DATE / DESCRIPTION	CONTRACT I-19-4495	SHEET SC - 33 OF 234
CHECKED BY SP	SCALE NONE				I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 116) DECK PLAN UNIT 1 - SPAN 1	308 OF 606



DECK PLAN UNIT 1 - SPAN 2

MINIMUM BAR LAP

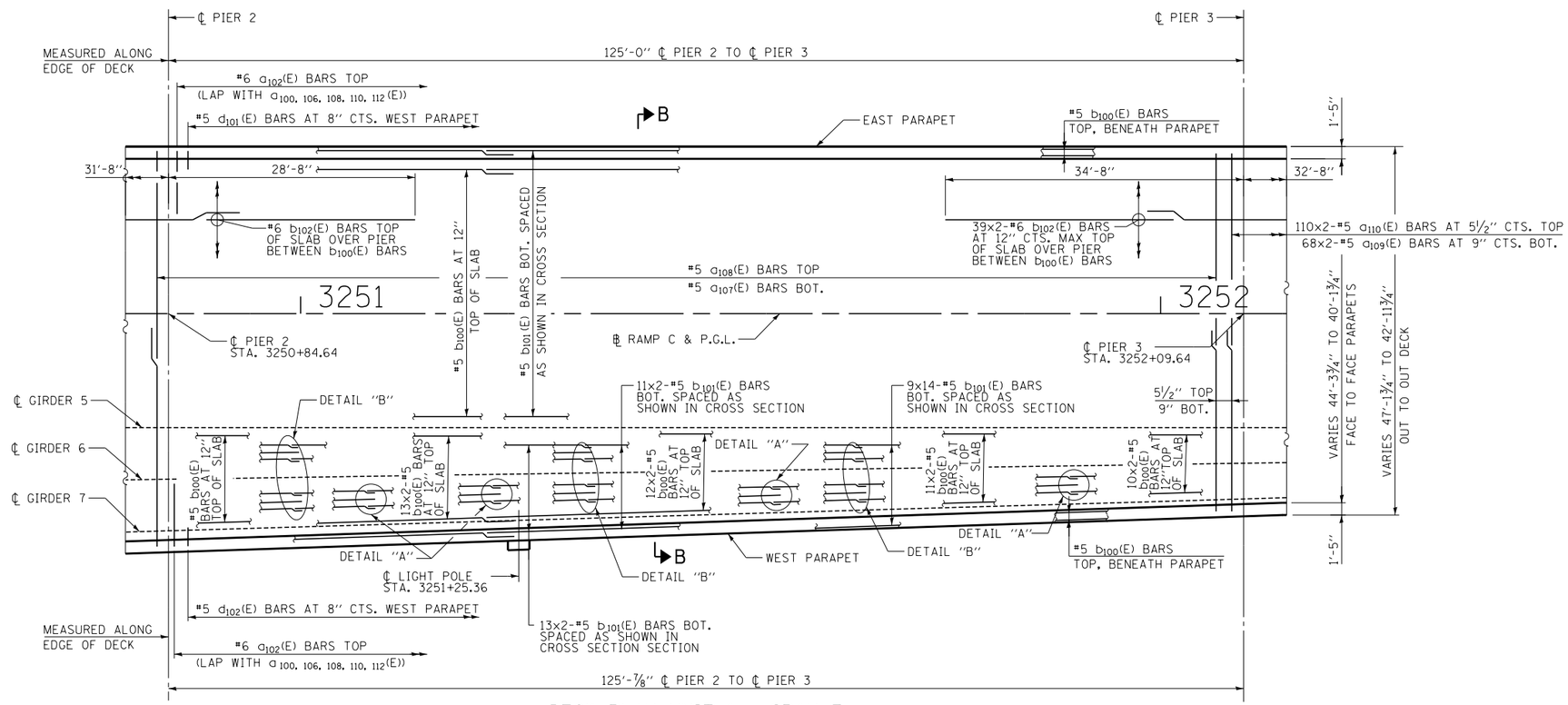
#5 BAR - 3'-6"
#6 BAR - 3'-7"

NOTES:

1. FOR SECTION B-B, SEE SHEET SC-39.
2. FOR PARAPET REINFORCEMENT, SEE SHEET SC-41 AND SC-42.
3. FOR DETAIL "A" & "B", SEE SHEET SC-33.
4. FOR SCUPPER DETAILS, SEE SHEET SC-97 THRU SC-99.
5. BARS INDICATED THUS 20X3-#5, ETC INDICATES 20 LINES OF BARS WITH 3 LENGTHS PER LINE.
6. LONGITUDINAL BARS SHALL BE SPRUNG INTO PLACE TO BE CONCENTRIC AT THE SPACING NOTED.
7. TRANSVERSE BARS SHALL BE PLACED RADIALLY AT THE SPACING NOTED. THE SPACING IS MEASURED ALONG THE EDGE OF DECK ALONG THE EAST PARAPET.

P:\68254057-294.5-91\STRUCTURAL\RESTART.2018\Ramp C over I-57 and I-294\B062101.5_unit1_dkpln-span2.dgn
3/30/2020

DRAWN BY . . . JM . . .	DATE . 4-3-2020 . . .	T·Y·LIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	REVISIONS			CONTRACT I-19-4495	SHEET SC - 34 OF 234
CHECKED BY . . . SP . . .	SCALE . NONE . . .			NO.	DATE	DESCRIPTION	I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 116) DECK PLAN UNIT 1 - SPAN 2	309 OF 606



DECK PLAN UNIT 1 - SPAN 3

MINIMUM BAR LAP

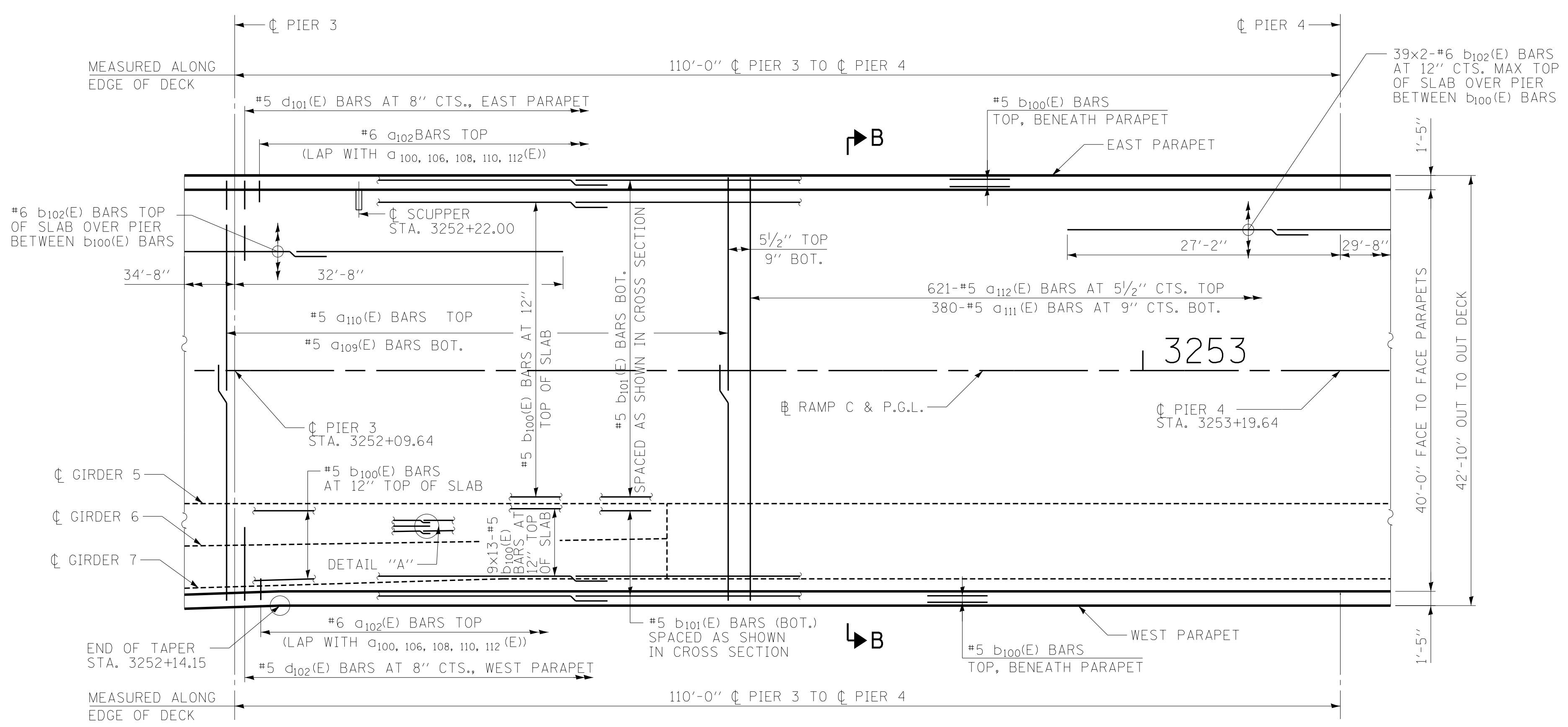
#5 BAR - 3'-6"
#6 BAR - 3'-7"

NOTES:

1. FOR SECTION B-B, SEE SHEET SC-39.
2. FOR PARAPET REINFORCEMENT, SEE SHEET SC-41 AND SC-42.
3. FOR DETAILS "A" & "B", SEE SHEET SC-33.
4. FOR SCUPPER DETAILS, SEE SHEET SC-97 THRU SC-99.
5. BARS INDICATED THUS 20X3-#5, ETC INDICATES 20 LINES OF BARS WITH 3 LENGTHS PER LINE.

P:\60254057-294,5-91\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\0162101.5_unit1_deck\r-span3.dgn
3/30/2020

DRAWN BY . . . JM . . .	DATE . 4-3-2020 . . .	TY·LIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	REVISIONS NO. / DATE / DESCRIPTION	CONTRACT I-19-4495	SHEET SC - 35 OF 234
CHECKED BY . . . SP . . .	SCALE . NONE . . .				I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 116) DECK PLAN UNIT 1 - SPAN 3	310 OF 606



DECK PLAN UNIT 1 - SPAN 4

MINIMUM BAR LAP

#5 BAR - 3'-6"
#6 BAR - 3'-7"

NOTES:

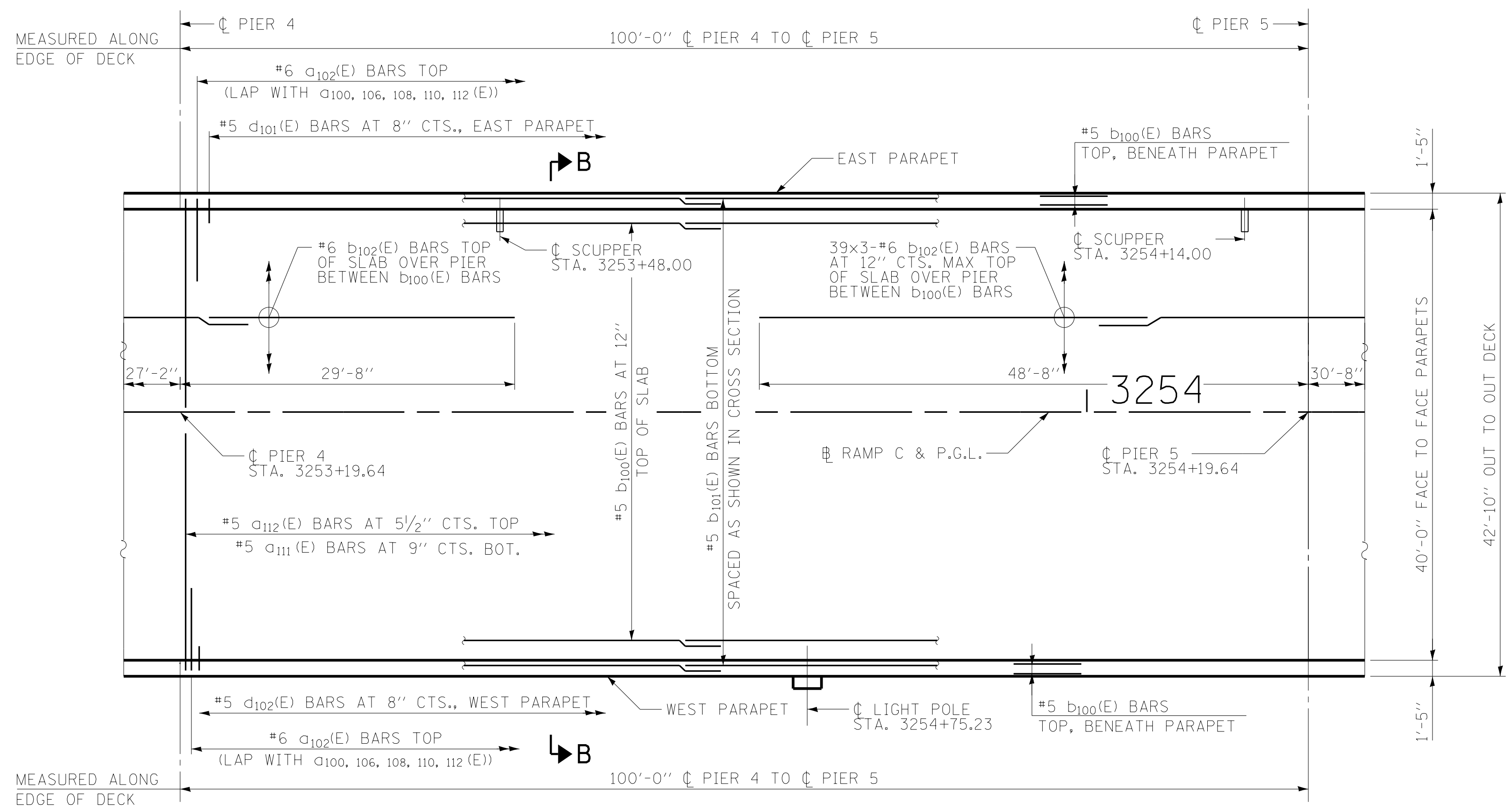
1. FOR SECTION B-B, SEE SHEET SC-39.
2. FOR PARAPET REINFORCEMENT, SEE SHEET SC-41 AND SSC-42.
3. FOR DETAILS "A" & "B", SEE SHEET SC-33.
4. FOR SCUPPER DETAILS, SEE SHEET SC-97 THRU SC-99.
5. BARS INDICATED THUS 20X3-#5, ETC INDICATES 20 LINES OF BARS WITH 3 LENGTHS PER LINE.

P:\6025402\57-294.5-9\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\0162101_5_unit1_dkpln-span4.dgn 3/30/2020

DRAWN BY JM	DATE 4-3-2020	TYLIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	REVISIONS: NO. / DATE / DESCRIPTION	CONTRACT I-19-4495
CHECKED BY SP	SCALE NONE				I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 116) DECK PLAN UNIT 1 - SPAN 4

SHEET SC - 36 OF 234

311 OF 606



DECK PLAN UNIT 1 - SPAN 5

MINIMUM BAR LAP

#5 BAR - 3'-6"
#6 BAR - 3'-7"

NOTES:

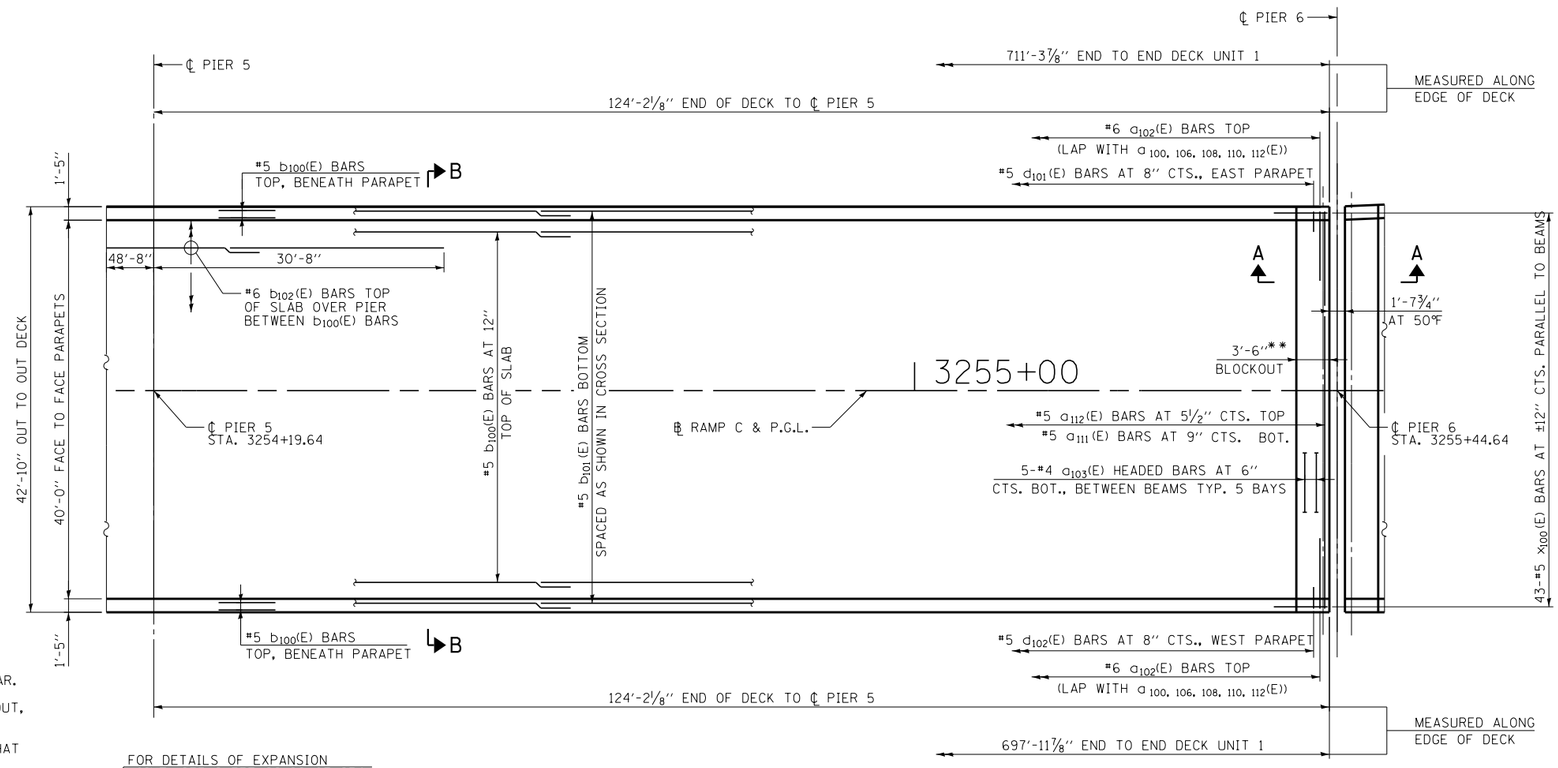
1. FOR SECTION B-B, SEE SHEET SC-39.
2. FOR PARAPET REINFORCEMENT, SEE SHEET SC-41 AND SC-42.
3. FOR SCUPPER DETAILS, SEE SHEET SC-97 THRU SC-99.
4. BARS INDICATED THUS 20X3-#5, ETC INDICATES 20 LINES OF BARS WITH 3 LENGTHS PER LINE.

P:\6025401\57-294_5-9\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\0162101_5_unit1_dkpln-span5.dgn 3/30/2020

DRAWN BY JM	DATE 4-3-2020	TYLIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	CONTRACT I-19-4495	SHEET SC - 37 OF 234
CHECKED BY SP	SCALE NONE			I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 116) DECK PLAN UNIT 1 - SPAN 5	312 OF 606

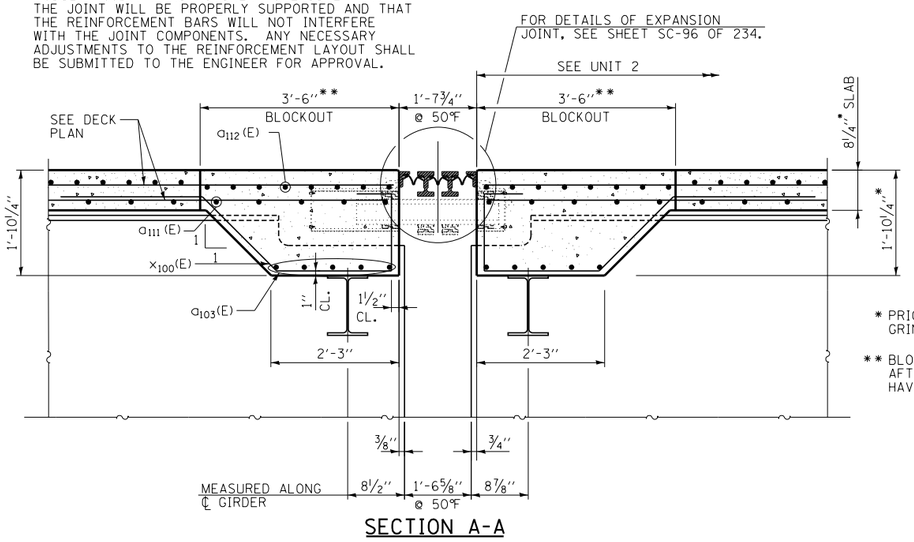
REVISIONS

NO.	DATE	DESCRIPTION



MODULAR JOINT NOTES:

1. CONTRACTOR SHALL USE THE APPROVED JOINT SHOP DRAWINGS WHEN LAYING OUT THE DECK REBAR.
2. PRIOR TO THE PLACEMENT OF THE JOINT BLOCK-OUT, THE CONTRACTOR SHALL COORDINATE WITH THE MODULAR JOINT MANUFACTURER TO ENSURE THAT THE JOINT WILL BE PROPERLY SUPPORTED AND THAT THE REINFORCEMENT BARS WILL NOT INTERFERE WITH THE JOINT COMPONENTS. ANY NECESSARY ADJUSTMENTS TO THE REINFORCEMENT LAYOUT SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.



SECTION A-A

DECK PLAN UNIT 1 - SPAN 6

* PRIOR TO GRINDING

** BLOCKOUT AREA TO BE POURED AFTER EXPANSION ASSEMBLIES HAVE BEEN ADJUSTED.

MINIMUM BAR LAP

#5 BAR - 3′-6″
#6 BAR - 3′-7″

NOTES:

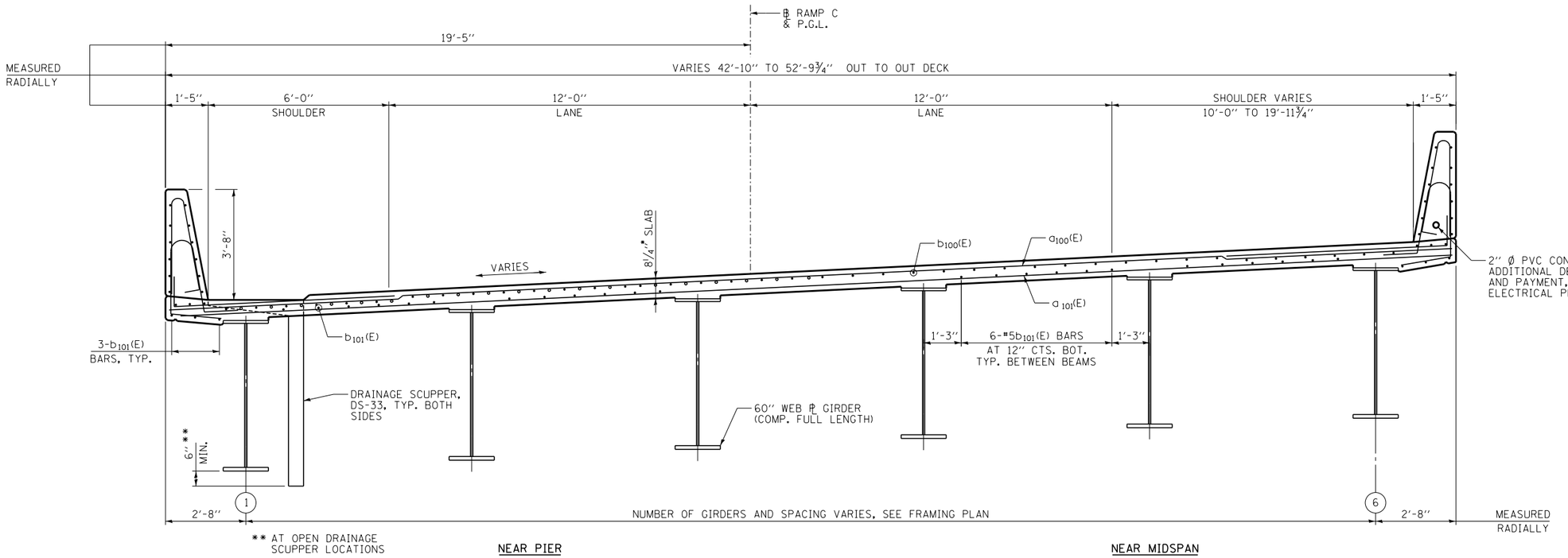
1. FOR SECTION B-B, SEE SHEET SC-39.
2. FOR PARAPET REINFORCEMENT, SEE SHEET SC-41 AND SC-42.
3. FOR SCUPPER DETAILS, SEE SHEET SC-97 THRU SC-99.
4. BARS INDICATED THUS 20X3-#5, ETC INDICATES 20 LINES OF BARS WITH 3 LENGTHS PER LINE.

P:\60254057-294.5-91\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\0162101.5_unit1_dsgln-span6.dgn
3/30/2020

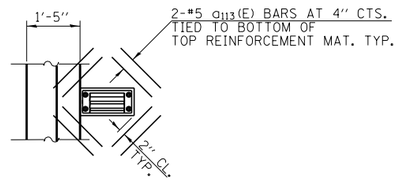
DRAWN BY . . . JM . . .	DATE . 4-3-2020 . . .	TYLIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	REVISIONS: NO. / DATE / DESCRIPTION	CONTRACT I-19-4495
CHECKED BY . . . SP . . .	SCALE . NONE . . .				I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 116) DECK PLAN UNIT 1 - SPAN 6

SHEET SC - 38 OF 234

313 OF 606

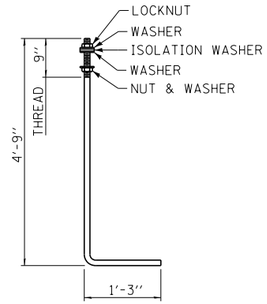


SECTION B-B
(LOOKING UPSTATION)



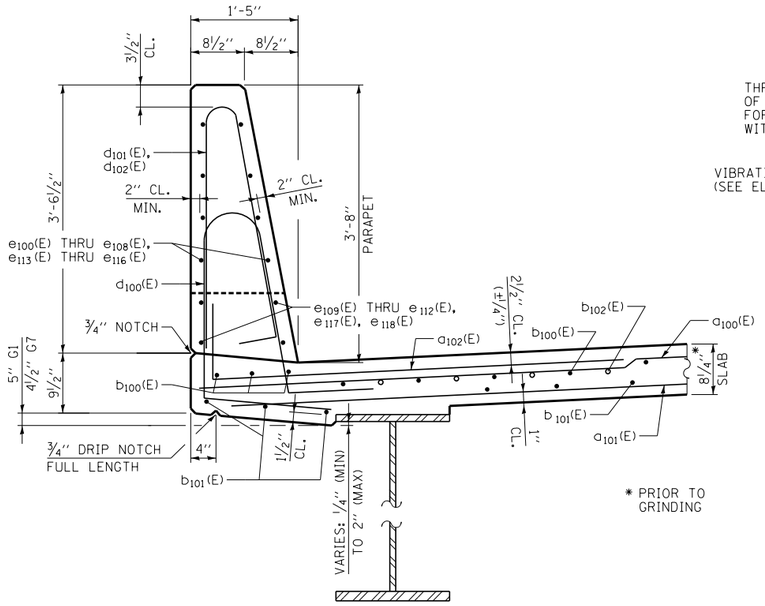
DRAINAGE SCUPPER PLAN

NOTE:
CUT LONGITUDINAL REINFORCEMENT TO CLEAR DRAINAGE SCUPPERS.

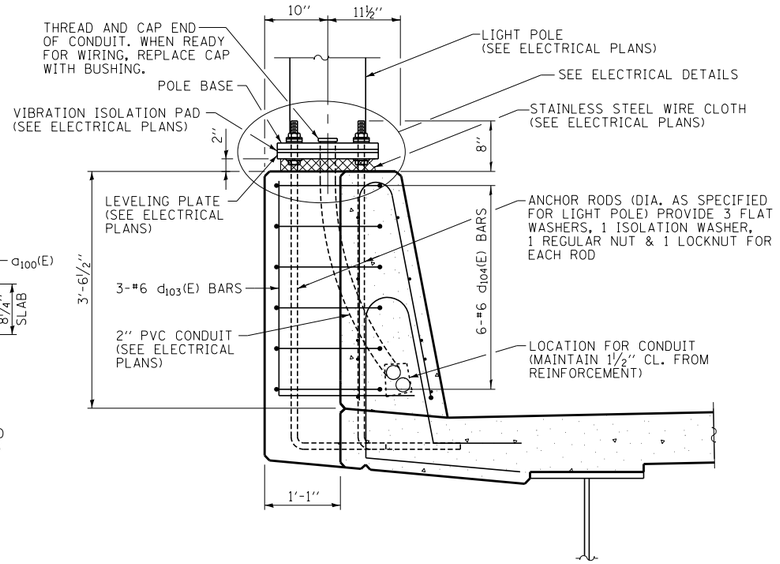


ANCHOR ROD

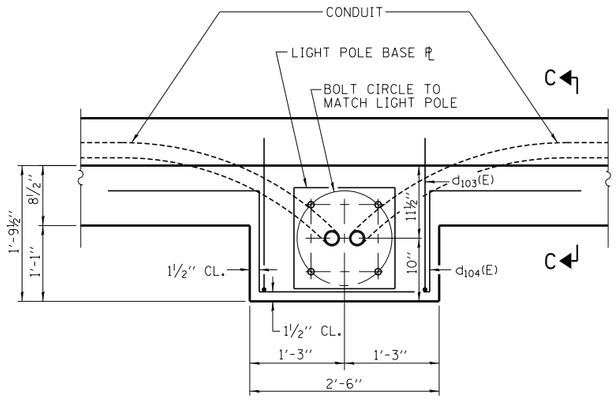
DIAMETER AS SPECIFIED FOR LIGHT POLES. (ASTM F 1554 GRADE 105) FULL LENGTH HOT DIPPED GALVANIZED.



SECTION THRU PARAPET
(EAST PARAPET SHOWN, WEST PARAPET SIMILAR)



SECTION C-C



LIGHT POLE PLAN

NOTE:
COST OF ANCHOR RODS IS INCLUDED WITH CONCRETE SUPERSTRUCTURE.

NOTES:

1. WORK THIS SHEET WITH SHEETS SC-33 THRU SC-42 OF 234.
2. SEE SHEET SC-97 THRU SC-99 FOR DRAINAGE SCUPPER.
3. FOR BILL OF MATERIAL, SEE SHEET SC-40 OF 234.
4. SEE SHEET SC-40 OF 234 FOR DECK CROSS SLOPE.

P:\68254057-294.5-9\STRUCTURAL\RESTART.2018\Ramp C over I-57 and I-294\016201.5_unit1-superdtl1.dgn
3/30/2020

DRAWN BY . . . JM . . . .
CHECKED BY . . . SP . . . .

DATE . 4-3-2020 . . .
SCALE NONE . . . . .

T·Y·LIN INTERNATIONAL

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

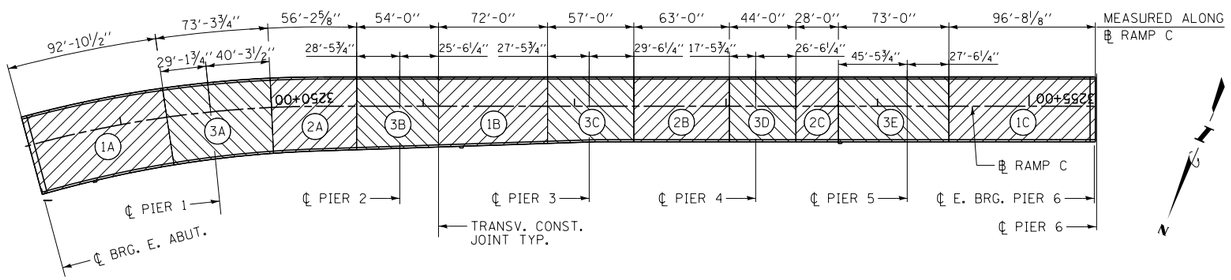
REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
DECK DETAILS 1 - UNIT 1

SHEET SC - 39 OF 234

314 OF 606



DECK POURING SEQUENCE

(THE POUR CAN START FROM EITHER END OF THE DECK)

NOTES ON DECK POURING SEQUENCE:

WHEN THE DECK POUR IS STOPPED FOR THE DAY AT ONE OF MORE OF THE TRANSVERSE BONDED CONTRUCTION JOINTS IN THE DECK POURING SEQUENCE AS SHOWN, THE NEXT POUR SHALL NOT BE MADE UNTIL BOTH OF THE FOLLOWING ARE MET:

1) AT LEAST 72 HOURS SHALL HAVE ELAPSED FROM THE END OF THE PREVIOUS POUR.
2) THE CONCRETE STRENGTH SHALL HAVE ATTAINED A MINIMUM FLEXURAL STRENGTH OF 675 PSI OR A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI.

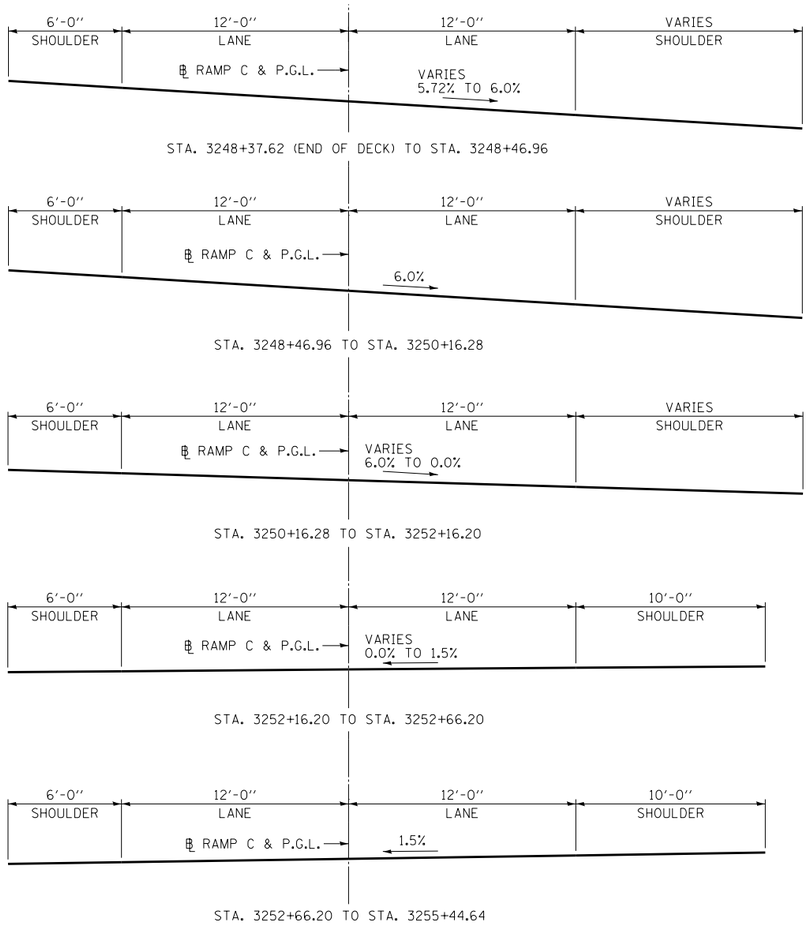
THE CONTRACTOR IS ALERTED THAT CAMBER AND DEAD LOAD DEFLECTIONS VALUES SHOWN ON THE GIRDER DETAIL DRAWINGS ARE DEVELOPED BASED ON THE DECK POURING SEQUENCE SHOWN. ANY DEVIATION FROM THIS POURING SEQUENCE WILL RESULT IN CHANGES TO CAMBER AND ELEVATIONS THAT AFFECT DEAD LOAD DEFLECTIONS. IF THE CONTRACTOR WISHES TO CHANGE THE SEQUENCE, THEN THE PROPOSED PLAN REVISIONS AND DESIGN CALCULATIONS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL. THE CACULATIONS SHALL BE PREPARED AND SEALED BY A LICENSED STRUCTURAL ENGINEER IN ILLINOIS.

BILL OF MATERIAL

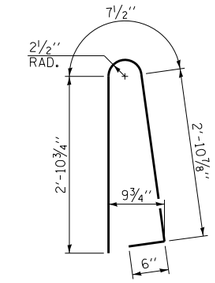
REINFORCEMENT BAR LIST

BAR	NO.	SIZE	LENGTH	SHAPE
a100(E)	560	#5	27'-5"	
a101(E)	330	#5	27'-5"	
a102(E)	3104	#6	8'-4"	
a103(E)	45	#5	7'-2"	
a104(E)	10	#5	8'-5"	
a105(E)	328	#5	24'-0"	
a106(E)	534	#5	24'-0"	
a107(E)	336	#5	22'-6"	
a108(E)	548	#5	22'-6"	
a109(E)	136	#5	20'-5"	
a110(E)	220	#5	20'-5"	
a111(E)	621	#5	42'-6"	
a112(E)	380	#5	42'-6"	
a113(E)	32	#5	2'-0"	
b100(E)	1425	#5	29'-4"	
b101(E)	1082	#5	29'-4"	
b102(E)	502	#6	34'-11"	
d100(E)	2125	#5	8'-6"	
d101(E)	1073	#5	7'-0"	
d102(E)	1047	#5	7'-0"	
d103(E)	9	#6	5'-3"	
d104(E)	18	#6	8'-11"	
e100(E)	8	#4	17'-0"	
e101(E)	168	#4	17'-8"	
e102(E)	120	#4	19'-8"	
e103(E)	8	#4	19'-5"	
e104(E)	32	#4	17'-1"	
e105(E)	24	#4	16'-9"	
e106(E)	32	#4	19'-2"	
e107(E)	48	#4	13'-8"	
e108(E)	88	#4	16'-2"	
e109(E)	8	#4	18'-10"	
e110(E)	112	#4	16'-8"	
e111(E)	116	#4	28'-7"	
e112(E)	32	#4	24'-3"	
e113(E)	12	#4	27'-6"	
e114(E)	24	#4	23'-6"	
e115(E)	8	#4	13'-10"	
e116(E)	8	#4	18'-3"	
e117(E)	24	#4	17'-1"	
e118(E)	8	#4	18'-10"	
e119(E)	8	#4	17'-4"	
e120(E)	8	#4	14'-0"	
e121(E)	32	#4	27'-10"	
e122(E)	16	#4	24'-5"	
e123(E)	16	#4	23'-2"	
e124(E)	16	#4	26'-6"	
x100(E)	96	#5	6'-5"	

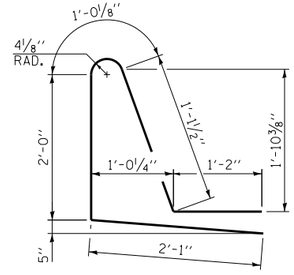
ITEM	UNIT	QUANTITY
CONCRETE SUPERSTRUCTURE	CU. YD.	1065.1
REINFORCEMENT BARS, EPOXY COATED	POUND	310,100
BRIDGE DECK GROOVING (LONGITUDINAL)	SQ. YD.	1883
DIAMOND GRINDING (BRIDGE SECTION)	SQ. YD.	3276
PROTECTIVE COAT	SQ. YD.	4321



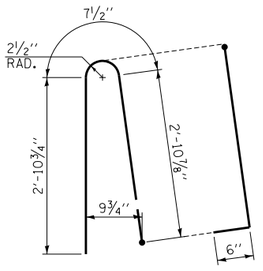
DECK CROSS SLOPE DETAIL



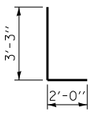
BAR d101(E)



BAR d100(E)



BAR d102(E)



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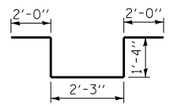
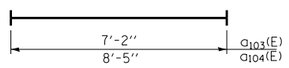
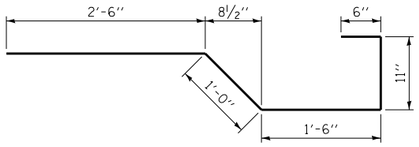


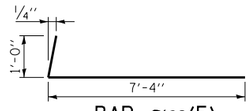
BAR d103(E)



BAR a103(E) & a104(E)
(HEADED BARS)



BAR x100(E)



BAR a102(E)

NOTES:

1. WORK THIS SHEET WITH SHEETS SC-33 THRU SC-42 OF 234.
2. SEE SHEET SC-97 THRU SC-99 FOR DRAINAGE SCUPPER.
3. HEADED BARS SHALL CONFORM TO ASTM A970 WITH THREADED ATTACHMENT; CLASS HA; AND REINFORCEMENT BARS CONFORMING TO ASTM A706. COST INCLUDED WITH REINFORCEMENT BARS, EPOXY COATED.

P:\68254057-294_5-IN\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\RI62101.5_unit1-superd12.dgn
3/30/2020

DRAWN BY . . . JM . . . . . DATE . 4-3-2020 . . .
CHECKED BY . . . SP . . . . . SCALE . NONE . . . . .

T·Y·LIN INTERNATIONAL

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

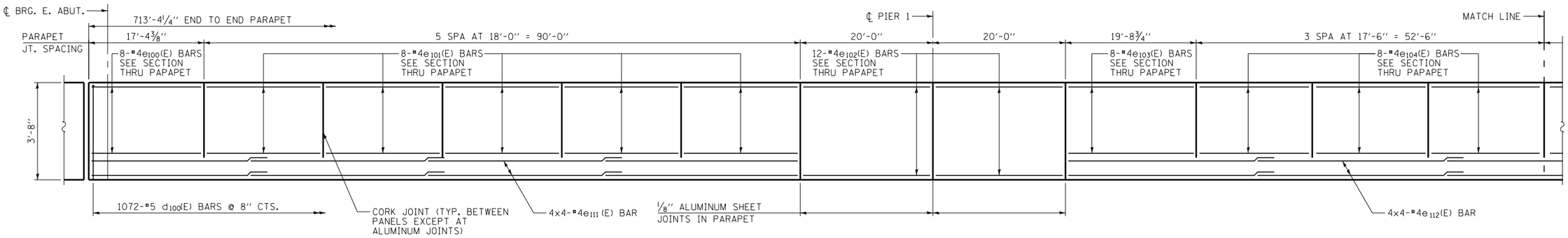
REVISIONS		
NO.	DATE	DESCRIPTION

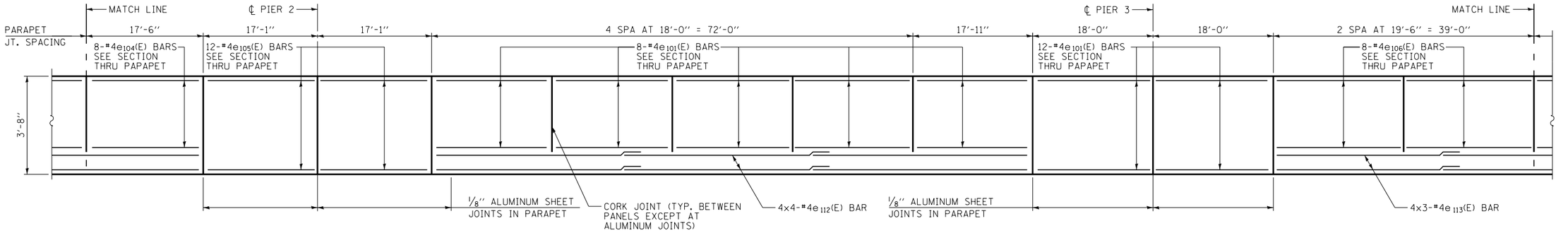
CONTRACT I-19-4495

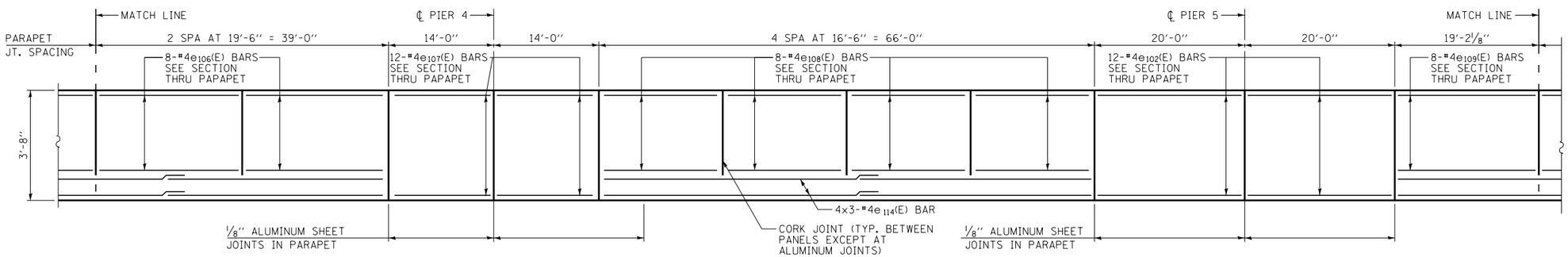
I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
DECK DETAILS 2 - UNIT 1

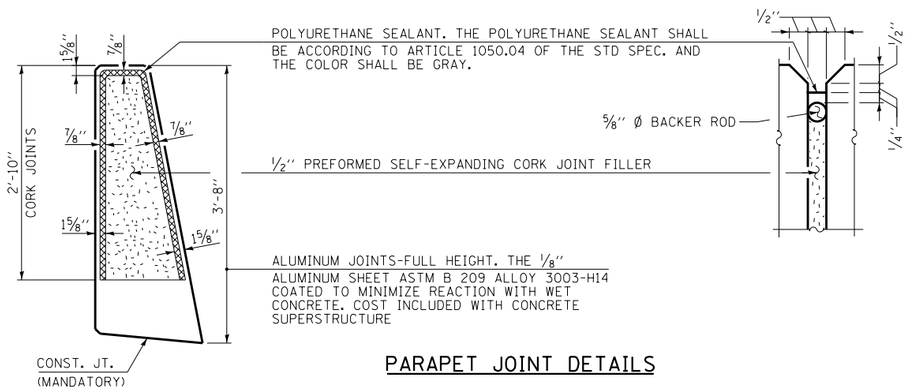
SHEET SC - 40 OF 234

315 OF 606

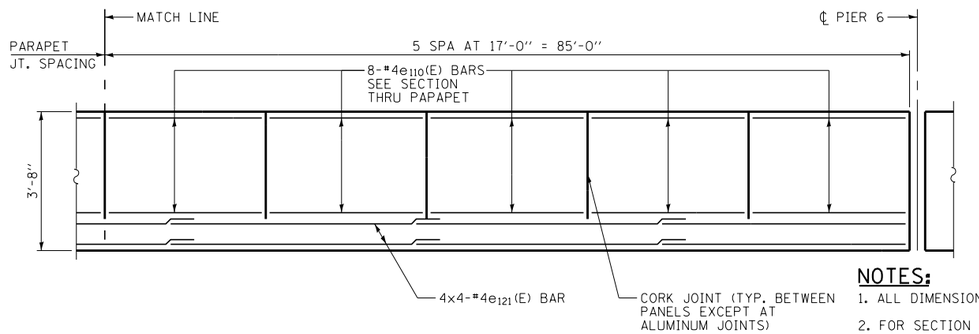








PARAPET JOINT DETAILS



INSIDE ELEVATION OF PARAPET

MIN. BAR LAP

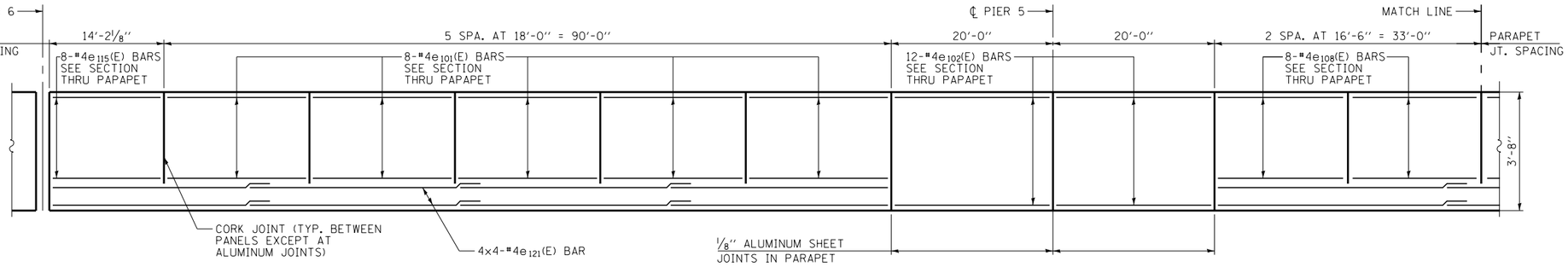
#4 = 2'-6"

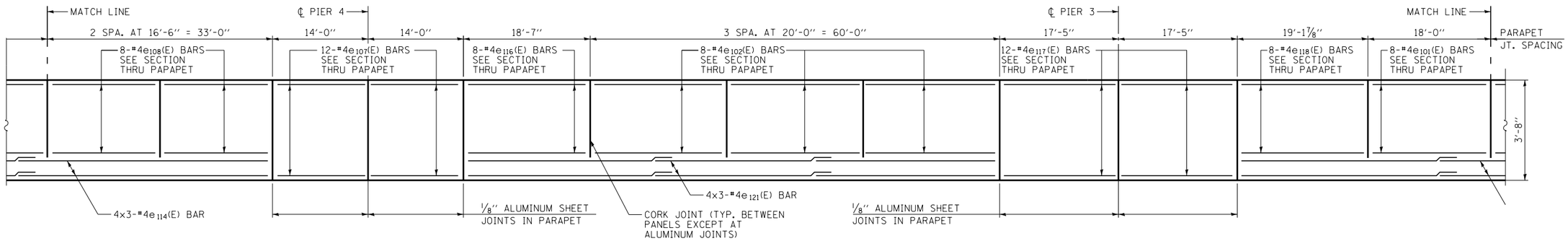
NOTES:

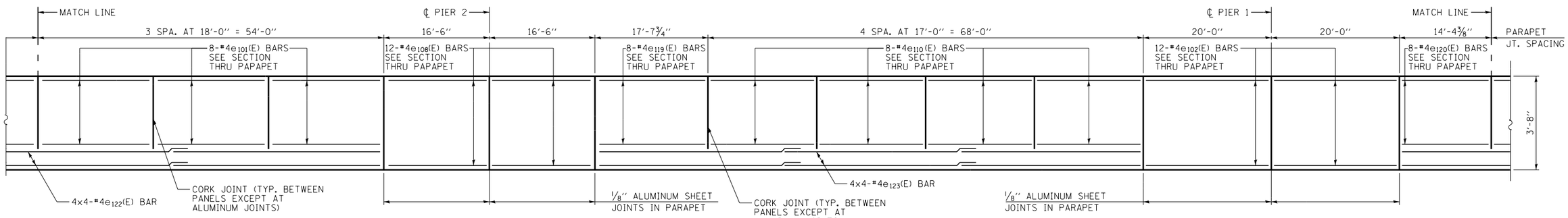
1. ALL DIMENSIONS MEASURED ALONG FRONT FACE OF PARAPET.
2. FOR SECTION THRU PARAPET, SEE SHEET SC-39 OF 234.
3. SEE MODULAR JOINT DETAILS ON SHEET SC-93 THRU SC-96 FOR EMBEDDED PLATE IN THE PARAPET.

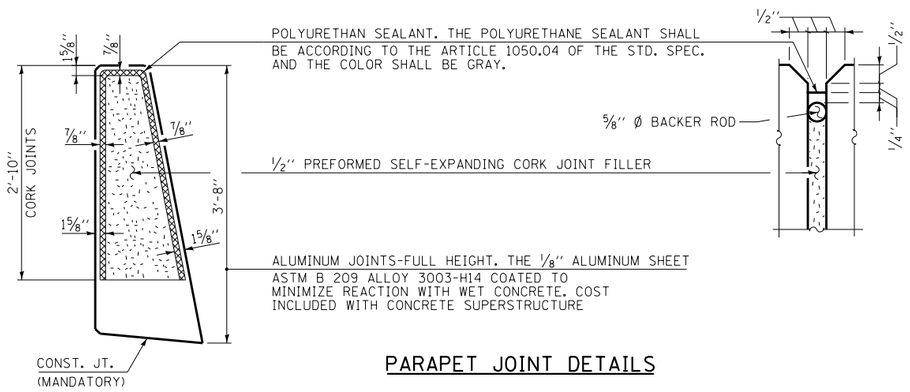
DRAWN BY . . . JM . . .	DATE . 4-3-2020 . . .	T·Y·LIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	REVISIONS: NO. / DATE / DESCRIPTION	CONTRACT I-19-4495	SHEET SC - 41 OF 234
CHECKED BY . . . SP . . .	SCALE . NONE . . .				I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 116) EAST PARAPET ELEV. - UNIT 1	316 OF 606

P:\68254057-294_5-1\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\016201.5_unit1-Parapet E.dgn
3/30/2020

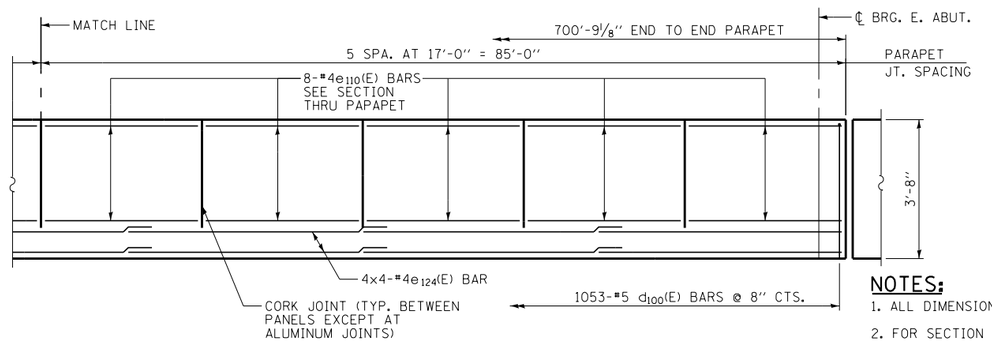








PARAPET JOINT DETAILS



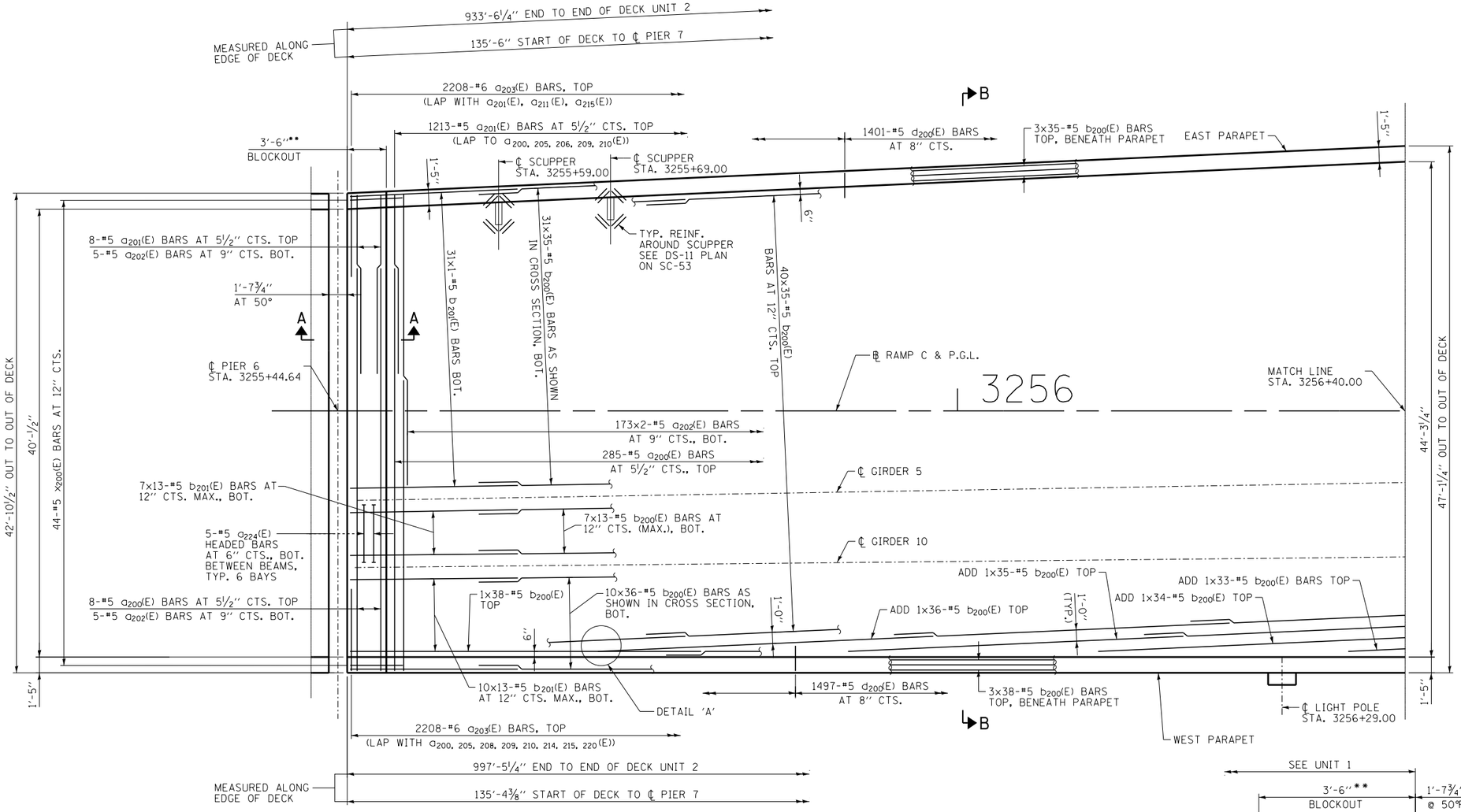
INSIDE ELEVATION OF PARAPET

MIN. BAR LAP
#4 = 2'-6"

NOTES:
1. ALL DIMENSIONS MEASURED ALONG FRONT FACE OF PARAPET.
2. FOR SECTION THRU PARAPET, SEE SHEET SC-39 OF 234.
3. SEE MODULAR JOINT DETAILS ON SHEET SC-93 THRU SC-96 FOR EMBEDDED PLATE IN THE PARAPET.

P:\682540\57-294_5-11\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\Bl62101.5_unit1-Parapet W.dgn
3/30/2020

DRAWN BY . . . JM . . .	DATE . 4-3-2020 . . .	T·Y·LIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	REVISIONS NO. / DATE / DESCRIPTION	CONTRACT I-19-4495	SHEET SC - 42 OF 234
CHECKED BY . . . SP . . .	SCALE . NONE . . .				I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 116) WEST PARAPET ELEV. - UNIT 1	317 OF 606



PLAN

NOTES:

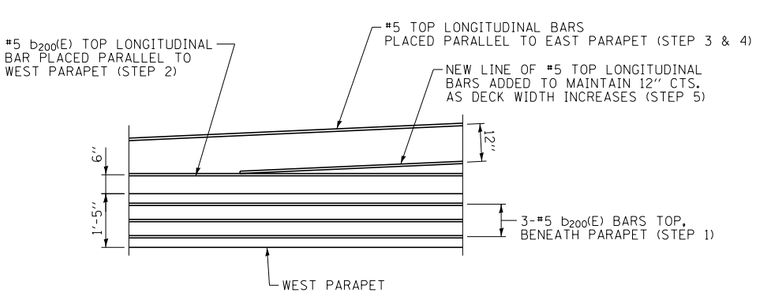
1. FOR SECTION B-B, SEE SHEET SC-53.
2. FOR PARAPET REINFORCEMENT, SEE SHEETS SC-57 AND SC-58.
3. BARS INDICATED THUS 20X3-#5, ETC INDICATES 20 LINES OF BARS WITH 3 LENGTHS PER LINE.
4. LONGITUDINAL BARS SHALL BE BENT IN THE FIELD TO BE PARALLEL/CONCENTRIC AT THE SPACING NOTED AND AS DESCRIBED IN THE PLACEMENT OF TOP LONGITUDINAL BARS SEQUENCE SHOWN BELOW.

MINIMUM BAR LAP

#5 BAR - 3'-6"
#6 BAR - 3'-7"

MODULAR JOINT NOTES:

1. CONTRACTOR SHALL USE THE APPROVED JOINT SHOP DRAWINGS WHEN LAYING OUT THE DECK REBAR.
2. PRIOR TO THE PLACEMENT OF THE JOINT BLOCK-OUT, THE CONTRACTOR SHALL COORDINATE WITH THE MODULAR JOINT MANUFACTURER TO ENSURE THAT THE JOINT WILL BE PROPERLY SUPPORTED AND THAT THE REINFORCEMENT BARS WILL NOT INTERFERE WITH THE JOINT COMPONENTS. ANY NECESSARY ADJUSTMENTS TO THE REINFORCEMENT LAYOUT SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.



DETAIL 'A': (TOP LONGITUDINAL BARS)

(APPLIES TO ALL SPANS)

PLACEMENT OF TOP LONGITUDINAL BARS:

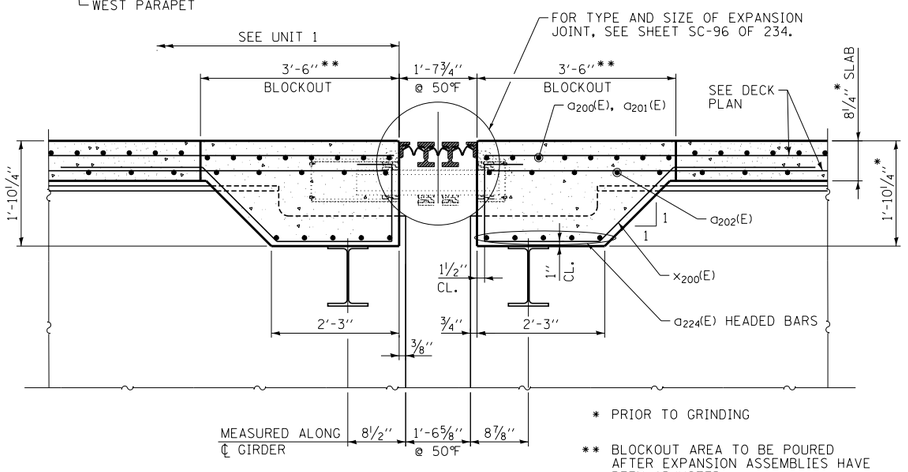
STEP 1: AT BOTH EDGES OF THE DECK, PLACE THE TOP THREE BARS UNDER THE PARAPETS CONCENTRIC/PARALLEL TO THE EDGE OF DECK.

STEP 2: AT THE WEST EDGE OF DECK, PLACE ONE b200(E) BAR AT 6" FROM THE TOE OF THE WEST PARAPET AND CONCENTRIC/PARALLEL TO THE THREE BARS PLACED IN STEP 1.

STEP 3: AT THE EAST EDGE OF DECK, PLACE ONE b200(E) BAR AT 6" FROM THE TOE OF THE EAST PARAPET AND CONCENTRIC/PARALLEL TO THE THREE BARS PLACED IN STEP 1.

STEP 4: STARTING FROM THE BAR PLACED IN STEP 3, CONTINUE PLACING b200(E) BARS AT 12" CTS. SUCH THAT EACH BAR PLACED IS CONCENTRIC/PARALLEL TO THE PREVIOUS BAR. CONTINUE PLACING THESE BARS UNTIL THE BAR PLACED IN STEP 2 IS REACHED.

STEP 5: AS THE DECK WIDENS, PLACE ADDITIONAL BARS BETWEEN THE LAST BAR PLACED IN STEP 4 AND THE WEST PARAPET IN ACCORDANCE WITH DETAIL 'A'.



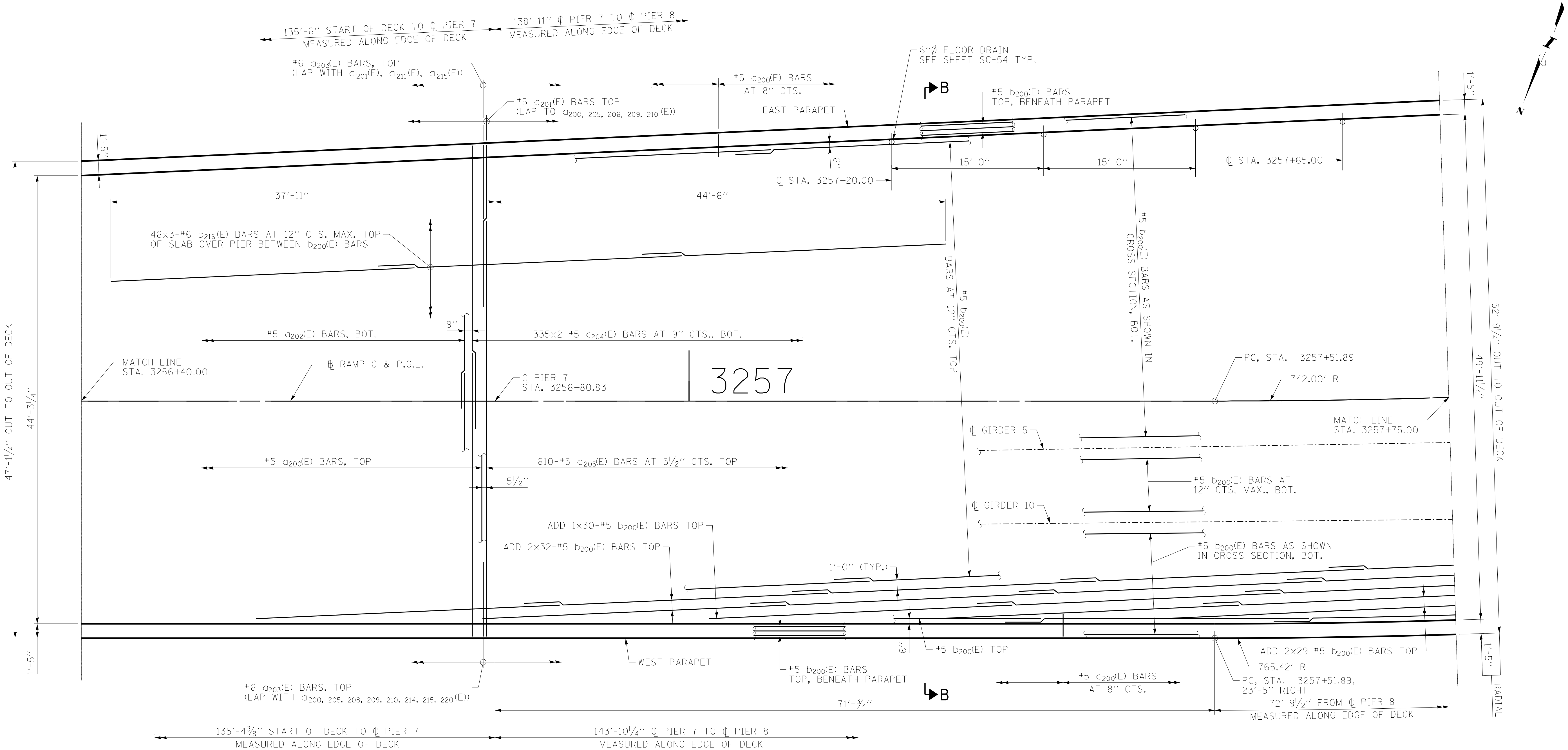
* PRIOR TO GRINDING

** BLOCKOUT AREA TO BE POURED AFTER EXPANSION ASSEMBLIES HAVE BEEN ADJUSTED.

SECTION A-A

DRAWN BY . . . LP	DATE . 4-3-2020	T·Y·LIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	REVISIONS NO. / DATE / DESCRIPTION	CONTRACT I-19-4495	SHEET SC - 43 OF 234
CHECKED BY . . . SP	SCALE . NONE				I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 116) DECK PLAN UNIT 2 - SPAN 7	318 OF 606

P:\60254057-294.5-91\STRUCTURAL\RESTART.2018\Ramp C over I-57 and I-294\016210I.5.unit2-dkpln-span7.dgn
3/30/2020



PLAN

NOTES:

1. FOR SECTION B-B, SEE SHEET SC-53.
2. FOR PARAPET REINFORCEMENT, SEE SHEETS SC-56 AND SC-57.
3. BARS INDICATED THUS 20X3-#5, ETC INDICATES 20 LINES OF BARS WITH 3 LENGTHS PER LINE.
4. LONGITUDINAL BARS SHALL BE BENT IN THE FIELD TO BE PARALLEL/CONCENTRIC AT THE SPACING NOTED AND AS DESCRIBED IN THE PLACEMENT OF TOP LONGITUDINAL BARS SEQUENCE SHOWN ON SHEET SC-43 OF 234.

MINIMUM BAR LAP

#5 BAR - 3'-6"
#6 BAR - 3'-7"

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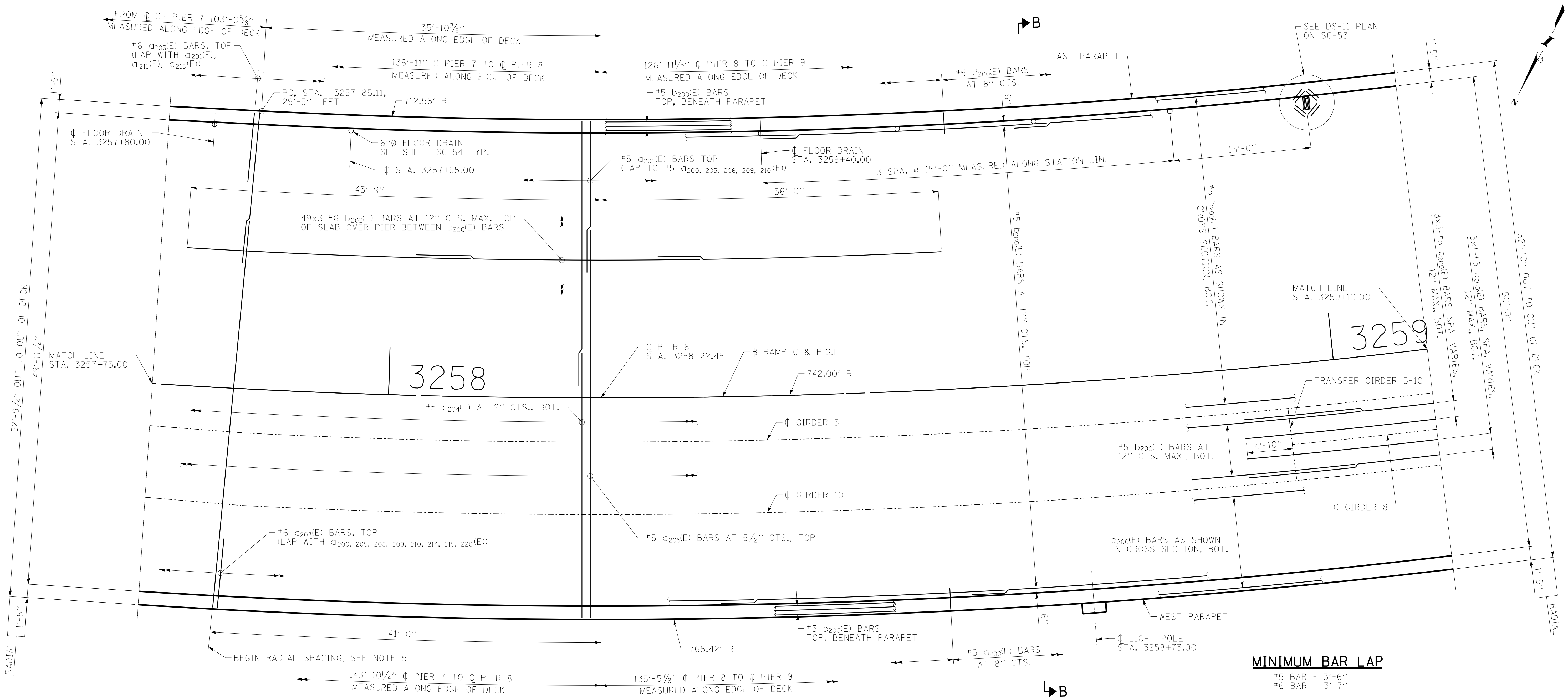
3/30/2020

DRAWN BY LP	DATE 4-3-2020	TYLIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	CONTRACT I-19-4495	SHEET SC - 44 OF 234
CHECKED BY SP	SCALE NONE			I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 116) DECK PLAN UNIT 2 - SPANS 7/8	319 OF 606

REVISIONS		
NO.	DATE	DESCRIPTION



PLAN

MINIMUM BAR LAP

#5 BAR - 3′-6″
#6 BAR - 3′-7″

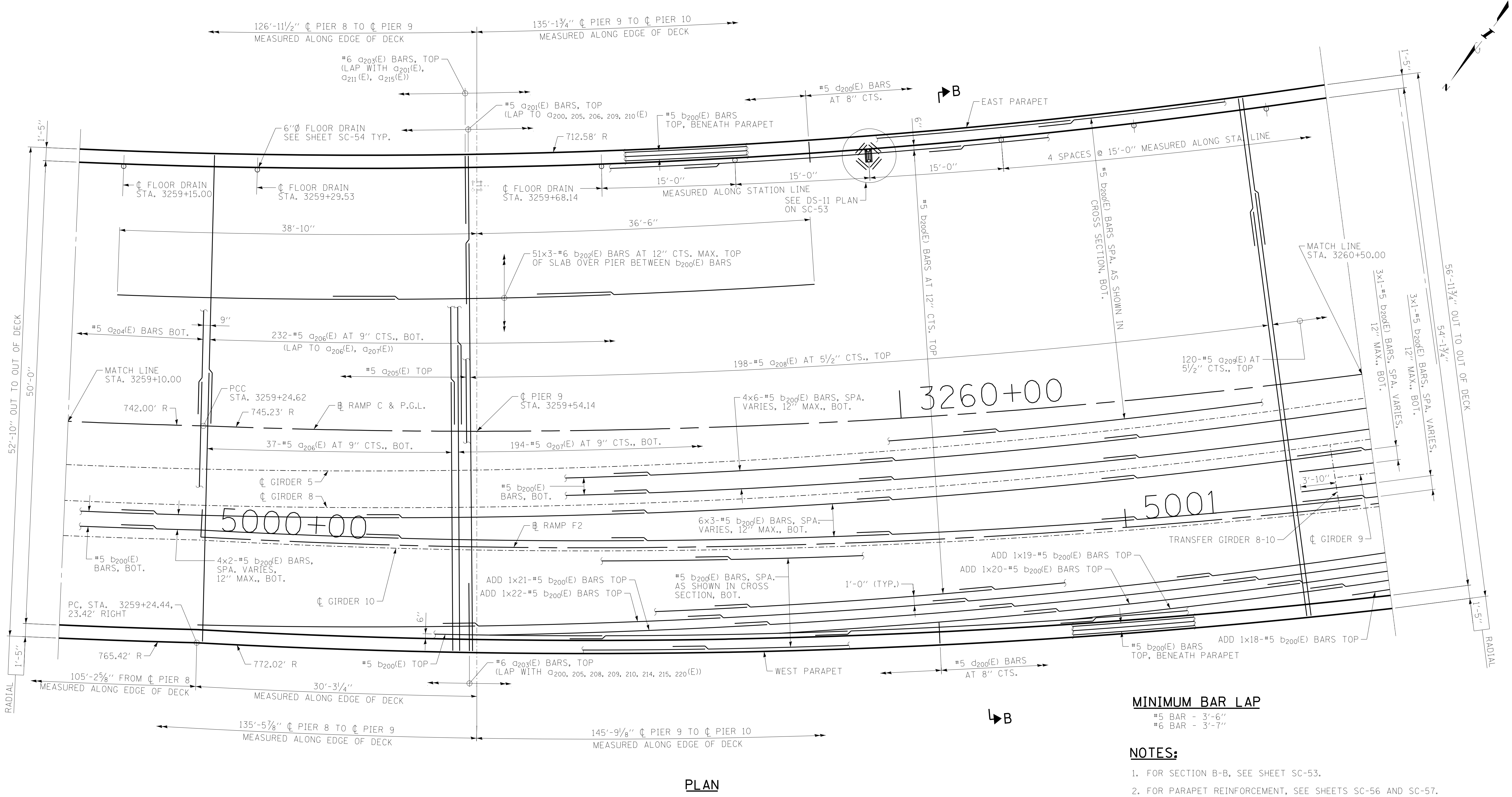
NOTES:

1. FOR SECTION B-B, SEE SHEET SC-53.
2. FOR PARAPET REINFORCEMENT, SEE SHEET SC-56 THRU SC-57.
3. BARS INDICATED THUS 20X3-#5, ETC INDICATES 20 LINES OF BARS WITH 3 LENGTHS PER LINE.
4. LONGITUDINAL BARS SHALL BE BENT IN THE FIELD TO BE PARALLEL/CONCENTRIC AT THE SPACING NOTED AND AS DESCRIBED IN THE PLACEMENT OF TOP LONGITUDINAL BARS SEQUENCE SHOWN ON SHEET SC-43 OF 234.
5. TRANSVERSE BARS SHALL BE PLACED RADIALLY AT THE SPACING NOTED. THE SPACING IS MEASURED ALONG THE EDGE OF DECK ALONG THE WEST PARAPET.

P:\60254065-294.5-9\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\0162101.5_unit2-dkpln-span9.dgn
3/30/2020

DRAWN BY LP	DATE 4-3-2020	TYLININTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	CONTRACT I-19-4495
CHECKED BY SP	SCALE NONE			I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 116) DECK PLAN UNIT 2 - SPANS 8/9

REVISIONS		
NO.	DATE	DESCRIPTION



MINIMUM BAR LAP

#5 BAR - 3'-6"
#6 BAR - 3'-7"

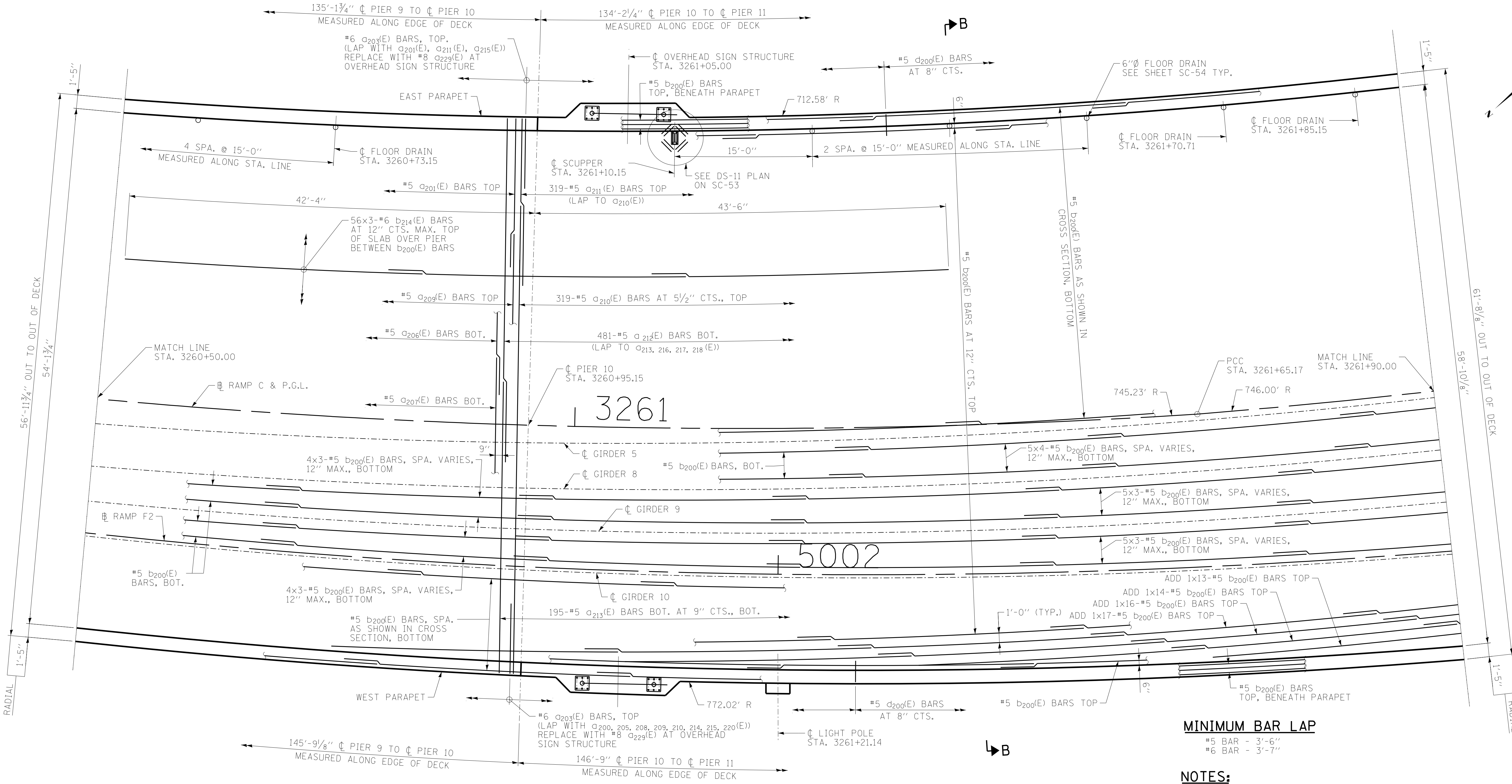
NOTES:

1. FOR SECTION B-B, SEE SHEET SC-53.
2. FOR PARAPET REINFORCEMENT, SEE SHEETS SC-56 AND SC-57.
3. BARS INDICATED THUS 20X3-#5, ETC INDICATES 20 LINES OF BARS WITH 3 LENGTHS PER LINE.
4. LONGITUDINAL BARS SHALL BE BENT IN THE FIELD TO BE PARALLEL/CONCENTRIC AT THE SPACING NOTED AND AS DESCRIBED IN THE PLACEMENT OF TOP LONGITUDINAL BARS SEQUENCE SHOWN ON SHEET SC-43 OF 234.
5. TRANSVERSE BARS SHALL BE PLACED RADIALLY AT THE SPACING NOTED. THE SPACING IS MEASURED ALONG THE EDGE OF DECK ALONG THE WEST PARAPET.

DRAWN BY LP	DATE 4-3-2020	TYLIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	CONTRACT I-19-4495
CHECKED BY SP	SCALE NONE		REVISIONS: NO. / DATE / DESCRIPTION	I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 116) DECK PLAN UNIT 2 - SPANS 9/10

SHEET SC - 46 OF 234

321 OF 606



PLAN

MINIMUM BAR LAP

#5 BAR - 3'-6"
#6 BAR - 3'-7"

NOTES:

1. FOR SECTION B-B, SEE SHEET SC-53.
2. FOR PARAPET REINFORCEMENT, SEE SHEETS SC-56 AND SC-57.
3. BARS INDICATED THUS 20X3-#5, ETC INDICATES 20 LINES OF BARS WITH 3 LENGTHS PER LINE.
4. LONGITUDINAL BARS SHALL BE BENT IN THE FIELD TO BE PARALLEL/CONCENTRIC AT THE SPACING NOTED AND AS DESCRIBED IN THE PLACEMENT OF TOP LONGITUDINAL BARS SEQUENCE SHOWN ON SHEET SC-43 OF 234.
5. TRANSVERSE BARS SHALL BE PLACED RADIALLY AT THE SPACING NOTED. THE SPACING IS MEASURED ALONG THE EDGE OF DECK ALONG THE WEST PARAPET.
6. SEE SHEET SC-52 FOR DECK DETAILING AT OVERHEAD SIGN STRUCTURE.

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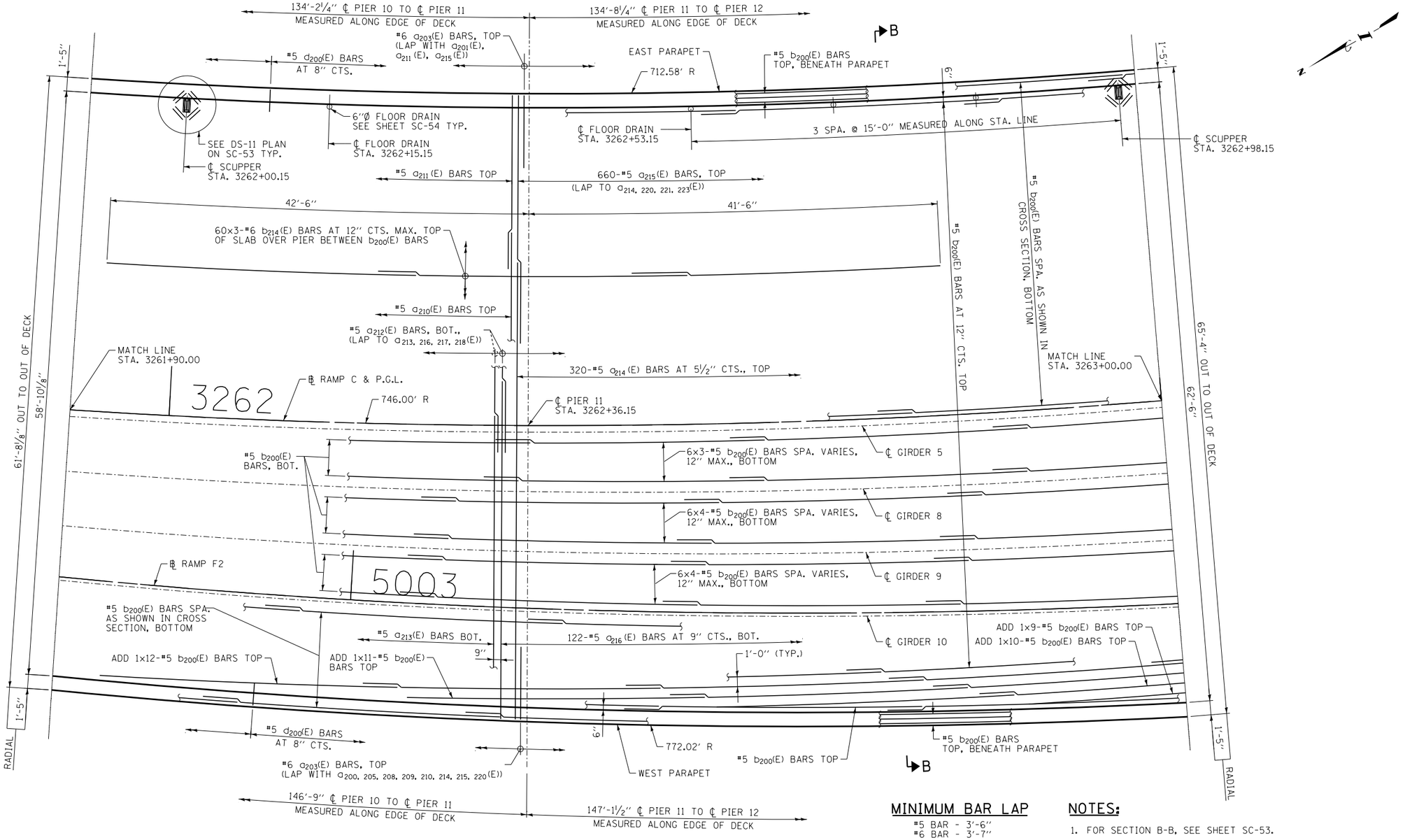
3/30/2020

DRAWN BY LP	DATE 4-3-2020	TYLIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	
CHECKED BY SP	SCALE NONE			

REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
DECK PLAN UNIT 2 - SPANS 10/11



PLAN

MINIMUM BAR LAP

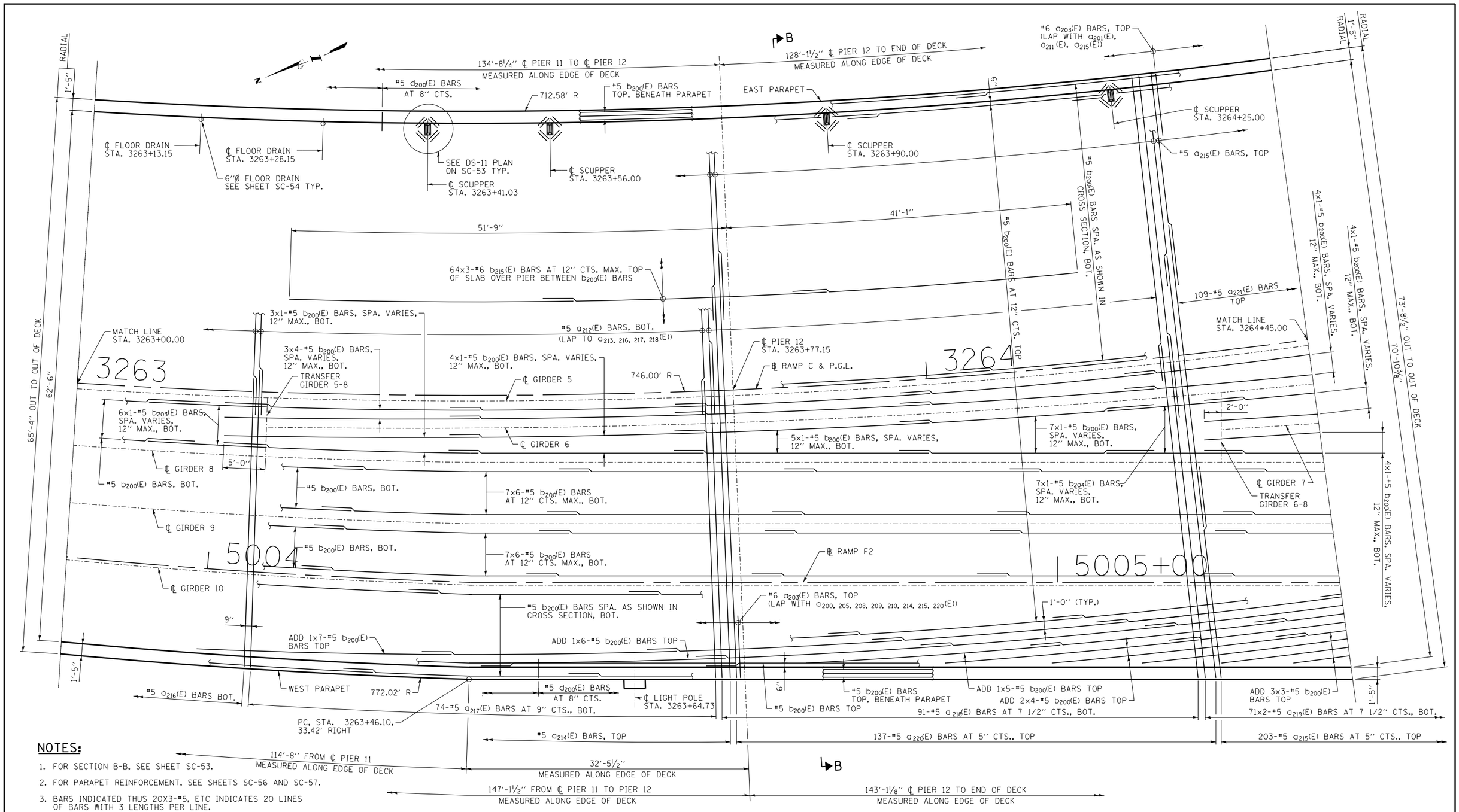
#5 BAR - 3'-6"
#6 BAR - 3'-7"

NOTES:

1. FOR SECTION B-B, SEE SHEET SC-53.
2. FOR PARAPET REINFORCEMENT, SEE SHEETS SC-56 AND SC-57.
3. BARS INDICATED THUS 20X3-#5, ETC INDICATES 20 LINES OF BARS WITH 3 LENGTHS PER LINE.
4. LONGITUDINAL BARS SHALL BE BENT IN THE FIELD TO BE PARALLEL/CONCENTRIC AT THE SPACING NOTED AND AS DESCRIBED IN THE PLACEMENT OF TOP LONGITUDINAL BARS SEQUENCE SHOWN ON SHEET SC-43 OF 234.
5. TRANSVERSE BARS SHALL BE PLACED RADIALLY AT THE SPACING NOTED. THE SPACING IS MEASURED ALONG THE EDGE OF DECK ALONG THE WEST PARAPET.

P:\60254A0\57-294-5-91\STRUCTURAL_RESTART.2018\Ramp C over I-57 and I-294\016210\1.5_unit2-dkpln-span12.dgn
3/30/2020

DRAWN BY . . . . LP	DATE . 4-3-2020 . . .	TY·LIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	REVISIONS NO. / DATE / DESCRIPTION	CONTRACT I-19-4495 I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 116) DECK PLAN UNIT 2 - SPANS 11/12	SHEET SC - 48 OF 234 323 OF 606
CHECKED BY . . . SP	SCALE . NONE					



NOTES:

1. FOR SECTION B-B, SEE SHEET SC-53.
2. FOR PARAPET REINFORCEMENT, SEE SHEETS SC-56 AND SC-57.
3. BARS INDICATED THUS 20X3-#5, ETC INDICATES 20 LINES OF BARS WITH 3 LENGTHS PER LINE.
4. LONGITUDINAL BARS SHALL BE BENT IN THE FIELD TO BE PARALLEL/CONCENTRIC AT THE SPACING NOTED AND AS DESCRIBED IN THE PLACEMENT OF TOP LONGITUDINAL BARS SEQUENCE SHOWN ON SHEET SC-43 OF 234.
5. TRANSVERSE BARS SHALL BE PLACED RADIALLY AT THE SPACING NOTED. THE SPACING IS MEASURED ALONG THE EDGE OF DECK ALONG THE WEST PARAPET.

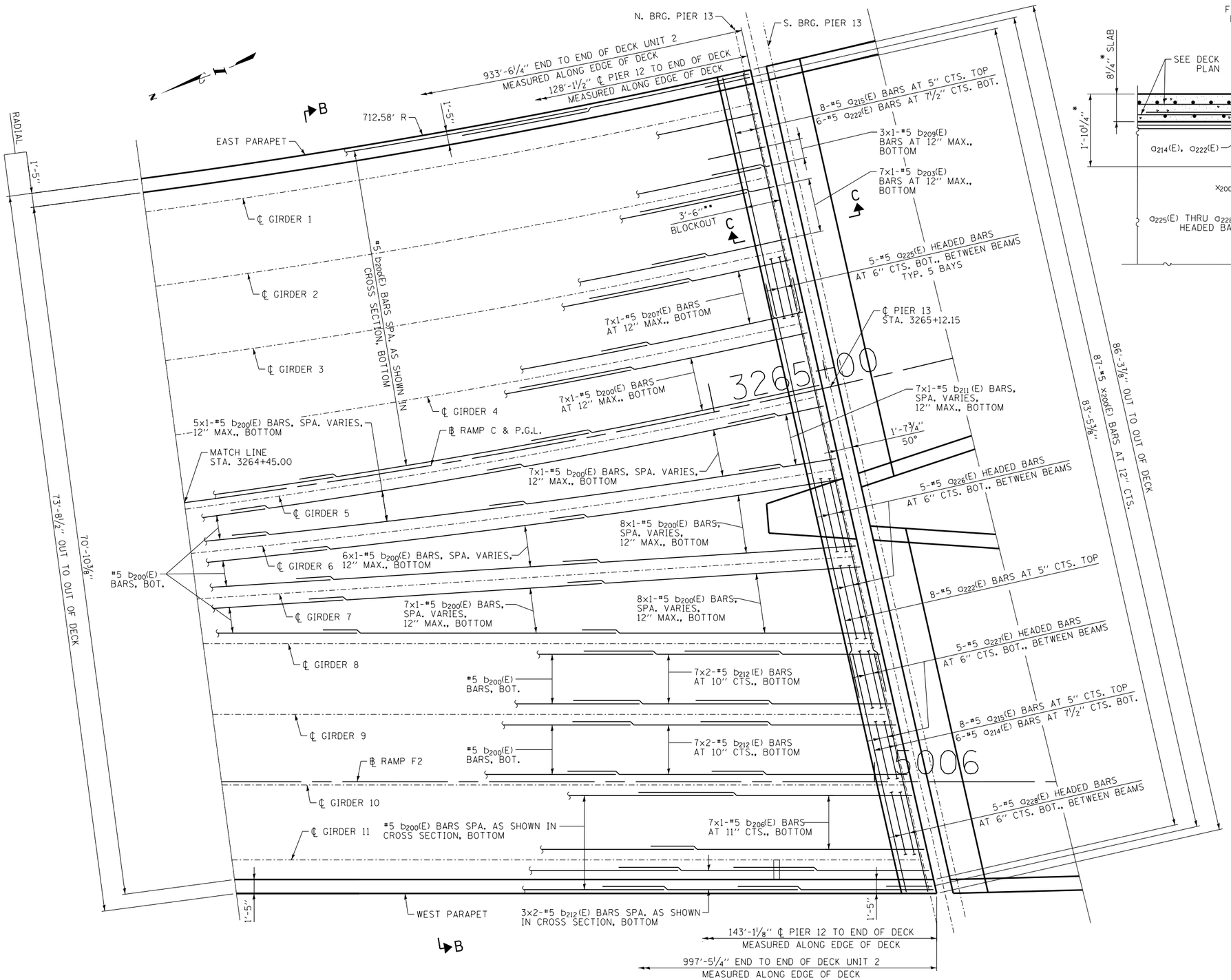
PLAN

MINIMUM BAR LAP

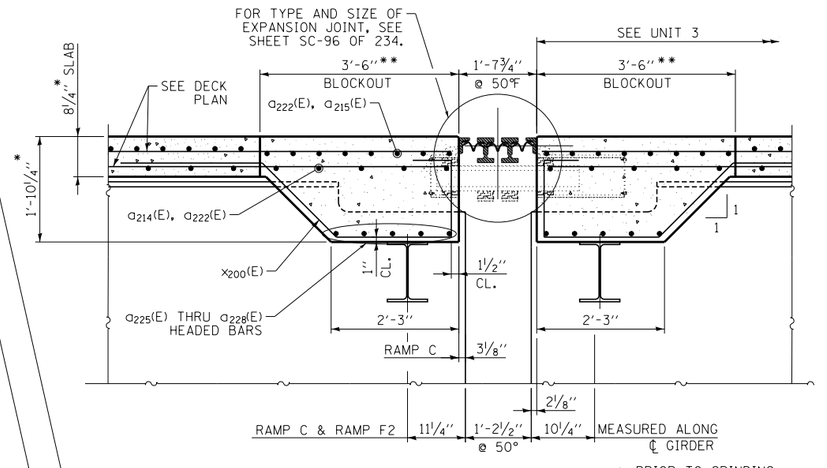
#5 BAR - 3'-6"
#6 BAR - 3'-7"

P:\682540\57-294_5-IN\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\Bl62101.5_unit2-dkpln-span13.dgn
3/30/2020

DRAWN BY . . . . LP	DATE . 4-3-2020 . . .	T·Y·LIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	REVISIONS NO.	DATE	DESCRIPTION	CONTRACT I-19-4495	SHEET SC - 49 OF 234
CHECKED BY . . . SP	SCALE NONE						I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 116) DECK PLAN UNIT 2 - SPANS 12/13	324 OF 606



PLAN - BOTTOM LONG. BARS AND BLOCKOUT BARS ONLY



SECTION C-C

* PRIOR TO GRINDING

** BLOCKOUT AREA TO BE POU
AFTER EXPANSION ASSEMBL
HAVE BEEN ADJUSTED.

MODULAR JOINT NOTES:

1. CONTRACTOR SHALL USE THE APPROVED JOINT SHOP DRAWINGS WHEN LAYING OUT THE DECK REBAR.
2. PRIOR TO THE PLACEMENT OF THE JOINT BLOCK-OUT, THE CONTRACTOR SHALL COORDINATE WITH THE MODULAR JOINT MANUFACTURER TO ENSURE THAT THE JOINT WILL BE PROPERLY SUPPORTED AND THAT THE REINFORCEMENT BARS WILL NOT INTERFERE WITH THE JOINT COMPONENTS. ANY NECESSARY ADJUSTMENTS TO THE REINFORCEMENT LAYOUT SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

NOTES:

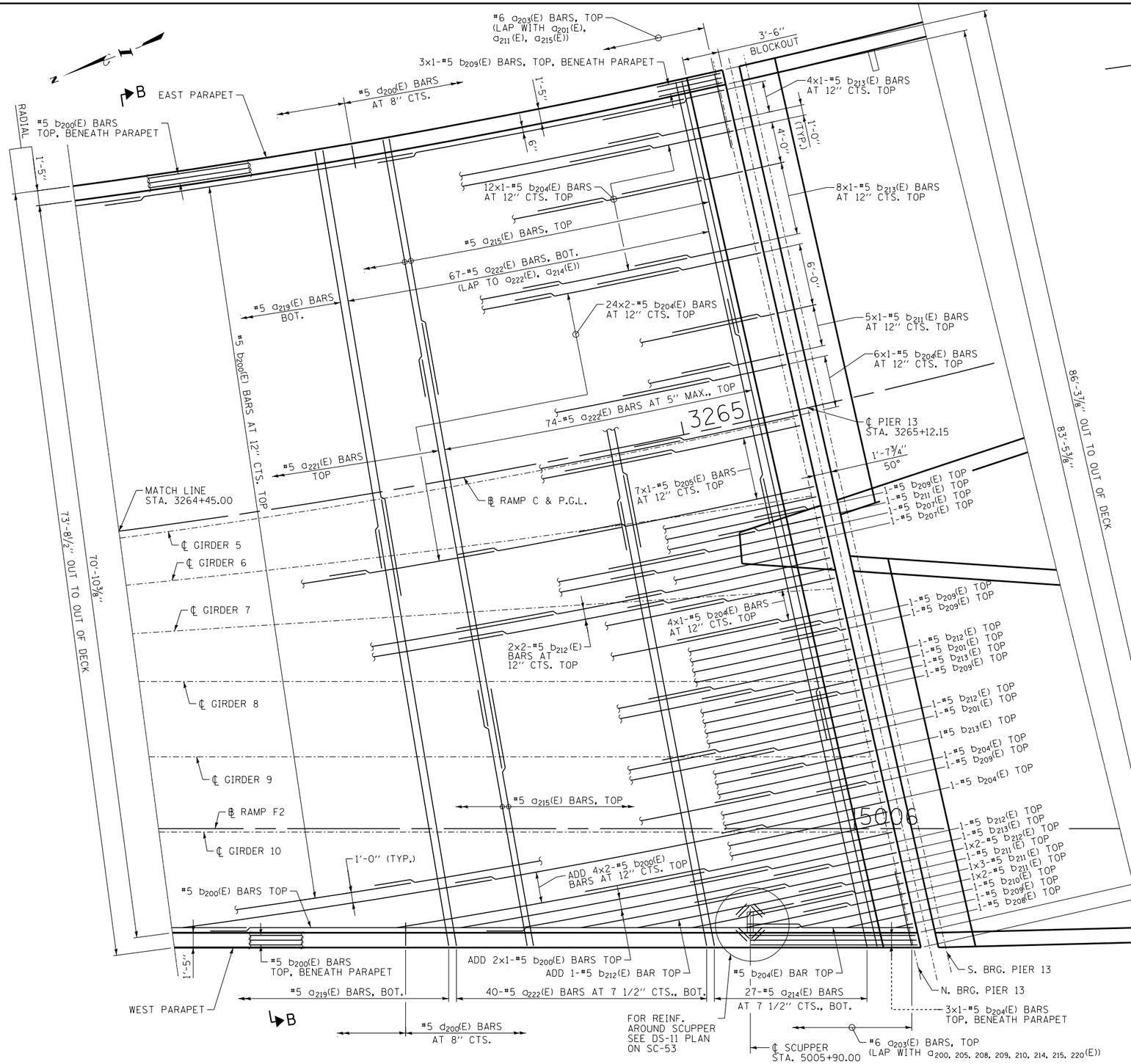
1. FOR SECTION B-B, SEE SHEET SC-53.
2. FOR PARAPET REINFORCEMENT, SEE SHEETS SC-56 AND SC-57.
3. BARS INDICATED THUS 20X3-#5, ETC INDICATES 20 LINES OF BARS WITH 3 LENGTHS PER LINE.
4. LONGITUDINAL BARS SHALL BE BENT IN THE FIELD TO BE PARALLEL/CONCENTRIC AT THE SPACING NOTED AND AS DESCRIBED IN THE PLACEMENT OF TOP LONGITUDINAL BARS SEQUENCE SHOWN ON SHEET SC-43 OF 234.
5. TRANSVERSE BARS SHALL BE PLACED RADIALLY AT THE SPACING NOTED. THE SPACING IS MEASURED ALONG THE EDGE OF DECK ALONG THE WEST PARAPET.

MINIMUM BAR LAP

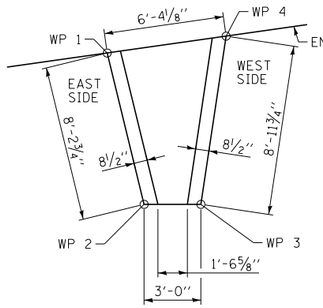
#5 BAR - 3'-6"
#6 BAR - 3'-7"

P:\60254057-294.5-91\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\0162101.5_unit2-dkpln-span13-end-BOT-bars.dgn
3/30/2020

DRAWN BY . . . . LP	DATE . 4-3-2020	TYLIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	REVISIONS NO.	DATE	DESCRIPTION	CONTRACT I-19-4495 / SHEET SC - 50 OF 234
CHECKED BY . . . SP	SCALE NONE						I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 116) DECK PLAN UNIT 2 - SPAN 13 BOT. / 325 OF 606

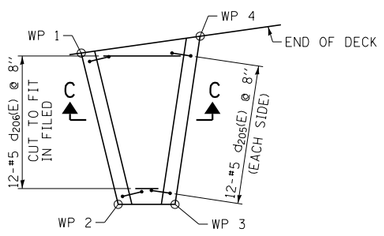


PLAN - TOP LONG. & TOP/BOTTOM TRANSVERSE BARS

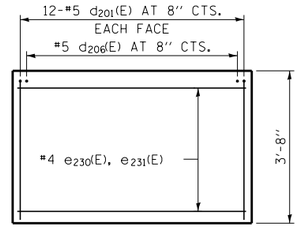


	STA.	OFFSET
WP 1	3265+11.34	9.41' RT.
WP 2	3265+03.26	10.27' RT.
WP 3	3265+02.89	13.25' RT.
WP 4	3265+11.35	15.75' RT.

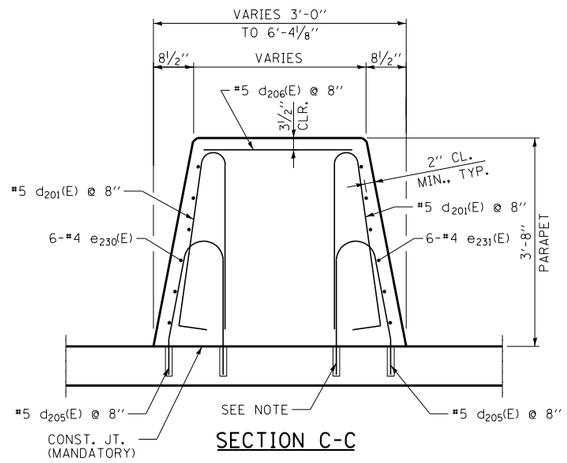
PLAN



PLAN



ELEVATION



SECTION C-C

END PARAPET DETAILS

NOTE:
DRILL AND SET #5 $d_{205(E)}$ BAR ACCORDING TO ART. 509.06 OF THE STANDARD SPECIFICATIONS. DRILLED HOLES SHALL BE ROUGHENED OR SCORED PER MANUFACTURER'S RECOMMENDATIONS. MAXIMUM DEPTH OF HOLE SHALL NOT EXCEED 6". CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT DRILLED HOLE INTERFERENCE WITH DECK REINFORCEMENT BARS. LOCATE LONGITUDINAL BARS TO MISS DRILLED LOCATIONS. LOCATE DRILLED HOLES TO MISS TRANSVERSE BARS IN DECK.

MINIMUM BAR LAP

#5 BAR - 3'-6"
#6 BAR - 3'-7"

NOTES:

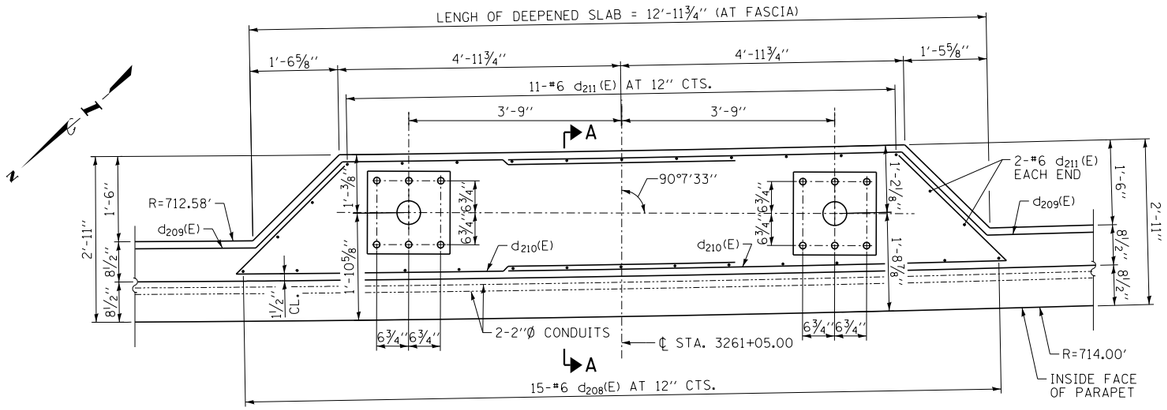
1. FOR SECTION B-B, SEE SHEET SC-53.
2. FOR PARAPET REINFORCEMENT, SEE SHEET SC-56 AND SC-57.
3. BARS INDICATED THUS 20X3-#5, ETC INDICATES 20 LINES OF BARS WITH 3 LENGTHS PER LINE.
4. LONGITUDINAL BARS SHALL BE BENT IN THE FIELD TO BE PARALLEL/CONCENTRIC AT THE SPACING NOTED AND AS DESCRIBED IN THE PLACEMENT OF TOP LONGITUDINAL BARS SEQUENCE SHOWN ON SHEET SC-43 OF 234.
5. TRANSVERSE BARS SHALL BE PLACED RADIALLY AT THE SPACING NOTED. THE SPACING IS MEASURED ALONG THE EDGE OF DECK ALONG THE WEST PARAPET.

P:\62524057-294_5-91\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\016201.5_unit2-deck\r-span13-end-TOP-bars.dgn
3/30/2020

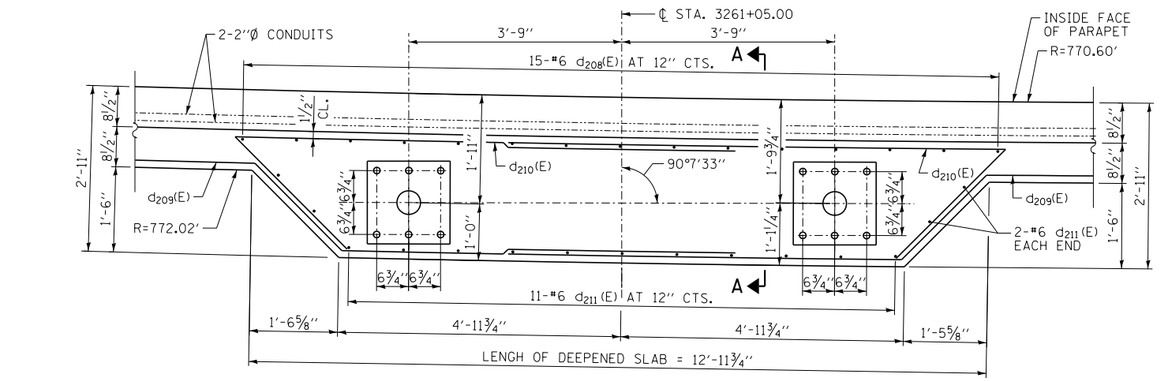
DRAWN BY . . . . LP	DATE . 4-3-2020	TY·LIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	REVISIONS NO. / DATE / DESCRIPTION	CONTRACT I-19-4495
CHECKED BY . . . . SP	SCALE . NONE				I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 116) DECK PLAN UNIT 2 - SPAN 13 TOP

SHEET SC - 51 OF 234

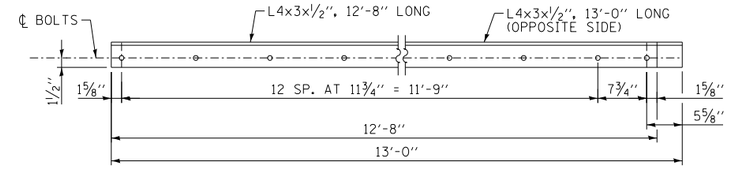
326 OF 606



PARAPET PLAN FOR OVERHEAD SIGN STRUCTURE - EAST PARAPET

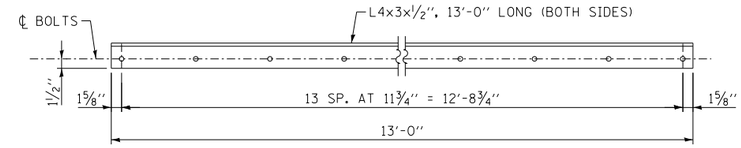


PARAPET PLAN FOR OVERHEAD SIGN STRUCTURE - WEST PARAPET



L4x3x½" DETAIL - EAST PARAPET

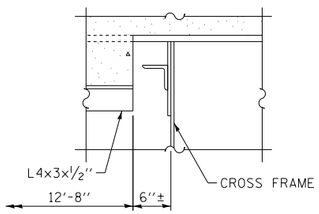
(LOOKING EAST)
14 BOLTS REQUIRED



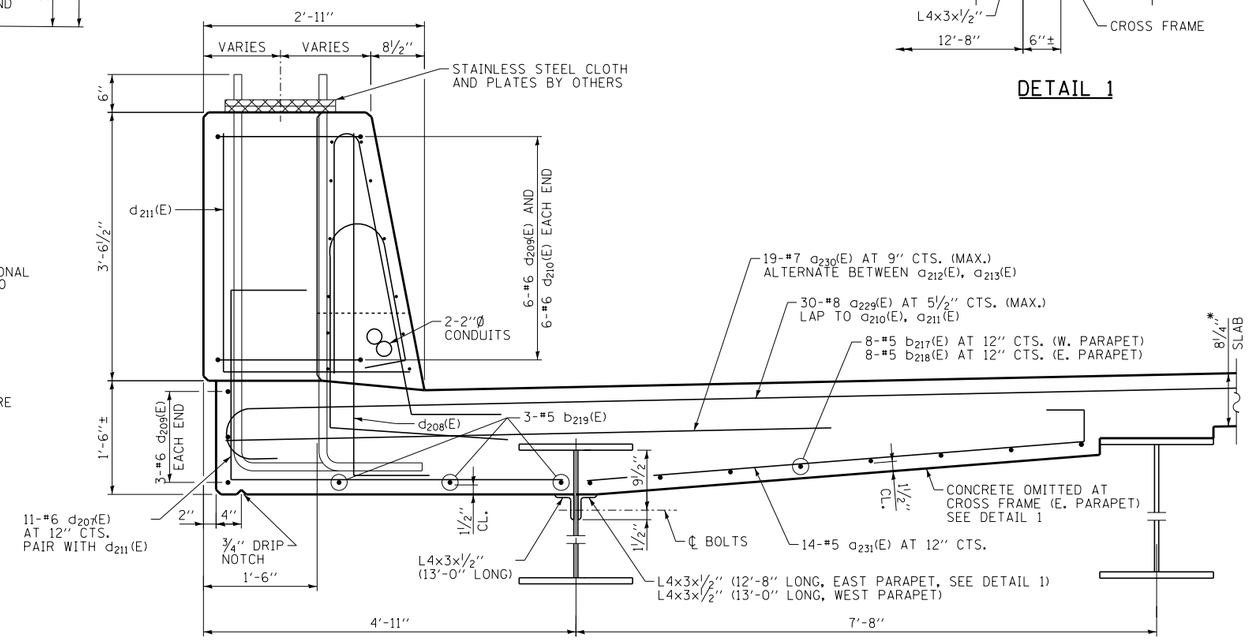
L4x3x½" DETAIL - WEST PARAPET

14 BOLTS REQUIRED

NOTE:
FASTENERS SHALL BE AASHTO M164 TYPE 1 MECHANICALLY GALVANIZED BOLTS. BOLTS ⅞"Ø, HOLES ¹⁵⁄₁₆ "Ø, UNLESS NOTED OTHERWISE.

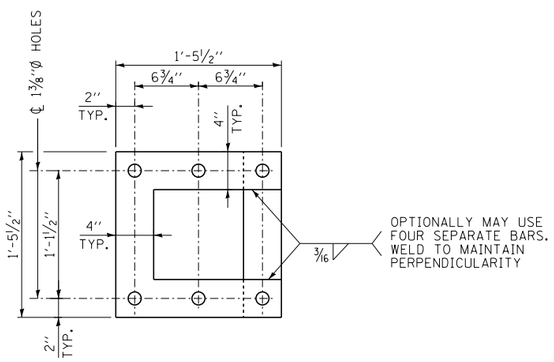


DETAIL 1

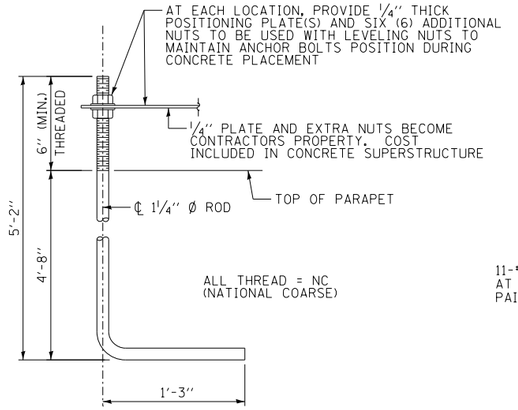


SECTION A-A * PRIOR TO GRINDING

(DECK AND DROP SLAB FOR OVERHEAD SIGN STRUCTURE BUMP OUT ARE TO BE POURED MONOLITHICALLY. HORIZONTAL JOINT BETWEEN DECK AND DROP SLAB IS NOT PERMITTED.)



POSITIONING PLATE(S)

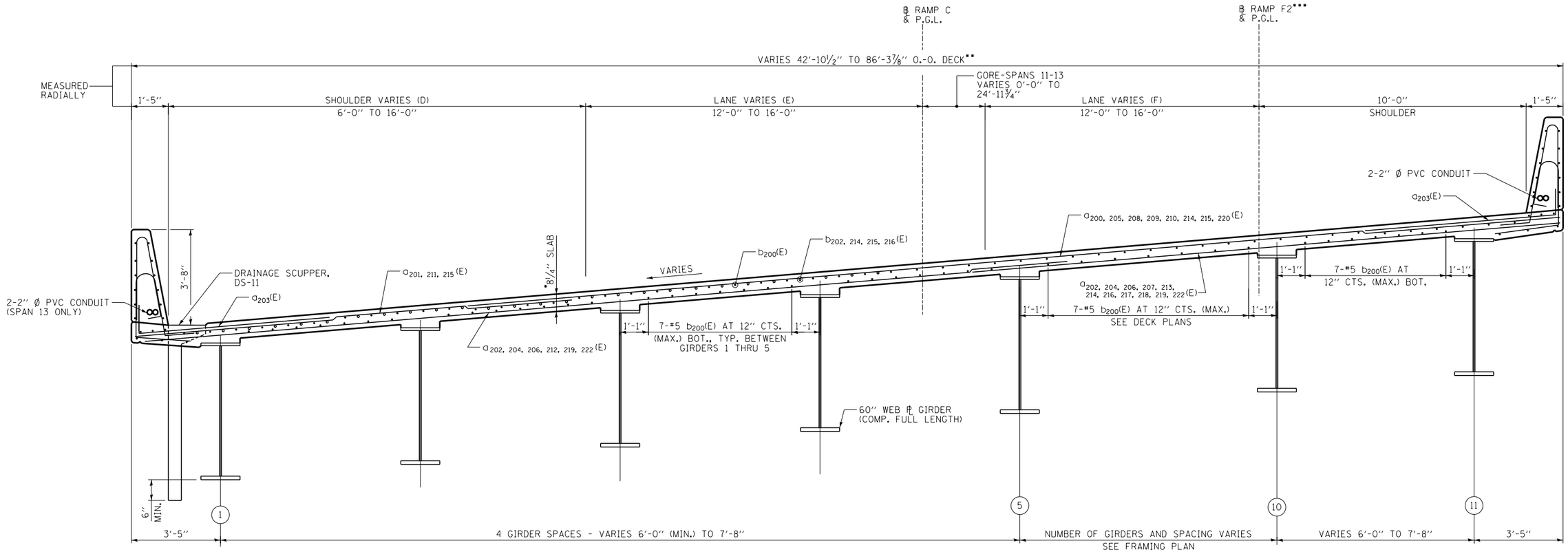


ANCHOR ROD DETAIL

COST INCLUDED IN CONCRETE SUPERSTRUCTURE (24 TOTAL)

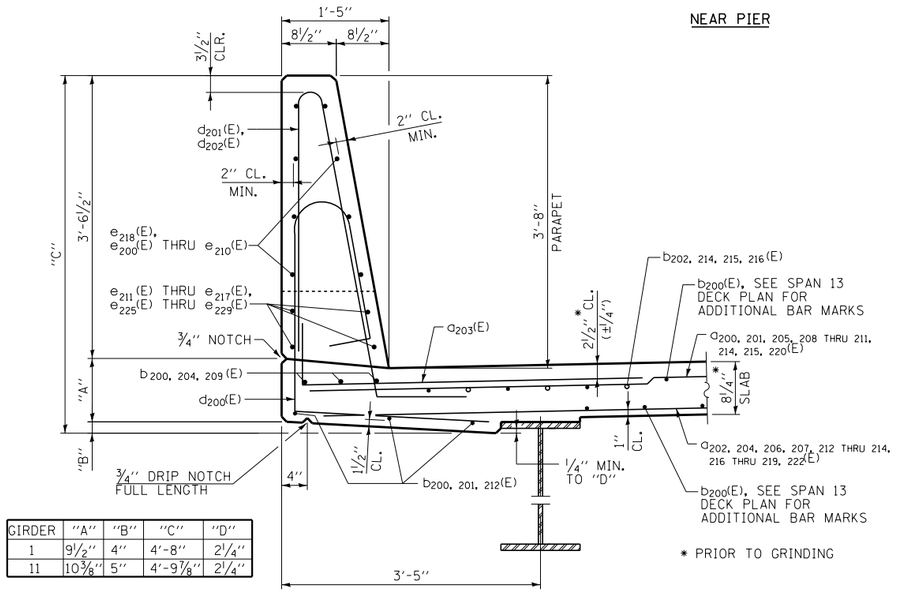
DRAWN BY . . . LP	DATE . 4-3-2020	TY·LIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	REVISIONS NO. / DATE / DESCRIPTION	CONTRACT I-19-4495	SHEET 8C - 52 OF 234
CHECKED BY . . . SP	SCALE . NONE				I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 116) SIGN BUMP-OUT DETAILS - UNIT 2	327 OF 606

P:\60254057-294_5-9\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\016210I.5_unit2-sign_structure.dgn
3/30/2020



NEAR PIER

NEAR MIDSPAN

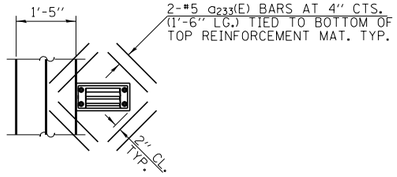


GIRDER	"A"	"B"	"C"	"D"
1	9½"	4"	4'-8"	2¼"
11	10⅜"	5"	4'-9⅞"	2¼"

SECTION THRU PARAPET

* PRIOR TO GRINDING

SECTION B-B
(LOOKING UPSTATION)



DRAINAGE SCUPPER PLAN

NOTE:
CUT LONGITUDINAL REINFORCEMENT TO CLEAR DRAINAGE SCUPPERS.

- PRIOR TO GRINDING
- ** MEASURED RADIAL TO ℄ RAMP C AT END OF UNIT
- *** BEGINS AT STA. 3259+24.62 ℄ RAMP C

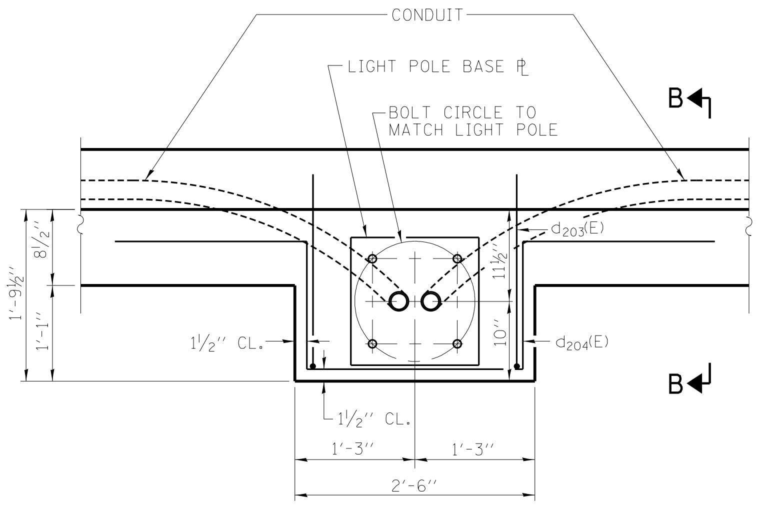
D: TRANSITION FROM 6'-0" AT STA. 3255+44.64 TO 16'-0" AT STA. 3257+85.11
E: TRANSITION FROM 12'-0" AT STA. 3259+24.49 TO 16'-0" AT STA. 3261+65.17
F: TRANSITION FROM 12'-0" AT STA. 3259+24.49 TO 16'-0" AT STA. 3261+65.17

NOTES:

1. WORK THIS SHEET WITH SHEETS SC-43 THRU SC-57 OF 234
2. SEE SHEET SC-97 OF SC-99 FOR DRAINAGE SCUPPER.
3. FOR BILL OF MATERIAL, SEE SHEET SC-55 OF 234

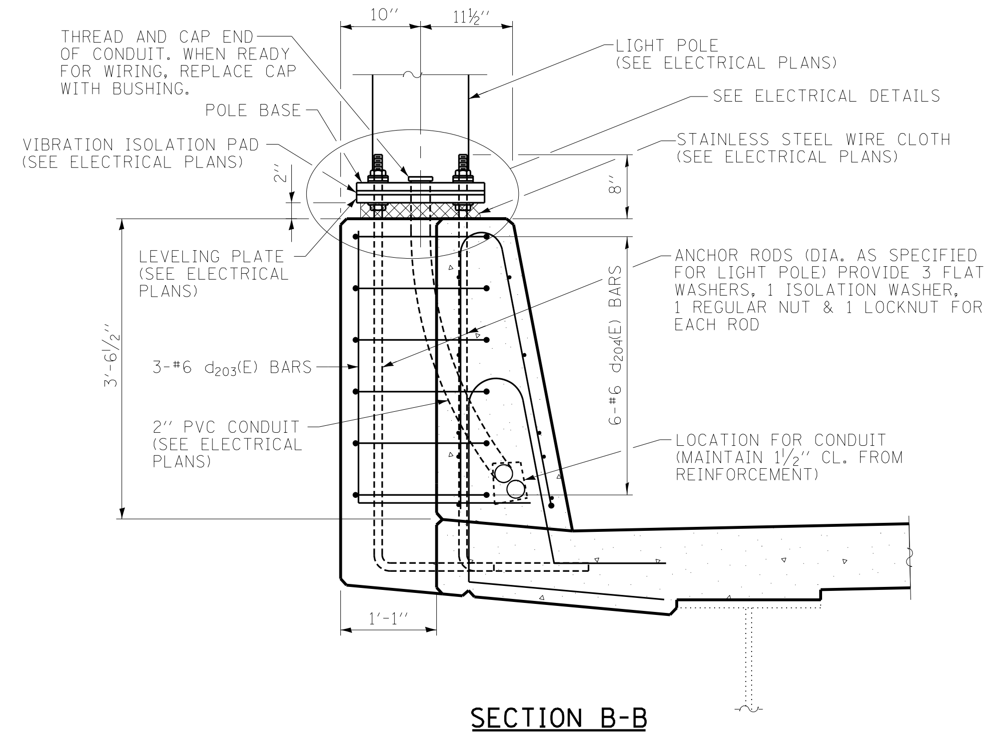
P:\60254057-294,5-9\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\01621O1.5_unit2-super-dt1.dgn
3/30/2020

DRAWN BY . . . LP	DATE . 4-3-2020	TY·LIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	REVISIONS: NO. / DATE / DESCRIPTION	CONTRACT I-19-4495	SHEET SC - 53 OF 234
CHECKED BY . . . SP	SCALE . NONE				I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 116) DECK DETAILS 1 - UNIT 2	328 OF 606

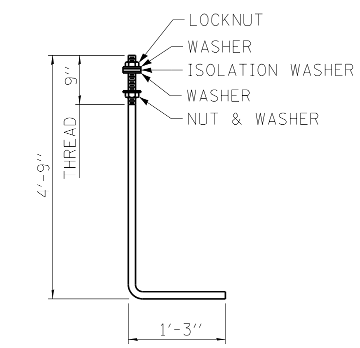


LIGHT POLE PLAN

NOTE:
COST OF ANCHOR RODS IS INCLUDED WITH CONCRETE SUPERSTRUCTURE.

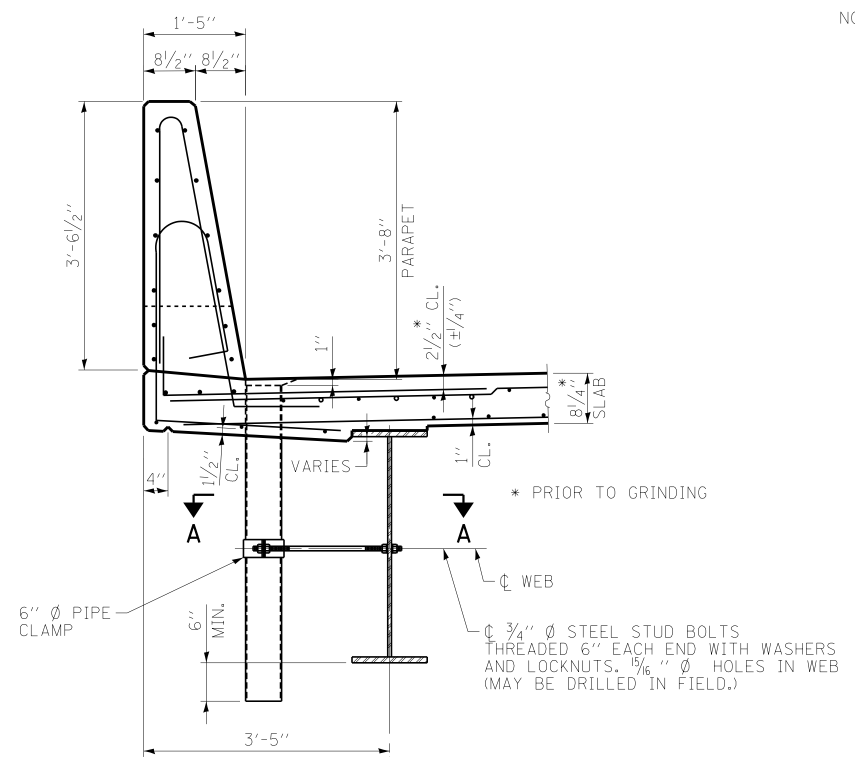


SECTION B-B



ANCHOR ROD

DIAMETER AS SPECIFIED FOR LIGHT POLES. (ASTM F 1554 GRADE 105) FULL LENGTH HOT DIPPED GALVANIZED.



SECTION AT FLOOR DRAIN

NOTES:

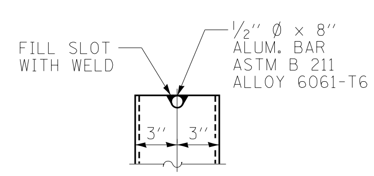
FIBERGLASS PIPE SHALL CONFORM TO ASTM D2996, WITH SHORT-TIME RUPTURE STRENGTH HOOP TENSILE STRESS OF 30,000 P.S.I. MINIMUM.

THE EXTERIOR SURFACES OF THE FLOOR DRAINS SHALL BE PAINTED ACCORDING TO ARTICLE 506 WITH THE FINISH COAT AS SPECIFIED. THE EXTERIOR SURFACES OF THE DRAINS SHALL BE CLEANED ACCORDING TO THE SOCIETY OF PROTECTIVE COATING'S SPEC. SSPC-SP1 PRIOR TO PAINTING.

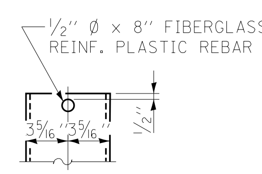
THE TOP PORTION OF ALUMINUM FLOOR DRAINS SHALL BE COATED TO MINIMIZE REACTION WITH WET CONCRETE.

THE CLAMPING DEVICE SHALL BE GALVANIZED ACCORDING TO AASHTO M 232. COST OF CLAMPING DEVICE INCLUDED WITH FLOOR DRAINS.

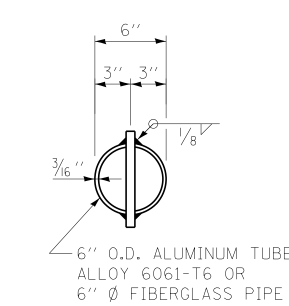
THE POLYURETHANE SEALANT SHALL BE ACCORDING TO ARTICLE 1050.04 OF THE STD. SPEC. AND THE COLOR SHALL BE GRAY.



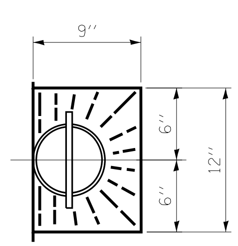
ALUMINUM TUBE



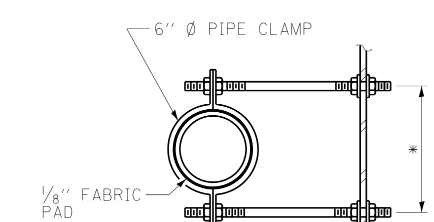
FIBERGLASS PIPE



TOP PLAN
(SHOWING ALUMINUM TUBE)

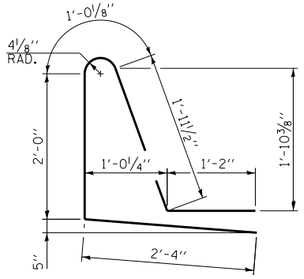


TOP PLAN

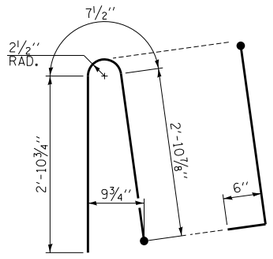


SECTION A-A

* DIMENSION AS REQUIRED BY PIPE CLAMP



BAR d_{200}(E)



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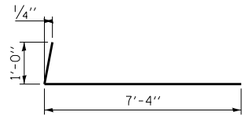

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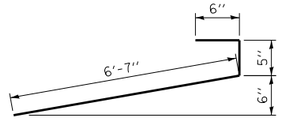
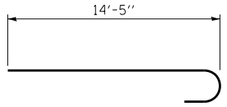
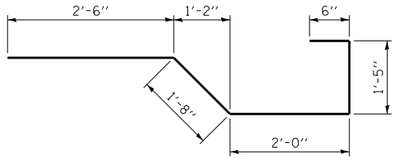


BAR a_{231}(E)

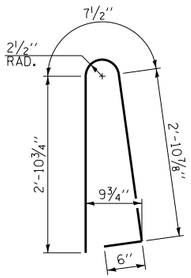
BAR a_{224}(E) THRU a_{228}(E)
(HEADED)



BAR a_{229}(E)



BAR x_{200}(E)



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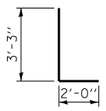

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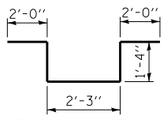

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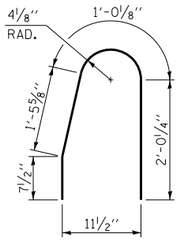

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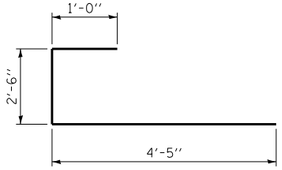
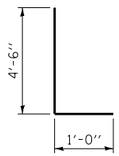
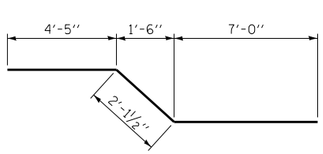


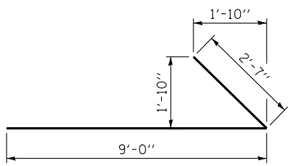
BAR d_{207}(E)



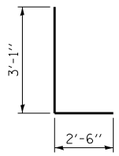
BAR d_{208}(E)



BAR d_{209}(E)



BAR d_{210}(E)



BAR d_{211}(E)

BILL OF MATERIAL

REINFORCEMENT BAR LIST

BAR	NO.	SIZE	LENGTH	SHAPE
a_{200}(E)	293	#5	36'-0"	
a_{201}(E)	1221	#5	16'-0"	
a_{202}(E)	356	#5	26'-0"	
a_{203}(E)	4394	#6	8'-4"	
a_{204}(E)	670	#5	28'-0"	
a_{205}(E)	610	#5	41'-0"	
a_{206}(E)	269	#5	29'-0"	
a_{207}(E)	194	#5	33'-0"	
a_{208}(E)	198	#5	44'-0"	
a_{209}(E)	120	#5	46'-0"	
a_{210}(E)	319	#5	49'-0"	
a_{211}(E)	319	#5	17'-6"	
a_{212}(E)	481	#5	36'-0"	
a_{213}(E)	195	#5	30'-6"	
a_{214}(E)	353	#5	46'-0"	
a_{215}(E)	879	#5	25'-0"	
a_{216}(E)	122	#5	34'-0"	
a_{217}(E)	74	#5	35'-0"	
a_{218}(E)	91	#5	39'-4"	
a_{219}(E)	142	#5	40'-6"	
a_{220}(E)	137	#5	50'-0"	
a_{221}(E)	109	#5	35'-9"	
a_{222}(E)	195	#5	43'-5"	
a_{223}(E)	96	#5	1'-6"	
a_{224}(E)	30	#5	5'-8"	
a_{225}(E)	25	#5	7'-4"	
a_{226}(E)	10	#5	8'-9"	
a_{227}(E)	10	#5	7'-0"	
a_{228}(E)	5	#5	7'-6"	
a_{229}(E)	60	#8	15'-6"	
a_{230}(E)	38	#7	9'-0"	
a_{231}(E)	28	#5	7'-6"	
b_{200}(E)	4116	#5	30'-0"	
b_{201}(E)	50	#5	15'-0"	
b_{202}(E)	300	#6	30'-0"	
b_{203}(E)	13	#5	14'-0"	
b_{204}(E)	82	#5	16'-0"	
b_{205}(E)	7	#5	23'-0"	
b_{206}(E)	7	#5	28'-0"	
b_{207}(E)	9	#5	21'-0"	
b_{208}(E)	1	#5	1'-8"	
b_{209}(E)	12	#5	6'-0"	
b_{210}(E)	1	#5	11'-0"	
b_{211}(E)	19	#5	10'-0"	
b_{212}(E)	44	#5	20'-0"	
b_{213}(E)	15	#5	12'-0"	
b_{214}(E)	348	#6	31'-2"	
b_{215}(E)	192	#6	33'-5"	
b_{216}(E)	138	#6	30'-0"	
b_{217}(E)	8	#5	12'-8"	
b_{218}(E)	8	#5	12'-5"	
b_{219}(E)	6	#5	12'-8"	

REINFORCEMENT BAR LIST

BAR	NO.	SIZE	LENGTH	SHAPE
d_{200}(E)	2898	#5	8'-5"	
d_{201}(E)	1238	#5	6'-11"	
d_{202}(E)	1691	#5	6'-11"	
d_{203}(E)	12	#6	5'-3"	
d_{204}(E)	24	#6	8'-11"	
d_{205}(E)	24	#5	5'-2"	
d_{206}(E)	12	#5	4'-1"	
d_{207}(E)	22	#6	7'-11"	
d_{208}(E)	30	#6	5'-6"	
d_{209}(E)	36	#6	13'-7"	
d_{210}(E)	24	#6	11'-7"	
d_{211}(E)	30	#6	5'-7"	
e_{200}(E)	8	#4	11'-6"	
e_{201}(E)	168	#4	18'-2"	
e_{202}(E)	144	#4	19'-8"	
e_{203}(E)	144	#4	18'-8"	
e_{204}(E)	8	#4	14'-7"	
e_{205}(E)	8	#4	13'-7"	
e_{206}(E)	8	#4	18'-11"	
e_{207}(E)	208	#4	19'-2"	
e_{208}(E)	8	#4	14'-4"	
e_{209}(E)	120	#4	17'-8"	
e_{210}(E)	8	#4	17'-6"	
e_{211}(E)	16	#4	32'-9"	
e_{212}(E)	16	#4	29'-0"	
e_{213}(E)	16	#4	28'-11"	
e_{214}(E)	16	#4	28'-8"	
e_{215}(E)	12	#4	34'-3"	
e_{216}(E)	12	#4	28'-3"	
e_{217}(E)	32	#4	30'-11"	
e_{218}(E)	8	#4	15'-0"	
e_{219}(E)	8	#4	14'-8"	
e_{220}(E)	40	#4	16'-8"	
e_{221}(E)	8	#4	16'-10"	
e_{222}(E)	16	#4	18'-0"	
e_{223}(E)	8	#4	17'-1"	
e_{224}(E)	8	#4	17'-7"	
e_{225}(E)	12	#4	34'-11"	
e_{226}(E)	12	#4	31'-4"	
e_{227}(E)	24	#4	33'-7"	
e_{228}(E)	12	#4	33'-5"	
e_{229}(E)	16	#4	28'-11"	
e_{230}(E)	6	#4	7'-10"	
e_{231}(E)	6	#4	8'-5"	
x_{200}(E)	131	#5	8'-1"	

ITEM	UNIT	QUANTITY
CONCRETE SUPERSTRUCTURE	CU. YD.	1793.1
REINFORCEMENT BARS, EPOXY COATED	POUND	543,300
PROTECTIVE COAT	SQ. YD.	5969
BRIDGE DECK GROOVING (LONGITUDINAL)	SQ. YD.	3333
DIAMOND GRINDING (BRIDGE SECTION)	SQ. YD.	5539

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3/30/2020

DRAWN BY . . . . LP . . . . . | DATE . 4-3-2020 . . . | CHECKED BY . . . SP . . . . . | SCALE . NONE . . . . .

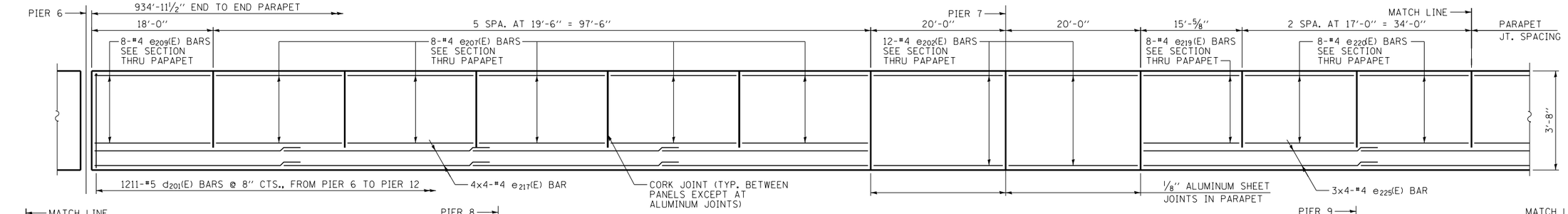
TY·LIN INTERNATIONAL

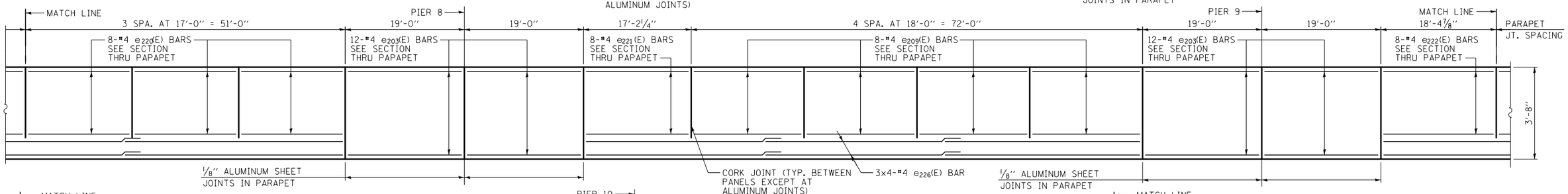
THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

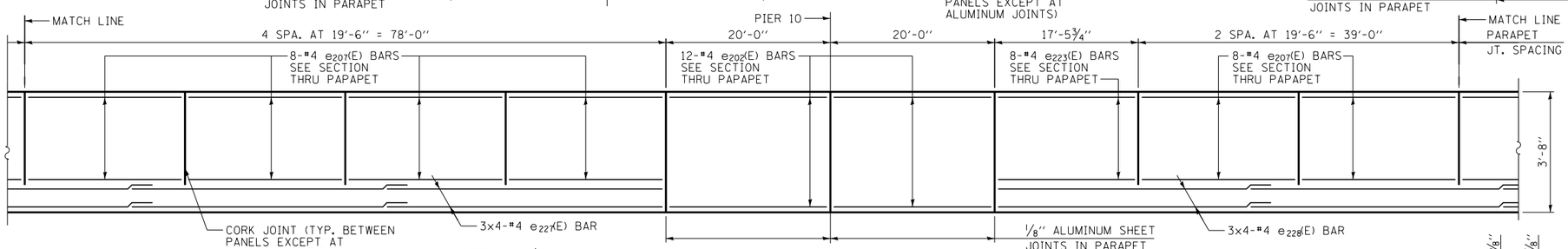
REVISIONS		
NO.	DATE	DESCRIPTION

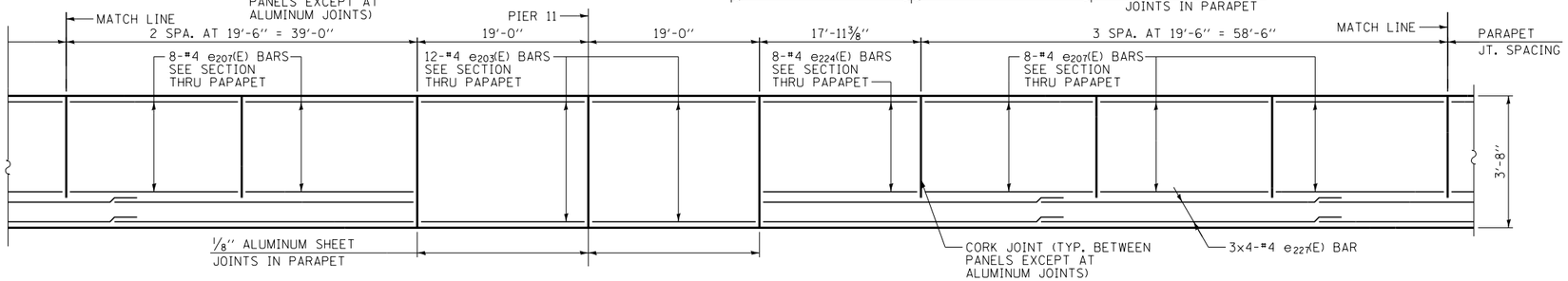
CONTRACT I-19-4495

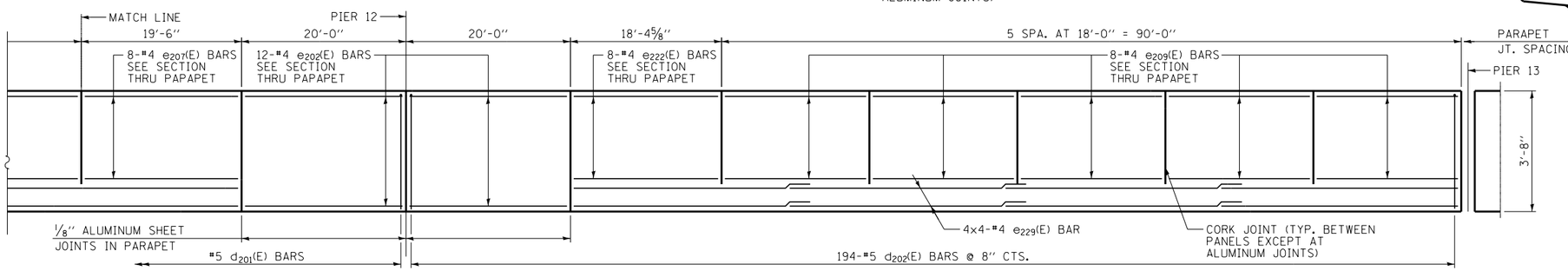
I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
B.O.M. - UNIT 2



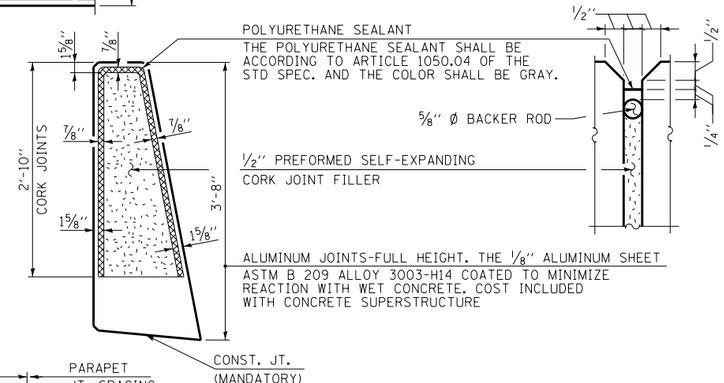








INSIDE ELEVATION OF PARAPET



PARAPET JOINT DETAILS

MIN. BAR LAP

#4 = 2'-6"

NOTES:

1. ALL DIMENSIONS MEASURED ALONG FRONT FACE OF PARAPET.
2. FOR SECTION THRU PARAPET, SEE SHEET SC-53 OF SF-234.
3. SEE MODULAR JOINT DETAILS ON SHEET SC-93 THRU SC-96 OF 234 FOR EMBEDDED PLATE IN THE PARAPET.

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3/30/2020

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CHECKED BY . . . SP . . . . . | SCALE . NONE . . . . .

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
EAST PARAPET ELEV. - UNIT 2

SHEET SC - 56 OF 234

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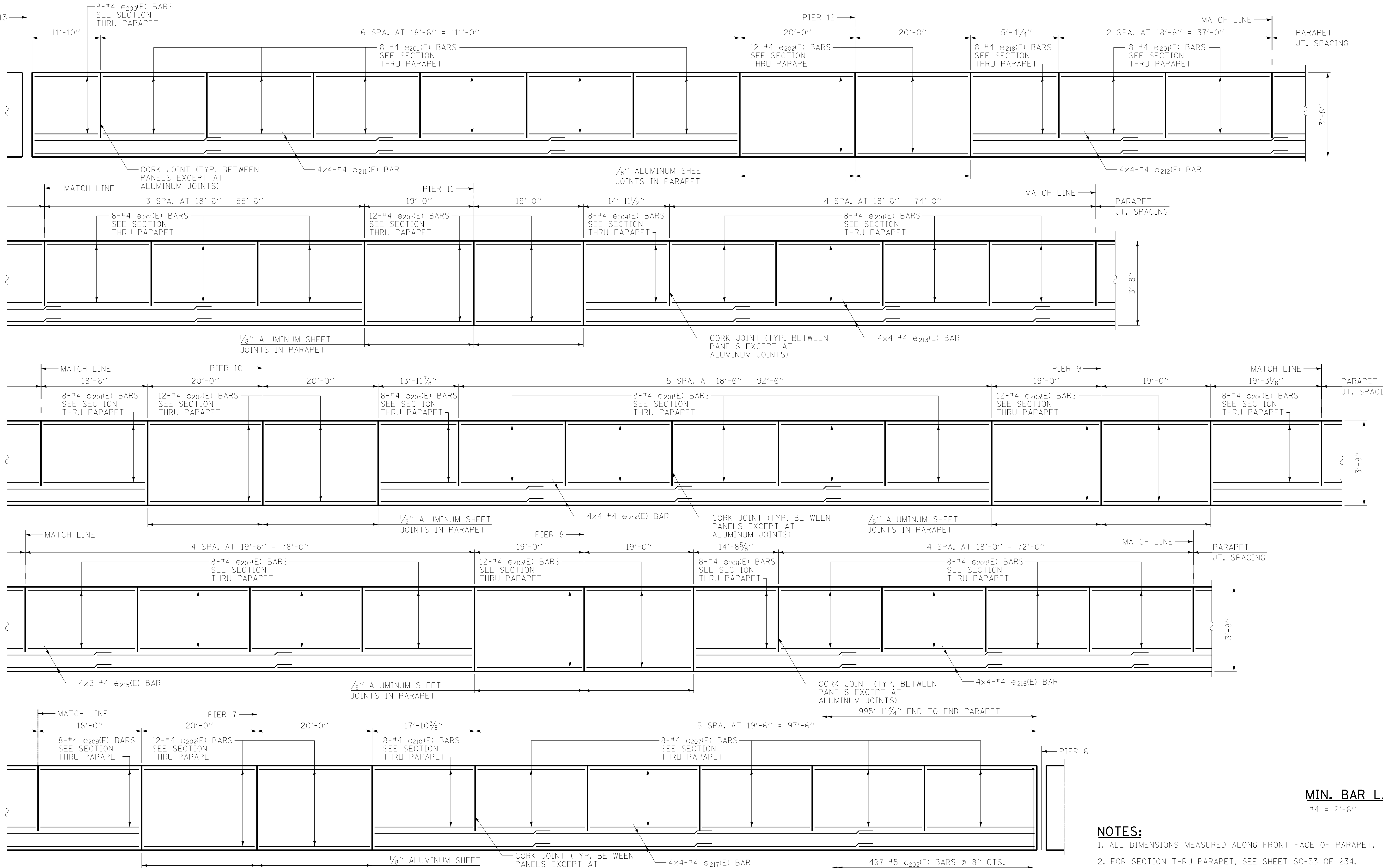

INSIDE ELEVATION OF PARAPET

MIN. BAR LAP

#4 = 2'-6"

NOTES:

1. ALL DIMENSIONS MEASURED ALONG FRONT FACE OF PARAPET.
2. FOR SECTION THRU PARAPET, SEE SHEET SC-53 OF 234.
3. SEE MODULAR JOINT DETAILS ON SHEET SC-93 THRU SC-96 OF 234 FOR EMBEDDED PLATE IN THE PARAPET.

DRAWN BY LP | DATE 4-3-2020
CHECKED BY SP | SCALE NONE

TYLIN INTERNATIONAL

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

REVISIONS

NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
WEST PARAPET ELEV. - UNIT 2

SHEET SC - 57 OF 234

332 OF 606

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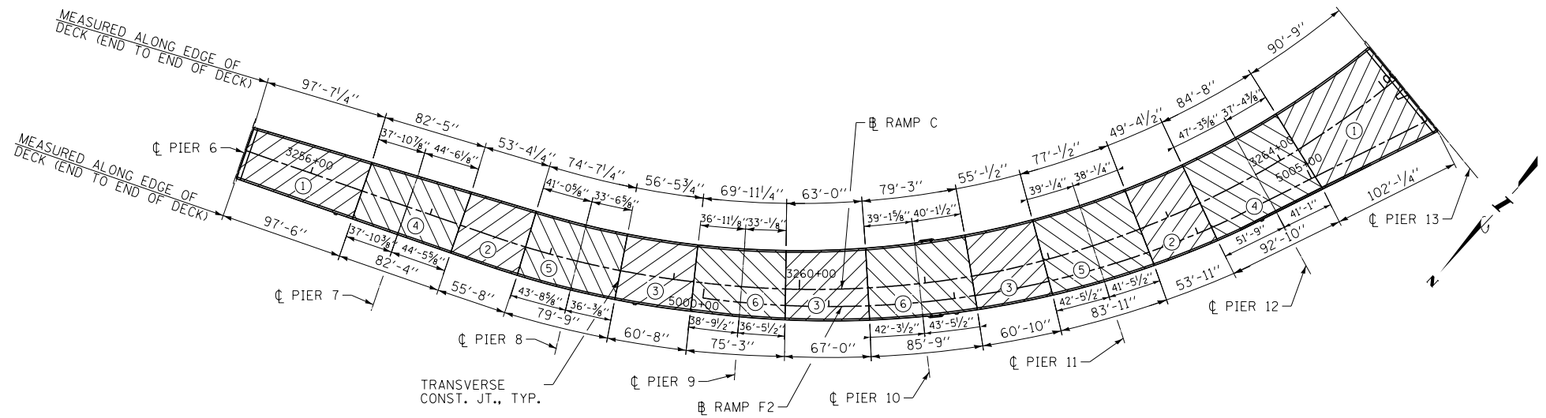
3/30/2020



DECK POURING SEQUENCE - UNIT 2

NOTES ON DECK POURING SEQUENCE:

WHEN THE DECK POUR IS STOPPED FOR THE DAY AT ONE OF MORE OF THE TRANSVERSE BONDED CONTRUCTION JOINTS IN THE DECK POURING SEQUENCE AS SHOWN, THE NEXT POUR SHALL NOT BE MADE UNTIL BOTH OF THE FOLLOWING ARE MET:

1) AT LEAST 72 HOURS SHALL HAVE ELAPSED FROM THE END OF THE PREVIOUS POUR.
2) THE CONCRETE STRENGTH SHALL HAVE ATTAINED A MINIMUM FLEXURAL STRENGTH OF 675 PSI OR A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI.

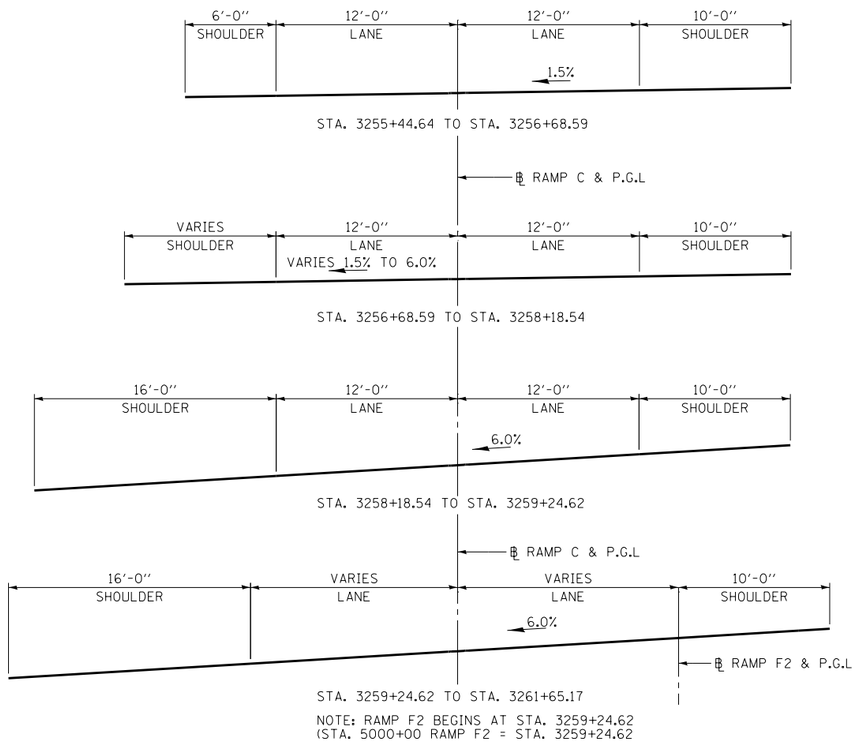
THE CONTRACTOR IS ALERTED THAT CAMBER AND DEAD LOAD DEFLECTIONS VALUES SHOWN ON THE GIRDER DETAIL DRAWINGS ARE DEVELOPED BASED ON THE DECK POURING SEQUENCE SHOWN. ANY DEVIATION FROM THIS POURING SEQUENCE WILL RESULT IN CHANGES TO CAMBER AND ELEVATIONS THAT AFFECT DEAD LOAD DEFLECTIONS. IF THE CONTRACTOR WISHES TO CHANGE THE SEQUENCE, THEN THE PROPOSED PLAN REVISIONS AND DESIGN CALCULATIONS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL. THE CACULATIONS SHALL BE PREPARED AND SEALED BY A LICENSED STRUCTURAL ENGINEER IN ILLINOIS.

TABLE A

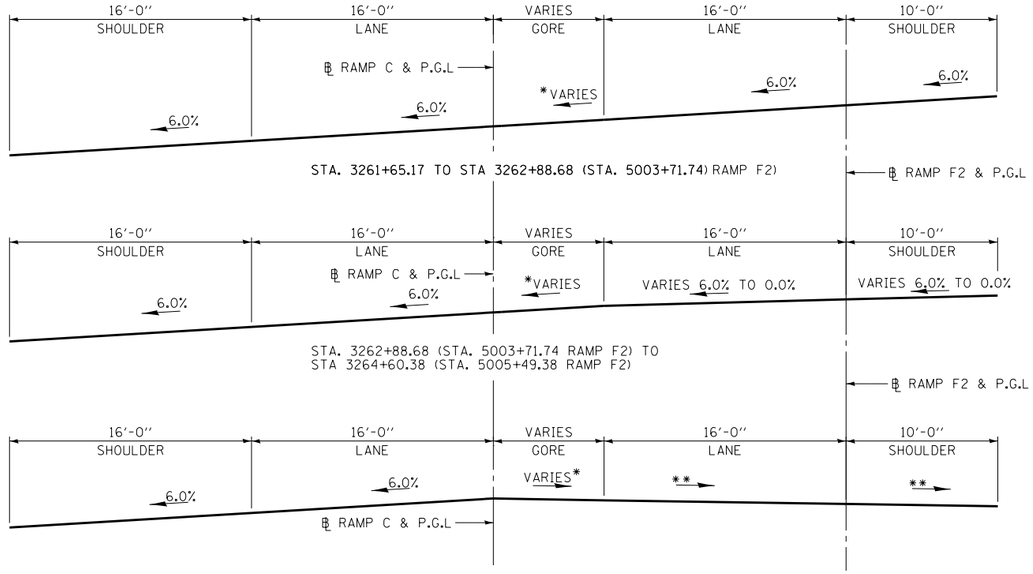
SCREED LINE	CROSS SLOPE %
11H	3.65%
11I	3.31%
11J	3.18%
11K	3.14%
11L	3.10%
11M	3.07%
CL Pier 11	3.03%
12A	3.02%
12B	3.03%
12C	3.01%
12D	2.96%
12E	2.85%
12F	3.53%
12G	4.45%
12H	5.19%
12I	5.81%
12J	6.22%
12K	6.40%
12L	6.65%
12M	6.62%
CL Pier 12	6.33%
13A	5.76%
13B	5.04%
13C	4.23%
13D	3.40%
13E	2.57%
13F	1.78%
13G	1.04%
13H	0.36%
13I	-0.26%
13J	-0.87%
13K	-1.49%
13L	-2.10%
CL W. Brg. Pier 13	-3.05%

* VARIES - SEE TABLE A

** VARIES 0% AT STA. 5005+49.38 TO 1.5% AT STA. 5005+93.78



DECK CROSS SLOPE DETAIL 1



DECK CROSS SLOPE DETAIL 2

DRAWN BY LP	DATE 4-3-2020	TYLIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	REVISIONS NO.	DATE	DESCRIPTION	CONTRACT I-19-4495
CHECKED BY SP	SCALE NONE						I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 116) DECK POUR SEQUENCE - UNIT 2

SHEET 8C - 58 OF 234

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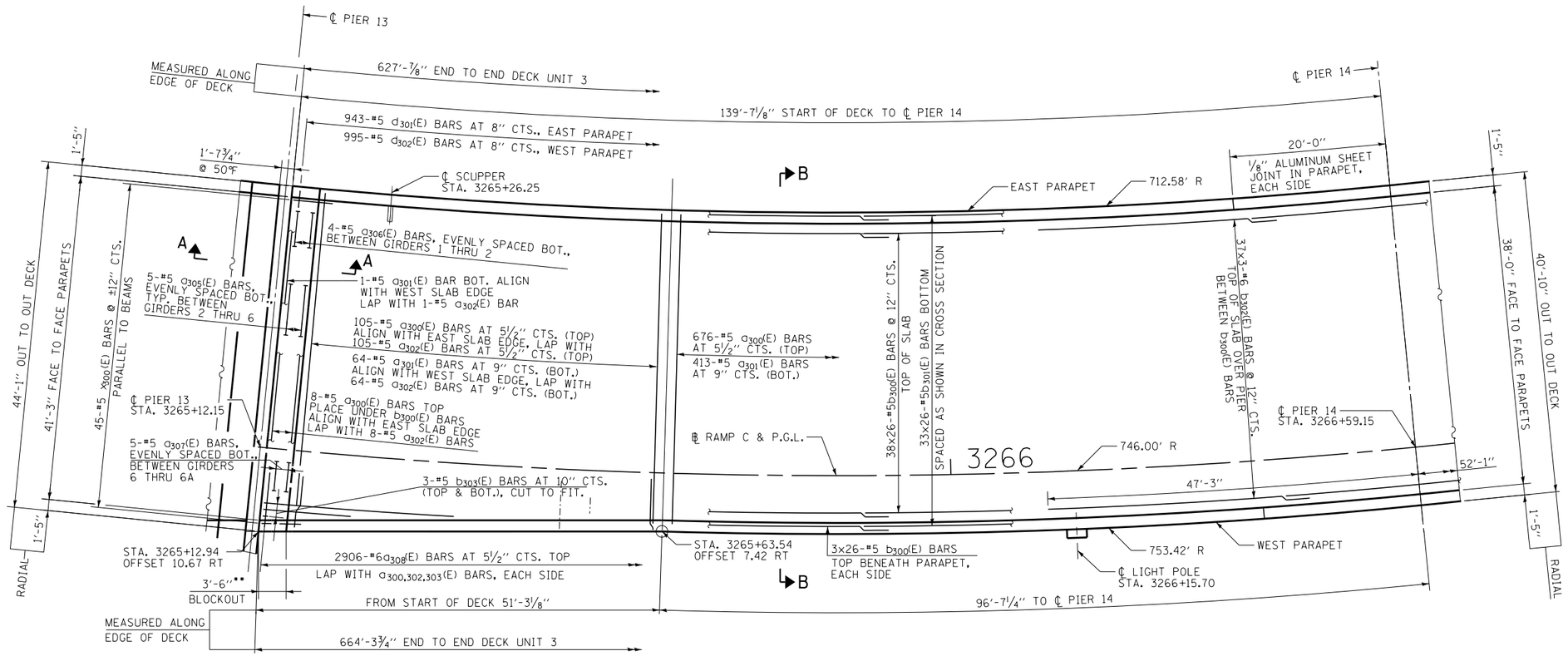
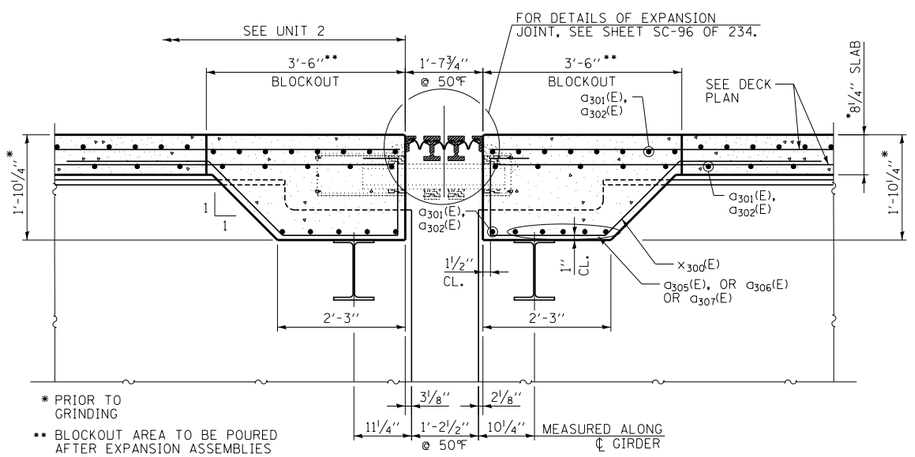
3/30/2020



DECK PLAN UNIT 3 - SPAN 14



SECTION A-A

* PRIOR TO GRINDING

** BLOCKOUT AREA TO BE POURED AFTER EXPANSION ASSEMBLIES HAVE BEEN ADJUSTED.

MODULAR JOINT NOTES:

1. CONTRACTOR SHALL USE THE APPROVED JOINT SHOP DRAWINGS WHEN LAYING OUT THE DECK REBAR.
2. PRIOR TO THE PLACEMENT OF THE JOINT BLOCK-OUT, THE CONTRACTOR SHALL COORDINATE WITH THE MODULAR JOINT MANUFACTURER TO ENSURE THAT THE JOINT WILL BE PROPERLY SUPPORTED AND THAT THE REINFORCEMENT BARS WILL NOT INTERFERE WITH THE JOINT COMPONENTS. ANY NECESSARY ADJUSTMENTS TO THE REINFORCEMENT LAYOUT SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

MINIMUM BAR LAP

#5 BAR - 3'-6"
#6 BAR - 3'-7"

NOTES:

1. FOR SECTION B-B, SEE SHEET SC-63.
2. FOR PARAPET REINFORCEMENT, SEE SHEET SC-65 THRU SC-66.
3. FOR SCUPPER DETAILS, SEE SHEET SC-64.
4. BARS INDICATED THUS 20X3-#5, ETC INDICATES 20 LINES OF BARS WITH 3 LENGTHS PER LINE.
5. LONGITUDINAL BARS SHALL BE SPRUNG INTO PLACE TO BE CONCENTRIC AT THE SPACING NOTED.
6. TRANSVERSE BARS SHALL BE PLACED RADIALLY AT THE SPACING NOTED. THE SPACING IS MEASURED ALONG THE EDGE OF DECK ALONG THE WEST PARAPET.

DRAWN BY . . . JM	DATE . 4-3-2020	TY·LIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	REVISIONS NO.	DATE	DESCRIPTION	CONTRACT I-19-4495 / SHEET SC - 59 OF 234
CHECKED BY . . . SP	SCALE . NONE						I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 116) DECK PLAN UNIT 3 - SPAN 14 / 334 OF 606

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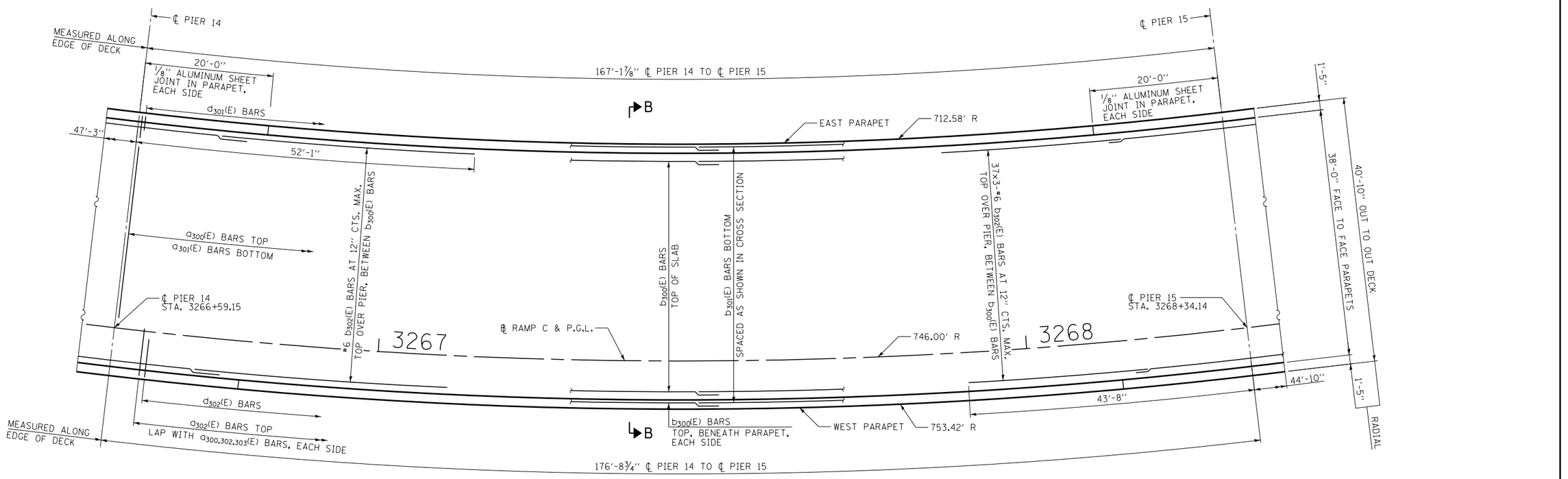
3/30/2020



DECK PLAN UNIT 3 - SPAN 15

MINIMUM BAR LAP

#5 BAR - 3'-6"
#6 BAR - 3'-7"

NOTES:

1. FOR SECTION B-B, SEE SHEET SC-63.
2. FOR PARAPET REINFORCEMENT, SEE SHEET SC-65 THRU SC-66.
3. FOR SCUPPER DETAILS, SEE SHEET SC-64.
4. BARS INDICATED THUS 20X3-#5, ETC INDICATES 20 LINES OF BARS WITH 3 LENGTHS PER LINE.
5. LONGITUDINAL BARS SHALL BE SPRUNG INTO PLACE TO BE CONCENTRIC AT THE SPACING NOTED.
6. TRANSVERSE BARS SHALL BE PLACED RADIALLY AT THE SPACING NOTED. THE SPACING IS MEASURED ALONG THE EDGE OF DECK ALONG THE WEST PARAPET.

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3/30/2020

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CHECKED BY . . . SP . . . .
DATE . 4-3-2020 . . .
SCALE . NONE . . . .

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THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
DECK PLAN UNIT 3 - SPAN 15

SHEET SC - 60 OF 234

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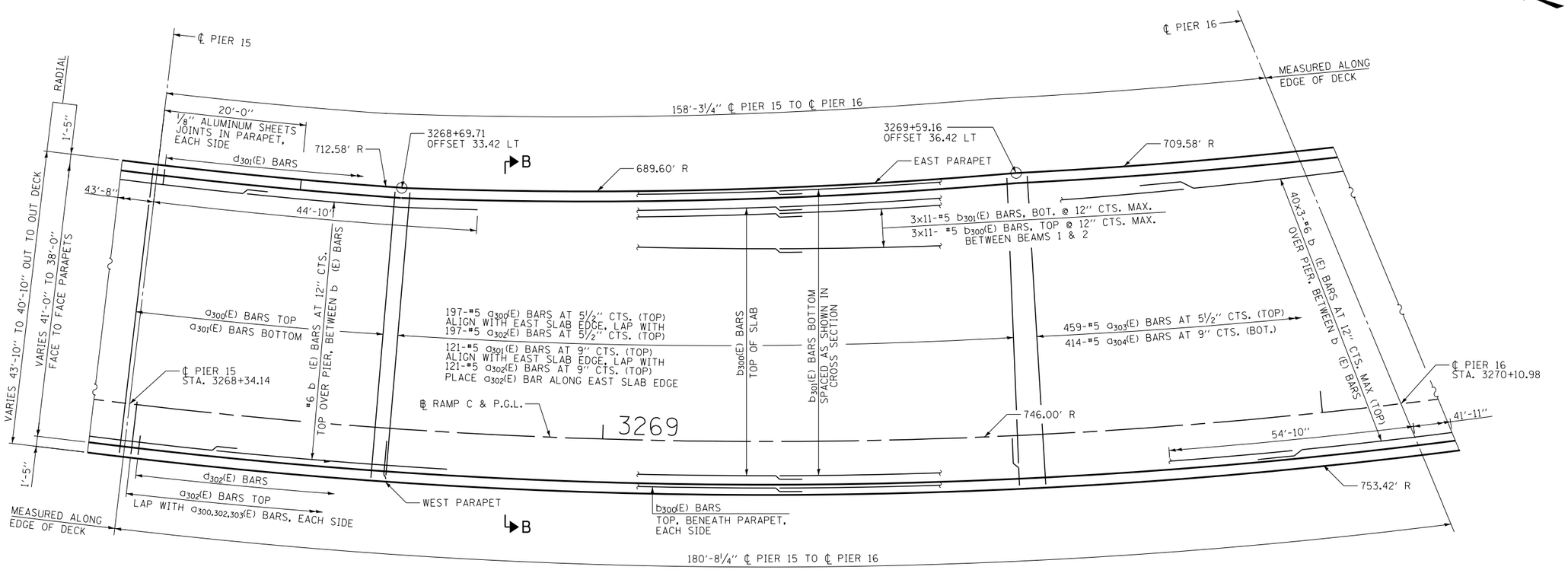


DECK PLAN UNIT 3 - SPAN 16

MINIMUM BAR LAP

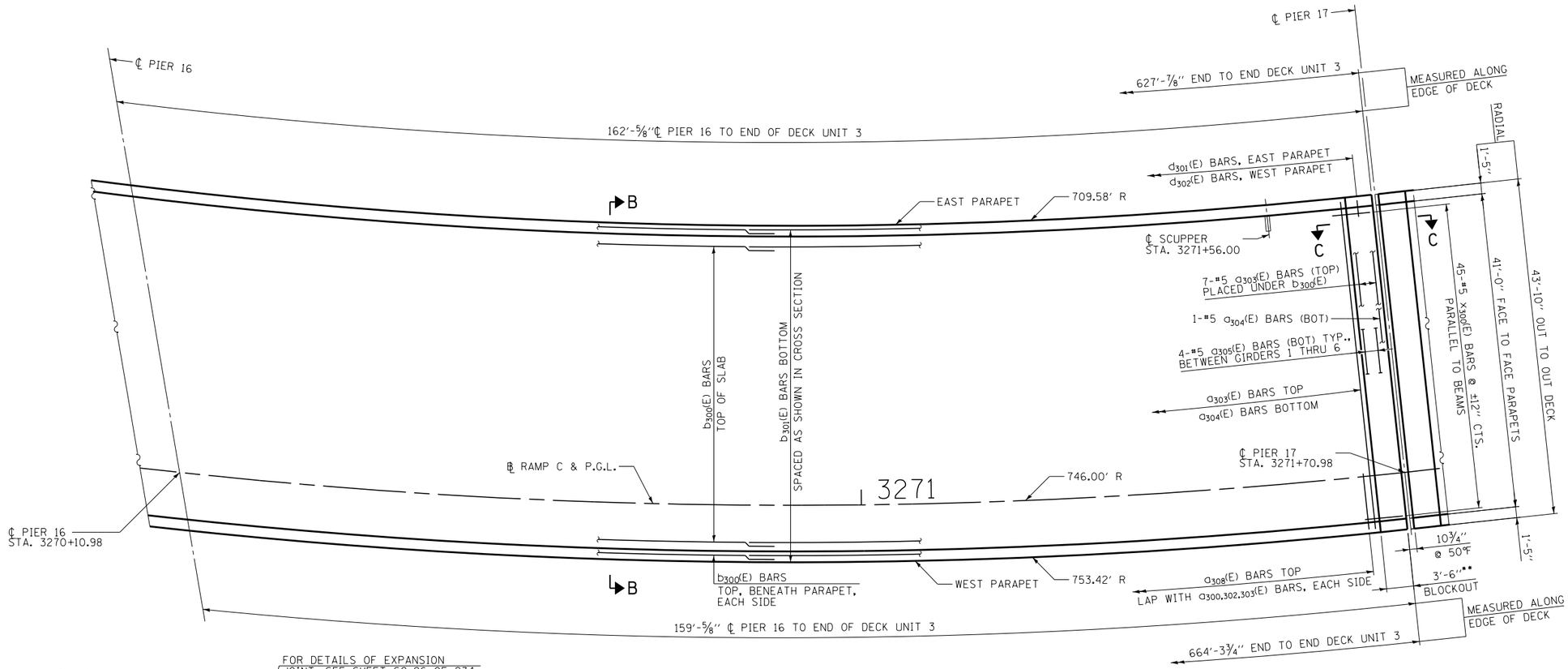
#5 BAR - 3'-6"
#6 BAR - 3'-7"

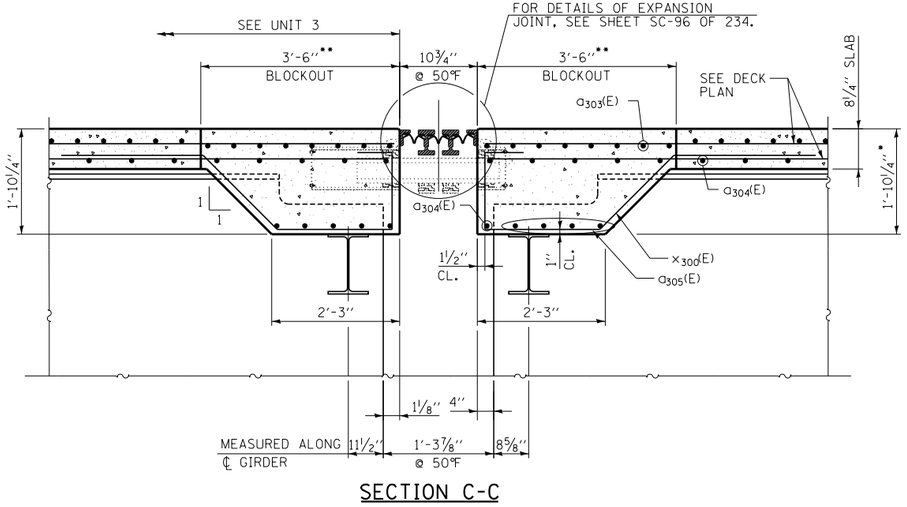
NOTES:

1. FOR SECTION B-B, SEE SHEET SC-63.
2. FOR PARAPET REINFORCEMENT, SEE SHEET SC-65 THRU SC-66.
3. FOR SCUPPER DETAILS, SEE SHEET SC-64.
4. BARS INDICATED THUS 20X3-#5, ETC INDICATES 20 LINES OF BARS WITH 3 LENGTHS PER LINE.
5. LONGITUDINAL BARS SHALL BE SPRUNG INTO PLACE TO BE CONCENTRIC AT THE SPACING NOTED.
6. TRANSVERSE BARS SHALL BE PLACED RADIALLY AT THE SPACING NOTED. THE SPACING IS MEASURED ALONG THE EDGE OF DECK ALONG THE WEST PARAPET.

DRAWN BY . . . JM . . .	DATE . 4-3-2020 . . .	T·Y·LIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	REVISIONS NO. / DATE / DESCRIPTION	CONTRACT I-19-4495	SHEET SC - 61 OF 234
CHECKED BY . . . SP . . .	SCALE . NONE . . .				I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 116) DECK PLAN UNIT 3 - SPAN 16	336 OF 606

P:\60254057-294.5-9\STRUCTURAL\RESTART.2018\Ramp C over I-57 and I-294\016210I.5_unit3_dkpln-span16.dgn
3/30/2020





SECTION C-C

DECK PLAN UNIT 3 - SPAN 17

• PRIOR TO GRINDING

•• BLOCKOUT AREA TO BE POURED AFTER EXPANSION ASSEMBLIES HAVE BEEN ADJUSTED.

MODULAR JOINT NOTES:

1. CONTRACTOR SHALL USE THE APPROVED JOINT SHOP DRAWINGS WHEN LAYING OUT THE DECK REBAR.
2. PRIOR TO THE PLACEMENT OF THE JOINT BLOCK-OUT, THE CONTRACTOR SHALL COORDINATE WITH THE MODULAR JOINT MANUFACTURER TO ENSURE THAT THE JOINT WILL BE PROPERLY SUPPORTED AND THAT THE REINFORCEMENT BARS WILL NOT INTERFERE WITH THE JOINT COMPONENTS. ANY NECESSARY ADJUSTMENTS TO THE REINFORCEMENT LAYOUT SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

MINIMUM BAR LAP

#5 BAR - 3′-6″
#6 BAR - 3′-7″

NOTES:

1. FOR SECTION B-B, SEE SHEET SC-63.
2. FOR PARAPET REINFORCEMENT, SEE SHEET SC-65 THRU SC-68.
3. FOR SCUPPER DETAILS, SEE SHEET SC-64.
4. BARS INDICATED THUS 20X3-#5, ETC INDICATES 20 LINES OF BARS WITH 3 LENGTHS PER LINE.
5. LONGITUDINAL BARS SHALL BE SPRUNG INTO PLACE TO BE CONCENTRIC AT THE SPACING NOTED.
6. TRANSVERSE BARS SHALL BE PLACED RADIALLY AT THE SPACING NOTED. THE SPACING IS MEASURED ALONG THE EDGE OF DECK ALONG THE WEST PARAPET.

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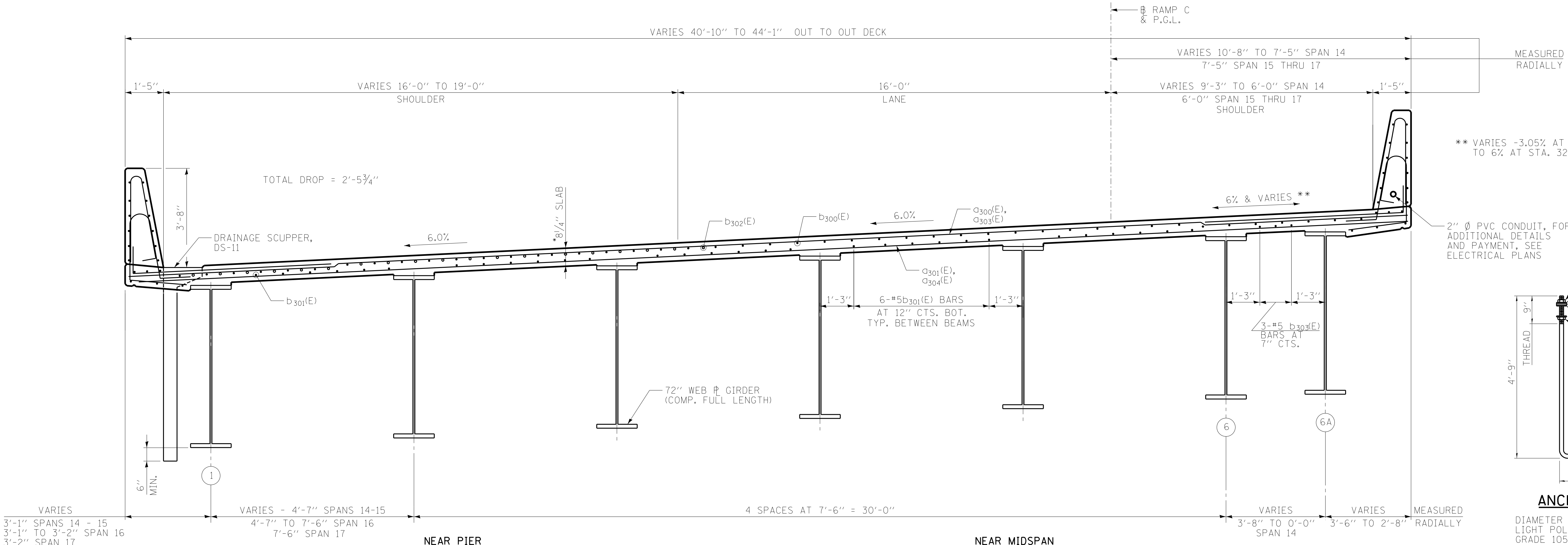
3/30/2020

DRAWN BY . . . JM . . .	DATE . 4-3-2020 . . .	TY·LIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	REVISIONS: NO. / DATE / DESCRIPTION	CONTRACT I-19-4495
CHECKED BY . . . SP . . .	SCALE . NONE . . .				I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 116) DECK PLAN UNIT 3 - SPAN 17

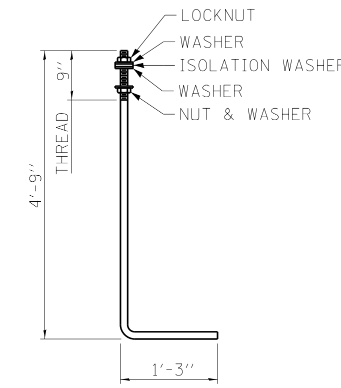
SHEET SC - 62 OF 234

337 OF 606



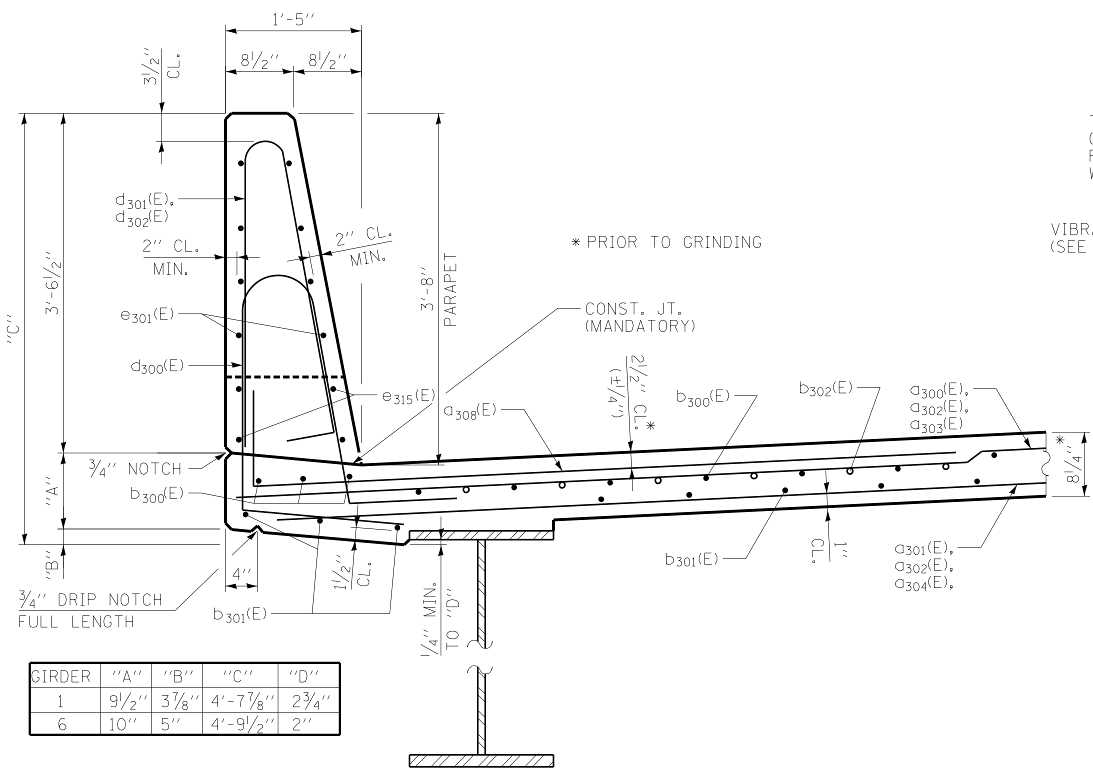
SECTION B-B

(LOOKING UPSTATION)



ANCHOR ROD

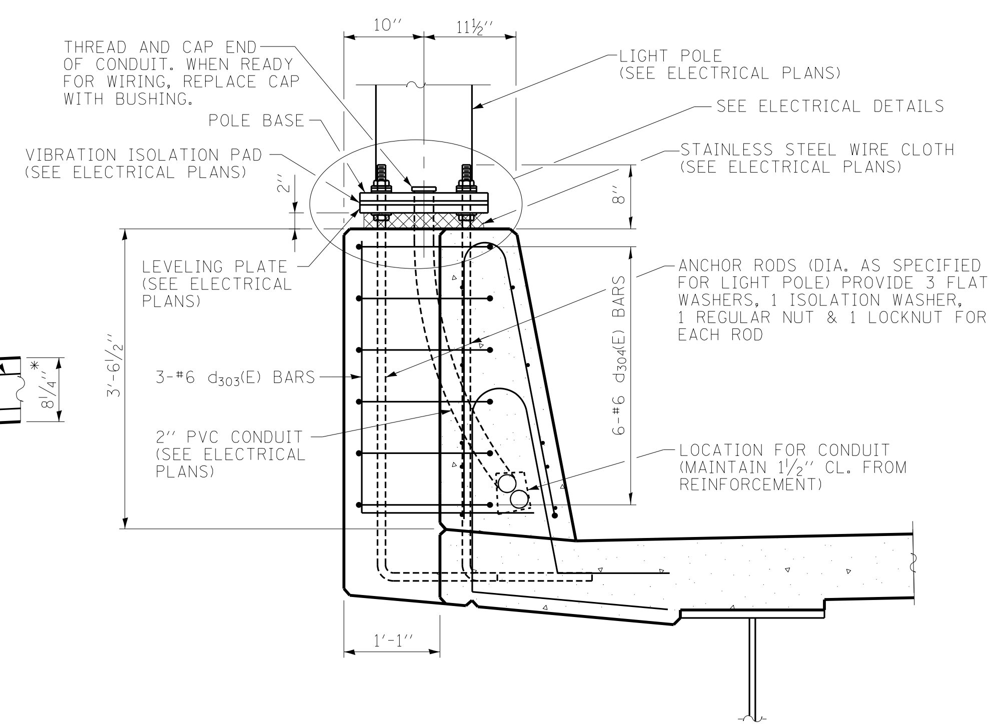
DIAMETER AS SPECIFIED FOR LIGHT POLES. (ASTM F 1554 GRADE 105) FULL LENGTH HOT DIPPED GALVANIZED.



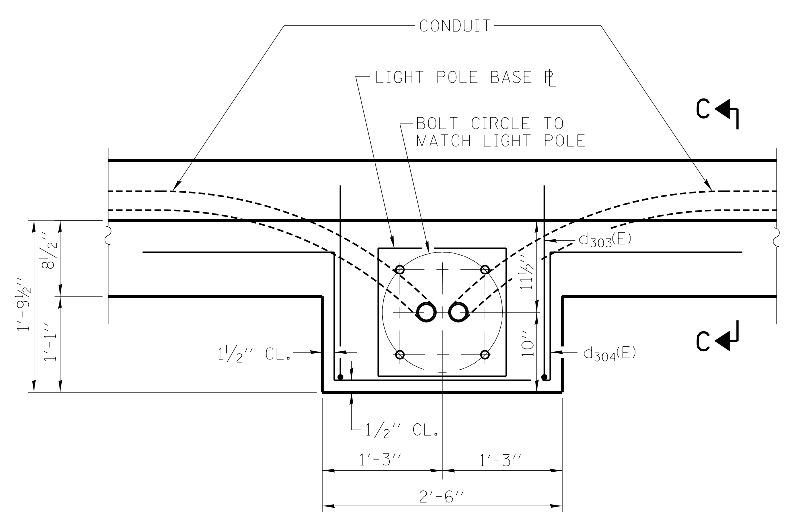
GIRDER	"A"	"B"	"C"	"D"
1	9½"	3⅞"	4'-7⅞"	2¾"
6	10"	5"	4'-9½"	2"

SECTION THRU PARAPET

(EAST PARAPET SHOWN, WEST PARAPET SIMILAR)



SECTION C-C



LIGHT POLE PLAN

NOTE:
COST OF ANCHOR RODS IS INCLUDED WITH CONCRETE SUPERSTRUCTURE.

MIN. BAR LAP

#5 BAR 3'-6"
#6 BAR 3'-7"

NOTES:

1. WORK THIS SHEET WITH SHEETS SC-59 THRU SC-66 OF 234.
2. SEE SHEET SC-97 THRU SC-99 FOR DRAINAGE SCUPPER.
3. FOR BILL OF MATERIAL, SEE SHEET SC-64 OF 234.

DRAWN BY JM
CHECKED BY SP
DATE 4-3-2020
SCALE NONE

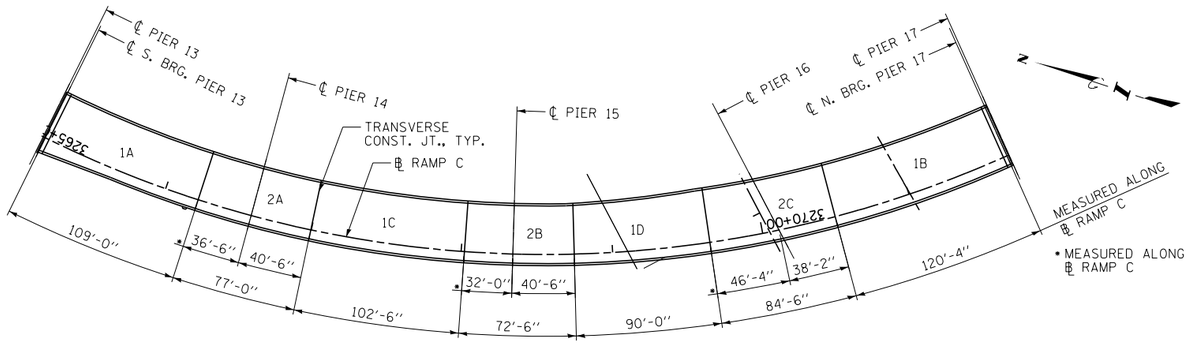
TYLIN INTERNATIONAL

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
DECK DETAILS 1 - UNIT 3



DECK POURING SEQUENCE

NOTES ON DECK POURING SEQUENCE:

WHEN THE DECK POUR IS STOPPED FOR THE DAY AT ONE OF MORE OF THE TRANSVERSE BONDED CONTRUCTION JOINTS IN THE DECK POURING SEQUENCE AS SHOWN, THE NEXT POUR SHALL NOT BE MADE UNTIL BOTH OF THE FOLLOWING ARE MET:

1) AT LEAST 72 HOURS SHALL HAVE ELAPSED FROM THE END OF THE PREVIOUS POUR.
2) THE CONCRETE STRENGTH SHALL HAVE ATTAINED A MINIMUM FLEXURAL STRENGTH OF 675 PSI OR A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI.

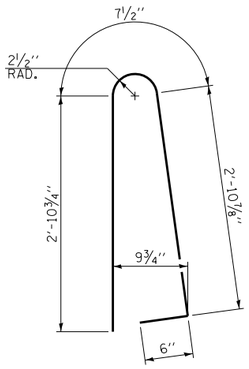
THE CONTRACTOR IS ALERTED THAT CAMBER AND DEAD LOAD DEFLECTIONS VALUES SHOWN ON THE GIRDER DETAIL DRAWINGS ARE DEVELOPED BASED ON THE DECK POURING SEQUENCE SHOWN. ANY DEVIATION FROM THIS POURING SEQUENCE WILL RESULT IN CHANGES TO CAMBER AND ELEVATIONS THAT AFFECT DEAD LOAD DEFLECTIONS. IF THE CONTRACTOR WISHES TO CHANGE THE SEQUENCE, THEN THE PROPOSED PLAN REVISIONS AND DESIGN CALCULATIONS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL. THE CACULATIONS SHALL BE PREPARED AND SEALED BY A LICENSED STRUCTURAL ENGINEER IN ILLINOIS.

BILL OF MATERIAL

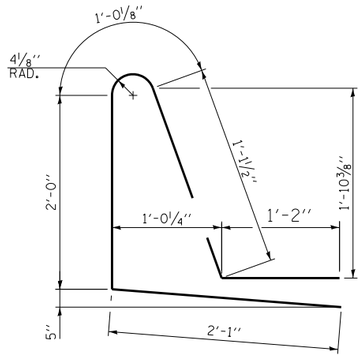
REINFORCEMENT BAR LIST

BAR	NO.	SIZE	LENGTH	SHAPE
a300(E)	986	#5	40'-6"	
a301(E)	599	#5	40'-6"	
a302(E)	496	#5	6'-9"	
a303(E)	467	#5	43'-6"	
a304(E)	415	#5	43'-6"	
a305(E)	36	#5	7'-2"	
a306(E)	4	#5	4'-3"	
a307(E)	4	#5	3'-4"	
a308(E)	2906	#6	8'-4"	
b300(E)	1144	#5	28'-6"	
b301(E)	858	#5	28'-6"	
b302(E)	342	#5	27'-4"	
b303(E)	6	#5	24'-3"	
d300(E)	1938	#5	8'-6"	
d301(E)	943	#5	7'-0"	
d302(E)	995	#5	7'-0"	
d303(E)	3	#6	5'-3"	
d304(E)	6	#6	8'-11"	
e300(E)	8	#4	12'-10"	
e301(E)	216	#4	17'-8"	
e302(E)	144	#4	19'-8"	
e303(E)	104	#4	16'-8"	
e304(E)	8	#4	16'-9"	
e305(E)	8	#4	19'-2"	
e306(E)	8	#4	15'-8"	
e307(E)	8	#4	13'-7"	
e308(E)	8	#4	19'-1"	
e309(E)	48	#4	19'-2"	
e310(E)	8	#4	16'-3"	
e311(E)	48	#4	18'-2"	
e312(E)	20	#4	25'-9"	
e313(E)	20	#4	27'-5"	
e314(E)	20	#4	25'-8"	
e315(E)	20	#4	25'-8"	
e316(E)	20	#4	29'-9"	
e317(E)	20	#4	29'-11"	
e318(E)	20	#4	29'-2"	
e319(E)	20	#4	27'-5"	
x300(E)	90	#5	8'-1"	

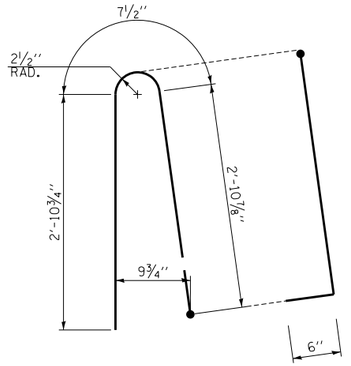
ITEM	UNIT	QUANTITY
CONCRETE SUPERSTRUCTURE	CU. YD.	915.6
REINFORCEMENT BARS, EPOXY COATED	POUND	259,070
BRIDGE DECK GROOVING (LONGITUDINAL)	SQ. YD.	1172
DIAMOND GRINDING (BRIDGE SECTION)	SQ. YD.	2756
PROTECTIVE COAT	SQ. YD.	3713



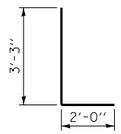
BAR d301(E)



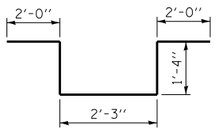
BAR d300(E)



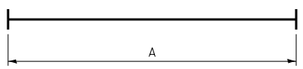
BAR d302(E)



BAR d303(E)



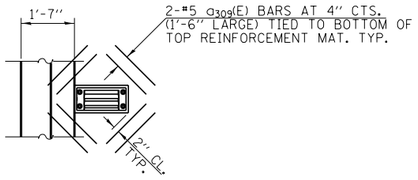
BAR d304(E)



BAR	A
a305(E)	7'-2"
a306(E)	4'-3"
a307(E)	3'-4"

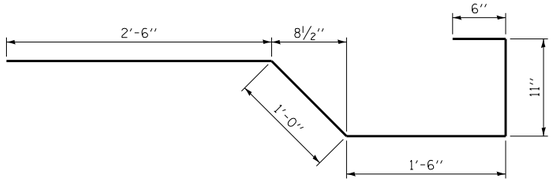
BAR a305(E), a306(E) & a307(E)

(HEADED BARS)

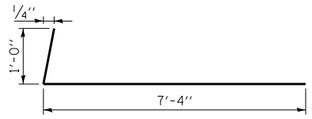


DRAINAGE SCUPPER PLAN

NOTE:
CUT LONGITUDINAL REINFORCEMENT TO CLEAR DRAINAGE SCUPPERS.



BAR x300(E)



BAR a308(E)

NOTES:

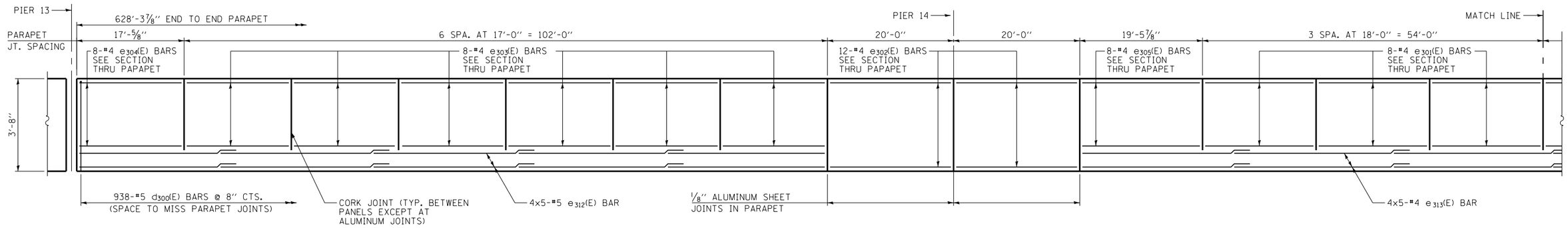
1. WORK THIS SHEET WITH SHEETS SC-59 THRU SC-66 OF 234.
2. SEE SHEET SC-97 THRU SC-99 FOR DRAINAGE SCUPPER.
3. HEADED BARS SHALL CONFORM TO ASTM A970 WITH THREADED ATTACHMENT; CLASS HA; AND REINFORCEMENT BARS CONFORMING TO ASTM A706. COST INCLUDED WITH REINFORCEMENT BARS, EPOXY COATED.

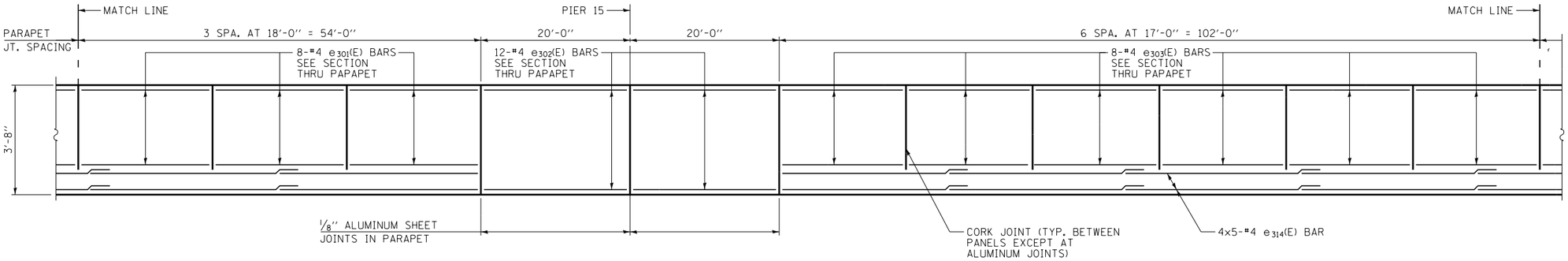
P:\60254057-294_5-9\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\0162101_5_uni13-superd12.dgn
3/30/2020

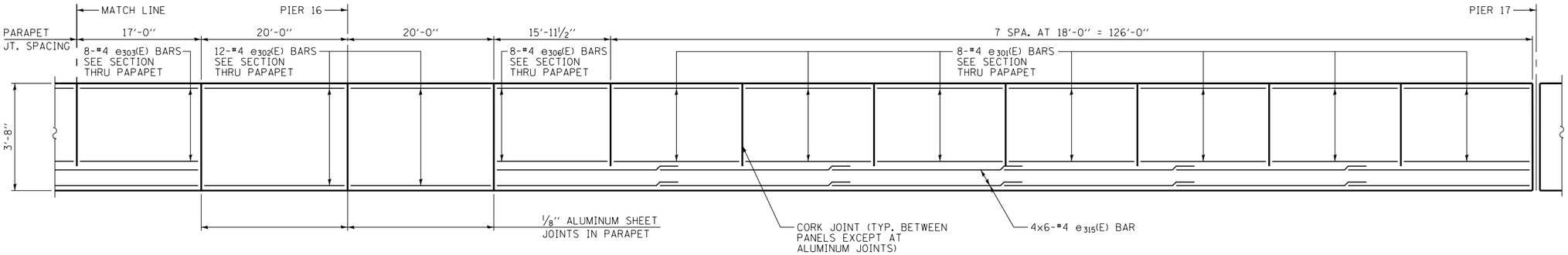
DRAWN BY . . . JM . . .	DATE . 4-3-2020 . . .	TYLIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515
CHECKED BY . . SP . . .	SCALE . NONE . . .		

REVISIONS		
NO.	DATE	DESCRIPTION

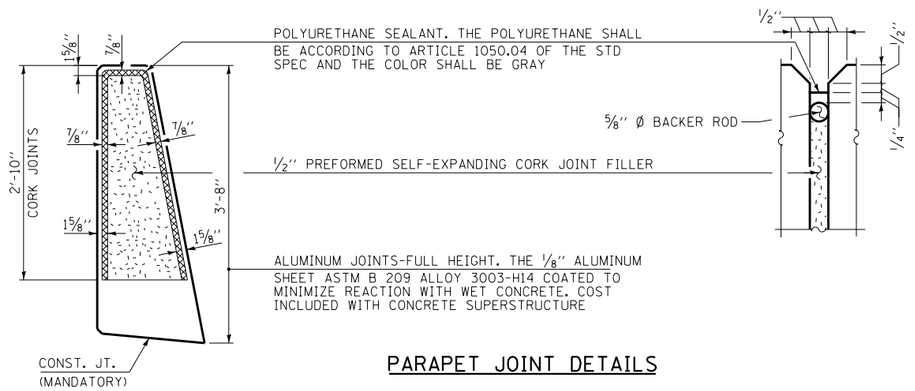
CONTRACT I-19-4495	SHEET SC - 64 OF 234
I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 116) DECK DETAILS 2 - UNIT 3	339 OF 606







INSIDE ELEVATION OF PARAPET



PARAPET JOINT DETAILS

MIN. BAR LAP

#4 = 2'-5"

NOTES:

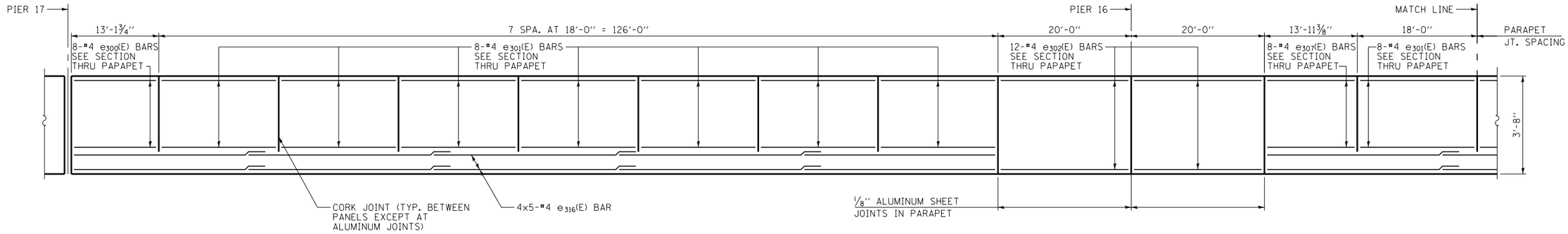
1. ALL DIMENSIONS MEASURED ALONG FRONT FACE OF PARAPET.
2. FOR SECTION THRU PARAPET, SEE SHEET SC- 63 OF 234.
3. SEE MODULAR JOINT DETAILS ON SHEET SC-93 THRU SC-96 FOR EMBEDDED PLATE IN THE PARAPET.

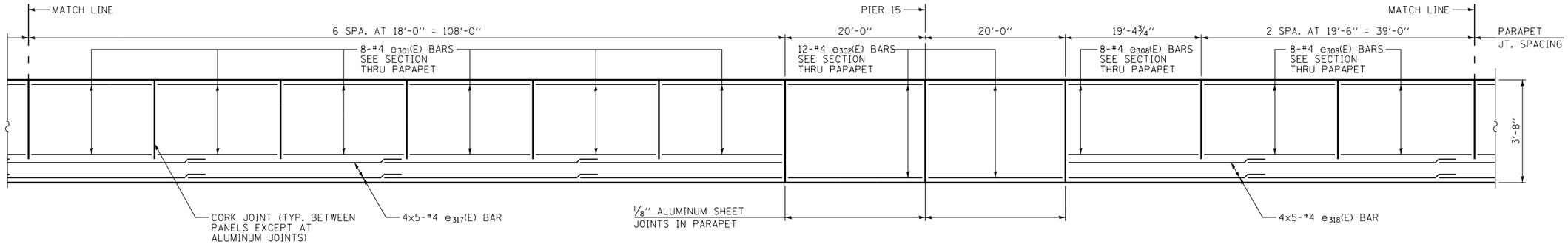
P:\682540\57-294_5-1\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\Bl62101.5_unit3-Parapet E.dgn
3/30/2020

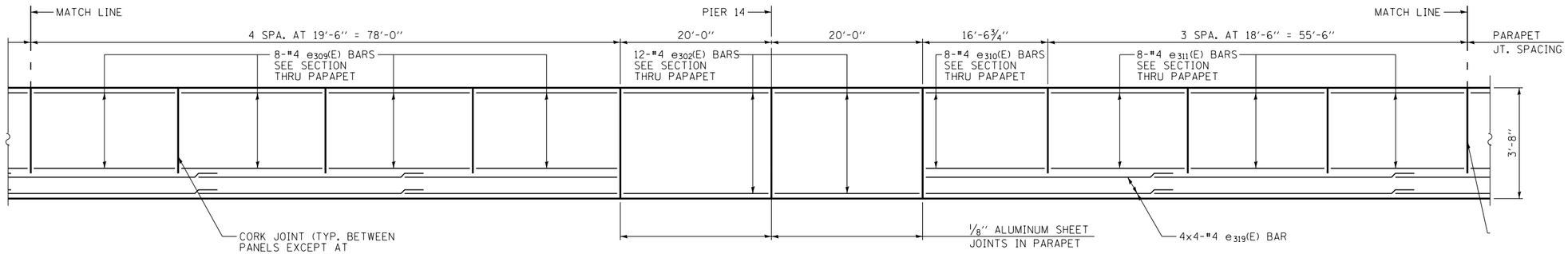
DRAWN BY . . . JM . . .	DATE . 4-3-2020 . . .	T·Y·LIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	REVISIONS: NO. / DATE / DESCRIPTION	CONTRACT I-19-4495
CHECKED BY . . . SP . . .	SCALE . NONE . . .				I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 116) EAST PARAPET ELEV. - UNIT 3

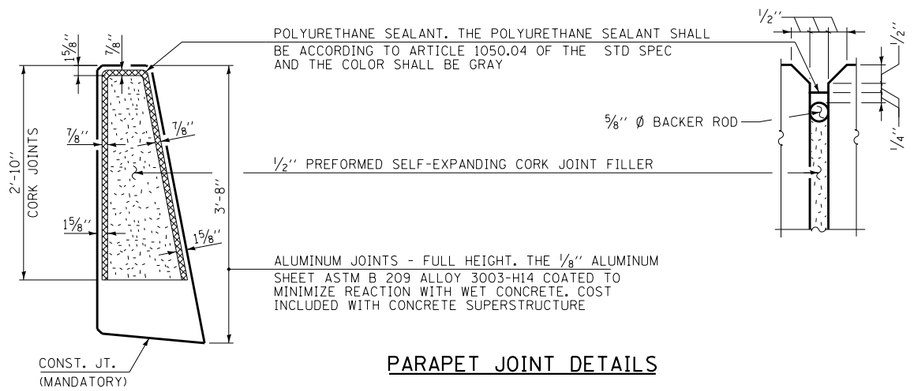
SHEET SC - 65 OF 234

340 OF 606

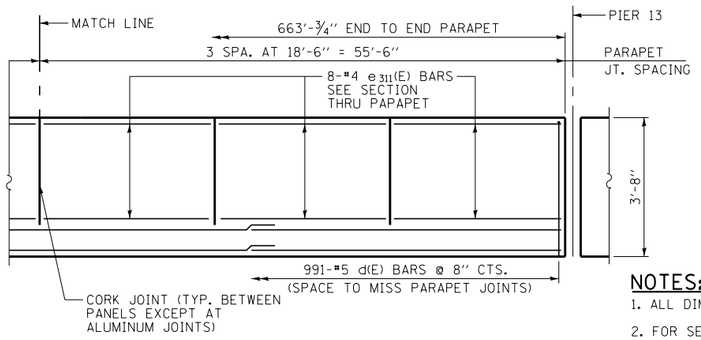








PARAPET JOINT DETAILS



INSIDE ELEVATION OF PARAPET

MIN. BAR LAP

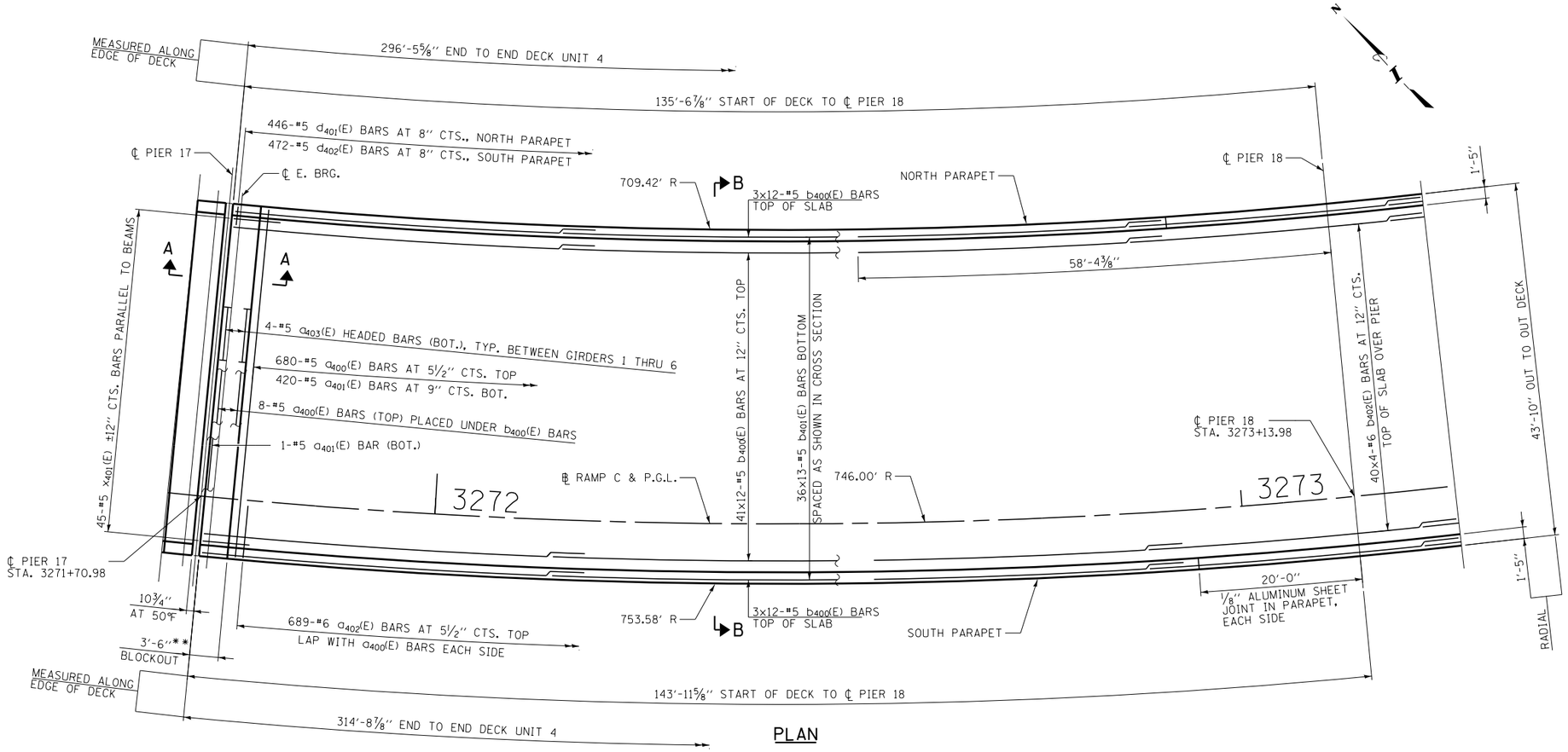
#4 = 2'-5''

NOTES:

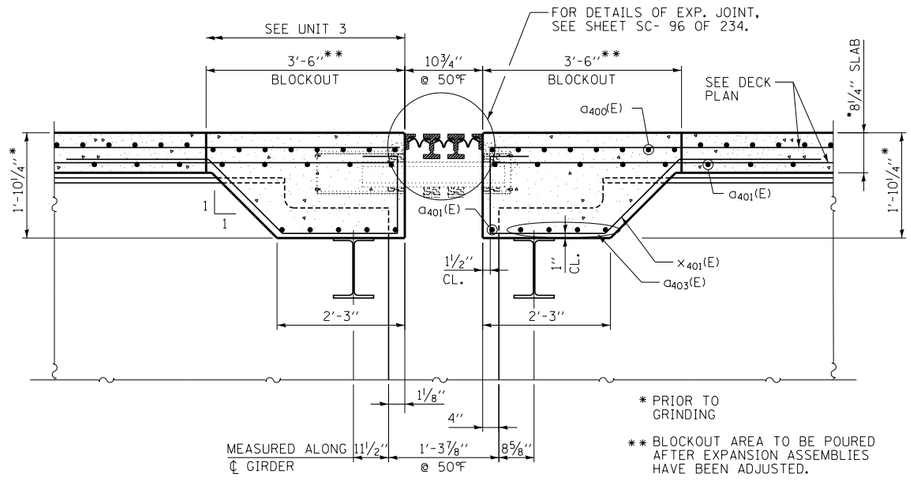
1. ALL DIMENSIONS MEASURED ALONG FRONT FACE OF PARAPET.
2. FOR SECTION THRU PARAPET, SEE SHEET SC-63 OF 234.
3. SEE MODULAR JOINT DETAILS ON SHEET SC-93 THUR SC-96 FOR EMBEDDED PLATE IN THE PARAPET.

P:\68254057-2194_5-91\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\Bl62101.5_unit3-Parapet W.dgn
3/30/2020

DRAWN BY . . . JM . . .	DATE . 4-3-2020 . . .	T·Y·LIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	REVISIONS NO. / DATE / DESCRIPTION	CONTRACT I-19-4495	SHEET SC - 66 OF 234
CHECKED BY . . . SP . . .	SCALE . NONE . . .				I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 116) WEST PARAPET ELEV. - UNIT 3	341 OF 606



PLAN



SECTION A-A

* PRIOR TO GRINDING

** BLOCKOUT AREA TO BE POURED AFTER EXPANSION ASSEMBLIES HAVE BEEN ADJUSTED.

MODULAR JOINT NOTES:

1. CONTRACTOR SHALL USE THE APPROVED JOINT SHOP DRAWINGS WHEN LAYING OUT THE DECK REBAR.
2. PRIOR TO THE PLACEMENT OF THE JOINT BLOCK-OUT, THE CONTRACTOR SHALL COORDINATE WITH THE MODULAR JOINT MANUFACTURER TO ENSURE THAT THE JOINT WILL BE PROPERLY SUPPORTED AND THAT THE REINFORCEMENT BARS WILL NOT INTERFERE WITH THE JOINT COMPONENTS. ANY NECESSARY ADJUSTMENTS TO THE REINFORCEMENT LAYOUT SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

MINIMUM BAR LAP

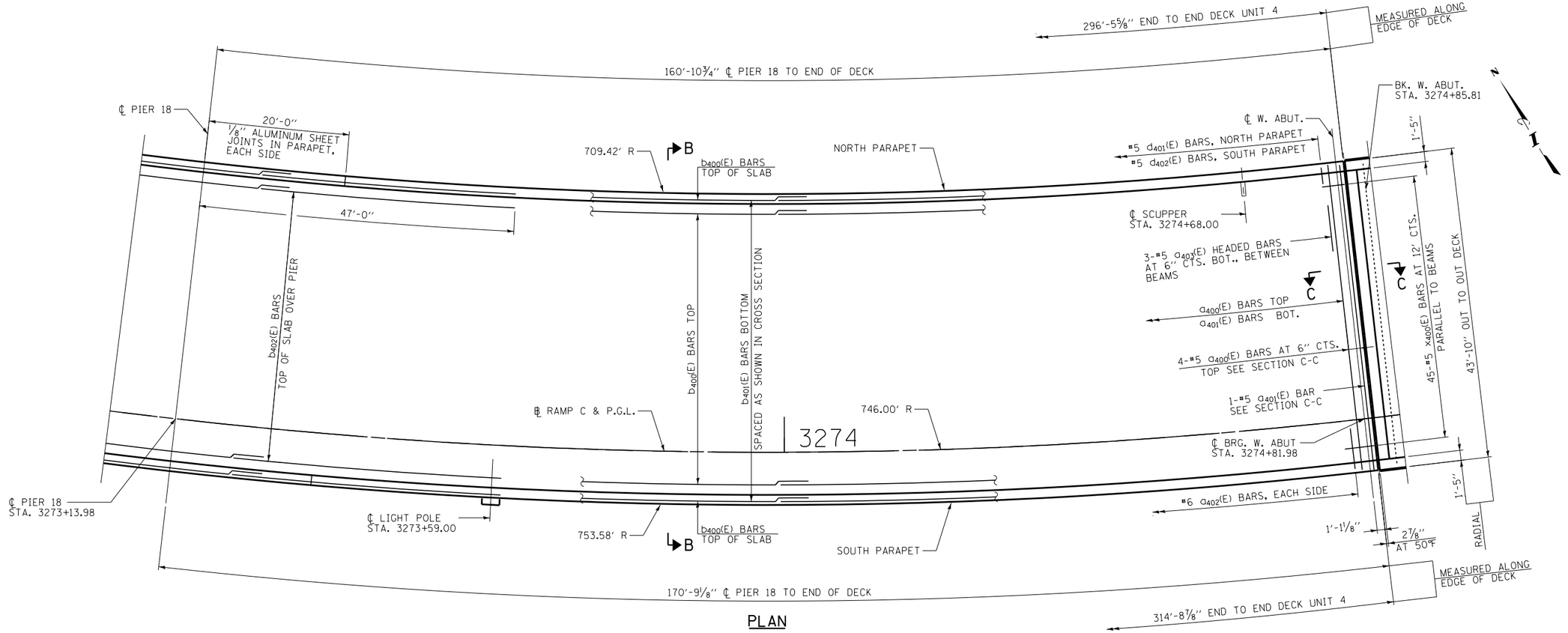
#5 BAR - 3'-6"
#6 BAR - 3'-7"

NOTES:

1. FOR SECTION B-B, SEE SHEET SC-69.
2. FOR PARAPET REINFORCEMENT, SEE SHEET SC-71 AND SC-72.
3. FOR SCUPPER DETAILS, SEE SHEET SC-70.
4. BARS INDICATED THUS 20X3-#5, ETC INDICATES 20 LINES OF BARS WITH 3 LENGTHS PER LINE.
5. LONGITUDINAL BARS SHALL BE SPRUNG INTO PLACE TO BE CONCENTRIC AT THE SPACING NOTED.
6. TRANSVERSE BARS SHALL BE PLACED RADIALLY AT THE SPACING NOTED. THE SPACING IS MEASURED ALONG THE EDGE OF DECK ALONG THE SOUTH PARAPET.

DRAWN BY ME	DATE 4-3-2020	TY·LIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	REVISIONS NO. / DATE / DESCRIPTION	CONTRACT I-19-4495	SHEET SC - 67 OF 234
CHECKED BY SP	SCALE NONE				I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 116) DECK PLAN UNIT 4 - SPAN 18	342 OF 606

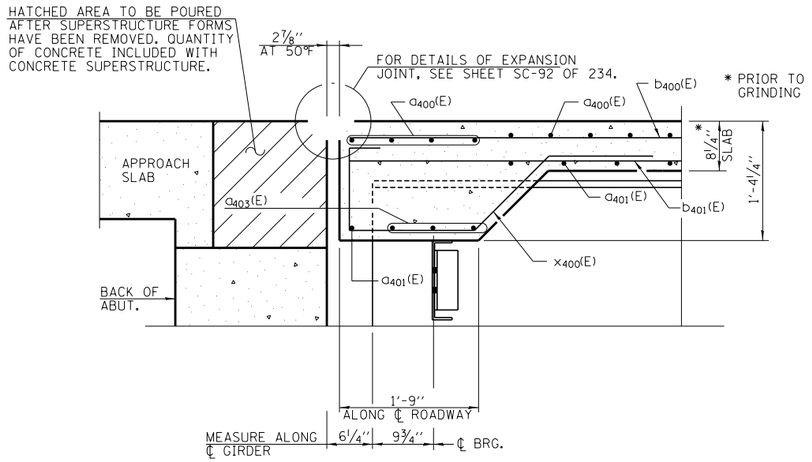
P:\60254057-294,5-9\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\0162101.5_unit4-deck-span18.dgn
3/30/2020



PLAN

MINIMUM BAR LAP

#5 BAR - 3'-6''
#6 BAR - 3'-7''



SECTION C-C

NOTES:

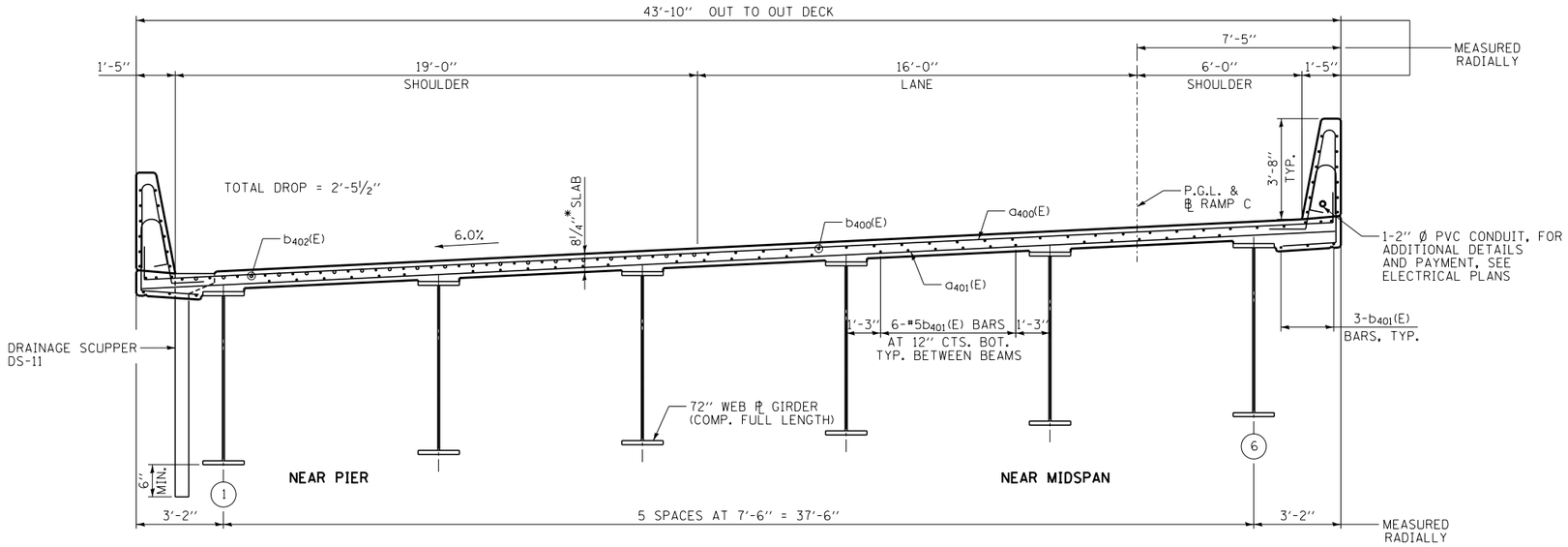
1. FOR SECTION B-B, SEE SHEET SC-69.
2. FOR PARAPET REINFORCEMENT, SEE SHEET SC-71 AND SC-72.
3. FOR SCUPPER REINFORCEMENT AND BILL OF MATERIAL, SEE SHEET SC-70.
4. BARS INDICATED THUS 20X3-#4, ETC INDICATES 20 LINES OF BARS WITH 3 LENGTHS PER LINE.
5. LONGITUDINAL BARS SHALL BE SPRUNG INTO PLACE TO BE CONCENTRIC AT THE SPACING NOTED.
6. TRANSVERSE BARS SHALL BE PLACED RADIALLY AT THE SPACING NOTED. THE SPACING IS MEASURED ALONG THE EDGE OF DECK ALONG THE SOUTH PARAPET.
7. DECK OPENING AT THE EAST ABUTMENT IS BASED ON A ROLLED STRIP SEAL JOINT. IF THE CONTRACTOR ELECTS TO USE A WELDED RAIL STRIP SEAL JOINT, DECK DIMENSIONS MAY REQUIRE ADJUSTMENTS TO SATISFY THE DETAILS ON BASE SHEET SC-92.

DRAWN BY . . . . ME	DATE . 4-3-2020	TY·LIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	REVISIONS: NO. / DATE / DESCRIPTION	CONTRACT I-19-4495
CHECKED BY . . . . SP	SCALE . NONE				I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 116) DECK PLAN UNIT 4 - SPAN 19

SHEET SC - 68 OF 234

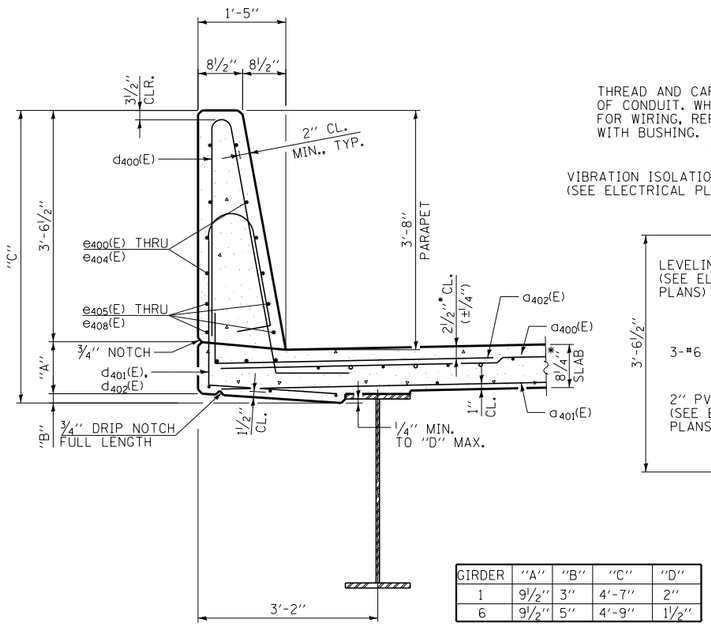
343 OF 606

P:\68254\057-294.5-91\STRUCTURAL_RESTART_2018\Ramp C over I-57 and I-294\016210I.5_unit4-deck-span19.dgn
3/30/2020



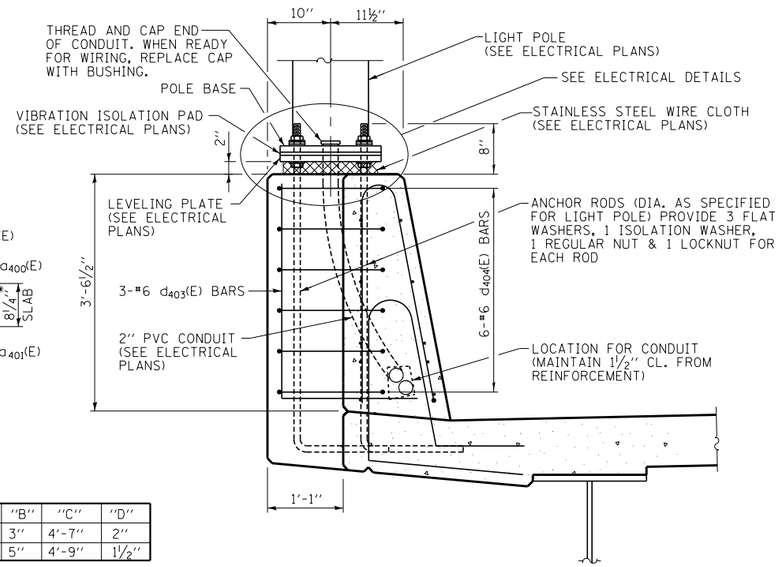
SECTION B-B
(LOOKING EAST)

* PRIOR TO GRINDING

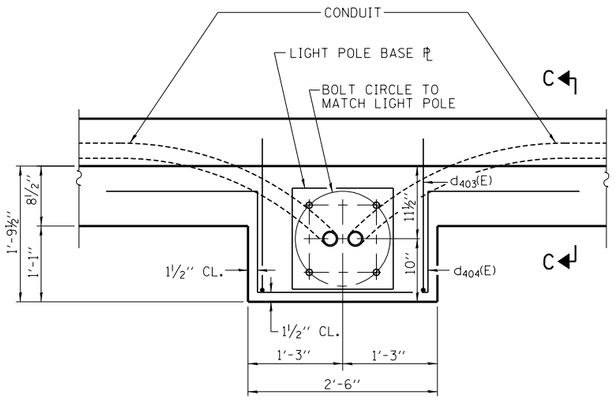


GIRDER	"A"	"B"	"C"	"D"
1	9½"	3"	4'-7"	2"
6	9½"	5"	4'-9"	1½"

SECTION THRU PARAPET

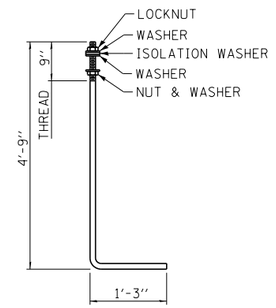


SECTION C-C



LIGHT POLE PLAN

NOTE:
COST OF ANCHOR RODS IS INCLUDED WITH CONCRETE SUPERSTRUCTURE.



ANCHOR ROD

DIAMETER AS SPECIFIED FOR LIGHT POLES. (ASTM F 1554 GRADE 105) FULL LENGTH HOT DIPPED GALVANIZED.

NOTES:

1. HEADED BARS SHALL CONFORM TO ASTM A970 WITH THREADED ATTACHMENT; CALSS HA; AND REINFORCEMENT BARS CONFORMING TO ASTM A706. COST INCLUDED WITH REINFORCING BARS, EPOXY COATED.

P:\68254051\57-294.5-91\STRUCTURAL\RESTART.2018\Ramp C over I-57 and I-294\0162101.5_unit4-superdtl.dgn
3/30/2020

DRAWN BY . . . . ME . . . . . DATE . 4-3-2020 . . . .
CHECKED BY . . . SP . . . . . SCALE . NONE . . . . .

TY·LIN INTERNATIONAL

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

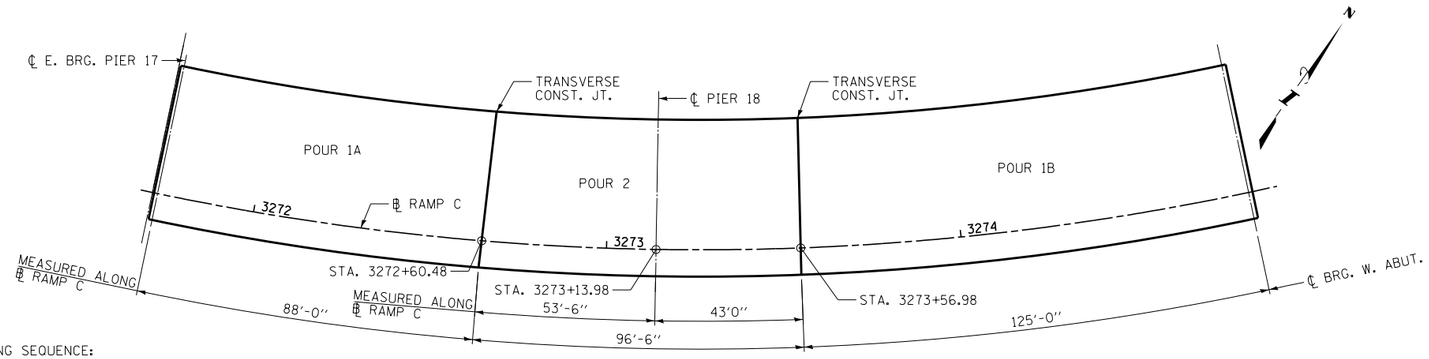
REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
DECK DETAILS 1 - UNIT 4

SHEET SC - 69 OF 234

344 OF 606



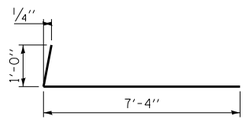
DECK POURING SEQUENCE

NOTES ON DECK POURING SEQUENCE:

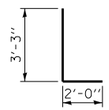
WHEN THE DECK POUR IS STOPPED FOR THE DAY AT ONE OF MORE OF THE TRANSVERSE BONDED CONTRUCTION JOINTS IN THE DECK POURING SEQUENCE AS SHOWN, THE NEXT POUR SHALL NOT BE MADE UNTIL BOTH OF THE FOLLOWING ARE MET:

1) AT LEAST 72 HOURS SHALL HAVE ELAPSED FROM THE END OF THE PREVIOUS POUR.
2) THE CONCRETE STRENGTH SHALL HAVE ATTAINED A MINIMUM FLEXURAL STRENGTH OF 675 PSI OR A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI.

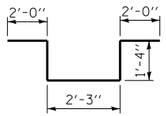
THE CONTRACTOR IS ALERTED THAT CAMBER AND DEAD LOAD DEFLECTIONS VALUES SHOWN ON THE GIRDER DETAIL DRAWINGS ARE DEVELOPED BASED ON THE DECK POURING SEQUENCE SHOWN. ANY DEVIATION FROM THIS POURING SEQUENCE WILL RESULT IN CHANGES TO CAMBER AND ELEVATIONS THAT AFFECT DEAD LOAD DEFLECTIONS. IF THE CONTRACTOR WISHES TO CHANGE THE SEQUENCE, THEN THE PROPOSED PLAN REVISIONS AND DESIGN CALCULATIONS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL. THE CACULATIONS SHALL BE PREPARED AND SEALED BY A LICENSED STRUCTURAL ENGINEER IN ILLINOIS.



BAR a402(E)



BAR d403(E)



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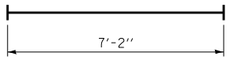
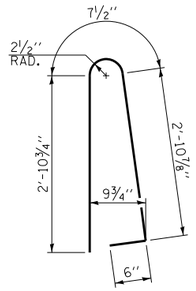


BAR a403(E)
(HEADED BARS)



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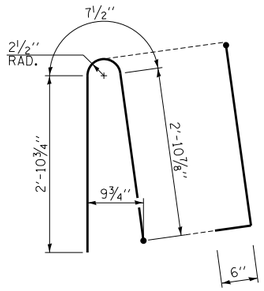

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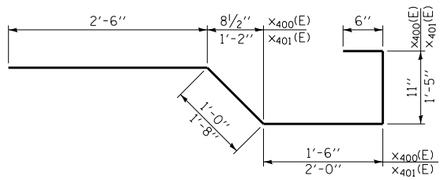
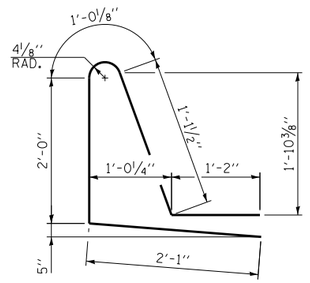
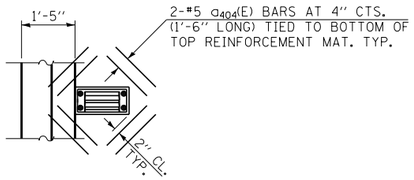


BAR x400(E) & x401(E)



BAR d400(E)



SCUPPER PLAN

NOTE:
CUT LONGITUDINAL REINFORCEMENT TO CLEAR DRAINAGE SCUPPERS.

BILL OF MATERIAL

REINFORCEMENT BAR LIST

BAR	NO.	SIZE	LENGTH	SHAPE
a400(E)	688	#5	43'-6"	
a401(E)	422	#5	43'-6"	
a402(E)	1376	#6	8'-4"	
a403(E)	40	#5	7'-2"	
b400(E)	508	#5	29'-5"	
b401(E)	468	#5	27'-5"	
b402(E)	160	#6	29'-1"	
d400(E)	918	#5	8'-6"	
d401(E)	446	#5	7'-0"	
d402(E)	472	#5	7'-0"	
d403(E)	3	#6	5'-3"	
d404(E)	6	#6	8'-11"	
e400(E)	96	#4	18'-11"	
e401(E)	120	#4	17'-4"	
e402(E)	48	#4	19'-8"	
e403(E)	8	#4	19'-2"	
e404(E)	8	#4	15'-5"	
e405(E)	20	#4	25'-1"	
e406(E)	24	#4	25'-6"	
e407(E)	24	#4	27'-1"	
e408(E)	20	#4	26'-7"	
x400(E)	45	#5	8'-1"	
x401(E)	45	#5	6'-5"	

ITEM	UNIT	QUANTITY
CONCRETE SUPERSTRUCTURE	CU. YD.	446.4
REINFORCEMENT BARS, EPOXY COATED	POUND	124,420
BRIDGE DECK GROOVING (LONGITUDINAL)	SQ. YD.	553
DIAMOND GRINDING (BRIDGE SECTION)	SQ. YD.	1353
PROTECTIVE COAT	SQ. YD.	1806

NOTES:

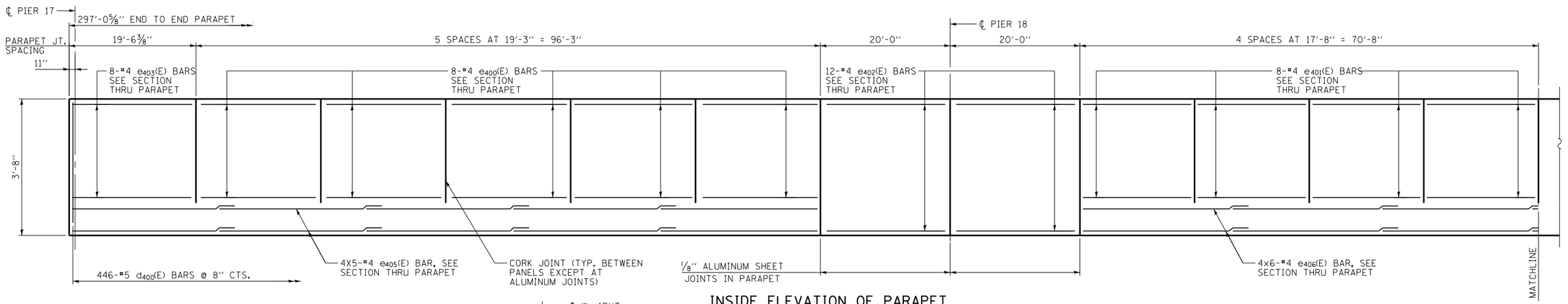
1. HEADED BARS SHALL CONFORM TO ASTM A970 WITH THREADED ATTACHMENT: CALSS HA; AND REINFORCEMENT BARS CONFORMING TO ASTM A706. COST INCLUDED WITH REINFORCING BARS, E POXY COATED.

P:\682540\57-294.5-9\STRUCTURAL\RESTART.2018\Ramp C over I-57 and I-294\0162101.5_unit4-super-dt12.dgn
3/30/2020

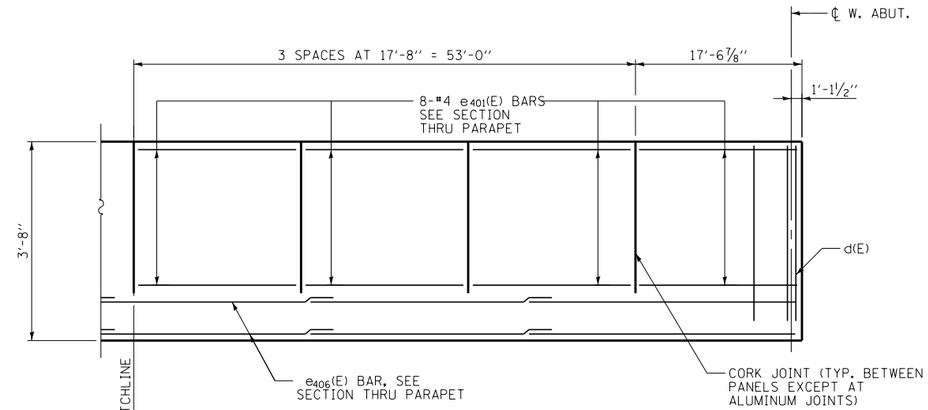
DRAWN BY . . . ME	DATE . 4-3-2020	TYLIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515
CHECKED BY . . . SP	SCALE . NONE		

REVISIONS		
NO.	DATE	DESCRIPTION

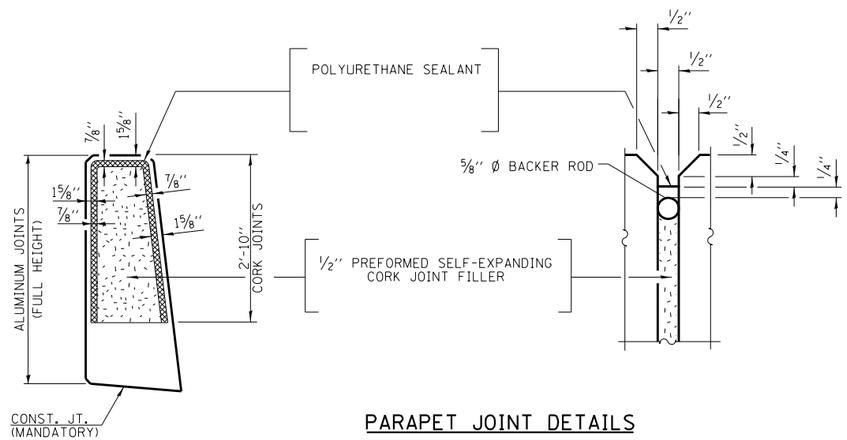
CONTRACT I-19-4495	SHEET 8C - 70 OF 234
I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 116) DECK DETAILS 2 - UNIT 4	345 OF 606



INSIDE ELEVATION OF PARAPET
(NORTH PARAPET)



INSIDE ELEVATION OF PARAPET
(NORTH PARAPET)



PARAPET JOINT DETAILS

NOTE:
THE POLYURATHANE SEALANT SHALL BE ACCORDING TO ARTICLE 1050.04 OF THE STANDARD SPECIFICATIONS AND COLOR SHALL BE GRAY.
THE ⅛'' ALUMINUM SHEET SHALL BE ASTM B209 ALLOY 3003-H14 AND COATED TO MINIMIZE REACTION WITH WET CONCRETE. COST INCLUDED WITH CONRET SUPERSTRUCTURE.

MIN. BAR LAP

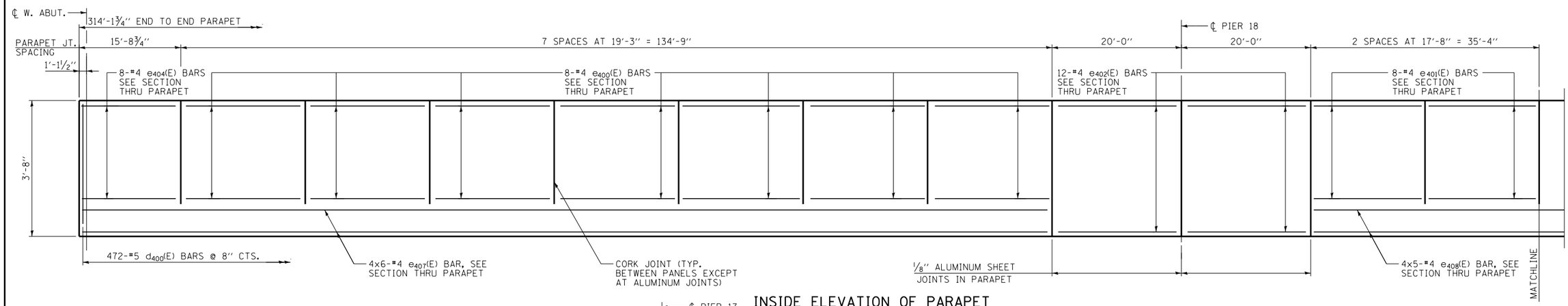
#4 = 2'-5''

NOTES:

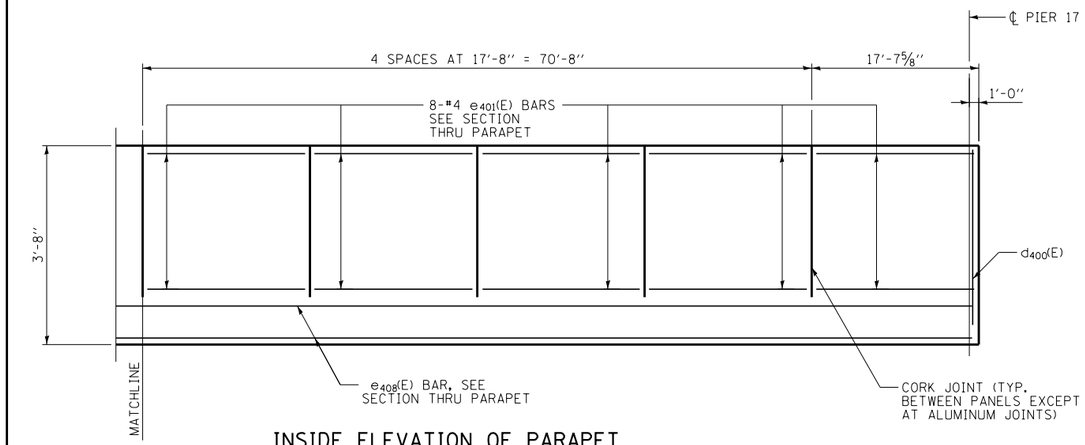
1. ALL DIMENSIONS MEASURED ALONG FRONT FACE OF PARAPET.
2. FOR SECTION THRU PARAPET, SEE SHEET SC-69 OF 234.
3. SEE MODULAR JOINT DETAILS ON SHEET SC-93 THRU SC-96 FOR EMBEDDED PLATE IN THE PARAPET.

P:\682540\57-294_5-1\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\B162101.5_unit4-Parapet.Ndgn
3/30/2020

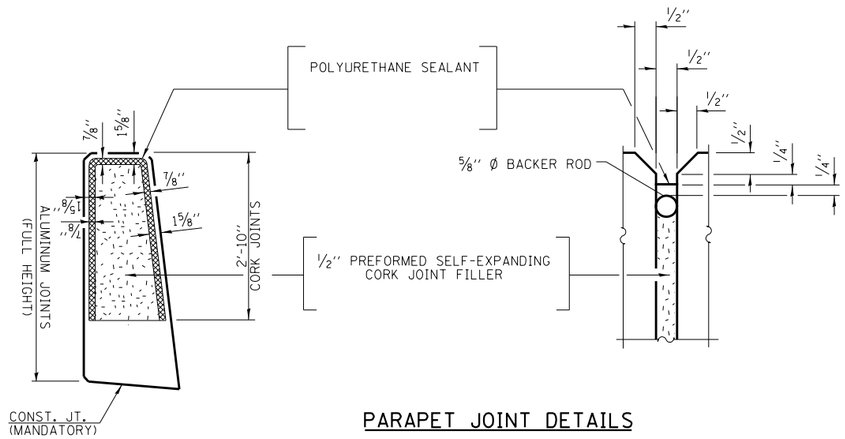
DRAWN BY . . . ME	DATE . 4-3-2020	T·Y·LIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	REVISIONS: NO. / DATE / DESCRIPTION	CONTRACT I-19-4495 I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 116) NORTH PARAPET ELEV. - UNIT 4	SHEET SC - 71 OF 234 346 OF 606
CHECKED BY . . . SP	SCALE . NONE					



INSIDE ELEVATION OF PARAPET
(SOUTH PARAPET)



INSIDE ELEVATION OF PARAPET
(SOUTH PARAPET)



PARAPET JOINT DETAILS

NOTE:
THE POLYURATHANE SEALANT SHALL BE ACCORDING TO ARTICLE 1050.04 OF THE STANDARD SPECIFICATIONS AND COLOR SHALL BE GRAY. THE ⅛'' ALUMINUM SHEET SHALL BE ASTM B209 ALLOY 3003-H14 AND COATED TO MINIMIZE REACTION WITH WET CONCRETE. COST INCLUDED WITH CONCRETE SUPERSTRUCTURE.

MIN. BAR LAP
#4 BAR - 2'-5''

NOTES:

1. ALL DIMENSIONS MEASURED ALONG FRONT FACE OF PARAPET.
2. FOR SECTION THRU PARAPET, SEE SHEET SC-69 OF 234.
3. SEE MODULAR JOINT DETAILS ON SHEET SC-93 THRU SC-96 FOR EMBEDDED PLATE IN THE PARAPET.

P:\60254057-294,57-94\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\016201.5_unit4-Parapet S.dgn
3/30/2020

DRAWN BY . . . JM . . . .
CHECKED BY . . . SP . . . .
DATE . 4-3-2020 . . . .
SCALE . NONE . . . . .

TY·LIN INTERNATIONAL

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

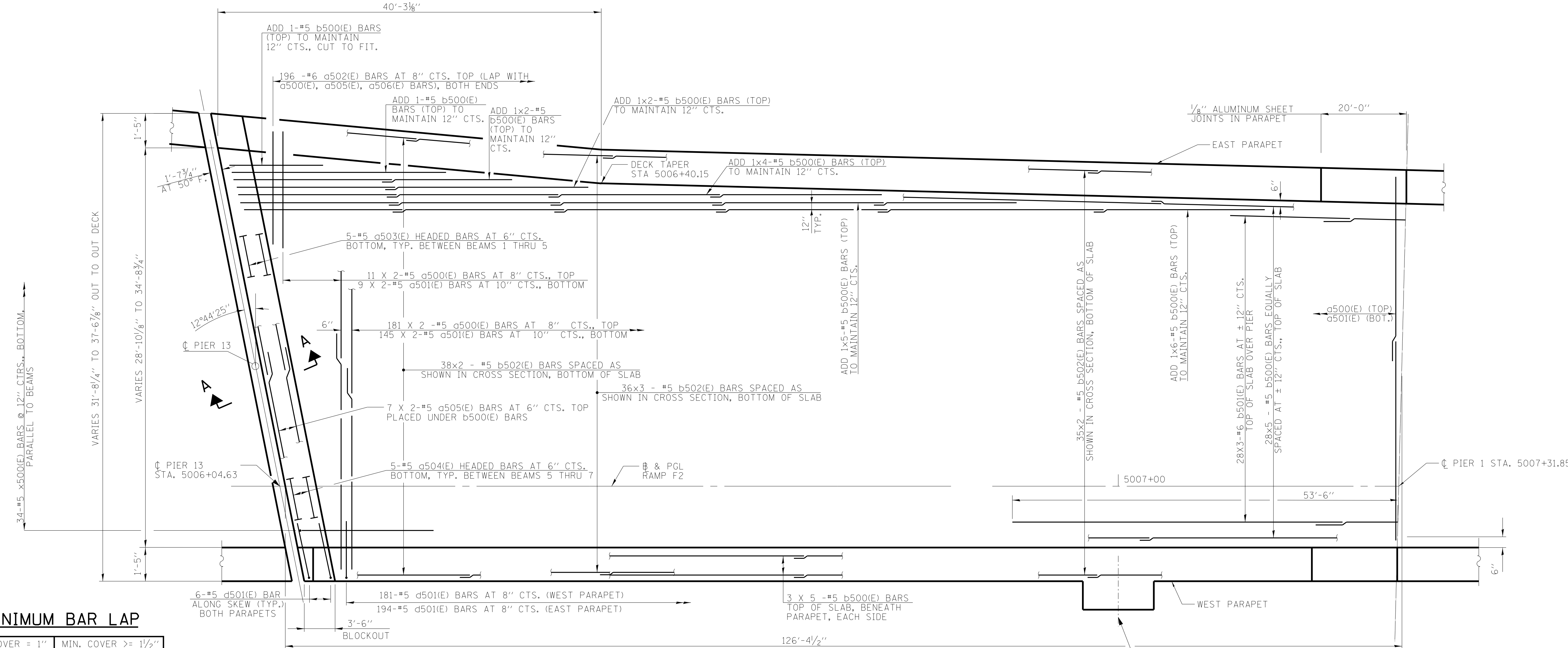
REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
SOUTH PARAPET ELEV. - UNIT 4

SHEET SC - 72 OF 234

347 OF 606

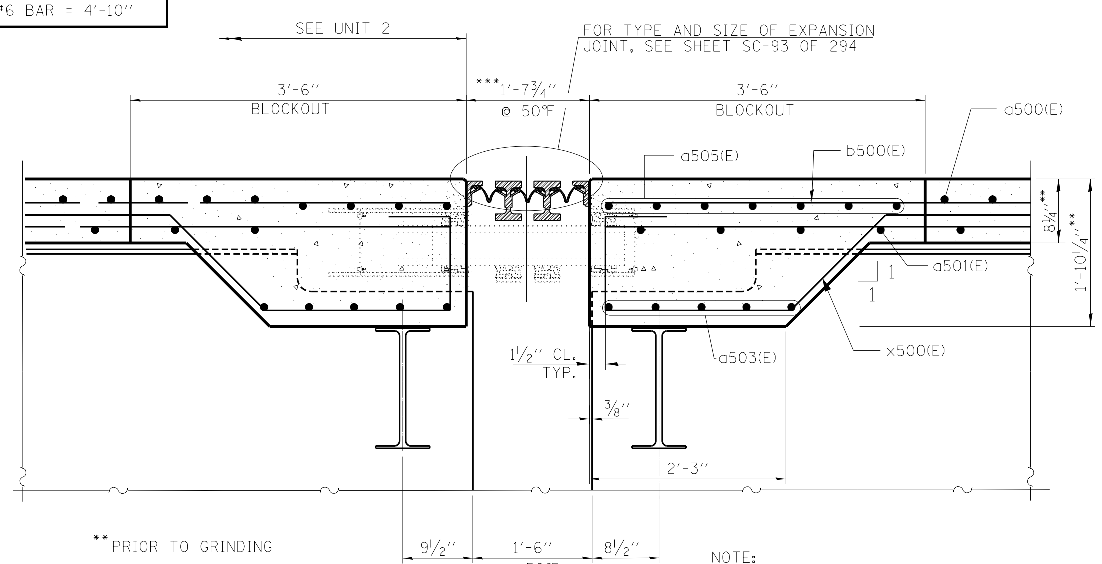


DECK PLAN SPAN 20

(STA. 5006+05.33 TO STA. 5007+31.85)

MINIMUM BAR LAP

MIN. COVER = 1"	MIN. COVER >= 1½"
#4 BAR = 2'-5" #5 BAR = 3'-0" #6 BAR = 3'-7"	#4 BAR = 2'-5" #5 BAR = 3'-6" #6 BAR = 4'-10"



**PRIOR TO GRINDING

***CONTRACTOR TO VERIFY NUMBER OF RAILS, BLOCKOUT DIMENSIONS AND JOINT OPENING WITH JOINT MANUFACTURER

NOTE:
a503(E), a504(E) AND a505(E) BARS PLACED ALONG SKEW AND CUT TO FIT AS REQUIRED

SECTION A-A

NOTES:

1. SEE SHEET SC-80 FOR SUPERSTRUCTURE DETAILS AND BILL OF MATERIAL.
2. BARS INDICATED THUS 20 X 3-#5 ETC. INDICATES 20 LINES OF BARS WITH 3 LENGTHS PER LINE.
3. FOR CROSS-SECTIONS, SEE SHEET S-X OF S-X.
4. FOR PARAPET REINFORCEMENT SEE SHEET S-X OF S-X.
5. FOR BILL OF MATERIALS SEE SHEET S-X OF S-X.

MODULAR JOINT NOTES:

1. CONTRACTOR SHALL USE THE APPROVED JOINT SHOP DRAWINGS WHEN LAYING OUT THE DECK REBAR.
2. PRIOR TO THE PLACEMENT OF THE JOINT BLOCK-OUT, THE CONTRACTOR SHALL COORDINATE WITH THE MODULAR JOINT MANUFACTURER TO ENSURE THAT THE JOINT WILL BE PROPERLY SUPPORTED AND THAT THE REINFORCEMENT BARS WILL NOT INTERFERE WITH THE JOINT COMPONENTS. ANY NECESSARY ADJUSTMENTS TO THE REINFORCEMENT LAYOUT SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

P:\602540\57-294_5-9\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\Reference\EJM\4419-sht-deck-08l.dgn
3/30/2020

DRAWN BY CK | DATE 3-11-2020
CHECKED BY MG | SCALE NONE

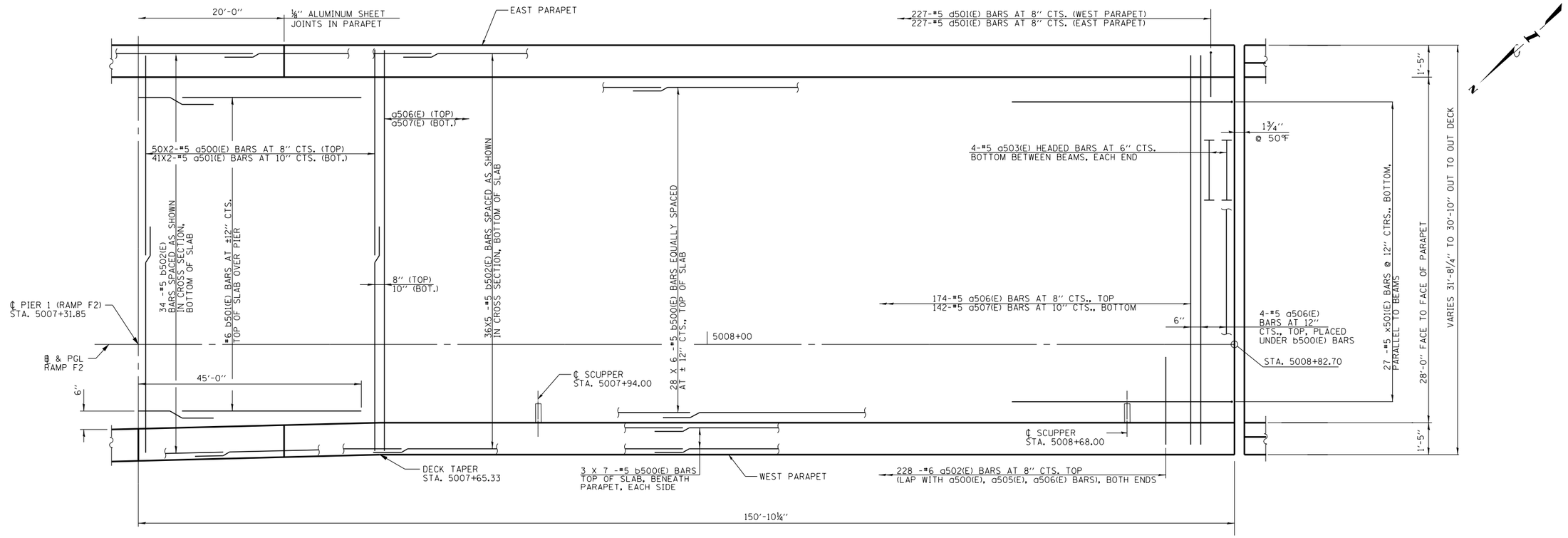
TranSmart/EJM
411 South Wells Street Suite 1000
Chicago, Illinois 60607

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

REVISIONS

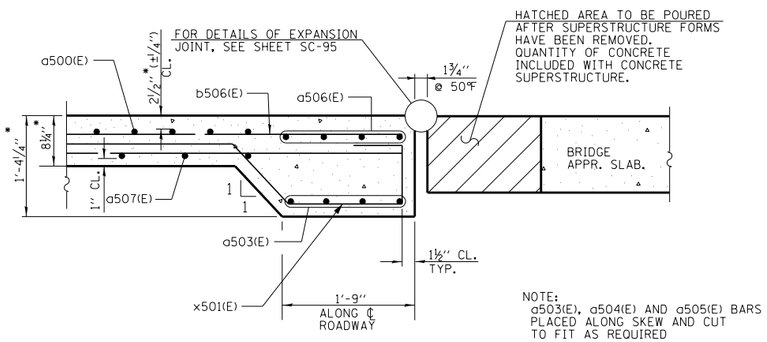
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495
I-57 AT 294 RAMPS C, D, AND F2
S.N. 016-2101
DECK PLAN UNIT 5-SPAN 20



DECK PLAN SPAN 21

(STA. 5007+31.85 TO STA. 5008+82.70)



SECTION AT EXPANSION JOINT

* PRIOR TO GRINDING

MINIMUM BAR LAP

MIN. COVER = 1"	MIN. COVER >= 1½"
#4 BAR = 2'-5""	#4 BAR = 2'-5""
#5 BAR = 3'-0"	#5 BAR = 3'-6"
#6 BAR = 3'-7"	#6 BAR = 4'-10"

NOTES:

1. SEE SHEET SC-80 FOR SUPERSTRUCTURE DETAILS AND BILL OF MATERIAL.
2. BARS INDICATED THUS 20 X 3-#5 ETC. INDICATES 20 LINES OF BARS WITH 3 LENGTHS PER LINE.
3. FOR CROSS-SECTIONS, SEE SHEET S-X OF S-X.
4. FOR PARAPET REINFORCEMENT SEE SHEET S-X OF S-X.
5. FOR BILL OF MATERIALS SEE SHEET S-X OF S-X.
6. DRAINAGE SCUPPERS SHALL BE LOCATED CLEAR OF ALL DIAPHRAGMS.

P:\68254057-294.5-9\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\Reference\EJM\4419-sht-deck-002.dgn
3/30/2020

DRAWN BY . . . . . MG . . . . . DATE . 3-11-2020 . . .
CHECKED BY . . . . CK . . . . . SCALE . NONE . . . .

TranSmart/EJM
411 South Wells Street Suite 1000
Chicago, Illinois 60607

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

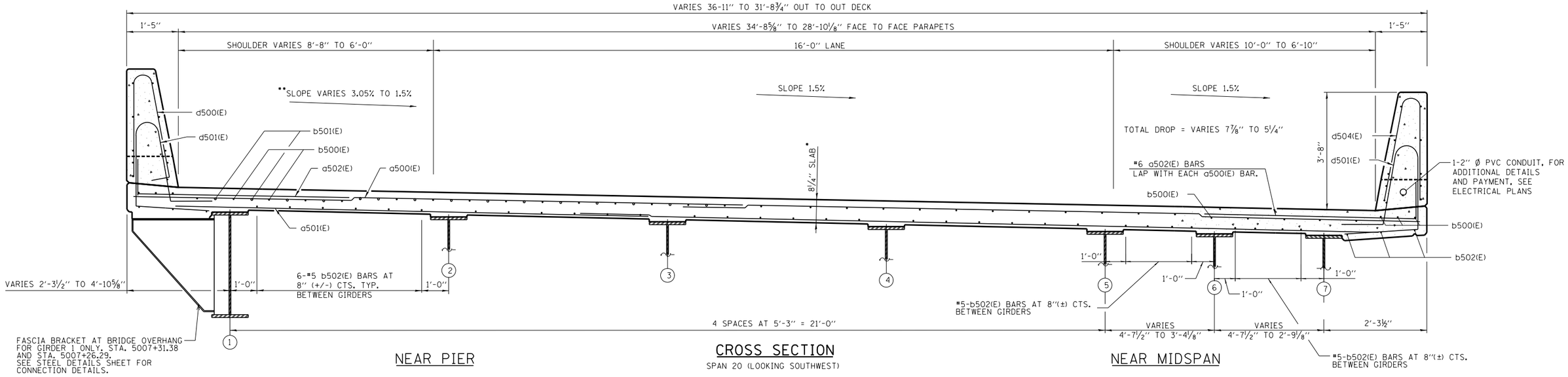
REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

I-57 AT 294 RAMPS C, D, AND F2
S.N. 016-2101
DECK PLAN UNIT 5-SPAN 21

SHEET SC - 74 OF 234

349 . . . . . OF 606



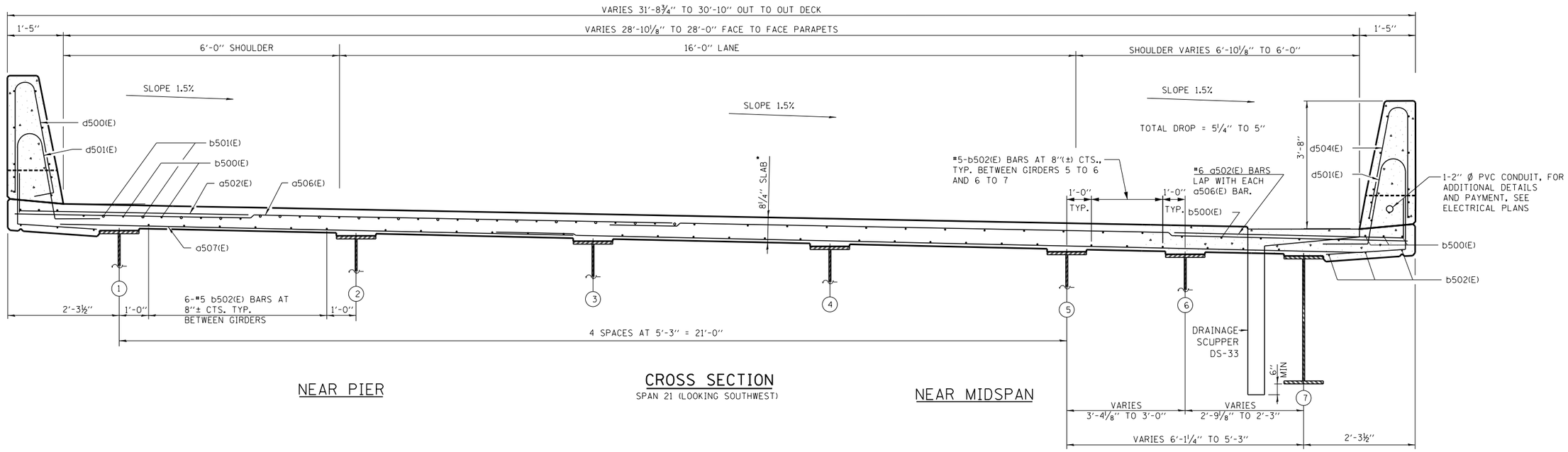
NEAR PIER

CROSS SECTION

SPAN 20 (LOOKING SOUTHWEST)

NEAR MIDSPAN

- • PRIOR TO GRINDING
- •• SHOULDER SLOPE VARIES FROM 3.05% AT STA. 5006+01.38 TO 1.5% AT STA. 5006+39.57. CONSTANT 1.5% SLOPE FROM STA. 5006+39.57 TO STA. 5008+82.70



NEAR PIER

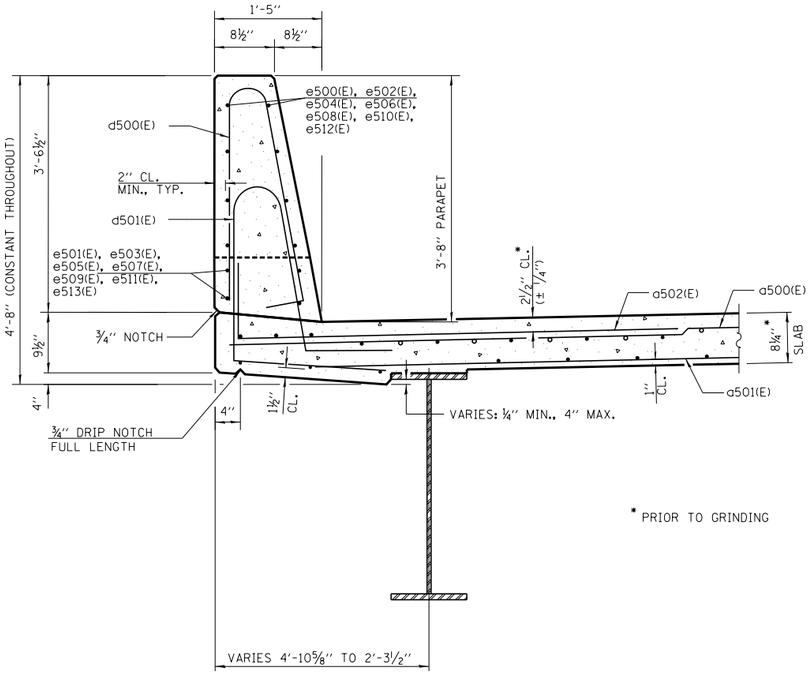
CROSS SECTION

SPAN 21 (LOOKING SOUTHWEST)

NEAR MIDSPAN

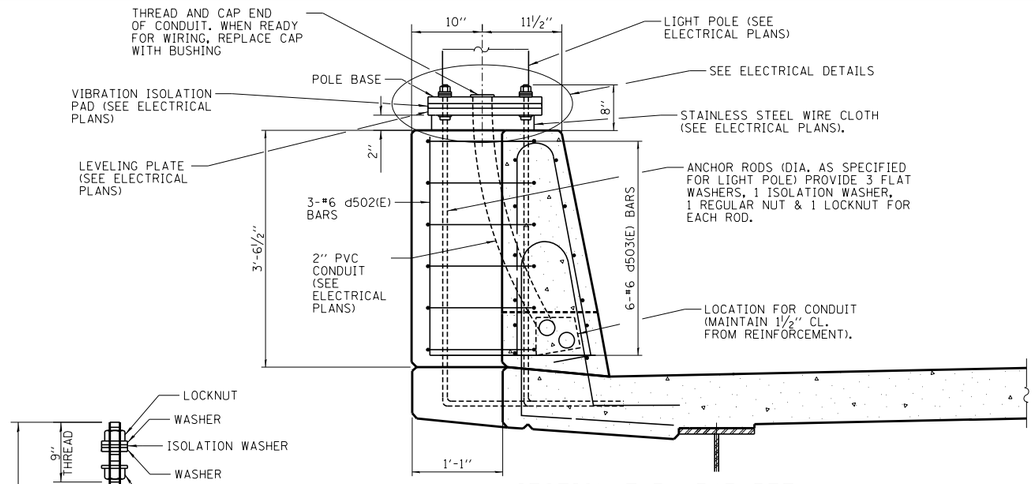
P:\68254057-294.5-9\STRUCTURAL\RESTART.2018\Ramp C over I-57 and I-294\Reference\EJM\44419-sht-deck-006.dgn
3/30/2020

DRAWN BY . . . . . CK	DATE . . 3-11-2020 . .	**TranSmart/EJM** 411 South Wells Street Suite 1000 Chicago, Illinois 60607	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	REVISIONS NO. / DATE / DESCRIPTION	CONTRACT I-19-4495
CHECKED BY . . . . MG	SCALE . . NONE				I-57 AT 294 RAMPS C, D, AND F2 S.N. 016-2101 DECK CROSS SECTIONS-UNIT 5
					SHEET SC - 75 OF 234
					350 . . . . . OF 606

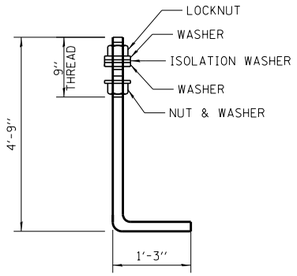


* PRIOR TO GRINDING

SECTION THRU PARAPET

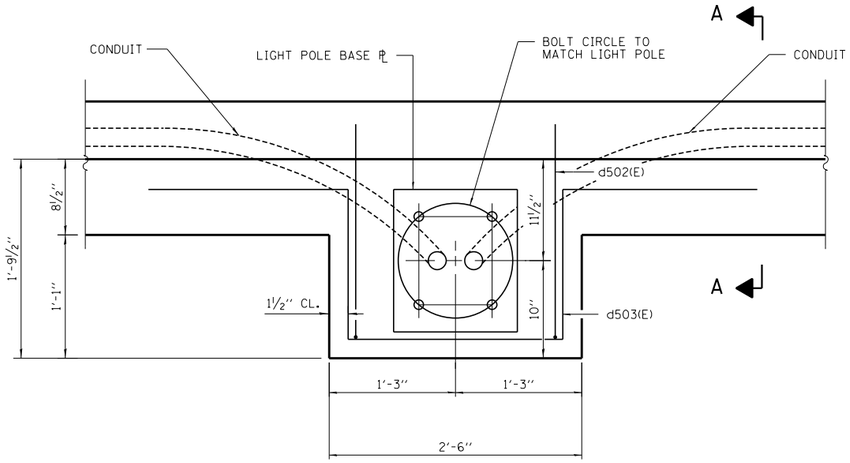


SECTION THRU PARAPET WITH LIGHT POLE



ANCHOR ROD

DIAMETER AS SPECIFIED FOR LIGHT POLES. (ASTM F 1554 GRADE 105) FULL LENGTH HOT DIPPED GALVANIZED

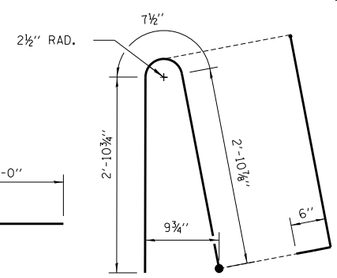


LIGHT POLE PLAN

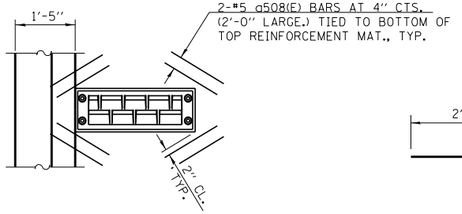
SUPERSTRUCTURE BILL OF MATERIAL

BAR	NO.	SIZE	LENGTH	SHAPE
a500(E)	484	#5	20'-5"	
a501(E)	390	#5	19'-3"	
a502(E)	848	#6	8'-4"	
a503(E)	40	#5	5'-0"	
a504(E)	10	#5	4'-5"	
a505(E)	14	#5	21'-5"	
a506(E)	178	#5	30'-6"	
a507(E)	142	#5	28'-0"	
a508(E)	16	#5	2'-0"	
b500(E)	395	#5	29'-11"	
b501(E)	84	#6	35'-3"	
b502(E)	468	#5	26'-0"	
d500(E)	428	#5	7'-2"	
d501(E)	841	#5	8'-3"	
d502(E)	3	#6	5'-3"	
d503(E)	6	#6	8'-11"	
d504(E)	417	#5	7'-2"	
e500(E)	16	#4	18'-10"	
e501(E)	8	#4	21'-3"	
e502(E)	32	#4	17'-7"	
e503(E)	12	#4	25'-6"	
e504(E)	32	#4	19'-8"	
e505(E)	16	#4	19'-8"	
e506(E)	56	#4	18'-4"	
e507(E)	20	#4	28'-1"	
e508(E)	48	#4	17'-0"	
e509(E)	16	#4	27'-10"	
e510(E)	8	#4	13'-2"	
e511(E)	4	#4	13'-2"	
e512(E)	48	#4	19'-2"	
e513(E)	20	#4	25'-4"	
x500(E)	34	#5	8'-1"	
x501(E)	27	#5	6'-5"	

ITEM	UNIT	QTY.
REINFORCEMENT BARS, EPOXY COATED	POUNDS	87,240
CONCRETE SUPERSTRUCTURE	CU. YD.	323.0
PROTECTIVE COAT	SQ. YD.	1,187
BRIDGE DECK GROOVING (LONGITUDINAL)	SQ. YD.	493
DIAMOND GRINDING (BRIDGE SECTION)	SQ YD.	786

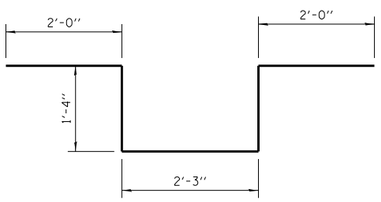


BAR d504(E)



DS-33 DRAINAGE SCUPPER PLAN

NOTE: CUT LONGITUDINAL REINFORCEMENT TO CLEAR DRAINAGE SCUPPERS.



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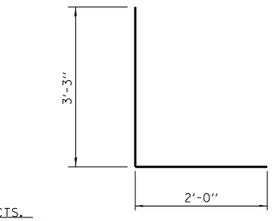

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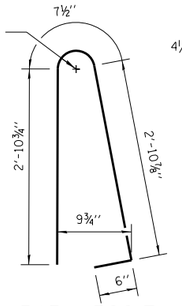

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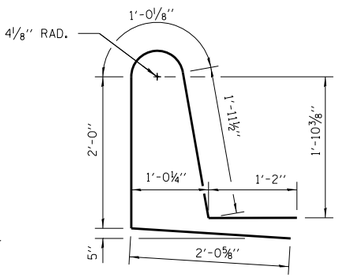

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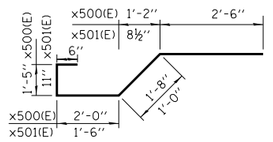
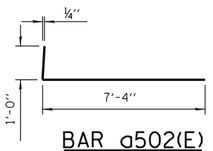
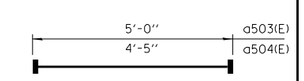


BAR x500(E)



BAR a502(E)



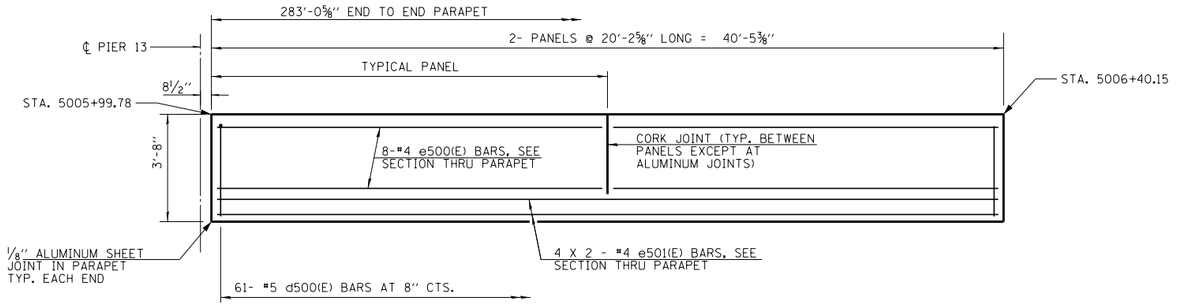
BAR a503(E) & a504(E)

(HEADED)

NOTES:
THE 1/8" ALUMINUM SHEET SHALL BE ASTM B 209 ALLOY 3003-H14 AND COATED TO MINIMIZE REACTION WITH WET CONCRETE. COST INCLUDED WITH CONCRETE SUPERSTRUCTURE.
THE POLYURETHANE SEALANT SHALL BE ACCORDING TO ARTICLE 1050.04 OF THE STD. SPEC. AND THE COLOR SHALL BE GRAY.
HEADED BARS SHALL CONFORM TO ASTM A970 WITH THREADED ATTACHMENT; CLASS HA; AND REINFORCEMENT BARS CONFORMING TO ASTM A706. COST INCLUDED WITH REINFORCEMENT BARS, EPOXY COATED.

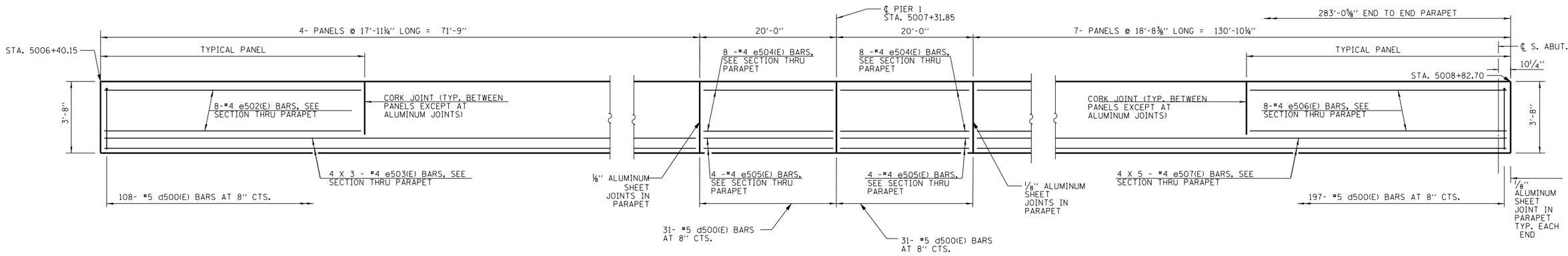
P:\62524057-294_5-9\STRUCTURAL_RESTART_2018\Ramp C over I-57 and I-294\Reference\EJM\4419-plt-deck-005.dgn
3/30/2020

DRAWN BY . . . . . MG	DATE . 3-11-2020 . .	TranSmart/EJM 411 South Wells Street Suite 1000 Chicago, Illinois 60607	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	REVISIONS NO. / DATE / DESCRIPTION	CONTRACT I-19-4495
CHECKED BY . . . . CK	SCALE . NONE				I-57 AT 294 RAMPS C, D, AND F2 S.N. 016-2101 DECK DETAILS-UNIT 5
					SHEET SC - 76 OF 234 — 351 OF 606



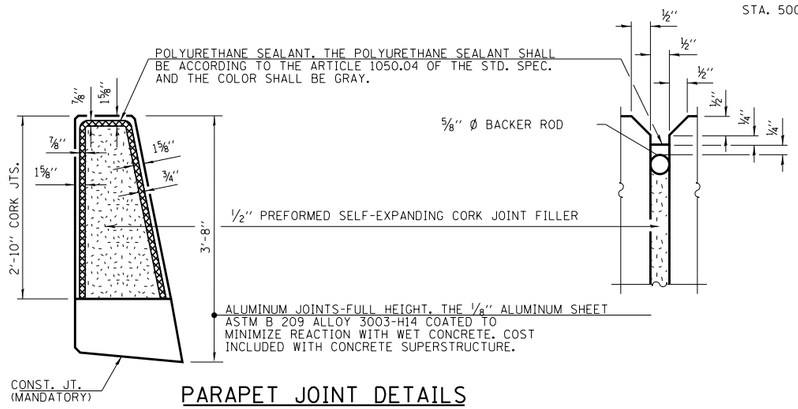
INSIDE ELEVATION OF EAST PARAPET

STA. 5005+99.78 LT. TO STA. 5006+40.10 LT.
SEE SHEET SC-81 FOR EAST AND WEST PARAPET ELEVATIONS



INSIDE ELEVATION OF EAST PARAPET

STA. 5006+40.15 LT. TO STA. 5008+82.70 LT.



PARAPET JOINT DETAILS

NOTES:

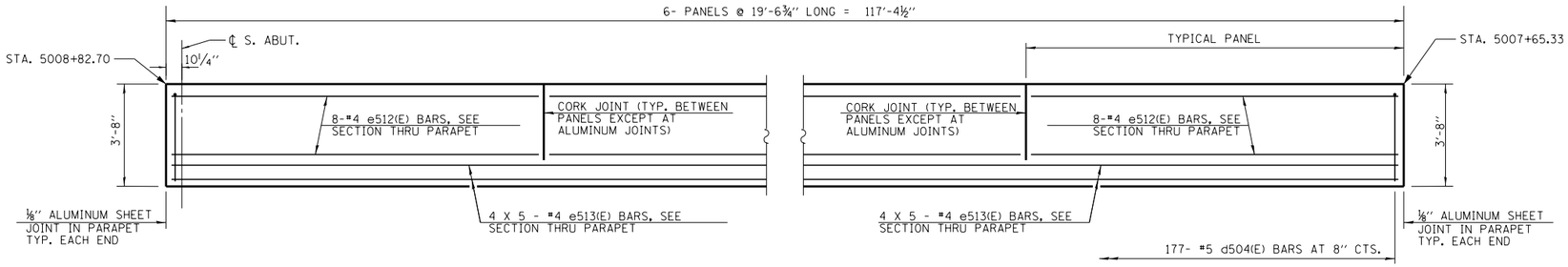
1. ALL DIMENSIONS MEASURED ALONG FRONT FACE OF PARAPET
2. FOR SECTION THRU PARAPET, SEE SHEET S-X OF S-X.

MIN. BAR LAP

#4 = 2'-5"

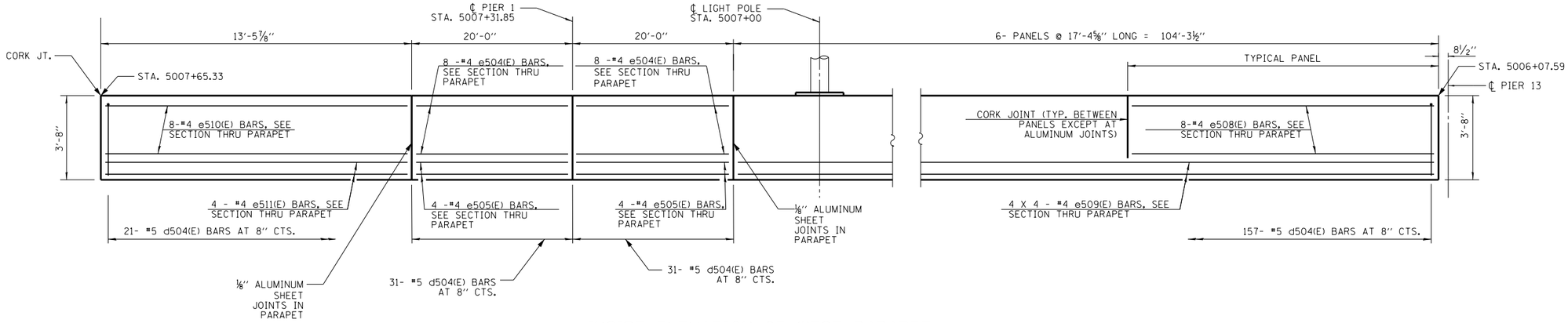
P:\60254057-294,5-94\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\Reference\EJM\4419-sht-deck-003.dgn
3/30/2020

DRAWN BY . . . . . CK	DATE . 3-11-2020 . .	TranSmart/EJM 411 South Wells Street Suite 1000 Chicago, Illinois 60607	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	REVISIONS NO. / DATE / DESCRIPTION	CONTRACT I-19-4495	SHEET SC - 77 OF 234
CHECKED BY . . . . MG	SCALE . NONE				I-57 AT 294 RAMPS C, D, AND F2 S.N. 016-2101 UNIT 5-EAST PARAPET DETAILS	352 . . . . OF 606



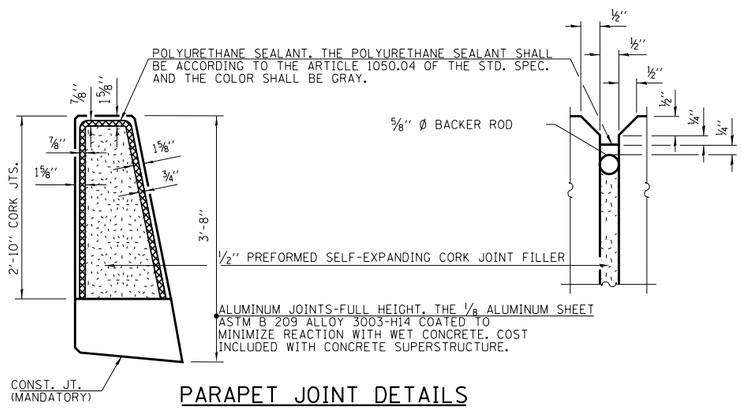
INSIDE ELEVATION OF WEST PARAPET

STA. 5007+65.33 RT. TO STA. 5008+82.70 RT.



INSIDE ELEVATION OF WEST PARAPET

STA. 5006+07.59 RT. TO STA. 5007+65.33 RT.



PARAPET JOINT DETAILS

NOTES:

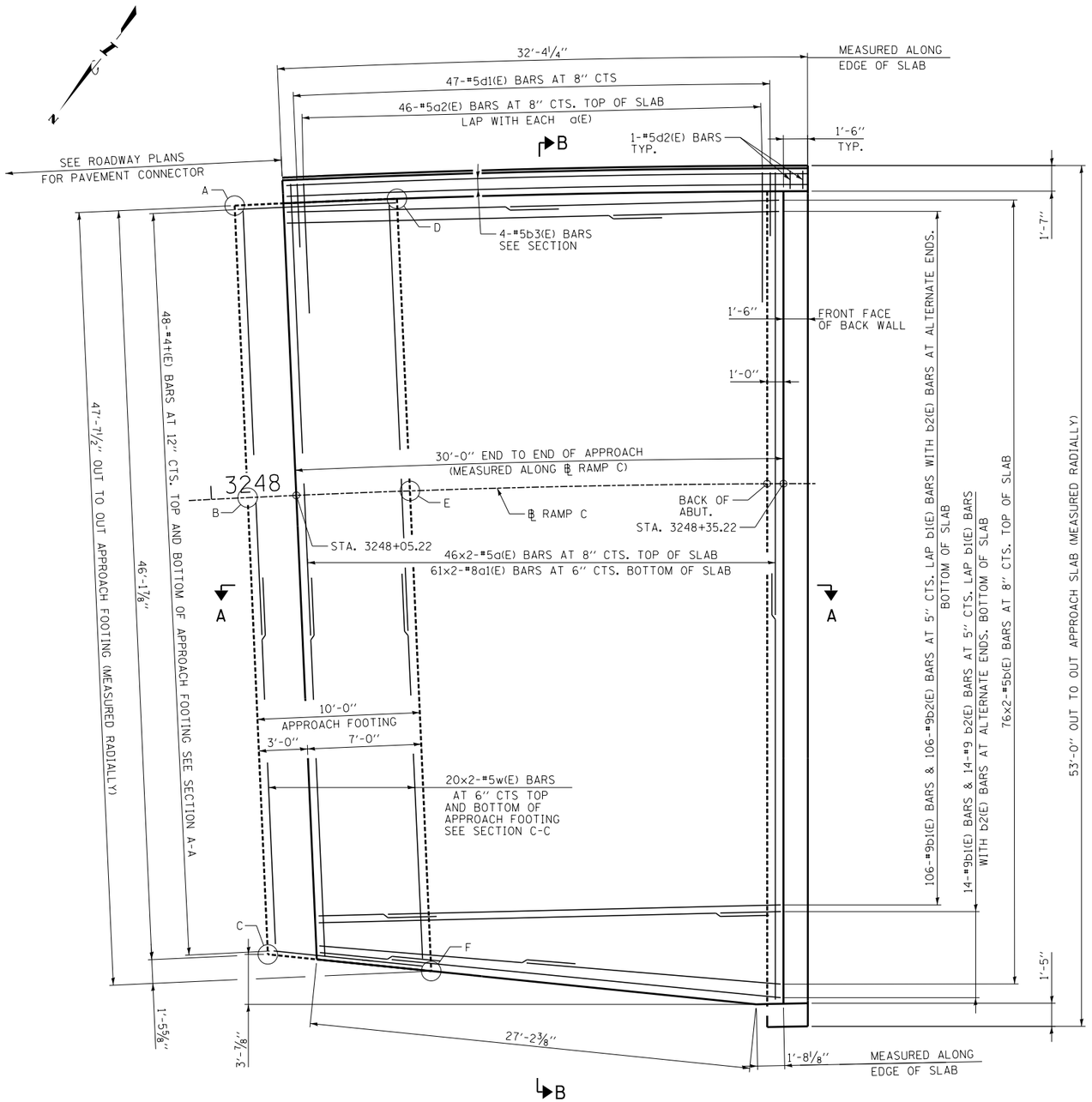
1. ALL DIMENSIONS MEASURED ALONG FRONT FACE OF PARAPET
2. FOR SECTION THRU PARAPET, SEE SHEET S-X OF S-X.

MIN. BAR LAP

#4 = 2'-5"

P:\68254\057-294.5-91\STRUCTURAL_RESTART_2016\Ramp C over I-57 and I-294\Reference\EJMV4419-sht-deck-004.dgn
3/30/2020

DRAWN BY . . . . . CK	DATE . 3-11-2020 . .	TranSmart/EJM 411 South Wells Street Suite 1000 Chicago, Illinois 60607	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	REVISIONS NO. / DATE / DESCRIPTION	CONTRACT I-19-4495	SHEET SC - 78 OF 234
CHECKED BY . . . . MG	SCALE . NONE				I-57 AT 294 RAMPS C, D, AND F2 S.N. 016-2101 UNIT 5-WEST PARAPET DETAILS	353 . . . . OF 606



PLAN

TOP AND BOTTOM ELEVATIONS FOR APPROACH FOOTING

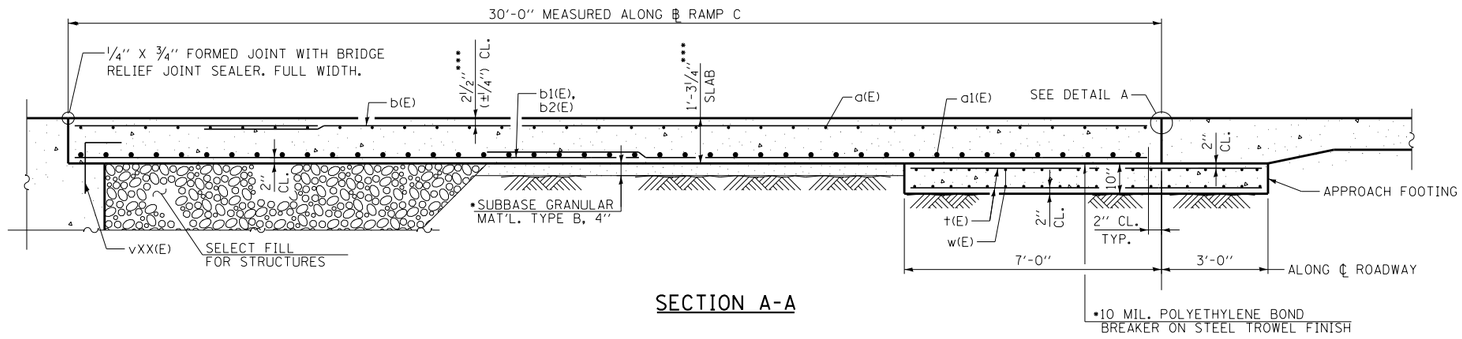
	APPROACH	
POINT	TOP	BOTTOM
A	630.07	629.24
B	629.23	628.40
C	627.92	627.08
D	630.30	629.47
E	629.41	628.58
F	627.95	627.11

MINIMUM BAR LAP

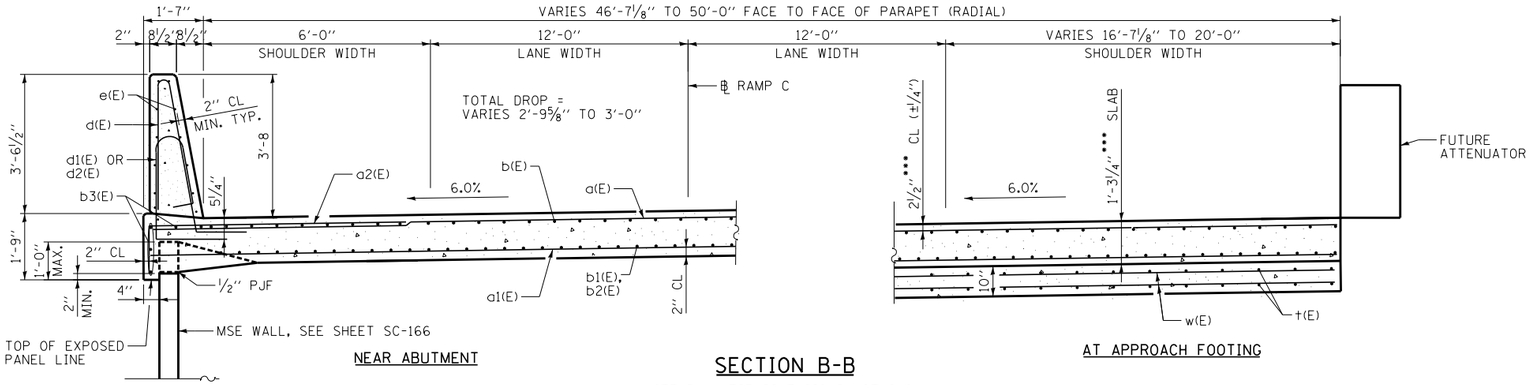
#5 BARS = 3'-0" (APPROACH SLAB)
#5 BARS = 3'-2" (APPROACH FOOTING)
#8 BARS = 4'-9"
#9 BARS = 8'-7"

P:\60254057-294_ES-9\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\0162101.5_Appr.slabE.dgn
3/30/2020

DRAWN BY JM	DATE 4-3-2020	TYLIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	REVISIONS NO. / DATE / DESCRIPTION	CONTRACT I-19-4495	SHEET SC - 79 OF 234
CHECKED BY SP	SCALE NONE				I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 116) EAST APPROACH SLAB PLAN	354 OF 606



SECTION A-A



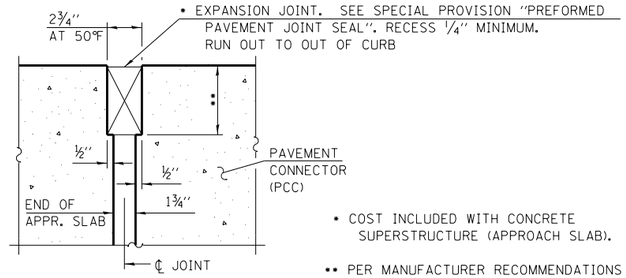
SECTION B-B

(SEE PLAN FOR DIMENSIONS NOT SHOWN)

***PRIOR TO GRINDING

NOTES:

1. PARAPET CONCRETE SHALL BE PAID FOR AS CONCRETE SUPERSTRUCTURE.
2. APPROACH SLAB SHALL BE PAID FOR AS CONCRETE SUPERSTRUCTURE (APPROACH SLAB).
3. APPROACH FOOTING CONCRETE SHALL BE PAID FOR AS CONCRETE STRUCTURES.
4. THE APPROACH FOOTING MAXIMUM APPLIED SERVICE BEARING PRESSURE (QMAX) = 2.0 KSF.
5. COST OF EXCAVATION FOR APPROACH FOOTING INCLUDED WITH CONCREE STRUCTURES.
6. FOR GRANULAR BACKFILL FOR STRUCTURES AND DRAINAGE TREATMENT DETAILS, SEE SHEET SC-166 OF 234.



DETAIL A

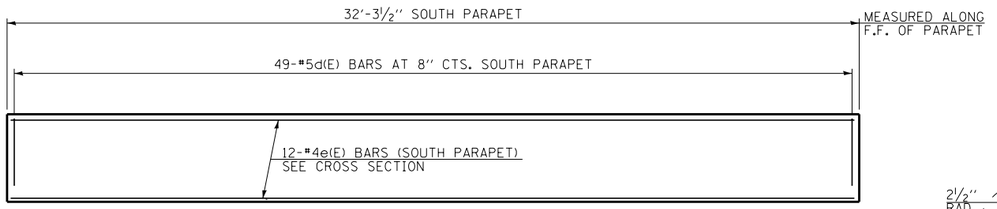
(DETAIL A SHOWN, APPLIES TO HIGHWAY STANDARD 420401 ONLY. DETAIL A FOR PAVEMENT CONNECTOR (HMA) MAY BE FOUND ON HIGHWAY STANDARD 420406.)

BILL OF MATERIAL

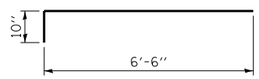
REINFORCEMENT BAR LIST

BAR	NO.	SIZE	LENGTH	SHAPE
a (E)	92	#5	27'-2"	
a1(E)	124	#8	28'-2"	
a2(E)	46	#5	7'-4"	
b (E)	152	#5	16'-9"	
b1(E)	120	#9	28'-5"	
b2(E)	120	#9	12'-4"	
b3(E)	4	#5	32'-0"	
d (E)	49	#5	7'-0"	
d1(E)	47	#5	7'-8"	
d2(E)	2	#5	7'-8"	
e (E)	12	#4	32'-0"	
† (E)	96	#4	9'-8"	
w (E)	80	#5	25'-2"	

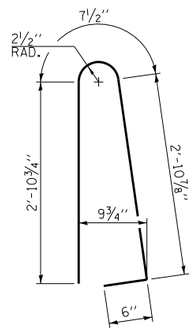
ITEM	UNIT	QUANTITY
CONCRETE STRUCTURES	CU. YD.	14.6
CONCRETE SUPERSTRUCTURE	CU. YD.	4.3
CONCRETE SUPERSTRUCTURE (APPROACH SLAB)	CU. YD.	71.4
REINFORCEMENT BARS, EPOXY COATED	POUND	30,400
PROTECTIVE COAT	SQ. YD.	178
BRIDGE DECK GROOVING (LONGITUDINAL)	SQ. YD.	80
DIAMOND GRINDING (BRIDGE SECTION)	SQ. YD.	147



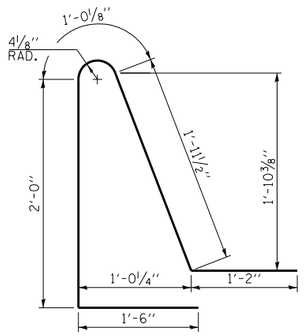
INSIDE ELEVATION OF PARAPET



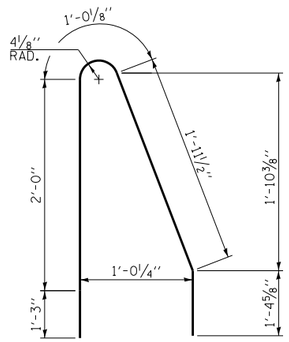
BAR a2(E)



BAR d(E)



BAR d1(E)



BAR d2(E)

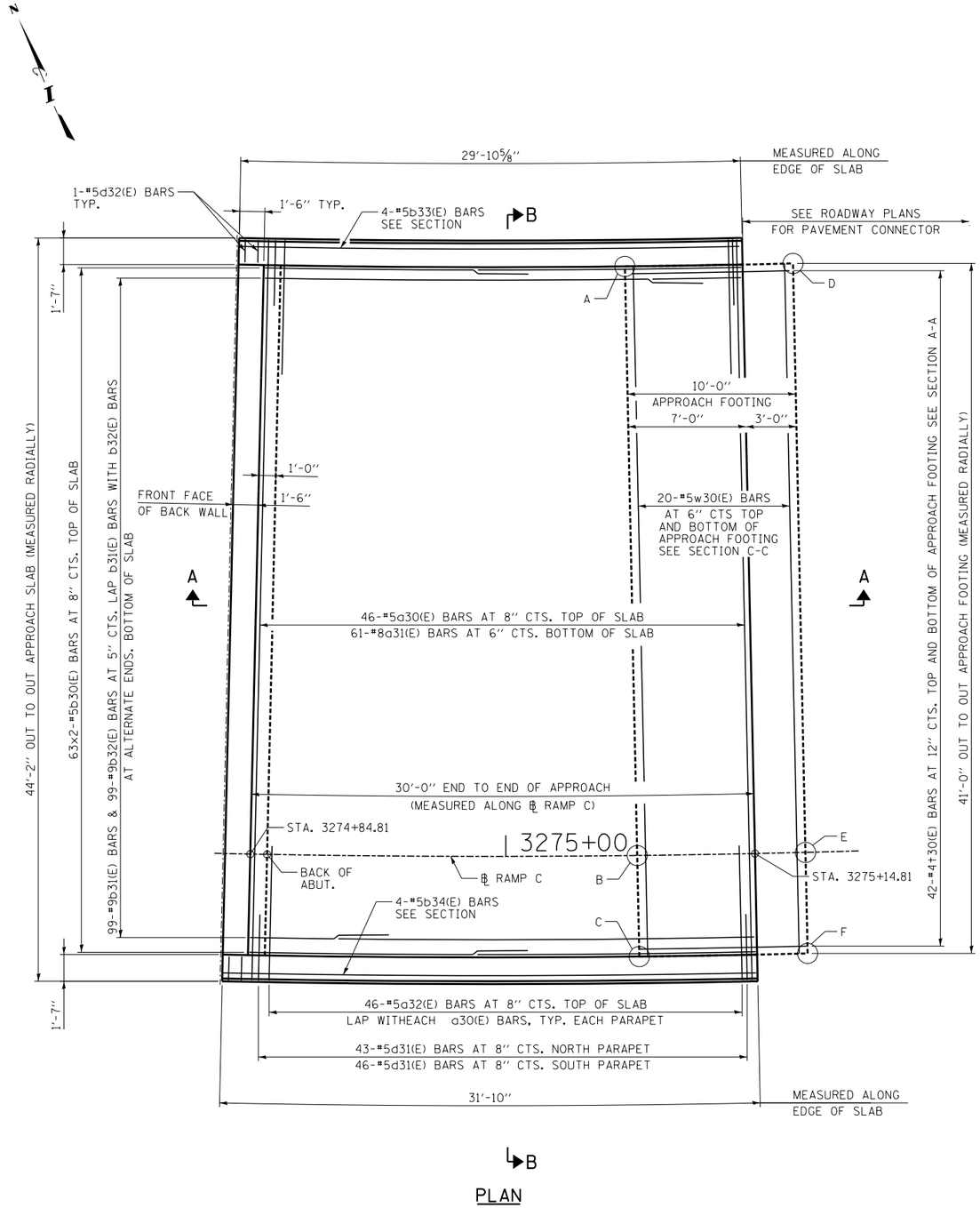
DRAWN BY JM	DATE 4-3-2020	TYLIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	CONTRACT I-19-4495
CHECKED BY SP	SCALE NONE			I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 116) EAST APPROACH SLAB DETAILS

REVISIONS		
NO.	DATE	DESCRIPTION

SHEET SC - 80 OF 234

355 OF 606

P:\6825401\57-294.5-91\STRUCTURAL_RESTART_2019\Ramp C over I-57 and I-294\016l2101.5_Appr_slabE.dgn
3/30/2020



B

PLAN

TOP AND BOTTOM ELEVATIONS FOR APPROACH FOOTING

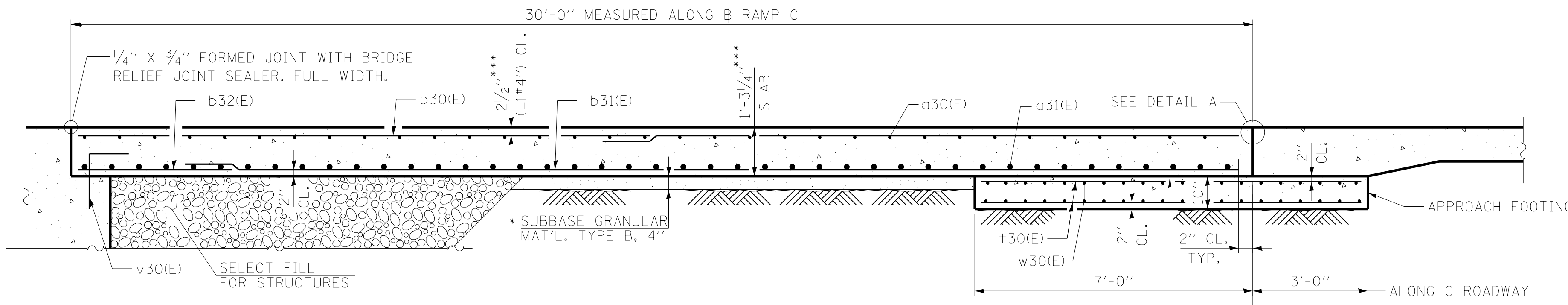
	APPROACH	
POINT	TOP	BOTTOM
A	625.94	625.11
B	624.91	624.08
C	625.27	624.44
D	622.29	621.46
E	624.40	623.57
F	624.76	623.92

MINIMUM BAR LAP

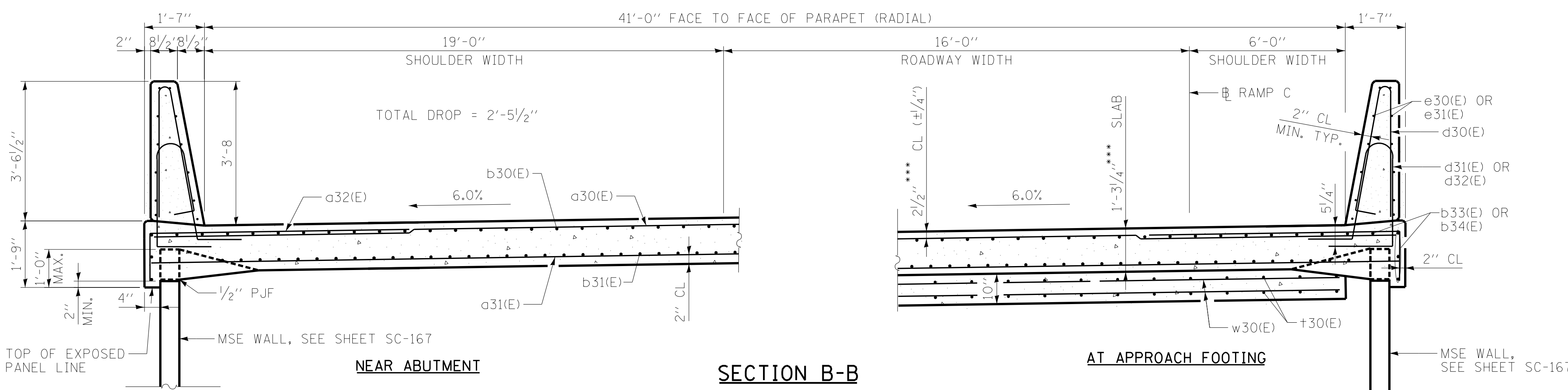
#5 BARS = 3'-0"
#9 BARS = 8'-7"

P:\60254057-294.5-9\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\0162101.5_Appr_slabW.dgn
3/30/2020

DRAWN BY ME	DATE 4-3-2020	TYLIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	REVISIONS NO. / DATE / DESCRIPTION	CONTRACT I-19-4495	SHEET SC - 81 OF 234
CHECKED BY SP	SCALE NONE				I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 116) WEST APPROACH SLAB PLAN	356 OF 606



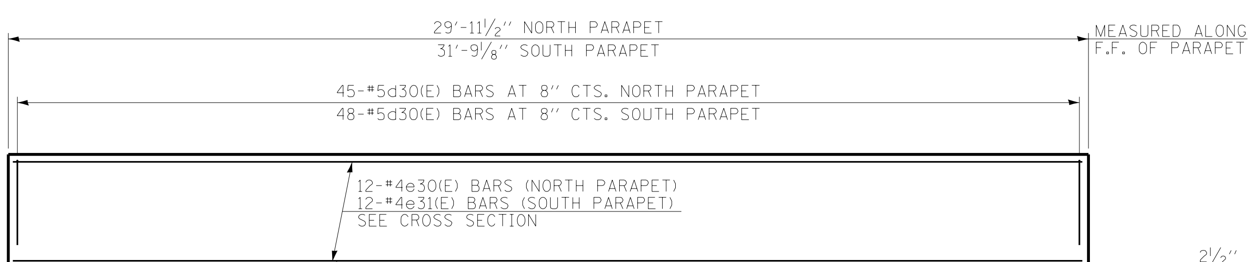
SECTION A-A



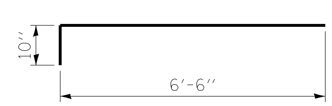
SECTION B-B

(SEE PLAN FOR DIMENSIONS NOT SHOWN)

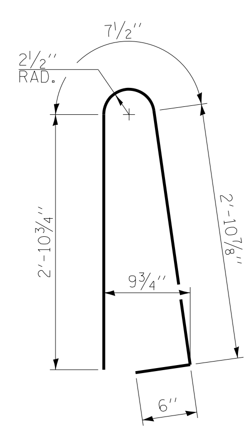
*** PRIOR TO GRINDING



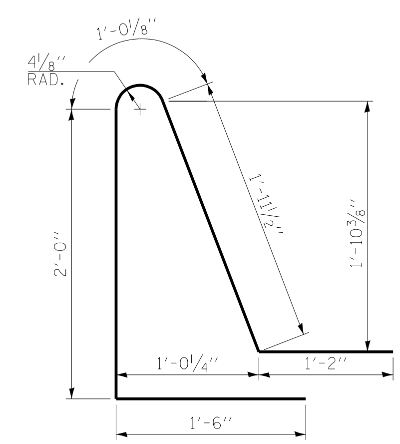
INSIDE ELEVATION OF PARAPET



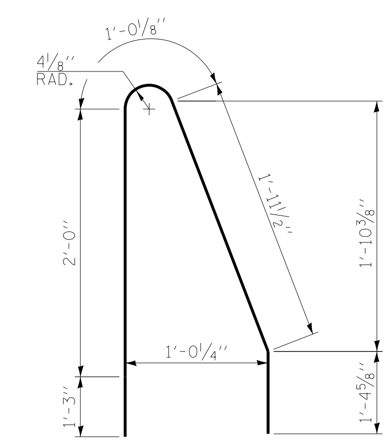
BAR a32(E)



BAR d30(E)



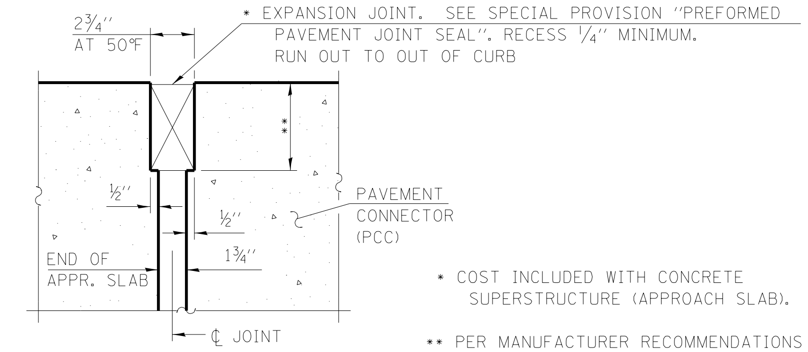
BAR d31(E)



BAR d32(E)

NOTES:

1. PARAPET CONCRETE SHALL BE PAID FOR AS CONCRETE SUPERSTRUCTURE.
2. APPROACH SLAB SHALL BE PAID FOR AS CONCRETE SUPERSTRUCTURE (APPROACH SLAB).
3. APPROACH FOOTING CONCRETE SHALL BE PAID FOR AS CONCRETE STRUCTURES.
4. THE APPROACH FOOTING MAXIMUM APPLIED SERVICE BEARING PRESSURE (QMAX) = 2.0 KSF.
5. COST OF EXCAVATION FOR APPROACH FOOTING INCLUDED WITH CONCREE STRUCTURES.
6. FOR GRANULAR BACKFILL FOR STRUCTURES AND DRAINAGE TREATMENT DETAILS, SEE SHEET SC-167 OF 234.



* COST INCLUDED WITH CONCRETE SUPERSTRUCTURE (APPROACH SLAB).

** PER MANUFACTURER RECOMMENDATIONS

DETAIL A

(DETAIL A SHOWN, APPLIES TO HIGHWAY STANDARD 420401 ONLY. DETAIL A FOR PAVEMENT CONNECTOR (HMA) MAY BE FOUND ON HIGHWAY STANDARD 420406.)

BILL OF MATERIAL

REINFORCEMENT BAR LIST

BAR	NO.	SIZE	LENGTH	SHAPE
a30(E)	46	#5	43'-10"	
a31(E)	61	#8	43'-10"	
a32(E)	92	#5	7'-4"	
b30(E)	126	#5	17'-3"	
b31(E)	99	#9	29'-7"	
b32(E)	99	#9	10'-10"	
b33(E)	4	#5	29'-7"	
b34(E)	4	#5	31'-9"	
d30(E)	93	#5	7'-0"	
d31(E)	89	#5	7'-8"	
d32(E)	4	#5	7'-8"	
e30(E)	12	#4	29'-8"	
e31(E)	12	#4	31'-5"	
t30(E)	84	#4	9'-8"	
w30(E)	40	#5	40'-8"	

ITEM	UNIT	QUANTITY
CONCRETE STRUCTURES	CU. YD.	13.0
CONCRETE SUPERSTRUCTURE	CU. YD.	8.5
CONCRETE SUPERSTRUCTURE (APPROACH SLAB)	CU. YD.	62.4
REINFORCEMENT BARS, EPOXY COATED	POUND	26,580
PROTECTIVE COAT	SQ. YD.	168
BRIDGE DECK GROOVING (LONGITUDINAL)	SQ. YD.	54
DIAMOND GRINDING (BRIDGE SECTION)	SQ. YD.	124

P:\60254\057-294_5-9\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\016210l_5_Appr_slabW_det.dgn
3/30/2020

DRAWN BY ME
CHECKED BY SP
DATE 4-3-2020
SCALE NONE

TYLIN INTERNATIONAL

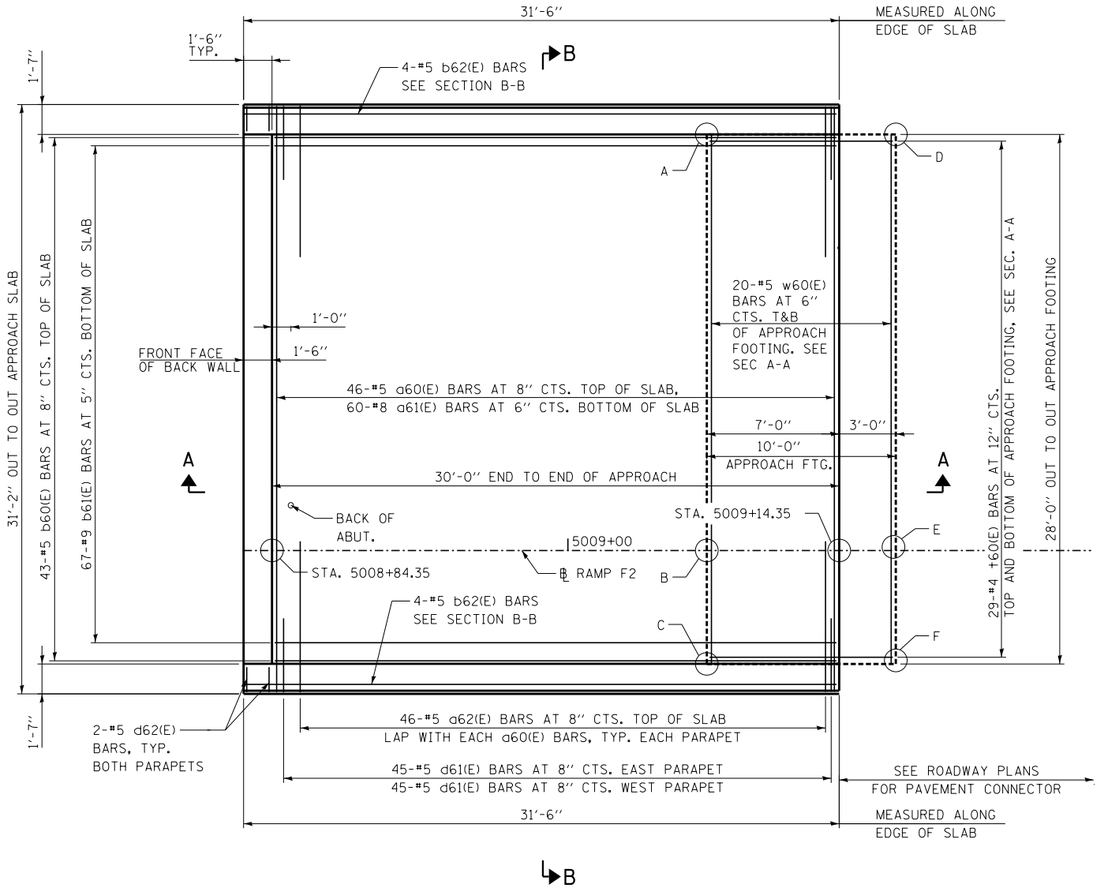
THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
WEST APPROACH SLAB DETAILS

SHEET SC - 82 OF 234



PLAN

N

TOP AND BOTTOM ELEVATIONS FOR APPROACH FOOTING

	APPROACH	
POINT	TOP	BOTTOM
A	628.49	627.66
B	628.16	627.33
C	628.07	627.24
D	627.96	627.13
E	627.63	626.80
F	627.54	626.71

P:\60254057-294.5-9\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\Reference\EJM\4419-ant-appr-slab5.dgn
3/30/2020

DRAWN BY . . . . . MG . . . . . DATE . 3-11-2020 . . . .
CHECKED BY . . . . RP . . . . . SCALE . NONE . . . .

TranSmart/EJM
411 South Wells Street Suite 1000
Chicago, Illinois 60607

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

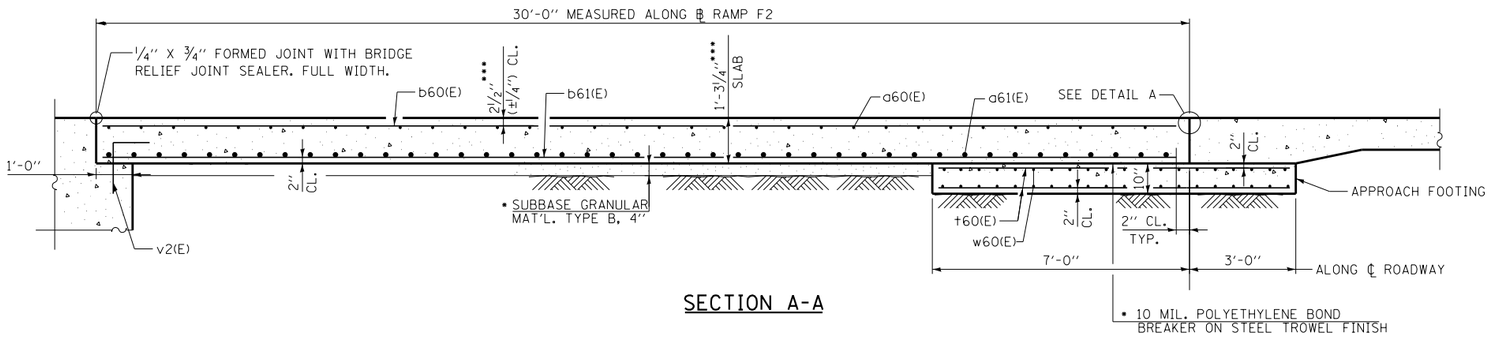
REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101
SOUTH APPROACH SLAB PLAN

SHEET SC - 83 OF 234

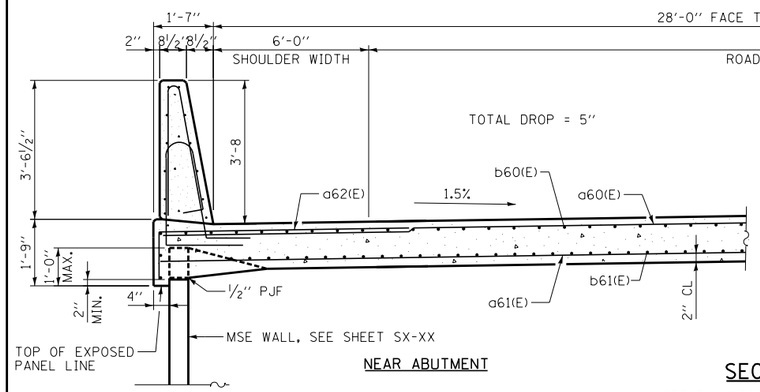
358 OF 606



SECTION A-A

NOTES:

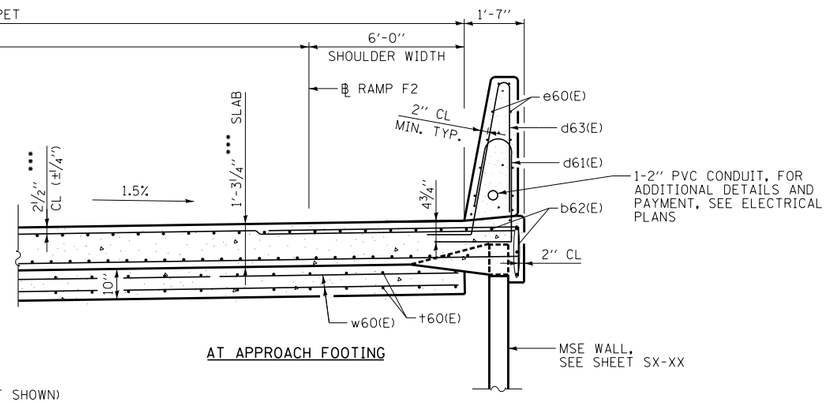
1. PARAPET CONCRETE SHALL BE PAID FOR AS CONCRETE SUPERSTRUCTURE.
2. APPROACH SLAB SHALL BE PAID FOR AS CONCRETE SUPERSTRUCTURE (APPROACH SLAB).
3. APPROACH FOOTING CONCRETE SHALL BE PAID FOR AS CONCRETE STRUCTURES.
4. THE APPROACH FOOTING MAXIMUM APPLIED SERVICE BEARING PRESSURE (QMAX) = 2.0 KSF.
5. COST OF EXCAVATION FOR APPROACH FOOTING INCLUDED WITH CONCRETE STRUCTURES.



NEAR ABUTMENT

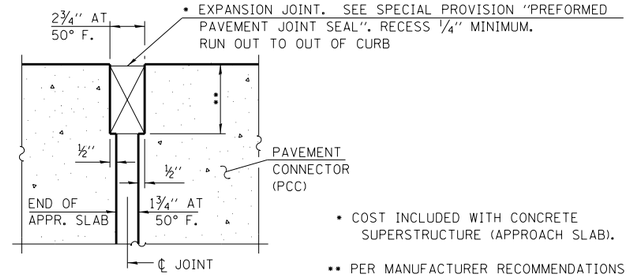
SECTION B-B

(SEE PLAN FOR DIMENSIONS NOT SHOWN)



AT APPROACH FOOTING

*** PRIOR TO GRINDING

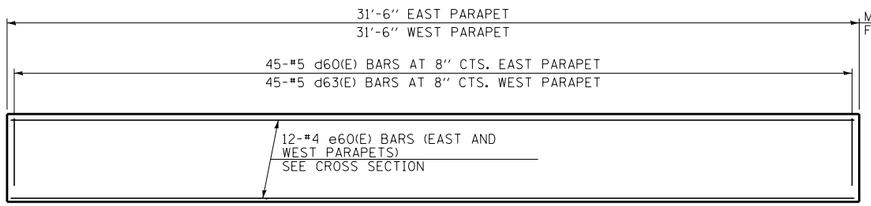


• COST INCLUDED WITH CONCRETE SUPERSTRUCTURE (APPROACH SLAB).

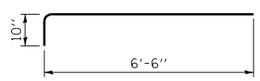
•• PER MANUFACTURER RECOMMENDATIONS

DETAIL A

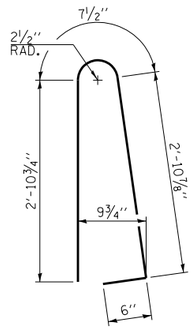
(DETAIL A SHOWN, APPLIES TO HIGHWAY STANDARD 420401 ONLY. DETAIL A FOR PAVEMENT CONNECTOR (HMA) MAY BE FOUND ON HIGHWAY STANDARD 420406.)



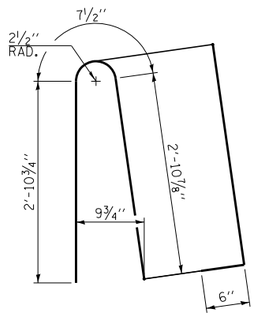
INSIDE ELEVATION OF PARAPET



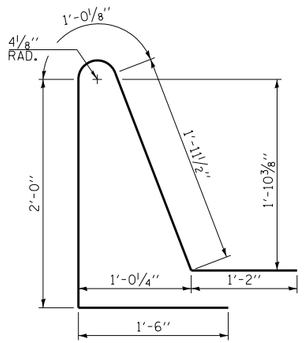
BAR a62(E)



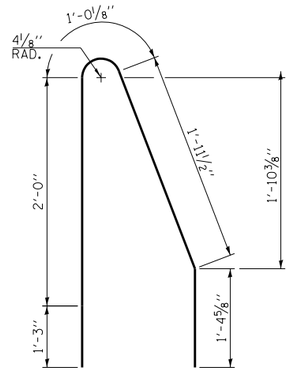
BAR d60(E)



BAR d63(E)



BAR d61(E)



BAR d62(E)

BILL OF MATERIAL

REINFORCEMENT BAR LIST

BAR	NO.	SIZE	LENGTH	SHAPE
a60(E)	46	#5	30'-10"	
a61(E)	60	#8	30'-10"	
a62(E)	92	#5	7'-4"	
b60(E)	43	#5	29'-8"	
b61(E)	67	#9	29'-10"	
b62(E)	8	#5	31'-2"	
d60(E)	45	#5	7'-0"	
d61(E)	90	#5	7'-8"	
d62(E)	4	#5	7'-8"	
d63(E)	45	#5	7'-0"	
e60(E)	24	#4	31'-2"	
†60(E)	58	#4	9'-8"	
w60(E)	40	#5	27'-8"	

ITEM	UNIT	QUANTITY
CONCRETE STRUCTURES	CU. YD.	8.6
CONCRETE SUPERSTRUCTURE	CU. YD.	8.9
CONCRETE SUPERSTRUCTURE (APPROACH SLAB)	CU. YD.	45.2
REINFORCEMENT BARS, EPOXY COATED	POUND	18,950
PROTECTIVE COAT	SQ. YD.	124
BRIDGE DECK GROOVING (LONGITUDINAL)	SQ. YD.	53
DIAMOND GRINDING (BRIDGE SECTION)	SQ. YD.	80

P:\60254057-294.5-91\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\Reference\EJMV4419-sht-appr_slabS_det.dgn
3/30/2020

DRAWN BY . . . . . MG . . . . . DATE . 3-11-2020 . .
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TranSmart/EJM
411 South Wells Street Suite 1000
Chicago, Illinois 60607

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

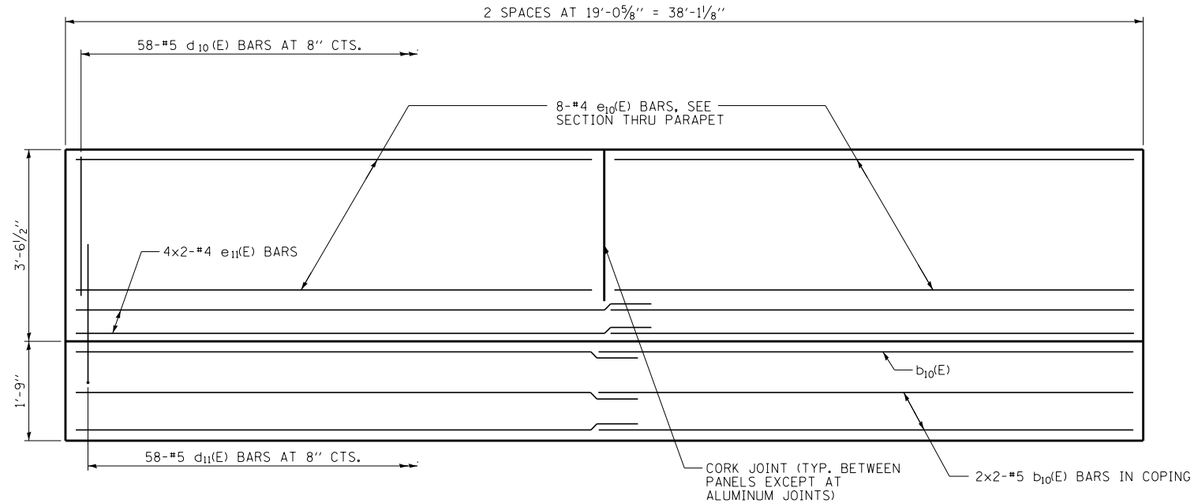
REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101
SOUTH APPROACH SLAB DETAILS

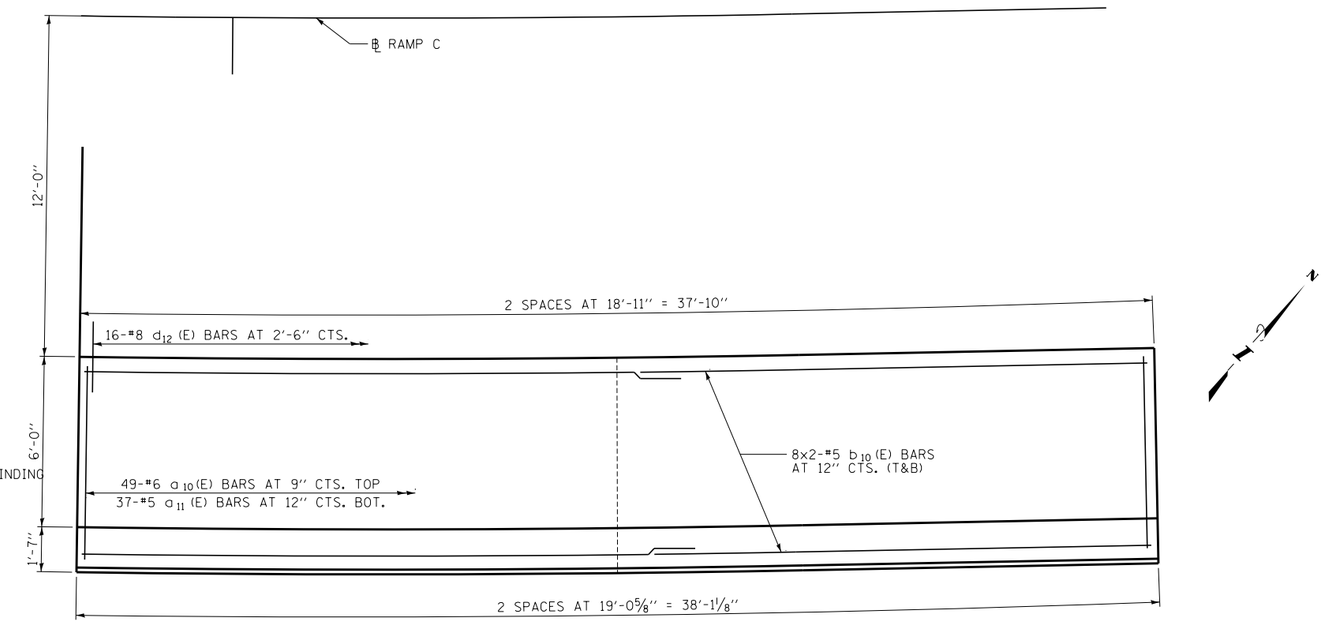
SHEET SC - 84 OF 234

359 OF 606

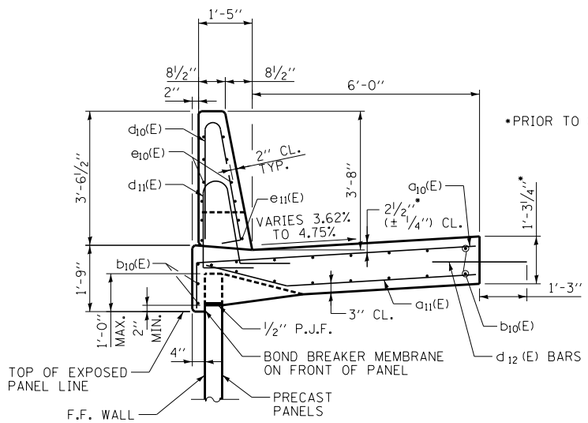


ELEVATION

(LOOKING AT F.F. OF WALL)



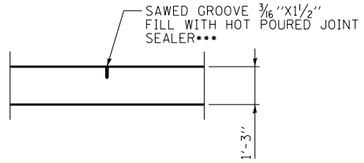
PLAN



SECTION THRU E. ABUT ANCHORAGE SLAB

P:\682540\57-294.5-9\STRUCTURAL\RESTART.2018\Ramp C over I-57 and I-294\016201.5_AbutE-4inchSlab.dgn
3/30/2020

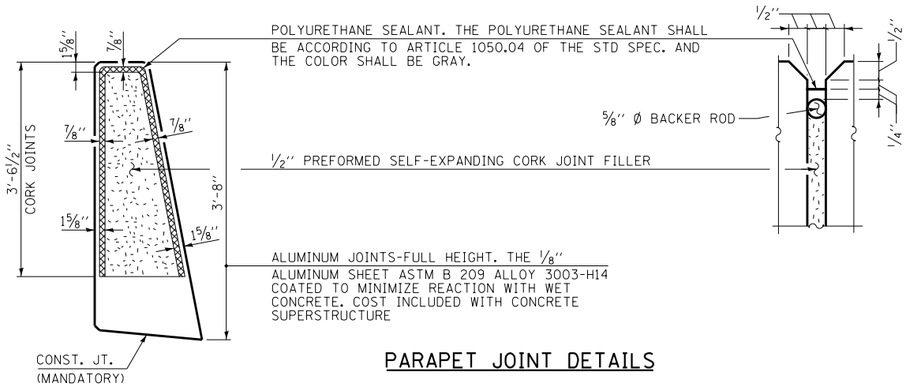
DRAWN BY . . . PAF	DATE . 4-3-2020	T·Y·LIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	REVISIONS NO. / DATE / DESCRIPTION	CONTRACT I-19-4495 I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 116) E. ABUT. ANCHORAGE SLAB	SHEET SC - 85 OF 234 360 OF 606
CHECKED BY . . . SP	SCALE . NONE					



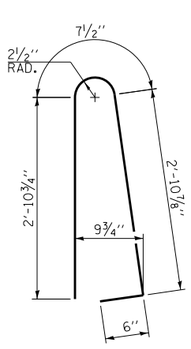
SECTION THRU TRANSVERSE CONTRACTION JOINT

••• COST OF SAWCUTTING AND JOINT SEALER INCLUDED IN THE COST OF CONCRETE SUPERSTRUCTURE

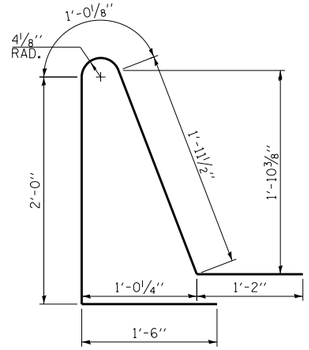
TRANSVERSE CONTRACTION JOINT SHALL BE ACCORDING TO ARTICLE 420.05 AND 1050.02 OF THE STD. SPEC.



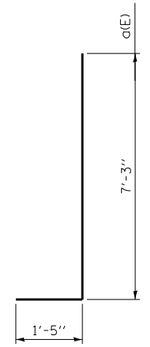
PARAPET JOINT DETAILS



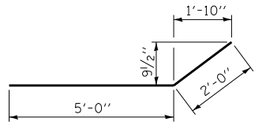
BAR d 10 (E)



BAR d11(E)



BAR a 10 (E)



BAR a 11 (E)

REINFORCEMENT BAR LIST

BAR	NO.	SIZE	LENGTH	SHAPE
a_{10}(E)	49	#6	8'-8"	
a_{11}(E)	37	#5	7'-0"	
b_{10}(E)	36	#5	20'-5"	
d_{10}(E)	58	#5	6'-11"	
d_{11}(E)	58	#5	7'-8"	
d_{12}(E)	16	#8	2'-6"	
e_{10}(E)	16	#4	18'-9"	
e_{11}(E)	8	#4	20'-1"	

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
CONCRETE SUPERSTRUCTURE	CU. YD.	18.8
REINFORCEMENT BARS, EPOXY COATED	POUND	2,980
PROTECTIVE COAT	SQ. YD.	45

MINIMUM BAR LAP

BAR	LAP
#4	2'-5"
#5	3'-0"
#6	3'-7"

P:\60254040\57-294.5-91\STRUCTURAL\RESTART.2018\Ramp C over I-57 and I-294\0162101.5_AbutE-AnchDtls.dgn
3/30/2020

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CHECKED BY . . . SP . . . . .

DATE . 4-3-2020 . . .
SCALE . NONE . . . . .

TY·LIN INTERNATIONAL

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

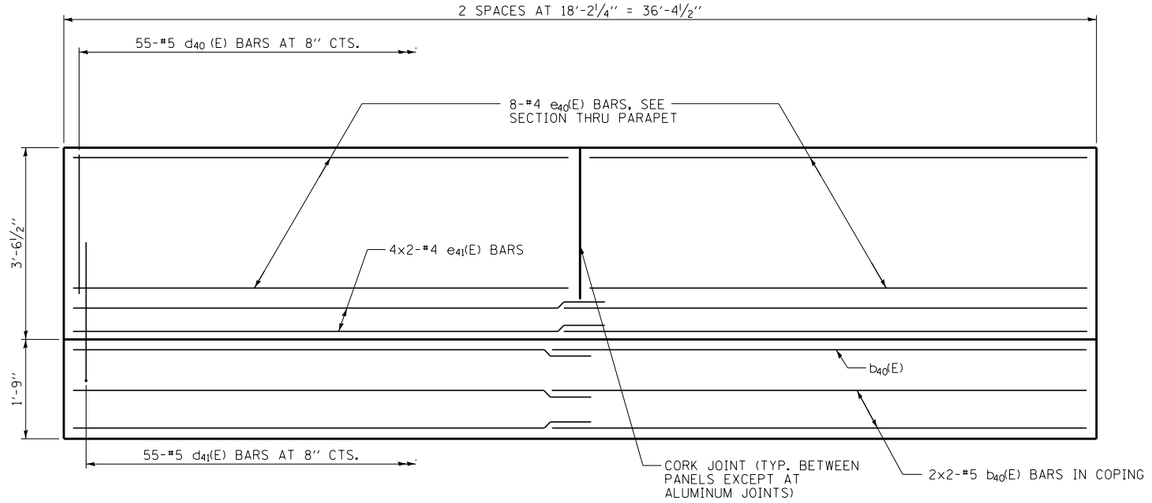
REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
E. ABUT ANCHORAGE SLAB DETAILS

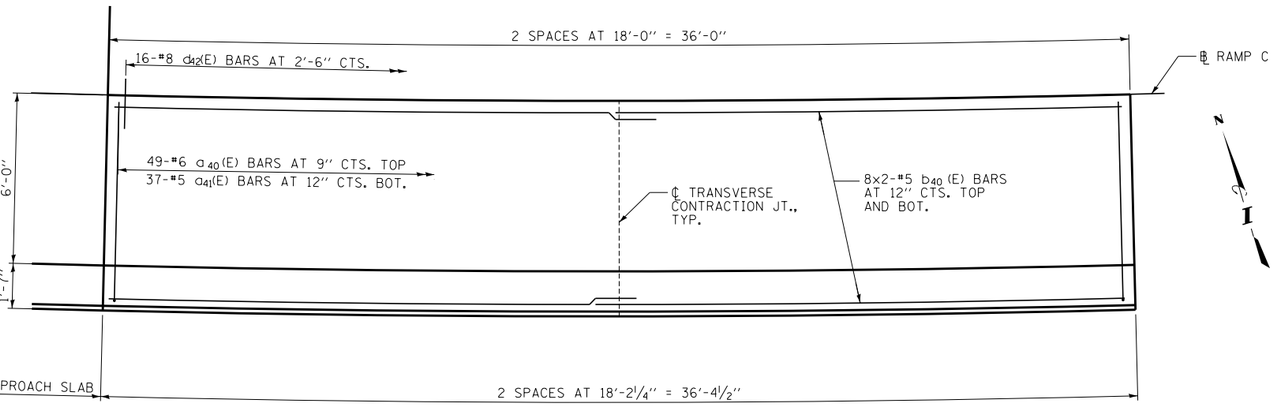
SHEET SC - 86 OF 234

361 OF 606

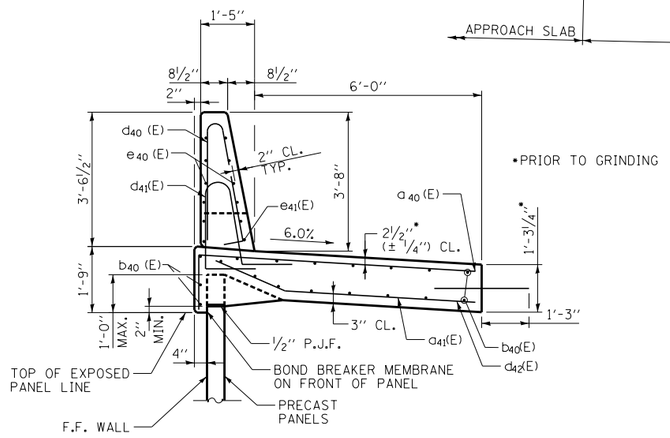


ELEVATION

(LOOKING AT F.F. OF WALL)



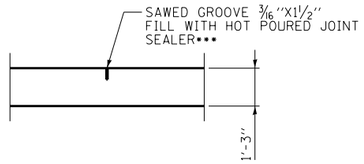
PLAN



SECTION THRU W. ABUT ANCHORAGE SLAB

P:\68254\057-294.5-91\STRUCTURAL_RESTART_2018\Ramp C over I-57 and I-294\016\2101.5_AbutW-AnchSlab1.dgn
3/30/2020

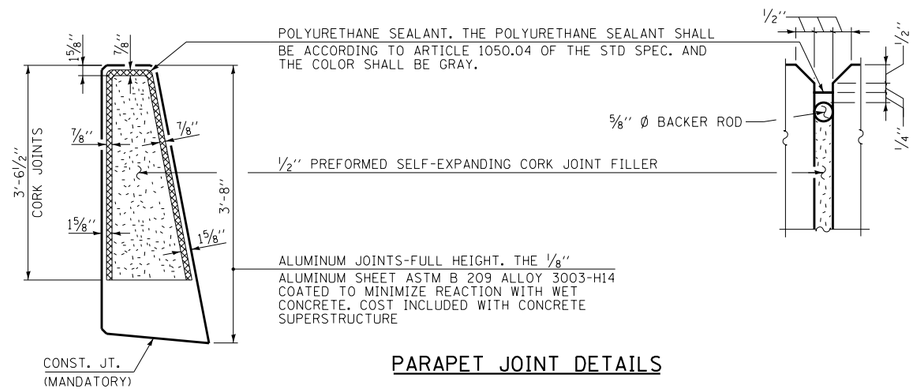
DRAWN BY . . . ME	DATE . 4-3-2020	TYLIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	REVISIONS NO. / DATE / DESCRIPTION	CONTRACT I-19-4495	SHEET 8C - 87 OF 234
CHECKED BY . . . SP	SCALE . NONE				I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 116) W. ABUT. ANCHORAGE SLAB	362 OF 606



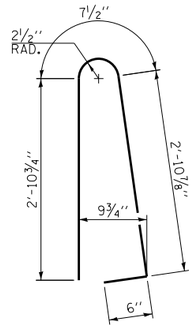
SECTION THRU TRANSVERSE CONTRACTION JOINT

••• COST OF SAWCUTTING AND JOINT SEALER INCLUDED IN THE COST OF CONCRETE SUPERSTRUCTURE

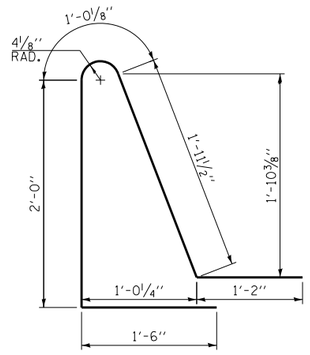
TRANSVERSE CONTRACTION JOINT SHALL BE ACCORDING TO ARTICLE 420.05 AND 1050.02 OF THE STD. SPEC.



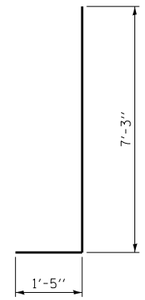
PARAPET JOINT DETAILS



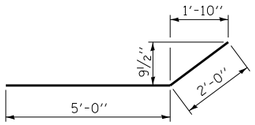
BAR d 40(E)



BAR d41(E)



BAR a 40 (E)



BAR a 41 (E)

REINFORCEMENT BAR LIST

BAR	NO.	SIZE	LENGTH	SHAPE
a_{40}(E)	49	#6	8'-8"	
a_{41}(E)	37	#5	7'-0"	
b_{40}(E)	36	#5	19'-7"	
d_{40}(E)	55	#5	6'-11"	
d_{41}(E)	55	#5	7'-8"	
d_{42}(E)	16	#8	2'-6"	
e_{40}(E)	16	#4	17'-10"	
e_{41}(E)	8	#4	19'-3"	

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
CONCRETE SUPERSTRUCTURE	CU. YD.	17.8
REINFORCEMENT BARS, EPOXY COATED	POUND	2890
PROTECTIVE COAT	SQ. YD.	42

MINIMUM BAR LAP

BAR	LAP
#4	2'-5"
#5	3'-0"
#6	3'-7"

P:\68254057-294_5-91\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\B162101.5_AbutW-AnchDtls.dgn
3/30/2020

DRAWN BY . . . . ME . . . . .
CHECKED BY . . . . SP . . . . .

DATE . 4-3-2020 . . .
SCALE . NONE . . . . .

T·Y·LIN INTERNATIONAL

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

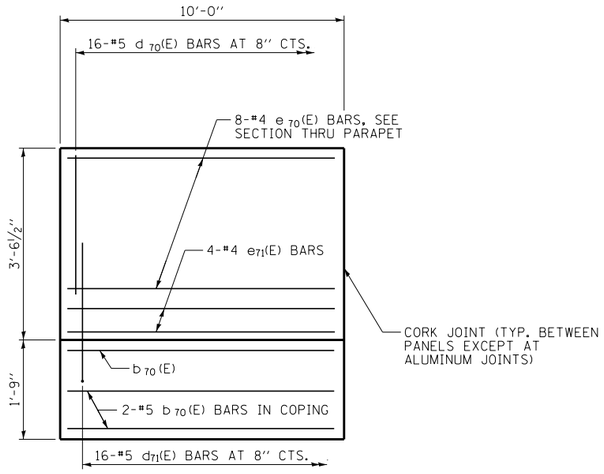
REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
W. ABUT ANCHORAGE SLAB DETAILS

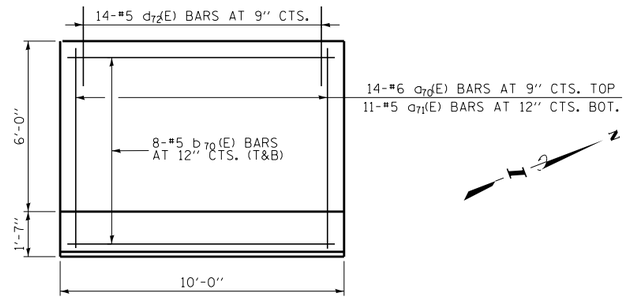
SHEET SC - 88 OF 234

363 OF 606

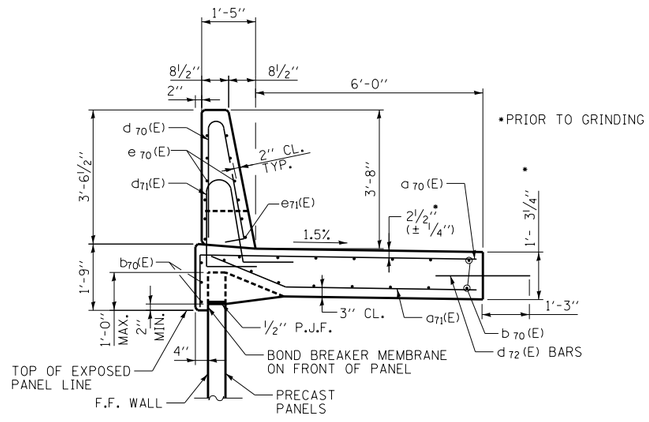


ELEVATION

(LOOKING AT F.F. OF WALL)



PLAN



SECTION THRU S. ABUT ANCHORAGE SLAB 1

NOTE

1. FOUR ADDITIONAL #5 d(E) BARS AT 11" CTS. TO BE PLACED BETWEEN #5 d(E) BARS AT EACH PARAPET END AND EITHER SIDE OF FULL HEIGHT PARAPET JOINTS. (6 LOCATIONS)

P:\60254057-294.S-91\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\01621O1.5_AbutS-AnchSlab1.dgn
3/30/2020

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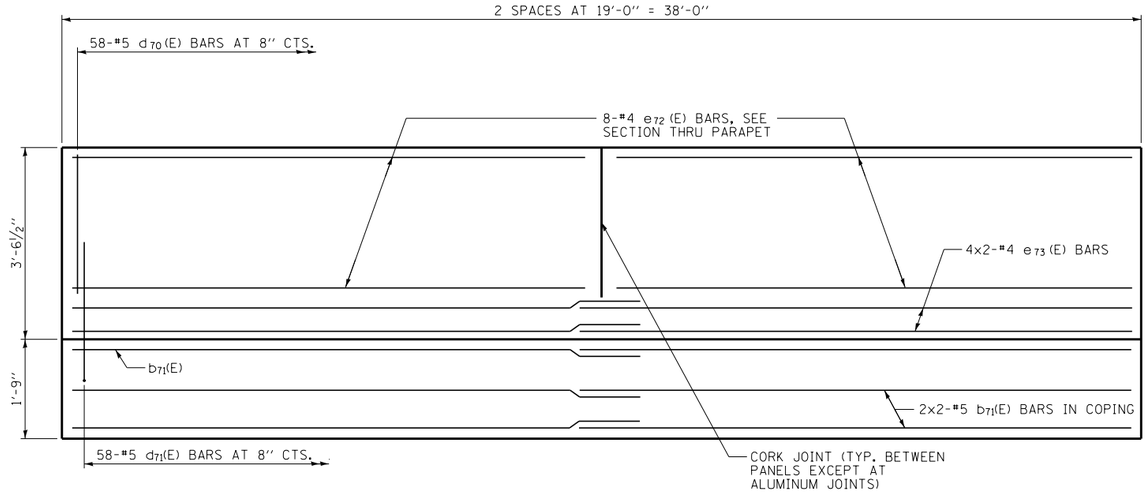
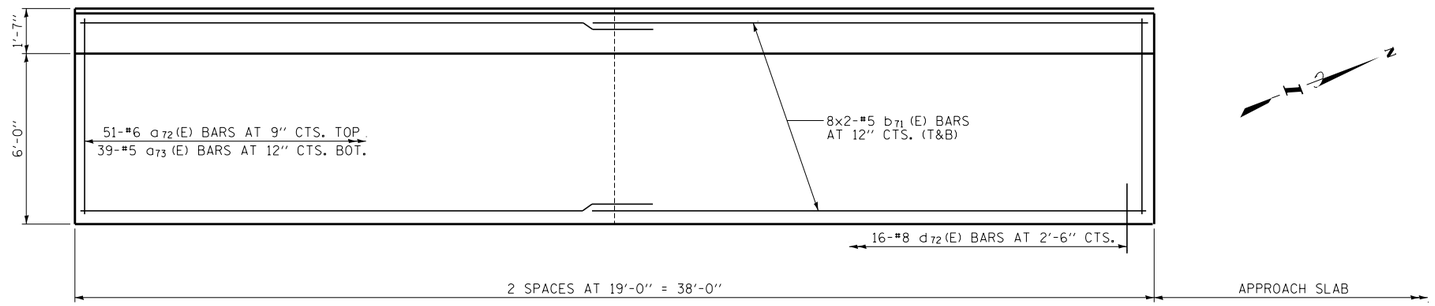
CHECKED BY . . . SP	SCALE . NONE						I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 116) S. ABUT. ANCHORAGE SLAB-1	364 OF 606

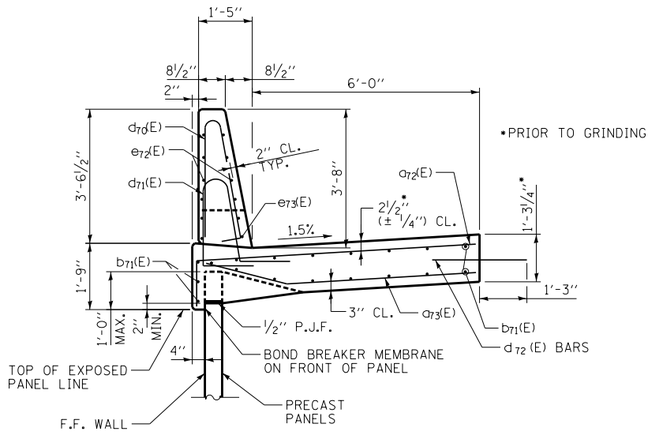


ELEVATION

(LOOKING AT F.F. OF WALL)



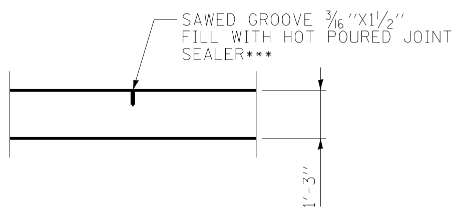
PLAN



SECTION THRU S. ABUT ANCHORAGE SLAB 2

DRAWN BY . . . PAF	DATE . 4-3-2020	T·Y·LIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	REVISIONS NO. / DATE / DESCRIPTION	CONTRACT I-19-4495	SHEET SC - 90 OF 234
CHECKED BY . . . SP	SCALE . NONE				I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 16) S. ABUT. ANCHORAGE SLAB-2	365 OF 606

P:\60254A0\57-294_5-9\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\016210I_5_AbutS-AnchSlab2.dgn
3/30/2020



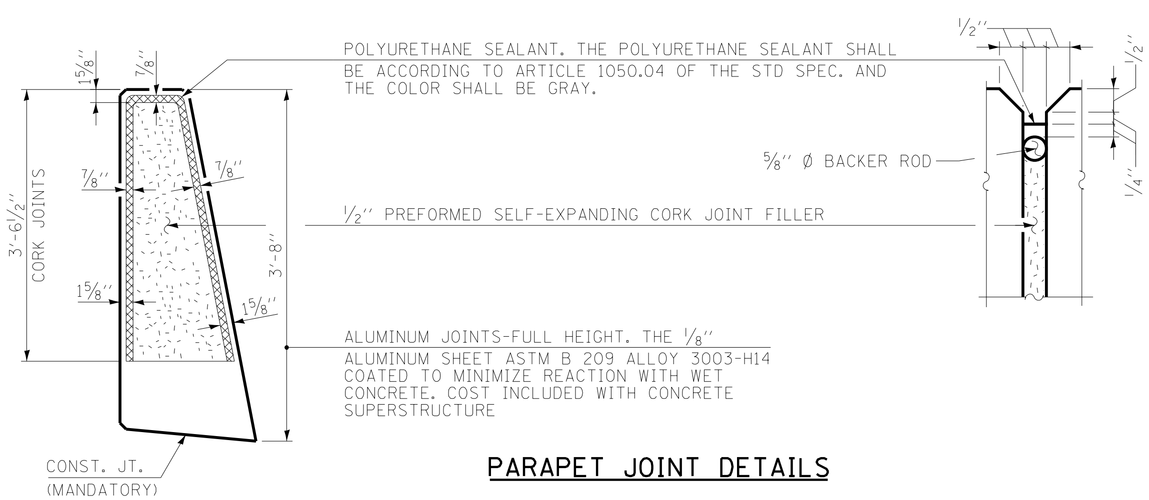
SECTION THRU TRANSVERSE CONTRACTION JOINT

*** COST OF SAWCUTTING AND JOINT SEALER INCLUDED IN THE COST OF CONCRETE SUPERSTRUCTURE

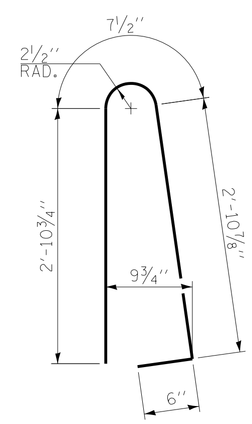
TRANSVERSE CONTRACTION JOINT SHALL BE ACCORDING TO ARTICLE 420.05 AND 1050.02 OF THE STD. SPEC.

REINFORCEMENT BAR LIST				
BAR	NO.	SIZE	LENGTH	SHAPE
a_{70}(E)	14	#6	8'-8"	
a_{71}(E)	11	#5	7'-0"	
a_{72}(E)	51	#6	8'-8"	
a_{73}(E)	39	#5	7'-0"	
b_{70}(E)	18	#5	9'-8"	
b_{71}(E)	36	#5	20'-2"	
d_{70}(E)	98	#5	6'-11"	
d_{71}(E)	98	#5	7'-8"	
d_{72}(E)	30	#5	2'-6"	
e_{70}(E)	8	#4	9'-8"	
e_{71}(E)	4	#4	9'-8"	
e_{72}(E)	16	#4	18-'8"	
e_{73}(E)	8	#4	19'-11"	

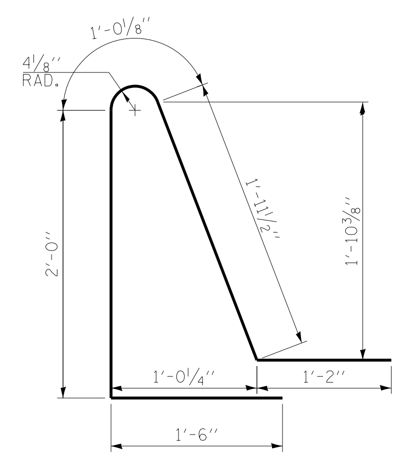
ITEM	UNIT	QUANTITY
CONCRETE SUPERSTRUCTURE	CU. YD.	23.8
REINFORCEMENT BARS, EPOXY COATED	POUND	4000
PROTECTIVE COAT	SQ. YD.	56



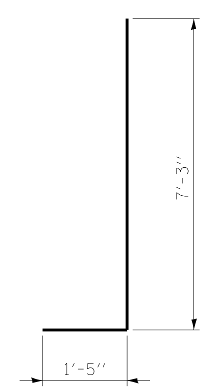
PARAPET JOINT DETAILS



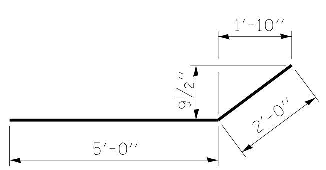
BAR d_{70}(E)



BAR d_{71}(E)



BAR a_{70}(E), a_{72}(E)



BAR a_{71}(E), a_{73}(E)

MINIMUM BAR LAP

BAR	LAP
#4	2'-5"
#5	3'-0"
#6	3'-7"

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3/30/2020

DRAWN BY PAF	DATE 4-3-2020	TYLIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515
CHECKED BY SP	SCALE NONE		

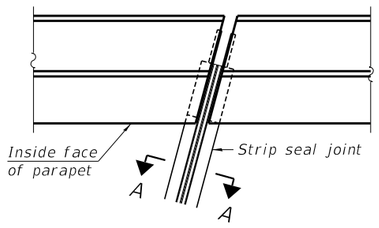
REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

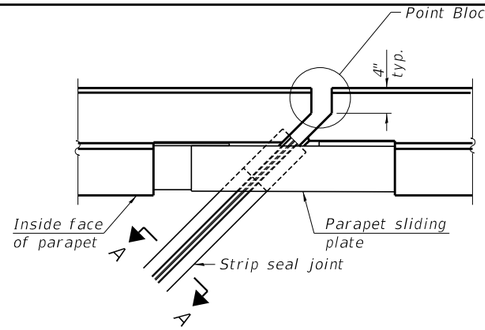
I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
S. ABUT ANCHORAGE SLAB DETAILS

SHEET SC - 91 OF 234

366 OF 606

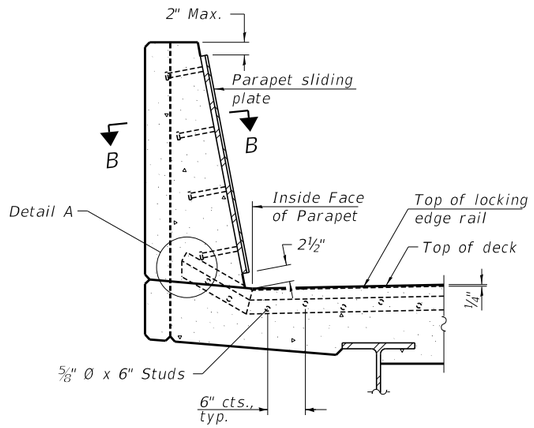


FOR SKEWS ≤ 30°



FOR SKEWS > 30°

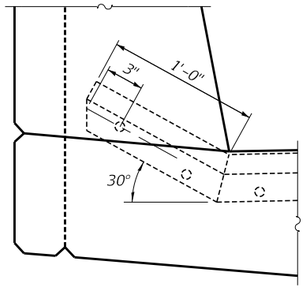
PLAN AT PARAPET



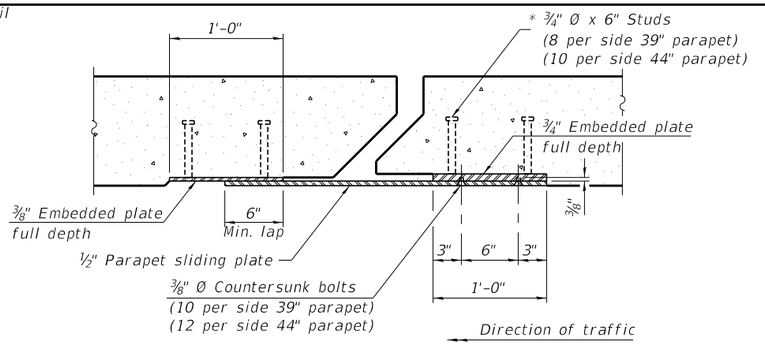
SECTION AT PARAPET

(Skews > 30° shown. Skews ≤ 30° similar except as shown in plan view.)

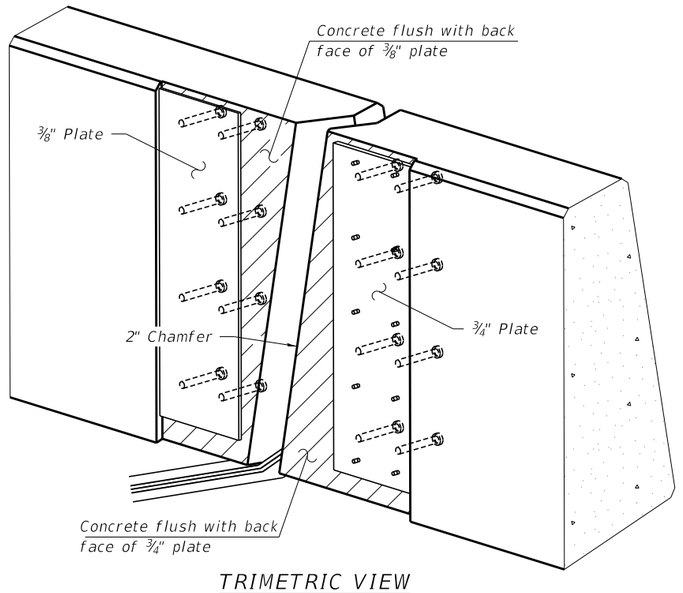
*** Prior to Grinding



DETAIL A

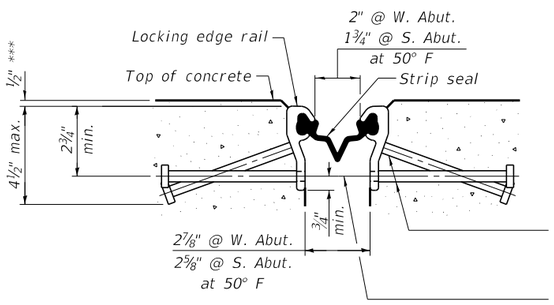


SECTION B-B

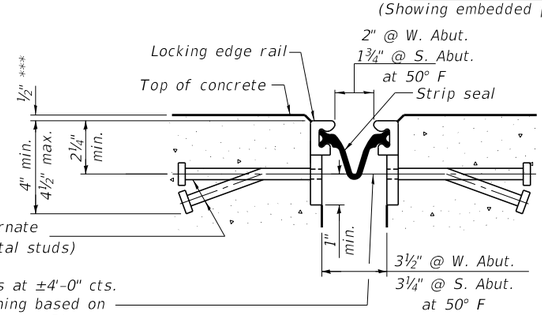


TRIMETRIC VIEW

(Showing embedded plates only)



SHOWING ROLLED RAIL JOINT



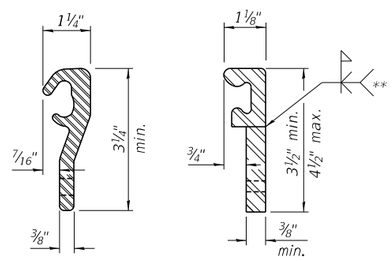
SHOWING WELDED RAIL JOINT

* ⅝" Ø x 6" studs @ 6" cts. (alternate angled/bent studs with horizontal studs)

⅜" ϕ threaded rods in 7/16" ϕ holes at ±4'-0" cts. for holding the proper joint opening based on the temperature during the deck pour. Place to miss studs. All rods shall be burned, or sawed off flush with the plates after concrete is set.

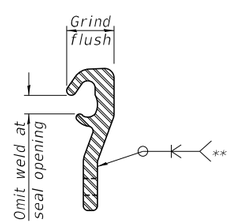
SECTION A-A

* Granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs., automatically end welded.



LOCKING EDGE RAILS

** Back gouge not required if complete joint penetration is verified by mock-up.



LOCKING EDGE RAIL SPLICE

The inside of the locking edge rail groove shall be free of weld residue. Rolled rail shown, welded rail similar.

Notes:

The strip seal shall be made continuous and shall have a minimum thickness of ¼". 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.

The locking edge rails depicted are 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. Locking edge rails may exceed the 4½" maximum depth provided the anchorage system is revised according to the manufacturer's recommendation.

The manufacturer's recommended installation methods shall be followed.

All steel components shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications.

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.

Cost of parapet sliding plates, embedded plates, and anchorage studs included with Preformed Joint Strip Seal.

39" constant slope barrier shown, 44" constant slope barrier similar as noted.

The concrete opening below the strip seal will vary based on the locking edge rail chosen by the Contractor. Deck and parapet lengths shown elsewhere in the plans are dimensioned to the concrete opening, not the joint opening, and are based on the rolled locking edge rail. If the Contractor elects to use a different locking edge rail, dimensional adjustments may be required. One exception to this would be the strip seal joint at the end of the precast bridge approach slab. For these cases the pavement connector length shall be adjusted, not the length of the bridge approach slab.

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	73

EJ-SS

1-1-2020

DRAWN BY VPS	DATE 4-3-2020	TYLIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	CONTRACT I-19-4495	SHEET SC - 92 OF 234
CHECKED BY SP	SCALE NONE		REVISIONS NO. / DATE / DESCRIPTION	I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 116) PREFORMED JOINT STRIP SEAL	367 OF 606

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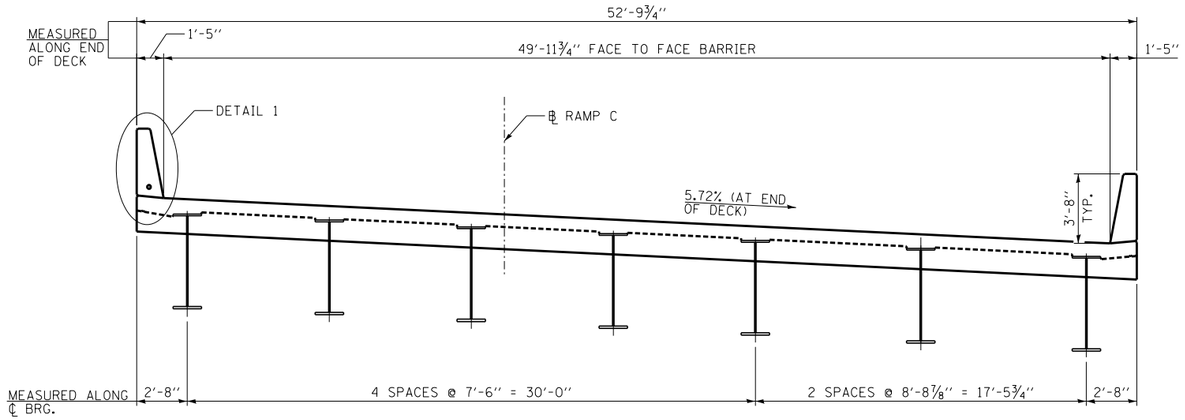
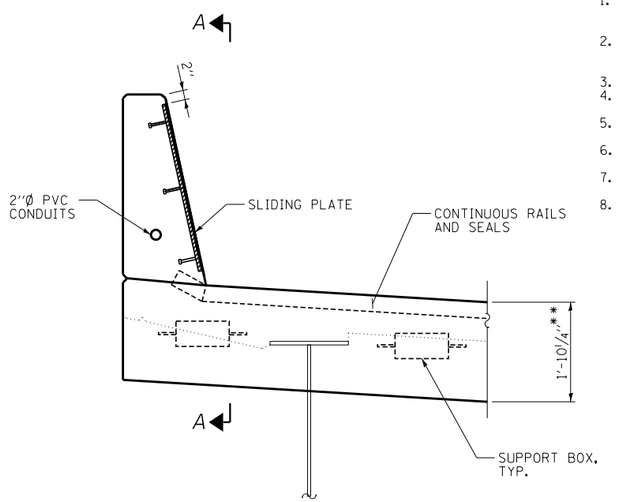
3/30/2020



DECK CROSS SECTION - EAST ABUTMENT
(LOOKING UPSTATION)



DETAIL 1

NOTES:
1. THE STRUCTURAL STEEL PLATES OF THE BARRIER PLATE ASSEMBLIES SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M270 GRADE 36, AND HOT-DIPPED GALVANIZED ACCORDING TO AASHTO M111 AFTER FABRICATION.
2. JOINT OPENING SHALL BE ADJUSTED ACCORDING TO ARTICLE 520.04 OF THE STANDARD SPECIFICATIONS WHEN THE CONCRETE BLOCKOUT IS CAST AT AN AMBIENT TEMPERATURE OTHER THAN 50° F.
3. COUNTERSUNK BOLTS SHALL BE IN ACCORDANCE WITH ASTM A307, GRADE A.
4. COUNTERSUNK BOLTS AND CONCRETE INSERTS SHALL BE HOT-DIPPED GALVANIZED ACCORDING TO AASHTO M232.
5. THE TOP SURFACE OF THE SIDEWALK SLIDING PLATES SHALL HAVE A RAISED PATTERN ACCORDING TO ASTM A786.
6. ¾''Ø X 6'' STUDS SHALL BE GRANULAR OR SOLID FLUX FILLED HEADED STUDS CONFORMING TO ARTICLE 1006.32 OF THE STANDARD SPECIFICATIONS.
7. APPLY ANTI-SEIZE COMPOUND TO ALL COUNTERSUNK BOLTS AND ANCHORS IN PARAPET EMBEDDED PLATE.
8. MODULAR EXPANSION JOINTS SHALL BE ASSEMBLED IN THEIR FINAL RELATIVE POSITION WITH THE ENDS IN PLACE FOR SHOP INSPECTIONS AND ACCEPTANCE.

REQUIRED MOVEMENT
TOTAL LONGITUDINAL (OPEN/CLOSE)

LOCATION	AMOUNT	JOINT TYPE
EAST ABUTMENT	5''	SWIVEL

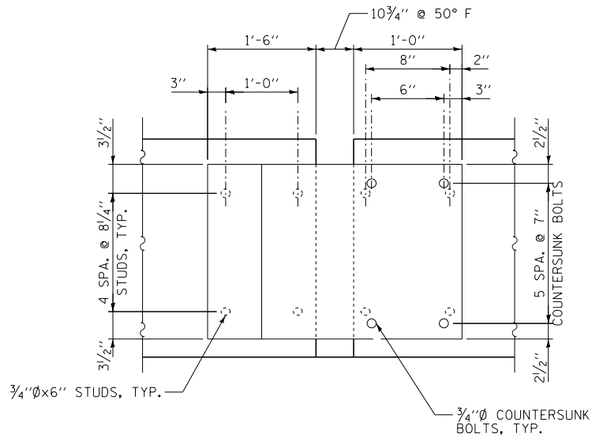
BILL OF MATERIAL

ITEM	UNIT	TOTAL
MODULAR EXPANSION JOINT-SWIVEL 6''	FOOT	50

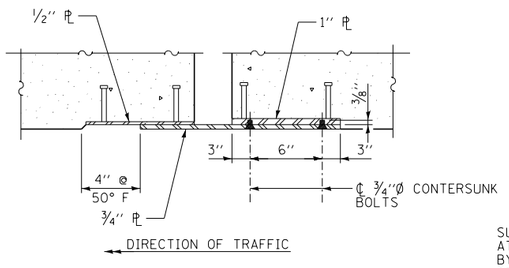
* CONTRACTOR TO VERIFY NUMBER OF RAILS, BLOCKOUT DIMENSIONS AND JOINT OPENING WITH JOINT MANUFACTURER. SEE SPECIAL PROVISION FOR MODULAR EXPANSION JOINT.

** PRIOR TO GRINDING

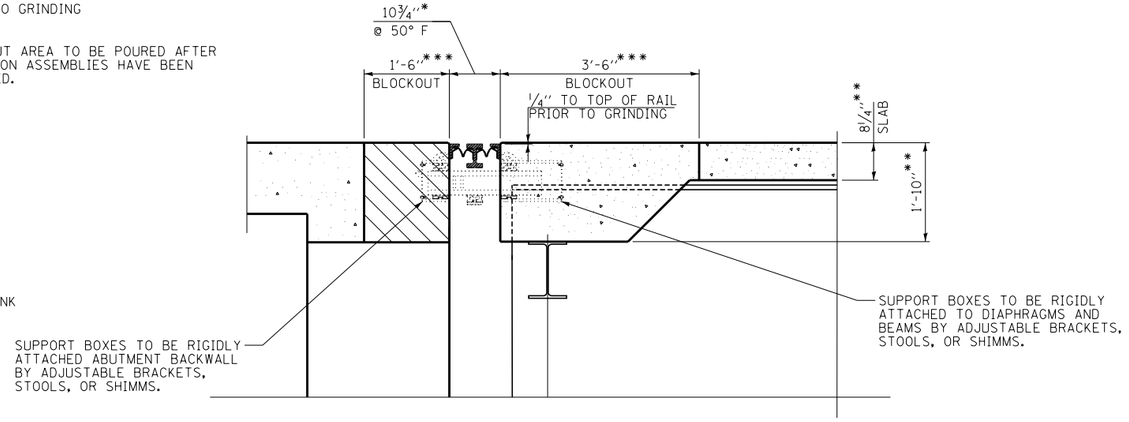
*** BLOCKOUT AREA TO BE POURED AFTER EXPANSION ASSEMBLIES HAVE BEEN ADJUSTED.



VIEW A-A



HORIZONTAL SECTION OF PARAPET AT JOINT



SECTION THRU END OF DECK AT ABUTMENT

MODULAR JOINT NOTES:

1. CONTRACTOR SHALL USE THE APPROVED JOINT SHOP DRAWINGS WHEN LAYING OUT THE DECK REBAR.
2. PRIOR TO THE PLACEMENT OF THE JOINT BLOCK-OUT, THE CONTRACTOR SHALL COORDINATE WITH THE MODULAR JOINT MANUFACTURER TO ENSURE THAT THE JOINT WILL BE PROPERLY SUPPORTED AND THAT THE REINFORCEMENT BARS WILL NOT INTERFERE WITH THE JOINT COMPONENTS. ANY NECESSARY ADJUSTMENTS TO THE REINFORCEMENT LAYOUT SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

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3/30/2020

DRAWN BY . . . . RH
CHECKED BY . . . SP
DATE . 4-3-2020
SCALE . NONE

TY·LIN INTERNATIONAL

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
MODULAR EXP. JOINT. E. ABUT.

SHEET SC - 93 OF 234

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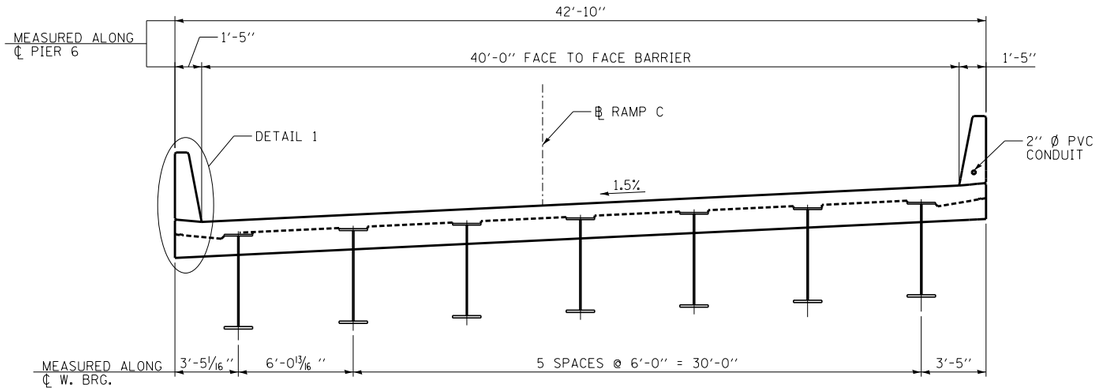
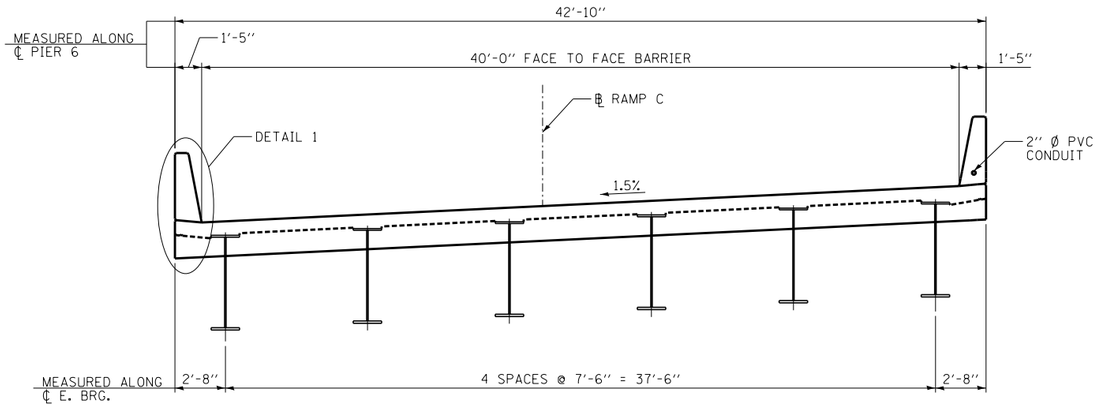
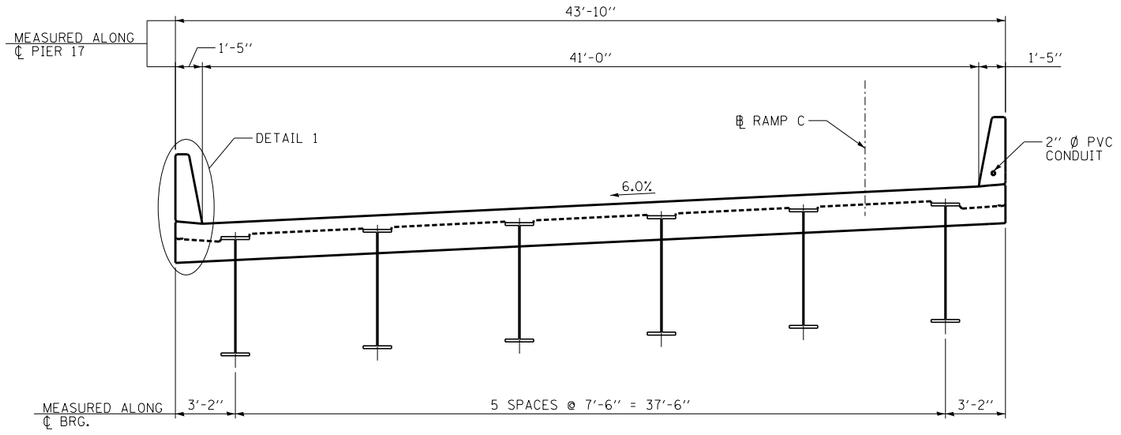


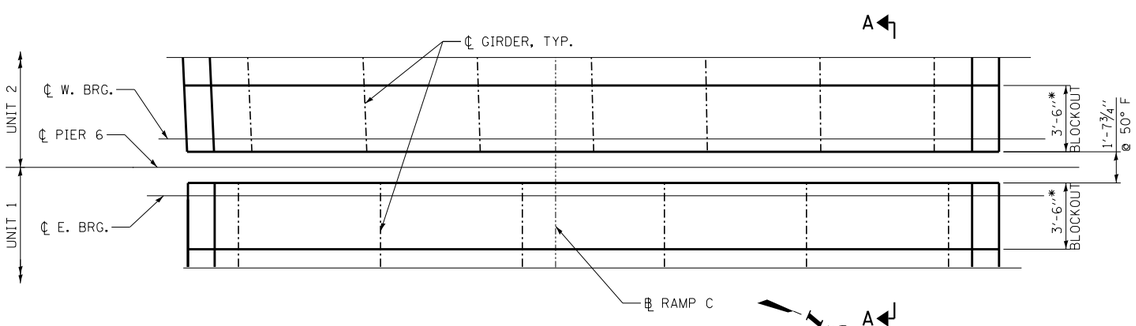
WEST OF JOINT DECK CROSS SECTION - PIER 6
(LOOKING UPSTATION)



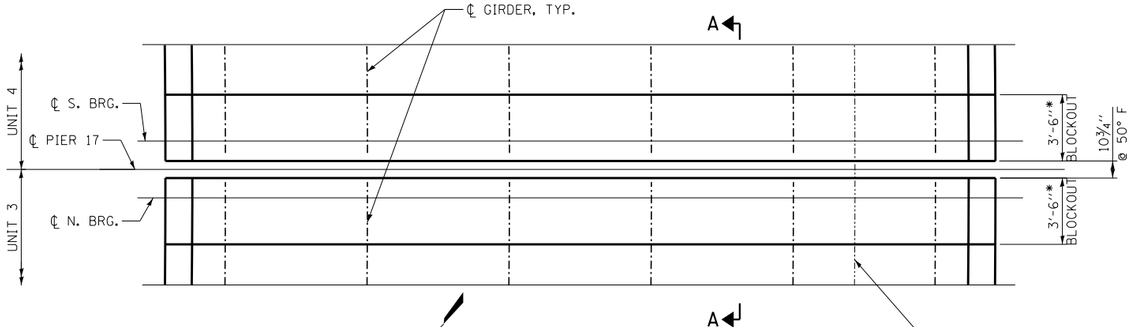
EAST OF JOINT DECK CROSS SECTION - PIER 6
(LOOKING UPSTATION)



DECK CROSS SECTION - PIER 17
(LOOKING UPSTATION)



PLAN - PIER 6



PLAN - PIER 17

* BLOCKOUT AREA TO BE POURED AFTER EXPANSION ASSEMBLIES HAVE BEEN ADJUSTED.

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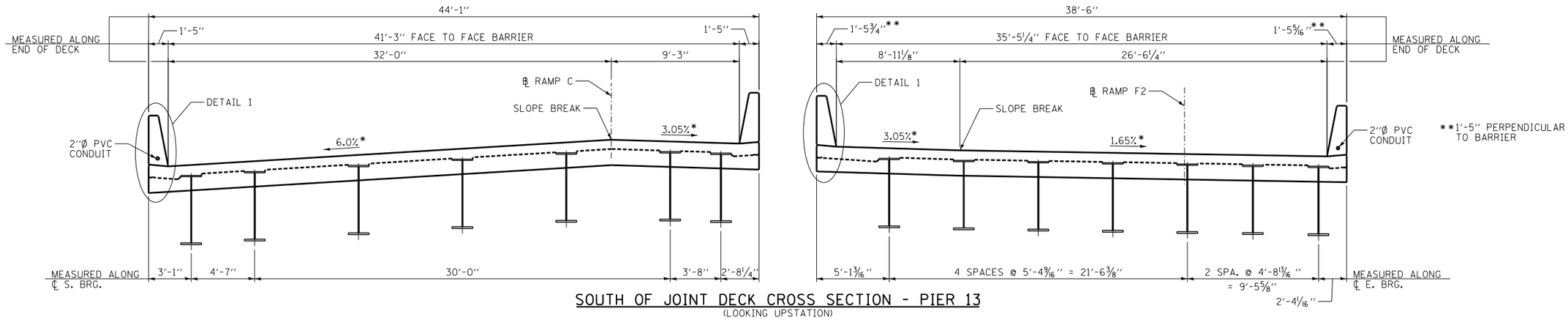
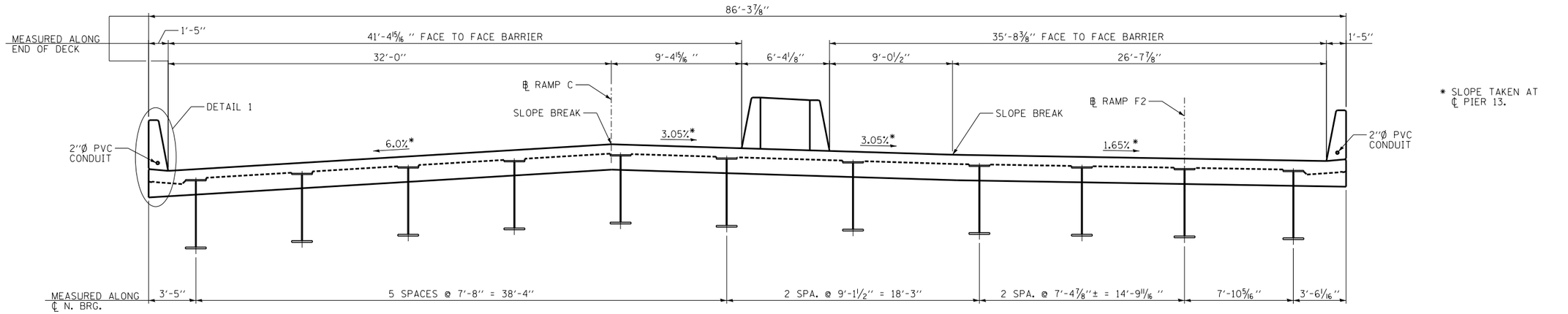
3/30/2020

DRAWN BY . . . RH	DATE . 4-3-2020	T·Y·LIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	REVISIONS NO. / DATE / DESCRIPTION	CONTRACT I-19-4495 I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 116) MODULAR EXP. JT. PIERS (1 OF 3)	SHEET SC - 94 OF 234 369 OF 606
CHECKED BY . . . SP	SCALE . NONE					



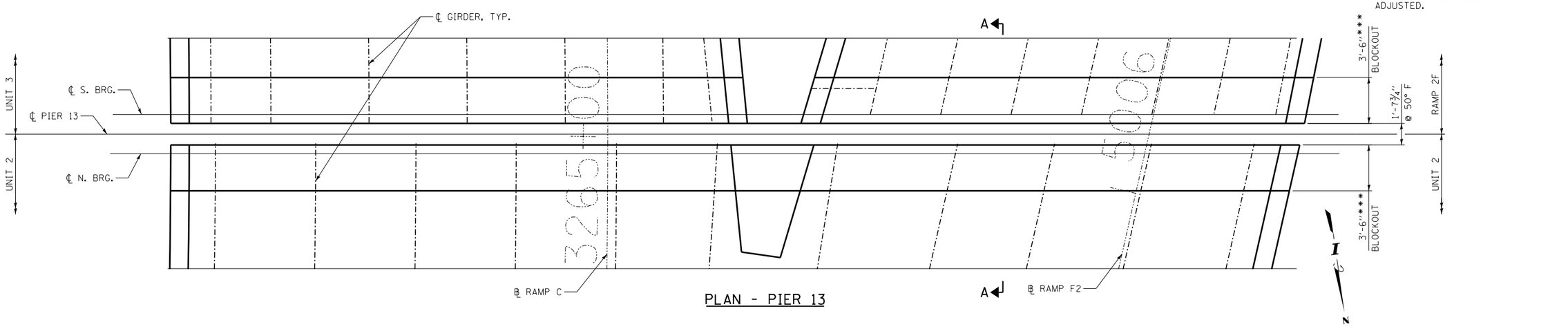
SOUTH OF JOINT DECK CROSS SECTION - PIER 13

(LOOKING UPSTATION)



NORTH OF JOINT DECK CROSS SECTION - PIER 13

(LOOKING UPSTATION)



PLAN - PIER 13

DRAWN BY . . . . RH	DATE . 4-3-2020	TYLIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	REVISIONS NO.	DATE	DESCRIPTION	CONTRACT I-19-4495
CHECKED BY . . . SP	SCALE . NONE						I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 116) MODULAR EXP. JT. PIERS (2 OF 3)

SHEET SC - 95 OF 234

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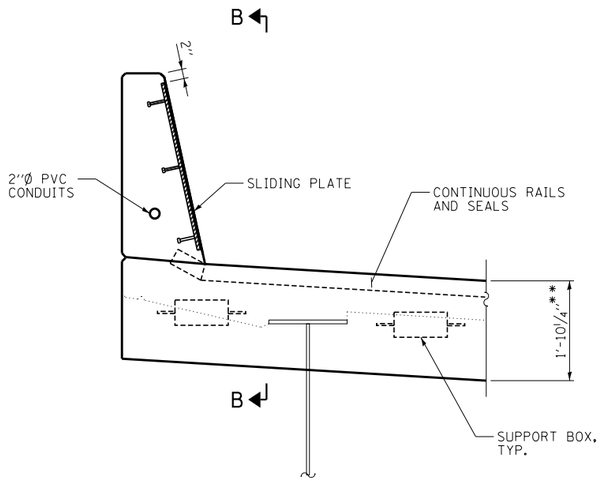
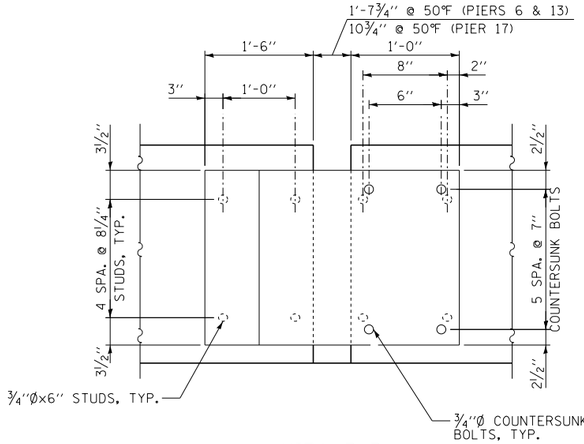
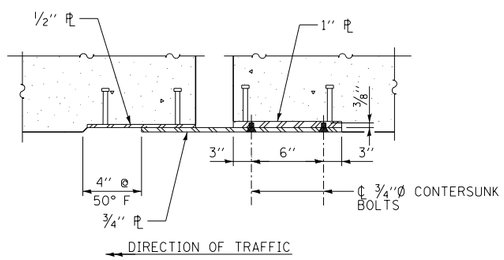
P:\682540\57-294.5-9\STRUCTURAL\RESTART.2018\Ramp C over I-57 and I-294\016210I.5_Modular Expansion joint_Piers 2 of 3.dgn
3/30/2020



DETAIL 1



VIEW B-B



HORIZONTAL SECTION OF PARAPET AT JOINT

* CONTRACTOR TO VERIFY NUMBER OF RAILS, BLOCKOUT DIMENSIONS AND JOINT OPENING WITH JOINT MANUFACTURER. SEE SPECIAL PROVISION FOR MODULAR EXPANSION JOINT.

** PRIOR TO GRINDING

**** BLOCKOUT AREA TO BE POURED AFTER EXPANSION ASSEMBLIES HAVE BEEN ADJUSTED.

NOTES:
1. THE STRUCTURAL STEEL PLATES OF THE BARRIER PLATE ASSEMBLIES SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M270 GRADE 36, AND HOT-DIPPED GALVANIZED ACCORDING TO AASHTO M111 AFTER FABRICATION.
2. JOINT OPENING SHALL BE ADJUSTED ACCORDING TO ARTICLE 520.04 OF THE STANDARD SPECIFICATIONS WHEN THE CONCRETE BLOCKOUT IS CAST AT AN AMBIENT TEMPERATURE OTHER THAN 50° F.
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4. COUNTERSUNK BOLTS AND CONCRETE INSERTS SHALL BE HOT-DIPPED GALVANIZED ACCORDING TO AASHTO M232.
5. THE TOP SURFACE OF THE SIDEWALK SLIDING PLATES SHALL HAVE A RAISED PATTERN ACCORDING TO ASTM A786.
6. ¾"Ø X 6" STUDS SHALL BE GRANULAR OR SOLID FLUX FILLED HEADED STUDS CONFORMING TO ARTICLE 1006.32 OF THE STANDARD SPECIFICATIONS.
7. APPLY ANTI-SEIZE COMPOUND TO ALL COUNTERSUNK BOLTS AND ANCHORS IN PARAPET EMBEDDED PLATE.
8. MODULAR EXPANSION JOINTS SHALL BE ASSEMBLED IN THEIR FINAL RELATIVE POSITION WITH THE ENDS IN PLACE FOR SHOP INSPECTIONS AND ACCEPTANCE.

REQUIRED MOVEMENT

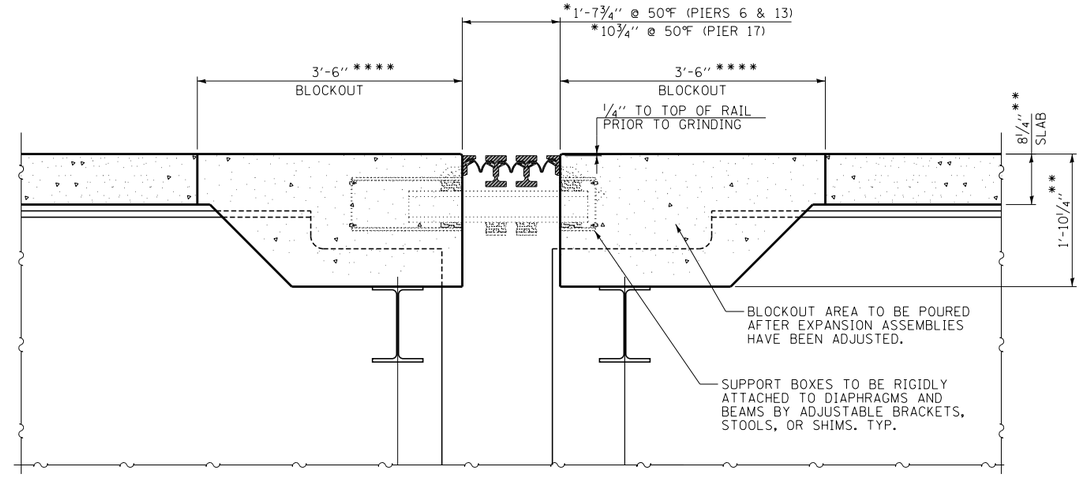
TOTAL LONGITUDINAL (OPEN/CLOSE)

LOCATION	AMOUNT	JOINT TYPE
PIER 6	10"	SWIVEL
PIER 13	10"	
PIER 17	6½"	

BILL OF MATERIAL

	ITEM	UNIT	TOTAL
	MODULAR EXPANSION JOINT-SWIVEL 6"	FOOT	41
***	MODULAR EXPANSION JOINT-SWIVEL 12"	FOOT	124

*** PIER 6 IS 40' AND PIER 13 IS 84'



SECTION A-A

MODULAR JOINT NOTES:

1. CONTRACTOR SHALL USE THE APPROVED JOINT SHOP DRAWINGS WHEN LAYING OUT THE DECK REBAR.
2. PRIOR TO THE PLACEMENT OF THE JOINT BLOCK-OUT, THE CONTRACTOR SHALL COORDINATE WITH THE MODULAR JOINT MANUFACTURER TO ENSURE THAT THE JOINT WILL BE PROPERLY SUPPORTED AND THAT THE REINFORCEMENT BARS WILL NOT INTERFERE WITH THE JOINT COMPONENTS. ANY NECESSARY ADJUSTMENTS TO THE REINFORCEMENT LAYOUT SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

P:\60254040\57-294.5-91\STRUCTURAL_RESTART.2018\Ramp C over I-57 and I-294\016(2101.5_Modular Expansion joint_Piers 3 of 3.dgn
3/30/2020

DRAWN BY . . . . RH
CHECKED BY . . . SP
DATE . 4-3-2020
SCALE . NONE

TY·LIN INTERNATIONAL

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
MODULAR EXP. JT. PIERS (3 OF 3)

SHEET SC - 96 OF 234

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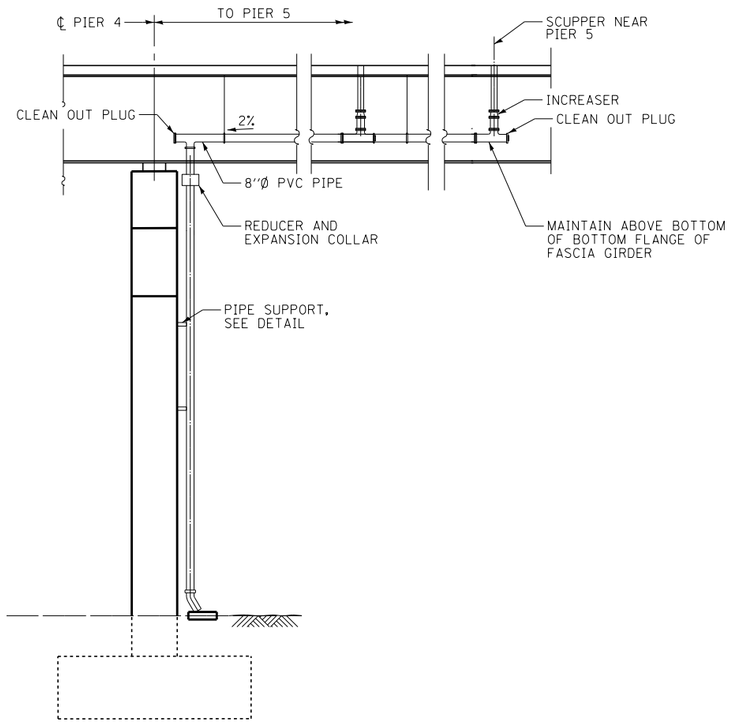
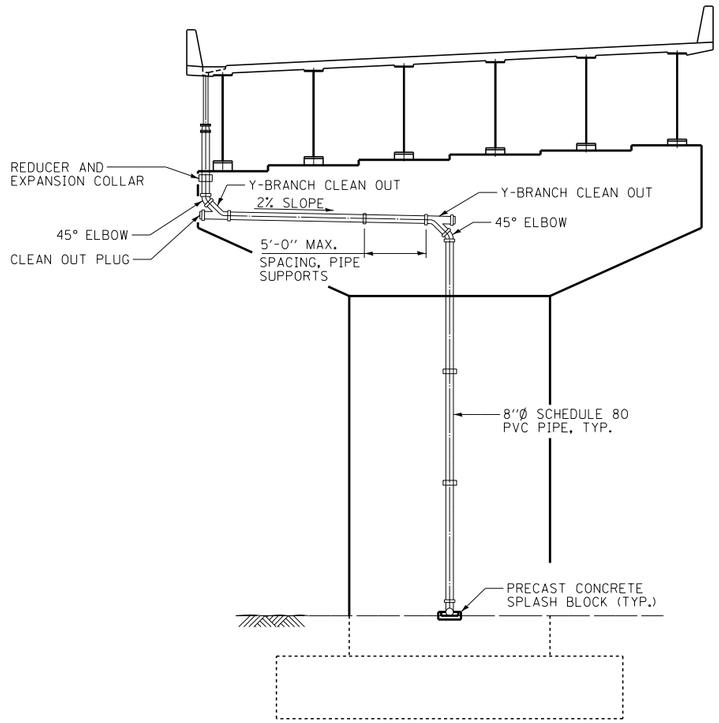
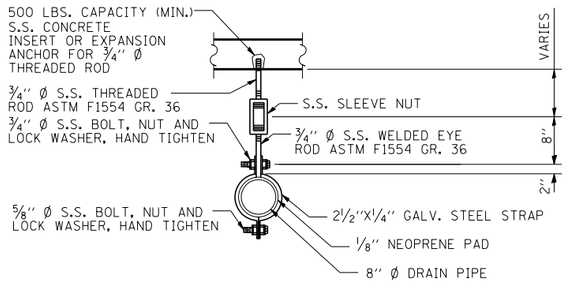


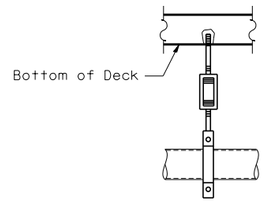
END VIEW



ELEVATION



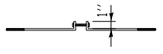
TYPICAL SECTION



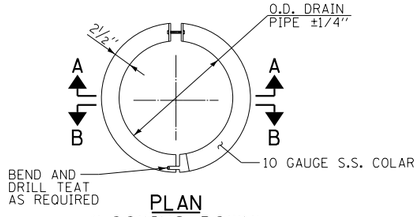
ELEVATION

PIPE HANGER DETAIL

PIERS 4



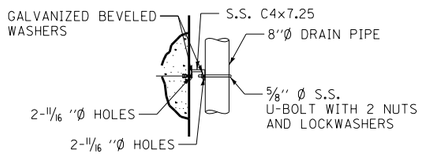
SECTION A-A



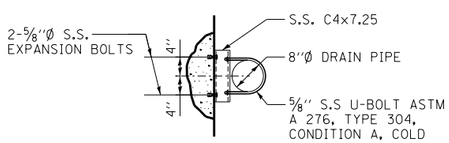
PLAN (LOOKING DOWN)

SECTION B-B

EXPANSION COLLAR DETAILS

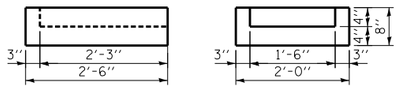


ELEVATION



PLAN

TYPICAL PIPE SUPPORT DETAILS



SPLASH BLOCK DETAIL

COST INCLUDED WITH PVC DRAIN PIPE (8in.)

BILL OF MATERIAL

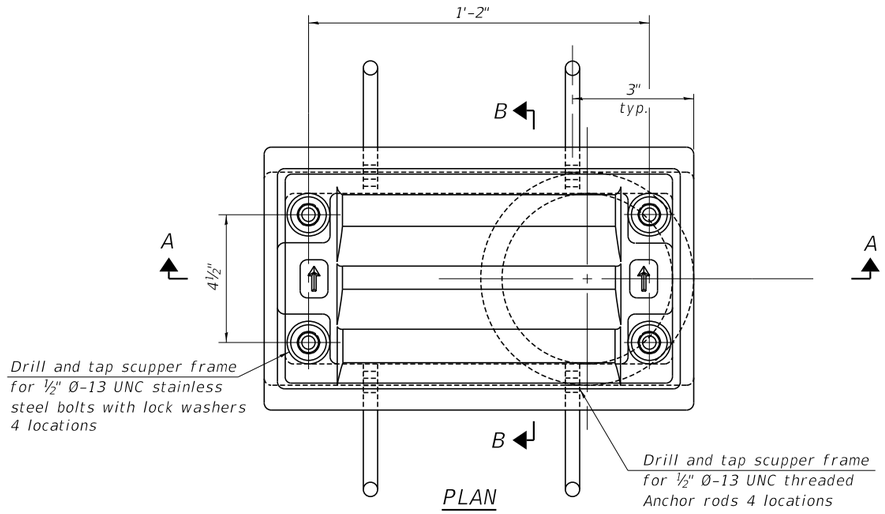
ITEM	UNIT	QUANTITY
DRAINAGE SYSTEM	L SUM	1

NOTES:

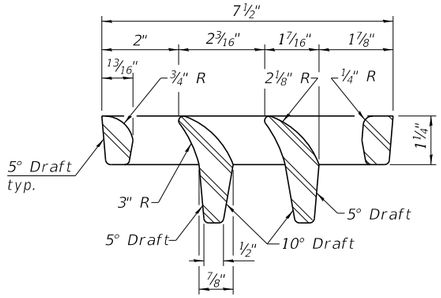
1. PIPE SUPPORTS SHALL BE PROVIDED ON ALL HORIZONTAL PIPES AT EACH TEE, ELBOW, OR CHANGE IN DIRECTION AND AT INTERMEDIATE POINTS NOT MORE THAN 5'-0" ON CENTERS.
2. COLLECTOR PIPE HANGERS SHALL HAVE A LOAD CAPACITY OF NOT LESS THAN 2,000LBS. AND SHALL BE DESIGNED SO AS NOT TO APPLY EXCESSIVE COMPRESSIVE STRESS TO THE PIPE.
3. PIPE SUPPORTS SHALL BE PROVIDED ON ALL VERTICAL DRAIN PIPES AT NOT MORE THAN 12'-0" ON CENTERS.
4. FOR SCUPPER DETAILS SEE DRAINAGE PLANS, SHEET SC-98 AND SC-99.
5. REDUCER SHALL BE SIZED TO ACCOMODATE A LONGITUDINAL MOVEMENT OF 3" IN EACH DIRECTION.
6. PVC PIPE AND FITTINGS SHALL BE 8" DIAMETER SCHEDULE 80 MEETING THE REQUIREMENTS OF ASTM D1785, D2464 AND D2467.

P:\682540\57-294.5-9\STRUCTURAL\RESTART.2018\Ramp C over I-57 and I-294\016201\5_drainage-details.dgn
3/30/2020

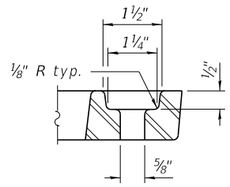
DRAWN BY . . . JM . . .	DATE . 4-3-2020 . . .	TY·LIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	REVISIONS NO. / DATE / DESCRIPTION	CONTRACT I-19-4495	SHEET SC - 97 OF 234
CHECKED BY . . . SP . . .	SCALE . NONE . . .				I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 116) DRAINAGE DETAILS	372 OF 606



PLAN



VANE GRATE DETAIL



GRATE BOLT HOLE DETAIL

Notes:

All cast iron parts shall be gray iron conforming to the requirements of AASHTO M105, Class 35B and AASHTO M306.

Bolts, anchor rods, nuts and washers shall be according to ASTM A307 and shall be galvanized according to AASHTO M232. As an alternate stainless steel may be used.

Stainless steel hardware shall be according to Article 1006.29(d) of the Standard Specifications.

Structural steel weldments of equal sections and of the same configuration may be substituted for the cast iron scupper frames and downspouts; however, the scupper grates shall remain cast iron. Fillet or full penetration welds shall be used for the weldments. Details shall be submitted to the Engineer for approval.

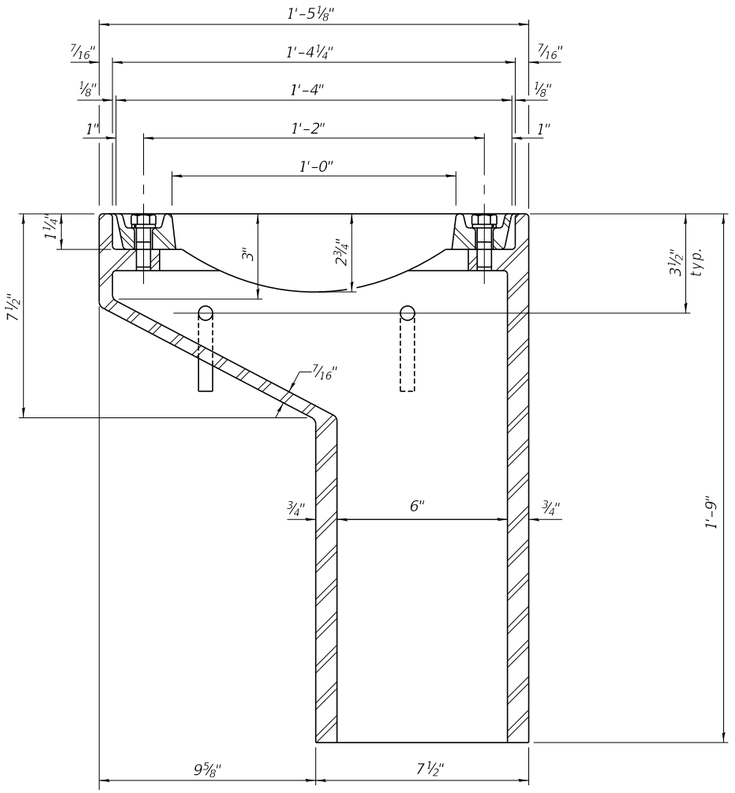
Structural steel scupper frames and downspouts, when utilized, shall be galvanized according to AASHTO M111.

As an alternate, fiberglass may be used for downspouts according to ASTM D2996 with a short-time rupture strength hoop tensile stress of 30,000 psi min. in lieu of the cast iron or structural steel.

Exterior surfaces of downspouts and exterior exposed surfaces of the scupper frame below deck shall be treated as specified on sheet of .

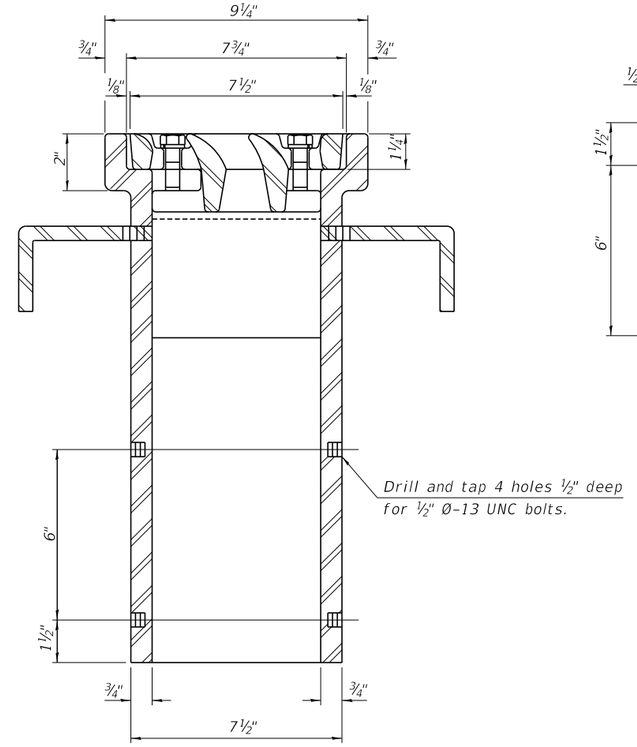
The Contractor shall take appropriate measures to assure that Protective Coat is not applied to the scupper.

Cost of the grate, frame, downspout, anchor rods, nuts and washers including complete installation of the scupper shall be paid for at the contract unit price for Drainage Scupper, DS-11.

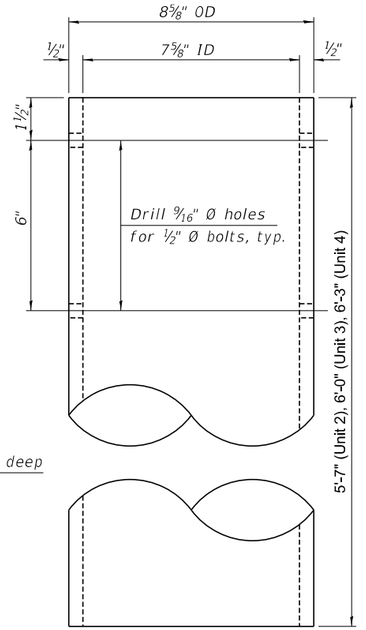


SECTION A-A

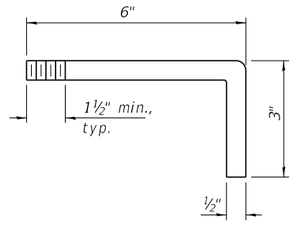
See sheets SC-53, SC-63, and SC-69 of 234 for scupper location relative to parapet.



SECTION B-B



DOWNSPOUT



ANCHOR ROD DETAIL

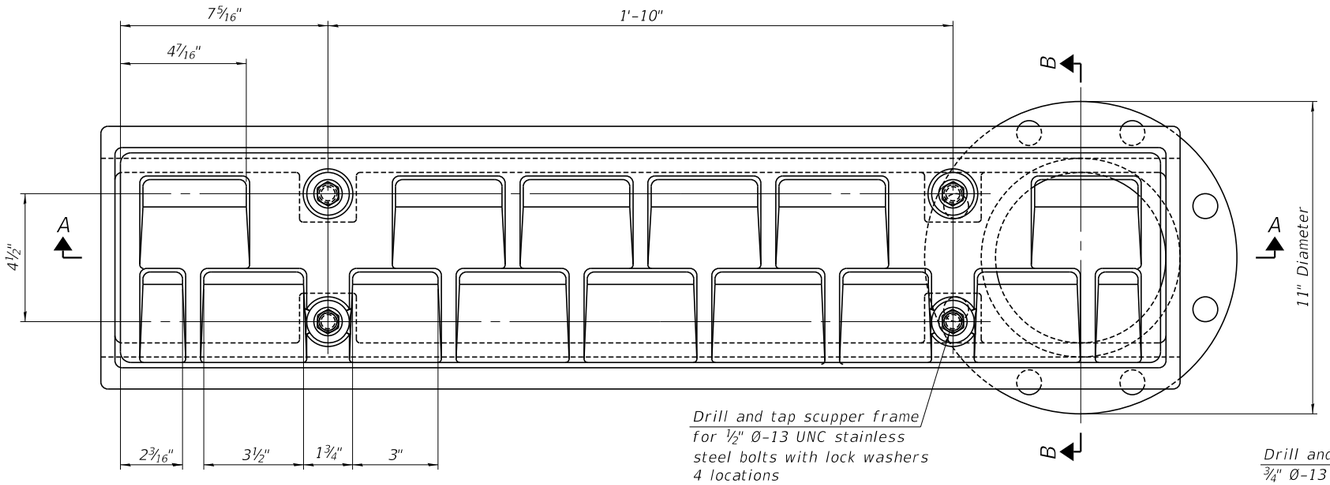
BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Drainage Scupper, DS-11	Each	15

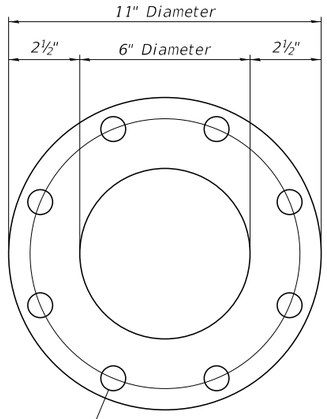
DS-11 1-1-2020

DRAWN BY JM	DATE 4-3-2020	TYLIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	REVISIONS NO. / DATE / DESCRIPTION	CONTRACT I-19-4495 I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 116) DRAINAGE SCUPPER, DS-11	SHEET SC - 98 OF 234 373 OF 606
CHECKED BY SP	SCALE NONE					

P:\602540\57-294.5-9\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\016210\1.5_drainage\scupper DS-11.dgn
3/30/2020



PLAN



BOTTOM VIEW OF FLANGE ONLY

Notes:

All cast iron parts shall be gray iron conforming to the requirements of AASHTO M105, Class 35B and AASHTO M306.

Bolts, nuts and washers shall be according to ASTM A307 and shall be galvanized according to AASHTO M232. As an alternate stainless steel may be used.

Stainless steel hardware shall be according to Article 1006.29(d) of the Standard Specifications.

Structural steel weldments of equal sections and of the same configuration may be substituted for the cast iron scupper frames and downspouts; however, the scupper grates shall remain cast iron. Fillet or full penetration welds shall be used for the weldments. Details shall be submitted to the Engineer for approval.

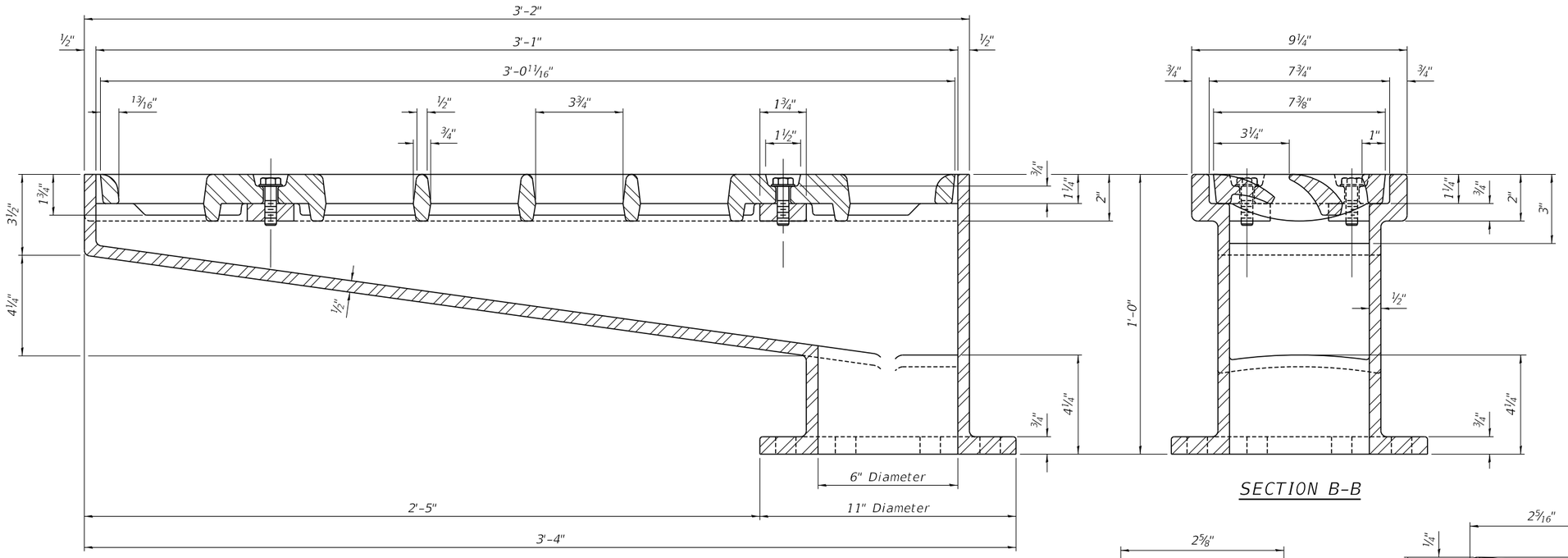
Structural steel scupper frames and downspouts, when utilized, shall be galvanized according to AASHTO M111.

As an alternate, fiberglass may be used for downspouts according to ASTM D2996 with a short-time rupture strength hoop tensile stress of 30,000 psi min. in lieu of the cast iron or structural steel.

Exterior surfaces of downspouts and exterior exposed surfaces of the scupper frame below deck shall be treated as specified on sheet of .

The Contractor shall take appropriate measures to assure that Protective Coat is not applied to the scupper.

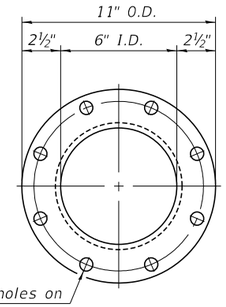
Cost of the grate, frame, downspout, nuts and washers including complete installation of the scupper shall be paid for at the contract unit price for Drainage Scupper, DS-33.

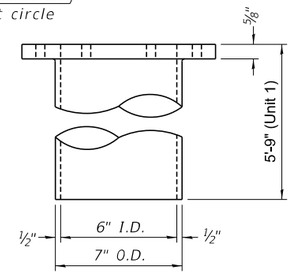


SECTION A-A

See sheets SC-39, and SC-75 of 234 for scupper location relative to parapet.

SECTION B-B

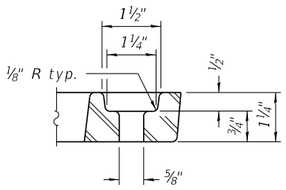




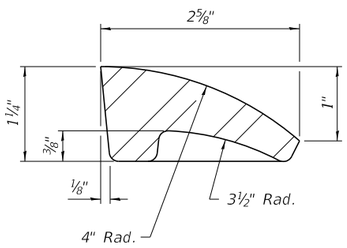
DOWNSPOUT

BILL OF MATERIAL

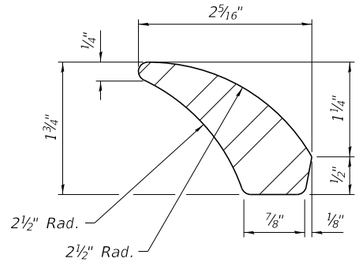
ITEM	UNIT	QUANTITY
Drainage Scupper, DS-33	Each	7



GRATE BOLT HOLE DETAIL



FIRST VANE DETAIL

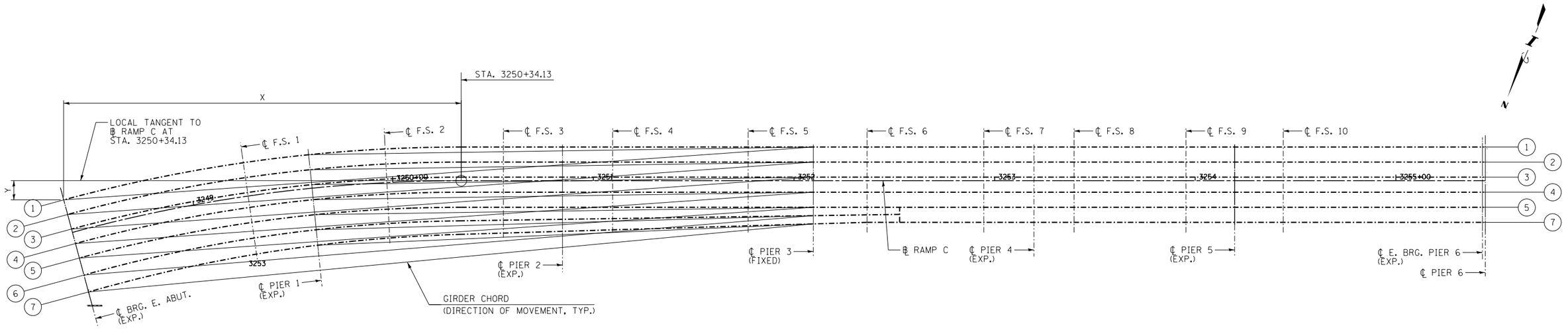


SECOND VANE DETAIL

DS-33 1-1-2020

DRAWN BY . . . JM . . .	DATE . 4-3-2020 . . .	TY·LIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	REVISIONS NO. / DATE / DESCRIPTION	CONTRACT I-19-4495 I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 16) DRAINAGE SCUPPER, DS-33	SHEET SC - 99 OF 234 374 OF 606
CHECKED BY . . . SP . . .	SCALE . NONE . . .					

P:\682540\57-294,5-91\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\Q162101.5_drainage-scupper DS-33.dgn
3/30/2020



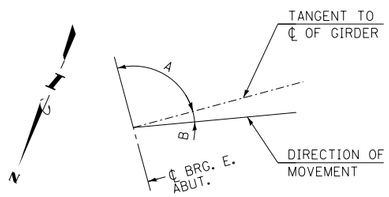
GIRDER LAYOUT PLAN - SPANS 1 THRU 6

LAYOUT DIMESIONS - SPANS 1 THRU 6

GIRDER	℄ BRG. E. ABUT.		℄ F.S. 1		℄ PIER 1		℄ F.S. 2		℄ F.S. 3		℄ PIER 2		℄ F.S. 4		℄ F.S. 5		℄ PIER 3	
	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y
1	-198.169	-9.586	-108.605	8.937	-76.038	12.930	-37.900	15.803		16.750		16.750		16.750		16.750		16.750
2	-196.210	-16.825	-107.532	1.514	-75.286	5.468	-37.525	8.312		9.250		9.250		9.250		9.250		9.250
3	-194.251	-24.065	-106.458	-5.908	-74.535	-1.994	-37.151	0.822		1.750		1.750		1.750		1.750		1.750
4	-192.292	-31.305	-105.385	-13.331	-73.783	-9.456	-36.776	-6.669	21.016	-5.750	50.516	-5.750	75.516	-5.750	143.016	-5.750	175.515	-5.750
5	-190.333	-38.544	-104.311	-20.754	-73.031	-16.919	-36.402	-14.160		-13.250		-13.250		-13.250		-13.250		-13.250
6	-188.051	-46.981	-103.184	-28.545	-72.275	-24.425	-36.044	-21.301		-19.688		-19.251		-18.880		-17.878		-17.396
7	-185.768	-55.418	-102.028	-36.540	-71.500	-32.124	-35.681	-28.569		-26.126		-25.251		-24.509		-22.507		-21.543

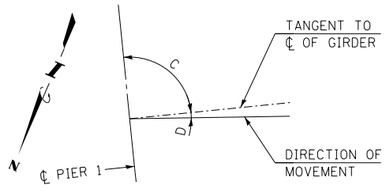
F.S. = FIELD SPLICE

GIRDER	A	B
1	90°0′0″	11°6′31.25″
2	90°0′0″	11°7′38.76″
3	90°0′0″	11°8′46.99″
4	90°0′0″	11°9′55.95″
5	90°0′0″	11°11′5.66″
6	89°27′13.17″	11°2′3.08″
7	89°8′39.08″	10°38′21.3″



BEARING ORIENTATION - EAST ABUT.

GIRDER	C	D
1	90°0′0″	4°52′53.87″
2	90°0′0″	4°53′15.53″
3	90°0′0″	4°53′37.33″
4	90°0′0″	4°53′59.25″
5	90°0′0″	4°54′21.3″
6	89°23′19.37″	4°44′16.89″
7	88°42′13.08″	4°35′42.17″



BEARING ORIENTATION - PIER 1

NOTES:

1. ALL LAYOUT DIMENSIONS ARE RELATIVE TO THE LOCAL TANGENT TO ℄ RAMP C AT STA. 3250+34.13

P:\682540\57-294.5-91\STRUCTURAL\RESTART.2018\Ramp C over I-57 and I-294\016z2101.5_unit1-girderlayout.dgn
3/30/2020

DRAWN BY . . . JM . . . .
CHECKED BY . . . SP . . . .

DATE . 4-3-2020 . . .
SCALE . NONE . . . .

T·Y·LIN INTERNATIONAL

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
UNIT 1 - GIRDER LAYOUT

SHEET SC - 100 OF 234

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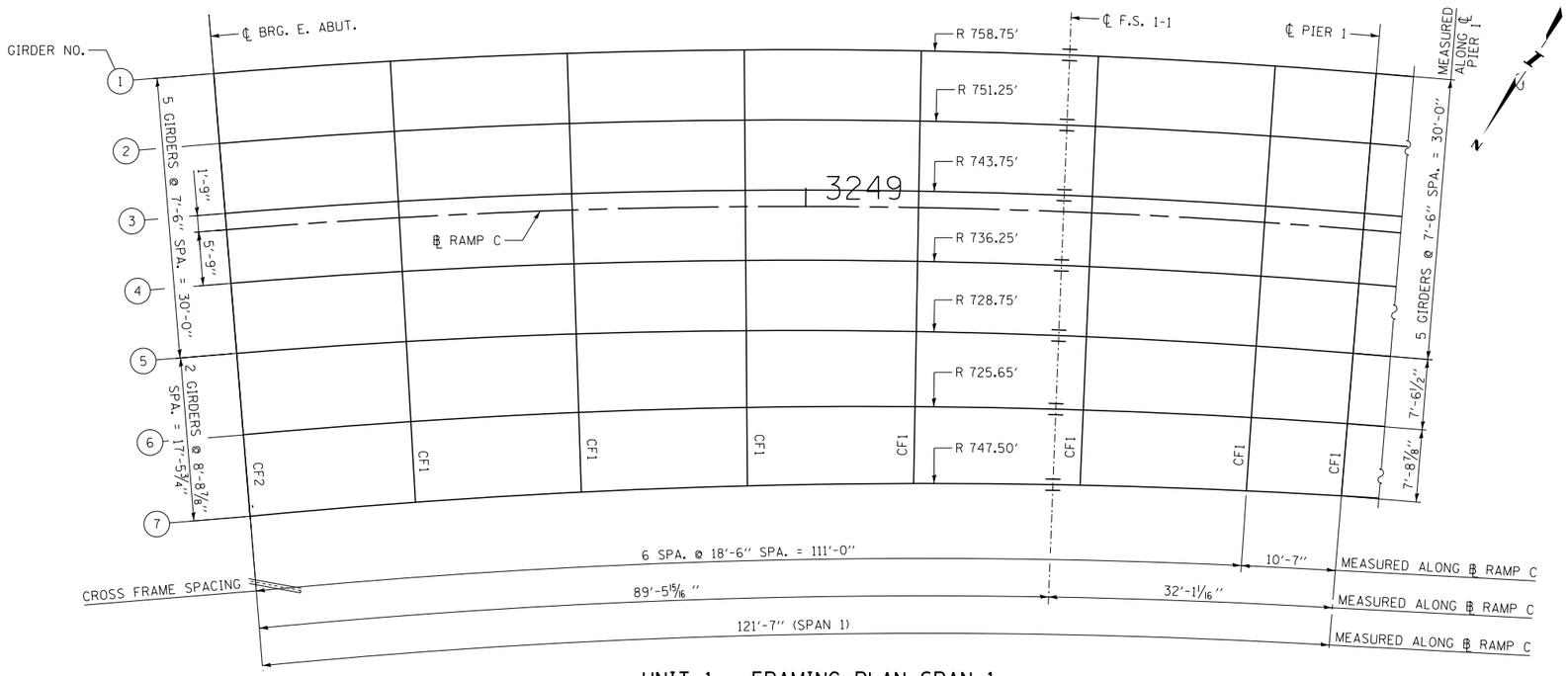
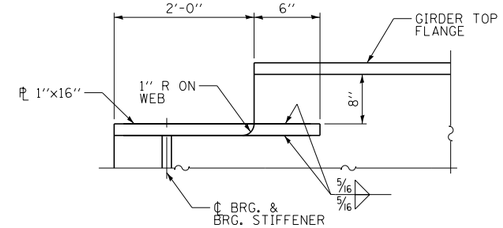
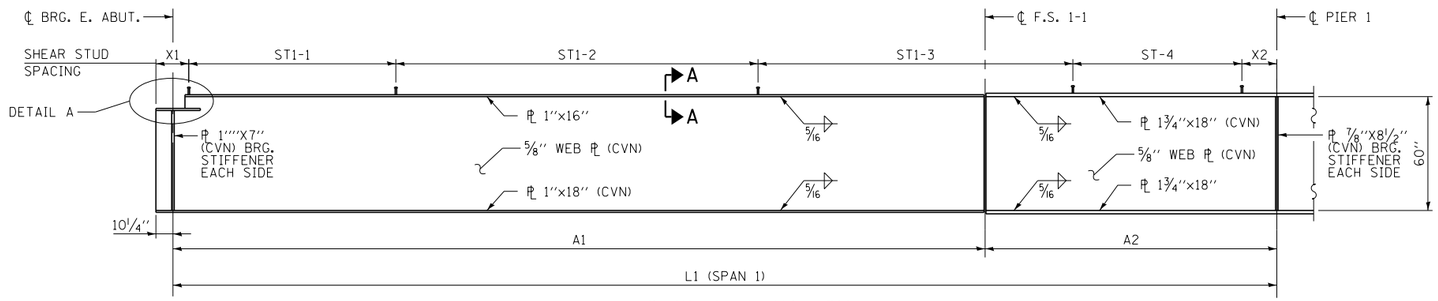


UNIT 1 - FRAMING PLAN SPAN 1



DETAIL A



GIRDER ELEVATION

GIRDER DIMENSIONS

GIRDER	A1	A2	L1
1	91′-6⅝″	32′-9¾″	124′-4¹⁄₁₆″
2	90′-7¹⁄₁₆″	32′-5⅞″	123′-1⅝″
3	89′-8⅜″	32′-2″	121′-10½″
4	88′-9¹¹⁄₁₆″	31′-10¹⁄₁₆″	120′-7¾″
5	87′-10¹³⁄₁₆″	31′-6⅜″	119′-5″
6	86′-10¾″	31′-2¹⁄₄″	118′-1″
7	85′-10⅝″	30′-10⅜″	116′-8¹³⁄₁₆″

WELDED SHEAR STUD SPACING

GIRDER	ST1-1	ST1-2	ST1-3	ST1-4	X1	X2
1	25 SPA. @ 6″	72 SPA. @ 10″	50 SPA. AT 9″	25 SPA. AT 6″	2′-6″	2⅝″
2	73 SPA. @ 6″	49 SPA. @ 9″	35 SPA. AT 12″	17 SPA. AT 9″	2′-6″	5⅜″
3	73 SPA. @ 6″	49 SPA. @ 9″	34 SPA. AT 12″	17 SPA. AT 9″	2′-6″	2¾″
4	72 SPA. @ 6″	48 SPA. @ 9″	34 SPA. AT 12″	17 SPA. AT 9″	2′-6″	3″
5	71 SPA. @ 6″	48 SPA. @ 9″	34 SPA. AT 12″	16 SPA. AT 9″	2′-6″	3¼″
6	70 SPA. @ 6″	47 SPA. @ 9″	34 SPA. AT 12″	16 SPA. AT 9″	2′-6″	2¼″
7	16 SPA. @ 9″	34 SPA. @ 11″	70 SPA. AT 10″	27 SPA. AT 6″	2′-6″	1¹⁄₁₆″

NOTES:

1. CROSS FRAME ORIENTATION, ℄ ABUTMENT, AND ℄ PIER ARE RADIAL TO ℄ RAMP C.
2. ALL CROSS FRAMES BETWEEN GIRDERS SHALL BE INSTALLED WITH ERECTION PINS AND BOLTS IN ACCORDANCE WITH THE ERECTION PLANS APPROVED BY THE ENGINEER. INDIVIDUAL CROSS FRAMES AT SUPPORTS MAY BE TEMPORARILY DISCONNECTED TO INSTALL BEARING ANCHOR RODS.
3. "CVN" DENOTES CHARPY V-NOTCH ENERGY REQUIREMENTS, ZONE 2.
4. FOR SECTION A-A, SEE SHEET SC-107.

P:\68254057-294.5-91\STRUCTURAL\RESTART.2018\Ramp C over I-57 and I-294\2016\2101.5_unit1_frpln-span1.dgn
3/30/2020

DRAWN BY . . . JM . . . .
CHECKED BY . . . SP . . . .

DATE . 4-3-2020 . . . .
SCALE . NONE . . . . .

T·Y·LIN INTERNATIONAL

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
UNIT 1 - FRAMING PLAN SPAN 1

SHEET SC - 101 OF 234

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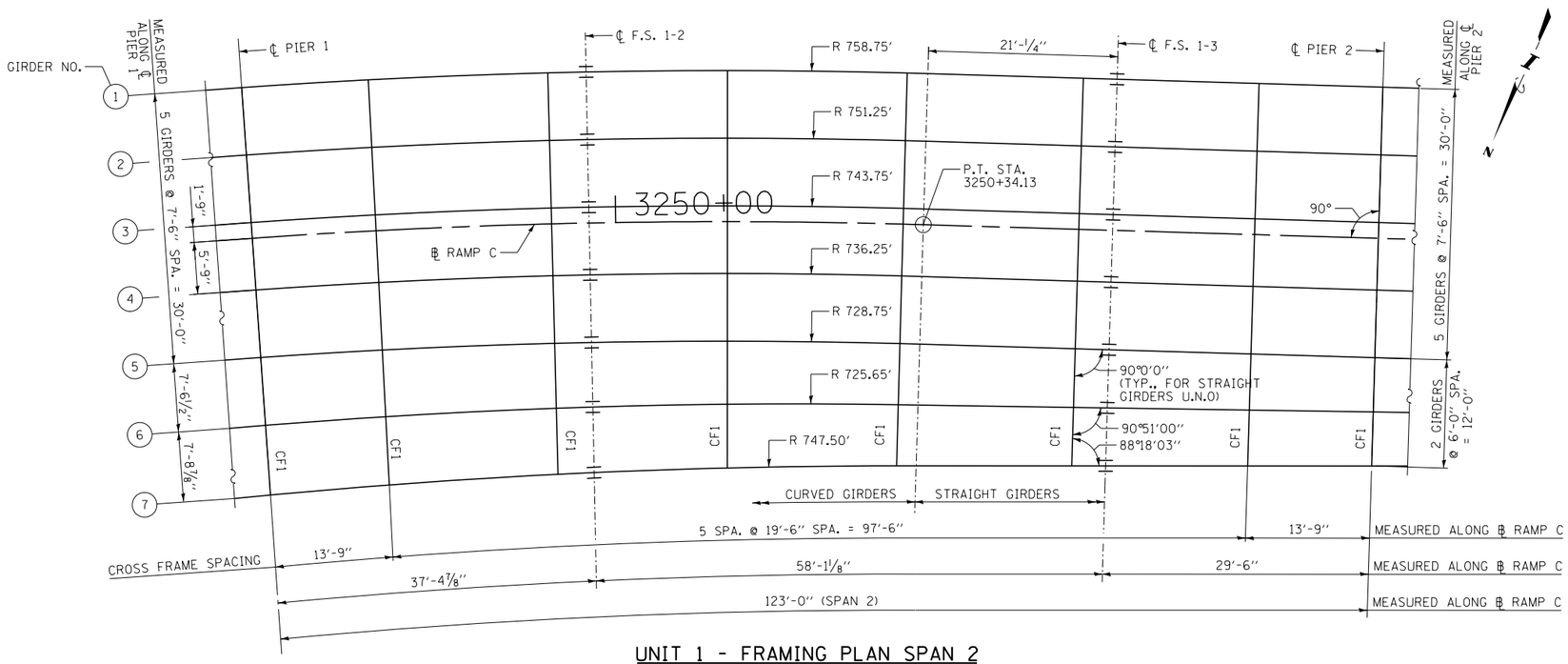
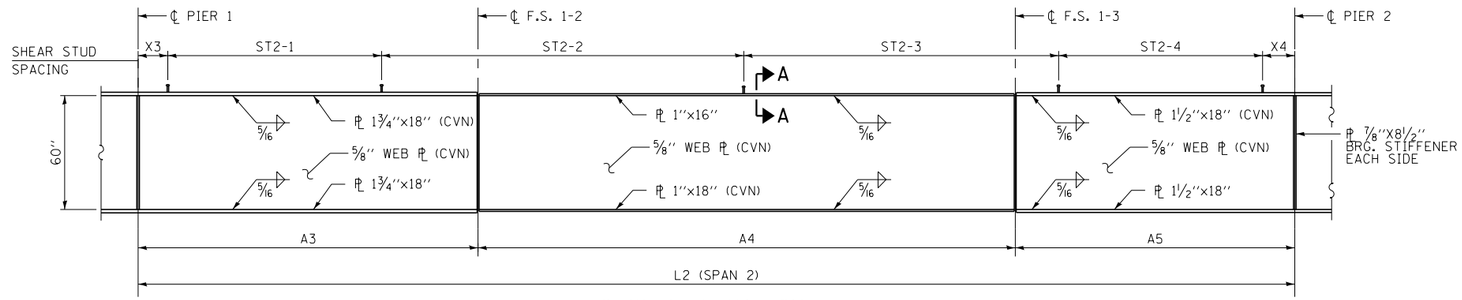


UNIT 1 - FRAMING PLAN SPAN 2



GIRDER ELEVATION

GIRDER DIMENSIONS

GIRDER	A3	A4	A5	L2
1	38'-3"	58'-11 3/16"	29'-6"	126'-8 3/16"
2	37'-10 7/16"	58'-6 11/16"	29'-6"	125'-11 1/8"
3	37'-5 15/16"	58'-2 3/16"	29'-6"	125'-2 1/8"
4	37'-1 3/8"	57'- 9 11/16"	29'-6"	124'-5 1/16"
5	36'-8 1/8"	57'-5 3/16"	29'-6"	123'-8 1/16"
6	36'-4 1/16"	57'-1 1/16"	29'-6 1/16"	122'-11 3/16"
7	36'-0"	56'-9 1/16"	29'-6 1/8"	122'-3 3/16"

WELDED SHEAR STUD SPACING

GIRDER	ST2-1	ST2-2	ST2-3	ST2-4	X3	X4
1	26 SPA. @ 6"	58 SPA. @ 8"	74 SPA. AT 10"	17 SPA. AT 9"	3 3/16"	3 5/8"
2	17 SPA. @ 9"	43 SPA. @ 10"	NA	116 SPA. AT 8"	1/16"	1/16"
3	17 SPA. @ 9""	44 SPA. @ 10"	NA	113 SPA. AT 8"	2 9/16"	2 9/16"
4	17 SPA. @ 9"	44 SPA. @ 10"	NA	112 SPA. AT 8"	2 1/16"	2"
5	17 SPA. @ 9"	43 SPA. @ 10"	NA	112 SPA. AT 8"	2 3/16"	2 9/16"
6	17 SPA. @ 9"	43 SPA. @ 10"	NA	111 SPA. AT 8"	2 1/4"	2 5/16"
7	28 SPA. @ 6"	46 SPA. @ 10"	34 SPA. AT 11"	46 SPA. AT 10"	2 3/16"	2 5/8"

NOTES:

1. CROSS FRAME ORIENTATION AND ℄ PIER ARE RADIAL TO ℄ RAMP C, IN THE CURVED SECTIONS AND 90° AT THE TANGENT SECTIONS UNLESS NOTED OTHERWISE
2. ALL CROSS FRAMES BETWEEN GIRDERS SHALL BE INSTALLED WITH ERECTION PINS AND BOLTS IN ACCORDANCE WITH THE ERECTION PLANS APPROVED BY THE ENGINEER. INDIVIDUAL CROSS FRAMES AT SUPPORTS MAY BE TEMPORARILY DISCONNECTED TO INSTALL BEARING ANCHOR RODS.
3. "CVN" DENOTES CHARPY V-NOTCH REQUIREMENTS, ZONE 2.
4. U.N.O. DENOTES UNLESS NOTED OTHERWISE.
5. FOR SECTION A-A, SEE SHEET SC-107.

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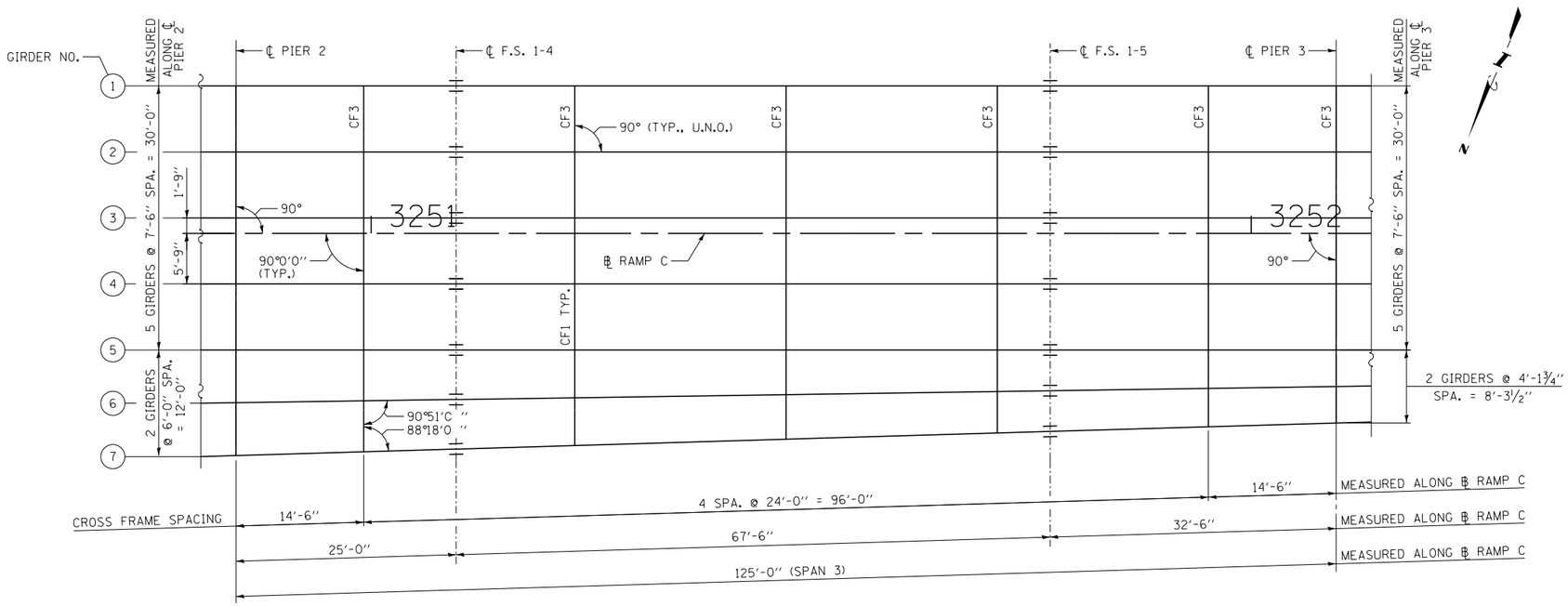
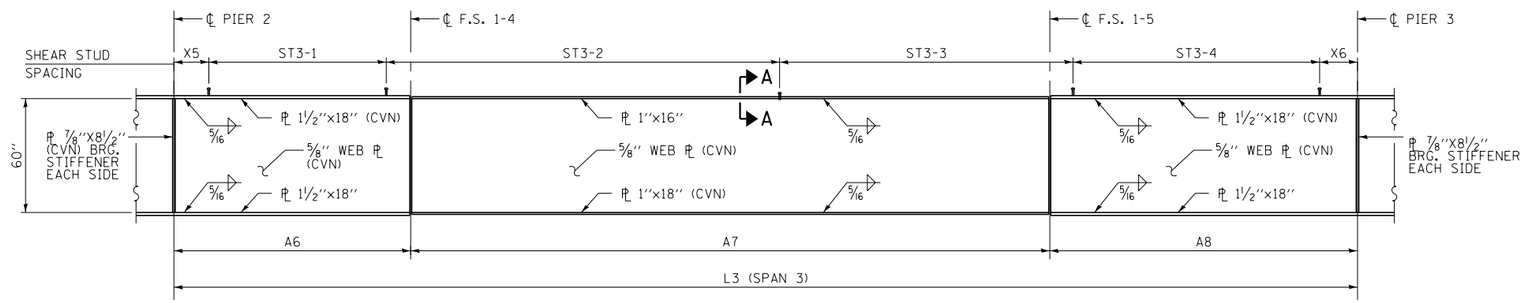
CHECKED BY . . . SP	SCALE . NONE				SHEET SC - 102 OF 234 377 OF 606



UNIT 1 - FRAMING PLAN SPAN 3



GIRDER ELEVATION

GIRDER DIMENSIONS

GIRDER	A6	A7	A8	L3
1	25'-0"	67'-6"	32'-6"	125'-0"
2	25'-0"	67'-6"	32'-6"	125'-0"
3	25'-0"	67'-6"	32'-6"	125'-0"
4	25'-0"	67'-6"	32'-6"	125'-0"
5	25'-0"	67'-6"	32'-6"	125'-0"
6	25'-0 1/16"	67'-6 1/16"	32'-6 1/16"	125'-0 3/16"
7	25'-0 1/8"	67'-6 3/16"	32'-6 3/16"	125'-0 11/16"

WELDED SHEAR STUD SPACING

GIRDER	ST3-1	ST3-2	ST3-3	ST3-4	X5	X6
1	17 SPA. @ 9"	54 SPA. @ 11"	45 SPA. AT 10"	50 SPA. AT 6"	1½"	1½"
2	25 SPA. @ 6"	66 SPA. @ 9"	75 SPA. AT 8"	25 SPA. AT 6"	3"	3"
3	25 SPA. @ 6"	66 SPA. @ 9"	75 SPA. AT 8"	25 SPA. AT 6"	3"	3"
4	25 SPA. @ 6"	66 SPA. @ 9"	75 SPA. AT 8"	25 SPA. AT 6"	3"	3"
5	25 SPA. @ 6"	66 SPA. @ 9"	75 SPA. AT 8"	25 SPA. AT 6"	3"	3"
6	26 SPA. @ 6"	64 SPA. @ 9"	76 SPA. AT 8"	26 SPA. AT 6"	2 1/8"	2 1/8"
7	73 SPA. @ 10"	67 SPA. @ 9"	NA	27 SPA. AT 6"	2 1/16"	2 1/8"

NOTES:

1. ALL CROSS FRAMES BETWEEN GIRDERS SHALL BE INSTALLED WITH ERECTION PINS AND BOLTS IN ACCORDANCE WITH THE ERECTION PLANS APPROVED BY THE ENGINEER. INDIVIDUAL CROSS FRAMES AT SUPPORTS MAY BE TEMPORARILY DISCONNECTED TO INSTALL BEARING ANCHOR RODS.
2. "CVN" DENOTES CHARPY V-NOTCH ENERGY REQUIREMENTS, ZONE 2.
3. U.N.O. DENOTES UNLESS NOTED OTHERWISE
4. FOR SECTION A-A, SEE SHEET SC-107.

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DOWNERS GROVE, ILLINOIS 60515

REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
UNIT 1 - FRAMING PLAN SPAN 3

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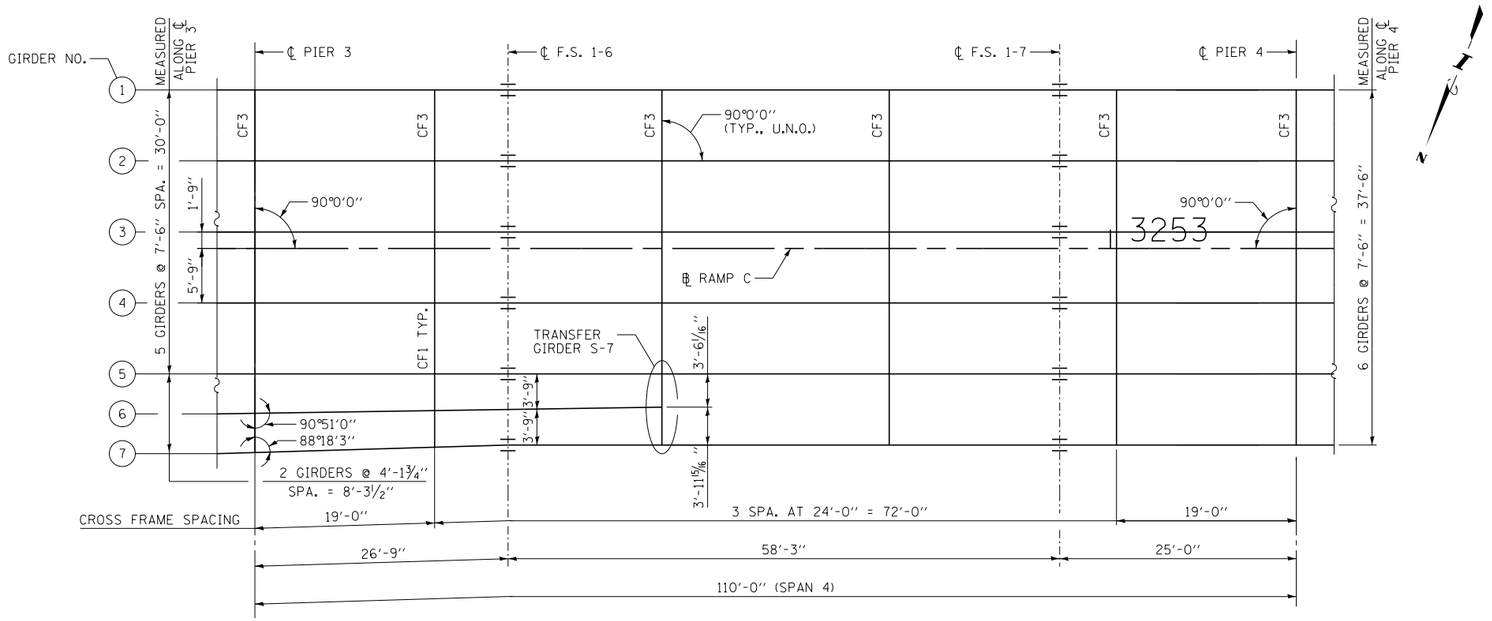
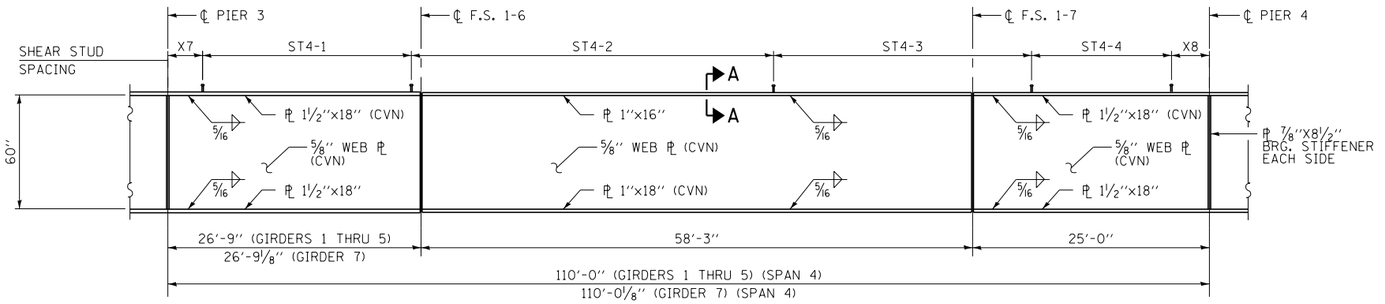
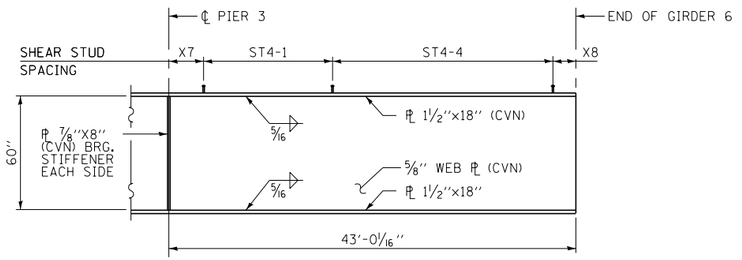


UNIT 1 - FRAMING PLAN SPAN 4



ELEVATION - GIRDER 1-5 & 7



ELEVATION - GIRDER 6

WELDED SHEAR STUD SPACING

GIRDER	ST4-1	ST4-2	ST4-3	ST4-4	X7	X8
1	44 SPA. @ 6"	47 SPA. AT 11"	40 SPA. @ 10"	22 SPA. AT 6"	3 1/2"	3 1/2"
2	44 SPA. @ 6"	43 SPA. AT 12"	40 SPA. @ 10"	15 SPA. AT 9"	2 1/2"	2 1/2"
3	44 SPA. @ 6"	43 SPA. AT 12"	40 SPA. @ 10"	15 SPA. AT 9"	2 1/2"	2 1/2"
4	44 SPA. @ 6"	43 SPA. AT 12"	40 SPA. @ 10"	15 SPA. AT 9"	2 1/2"	2 1/2"
5	44 SPA. @ 6"	43 SPA. AT 12"	40 SPA. @ 10"	15 SPA. AT 9"	2 1/2"	2 1/2"
6	45 SPA. @ 6"	NA	NA	22 SPA. AT 11"	2 1/16"	2 1/16"
7	45 SPA. @ 6"	46 SPA. AT 9"	45 SPA. @ 11"	23 SPA. AT 6"	1 9/16"	1 9/16"

NOTES:

1. ALL CROSS FRAMES BETWEEN GIRDERS SHALL BE INSTALLED WITH ERECTION PINS AND BOLTS IN ACCORDANCE WITH THE ERECTION PLANS APPROVED BY THE ENGINEER. INDIVIDUAL CROSS FRAMES AT SUPPORTS MAY BE TEMPORARILY DISCONNECTED TO INSTALL BEARING ANCHOR RODS.
2. "CVN" DENOTES CHARPY V-NOTCH ENERGY REQUIREMENTS, ZONE 2.
3. U.N.O. DENOTES UNLESS NOTED OTHERWISE
4. FOR SECTION A-A, SEE SHEET SC-107.

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DOWNERS GROVE, ILLINOIS 60515

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I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
UNIT 1 - FRAMING PLAN SPAN 4

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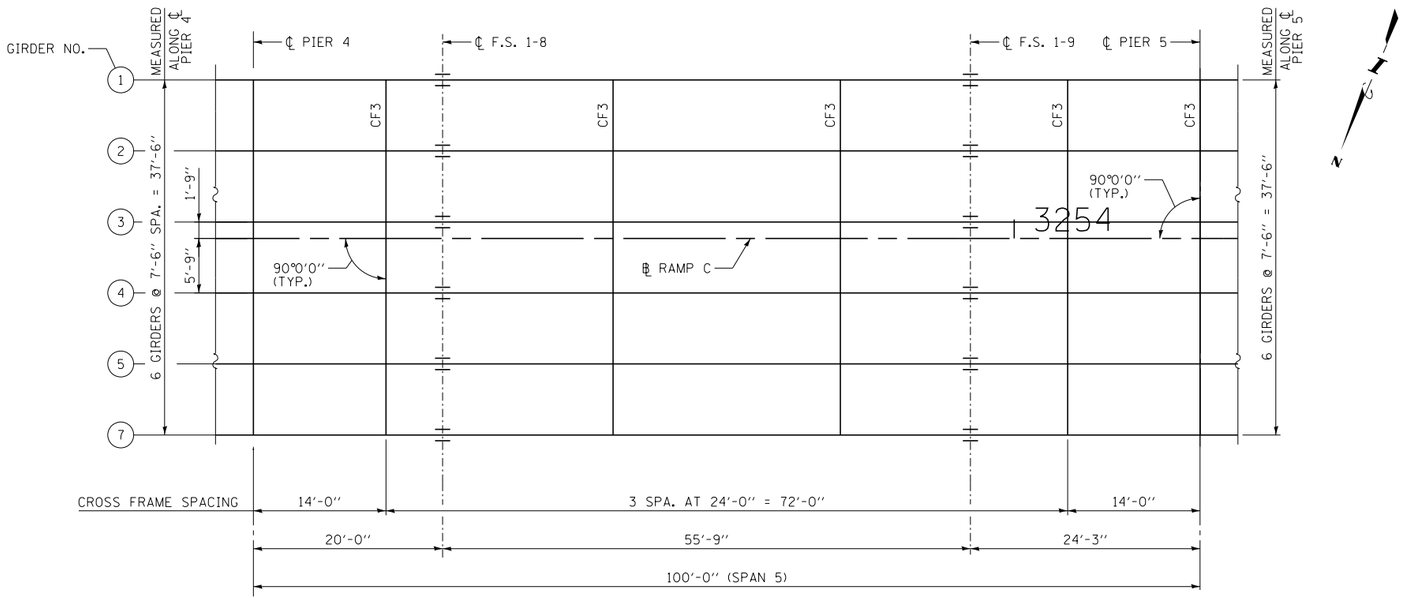
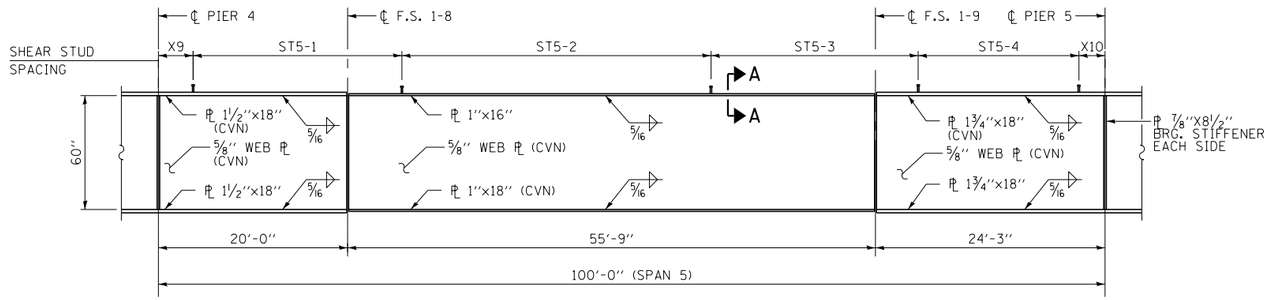


UNIT 1 - FRAMING PLAN SPAN 5



GIRDER ELEVATION

WELDED SHEAR STUD SPACING

GIRDER	ST5-1	ST5-2	ST5-3	ST5-4	X9	X10
1	21 SPA. @ 6"	40 SPA. AT 9"	59 SPA. @ 10"	20 SPA. AT 6"	2"	2"
2	40 SPA. @ 9"	36 SPA. AT 10"	29 SPA. @ 12"	14 SPA. AT 9"	3"	3"
3	40 SPA. @ 9"	36 SPA. AT 10"	29 SPA. @ 12"	14 SPA. AT 9"	3"	3"
4	40 SPA. @ 9"	36 SPA. AT 10"	29 SPA. @ 12"	14 SPA. AT 9"	3"	3"
5	40 SPA. @ 9"	36 SPA. AT 10"	29 SPA. @ 12"	14 SPA. AT 9"	3"	3"
6	NA	NA	NA	NA	NA	NA
7	20 SPA. @ 6"	54 SPA. AT 9"	29 SPA. @ 12"	40 SPA. AT 6"	3"	3"

NOTES:

1. ALL CROSS FRAMES BETWEEN GIRDERS SHALL BE INSTALLED WITH ERECTION PINS AND BOLTS IN ACCORDANCE WITH THE ERECTION PLANS APPROVED BY THE ENGINEER. INDIVIDUAL CROSS FRAMES AT SUPPORTS MAY BE TEMPORARILY DISCONNECTED TO INSTALL BEARING ANCHOR RODS.
2. "CVN" DENOTES CHARPY V-NOTCH ENERGY REQUIREMENTS, ZONE 2.
3. FOR SECTION A-A, SEE SHEET SC-72.

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DOWNERS GROVE, ILLINOIS 60515

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I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
UNIT 1 - FRAMING PLAN SPAN 5

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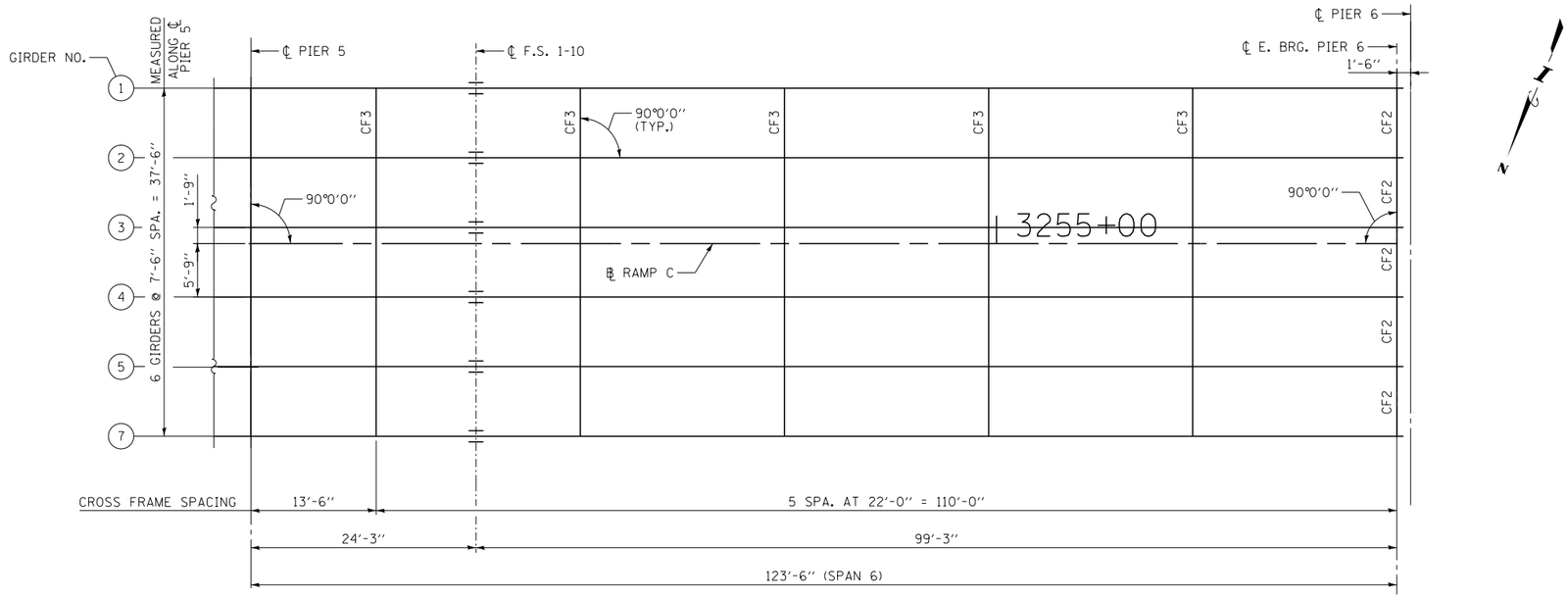
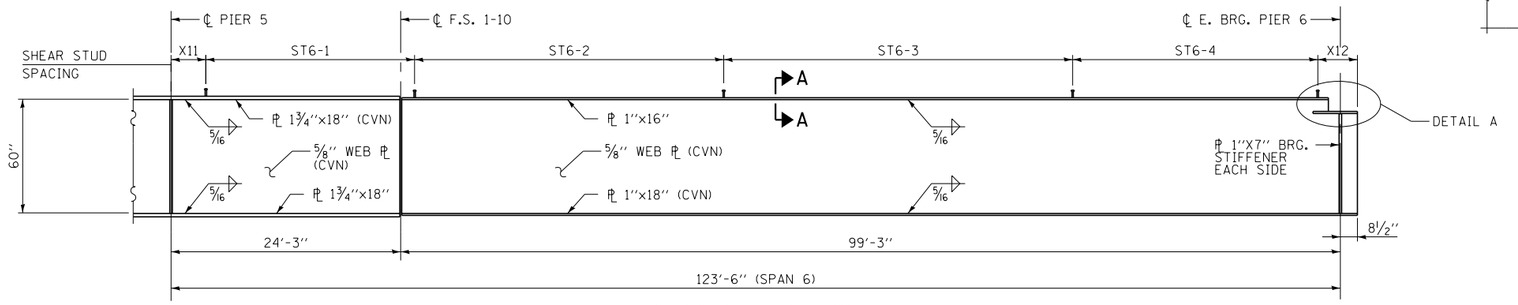
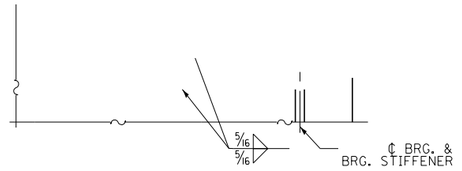


UNIT 1 - FRAMING PLAN SPAN 6



GIRDER ELEVATION



DETAIL A

WELDED SHEAR STUD SPACING

GIRDER	ST6-1	ST6-2	ST6-3	ST6-4	X11	X12
1	28 SPA. @ 6"	74 SPA. AT 8"	53 SPA. @ 10"	28 SPA. AT 6"	2½"	2'-6"
2	55 SPA. @ 8"	33 SPA. AT 9"	46 SPA. @ 12"	28 SPA. AT 6"	3½"	2'-6"
3	55 SPA. @ 8"	33 SPA. AT 9"	46 SPA. @ 12"	28 SPA. AT 6"	3½"	2'-6"
4	55 SPA. @ 8"	33 SPA. AT 9"	46 SPA. @ 12"	28 SPA. AT 6"	3½"	2'-6"
5	55 SPA. @ 8"	33 SPA. AT 9"	46 SPA. @ 12"	28 SPA. AT 6"	3½"	2'-6"
6	NA	NA	NA	NA	NA	NA
7	49 SPA. @ 6"	65 SPA. AT 9"	26 SPA. @ 11"	49 SPA. AT 6"	1½"	2'-6"

NOTES:

1. ALL CROSS FRAMES BETWEEN GIRDERS SHALL BE INSTALLED WITH ERECTION PINS AND BOLTS IN ACCORDANCE WITH THE ERECTION PLANS APPROVED BY THE ENGINEER. INDIVIDUAL CROSS FRAMES AT SUPPORTS MAY BE TEMPORARILY DISCONNECTED TO INSTALL BEARING ANCHOR RODS.
2. "CVN" DENOTES CHARPY V-NOTCH ENERGY REQUIREMENTS, ZONE 2.
3. FOR SECTION A-A, SEE SHEET SC-107.

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THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

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I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
UNIT 1 - FRAMING PLAN SPAN 6

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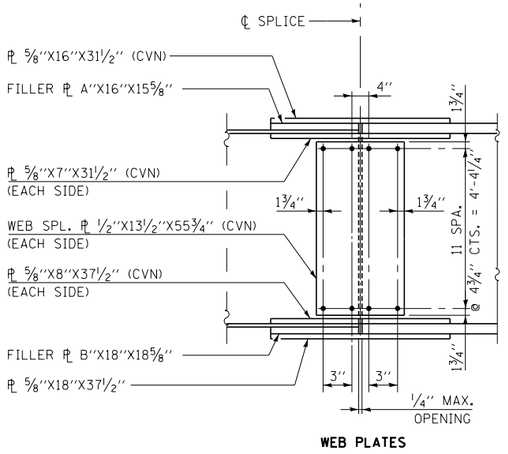
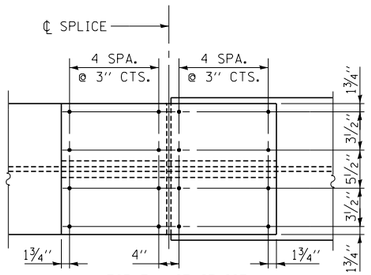
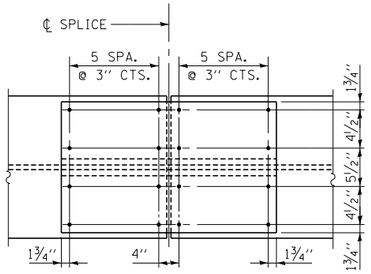


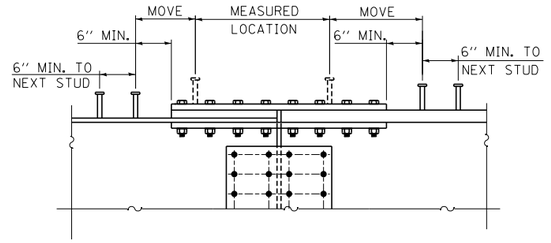
WEB PLATES



TOP FLANGE SPLICE

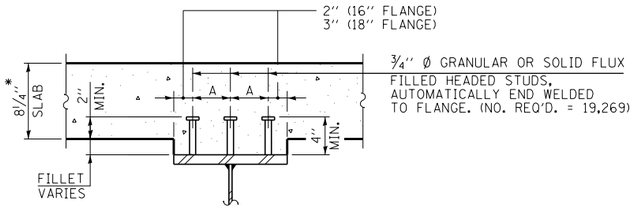


BOTTOM FLANGE SPLICE



SHEAR STUD DETAIL AT SPLICES AND FLANGE TRANSITIONS

DO NOT PLACE SHEAR STUDS ON SPLICE PLATES. MOVE ROW OF STUDS TO 6" BEYOND NEAREST EDGE OF SPLICE PLATE FROM MEASURED LOCATION.

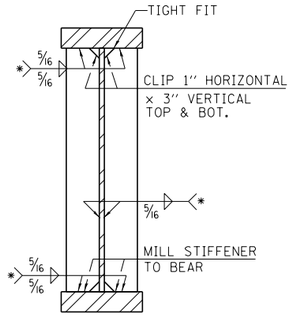


SECTION A-A

A = 6" (16" & 18" FLANGE)

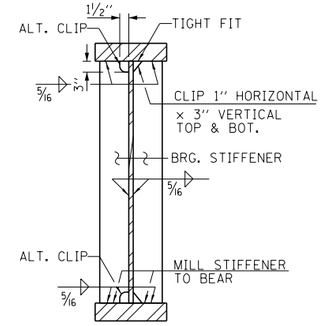
* PRIOR TO GRINDING

FILLER PLATE THICKNESS		
FIELD SPLICE NO.	A	B
1-1, 1-2, 1-9, 1-10	3/4"	3/4"
1-3 THRU 1-8	1/2"	1/2"



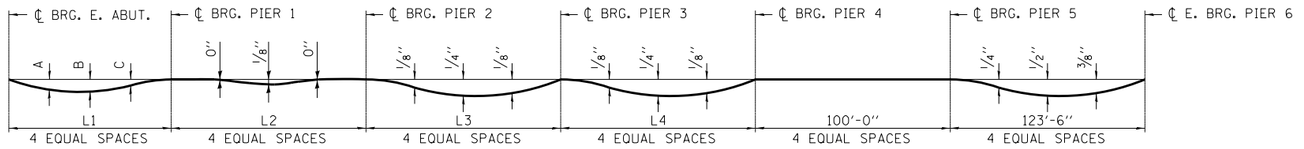
BEARING STIFFENERS

* TERMINATE 1/4" (±1/8") FROM THE END OF PLATE INTERSECTS.



ALTERNATE CLIP DETAILS

FIELD SPLICE 1-1 THRU 1-10

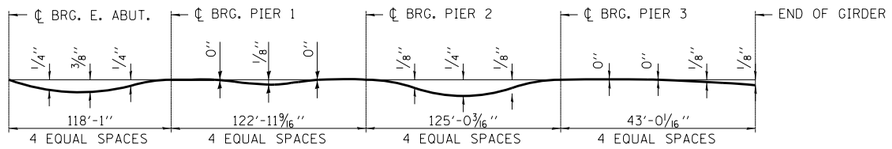


DEAD LOAD DEFLECTION DIAGRAM GIRDERS 1 THRU 5 & 7 - STEEL SELF WEIGHT

(INCLUDES WEIGHT OF STRUCTURAL STEEL ONLY)

GIRDER DIMENSIONS

GIRDER	A	B	C	L1	L2	L3	L4
1	1/2"	5/8"	1/4"	124'-4 1/16"	126'-8 3/16"	125'-0"	110'-0"
2	3/8"	1/2"	1/4"	123'-1 5/16"	125'-11 1/8"	125'-0"	110'-0"
3	3/8"	1/2"	1/4"	121'-10 1/2"	125'-2 1/8"	125'-0"	110'-0"
4	3/8"	1/2"	1/4"	120'-7 7/8"	124'-5 1/16"	125'-0"	110'-0"
5	1/4"	3/8"	1/4"	119'-5"	123'-8 1/16"	125'-0"	110'-0"
7	1/4"	3/8"	1/8"	116'-8 13/16"	122'-3 3/16"	125'-0 11/16"	110'-0 1/8"



DEAD LOAD DEFLECTION DIAGRAM GIRDERS 6 - STEEL SELF WEIGHT

(INCLUDES WEIGHT OF STRUCTURAL STEEL ONLY)

NOTE:
THE CALCULATED DEFLECTIONS OF THE PRIMARY GIRDERS UNDER STEEL SELF-WEIGHT SHALL BE USED TO DETAIL CROSS FRAME CONNECTIONS, AND TO ERECT THE STRUCTURAL STEEL SUCH THAT THE GIRDERS WILL BE PLUMB WITHIN A TOLERANCE OF ±1/8" IN. PER VERTICAL FT. THROUGHOUT WHEN SUPPORTING THEIR OWN WEIGHT.

NOTES:

1. "CVN" DENOTES CHARPY V-NOTCH ENERGY REQUIREMENTS, ZONE 2.

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I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
UNIT 1 - GIRDER DETAILS

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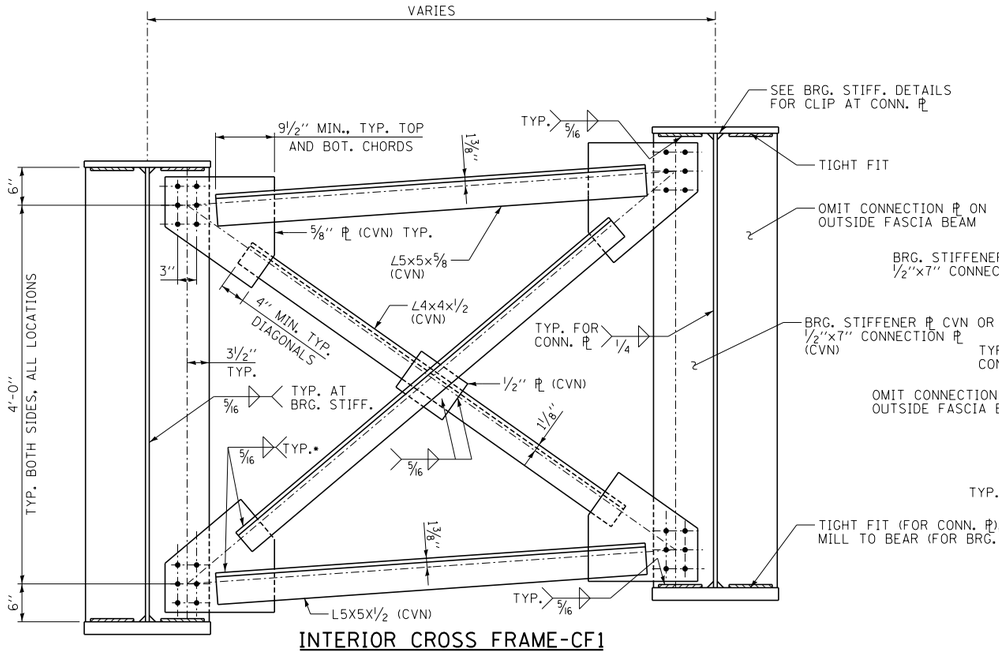
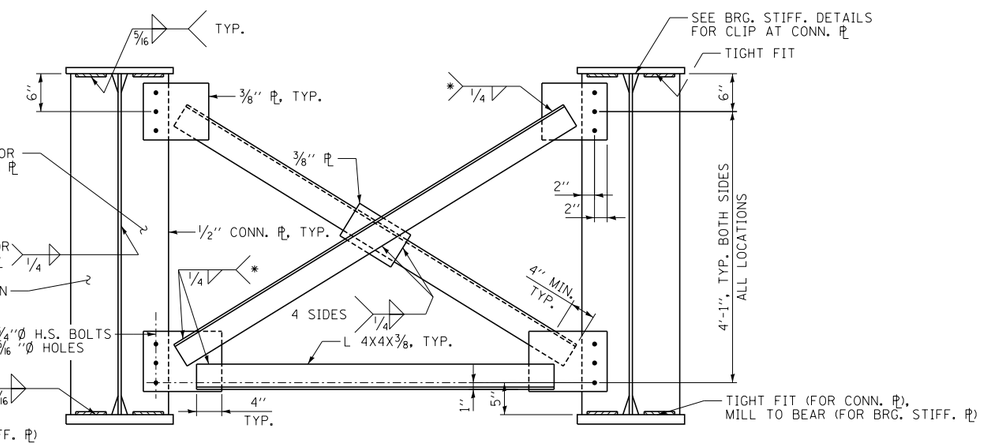


INTERIOR CROSS FRAME-CF1

(84 REQUIRED)

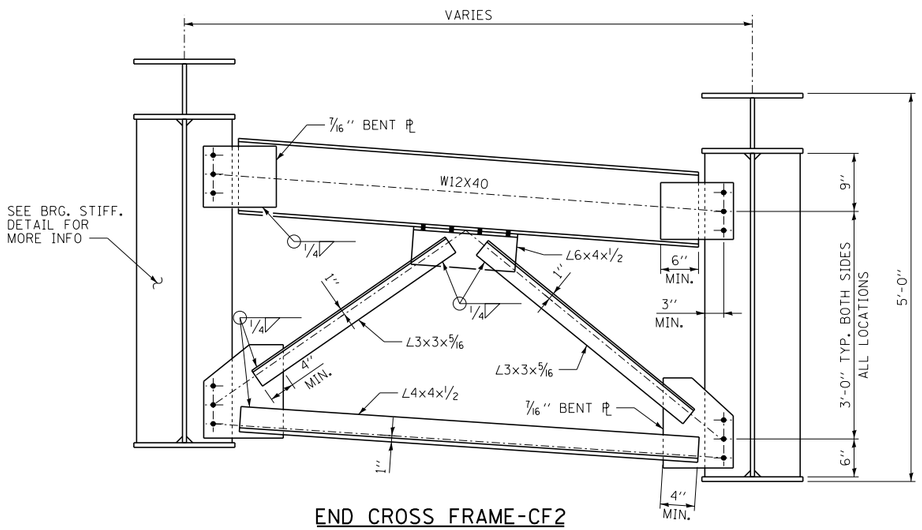
• FILLET WELD ANGLES ALONG 3 SIDES ON ONE FACE OF GUSSET PLATE.



INTERIOR CROSS FRAME CF3

(113 REQUIRED)

* FILLET WELD ANGLES ALONG 3 SIDES ON ONE FACE OF GUSSET PLATE.



END CROSS FRAME-CF2

(11 REQUIRED)

NOTES:

1. ALL CROSS FRAMES OR DIAPHRAGMS BETWEEN BEAMS OR GIRDERS SHALL BE INSTALLED WITH ERECTION PINS AND BOLTS IN ACCORDANCE WITH THE ERECTION PLAN APPROVED BY THE ENGINEER. INDIVIDUAL CROSS FRAMES OR DIAPHRAGMS AT SUPPORTS MAY BE TEMPORARILY DISCONNECTED TO INSTALL BEARING ANCHOR RODS.
2. "CVN" DENOTES CHARPY-V-NOTCH IMPACT ENGERY REQUIREMENTS, ZONE 2.
3. BOLTS SHALL BE ⅞" Ø IN HOLES 15/16 " Ø, UNLESS NOTED OTHERWISE.
4. TWO HARDENED WASHEERS SHALL BE REQUIRED FOR EACH SET OF OVERSIZED HOLES.
5. THE CONTRACTOR SHALL EITHER:
   A. REAM DIAPHRAGM AND/OR CROSS FRAME CONNECTION HOLES DURING SHOP ASSEMBLY, OR
   B. PROVIDE DETAILING AND FABRICATION CONTROLS ACCEPTABLE TO THE ENGINEER WHICH ENSURES ACCURACY SUCH THAT FIELD REAMING WILL NOT EXCEED THE AMOUNT PERMITTED IN ARTICLE 505.08(I) OF THE STANDARD SPECIFICATIONS.

P:\682540\57-294.5-9\STRUCTURAL\RESTART.2018\Ramp C over I-57 and I-294\016201.5_unit1-cross_frame_det.dgn
3/30/2020

DRAWN BY . . . . SP
CHECKED BY . . . SP
DATE . 4-3-2020
SCALE . NONE

T·Y·LIN INTERNATIONAL

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

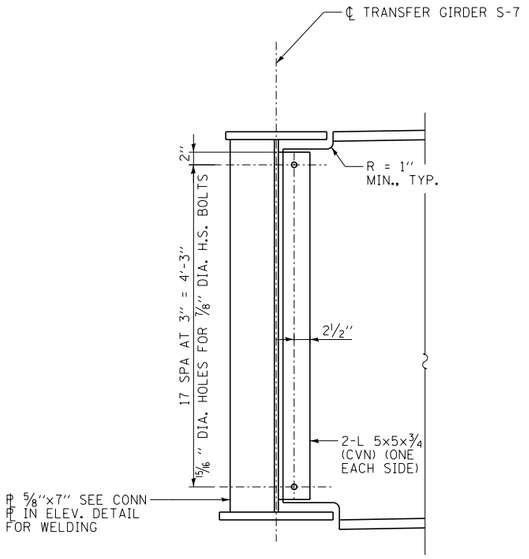
REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

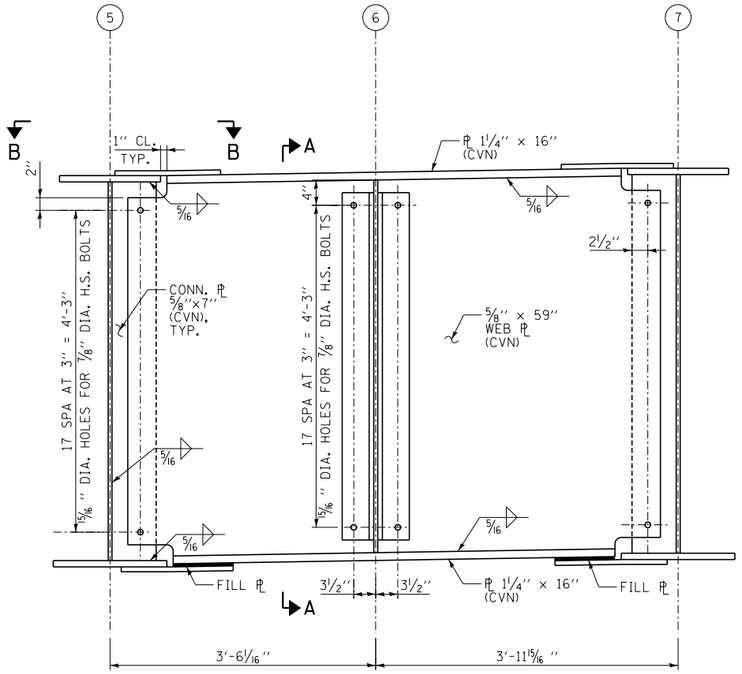
I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
UNIT 1 - CROSS FRAME DETAILS

SHEET SC - 108 OF 234

383 OF 606

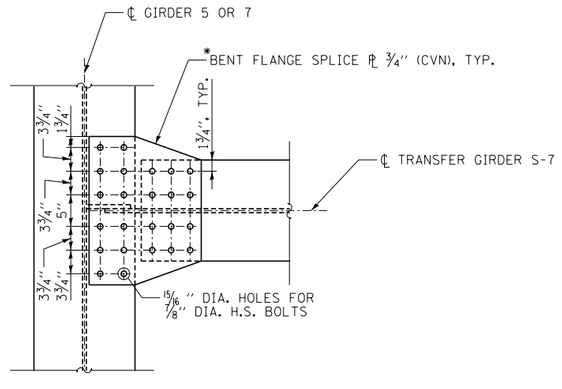


SECTION A-A



TRANSFER GIRDER S-7 ELEVATION

(LOOKING UPSTATION)



VIEW B-B

(TOP & BOTTOM)

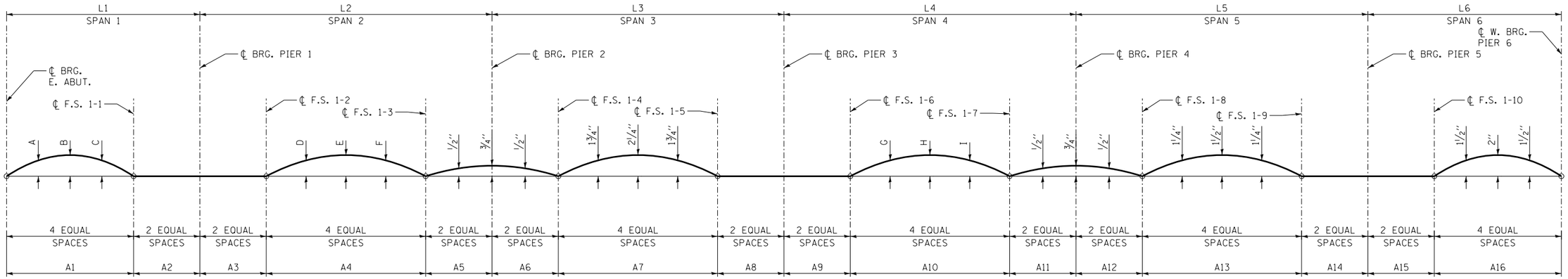
* BEND SPLICE PLATE AT FLANGE EDGE TO ACCOMODATE SLOPE OF TRANSFER GIRDER

NOTES:

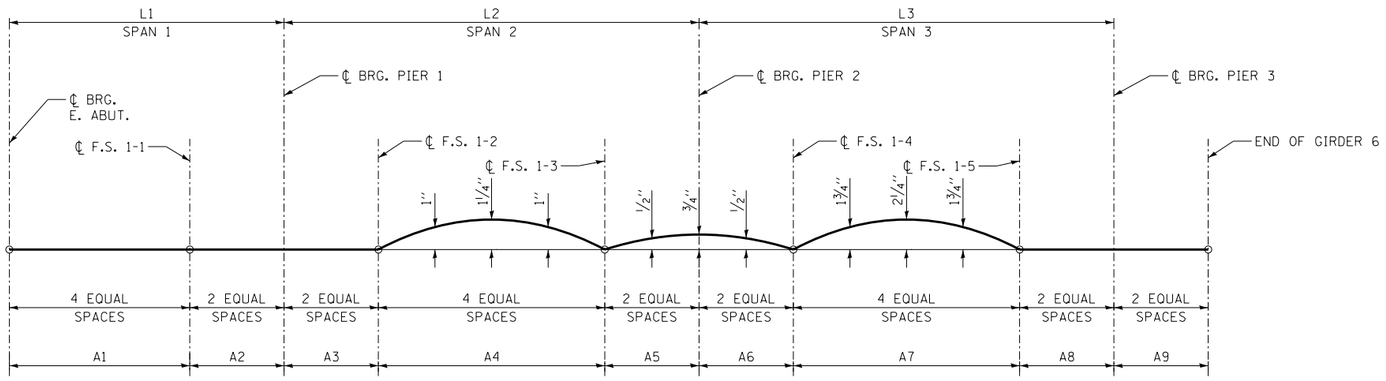
1. TRANSFER GIRDER IS CONSIDERED A SYSTEM REDUNDANT MEMBER. FABRICATION OF THE GIRDER AND ITS CONNECTIONS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF CHAPTER 12 OF THE AWS D1.5 BRIDGE WELDING CODE.
2. ALL STRUCTURAL STEEL FOR THE TRANSFER GIRDER, INCLUDING ALL CONNECTION PLATES, SHALL BE AASHTO M270 GRADE 50 AND MEET CVN.
3. LOAD CARRYING COMPONENTS DESIGNATED "CVN" SHALL CONFORM TO THE CHARPY-V-NOTCH IMPACT ENERGY REQUIREMENTS, ZONE 2.
4. ADJUST SHEAR STUD SPACING TO MISS TOP CONNECTION PLATE.

P:\68254057-294.5-91\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\016\2101.5_unit1-header beam S-7.dgn
3/30/2020

DRAWN BY . . . . SP	DATE . 4-3-2020	TYLIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	REVISIONS NO. / DATE / DESCRIPTION	CONTRACT I-19-4495 I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 116) UNIT 1 - STEEL DETAILS	SHEET SC - 109 OF 234 384 OF 606
CHECKED BY . . . . SP	SCALE . NONE					



UNIT 1 - CAMBER DIAGRAM - GIRDERS 1 THRU 5, AND 7



UNIT 1 - CAMBER DIAGRAM - GIRDER 6

CAMBER DIMENSIONS

GIRDER	A	B	C	D	E	F	G	H	I
1	1¾"	2¼"	1¾"	2"	2½"	2"	½"	¾"	½"
2	1½"	2"	1½"	1¾"	2¼"	1¾"	1"	1¼"	1"
3	1¼"	1¾"	1¼"	1½"	2"	1½"	1¼"	1½"	1¼"
4	1"	1¼"	1"	1¼"	1¾"	1¼"	1½"	2"	1½"
5	¾"	1"	¾"	1¼"	1½"	1¼"	1¾"	2¼"	1¾"
7	0"	0"	0"	¾"	1"	¾"	2"	2¾"	2"

TOP OF WEB ELEVATIONS

(FOR FABRICATION ONLY)

GIRDER	℄ BRG. E. ABUT.	℄ F.S. 1-1	℄ BRG. PIER 1	℄ F.S. 1-2	℄ F.S. 1-3	℄ BRG. PIER 2	℄ F.S. 1-4	℄ F.S. 1-5	℄ BRG. PIER 3	℄ F.S. 1-6	℄ F.S. 1-7	℄ BRG. PIER 4	℄ F.S. 1-8	℄ F.S. 1-9	℄ BRG. PIER 5	℄ F.S. 1-10	℄ E. BRG. PIER 6
1	631.23	632.84	633.38	634.00	634.85	635.21	635.40	635.84	635.97	636.08	636.49	636.77	636.88	637.22	637.67	637.93	638.96
2	630.80	632.39	632.92	633.55	634.49	634.91	635.16	635.75	635.96	636.12	636.60	636.88	636.99	637.34	637.78	638.05	639.08
3	630.37	631.93	632.47	633.10	634.13	634.62	634.92	635.66	935.94	636.17	636.72	637.00	637.11	637.45	637.89	638.16	639.19
4	629.94	631.47	632.02	632.65	633.76	634.32	634.68	635.57	635.92	636.21	636.83	637.11	637.22	637.56	638.01	638.27	639.30
5	629.51	631.02	631.56	632.20	633.40	634.02	634.44	635.48	635.90	636.26	636.94	637.22	637.33	637.67	638.12	638.38	639.41
6	629.02	630.54	631.11	631.77	633.09	633.78	634.25	635.43	635.94	636.61•	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7	628.51	630.05	630.64	631.33	632.78	633.54	634.07	635.37	635.88	636.30	637.05	637.33	637.45	637.79	638.23	638.49	639.53

• END OF GIRDER 6

NOTES:

1. THE CONTRACTOR IS ALERTED THAT CAMBER AND DEAD LOAD DEFLECTION VALUES SHOWN ON THE PLANS WERE DEVELOPED BASED ON THE DECK POURING SEQUENCE SHOWN IN THE CONTRACT DRAWINGS. ANY DEVIATION FROM THIS POURING SEQUENCE WILL RESULT IN CHANGES TO CAMBER AND ELEVATIONS THAT REFLECT DEAD LOAD DEFLECTIONS. IF THE CONTRACTOR WISHES TO CHANGE THE SEQUENCE, THEN THE PROPOSED PLAN REVISIONS AND DESIGN CALCULATIONS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL. THE CALCULATIONS SHALL BE PREPARED AND SEALED BY A LICENSED STRUCTURAL ENGINEER IN ILLINOIS.
2. FOR A1-A16 DIMENSIONS, SEE FRAMING PLAN SHEETS SC-101 TO SC-106.

P:\62540\57-294_5-9\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\016201.5_unit1_camber_diagram.dgn
3/30/2020

DRAWN BY . . . . RH	DATE . 4-3-2020	TY·LIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	REVISIONS: NO. / DATE / DESCRIPTION	CONTRACT I-19-4495
CHECKED BY . . . . SP	SCALE . NONE				I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 116) UNIT 1 - CAMBER DIAGRAM

EXTERIOR GIRDER 1

		GIRDER MOMENT TABLE										
		0.4 SP. 1	PIER 1	0.5 SP. 2	PIER 2	0.5 SP. 3	PIER 3	0.5 SP. 4	PIER 4	0.5 SP. 5	PIER 5	0.6 SP. 6
I_s	(IN^4)	42,829	71,322	42,829	62,321	42,829	62,321	42,829	62,321	42,829	71,322	42,829
$I_c(n)$	(IN^4)	90,770	127,277	90,770	115,267	90,770	115,267	90,770	115,267	90,770	127,277	90,770
$I_c(3n)$	(IN^4)	67,146	97,474	67,146	87,609	67,146	87,609	67,146	87,609	67,146	97,474	67,146
$I_c(cr)$	(IN^4)		80,370		71,183		71,183		71,183		80,370	
S_s	(IN^3)	1,421	2,246	1,421	1,978	1,421	1,978	1,421	1,978	1,421	2,246	1,421
$S_c(n)$	(IN^3)	1,864	2,696	1,864	2,418	1,864	2,418	1,864	2,418	1,864	2,696	1,864
$S_c(3n)$	(IN^3)	1,697	2,500	1,697	2,232	1,697	2,232	1,697	2,232	1,697	2,500	1,697
$S_c(cr)$	(IN^3)		2,347		2,081		2,081		2,081		2,347	
S_{xc}	(IN^3)	1,726.8	2,311.9	1,818.7	2,060.5	1,790.8	2,059.0	1,810.5	2,069.7	1,858.2	2,315.6	1,734.7
DC1	(K/')	0.94	1.05	0.94	1.01	0.94	1.01	0.94	1.01	0.94	1.05	0.94
M_{DC1}	('K)	1,246	2,033	411	1,325	666	1,424	484	734	55	1,733	1,168
DC2	(K/')	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
M_{DC2}	('K)	213	342	79	230	110	253	101	147	14	316	229
DW	(K/')	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.300
M_{DW}	('K)	405	592	135	393	221	790	153	208	15	496	377
M_{L+IM}	('K)	2,312	2,463	1,867	2,096	1,739	2,112	1,504	1,778	1,523	2,342	2,271
f_f (STRENGTH I)	(KSI)	0.29	0.04	0.23	0.05	0.03	0.01	0.01	0.01	0.03	0.01	0.01
$M_U + \frac{1}{3} f_f S_{xc}$	('K)	6,492	8,170	4,094	6,205	4,346	6,979	3,594	4,525	2,777	7,404	6,288
$\phi_f M_n$	('K)											
f_s DC1	(KSI)	10.52	10.86	3.47	8.04	5.62	8.64	4.09	4.45	0.46	9.26	9.87
f_s DC2	(KSI)	1.51	1.75	0.56	1.32	0.78	1.46	0.72	0.85	0.10	1.61	1.62
f_s DW	(KSI)	2.86	3.03	0.96	2.26	1.56	4.55	1.08	1.20	0.11	2.53	2.67
f_s (L+IM)	(KSI)	14.88	12.60	12.02	12.09	11.19	12.18	9.68	10.25	9.80	11.98	14.62
f_f (SERVICE II)	(KSI)	0.22	0.03	0.17	0.04	0.02	0.01	0.01	0.01	0.02	0.01	0.01
$f_s + \frac{1}{2}$ (SERVICE II)	(KSI)	34.35	32.02	20.69	27.36	22.52	30.49	18.47	19.83	13.43	28.98	33.16
$0.95R_h F_{yf}$	(KSI)	47.50	47.50	47.50	47.50	47.50	47.50	47.50	47.50	47.50	47.50	47.50
$f_s + \frac{1}{3}$ (TOTAL)(STRENGTH I)	(KSI)	45.4	42.3	27.5	36.3	29.9	40.8	24.6	26.4	18.0	38.3	43.9
$\phi_f F_n$	(KSI)	50.00	47.59	50.00	44.62	50.00	44.62	50.00	47.18	50.00	47.59	50.00
V_f	(K)	41.29	42.53	37.99	39.13	41.00	46.17	43.61	58.06	39.04	49.29	45.54

GIRDER REACTION TABLE								
		E. ABUT.	PIER 1	PIER 2	PIER 3	PIER 4	PIER 5	PIER 6
R_{DC1}	(K)	51.8	143.4	123.5	128.4	91.0	139.4	48.3
R_{DC2}	(K)	10.0	25.9	22.7	23.7	18.0	25.9	10.1
R_{DW}	(K)	16.6	40.0	34.5	35.9	24.8	37.9	15.2
R_{L+IM}	(K)	104.6	185.6	170.8	178.0	164.7	198.3	111.1
R_{Total}	(K)	183.1	394.8	351.5	366.0	298.5	401.4	184.7

INTERIOR GIRDER 2

		GIRDER MOMENT TABLE										
		0.4 SP. 1	PIER 1	0.5 SP. 2	PIER 2	0.5 SP. 3	PIER 3	0.5 SP. 4	PIER 4	0.5 SP. 5	PIER 5	0.6 SP. 6
I_s	(IN^4)	42,829	71,322	42,829	62,321	42,829	62,321	42,829	62,321	42,829	71,322	42,829
$I_c(n)$	(IN^4)	94,401	132,305	94,401	119,818	94,401	119,818	94,401	119,818	94,401	132,305	94,401
$I_c(3n)$	(IN^4)	70,049	100,883	70,049	90,833	70,049	90,833	70,049	90,833	70,049	100,883	70,049
$I_c(cr)$	(IN^4)		80,370		71,183		71,183		71,183		80,370	
S_s	(IN^3)	1,421	2,246	1,421	1,978	1,421	1,978	1,421	1,978	1,421	2,246	1,421
$S_c(n)$	(IN^3)	1,885	2,723	1,885	2,443	1,885	2,443	1,885	2,443	1,885	2,723	1,885
$S_c(3n)$	(IN^3)	1,721	2,526	1,721	2,258	1,721	2,258	1,721	2,258	1,721	2,526	1,721
$S_c(cr)$	(IN^3)		2,347		2,081		2,081		2,081		2,347	
S_{xc}	(IN^3)	1,748	2,319	1,837	2,060	1,810	2,059	1,828	2,069	1,876	2,323	1,749
DC1	(K/')	1.05	1.16	1.05	1.12	1.05	1.12	1.05	1.12	1.05	1.16	1.05
M_{DC1}	('K)	1,196	2,052	413	1,349	656	1,441	489	768	72	1,779	1,178
DC2	(K/')	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
M_{DC2}	('K)	206	331	77	225	111	253	102	148	16	325	238
DW	(K/')	0.375	0.375	0.375	0.375	0.375	0.375	0.375	0.375	0.375	0.375	0.375
M_{DW}	('K)	403	636	150	436	220	455	169	251	31	551	396
M_{L+IM}	('K)	1,965	2,080	1,602	1,798	1,513	1,746	1,325	1,477	1,282	1,913	1,871
f_f (STRENGTH I)	(KSI)	0.25	0.04	0.19	0.05	0.03	0.04	0.02	0.05	0.04	0.05	0.03
$M_U + \frac{1}{3} f_f S_{xc}$	('K)	5,795	7,572	3,640	5,767	3,936	5,856	3,311	4,107	2,401	6,805	5,638
$\phi_f M_n$	('K)											
f_s DC1	(KSI)	10.10	10.96	3.49	8.18	5.54	8.74	4.13	4.66	0.61	9.50	9.95
f_s DC2	(KSI)	1.43	1.69	0.53	1.30	0.77	1.46	0.71	0.85	0.11	1.66	1.66
f_s DW	(KSI)	2.81	3.25	1.04	2.51	1.53	2.63	1.18	1.45	0.22	2.82	2.76
f_s (L+IM)	(KSI)	12.51	10.63	10.20	10.37	9.63	10.07	8.44	8.52	8.16	9.78	11.91
f_f (SERVICE II)	(KSI)	0.19	0.03	0.14	0.04	0.02	0.03	0.01	0.04	0.03	0.03	0.02
$f_s + \frac{1}{2}$ (SERVICE II)	(KSI)	30.70	29.74	18.40	25.48	20.38	25.93	16.99	18.05	11.56	26.72	29.86
$0.95R_h F_{yf}$	(KSI)	47.50	47.50	47.50	47.50	47.50	47.50	47.50	47.50	47.50	47.50	47.50
$f_s + \frac{1}{3}$ (TOTAL)(STRENGTH I)	(KSI)	40.6	39.3	24.5	33.8	27.1	34.3	22.6	24.0	15.5	35.3	39.5
$\phi_f F_n$	(KSI)	50.00	47.59	50.00	44.62	50.00	44.62	50.00	47.18	50.00	47.59	50.00
V_f	(K)	37.07	43.67	27.06	44.43	27.75	46.46	35.06	36.12	32.66	41.55	46.13

GIRDER REACTION TABLE								
		E. ABUT.	PIER 1	PIER 2	PIER 3	PIER 4	PIER 5	PIER 6
R_{DC1}	(K)	50.4	159.3	157.0	131.4	95.7	144.3	49.1
R_{DC2}	(K)	8.7	26.9	22.1	23.6	18.4	27.1	9.6
R_{DW}	(K)	17.0	51.7	42.8	43.9	32.5	47.3	16.7
R_{L+IM}	(K)	86.3	169.4	161.1	160.7	151.5	167.6	98.2
R_{Total}	(K)	162.4	407.3	382.9	359.6	297.9	386.3	173.5

I_s, S_s: NON-COMPOSITE MOMENT OF INERTIA AND SECTION MODULUS OF THE STEEL SECTION USED FOR COMPUTING F_s (TOTAL-STRENGTH I, AND SERVICE II) DUE TO NON-COMPOSITE DEAD LOADS ($IN.^4$ AND $IN.^3$).

$I_c(n)$, $S_c(n)$: COMPOSITE MOMENT OF INERTIA AND SECTION MODULUS OF THE STEEL AND DECK BASED UPON THE MODULAR RATIO, "N", USED FOR COMPUTING F_s (TOTAL-STRENGTH I, AND SERVICE II) IN UNCRACKED SECTIONS DUE TO SHORT TERM COMPOSITE LIVE LOADS ($IN.^4$ AND $IN.^3$).

$I_c(3n)$, $S_c(3n)$: COMPOSITE MOMENT OF INERTIA AND SECTION MODULUS OF THE STEEL AND DECK BASED UPON 3 TIMES THE MODULAR RATIO, "3N", USED FOR COMPUTING F_s (TOTAL-STRENGTH I, AND SERVICE II) IN UNCRACKED SECTIONS DUE TO LONG-TERM COMPOSITE (SUPERIMPOSED) DEAD LOADS ($IN.^4$ AND $IN.^3$).

$I_c(cr)$, $S_c(cr)$: COMPOSITE MOMENT OF INERTIA AND SECTION MODULUS OF THE STEEL AND LONGITUDINAL DECK REINFORCEMENT, USED FOR COMPUTING F_s (TOTAL-STRENGTH I AND SERVICE II) IN CRACKED SECTIONS, DUE TO BOTH SHORT-TERM COMPOSITE LIVE LOADS AND LONG-TERM COMPOSITE (SUPERIMPOSED) DEAD LOADS ($IN.^4$ AND $IN.^3$).

S_{xc}: SECTION MODULUS ABOUT THE MAJOR AXIS OF SECTION TO THE CONTROLLING FLANGE, TENSION OR COMPRESSION, TAKEN AS YIELD MOMENT WITH RESPECT TO THE CONTROLLING FLANGE OVER THE YIELD STRENGTH OF THE CONTROLLING FLANGE ($IN.^3$).

DC1: UN-FACTORED NON-COMPOSITE DEAD LOAD (KIPS/FT.).

M_{DC1}: 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.).

M_{DC2}: 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.).

M_{DW}: UN-FACTORED MOMENT DUE TO LONG-TERM COMPOSITE (SUPERIMPOSED FUTURE WEARING SURFACE ONLY) DEAD LOAD (KIP-FT.).

M_{L+IM}: UN-FACTORED LIVE LOAD MOMENT PLUS DYNAMIC LOAD ALLOWANCE (IMPACT)(KIP-FT.).

M_U (STRENGTH I): FACTORED DESIGN MOMENT (KIP-FT.).
$1.25\ (M_{DC1} + M_{DC2}) + 1.5\ M_{DW} + 1.75\ M_{L+IM}$

f_f: FACTORED CALCULATED NORMAL STRESS AT EDGE OF FLANGE FOR CONTROLLING FLANGE PLATE DUE TO LATERAL BENDING, STRENGTH I OR SERVICE II AS APPLICABLE (KIP-FT.).

$\phi_f M_n$: 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.).

f_s DC1: UN-FACTORED STRESS AT EDGE OF FLANGE FOR CONTROLLING STEEL FLANGE DUE TO VERTICAL NON-COMPOSITE DEAD LOADS AS CALCULATED BELOW (KSI).
M_{DC1}/S_{sc}

f_s DC2: UN-FACTORED STRESS AT EDGE OF FLANGE FOR CONTROLLING STEEL FLANGE DUE TO VERTICAL COMPOSITE DEAD LOADS AS CALCULATED BELOW (KSI).
$M_{DC2}/S_c(3N)$ OR $M_{DC2}/S_c(CR)$ AS APPLICABLE.

f_s DW: UN-FACTORED STRESS AT EDGE OF FLANGE FOR CONTROLLING STEEL FLANGE DUE TO VERTICAL COMPOSITE FUTURE WEARING SURFACE LOADS AS CALCULATED BELOW (KSI).
$M_{DW}/S_c(3N)$ OR $M_{DW}/S_c(CR)$ AS APPLICABLE.

f_s (L+IM): UN-FACTORED STRESS AT EDGE OF FLANGE FOR CONTROLLING STEEL FLANGE DUE TO VERTICAL COMPOSITE LIVE PLUS IMPACT LOADS AS CALCULATED BELOW (KSI).
$M_{L+IM}/S_c(N)$ OR $M_{DW}/S_c(CR)$ AS APPLICABLE.

$f_s + \frac{1}{2}$ (SERVICE II): SUM OF STRESSES AS COMPUTED BELOW (KSI).
$F_{sDC1} + F_{sDC2} + F_{sDW} + 1.3\ F_s(L+IM) + \frac{1}{2}$

$0.95R_hF_y f$: COMPOSITE STRESS CAPACITY FOR SERVICE II LOADING ACCORDING TO ARTICLE 6.10.4.2 (KSI).

$f_s + \frac{1}{3}$ (Total)(STRENGTH I): SUM OF STRESSES AS COMPUTED BELOW ON NON-COMPACT SECTION (KSI).
$1.25\ (F_{sDC1} + F_{sDC2}) + 1.5\ F_{sDW} + 1.75\ F_s(L+IM) + \frac{1}{3}$

$\phi_f F_n$: NON-COMPACT COMPOSITE POSITIVE OR NEGATIVE STRESS CAPACITY FOR STRENGTH I LOADING ACCORDING TO ARTICLE 6.10.7 OR 6.10.8 (KSI).

V_f: MAXIMUM FACTORED SHEAR RANGE IN SPAN COMPUTED ACCORDING TO ARTICLE 6.10.10.

NOTE:
M_L AND R_L INCLUDE THE EFFECTS OF CENTRIFUGAL FORCE AND SUPERELEVATION.

P:\682540\57-294_5-9\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\Q1622101.5_unit1_girder_tables01.dgn
3/30/2020

DRAWN BY . . . . RH . . . . . DATE . 4-3-2020 . . .
CHECKED BY . . . SP . . . . . SCALE . NONE . . . . .

T·Y·LIN INTERNATIONAL

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
UNIT 1 - GIRDER TABLES - 1

SHEET SC - 111 OF 234

386 OF 606

EXTERIOR GIRDER 7

		GIRDER MOMENT TABLE											
		0.4 SP. 1	PIER 1	0.5 SP. 2	PIER 2	0.5 SP. 3	PIER 3	0.5 SP. 4	PIER 4	0.5 SP. 5	PIER 5	0.6 SP. 6
I_s	(IN^4)	42,829	71,322	42,829	62,321	42,829	62,321	42,829	62,321	42,829	71,322	42,829
$I_c(n)$	(IN^4)	89,344	125,667	89,436	111,688	85,898	106,658	90,770	115,267	90,770	127,277	90,770
$I_c(3n)$	(IN^4)	66,066	96,433	66,135	85,235	63,585	82,113	67,146	87,609	67,146	97,474	67,146
$I_c(cr)$	(IN^4)		79,116		69,579		68,748		70,241		79,402	
S_s	(IN^3)	1,421	2,246	1,421	1,978	1,421	1,978	1,421	1,978	1,421	2,246	1,421
$S_c(n)$	(IN^3)	1,856	2,687	1,856	2,397	1,835	2,367	1,864	2,418	1,864	2,696	1,864
$S_c(3n)$	(IN^3)	1,687	2,492	1,688	2,213	1,665	2,186	1,836	2,232	1,697	2,500	1,697
$S_c(cr)$	(IN^3)		2,333		2,063		2,053		2,071		2,336	
S_{xc}	(IN^3)	1,756	2,313	1,815	2,048	1,776	2,040	1,823	2,061	1,856	2,315	1,733
DC1	(K/')	1.00	1.06	0.94	0.98	0.90	1.00	0.97	1.04	0.97	1.07	0.97
M_{DC1}	('K)	935	1,750	380	1,193	564	1,193	430	705	72	1,774	1,184
DC2	(K/')	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
M_{DC2}	('K)	146	275	76	229	112	216	85	135	19	318	228
DW	(K/')	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.300
M_{DW}	('K)	257	460	130	326	162	305	132	193	21	499	376
M_{L+IM}	('K)	1,838	2,090	1,626	1,755	1,433	1,645	1,480	1,767	1,534	2,363	2,296
f_f (STRENGTH I)	('K)	0.16	0.06	0.17	0.07	0.05	0.05	0.03	0.08	0.03	0.05	0.03
$M_u + \frac{1}{3} f_f S_{xc}$	('K)	4,961	6,884	3,619	5,343	3,598	5,101	3,434	4,437	2,831	7,504	6,350
$\phi_f M_n$	('K)											
f_s DC1	(KSI)	7.90	9.35	3.21	7.23	4.76	7.24	3.63	4.28	0.61	9.48	10.00
f_s DC2	(KSI)	1.04	1.42	0.54	1.33	0.81	1.26	0.56	0.78	0.13	1.63	1.61
f_s DW	(KSI)	1.83	2.37	0.92	1.90	1.17	1.78	0.86	1.12	0.15	2.56	2.66
f_s (L+IM)	(KSI)	11.89	10.75	10.51	10.21	9.37	9.61	9.53	10.24	9.87	12.14	14.78
f_f (SERVICE II)	(KSI)	0.12	0.04	0.13	0.05	0.03	0.04	0.02	0.06	0.02	0.04	0.02
$f_s + \frac{1}{2}$ (SERVICE II)	(KSI)	26.27	27.13	18.40	23.76	18.94	22.80	17.45	19.52	13.74	29.47	33.50
$0.95R_h F_{yf}$	(KSI)	47.50	47.50	47.50	47.50	47.50	47.50	47.50	47.50	47.50	47.50	47.50
$f_s + \frac{1}{3}$ (TOTAL)(STRENGTH I)	(KSI)	34.8	35.8	24.5	31.4	25.1	30.1	23.2	26.0	18.4	39.0	44.4
$\phi_f F_n$	(KSI)	50.00	48.02	50.00	47.18	50.00	44.62	50.00	47.18	50.00	47.59	50.00
V_f	(K)	36.16	44.40	36.60	34.79	34.28	39.22	36.66	44.18	40.67	49.55	47.34

	GIRDER REACTION TABLE							
		E. ABUT.	PIER 1	PIER 2	PIER 3	PIER 4	PIER 5	PIER 6
R_{DC1}	(K)	41.4	153.6	113.5	106.6	90.4	142.6	49.2
R_{DC2}	(K)	7.6	25.4	22.1	21.1	17.6	26.0	10.1
R_{DW}	(K)	1.1	37.9	28.3	23.7	23.6	38.1	15.2
R_{L+IM}	(K)	85.7	177.5	151.0	13.5	165.8	200.0	112.6
R_{Total}	(K)	145.8	394.4	314.9	290.8	297.4	406.7	187.1

I_s, S_s: NON-COMPOSITE MOMENT OF INERTIA AND SECTION MODULUS OF THE STEEL SECTION USED FOR COMPUTING F_s (TOTAL-STRENGTH I, AND SERVICE II) DUE TO NON-COMPOSITE DEAD LOADS ($IN.^4$ AND $IN.^3$).

$I_c(n)$, $S_c(n)$: COMPOSITE MOMENT OF INERTIA AND SECTION MODULUS OF THE STEEL AND DECK BASED UPON THE MODULAR RATIO, "N", USED FOR COMPUTING F_s (TOTAL-STRENGTH I, AND SERVICE II) IN UNCRACKED SECTIONS DUE TO SHORT TERM COMPOSITE LIVE LOADS ($IN.^4$ AND $IN.^3$).

$I_c(3n)$, $S_c(3n)$: COMPOSITE MOMENT OF INERTIA AND SECTION MODULUS OF THE STEEL AND DECK BASED UPON 3 TIMES THE MODULAR RATIO, "3N", USED FOR COMPUTING F_s (TOTAL-STRENGTH I, AND SERVICE II) IN UNCRACKED SECTIONS DUE TO LONG-TERM COMPOSITE (SUPERIMPOSED) DEAD LOADS ($IN.^4$ AND $IN.^3$).

$I_c(cr)$, $S_c(cr)$: COMPOSITE MOMENT OF INERTIA AND SECTION MODULUS OF THE STEEL AND LONGITUDINAL DECK REINFORCEMENT, USED FOR COMPUTING F_s (TOTAL-STRENGTH I AND SERVICE II) IN CRACKED SECTIONS, DUE TO BOTH SHORT-TERM COMPOSITE LIVE LOADS AND LONG-TERM COMPOSITE (SUPERIMPOSED) DEAD LOADS ($IN.^4$ AND $IN.^3$).

S_{xc}: SECTION MODULUS ABOUT THE MAJOR AXIS OF SECTION TO THE CONTROLLING FLANGE, TENSION OR COMPRESSION, TAKEN AS YIELD MOMENT WITH RESPECT TO THE CONTROLLING FLANGE OVER THE YIELD STRENGTH OF THE CONTROLLING FLANGE ($IN.^3$).

DC1: UN-FACTORED NON-COMPOSITE DEAD LOAD (KIPS/FT.).

M_{DC1}: 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.).

M_{DC2}: 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.).

M_{DW}: UN-FACTORED MOMENT DUE TO LONG-TERM COMPOSITE (SUPERIMPOSED FUTURE WEARING SURFACE ONLY) DEAD LOAD (KIP-FT.).

M_{L+IM}: UN-FACTORED LIVE LOAD MOMENT PLUS DYNAMIC LOAD ALLOWANCE (IMPACT)(KIP-FT.).

M_u (STRENGTH I): FACTORED DESIGN MOMENT (KIP-FT.).
$1.25\ (M_{DC1} + M_{DC2}) + 1.5\ M_{DW} + 1.75\ M_{L+IM}$

f_f: FACTORED CALCULATED NORMAL STRESS AT EDGE OF FLANGE FOR CONTROLLING FLANGE PLATE DUE TO LATERAL BENDING, STRENGTH I OR SERVICE II AS APPLICABLE (KIP-FT.).

$\phi_f M_n$: 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.).

f_s DC1: UN-FACTORED STRESS AT EDGE OF FLANGE FOR CONTROLLING STEEL FLANGE DUE TO VERTICAL NON-COMPOSITE DEAD LOADS AS CALCULATED BELOW (KSI).
M_{DC1}/S_{nc}

f_s DC2: UN-FACTORED STRESS AT EDGE OF FLANGE FOR CONTROLLING STEEL FLANGE DUE TO VERTICAL COMPOSITE DEAD LOADS AS CALCULATED BELOW (KSI).
M_{DC2}/S_c (3N) OR M_{DC2}/S_c (CR) AS APPLICABLE.

f_s DW: UN-FACTORED STRESS AT EDGE OF FLANGE FOR CONTROLLING STEEL FLANGE DUE TO VERTICAL COMPOSITE FUTURE WEARING SURFACE LOADS AS CALCULATED BELOW (KSI).
M_{DW}/S_c (3N) OR M_{DW}/S_c (CR) AS APPLICABLE.

f_s (L+IM): UN-FACTORED STRESS AT EDGE OF FLANGE FOR CONTROLLING STEEL FLANGE DUE TO VERTICAL COMPOSITE LIVE PLUS IMPACT LOADS AS CALCULATED BELOW (KSI).
M_{L+IM}/S_c (N) OR M_{DW}/S_c (CR) AS APPLICABLE.

$f_s + \frac{1}{2}$ (SERVICE II): SUM OF STRESSES AS COMPUTED BELOW (KSI).
$F_{sDC1} + F_{sDC2} + F_{sDW} + 1.3\ F_s\ (L + IM) + \frac{1}{2}$

$0.95R_h F_y f$: COMPOSITE STRESS CAPACITY FOR SERVICE II LOADING ACCORDING TO ARTICLE 6.10.4.2 (KSI).

$f_s + \frac{1}{3}$ (Total)(STRENGTH I): SUM OF STRESSES AS COMPUTED BELOW ON NON-COMPACT SECTION (KSI).
$1.25\ (F_{sDC1} + F_{sDC2}) + 1.5\ F_{sDW} + 1.75\ F_s\ (L + IM) + \frac{1}{3}$

$\phi_f F_n$: NON-COMPACT COMPOSITE POSITIVE OR NEGATIVE STRESS CAPACITY FOR STRENGTH I LOADING ACCORDING TO ARTICLE 6.10.7 OR 6.10.8 (KSI).

V_f: MAXIMUM FACTORED SHEAR RANGE IN SPAN COMPUTED ACCORDING TO ARTICLE 6.10.10.

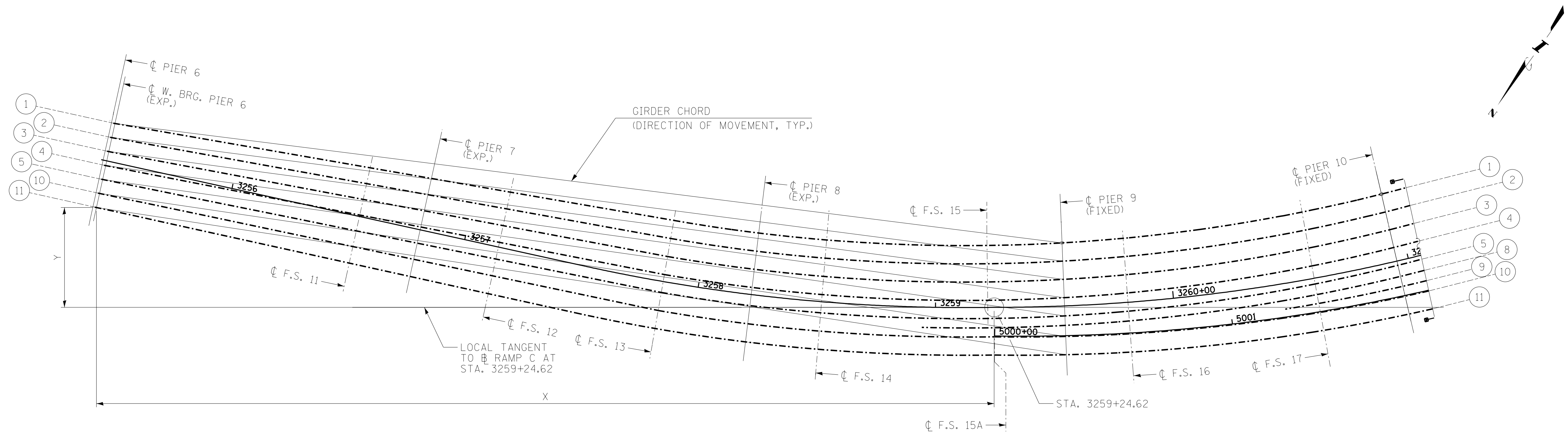
NOTE:
M_L AND R_L INCLUDE THE EFFECTS OF CENTRIFUGAL FORCE AND SUPERELEVATION.

P:\682540\57-294_5-9\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\Q162101.5_unit1_girder_tables02.dgn
3/30/2020

DRAWN BY . . . . RH	DATE . 4-3-2020	T·Y·LIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	REVISIONS NO. / DATE / DESCRIPTION	CONTRACT I-19-4495
CHECKED BY . . . . SP	SCALE . NONE				I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 116) UNIT 1 - GIRDER TABLES - 2

SHEET SC - 112 OF 234

387 OF 606



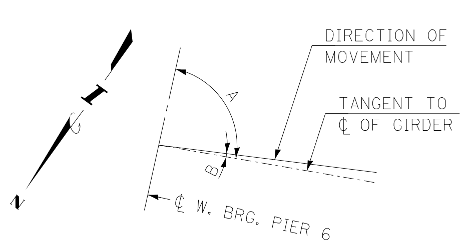
GIRDER LAYOUT PLAN - SPANS 7 THRU 10

LAYOUT DIMESIONS - SPANS 7 THRU 10

GIRDER	℄ W. BRG. PIER 6		℄ F.S. 11		℄ PIER 7		℄ F.S. 12		℄ F.S. 13		℄ PIER 8		℄ F.S. 14		℄ F.S. 15		℄ F.S. 15A		℄ PIER 9		℄ F.S. 16		℄ F.S. 17		℄ PIER 10	
	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y
1	-368.972	77.132	-261.838	58.544	-236.133	54.084	-202.970	48.330	-134.444	36.441	-98.801	31.177	-70.323	28.278	-3.001	25.959	-	-	28.473	27.050	54.115	28.966	129.204	39.973	162.505	47.505
2	-370.275	71.208	-263.299	51.904	-237.632	47.272	-204.517	41.296	-135.755	28.888	-99.730	23.567	-70.947	20.636	-2.904	18.293	-	-	28.777	19.388	54.693	21.320	130.586	32.431	164.245	40.037
3	-371.564	65.348	-264.752	45.300	-239.124	40.490	-206.060	34.284	-137.066	21.338	-100.659	15.957	-71.571	13.000	-2.808	10.627	-	-	29.081	11.726	55.270	13.674	131.967	24.889	165.984	32.569
4	-372.853	59.488	-266.204	38.699	-240.615	33.710	-207.602	27.275	-138.376	13.780	-101.588	8.347	-72.195	5.354	-2.711	2.961	-	-	29.385	4.065	55.848	6.028	133.349	17.347	167.723	25.101
5	-374.142	53.629	-267.656	32.099	-242.106	26.933	-209.143	20.269	-139.687	6.226	-102.517	0.737	-72.819	-2.287	-2.614	-4.705	-	-	29.688	-3.597	56.426	-1.618	134.731	9.804	169.463	17.634
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-30.379 A	-8.373 A	-	-	29.847	-7.599	56.735	-5.717	135.546	5.355	170.542	12.999
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	122.190 B	-0.778 B	171.513	8.831
10	375.432	47.769	-269.108	25.502	-243.596	20.159	-210.684	13.266	-140.997	-1.328	-103.445	-6.874	-73.443	-9.928	-	-	0.193	-12.332	30.030	-12.214	57.142	-11.092	136.916	-2.122	172.483	4.665
11	376.721	41.909	-270.633	18.569	-245.178	12.969	-212.339	5.744	-142.308	-8.882	-104.374	-14.484	-74.067	-17.570	-	-	0.197	-19.999	30.334	-19.876	57.719	-18.738	138.298	-9.664	174.223	-2.803

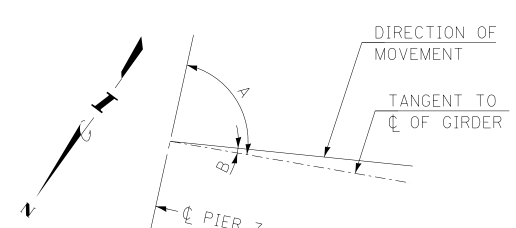
F.S. = FIELD SPLICE
A: START OF GIRDER 8
B: START OF GIRDER 9

GIRDER	A	B
1	87°26′06.36″	02°39′38.93″
2	87°49′17.70″	02°49′49.30″
3	88°13′22.15″	03°00′26.63″
4	88°37′23.08″	03°11′07.66″
5	89°01′20.35″	03°21′52.20″
10	89°25′13.84″	03°24′46.91″
11	90°00′00″	03°46′36.9″



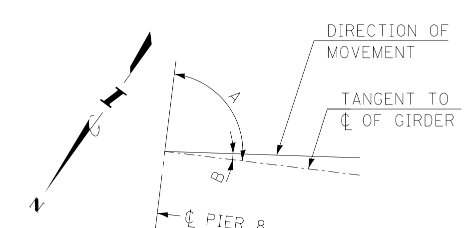
BEARING ORIENTATION - W. BRG. PIER 6

GIRDER	A	B
1	87°26′06.36″	04°00′33.07″
2	87°49′17.70″	04°15′14.88″
3	88°13′22.15″	04°30′33.34″
4	88°37′23.08″	04°45′53.52″
5	89°01′20.35″	05°01′15.18″
10	89°25′13.84″	05°04′50.66″
11	90°00′00″	05°36′33.56″



BEARING ORIENTATION - PIER 7

GIRDER	A	B
1	89°54′57.91″	05°01′04.32″
2	89°56′02.88″	05°01′50.72″
3	89°56′04.77″	05°01′34.42″
4	89°54′14.29″	04°59′26.14″
5	89°53′43.25″	04°58′37.65″
10	89°55′56.01″	04°36′00.39″
11	90°00′00″	04°40′01.20″



BEARING ORIENTATION - PIER 8

NOTES:

1. ALL LAYOUT DIMENSIONS ARE RELATIVE TO THE LOCAL TANGENT TO ℞ RAMP C AT STA. 3259+24.62 (STA. 3261+65.17 ON SHEET SC-114).

DRAWN BY JM
CHECKED BY SP
DATE 4-3-2020
SCALE NONE

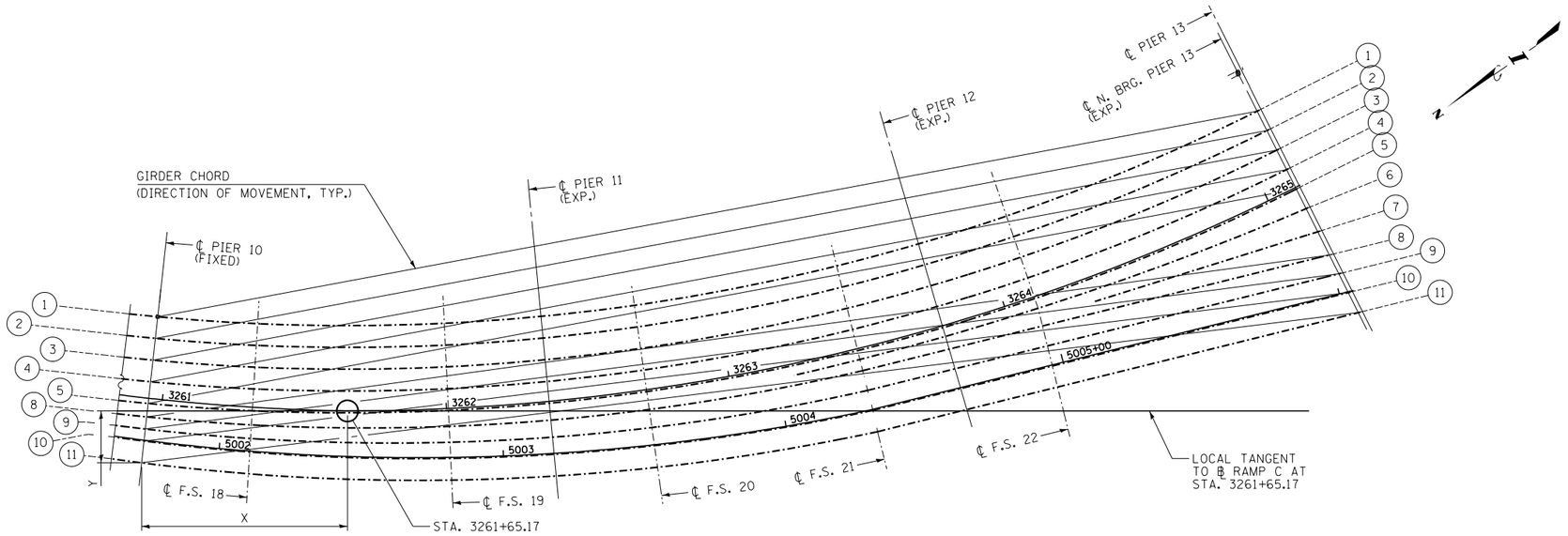
TYLIN INTERNATIONAL

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
UNIT 2 - GIRDER LAYOUT - 1



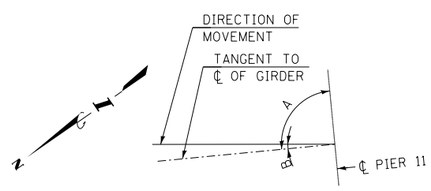
GIRDER LAYOUT PLAN - SPANS 11 TRU 13

LAYOUT DIMESIONS - SPANS 11 THRU 13

GIRDER	℄ PIER 10		℄ F.S. 18		℄ F.S. 19		℄ PIER 11		℄ F.S. 20		℄ F.S. 21		℄ PIER 12		℄ F.S. 22		℄ N. BRG. PIER 13	
	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y
1	-66.663	33.110	-31.551	30.696	34.044	30.810	68.026	33.239	100.904	37.146	172.007	50.968	200.732	58.714	231.685	68.521	319.810	105.393
2	-67.510	25.489	-32.023	23.042	34.408	23.152	68.755	25.607	101.985	29.556	173.849	43.526	202.881	51.354	234.166	61.267	323.248	98.540
3	-68.357	17.868	-32.494	15.389	34.773	15.494	69.483	17.975	103.065	21.966	175.690	36.084	205.031	43.995	236.647	54.013	326.687	91.688
4	-69.204	10.248	-32.966	7.736	35.137	7.836	70.211	10.343	104.146	14.375	177.532	28.641	207.180	36.636	239.128	46.758	330.126	84.836
5	-70.051	2.627	-33.437	0.082	35.502	0.179	70.940	2.711	105.226	6.785	179.374	21.199	209.329	29.277	241.609	39.504	333.565	77.984
6	-	-	-	-	-	-	-	-	-	-	156.941[C]	12.467[C]	210.223	26.217	242.783	36.069	337.003	71.132
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	262.785[D]	38.494[D]	341.096	62.976
8	-70.577	-2.103	-33.747	-4.940	35.769	-5.444	71.508	-3.238	106.120	-0.508	181.126	14.193	211.535	21.724	244.325	29.844	345.188	54.823
9	-71.049	-6.357	-34.040	-9.690	36.037	-11.056	72.081	-9.248	107.026	-5.856	182.873	7.185	213.562	14.785	246.061	22.833	348.509	48.205
10	-71.522'	-10.608'	-34.332	-14.437	36.304	-16.669	72.655	-15.258	107.931	-12.219	184.692	0.195	215.585	7.846	247.797	15.823	351.831	41.587
11	-72.369	-18.229	-34.804	-22.090	36.668	-24.331	73.383	-22.894	109.012	-19.813	186.419	-7.276	217.740	0.481	249.640	8.381	355.356	34.562

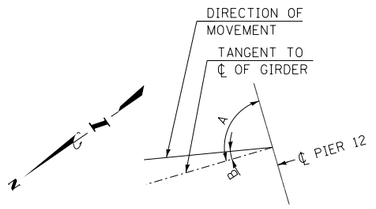
F.S. = FIELD SPLICE
C: START OF GIRDER 6
D: START OF GIRDER 7

GIRDER	A	B
1	87°26'06.36"	02°39'38.93"
2	87°49'17.70"	02°49'49.30"
3	88°13'22.15"	03°00'26.63"
4	88°37'23.08"	03°11'07.66"
5	89°01'20.35"	03°21'52.20"
10	89°25'13.84"	03°24'46.91"
11	90°00'00"	03°46'36.9"



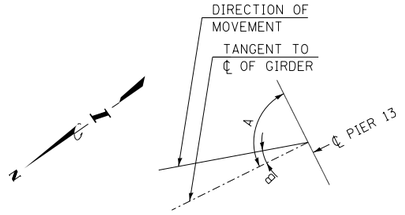
BEARING ORIENTATION - PIER 11

GIRDER	A	B
1	90°05'26.65"	10°54'08.87"
2	90°04'41.36"	10°53'42.63"
3	90°03'40.21"	10°53'00.14"
4	90°06'01.50"	10°55'39.71"
5	90°04'35.10"	10°54'31.20"
6	89°42'24.38"	01°31'05.00"
8	87°37'41.39"	09°04'54.36"
9	87°37'41.39"	09°39'40.01"
10	87°37'41.39"	10°13'54.08"
11	87°37'41.39"	10°13'09.80"



BEARING ORIENTATION - PIER 12

GIRDER	A	B
1	89°50'13.59"	15°53'35.18"
2	89°49'29.04"	15°53'07.41"
3	90°00'00"	16°03'54.78"
4	89°54'12.07"	15°58'22.94"
5	89°59'59.98"	16°04'26.59"
6	86°27'01.09"	05°03'15.33"
7	80°42'38.98"	00°00'00"
8	77°15'34.75"	06°06'47.02"
9	77°15'34.75"	06°29'59.92"
10	77°15'34.75"	06°52'51.35"
11	77°15'34.76"	06°52'24.50"



BEARING ORIENTATION - PIER 13

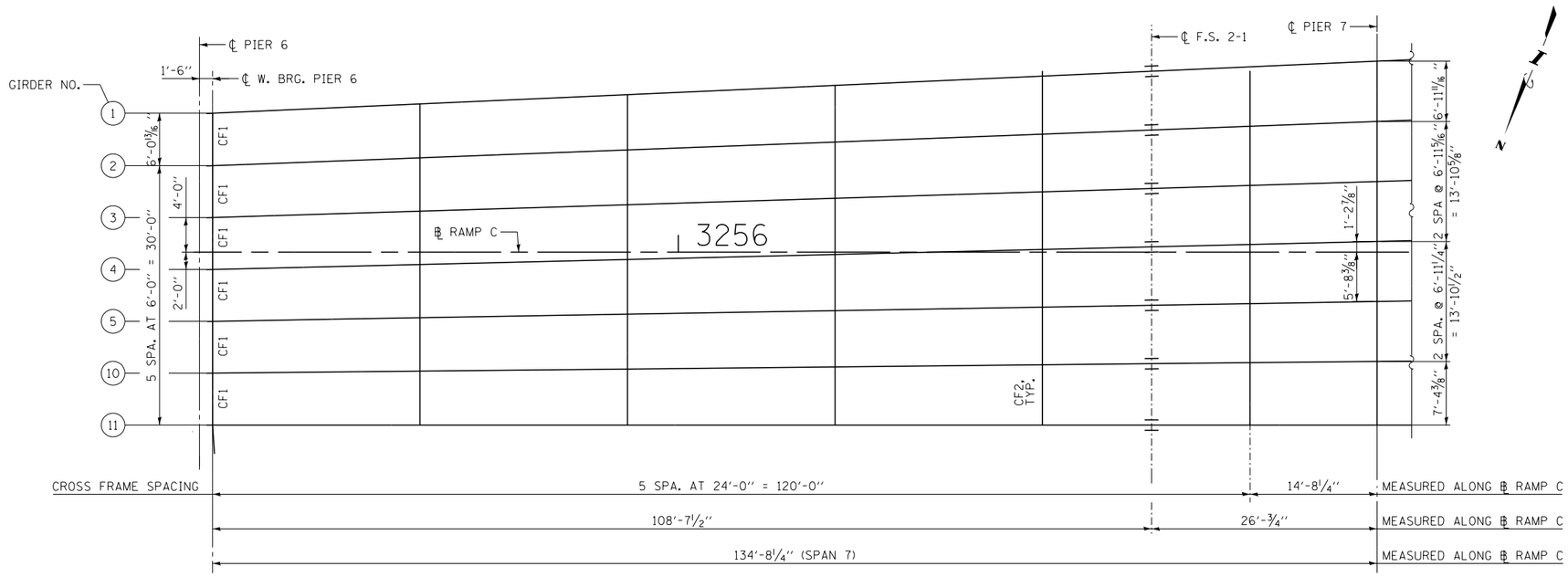
NOTES:

1. ALL LAYOUT DIMENSIONS ARE RELATIVE TO THE LOCAL TANGENT TO ℄ RAMP C AT STA. 3261+65.17(STA. 3259+24.62 ON SHEET SC-113).

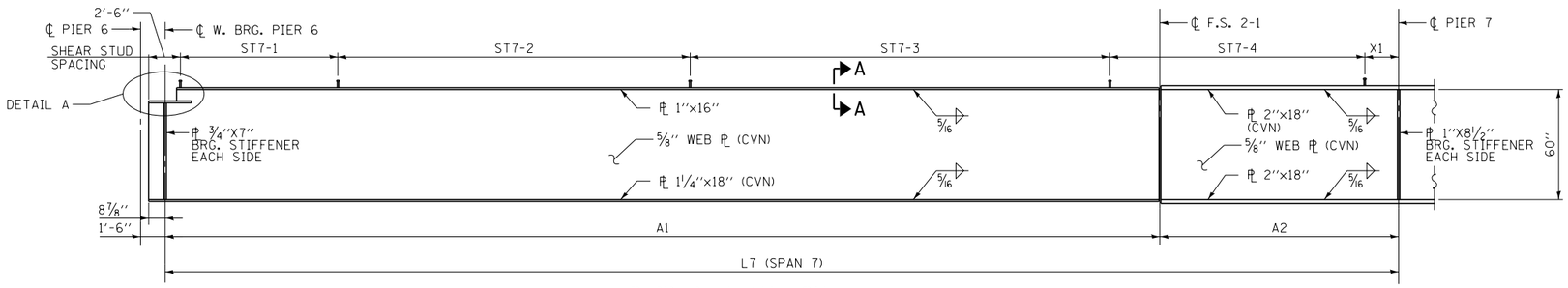
P:\62524057-294_5-9\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\01621Ø1_5_unit2-girder1layout02.dgn
3/30/2020

DRAWN BY . . . JM . . .	DATE . 4-3-2020 . . .	TY·LIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	CONTRACT I-19-4495
CHECKED BY . . . SP . . .	SCALE . NONE . . .			I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 116) UNIT 2 - GIRDER LAYOUT - 2

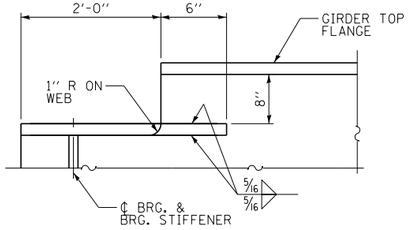
REVISIONS		
NO.	DATE	DESCRIPTION



UNIT 2 - FRAMING PLAN SPAN 7



GIRDER ELEVATION



DETAIL A

GIRDER DIMENSIONS

GIRDER	A1	A2	L7
1	108'-8 15/16"	26'-1 1/16"	134'-9 7/8"
2	108'-8 1/16"	26'-1"	134'-9 1/16"
3	108'-8 1/8"	26'-0 15/16"	134'-9 1/16"
4	108'-7 1/8"	26'-0 1/8"	134'-8 3/4"
5	108'-7 11/16"	26'-0 3/16"	134'-8 1/2"
10	108'-7 1/16"	26'-0 1/4"	134'-8 5/16"
11	108'-7 1/2"	26'-0 3/4"	134'-8 1/4"

WELDED SHEAR STUD SPACING

GIRDER	ST7-1	ST7-2	ST7-3	ST7-4	X1
1	55 SPA. AT 6"	39 SPA. AT 11"	50 SPA. AT 10"	56 SPA. AT 6"	1 3/4"
2	15 SPA. AT 12"	50 SPA. AT 15"	N/A	55 SPA. AT 12"	6 5/16"
3	15 SPA. AT 12"	50 SPA. AT 15"	N/A	55 SPA. AT 12"	5 5/16"
4	15 SPA. AT 12"	50 SPA. AT 15"	N/A	55 SPA. AT 12"	5 5/16"
5	15 SPA. AT 12"	50 SPA. AT 15"	N/A	55 SPA. AT 12"	5 3/8"
10	45 SPA. AT 11"	29 SPA. AT 15"	41 SPA. AT 12"	19 SPA. AT 9"	2 3/16"
11	55 SPA. AT 6"	60 SPA. AT 10"	29 SPA. AT 6"	54 SPA. AT 9"	5 1/8"

NOTES:

1. CROSS FRAME ORIENTATION AND ℄ PIER ARE RADIAL TO ℄ RAMP C.
2. ALL CROSS FRAMES BETWEEN GIRDERS SHALL BE INSTALLED WITH ERECTION PINS AND BOLTS IN ACCORDANCE WITH THE ERECTION PLANS APPROVED BY THE ENGINEER. INDIVIDUAL CROSS FRAMES AT SUPPORTS MAY BE TEMPORARILY DISCONNECTED TO INSTALL BEARING ANCHOR RODS.
3. "CVN" DENOTES CHARPY V-NOTCH ENERGY REQUIREMENTS, ZONE 2.
4. FOR SECTION A-A, SEE SHEET SC-124.

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3/30/2020

DRAWN BY . . . JM . . . .
CHECKED BY . . . SP . . . .
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T·Y·LIN INTERNATIONAL

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

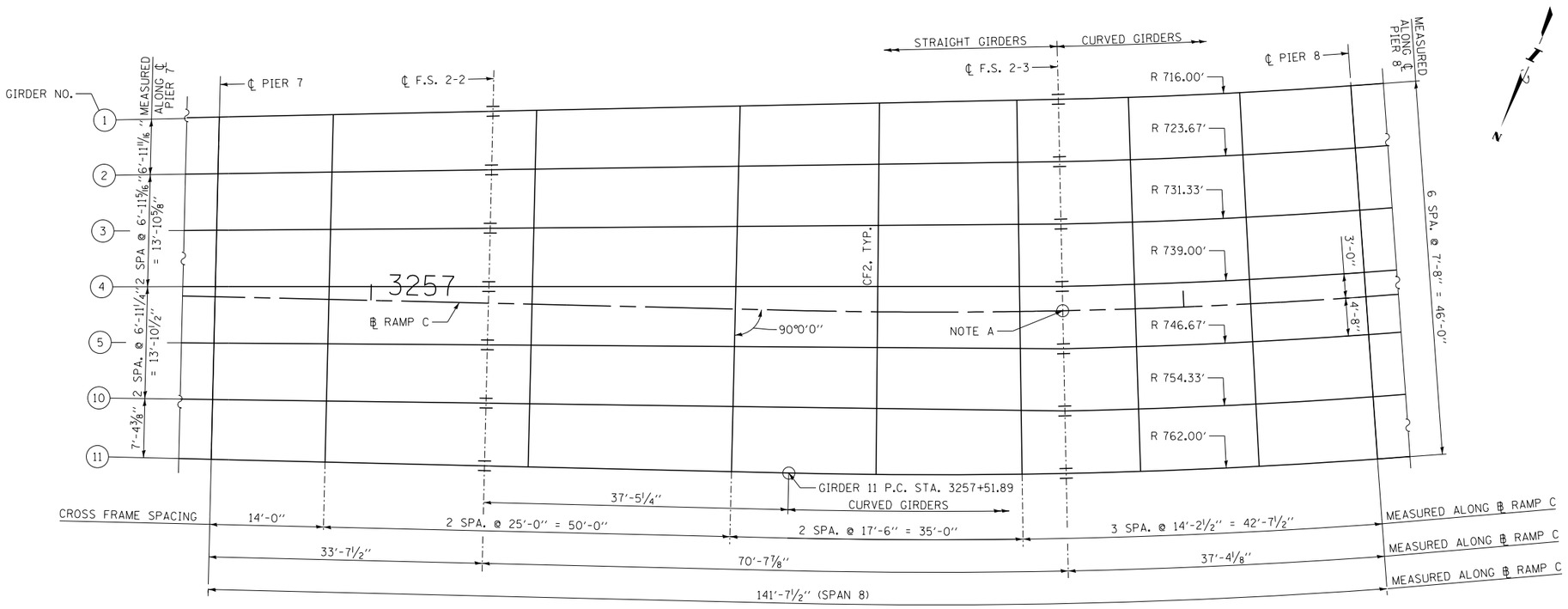
REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
UNIT 2 - FRAMING PLAN SPAN 7

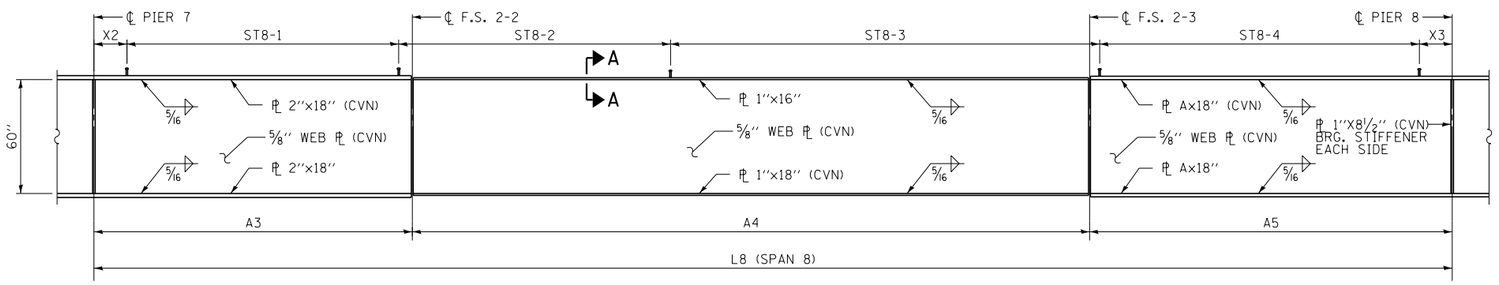
SHEET SC - 115 OF 234

390 OF 606



UNIT 2 - FRAMING PLAN SPAN 8

NOTE A: GIRDERS 1 THRU 5, AND 10 P.C. STA. 3257+85.11



GIRDER ELEVATION

FLANGE THICKNESS

GIRDER	A
1 THRU 5 & 10	1 3/4"
11	2"

GIRDER DIMENSIONS

GIRDER	A3	A4	A5	L8
1	33'-7 7/8"	69'-6 9/16"	36'-0 7/16"	139'-2 7/8"
2	33'-7 11/16"	69'-10 1/2"	36'-5 1/16"	139'-11 3/8"
3	33'-7 11/16"	70'-2 3/8"	36'-9 11/16"	140'-7 3/4"
4	33'-7 5/8"	70'-6 3/8"	37'-2 5/16"	141'-4 5/16"
5	33'-7 9/16"	70'-10 5/16"	37'-6 15/16"	142'-0 13/16"
10	33'-7 1/2"	71'-2 3/8"	37'-11 9/16"	142'-9 7/16"
11	33'-7 1/2"	71'-6 9/16"	38'-4 3/16"	143'-6 1/4"

WELDED SHEAR STUD SPACING

GIRDER	X2	ST8-1	ST8-2	ST8-3	ST8-4	X3
1	2 7/16"	56 SPA. AT 6"	29 SPA. AT 11"	93 SPA. AT 9"	29 SPA. AT 6"	2 7/16"
2	2 11/16"	12 SPA. AT 12"	85 SPA. AT 6"	94 SPA. AT 9"	29 SPA. AT 6"	2 11/16"
3	3 7/8"	12 SPA. AT 12"	85 SPA. AT 6"	94 SPA. AT 9"	30 SPA. AT 6"	3 7/8"
4	2 3/16"	12 SPA. AT 12"	85 SPA. AT 6"	94 SPA. AT 9"	32 SPA. AT 6"	2 1/8"
5	1/16"	12 SPA. AT 12"	85 SPA. AT 6"	94 SPA. AT 9"	34 SPA. AT 6"	3/8"
10	4 1/4"	21 SPA. AT 9"	11 SPA. AT 12"	96 SPA. AT 9"	52 SPA. AT 10"	4 3/16"
11	1 5/8"	75 SPA. AT 9"	N/A	N/A	174 SPA. AT 6"	1 5/8"

NOTES:

1. CROSS FRAME ORIENTATION AND ℄ PIER ARE RADIAL TO ℄ RAMP C.
2. ALL CROSS FRAMES BETWEEN GIRDERS SHALL BE INSTALLED WITH ERECTION PINS AND BOLTS IN ACCORDANCE WITH THE ERECTION PLANS APPROVED BY THE ENGINEER. INDIVIDUAL CROSS FRAMES AT SUPPORTS MAY BE TEMPORARILY DISCONNECTED TO INSTALL BEARING ANCHOR RODS.
3. "CVN" DENOTES CHARPY V-NOTCH ENERGY REQUIREMENTS, ZONE 2.
4. FOR SECTION A-A, SEE SHEET SC-124.

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3/30/2020

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CHECKED BY . . . SP . . . . .
DATE . 4-3-2020 . . .
SCALE . NONE . . . . .

T·Y·LIN INTERNATIONAL

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

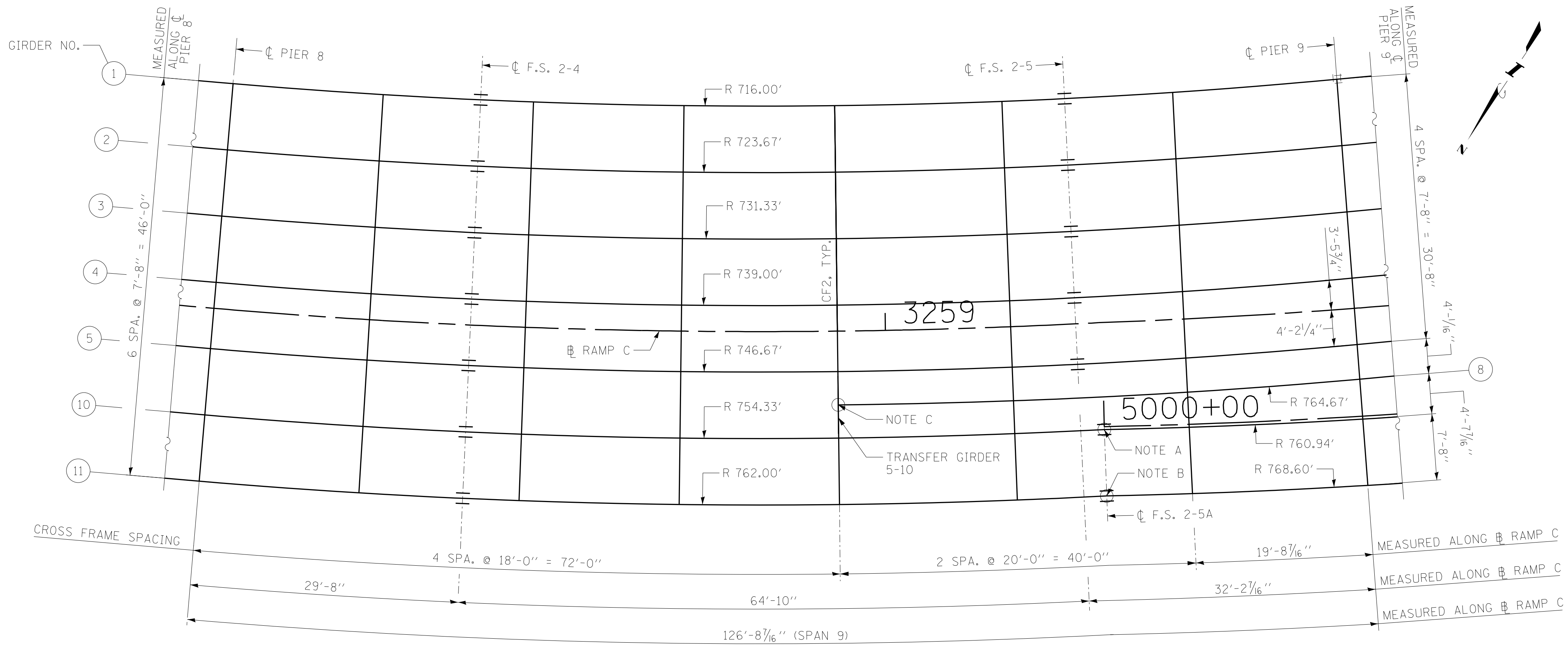
REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
UNIT 2 - FRAMING PLAN SPAN 8

SHEET SC - 116 OF 234

391 OF 606

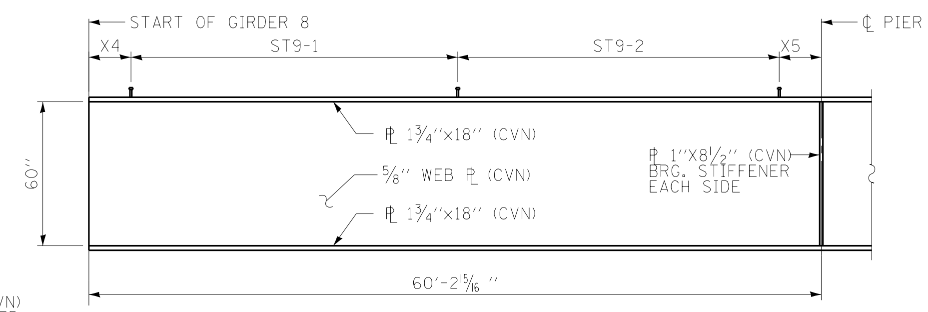


UNIT 2 - FRAMING PLAN SPAN 9

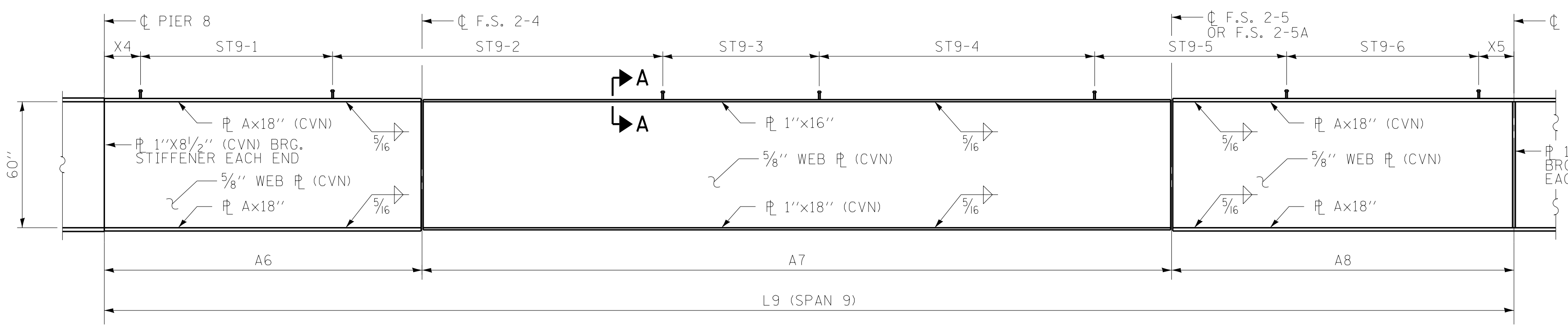
NOTE A: P.C.C. GIRDER 10 STA. 3259+24.43 OFFSET = 12.33' RT.
NOTE B: P.C.C. GIRDER 11 STA. 3259+24.31 OFFSET = 20.00' RT.
NOTE C: START OF GIRDER 8 STA. 3258+94.45 OFFSET = 8.50' RT.

GIRDER DIMENSIONS

GIRDER	A6	A7	A8	L9
1	28'-7 1/2"	67'-4 5/8"	31'-5 15/16"	127'-6 1/8"
2	28'-11 3/16"	68'-1 5/16"	31'-8 7/16"	128'-8 15/16"
3	29'-2 7/8"	68'-9 15/16"	31'-10 15/16"	129'-11 3/4"
4	29'-6 9/16"	69'-6 5/8"	32'-1 3/8"	131'-2 9/16"
5	29'-10 1/4"	70'-3 1/4"	32'-3 7/8"	132'-5 3/8"
10	30'-1 15/16"	73'-8 7/16"	29'-10 1/16"	133'-8 7/16"
11	30'-5 5/8"	74'-4"	30'-1 11/16"	134'-11 1/4"



ELEVATION - GIRDER 8



ELEVATION - GIRDER 1 THRU 5, AND 10, 11

FLANGE THICKNESS

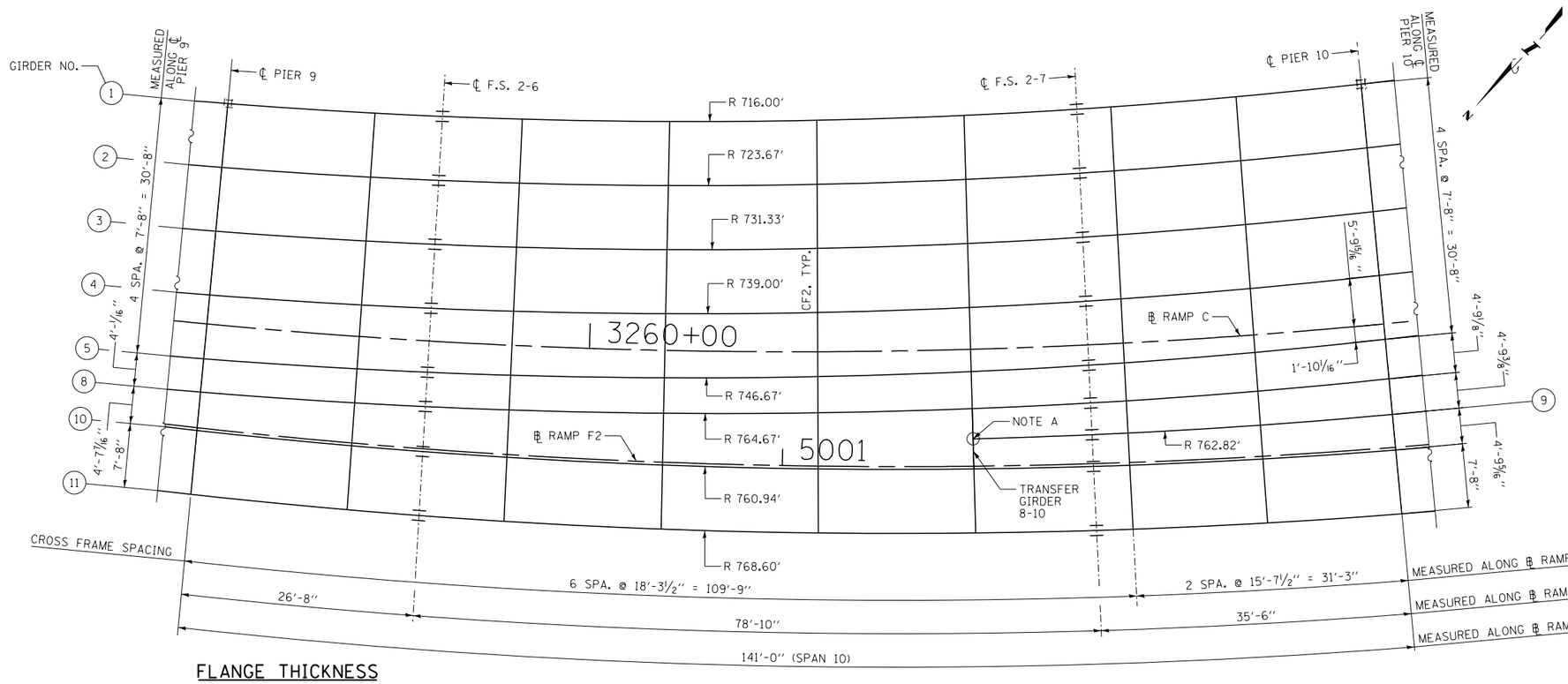
GIRDER	A
1 THRU 5 & 10	1 3/4"
11	2"

WELDED SHEAR STUD SPACING

GIRDER	X4	ST9-1	ST9-2	ST9-3	ST9-4	ST9-5	ST9-6	X5
1	1 9/16"	27 SPA. AT 6"	66 SPA. AT 11"	53 SPA. AT 9"	N/A	N/A	27 SPA. AT 6"	1 9/16"
2	2 15/16"	27 SPA. AT 6"	70 SPA. AT 9"	48 SPA. AT 12"	N/A	N/A	19 SPA. AT 9"	2 15/16"
3	1 3/8"	29 SPA. AT 6"	71 SPA. AT 9"	47 SPA. AT 12"	N/A	N/A	20 SPA. AT 9"	1 3/8"
4	2 3/4"	31 SPA. AT 6"	71 SPA. AT 9"	47 SPA. AT 12"	N/A	N/A	20 SPA. AT 9"	2 13/16"
5	4 3/16"	33 SPA. AT 6"	71 SPA. AT 9"	47 SPA. AT 12"	N/A	N/A	20 SPA. AT 9"	4 3/16"
8	2'-0"	32 SPA. AT 18"	8 SPA. AT 15"	N/A	N/A	N/A	N/A	2'-0"
10	1 3/4"	17 SPA. AT 10"	40 SPA. AT 12"	71 SPA. AT 9"	10 SPA. AT 15"	N/A	27 SPA. AT 6"	1 11/16"
11	3 5/8"	28 SPA. AT 6"	49 SPA. AT 10"	28 SPA. AT 6"	54 SPA. AT 9"	12 SPA. AT 11"	28 SPA. AT 6"	3 5/8"

NOTES:

1. CROSS FRAME ORIENTATION AND ℄ PIER ARE RADIAL TO ℄ RAMP C.
2. ALL CROSS FRAMES BETWEEN GIRDERS SHALL BE INSTALLED WITH ERECTION PINS AND BOLTS IN ACCORDANCE WITH THE ERECTION PLANS APPROVED BY THE ENGINEER. INDIVIDUAL CROSS FRAMES AT SUPPORTS MAY BE TEMPORARILY DISCONNECTED TO INSTALL BEARING ANCHOR RODS.
3. "CVN" DENOTES CHARPY V-NOTCH ENERGY REQUIREMENTS, ZONE 2.
4. FOR SECTION A-A, SEE SHEET SC-124.

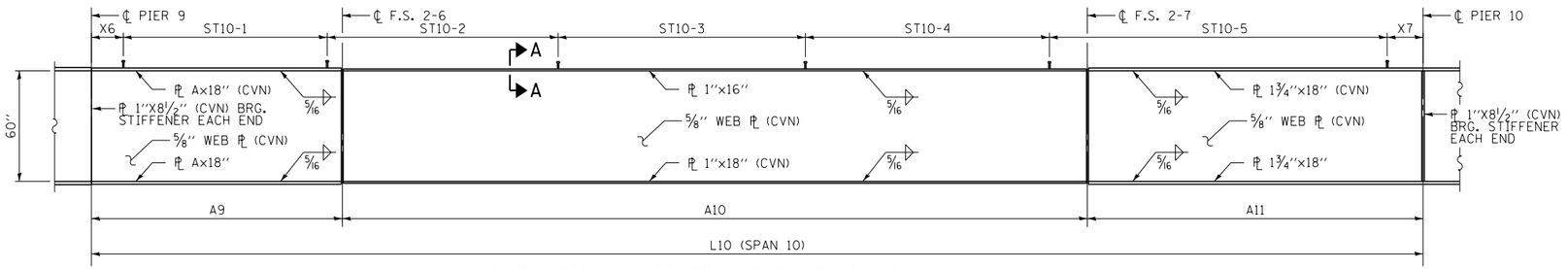


FLANGE THICKNESS

GIRDER	A
1 THRU 5, 8 & 10	1 3/4″
11	2″

UNIT 2 - FRAMING PLAN SPAN 10

NOTE A: START OF GIRDER 9 STA. 3260+45.61 OFFSET = 10.49′ RT.



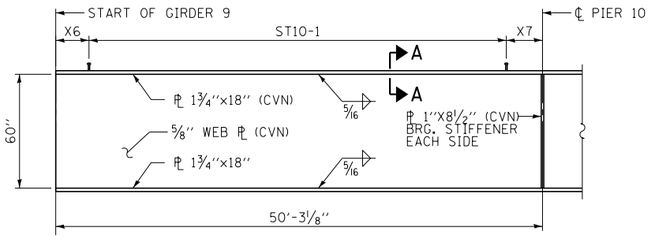
ELEVATION - GIRDER 1 THRU 5, 8, 10 & 11

GIRDER DIMENSIONS

GIRDER	A9	A10	A11	L10
1	25′-8 9/16″	75′-11 1/8″	34′-1 3/4″	135′-9 7/16″
2	25′-11 1/8″	76′-8 3/8″	34′-6 1/8″	137′-2 7/8″
3	26′-3 3/16″	77′-6 9/16″	34′-10 1/2″	138′-8 1/4″
4	26′-6 1/16″	78′-4 5/16″	35′-2 7/8″	140′-1 11/16″
5	26′-9 3/4″	79′-2 1/16″	35′-7 1/4″	141′-7 1/16″
8	26′-11 7/8″	79′-7 1/16″	35′-9 1/8″	142′-4 5/16″
10	27′-1 5/8″	80′-3 3/4″	36′-2 9/16″	143′-7 15/16″
11	27′-4 15/16″	81′-1 1/2″	36′-6 5/16″	145′-1 3/8″

WELDED SHEAR STUD SPACING

GIRDER	X6	ST10-1	ST10-2	ST-10-3	ST10-4	ST10-5	X7
1	1 3/4″	83 SPA. AT 6″	96 SPA. AT 10″	N/A	N/A	28 SPA. AT 6″	1 11/16″
2	4 1/16″	21 SPA. AT 9″	25 SPA. AT 15″	38 SPA. AT 9″	16 SPA. AT 15″	41 SPA. AT 12″	4 1/16″
3	4 1/8″	22 SPA. AT 9″	25 SPA. AT 15″	39 SPA. AT 9″	16 SPA. AT 15″	41 SPA. AT 12″	4 1/8″
4	3 11/16″	23 SPA. AT 9″	25 SPA. AT 15″	40 SPA. AT 9″	16 SPA. AT 15″	41 SPA. AT 12″	3 7/8″
5	3 1/2″	24 SPA. AT 9″	25 SPA. AT 15″	41 SPA. AT 9″	16 SPA. AT 15″	41 SPA. AT 12″	3 5/16″
8	8 3/16″	13 SPA. AT 15″	18 SPA. AT 18″	23 SPA. AT 15″	N/A	46 SPA. AT 18″	8 1/8″
9	2′-0″	38 SPA. AT 15″	N/A	N/A	N/A	N/A	9 1/8″
10	2 1/2″	30 SPA. AT 6″	43 SPA. AT 12″	39 SPA. AT 9″	41 SPA. AT 12″	20 SPA. AT 9″	2 1/16″
11	1 3/16″	30 SPA. AT 6″	58 SPA. AT 9″	88 SPA. AT 6″	32 SPA. AT 10″	21 SPA. AT 9″	1 5/16″



ELEVATION - GIRDER 9

NOTES:

1. CROSS FRAME ORIENTATION AND ℄ PIER ARE RADIAL TO ℄ RAMP C.
2. ALL CROSS FRAMES BETWEEN GIRDERS SHALL BE INSTALLED WITH ERECTION PINS AND BOLTS IN ACCORDANCE WITH THE ERECTION PLANS APPROVED BY THE ENGINEER. INDIVIDUAL CROSS FRAMES AT SUPPORTS MAY BE TEMPORARILY DISCONNECTED TO INSTALL BEARING ANCHOR RODS.
3. "CVN" DENOTES CHARPY V-NOTCH ENERGY REQUIREMENTS, ZONE 2.
4. FOR SECTION A-A, SEE SHEET SC-124.

P:\68254057-294.5-9\STRUCTURAL\RESTART.2018\Ramp C over I-57 and I-294\0162101.5_unit2_frplin-span10.dgn
3/30/2020

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THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
UNIT 2 - FRAMING PLAN SPAN 10

SHEET SC - 118 OF 234

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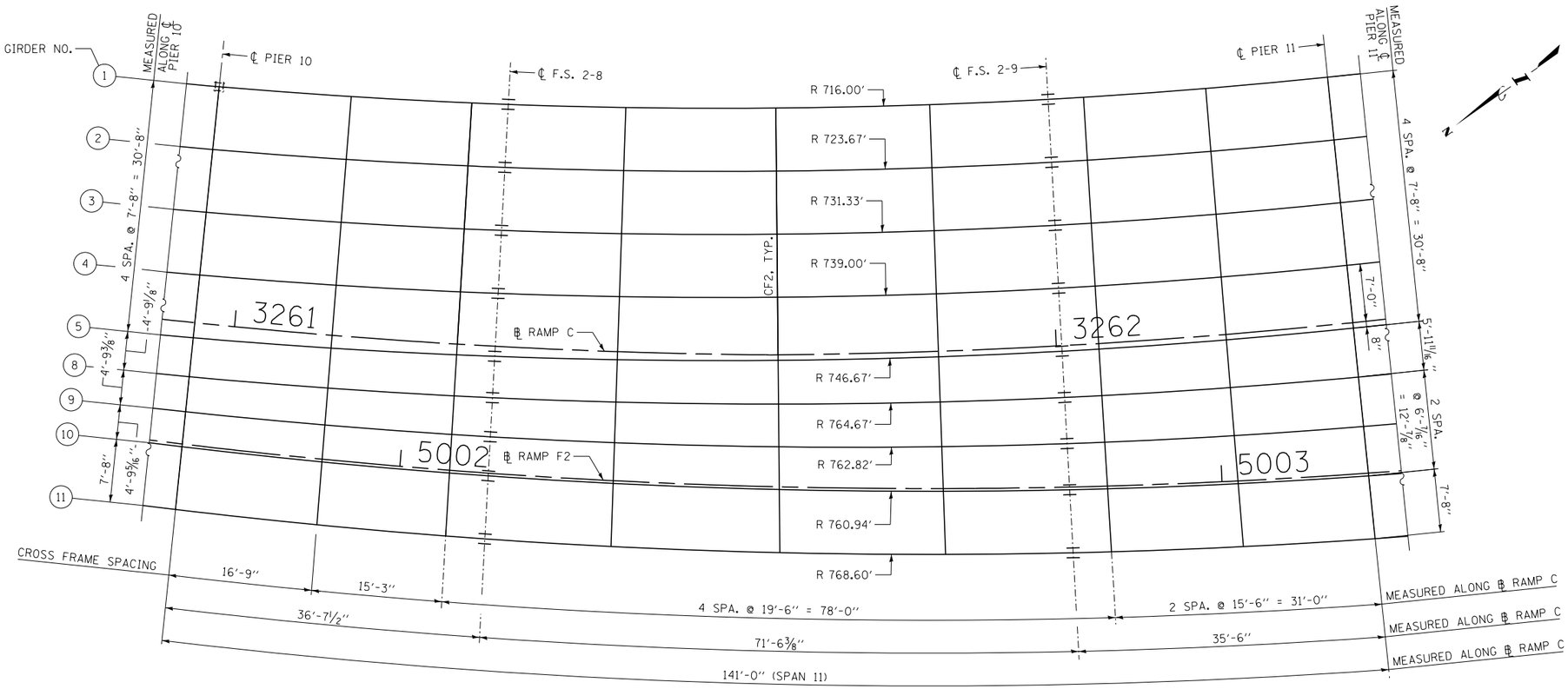
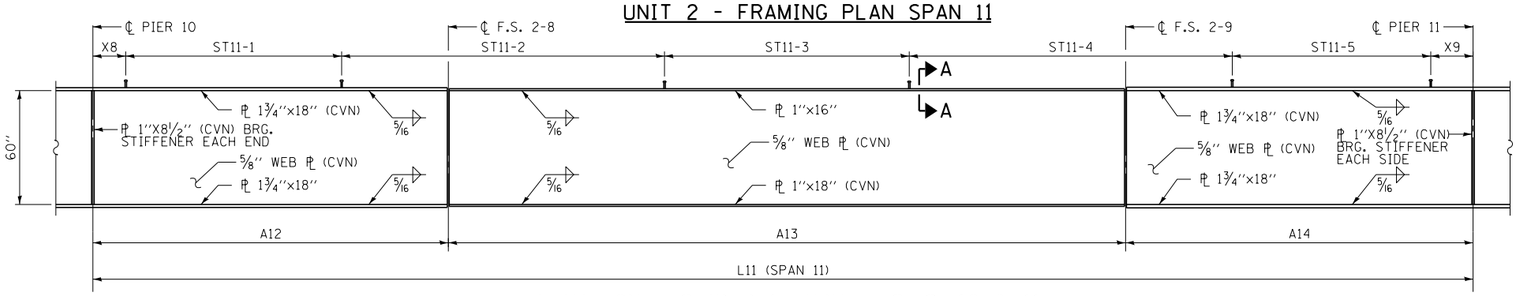


UNIT 2 - FRAMING PLAN SPAN 11



ELEVATION - GIRDER 1 THRU 5, 8, 9, 10 & 11

GIRDER DIMENSIONS

GIRDER	A12	A13	A14	L11
1	35'-2⅜''	65'-7⅞''	34'-0⅞''	134'-10¹¹⁄₁₆''
2	35'-6⅛''	66'-5⅝''	34'-5¼''	135'-5⅝''
3	35'-11⅛''	67'-3½''	34'-9⅜''	138'-0⅛''
4	36'-3⅝''	68'-1½''	35'-2''	139'-7½''
5	36'-8⅛''	68'-11⅜''	35'-6⅜''	141'-2⅛''
8	36'-11⅝''	69'-6½''	35'-9¹¹⁄₁₆''	142'-3½''
9	37'-1⅝''	70'-1⅜''	36'-1⅛''	143'- 4⅛''
10	37'-4¹¹⁄₁₆''	71'-8⅜''	36'-4⅞''	144'-5⅝''
11	37'-9⅝''	71'-6⅜''	36'-8¹⁵⁄₁₆''	146'-0⅛''

WELDED SHEAR STUD SPACING

GIRDER	X8	ST11-1	ST11-2	ST11-3	ST11-4	ST11-5	X9
1	2⅛''	28 SPA. AT 6''	47 SPA. AT 10''	36 SPA. AT 9''	48 SPA. AT 10''	19 SPA. AT 9''	2¹³⁄₁₆''
2	4⅝''	28 SPA. AT 12''	19 SPA. AT 15''	37 SPA. AT 9''	41 SPA. AT 12''	19 SPA. AT 9''	4⅝''
3	4¹³⁄₁₆''	29 SPA. AT 12''	19 SPA. AT 15''	38 SPA. AT 9''	41 SPA. AT 12''	20 SPA. AT 9''	4¾''
4	5¼''	29 SPA. AT 12''	19 SPA. AT 15''	39 SPA. AT 9''	41 SPA. AT 12''	21 SPA. AT 9''	5¼''
5	5¹⁵⁄₁₆''	29 SPA. AT 12''	19 SPA. AT 15''	40 SPA. AT 9''	41 SPA. AT 12''	22 SPA. AT 9''	5¹⁵⁄₁₆''
8	7¾''	47 SPA. AT 18''	24 SPA. AT 15''	17 SPA. AT 18''	N/A	12 SPA. AT 15''	7¾''
9	5¾''	114 SPA. AT 15''	N/A	N/A	N/A	N/A	5¼''
10	2¹³⁄₁₆''	21 SPA. AT 9''	33 SPA. AT 15''	N/A	N/A	87 SPA. AT 12''	2¹³⁄₁₆''
11	4¹³⁄₁₆''	21 SPA. AT 9''	31 SPA. AT 11''	78 SPA. AT 9''	29 SPA. AT 11''	32 SPA. AT 6''	4¾''

NOTES:

1. CROSS FRAME ORIENTATION AND ℄ PIER ARE RADIAL TO ℄ RAMP C.
2. ALL CROSS FRAMES BETWEEN GIRDERS SHALL BE INSTALLED WITH ERECTION PINS AND BOLTS IN ACCORDANCE WITH THE ERECTION PLANS APPROVED BY THE ENGINEER. INDIVIDUAL CROSS FRAMES AT SUPPORTS MAY BE TEMPORARILY DISCONNECTED TO INSTALL BEARING ANCHOR RODS.
3. "CVN" DENOTES CHARPY V-NOTCH ENERGY REQUIREMENTS, ZONE 2.
4. FOR SECTION A-A, SEE SHEET SC-124.

P:\68254\057-294.5-91\STRUCTURAL_RESTART_2018\Ramp C over I-57 and I-294\016\2101.5_unit2_frpln-span11.dgn
3/30/2020

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CHECKED BY . . . SP . . . . . | SCALE . NONE . . . . .

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

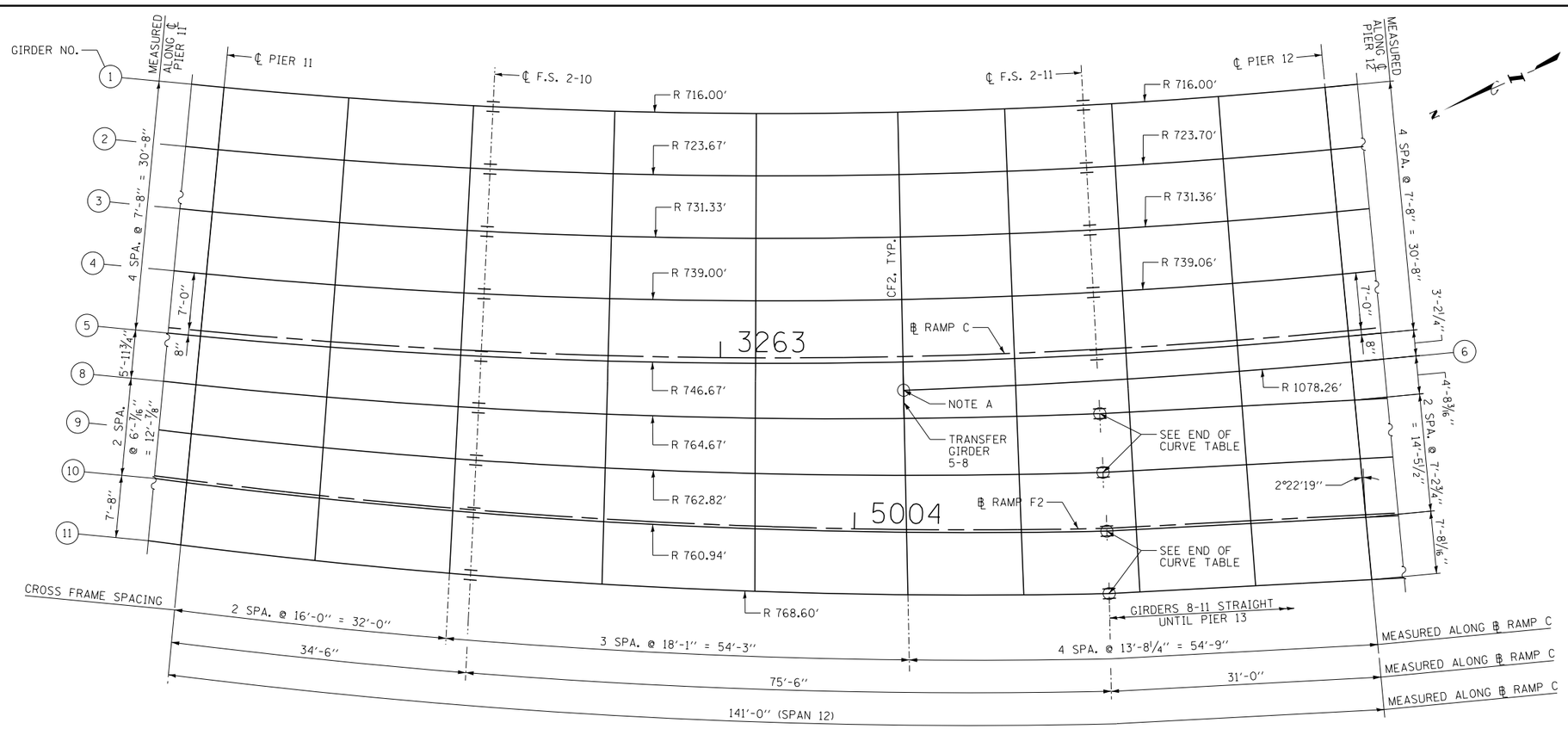
REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
UNIT 2 - FRAMING PLAN SPAN 11

SHEET SC - 119 OF 234

394 OF 606

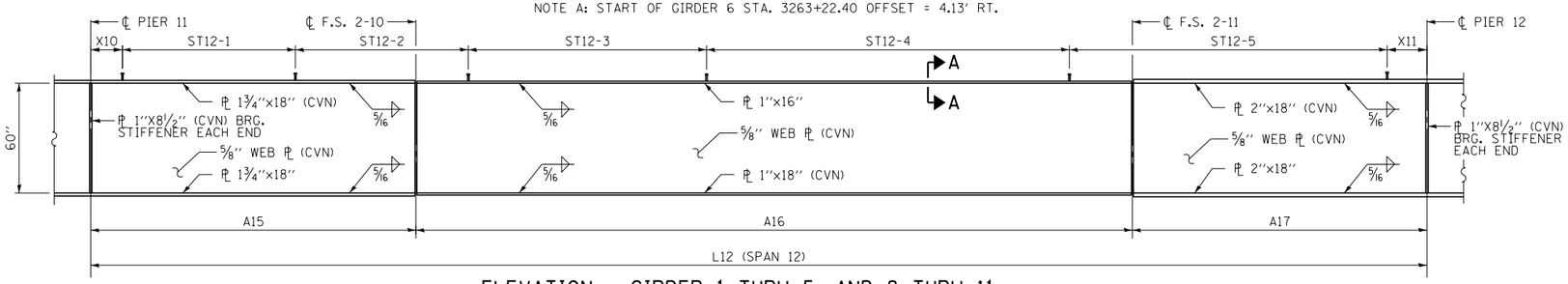


END OF CURVE

GIRDER	STA.	OFFSET
8	3263+46.18	7.89′ RT.
9	3263+46.19	15.11′ RT.
10	3263+46.27	22.33′ RT.
11	3263+46.15	30.00′ RT.

UNIT 2 - FRAMING PLAN SPAN 12

NOTE A: START OF GIRDER 6 STA. 3263+22.40 OFFSET = 4.13′ RT.



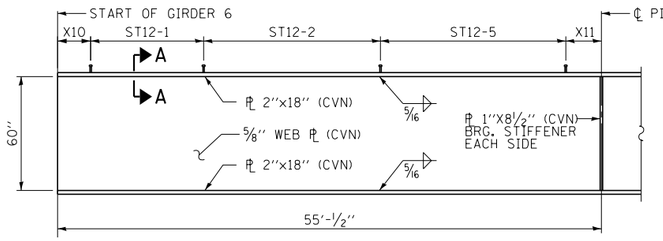
ELEVATION - GIRDER 1 THRU 5, AND 8 THRU 11

GIRDER DIMENSIONS

GIRDER	A15	A16	A17	L12
1	33′-1⅜″	72′-5⅝″	29′-9⅛″	135′-4″
2	33′-5⅝″	73′-2⅛″	30′-0⅛″	136′-9⅜″
3	33′-9⅞″	74′-0⅜″	30′-4⅛″	138′-2¾″
4	34′-2⅛″	74′-9½″	30′-8½″	139′-8⅛″
5	34′-6⅜″	75′-6⅞″	31′-0⅝″	141′-1½″
8	34′-9⅞″	76′-3⅜″	31′-3⅞″	142′-5⅛″
9	35′-1⅝″	76′-11⅝″	31′-7⅜″	143′-8⅝″
10	35′-4⅝″	77′-9½″	31′-9⅝″	145′-0⅜″
11	35′-9⅜″	78′-5⅜″	32′-3⅜″	146′-5¾″

WELDED SHEAR STUD SPACING

GIRDER	X10	ST12-1	ST12-2	ST12-3	ST12-4	ST12-5	X11
1	3″	74 SPA. AT 9″	26 SPA. AT 11″	N/A	N/A	74 SPA. AT 9″	3″
2	1¹¹⁄₁₆″	20 SPA. AT 9″	39 SPA. AT 12″	N/A	N/A	99 SPA. AT 10″	1¹¹⁄₁₆″
3	2⅜″	22 SPA. AT 9″	38 SPA. AT 12″	N/A	N/A	100 SPA. AT 10″	2⅜″
4	2¹⁄₁₆″	24 SPA. AT 9″	38 SPA. AT 12″	N/A	N/A	100 SPA. AT 10″	2¹⁄₁₆″
5	1¾″	26 SPA. AT 9″	38 SPA. AT 12″	N/A	N/A	100 SPA. AT 10″	1¾″
6	2′-0″	4 SPA. AT 18″	14 SPA. AT 25″	N/A	N/A	10 SPA. AT 21″	4½″
8	1¹⁄₁₆″	12 SPA. AT 15″	8 SPA. AT 18″	23 SPA. AT 15″	43 SPA. AT 12″	29 SPA. AT 18″	1″
9	5¹³⁄₁₆″	21 SPA. AT 15″	44 SPA. AT 12″	N/A	N/A	87 SPA. AT 10″	5¹³⁄₁₆″
10	5⅜″	35 SPA. AT 12″	53 SPA. AT 10″	40 SPA. AT 9″	N/A	35 SPA. AT 12″	5⅜″
11	⅞″	31 SPA. AT 6″	14 SPA. AT 11″	59 SPA. AT 9″	59 SPA. AT 6″	59 SPA. AT 9″	⅞″



ELEVATION - GIRDER 6

NOTES:

1. CROSS FRAME ORIENTATION AND ℄ PIER ARE RADIAL TO ℄ RAMP C.
2. ALL CROSS FRAMES BETWEEN GIRDERS SHALL BE INSTALLED WITH ERECTION PINS AND BOLTS IN ACCORDANCE WITH THE ERECTION PLANS APPROVED BY THE ENGINEER. INDIVIDUAL CROSS FRAMES AT SUPPORTS MAY BE TEMPORARILY DISCONNECTED TO INSTALL BEARING ANCHOR RODS.
3. "CVN" DENOTES CHARPY V-NOTCH ENERGY REQUIREMENTS, ZONE 2.
4. FOR SECTION A-A, SEE SHEET SC-124.

P:\582540\57-294.5-91\STRUCTURAL\RESTART.2018\Ramp C over I-57 and I-294\2016101.5_un12_frpln-span12.dgn
3/30/2020

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CHECKED BY . . . SP . . . .
DATE . 4-3-2020 . . .
SCALE . NONE . . . .

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THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
UNIT 2 - FRAMING PLAN SPAN 12

SHEET SC - 120 OF 234

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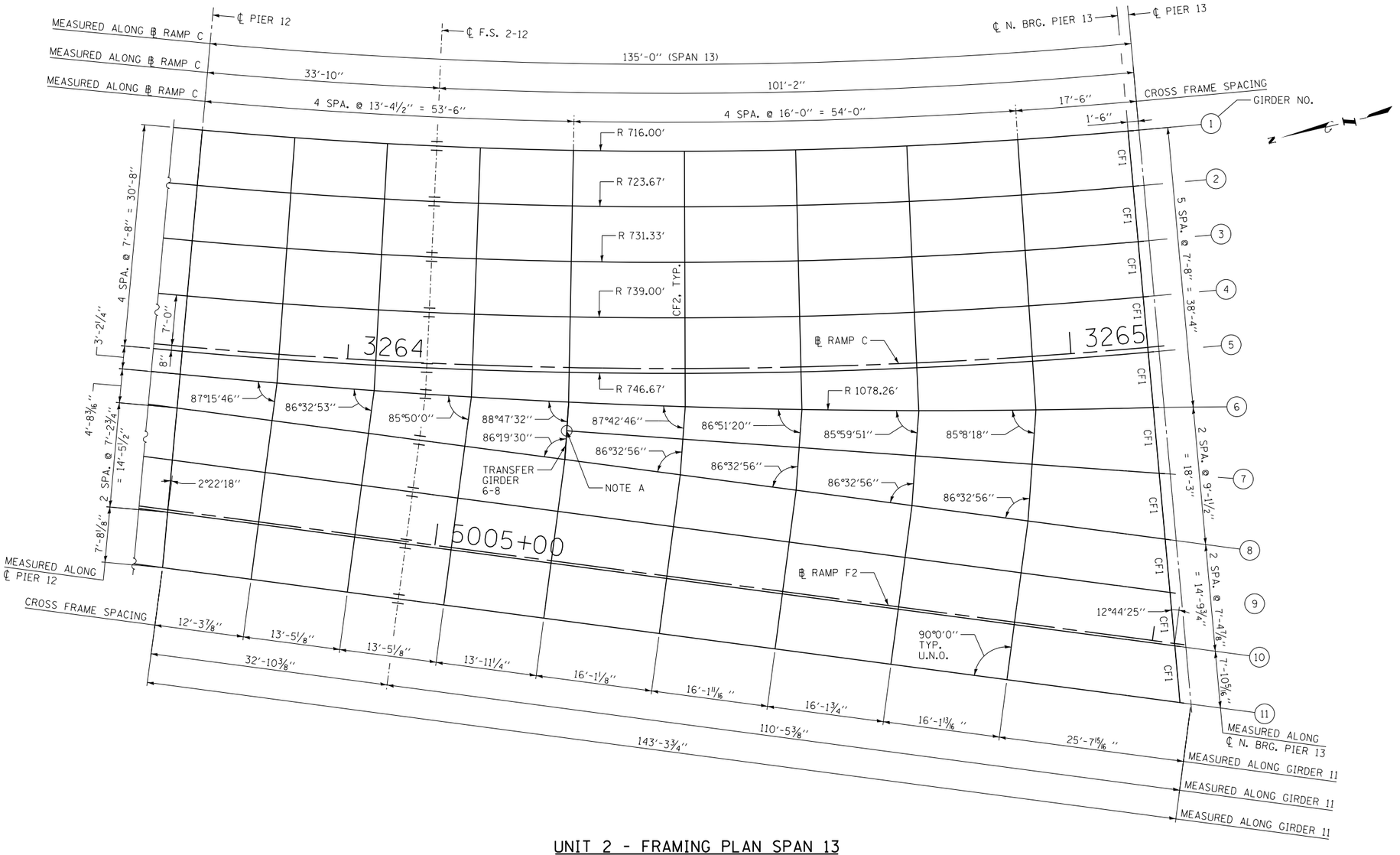

UNIT 2 - FRAMING PLAN SPAN 13

NOTE A: START OF GIRDER 7 STA. 3264+30.47 OFFSET = 8.73' RT.

NOTES:

1. CROSS FRAME ORIENTATION BETWEEN GIRDERS 1 THRU 6 ARE RADIAL TO ℄ RAMP C.
2. ℄ PIER ARE RADIAL TO ℄ RAMP C.
3. ALL CROSS FRAMES BETWEEN GIRDERS SHALL BE INSTALLED WITH ERECTION PINS AND BOLTS IN ACCORDANCE WITH THE ERECTION PLANS APPROVED BY THE ENGINEER. INDIVIDUAL CROSS FRAMES AT SUPPORTS MAY BE TEMPORARILY DISCONNECTED TO INSTALL BEARING ANCHOR RODS.

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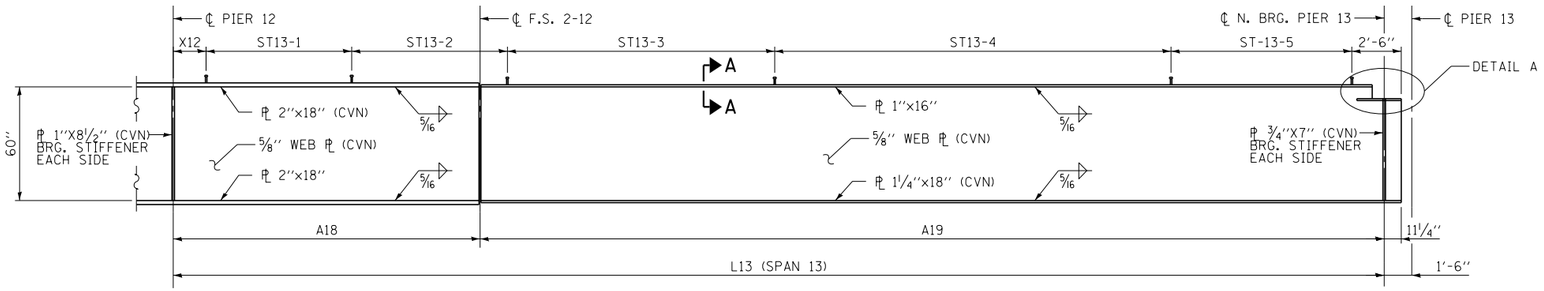
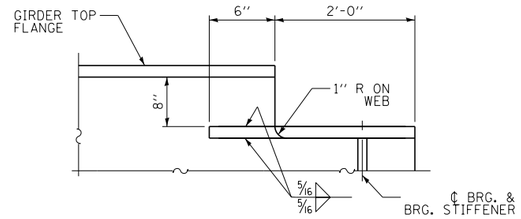
3/30/2020

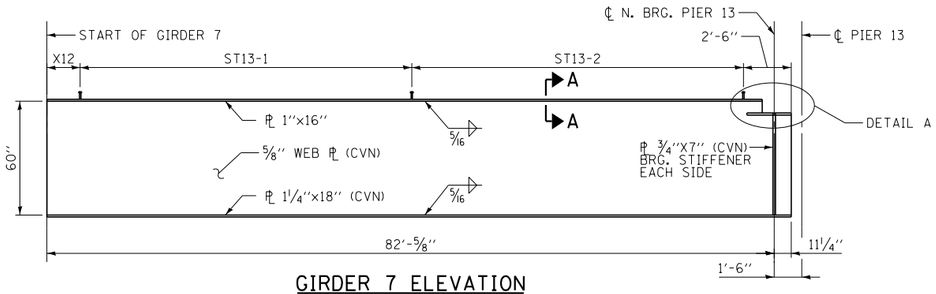
DRAWN BY . . . . JM	DATE . 4-3-2020	TY·LIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	REVISIONS NO. / DATE / DESCRIPTION	CONTRACT I-19-4495 I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 116) UNIT 2 - FRAMING PLAN SPAN 13	SHEET SC - 121 OF 234 396 OF 606
CHECKED BY . . . SP	SCALE . NONE					



ELEVATION - GIRDER 1 THRU 6 & 8 THRU 11



DETAIL A



GIRDER 7 ELEVATION

GIRDER DIMENSIONS

GIRDER	A18	A19	L13
1	32'-5 11/16"	95'-7 3/16"	128'-0 7/8"
2	32'-9 7/8"	96'-7 5/8"	129'-5 1/2"
3	33'-2"	97'-8 1/8"	130'-10 1/8"
4	33'-6 3/16"	98'-5 5/8"	131'-11 13/16"
5	33'-10 3/8"	99'-9 1/16"	133'-7 1/16"
6	34'-0 1/4"	100'-6 1/16"	134'-7 1/16"
8	33'-9 3/8"	103'-10 5/16"	137'-8 5/16"
9	33'-5 3/4"	105'-6 1/2"	139'-0 1/4"
10	33'-2 3/16"	107'-2 1/8"	140'-4 5/16"
11	32'-10 3/8"	108'- 10 5/16"	141'-9 5/16"

WELDED SHEAR STUD SPACING

GIRDER	X12	ST13-1	ST13-2	ST13-3	ST13-4	ST13-5
1	1¾"	52 SPA. AT 9"	52 SPA. AT 6"	52 SPA. AT 11"	N/A	27 SPA. AT 6"
2	2⅜"	78 SPA. AT 10"	26 SPA. AT 12"	18 SPA. AT 15"	N/A	28 SPA. AT 6"
3	3"	79 SPA. AT 10"	26 SPA. AT 12"	18 SPA. AT 15"	N/A	29 SPA. AT 6"
4	6 11/16"	80 SPA. AT 10"	26 SPA. AT 12"	18 SPA. AT 15"	N/A	29 SPA. AT 6"
5	4 5/16"	81 SPA. AT 10"	26 SPA. AT 12"	18 SPA. AT 15"	N/A	31 SPA. AT 6"
6	6 5/16"	7 SPA. AT 21"	18 SPA. AT 18"	27 SPA. AT 12"	35 SPA. AT 18"	27 SPA. AT 6"
7	1'-9½"	69 SPA. AT 12"	19 SPA. AT 6"	N/A	N/A	N/A
8	11 3/16"	9 SPA. AT 18"	45 SPA. AT 11"	53 SPA. AT 15"	N/A	28 SPA. AT 6"
9	3⅛"	17 SPA. AT 10"	42 SPA. AT 12"	34 SPA. AT 10"	30 SPA. AT 15"	30 SPA. AT 6"
10	3 3/16"	25 SPA. AT 12"	86 SPA. AT 6"	67 SPA. 10"	N/A	29 SPA. AT 6"
11	3 3/16"	30 SPA. AT 6"	12 SPA. AT 10"	114 SPA. 6"	57 SPA. AT 9"	30 SPA. AT 6"

NOTES:

1. FOR SECTION A-A, SEE SHEET SC-124.
2. "CVN" DENOTES CHARPY V-NOTCH ENERGY REQUIREMENTS, ZONE 2.

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THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
UNIT 2 - FRAMING PLAN SPAN 13 ELEV.

SHEET SC - 122 OF 234

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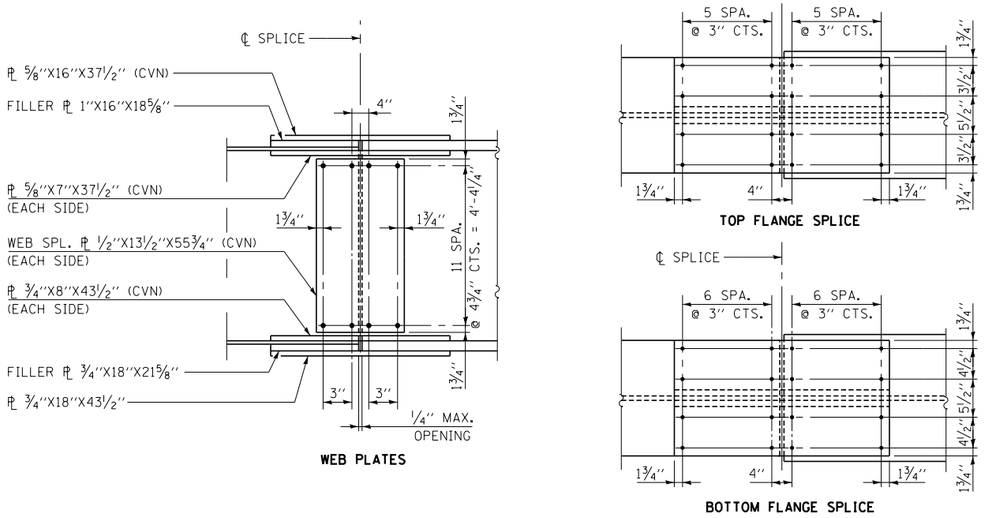
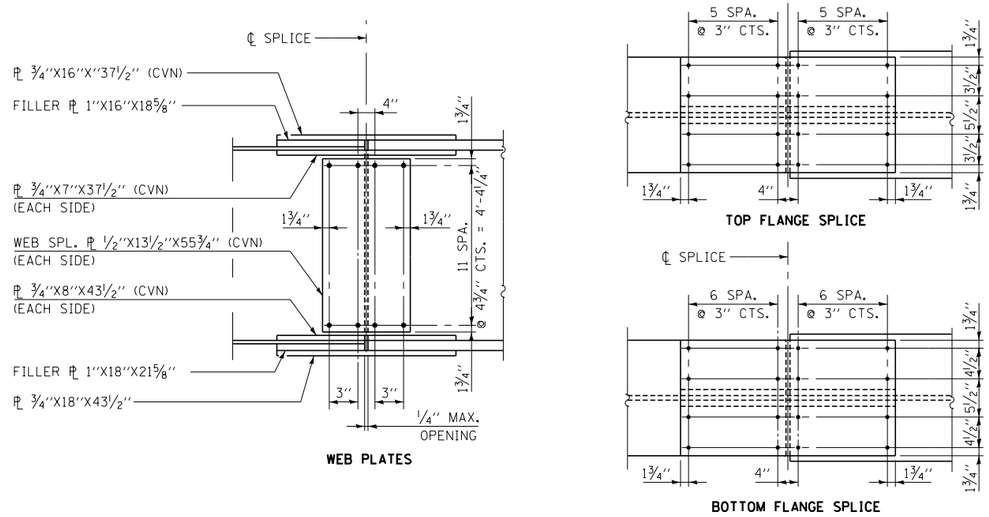
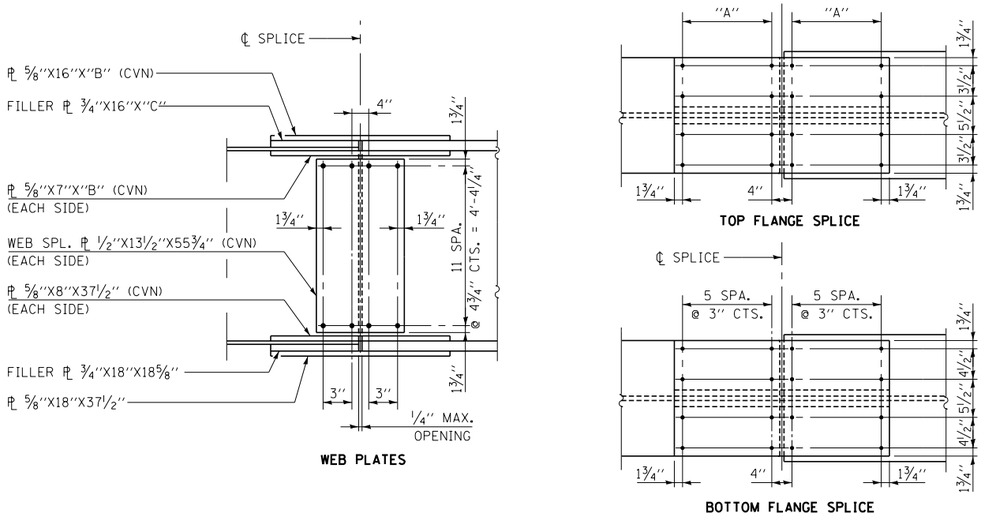


TOP FLANGE SPLICE

FIELD SPLICE 2-1 & 2-12

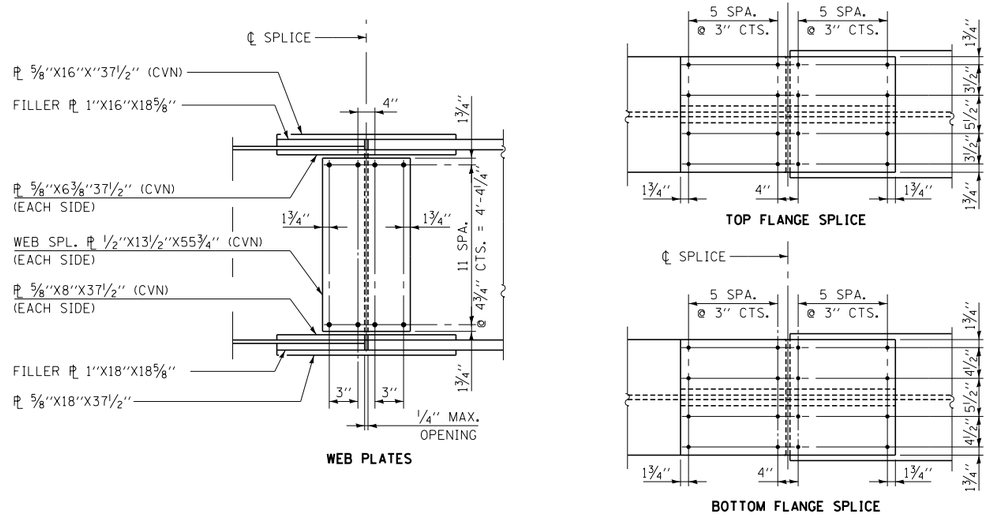


GIRDER 11 FIELD SPLICE 2-3



FIELD SPLICE NO.	"A"	"B"	"C"
2-2 & 2-11	5 SPA. @ 3"	37 1/2"	18 5/8"
2-3 THRU 2-10 AND 2-5A	4 SPA. @ 3"	31 1/2"	15 5/8"

FIELD SPLICE 2-2 (ALL GIRDER)
FIELD SPLICE 2-3 THRU 2-6 (ALL GIRDERS EXCEPT 11)
FIELD SPLICE 2-5A (GIRDER 10)



GIRDER 11 FIELD SPLICE 2-4, 2-5A & 2-6

NOTES:

1. "CVN" DENOTES CHARPY V-NOTCH ENERGY REQUIREMENTS, ZONE 2.

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3/30/2020

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THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

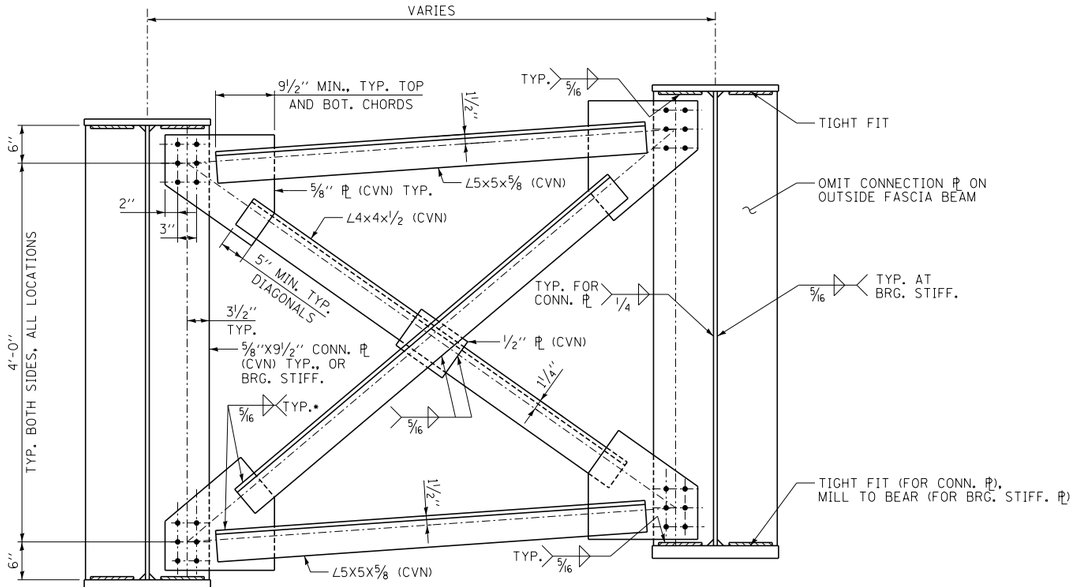
REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
UNIT 2 - GIRDER DETAILS

SHEET SC - 123 OF 234

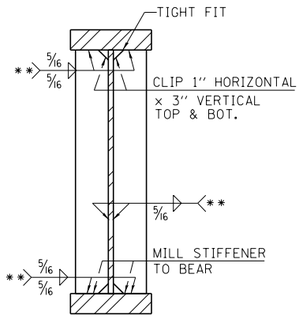
398 OF 606



INTERIOR CROSS FRAME-CF2

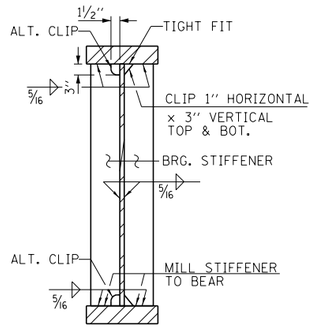
(400 REQUIRED)

• FILLER WELD ANGLES ALONG 3 SIDES ON ONE FACE OF GUSSET PLATE.

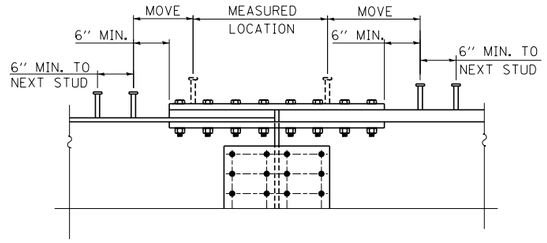


BEARING STIFFENERS

••TERMINATE ¼" (±⅛") FROM THE END OF PLATE INTERSECTS.

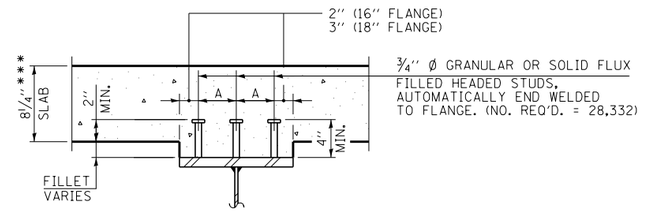


ALTERNATE CLIP DETAILS



SHEAR STUD DETAIL AT SPLICES AND FLANGE TRANSITIONS

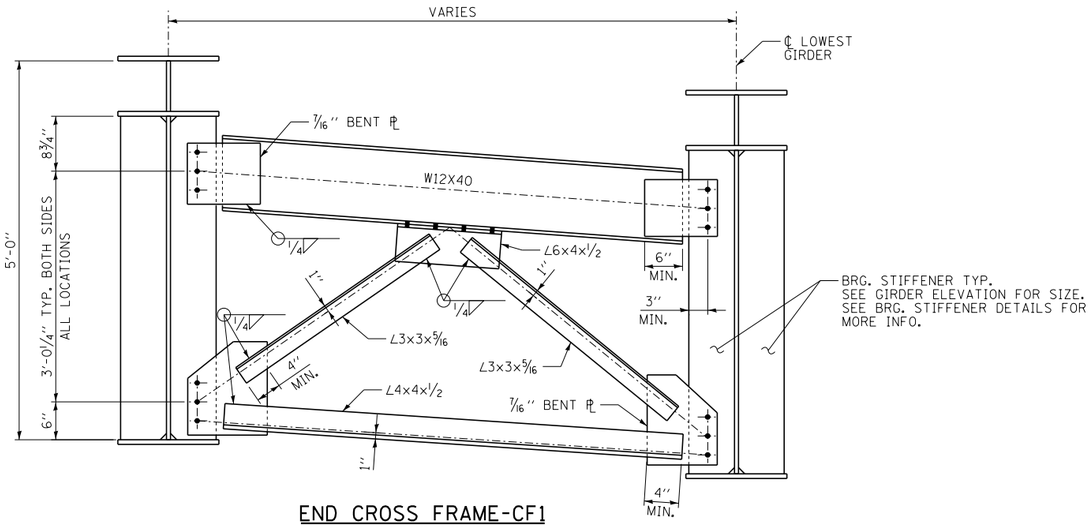
DO NOT PLACE SHEAR STUDS ON SPLICE PLATES. MOVE ROW OF STUDS TO 6" BEYOND NEAREST EDGE OF SPLICE PLATE FROM MEASURED LOCATION.



SECTION A-A

A = 6" (16" & 18" FLANGE)

***PRIOR TO GRINDING



END CROSS FRAME-CF1

(16 REQUIRED)

NOTES:

1. ALL CROSS FRAMES OR DIAPHRAGMS BETWEEN BEAMS OR GIRDERS SHALL BE INSTALLED WITH ERECTION PINS AND BOLTS IN ACCORDANCE WITH THE ERECTION PLAN APPROVED BY THE ENGINEER. INDIVIDUAL CROSS FRAMES OR DIAPHRAGMS AT SUPPORTS MAY BE TEMPORARILY DISCONNECTED TO INSTALL BEARING ANCHOR RODS.
2. "CVN" DENOTES CHARPY-V-NOTCH IMPACT ENGERY REQUIREMENTS, ZONE 2.
3. BOLTS SHALL BE ⅞" Ø IN HOLES ¹⁵⁄₁₆ " Ø.
4. TWO HARDENED WASHERS SHALL BE REQUIRED FOR EACH SET OF OVERSIZED HOLES.
5. THE CONTRACTOR SHALL EITHER:
   A. REAM DIAPHRAGM AND/OR CROSS FRAME CONNECTION HOLES DURING SHOP ASSEMBLY, OR
   B. PROVIDE DETAILING AND FABRICATION CONTROLS ACCEPTABLE TO THE ENGINEER WHICH ENSURES ACCURACY SUCH THAT FIELD REAMING WILL NOT EXCEED THE AMOUNT PERMITTED IN ARTICLE 505.08(I) OF THE STANDARD SPECIFICATIONS.

P:\62540\57-294_5-9\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\016201.5_unit2-cross_frame_det.dgn
3/30/2020

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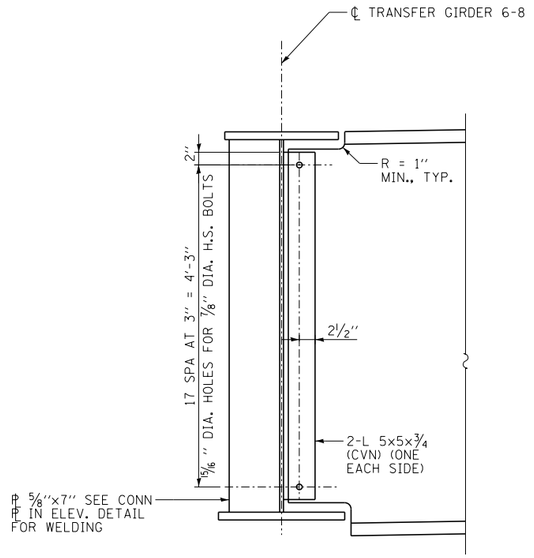
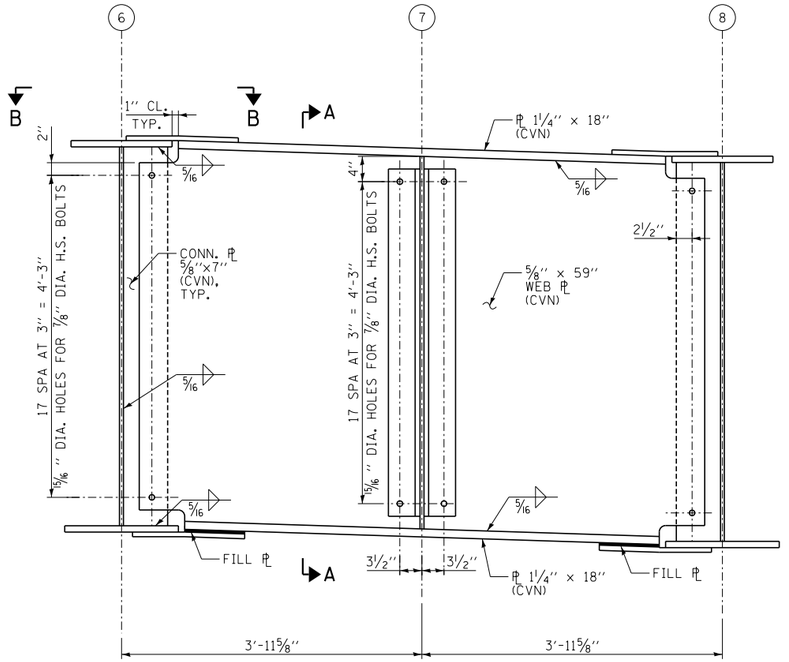
CHECKED BY SP	SCALE NONE				I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 116) UNIT 2 - CROSS FRAME DETAILS	399 OF 606

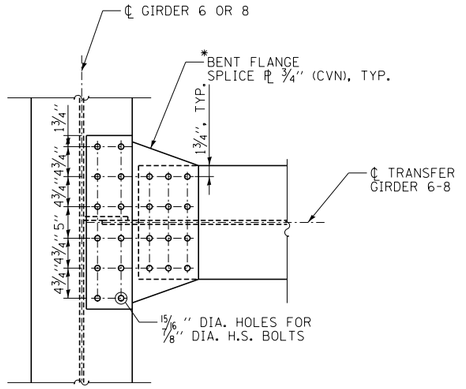


SECTION A-A



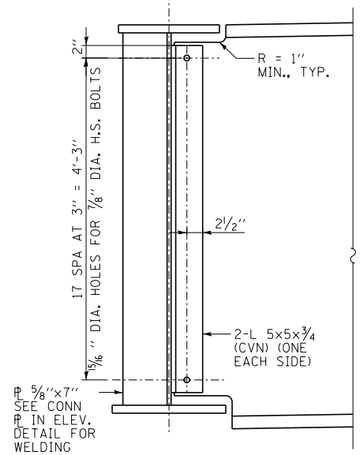
TRANSFER GIRDER 6-8 ELEVATION

(LOOKING DOWNSTATION)

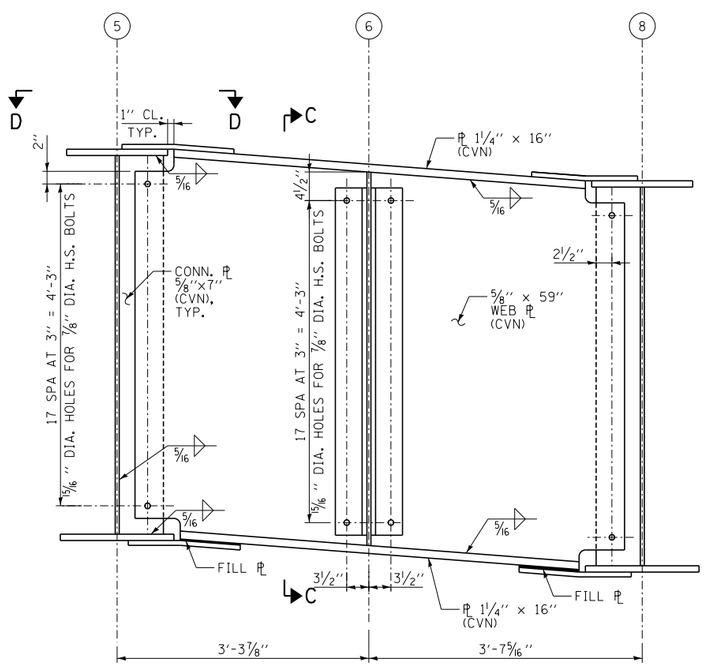


VIEW B-B

(TOP & BOTTOM)

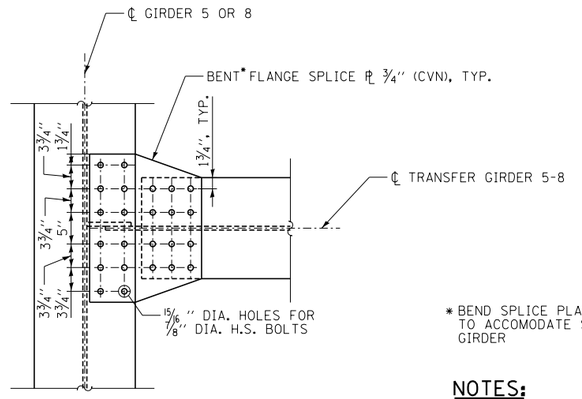


SECTION C-C



UNIT 2 TRANSFER GIRDER 5-8

(LOOKING DOWNSTATION)



VIEW D-D

*BEND SPLICE PLATE AT FLANGE EDGE TO ACCOMODATE SLOPE OF TRANSFER GIRDER

NOTES:

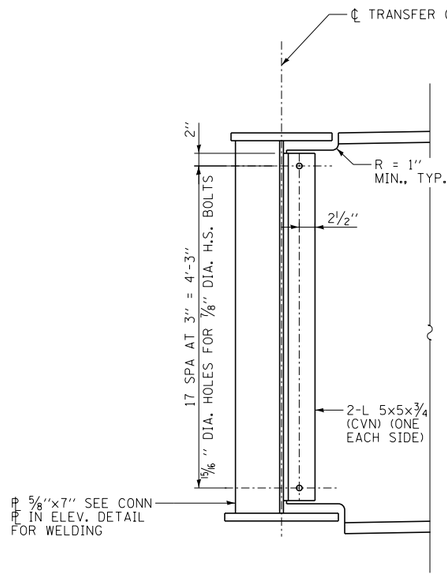
1. TRANSFER GIRDER IS CONSIDERED A SYSTEM REDUNDANT MEMBER. FABRICATION OF THE GIRDER AND ITS CONNECTIONS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF CHAPTER 12 OF THE AWS D1.5 BRIDGE WELDING CODE.
2. ALL STRUCTURAL STEEL FOR THE TRANSFER GIRDER, INCLUDING ALL CONNECTION PLATES, SHALL BE AASHTO M270 GRADE 50 AND MEET CVN.
3. LOAD CARRYING COMPONENTS DESIGNATED "CVN" SHALL CONFORM TO THE CHARPY-V-NOTCH IMPACT ENERGY REQUIREMENTS, ZONE 2.
4. ADJUST SHEAR STUD SPACING TO MISS TOP CONNECTION PLATE.

P:\60254401\57-294.5-91\STRUCTURAL\RESTART.2018\Ramp C over I-57 and I-294\016-2101\I.5.unit2-header beam 5-8&6-8.dgn
3/30/2020

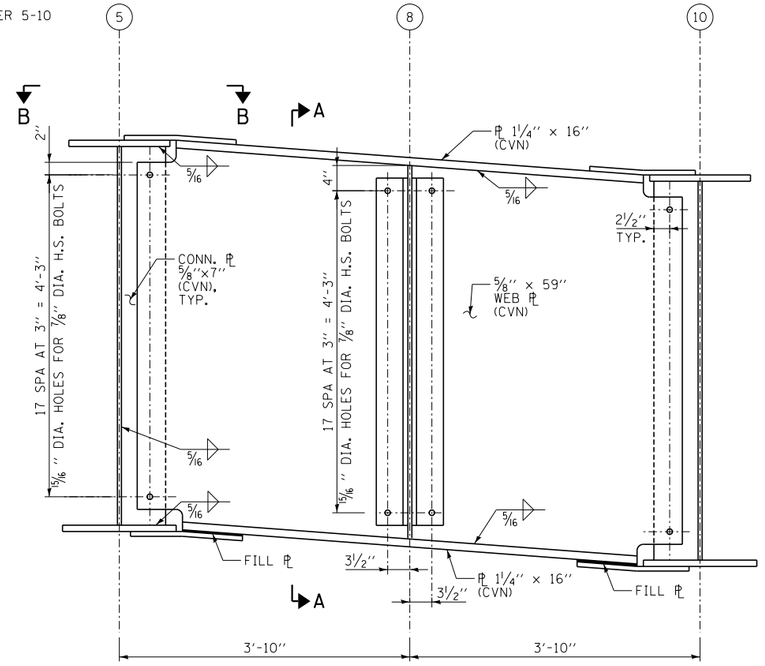
DRAWN BY . . . . SP	DATE . 4-3-2020	TYLIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515
CHECKED BY . . . SP	SCALE . NONE		

REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495	SHEET SC - 125 OF 234
I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 116) UNIT 2 - STEEL DETAILS 1	400 OF 606

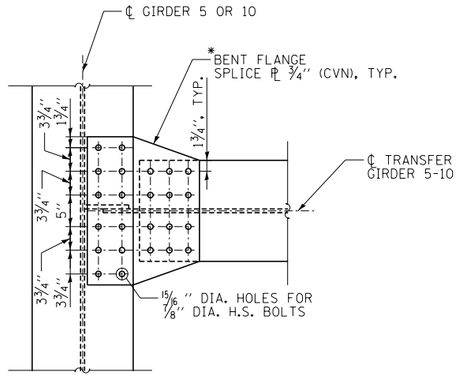


SECTION A-A



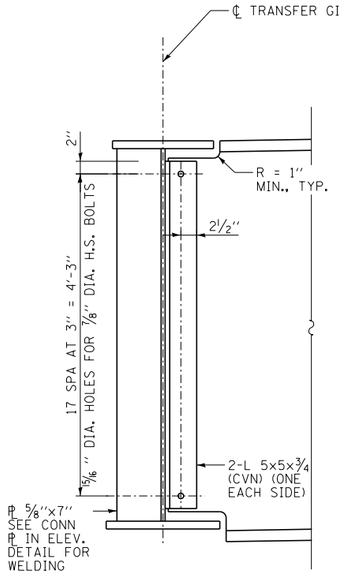
TRANSFER GIRDER 5-10 ELEVATION

(LOOKING DOWNSTATION)

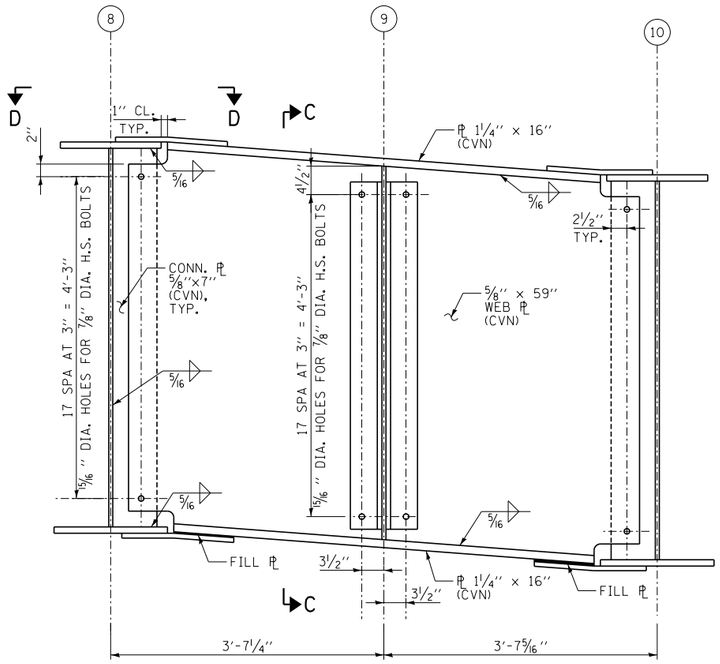


VIEW B-B

(TOP & BOTTOM)

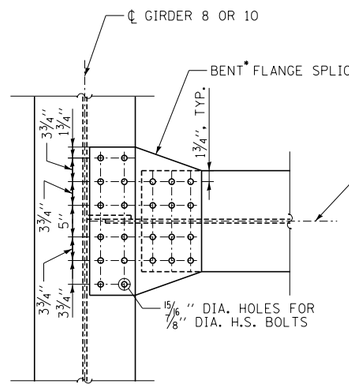


SECTION C-C



TRANSFER GIRDER 8-10 ELEVATION

(LOOKING DOWNSTATION)



VIEW D-D

*BEND SPLICE PLATE AT FLANGE EDGE TO ACCOMODATE SLOPE OF TRANSFER GIRDER

NOTES:

1. TRANSFER GIRDER IS CONSIDERED A SYSTEM REDUNDANT MEMBER. FABRICATION OF THE GIRDER AND ITS CONNECTIONS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF CHAPTER 12 OF THE AWS D1.5 BRIDGE WELDING CODE.
2. ALL STRUCTURAL STEEL FOR THE TRANSFER GIRDER, INCLUDING ALL CONNECTION PLATES, SHALL BE AASHTO M270 GRADE 50 AND MEET CVN.
3. LOAD CARRYING COMPONENTS DESIGNATED "CVN" SHALL CONFORM TO THE CHARPY-V-NOTCH IMPACT ENERGY REQUIREMENTS, ZONE 2.
4. ADJUST SHEAR STUD SPACING TO MISS TOP CONNECTION PLATE.

P:\60254057-294.5-91\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\01621B1.5_unit2-header beam 5-10&8-10.dgn
3/30/2020

DRAWN BY . . . SP	DATE . 4-3-2020	TYLIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	REVISIONS NO. / DATE / DESCRIPTION	CONTRACT I-19-4495
CHECKED BY . . . SP	SCALE NONE				I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 116) UNIT 2 - STEEL DETAILS 2

SHEET SC - 126 OF 234

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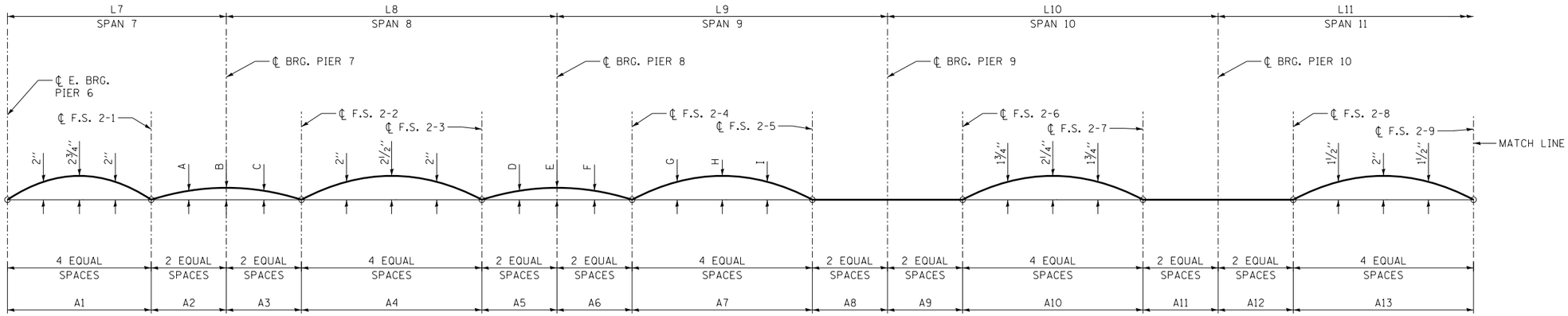

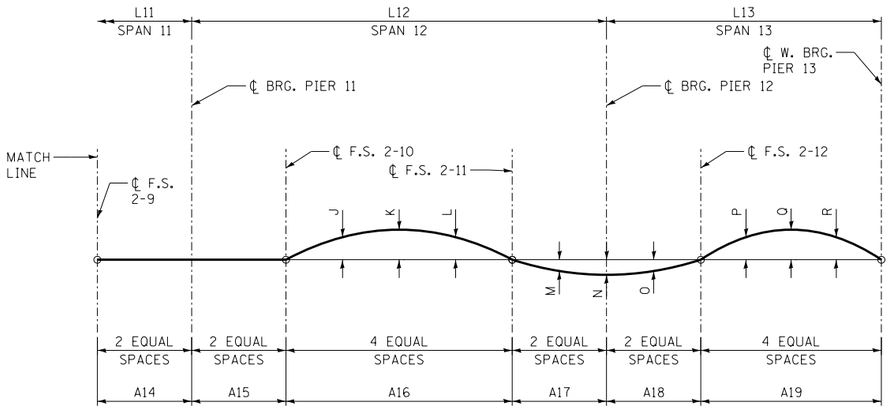

UNIT 2 - CAMBER DIAGRAM - GIRDERS 1 THRU 5, 10 & 11

CAMBER DIMENSIONS

GIRDER	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	M	N	O
1	¾''	1''	¾''	-½''	-¾''	-½''	1½''	2''	1½''	1½''	2''	1½''	½''	¾''	½''	0''	0''	0''
2	¾''	1''	¾''	0''	0''	0''	1½''	2''	1½''	1½''	2''	1½''	½''	¾''	½''	0''	0''	0''
3	½''	¾''	½''	0''	0''	0''	1½''	2''	1½''	1½''	2''	1½''	½''	¾''	½''	0''	0''	0''
4	0''	0''	0''	0''	0''	0''	1½''	2''	1½''	1½''	2''	1½''	½''	¾''	½''	½''	¾''	½''
5	0''	0''	0''	½''	¾''	½''	1½''	2''	1½''	1½''	2''	1½''	½''	¾''	½''	½''	¾''	½''
10	0''	0''	0''	1¼''	1½''	1¼''	1½''	2''	1½''	1½''	2''	1½''	0''	0''	0''	3''	4''	3''
11	0''	0''	0''	1¼''	1½''	1¼''	¾''	1''	¾''	2''	2½''	2''	0''	0''	0''	3''	4''	3''

TOP OF WEB ELEVATIONS

(FOR FABRICATION ONLY)

GIRDER	℄ W. BRG. PIER 6	℄ F.S. 2-1	℄ BRG. PIER 7	℄ F.S. 2-2	℄ F.S. 2-3	℄ BRG. PIER 8	℄ F.S. 2-4	℄ F.S. 2-5	℄ BRG. PIER 9	℄ F.S. 2-6	℄ F.S. 2-7	℄ BRG. PIER 10	℄ F.S. 2-8	℄ F.S. 2-9	℄ BRG. PIER 11	℄ F.S. 2-10	℄ F.S. 2-11	℄ BRG. PIER 12	℄ F.S. 2-12	℄ E. BRG. PIER 13
1	638.99	639.78	639.81	639.65	639.14	638.83	638.69	638.37	638.20	638.06	637.64	637.45	637.24	636.90	636.73	636.57	636.24	636.25	636.39	637.44
2	639.08	639.88	639.96	639.86	639.53	639.31	639.15	638.84	638.65	638.52	638.11	637.89	637.70	637.37	637.17	637.02	636.70	636.72	636.86	637.90
3	639.17	639.98	640.08	640.07	639.91	639.75	639.61	639.30	639.13	638.98	638.56	638.37	638.17	637.83	637.65	637.48	637.15	637.18	637.33	638.36
4	639.26	640.08	640.17	640.27	640.30	640.17	640.07	639.76	639.59	639.44	639.02	638.83	638.63	638.29	638.12	637.94	637.61	637.64	637.81	638.82
5	639.35	640.18	640.31	640.48	640.68	640.66	640.54	640.22	640.04	639.90	639.49	639.29	639.10	638.74	638.55	638.38	638.07	638.10	638.26	639.22
10	639.44	640.28	640.46	640.69	641.07	641.15	641.00	640.67	640.57	640.48	640.21	640.10	639.98	639.74	639.59	639.44	639.06	638.97	638.88	638.20
11	639.53	640.39	640.62	640.91	641.45	641.58	641.46	641.13	641.03	640.94	640.68	640.56	640.45	640.21	640.05	639.90	639.37	639.19	639.02	638.06

NOTES:

1. THE CONTRACTOR IS ALERTED THAT CAMBER AND DEAD LOAD DEFLECTION VALUES SHOWN ON THE PLANS WERE DEVELOPED BASED ON THE DECK POURING SEQUENCE SHOWN IN THE CONTRACT DRAWINGS. ANY DEVIATION FROM THIS POURING SEQUENCE WILL RESULT IN CHANGES TO CAMBER AND ELEVATIONS THAT REFLECT DEAD LOAD DEFLECTIONS. IF THE CONTRACTOR WISHES TO CHANGE THE SEQUENCE, THEN THE PROPOSED PLAN REVISIONS AND DESIGN CALCULATIONS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL. THE CALCULATIONS SHALL BE PREPARED AND SEALED BY A LICENSED STRUCTURAL ENGINEER IN ILLINOIS.
2. FOR A1-A19 DIMENSIONS, SEE FRAMING PLAN SHEETS SC-115 TO SC-122.

P:\162540\57-294,5-9\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\0162101.5_unit2_camber_diagram 11 of 21.dgn
3/30/2020

DRAWN BY . . . . RH . . . . .
CHECKED BY . . . . SP . . . . .
DATE . 4-3-2020 . . .
SCALE . NONE . . . . .

TY·LIN INTERNATIONAL

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
UNIT 2 - CAMBER DIAGRAM 1 OF 2

SHEET SC - 127 OF 234

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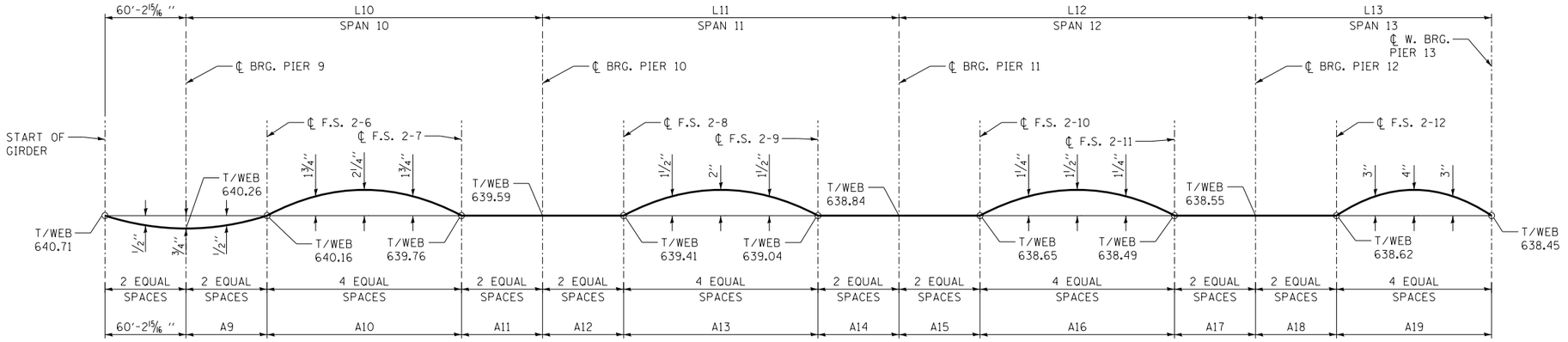
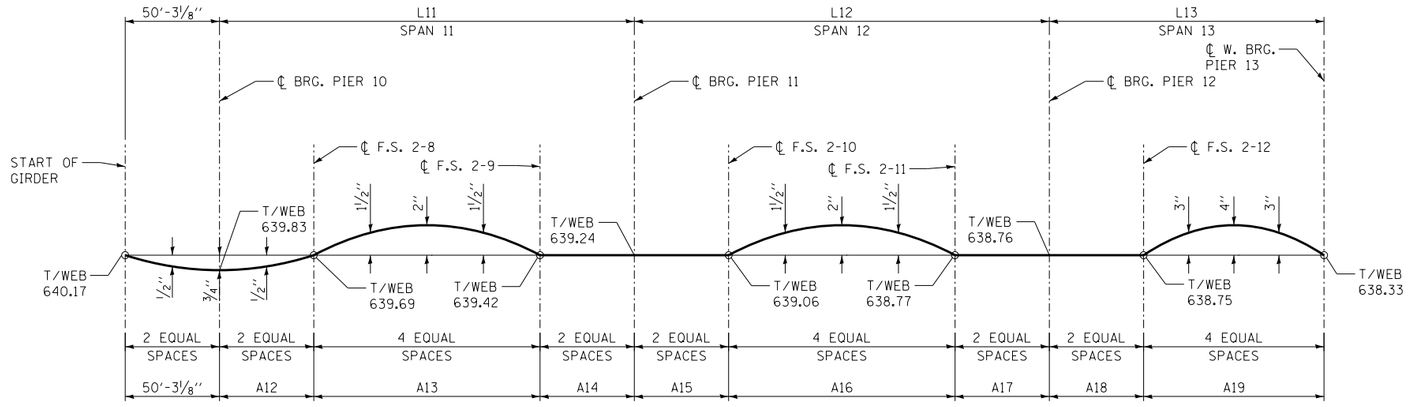
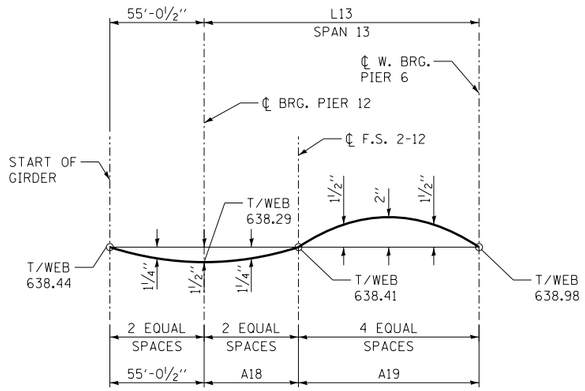


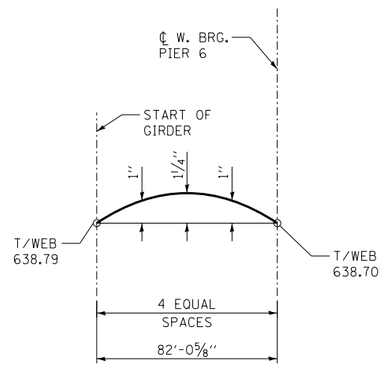
UNIT 2 - CAMBER DIAGRAM - GIRDERS 8



UNIT 2 - CAMBER DIAGRAM - GIRDERS 9



UNIT 2 - CAMBER DIAGRAM - GIRDERS 6



UNIT 2 - CAMBER DIAGRAM - GIRDERS 7

NOTES:

1. THE CONTRACTOR IS ALERTED THAT CAMBER AND DEAD LOAD DEFLECTION VALUES SHOWN ON THE PLANS WERE DEVELOPED BASED ON THE DECK POURING SEQUENCE SHOWN IN THE CONTRACT DRAWINGS. ANY DEVIATION FROM THIS POURING SEQUENCE WILL RESULT IN CHANGES TO CAMBER AND ELEVATIONS THAT REFLECT DEAD LOAD DEFLECTIONS. IF THE CONTRACTOR WISHES TO CHANGE THE SEQUENCE, THEN THE PROPOSED PLAN REVISIONS AND DESIGN CALCULATIONS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL. THE CALCULATIONS SHALL BE PREPARED AND SEALED BY A LICENSED STRUCTURAL ENGINEER IN ILLINOIS.
2. FOR A1-A19 DIMENSIONS, SEE FRAMING PLAN SHEETS SC-115 TO SC-122.

DRAWN BY . . . . RH	DATE . 4-3-2020 . . .	T·Y·LIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	REVISIONS NO.	DATE	DESCRIPTION	CONTRACT I-19-4495
CHECKED BY . . . SP	SCALE . NONE						I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 116) UNIT 2 - CAMBER DIAGRAM 2 OF 2

SHEET SC - 128 OF 234

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EXTERIOR GIRDER 1

		GIRDER MOMENT TABLE												
		0.4 SP. 7	PIER 7	0.5 SP. 8	PIER 8	0.5 SP. 9	PIER 9	0.5 SP. 10	PIER 10	0.5 SP. 11	PIER 11	0.5 SP. 12	PIER 12	0.6 SP. 13
I_s	(IN^4)	46,709	80,466	42,829	71,322	42,829	71,322	42,829	71,322	42,829	71,322	42,829	80,466	46,709
$I_c(n)$	(IN^4)	106,738	148,059	97,257	136,689	97,494	136,689	97,494	136,689	97,494	136,689	97,494	149,588	109,075
$I_c(3n)$	(IN^4)	78,295	113,281	72,498	104,066	72,709	104,066	72,709	104,066	72,709	104,066	72,709	114,370	80,270
$I_c(cr)$	(IN^4)		88,915		80,148		80,148		80,148		80,148		89,465	
S_s	(IN^3)	1,633	2,515	1,421	2,246	1,421	2,246	1,421	2,246	1,421	2,246	1,421	2,515	1,633
$S_c(n)$	(IN^3)	2,160	3,021	1,901	2,745	1,902	2,745	1,902	2,745	1,902	2,745	1,902	3,028	2,172
$S_c(3n)$	(IN^3)	1,978	2,812	1,741	2,550	1,742	2,550	1,742	2,550	1,742	2,550	1,742	2,820	1,993
$S_c(cr)$	(IN^3)		2,605		2,344		2,344		2,344		2,344		2,611	
S_{xc}	(IN^3)	2,008	2,578	1,828	2,323	1,843	2,322	1,824	2,320	1,826	2,322	1,842	2,585	2,044
DC1	(K/')	0.99	1.13	1.01	1.13	1.01	1.13	1.01	1.13	1.01	1.13	1.01	1.16	1.04
M_{DC1}	('K)	1,382	2,548	618	1,608	499	1,709	660	1,904	645	1,685	505	2,293	1,131
DC2	(K/')	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
M_{DC2}	('K)	217	349	105	246	82	247	103	265	97	245	85	289	148
DW	(K/')	0.290	0.290	0.290	0.290	0.290	0.290	0.290	0.290	0.290	0.290	0.290	0.290	0.290
M_{DW}	('K)	386	639	224	494	171	504	230	565	225	504	178	652	376
M_{L+IM}	('K)	2,163	2,445	1,960	2,388	1,523	2,337	1,707	2,265	1,824	2,313	1,698	2,321	1,955
f_f (STRENGTH I)	(KSI)	0.04	0.10	0.03	0.10	0.03	0.22	0.02	0.23	0.12	0.15	0.03	0.16	0.03
$M_u + \frac{1}{3} f_f S_{xc}$	('K)	6,365	8,865	4,673	7,245	3,651	7,305	4,289	7,537	4,463	7,226	3,977	8,279	5,586
$\phi_f M_n$	('K)													
f_s DC1	(KSI)	10.15	12.16	5.22	8.59	4.21	9.13	5.58	10.17	5.45	9.00	4.27	10.94	8.31
f_s DC2	(KSI)	1.32	1.61	0.73	1.26	0.57	1.26	0.71	1.35	0.67	1.25	0.58	1.33	0.89
f_s DW	(KSI)	2.34	2.94	1.55	2.53	1.18	2.58	1.59	2.89	1.55	2.58	1.22	3.00	2.26
f_s (L+IM)	(KSI)	12.02	11.26	12.38	12.22	9.61	11.96	10.77	11.60	11.51	11.84	10.71	10.67	10.80
f_f (SERVICE II)	(KSI)	0.03	0.07	0.02	0.07	0.02	0.16	0.02	0.17	0.09	0.11	0.02	0.12	0.02
$f_s + \frac{1}{2}$ (SERVICE II)	(KSI)	29.45	31.38	23.59	28.31	18.46	28.60	21.89	29.58	22.67	28.28	20.01	29.19	25.52
$0.95R_h F_{yf}$	(KSI)	47.50	47.50	47.50	47.50	47.50	47.50	47.50	47.50	47.50	47.50	47.50	47.50	47.50
$f_s + \frac{1}{3}$ (TOTAL)(STRENGTH I)	(KSI)	38.9	41.4	31.4	37.5	24.6	37.9	29.1	39.1	30.1	37.5	26.7	38.6	33.8
$\phi_f F_n$	(KSI)	50.00	47.31	50.00	45.35	50.00	44.39	50.00	46.47	50.00	46.47	50.00	47.86	50.00
V_f	(K)	42.70	49.33	40.50	46.49	42.37	53.71	50.45	56.65	47.51	51.78	44.11	66.37	50.37

GIRDER REACTION TABLE									
		PIER 6	PIER 7	PIER 8	PIER 9	PIER 10	PIER 11	PIER 12	PIER 13
R_{DC1}	(K)	59.7	182.8	153.5	157.9	168.2	156.5	188.8	188.8
R_{DC2}	(K)	9.3	27.3	23.7	23.7	24.6	24.0	25.4	25.4
R_{DW}	(K)	15.0	46.2	43.6	43.8	46.6	44.1	49.2	49.2
R_{L+IM}	(K)	104.6	192.0	193.4	188.6	195.1	185.0	189.8	189.8
R_{Total}	(K)	188.6	448.3	414.2	414.0	434.5	409.6	453.2	453.2

INTERIOR GIRDER 4

		GIRDER MOMENT TABLE												
		0.4 SP. 7	PIER 7	0.5 SP. 8	PIER 8	0.5 SP. 9	PIER 9	0.5 SP. 10	PIER 10	0.5 SP. 11	PIER 11	0.5 SP. 12	PIER 12	0.6 SP. 13
I_s	(IN^4)	46,709	80,466	42,829	71,322	42,829	71,322	42,829	71,322	42,829	71,322	42,829	80,466	46,709
$I_c(n)$	(IN^4)	105,800	148,908	98,275	138,515	98,763	138,515	98,763	138,515	98,763	138,515	98,763	151,602	110,573
$I_c(3n)$	(IN^4)	77,527	113,884	73,409	105,454	73,854	105,454	73,854	105,454	73,854	105,454	73,854	115,839	81,582
$I_c(cr)$	(IN^4)		89,341		80,518		80,518		80,518		80,518		89,844	
S_s	(IN^3)	1,633	2,515	1,421	2,246	1,421	2,246	1,421	2,246	1,421	2,246	1,421	2,515	1,633
$S_c(n)$	(IN^3)	2,155	3,221	1,906	2,754	1,909	2,754	1,909	2,754	1,909	2,754	1,909	3,038	2,180
$S_c(3n)$	(IN^3)	1,972	2,817	1,748	2,560	1,751	2,560	1,751	2,560	1,751	2,560	1,751	2,831	2,003
$S_c(cr)$	(IN^3)		2,610		2,348		2,348		2,348		2,348		2,615	
S_{xc}	(IN^3)	2,009	2,581	1,832	2,327	1,849	2,325	1,833	2,322	1,832	2,325	1,849	2,588	2,049
DC1	(K/')	0.92	1.11	1.00	1.09	1.00	1.09	1.00	1.09	1.00	1.09	1.00	1.14	1.02
M_{DC1}	('K)	1,338	2,476	641	1,712	584	1,784	697	2,003	736	1,742	494	2,452	1,316
DC2	(K/')	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
M_{DC2}	('K)	205	317	100	219	90	203	101	194	85	155	65	189	116
DW	(K/')	0.384	0.384	0.384	0.384	0.384	0.384	0.384	0.384	0.384	0.384	0.384	0.384	0.384
M_{DW}	('K)	377	702	249	570	196	550	143	607	250	560	195	737	434
M_{L+IM}	('K)	1,316	1,585	1,249	1,575	1,125	1,532	1,176	1,513	1,192	1,517	1,180	1,594	1,351
f_f (STRENGTH I)	(KSI)	0.03	0.07	0.02	0.08	0.03	0.17	0.03	0.18	0.09	0.11	0.02	0.12	0.02
$M_u + \frac{1}{3} f_f S_{xc}$	('K)	4,799	7,323	3,487	6,031	3,106	6,001	3,273	6,318	3,492	5,875	3,058	7,206	4,808
$\phi_f M_n$	('K)													
f_s DC1	(KSI)	9.83	11.82	5.42	9.15	4.93	9.53	5.89	10.70	6.22	9.31	4.17	11.70	9.67
f_s DC2	(KSI)	1.25	1.46	0.69	1.12	0.62	1.03	0.69	0.99	0.58	0.79	0.45	0.87	0.70
f_s DW	(KSI)	2.29	3.23	1.71	2.91	1.34	2.81	0.98	3.10	1.71	2.86	1.34	3.38	2.60
f_s (L+IM)	(KSI)	7.33	7.29	7.86	8.05	7.07	7.83	7.40	7.73	7.49	7.75	7.42	7.31	7.44
f_f (SERVICE II)	(KSI)	0.02	0.06	0.02	0.06	0.02	0.13	0.02	0.14	0.07	0.08	0.02	0.09	0.01
$f_s + \frac{1}{2}$ (SERVICE II)	(KSI)	22.91	26.00	18.04	23.67	16.09	23.61	17.19	24.92	18.29	23.08	15.61	25.51	22.65
$0.95R_h F_{yf}$	(KSI)	47.50	47.50	47.50	47.50	47.50	47.50	47.50	47.50	47.50	47.50	47.50	47.50	47.50
$f_s + \frac{1}{3}$ (TOTAL)(STRENGTH I)	(KSI)	30.1	34.2	24.0	31.3	21.3	31.2	22.7	32.9	24.2	30.5	20.8	33.6	29.9
$\phi_f F_n$	(KSI)	50.00	47.31	50.00	45.35	50.00	44.39	50.00	46.47	50.00	46.47	50.00	47.86	50.00
V_f	(K)	29.89	35.61	35.59	52.16	33.67	48.02	27.98	31.94	33.93	41.80	41.43	32.76	51.31

GIRDER REACTION TABLE									
		PIER 6	PIER 7	PIER 8	PIER 9	PIER 10	PIER 11	PIER 12	PIER 13
R_{DC1}	(K)	54.9	181.6	147.6	147.5	157.6	147.4	187.4	53.5
R_{DC2}	(K)	6.6	50.5	15.7	12.9	12.0	10.1	11.8	2.8
R_{DW}	(K)	15.2	54.3	49.8	46.9	49.1	18.3	57.5	18.2
R_{L+IM}	(K)	61.7	132.8	138.4	128.6	128.0	131.8	129.9	85.3
R_{Total}	(K)	138.3	419.2	351.5	335.9	346.6	307.7	386.7	159.8

I_s, S_s: NON-COMPOSITE MOMENT OF INERTIA AND SECTION MODULUS OF THE STEEL SECTION USED FOR COMPUTING F_s (TOTAL-STRENGTH I, AND SERVICE II) DUE TO NON-COMPOSITE DEAD LOADS ($IN.^4$ AND $IN.^3$).

$I_c(n)$, $S_c(n)$: COMPOSITE MOMENT OF INERTIA AND SECTION MODULUS OF THE STEEL AND DECK BASED UPON THE MODULAR RATIO, "N", USED FOR COMPUTING F_s (TOTAL-STRENGTH I, AND SERVICE II) IN UNCRACKED SECTIONS DUE TO SHORT TERM COMPOSITE LIVE LOADS ($IN.^4$ AND $IN.^3$).

$I_c(3n)$, $S_c(3n)$: COMPOSITE MOMENT OF INERTIA AND SECTION MODULUS OF THE STEEL AND DECK BASED UPON 3 TIMES THE MODULAR RATIO, "3N", USED FOR COMPUTING F_s (TOTAL-STRENGTH I, AND SERVICE II) IN UNCRACKED SECTIONS DUE TO LONG-TERM COMPOSITE (SUPERIMPOSED) DEAD LOADS ($IN.^4$ AND $IN.^3$).

$I_c(cr)$, $S_c(cr)$: COMPOSITE MOMENT OF INERTIA AND SECTION MODULUS OF THE STEEL AND LONGITUDINAL DECK REINFORCEMENT, USED FOR COMPUTING F_s (TOTAL-STRENGTH I AND SERVICE II) IN CRACKED SECTIONS, DUE TO BOTH SHORT-TERM COMPOSITE LIVE LOADS AND LONG-TERM COMPOSITE (SUPERIMPOSED) DEAD LOADS ($IN.^4$ AND $IN.^3$).

S_{xc}: SECTION MODULUS ABOUT THE MAJOR AXIS OF SECTION TO THE CONTROLLING FLANGE, TENSION OR COMPRESSION, TAKEN AS YIELD MOMENT WITH RESPECT TO THE CONTROLLING FLANGE OVER THE YIELD STRENGTH OF THE CONTROLLING FLANGE ($IN.^3$).

DC1: UN-FACTORED NON-COMPOSITE DEAD LOAD (KIPS/FT.).

M_{DC1}: 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.).

M_{DC2}: 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.).

M_{DW}: UN-FACTORED MOMENT DUE TO LONG-TERM COMPOSITE (SUPERIMPOSED FUTURE WEARING SURFACE ONLY) DEAD LOAD (KIP-FT.).

M_{L+IM}: UN-FACTORED LIVE LOAD MOMENT PLUS DYNAMIC LOAD ALLOWANCE (IMPACT)(KIP-FT.).

M_u(STRENGTH I): FACTORED DESIGN MOMENT (KIP-FT.).
$1.25\ (M_{DC1} + M_{DC2}) + 1.5\ M_{DW} + 1.75\ M_{L+IM}$

f_f: FACTORED CALCULATED NORMAL STRESS AT EDGE OF FLANGE FOR CONTROLLING FLANGE PLATE DUE TO LATERAL BENDING, STRENGTH I OR SERVICE II AS APPLICABLE (KIP-FT.).

$\phi_f M_n$: 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.).

f_s DC1: UN-FACTORED STRESS AT EDGE OF FLANGE FOR CONTROLLING STEEL FLANGE DUE TO VERTICAL NON-COMPOSITE DEAD LOADS AS CALCULATED BELOW (KSI).
M_{DC1}/S_{sc}

f_s DC2: UN-FACTORED STRESS AT EDGE OF FLANGE FOR CONTROLLING STEEL FLANGE DUE TO VERTICAL COMPOSITE DEAD LOADS AS CALCULATED BELOW (KSI).
$M_{DC2}/S_c(3N)$ OR $M_{DC2}/S_c(CR)$ AS APPLICABLE.

f_s DW: UN-FACTORED STRESS AT EDGE OF FLANGE FOR CONTROLLING STEEL FLANGE DUE TO VERTICAL COMPOSITE FUTURE WEARING SURFACE LOADS AS CALCULATED BELOW (KSI).
$M_{DW}/S_c(3N)$ OR $M_{DW}/S_c(CR)$ AS APPLICABLE.

f_s (L+IM): UN-FACTORED STRESS AT EDGE OF FLANGE FOR CONTROLLING STEEL FLANGE DUE TO VERTICAL COMPOSITE LIVE PLUS IMPACT LOADS AS CALCULATED BELOW (KSI).
$M_{L+IM}/S_c(N)$ OR $M_{DW}/S_c(CR)$ AS APPLICABLE.

$f_s + \frac{1}{2}$ (SERVICE II): SUM OF STRESSES AS COMPUTED BELOW (KSI).
$F_{sDC1} + F_{sDC2} + F_{sDW} + 1.3\ F_s\ (L+IM) + \frac{1}{2}$

$0.95R_h F_y f_f$: COMPOSITE STRESS CAPACITY FOR SERVICE II LOADING ACCORDING TO ARTICLE 6.10.4.2 (KSI).

$f_s + \frac{1}{3}$ (Total)(STRENGTH I): SUM OF STRESSES AS COMPUTED BELOW ON NON-COMPACT SECTION (KSI).
$1.25\ (F_{sDC1} + F_{sDC2}) + 1.5\ F_{sDW} + 1.75\ F_s\ (L+IM) + \frac{1}{3}$

$\phi_f F_n$: NON-COMPACT COMPOSITE POSITIVE OR NEGATIVE STRESS CAPACITY FOR STRENGTH I LOADING ACCORDING TO ARTICLE 6.10.7 OR 6.10.8 (KSI).

V_f: MAXIMUM FACTORED SHEAR RANGE IN SPAN COMPUTED ACCORDING TO ARTICLE 6.10.10.

NOTE:
M_L AND R_L INCLUDE THE EFFECTS OF CENTRIFUGAL FORCE AND SUPERELEVATION.

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3/30/2020

DRAWN BY . . . . OR . . . . . DATE . 4-3-2020 . . .
CHECKED BY . . . SP . . . . . SCALE . NONE . . . . .

T·Y·LIN INTERNATIONAL

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
UNIT 2 - GIRDER TABLES - 1

SHEET SC - 129 OF 234

404 OF 606

EXTERIOR GIRDER 11

		GIRDER MOMENT TABLE												
		0.4 SP. 7	PIER 7	0.5 SP. 8	PIER 8	0.5 SP. 9	PIER 9	0.5 SP. 10	PIER 10	0.5 SP. 11	PIER 11	0.5 SP. 12	PIER 12	0.6 SP. 13
I_s	(IN^4)	46,709	80,466	42,829	80,466	42,829	80,466	42,829	71,322	42,829	71,322	42,829	80,466	46,709
$I_c(n)$	(IN^4)	107,064	149,161	98,179	147,155	97,494	147,780	97,500	137,264	97,501	136,698	97488	149558	108914
$I_c(3n)$	(IN^4)	78,566	114,064	73,322	112,491	72,709	112,942	72,714	104,499	72,714	104,073	72703	114349	80131
$I_c(cr)$	(IN^4)		89,387		89,465		89,465		80148.0		80148.0		89,465	
S_s	(IN^3)	1,633	2,515	1,421	2,515	1,421	2,515	1,421	2,246	1,421	2,246	1,421	2,515	1,633
$S_c(n)$	(IN^3)	2,162	3,026	1,906	3,000	1,902	3,003	1,902	2,748	1,902	2,745	1,902	3,028	2,171
$S_c(3n)$	(IN^3)	1,980	2,818	1,747	2,794	1,742	2,797	1,742	2,553	1,742	2,550	1,742	2,820	1,992
$S_c(cr)$	(IN^3)		2,610		2,611		2,611		2,344		2,344		2,611	
S_{xc}	(IN^3)	2,013	2,582	1,826	2,590	1,825	2,589	1,815	2,316	1,804	2,320	1,843	2,580	1,993
DC1	(K/')	0.99	1.13	1.01	1.13	1.01	1.13	1.01	1.13	1.01	1.13	1.01	1.16	1.04
M_{DC1}	('K)	1,342	2,431	670	1,833	668	1,893	743	2,161	854	1,888	491	2,719	1,584
DC2	(K/')	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
M_{DC2}	('K)	212	353	114	277	103	281	115	293	117	280	94	353	197
DW	(K/')	0.290	0.290	0.290	0.290	0.290	0.290	0.290	0.290	0.290	0.290	0.290	0.290	0.290
M_{DW}	('K)	376	662	257	550	202	515	244	560	256	524	192	774	506
M_{L+IM}	('K)	2,431	2,711	2,154	2,664	1,812	2,566	1,888	2,433	1,985	2,506	2,004	2,698	2,255
f_f (STRENGTH I)	(KSI)	0.03	0.06	0.14	0.06	0.03	0.18	0.04	0.18	0.11	0.10	0.03	0.09	0.02
$M_u + \frac{1}{3} f_f S_{xc}$	('K)	6,762	9,222	5,142	8,130	4,440	7,994	4,744	8,178	5,078	7,888	4,528	9,731	6,933
$\phi_f M_n$	('K)													
f_s DC1	(KSI)	9.86	11.60	5.66	8.75	5.64	9.03	6.27	11.54	7.22	10.08	4.14	12.98	11.64
f_s DC2	(KSI)	1.29	1.62	0.78	1.27	0.71	1.29	0.79	1.50	0.81	1.43	0.65	1.62	1.19
f_s DW	(KSI)	2.28	3.04	1.76	2.53	1.39	2.37	1.68	2.87	1.77	2.68	1.32	3.56	3.05
f_s (L+IM)	(KSI)	13.49	12.46	13.56	12.24	11.43	11.79	11.91	12.46	12.52	12.83	12.65	12.40	12.46
f_f (SERVICE II)	(KSI)	0.03	0.05	0.11	0.04	0.02	0.13	0.03	0.14	0.08	0.08	0.03	0.07	0.01
$f_s + \frac{1}{2}$ (SERVICE II)	(KSI)	30.98	32.49	25.89	28.49	22.62	28.09	24.25	32.17	26.11	30.91	22.56	34.32	32.09
$0.95R_h F_{yf}$	(KSI)	47.50	47.50	47.50	47.50	47.50	47.50	47.50	47.50	47.50	47.50	47.50	47.50	47.50
$f_s + \frac{1}{3}$ (TOTAL)(STRENGTH I)	(KSI)	41.0	42.9	34.4	37.7	30.0	37.1	32.2	42.4	34.6	40.9	30.1	45.3	42.4
$\phi_f F_n$	(KSI)	50.00	47.31	50.00	45.07	50.00	44.08	50.00	46.19	50.00	46.14	50.00	47.54	50.00
V_f	(K)	52.69	45.97	56.47	59.61	41.61	68.82	45.72	48.75	38.94	51.97	43.18	47.50	44.32

GIRDER REACTION TABLE									
		PIER 6	PIER 7	PIER 8	PIER 9	PIER 10	PIER 11	PIER 12	PIER 13
R_{DC1}	(K)	56.1	184.4	144.7	143.4	150.1	146.7	193.2	57.1
R_{DC2}	(K)	9.0	27.9	22.8	22.6	22.8	23.1	27.7	6.6
R_{DW}	(K)	14.6	48.9	41.0	37.8	38.1	38.7	53.6	12.1
R_{L+IM}	(K)	108.5	212.5	197.0	181.1	182.8	183.0	201.4	81.0
R_{Total}	(K)	188.2	473.7	405.5	384.9	393.8	391.5	475.9	156.8

INTERIOR GIRDER 10

		GIRDER MOMENT TABLE												
		0.4 SP. 7	PIER 7	0.5 SP. 8	PIER 8	0.5 SP. 9	PIER 9	0.5 SP. 10	PIER 10	0.5 SP. 11	PIER 11	0.5 SP. 12	PIER 12	0.6 SP. 13
I_s	(IN^4)	46,709	80,466	42,829	71,322	42,829	71,322	42,829	71,322	42,829	71,322	42,829	80,466	46,709
$I_c(n)$	(IN^4)	106,234	149,644	99,164	138,513	98,761	132,016	97,333	131,094	94,746	135,284	97,714	151,233	109,486
$I_c(3n)$	(IN^4)	77,881	114,411	74,222	105,453	73,852	100,680	72,566	100,040	70,337	103,024	72,905	115,567	80,627
$I_c(cr)$	(IN^4)		89,475		80,518		79,281		79121.7		79875.6		89,773	
S_s	(IN^3)	1,633	2,515	1,421	2,246	1,421	2,246	1,421	2,246	1,421	2,246	1,421	2,515	1,633
$S_c(n)$	(IN^3)	2,158	3,029	1,911	2,754	1,909	2,721	1,901	2,717	1,887	2,738	1,903	3,036	2,174
$S_c(3n)$	(IN^3)	1,975	2,820	1,754	2,560	1,751	2,525	1,741	2,520	1,723	2,542	1,744	2,829	1,996
$S_c(cr)$	(IN^3)		2,611		2,348		2,335		2,333		2,342		2,614	
S_{xc}	(IN^3)	2,010	2,583	1,831	2,324	1,829	2,313	1,818	2,309	1,796	2,318	1,846	2,583	2,003
DC1	(K/')	0.99	1.10	1.03	1.15	0.97	0.99	0.89	1.03	0.92	1.07	1.00	1.16	1.06
M_{DC1}	('K)	1,342	2,443	658	1,805	685	1,846	712	2,112	809	1,839	474	2,662	1,514
DC2	(K/')	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
M_{DC2}	('K)	207	347	110	265	100	236	108	247	99	243	80	308	173
DW	(K/')	0.328	0.350	0.370	0.377	0.340	0.318	0.315	0.305	0.321	0.336	0.351	0.364	0.377
M_{DW}	('K)	374	690	260	577	209	483	245	538	245	535	190	787	493
M_{L+IM}	('K)	1,904	2,160	1,807	2,210	1,614	1,924	1,576	1,877	1,625	2,063	1,675	2,250	1,967
f_f (STRENGTH I)	('K)	0.03	0.07	0.02	0.07	0.03	0.17	0.04	0.17	0.09	0.10	0.03	0.09	0.02
$M_u + \frac{1}{3} f_f S_{xc}$	('K)	5,830	8,308	4,514	7,325	4,121	6,706	4,153	7,052	4,352	7,020	3,912	8,839	6,292
$\phi_f M_n$	('K)													
f_s DC1	(KSI)	9.86	11.66	5.56	9.64	5.78	9.86	6.02	11.28	6.84	9.82	4.00	12.71	11.13
f_s DC2	(KSI)	1.26	1.59	0.75	1.36	0.68	1.21	0.74	1.27	0.69	1.25	0.55	1.42	1.04
f_s DW	(KSI)	2.27	3.17	1.78	2.95	1.43	2.48	1.69	2.77	1.71	2.74	1.31	3.61	2.96
f_s (L+IM)	(KSI)	10.59	9.93	11.35	11.29	10.15	9.89	9.95	9.65	10.34	10.57	10.56	10.33	10.86
f_f (SERVICE II)	(KSI)	0.02	0.05	0.02	0.05	0.02	0.13	0.03	0.13	0.07	0.07	0.02	0.07	0.01
$f_s + \frac{1}{2}$ (SERVICE II)	(KSI)	27.17	29.36	22.85	28.65	21.10	26.48	21.39	27.94	22.70	27.59	19.61	31.20	29.25
$0.95R_h F_{yf}$	(KSI)	47.50	47.50	47.50	47.50	47.50	47.50	47.50	47.50	47.50	47.50	47.50	47.50	47.50
$f_s + \frac{1}{3}$ (TOTAL)(STRENGTH I)	(KSI)	35.8	38.7	30.4	37.9	28.0	34.9	28.4	36.7	30.1	36.4	26.1	41.1	38.7
$\phi_f F_n$	(KSI)	50.00	47.31	50.00	45.07	50.00	44.08	50.00	46.19	50.00	46.14	50.00	47.54	50.00
V_f	(K)	29.99	47.69	42.15	41.45	38.18	61.48	32.85	49.09	28.49	36.33	31.09	35.68	55.82

GIRDER REACTION TABLE									
		PIER 6	PIER 7	PIER 8	PIER 9	PIER 10	PIER 11	PIER 12	PIER 13
R_{DC1}	(K)	56.1	182.0	153.5	147.2	154.5	147.2	183.1	57.7
R_{DC2}	(K)	9.0	27.6	23.3	21.1	20.5	21.1	24.4	8.8
R_{DW}	(K)	14.6	54.4	49.5	40.8	40.8	44.2	58.4	19.4
R_{L+IM}	(K)	108.5	156.0	156.6	137.0	138.5	148.1	151.6	94.3
R_{Total}	(K)	188.2	420.0	382.9	346.1	354.4	360.6	417.5	180.1

I_s, S_s: NON-COMPOSITE MOMENT OF INERTIA AND SECTION MODULUS OF THE STEEL SECTION USED FOR COMPUTING F_s (TOTAL-STRENGTH I, AND SERVICE II) DUE TO NON-COMPOSITE DEAD LOADS ($IN.^4$ AND $IN.^3$).

$I_c(n)$, $S_c(n)$: COMPOSITE MOMENT OF INERTIA AND SECTION MODULUS OF THE STEEL AND DECK BASED UPON THE MODULAR RATIO, "N", USED FOR COMPUTING F_s (TOTAL-STRENGTH I, AND SERVICE II) IN UNCRACKED SECTIONS DUE TO SHORT TERM COMPOSITE LIVE LOADS ($IN.^4$ AND $IN.^3$).

$I_c(3n)$, $S_c(3n)$: COMPOSITE MOMENT OF INERTIA AND SECTION MODULUS OF THE STEEL AND DECK BASED UPON 3 TIMES THE MODULAR RATIO, "3N", USED FOR COMPUTING F_s (TOTAL-STRENGTH I, AND SERVICE II) IN UNCRACKED SECTIONS DUE TO LONG-TERM COMPOSITE (SUPERIMPOSED) DEAD LOADS ($IN.^4$ AND $IN.^3$).

$I_c(cr)$, $S_c(cr)$: COMPOSITE MOMENT OF INERTIA AND SECTION MODULUS OF THE STEEL AND LONGITUDINAL DECK REINFORCEMENT, USED FOR COMPUTING F_s (TOTAL-STRENGTH I AND SERVICE II) IN CRACKED SECTIONS, DUE TO BOTH SHORT-TERM COMPOSITE LIVE LOADS AND LONG-TERM COMPOSITE (SUPERIMPOSED) DEAD LOADS ($IN.^4$ AND $IN.^3$).

S_{xc}: SECTION MODULUS ABOUT THE MAJOR AXIS OF SECTION TO THE CONTROLLING FLANGE, TENSION OR COMPRESSION, TAKEN AS YIELD MOMENT WITH RESPECT TO THE CONTROLLING FLANGE OVER THE YIELD STRENGTH OF THE CONTROLLING FLANGE ($IN.^3$).

DC1: UN-FACTORED NON-COMPOSITE DEAD LOAD (KIPS/FT.).

M_{DC1}: 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.).

M_{DC2}: 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.).

M_{DW}: UN-FACTORED MOMENT DUE TO LONG-TERM COMPOSITE (SUPERIMPOSED FUTURE WEARING SURFACE ONLY) DEAD LOAD (KIP-FT.).

M_{L+IM}: UN-FACTORED LIVE LOAD MOMENT PLUS DYNAMIC LOAD ALLOWANCE (IMPACT)(KIP-FT.).

M_u (STRENGTH I): FACTORED DESIGN MOMENT (KIP-FT.).
$1.25\ (M_{DC1} + M_{DC2}) + 1.5\ M_{DW} + 1.75\ M_{L+IM}$

f_f: FACTORED CALCULATED NORMAL STRESS AT EDGE OF FLANGE FOR CONTROLLING FLANGE PLATE DUE TO LATERAL BENDING, STRENGTH I OR SERVICE II AS APPLICABLE (KIP-FT.).

$\phi_f M_n$: 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.).

f_s DC1: UN-FACTORED STRESS AT EDGE OF FLANGE FOR CONTROLLING STEEL FLANGE DUE TO VERTICAL NON-COMPOSITE DEAD LOADS AS CALCULATED BELOW (KSI).
M_{DC1}/S_{sc}

f_s DC2: UN-FACTORED STRESS AT EDGE OF FLANGE FOR CONTROLLING STEEL FLANGE DUE TO VERTICAL COMPOSITE DEAD LOADS AS CALCULATED BELOW (KSI).
$M_{DC2}/S_c(3N)$ OR $M_{DC2}/S_c(CR)$ AS APPLICABLE.

f_s DW: UN-FACTORED STRESS AT EDGE OF FLANGE FOR CONTROLLING STEEL FLANGE DUE TO VERTICAL COMPOSITE FUTURE WEARING SURFACE LOADS AS CALCULATED BELOW (KSI).
$M_{DW}/S_c(3N)$ OR $M_{DW}/S_c(CR)$ AS APPLICABLE.

f_s (L+IM): UN-FACTORED STRESS AT EDGE OF FLANGE FOR CONTROLLING STEEL FLANGE DUE TO VERTICAL COMPOSITE LIVE PLUS IMPACT LOADS AS CALCULATED BELOW (KSI).
$M_{L+IM}/S_c(N)$ OR $M_{DW}/S_c(CR)$ AS APPLICABLE.

$f_s + \frac{1}{2}$ (SERVICE II): SUM OF STRESSES AS COMPUTED BELOW (KSI).
$F_{sDC1} + F_{sDC2} + F_{sDW} + 1.3\ F_s\ (L + IM) + \frac{1}{2}$

$0.95R_h F_y f$: COMPOSITE STRESS CAPACITY FOR SERVICE II LOADING ACCORDING TO ARTICLE 6.10.4.2 (KSI).

$f_s + \frac{1}{3}$ (Total)(STRENGTH I): SUM OF STRESSES AS COMPUTED BELOW ON NON-COMPACT SECTION (KSI).
$1.25\ (F_{sDC1} + F_{sDC2}) + 1.5\ F_{sDW} + 1.75\ F_s\ (L + IM) + \frac{1}{3}$

$\phi_f F_n$: NON-COMPACT COMPOSITE POSITIVE OR NEGATIVE STRESS CAPACITY FOR STRENGTH I LOADING ACCORDING TO ARTICLE 6.10.7 OR 6.10.8 (KSI).

V_f: MAXIMUM FACTORED SHEAR RANGE IN SPAN COMPUTED ACCORDING TO ARTICLE 6.10.10.

NOTE:
M_L AND R_L INCLUDE THE EFFECTS OF CENTRIFUGAL FORCE AND SUPERELEVATION.

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3/30/2020

DRAWN BY . . . . OR . . . . . DATE . 4-3-2020 . . .
CHECKED BY . . . SP . . . . . SCALE . NONE . . . . .

T·Y·LIN INTERNATIONAL

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
UNIT 2 - GIRDER TABLES - 2

SHEET SC - 130 OF 234

405 OF 606

INTERIOR GIRDER 6

		GIRDER MOMENT TABLE		
		0.5 SP. 12	PIER 12	0.6 SP. 13
I_s	(IN^4)	80,466	80,466	46,709
$I_c(n)$	(IN^4)	125,860	129,734	100,138
$I_c(3n)$	(IN^4)	99,643	101,764	73,158
$I_c(cr)$	(IN^4)		86,519	
S_s	(IN^3)	2,515	2,515	1,633
$S_c(n)$	(IN^3)	2,897	2,921	2,124
$S_c(3n)$	(IN^3)	2,705	2,723	1,935
$S_c(cr)$	(IN^3)		2,580	
S_{xc}	(IN^3)	2,857	2,560	1,985
DC1	(K/')	0.77	0.83	0.83
M_{DC1}	('K)	752	2,531	1,350
DC2	(K/')	0.20	0.20	0.20
M_{DC2}	('k)	48	140	98
DW	(K/')	0.185	0.248	0.310
M_{DW}	('K)	167	528	404
M_{L+IM}	('K)	423	1,127	1,180
f_f (STRENGTH I)	(KSI)	0.03	0.09	0.02
$M_u + \frac{1}{3} f_f S_{xc}$	('K)	2,296	7,052	4,659
$\phi_f M_n$	('K)			
f_s DC1	(KSI)	3.59	12.08	9.92
f_s DC2	(KSI)	0.21	0.65	0.61
f_s DW	(KSI)	0.74	2.46	2.51
f_s (L+IM)	(KSI)	1.75	5.24	6.67
f_f (SERVICE II)	(KSI)	0.02	0.07	0.02
$f_s + f/2$ (SERVICE II)	(KSI)	6.83	22.04	21.70
$0.95R_h F_{yf}$	(KSI)	47.50	47.50	47.50
$f_s + f/3$ (TOTAL)(STRENGTH I)	(KSI)	8.9	28.8	28.6
$\phi_f F_n$	(KSI)	50.00	47.54	50.00
V_f	(K)	19.51	27.26	51.38

GIRDER REACTION TABLE			
		PIER 6	PIER 13
R_{DC1}	(K)	114.8	30.5
R_{DC2}	(K)	6.3	0.6
R_{DW}	(K)	31.8	10.4
R_{L+IM}	(K)	73.3	73.6
R_{Total}	(K)	226.1	115.1

INTERIOR GIRDER 8

		GIRDER MOMENT TABLE								
		0.5 SP. 9	PIER 9	0.5 SP. 10	PIER 10	0.5 SP. 11	PIER 11	0.5 SP. 12	PIER 12	0.6 SP. 13
I_s	(IN^4)	42,829	71,322	42,829	71,322	42,829	71,322	42,829	80,466	46,709
$I_c(n)$	(IN^4)	82,720	120,177	91,238	121,594	90,042	131,495	96,551	142,515	106,159
$I_c(3n)$	(IN^4)	61,446	93,053	67,508	93,901	66,291	100,317	71,878	109,511	77,820
$I_c(cr)$	(IN^4)		77,486		77,678		79,190		88,267	
S_s	(IN^3)	1,421	2,246	1,421	2,246	1,421	2,246	1,421	2,515	1,633
$S_c(n)$	(IN^3)	1,814	2,655	1,867	2,664	1,860	2,719	1,897	2,992	2,157
$S_c(3n)$	(IN^3)	1,644	2,464	1,700	2,471	1,823	2,522	1,736	2,784	1,974
$S_c(cr)$	(IN^3)		2,315		2,317		2,334		2,598	
S_{xc}	(IN^3)	1,795	2,298	1,795	2,298	1,784	2,313	1,841	2,573	2,005
DC1	(K/')	0.77	0.82	0.72	0.80	0.78	0.94	0.85	1.00	0.93
M_{DC1}	('K)	187	1,818	650	2,048	798	1,773	470	2,569	1,388
DC2	(K/')	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
M_{DC2}	('k)	30	212	93	190	82	164	66	196	124
DW	(K/')	0.207	0.253	0.234	0.270	0.270	0.310	0.339	0.338	0.342
M_{DW}	('K)	70	458	232	515	229	523	194	698	444
M_{L+IM}	('K)	805	1,602	1,241	1,427	1,126	1,507	1,230	1,538	1,403
f_f (STRENGTH I)	(KSI)	0.04	0.15	0.03	0.16	0.08	0.09	0.03	0.08	0.02
$M_u + \frac{1}{3} f_f S_{xc}$	('K)	1,786	6,036	3,450	6,077	3,418	5,848	3,115	7,201	5,012
$\phi_f M_n$	('K)									
f_s DC1	(KSI)	1.58	9.71	5.49	10.94	6.74	9.47	3.97	12.26	10.20
f_s DC2	(KSI)	0.22	1.10	0.66	0.98	0.54	0.84	0.45	0.91	0.76
f_s DW	(KSI)	0.51	2.37	1.64	2.67	1.51	2.69	1.34	3.22	2.70
f_s (L+IM)	(KSI)	5.33	8.30	7.98	7.39	7.26	7.75	7.78	7.10	7.81
f_f (SERVICE II)	(KSI)	0.03	0.11	0.02	0.12	0.06	0.07	0.03	0.06	0.01
$f_s + f/2$ (SERVICE II)	(KSI)	9.24	24.03	18.16	24.26	18.26	23.11	15.89	25.66	23.80
$0.95R_h F_{yf}$	(KSI)	47.50	47.50	47.50	47.50	47.50	47.50	47.50	47.50	47.50
$f_s + f/3$ (TOTAL)(STRENGTH I)	(KSI)	12.3	31.6	24.1	31.9	24.1	30.5	21.2	33.8	31.4
$\phi_f F_n$	(KSI)	50.00	44.08	50.00	46.19	50.00	46.14	50.00	47.54	50.00
V_f	(K)	21.94	28.90	20.44	27.13	20.35	27.55	22.13	27.12	52.55

GIRDER REACTION TABLE					
		PIER 9	PIER 10	PIER 11	PIER 12	PIER 13
R_{DC1}	(K)	144.4	155.9	147.9	177.1	69.9
R_{DC2}	(K)	19.0	13.2	11.3	11.9	6.4
R_{DW}	(K)	38.7	40.9	44.5	51.8	27.9
R_{L+IM}	(K)	116.5	108.6	121.6	120.3	105.2
R_{Total}	(K)	318.4	318.6	325.4	361.0	209.4

INTERIOR GIRDER 9

		GIRDER MOMENT TABLE						
		0.5 SP. 10	PIER 10	0.5 SP. 11	PIER 11	0.5 SP. 12	PIER 12	0.6 SP. 13
I_s	(IN^4)	71,322	71,322	42,829	71,322	42,829	80,466	46,709
$I_c(n)$	(IN^4)	118,432	119,943	89,774	131,699	96,628	149,465	108,665
$I_c(3n)$	(IN^4)	92,031	92,915	66,389	100,459	71,946	114,282	79,917
$I_c(cr)$	(IN^4)		77,458		79,387		89,443	
S_s	(IN^3)	2,246	2,246	1,421	2,246	1,375	2,515	1,633
$S_c(n)$	(IN^3)	2,645	6,552	1,858	2,720	1,897	3,028	2,170
$S_c(3n)$	(IN^3)	2,455	2,463	1,690	2,523	1,736	2,820	1,991
$S_c(cr)$	(IN^3)		2,315		2,336		2,611	
S_{xc}	(IN^3)	2,613.5	2,295.7	1,774.4	2,314.6	1,834.7	2,580.7	2,007.6
DC1	(K/')	0.76	0.82	0.77	0.94	0.91	1.08	0.99
M_{DC1}	('K)	507	2,089	792	1,804	477	2,627	1,450
DC2	(K/')	0.20	0.20	0.20	0.20	0.20	0.20	0.20
M_{DC2}	('k)	48	215	85	204	68	262	148
DW	(K/')	0.193	0.227	0.278	0.295	0.332	0.349	0.366
M_{DW}	('K)	116	808	231	521	190	774	475
M_{L+IM}	('K)	679	1,575	1,303	1,752	1,379	1,855	1,672
f_f (STRENGTH I)	(KSI)	0.02	0.17	0.08	0.09	0.03	0.07	0.02
$M_u + \frac{1}{3} f_f S_{xc}$	('K)	2,059	6,859	3,726	6,363	3,382	8,022	5,638
$\phi_f M_n$	('K)							
f_s DC1	(KSI)	2.71	11.16	6.69	9.63	4.16	12.54	10.66
f_s DC2	(KSI)	0.24	1.11	0.60	1.05	0.47	1.20	0.89
f_s DW	(KSI)	0.57	4.19	1.64	2.68	1.31	3.56	2.87
f_s (L+IM)	(KSI)	3.08	8.16	8.41	9.00	8.72	8.53	9.25
f_f (SERVICE II)	(KSI)	0.02	0.13	0.06	0.07	0.02	0.05	0.01
$f_s + f/2$ (SERVICE II)	(KSI)	7.53	27.14	19.90	25.09	17.30	28.40	26.44
$0.95R_h F_{yf}$	(KSI)	47.50	47.50	47.50	47.50	47.50	47.50	47.50
$f_s + f/3$ (TOTAL)(STRENGTH I)	(KSI)	9.9	35.9	26.3	33.1	23.0	37.4	34.9
$\phi_f F_n$	(KSI)	50.00	46.19	50.00	46.14	50.00	47.54	50.00
V_f	(K)	20.44	27.13	20.35	27.55	22.13	27.12	52.55

GIRDER REACTION TABLE					
		PIER 10	PIER 11	PIER 12	PIER 13
R_{DC1}	(K)	156.4	149.5	196.6	56.9
R_{DC2}	(K)	18.2	18.2	20.8	7.9
R_{DW}	(K)	39.5	44.2	59.5	20.3
R_{L+IM}	(K)	113.7	129.9	137.3	87.6
R_{Total}	(K)	327.8	341.7	414.2	172.7

I_s, S_s: NON-COMPOSITE MOMENT OF INERTIA AND SECTION MODULUS OF THE STEEL SECTION USED FOR COMPUTING F_s (TOTAL-STRENGTH I, AND SERVICE II) DUE TO NON-COMPOSITE DEAD LOADS ($IN.^4$ AND $IN.^3$).

$I_c(n)$, $S_c(n)$: COMPOSITE MOMENT OF INERTIA AND SECTION MODULUS OF THE STEEL AND DECK BASED UPON THE MODULAR RATIO, "N", USED FOR COMPUTING F_s (TOTAL-STRENGTH I, AND SERVICE II) IN UNCRACKED SECTIONS DUE TO SHORT TERM COMPOSITE LIVE LOADS ($IN.^4$ AND $IN.^3$).

$I_c(3n)$, $S_c(3n)$: COMPOSITE MOMENT OF INERTIA AND SECTION MODULUS OF THE STEEL AND DECK BASED UPON 3 TIMES THE MODULAR RATIO, "3N", USED FOR COMPUTING F_s (TOTAL-STRENGTH I, AND SERVICE II) IN UNCRACKED SECTIONS DUE TO LONG-TERM COMPOSITE (SUPERIMPOSED) DEAD LOADS ($IN.^4$ AND $IN.^3$).

$I_c(cr)$, $S_c(cr)$: COMPOSITE MOMENT OF INERTIA AND SECTION MODULUS OF THE STEEL AND LONGITUDINAL DECK REINFORCEMENT, USED FOR COMPUTING F_s (TOTAL-STRENGTH I AND SERVICE II) IN CRACKED SECTIONS, DUE TO BOTH SHORT-TERM COMPOSITE LIVE LOADS AND LONG-TERM COMPOSITE (SUPERIMPOSED) DEAD LOADS ($IN.^4$ AND $IN.^3$).

S_{xc}: SECTION MODULUS ABOUT THE MAJOR AXIS OF SECTION TO THE CONTROLLING FLANGE, TENSION OR COMPRESSION, TAKEN AS YIELD MOMENT WITH RESPECT TO THE CONTROLLING FLANGE OVER THE YIELD STRENGTH OF THE CONTROLLING FLANGE ($IN.^3$).

DC1: UN-FACTORED NON-COMPOSITE DEAD LOAD (KIPS/FT.).

M_{DC1}: 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.).

M_{DC2}: 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.).

M_{DW}: UN-FACTORED MOMENT DUE TO LONG-TERM COMPOSITE (SUPERIMPOSED FUTURE WEARING SURFACE ONLY) DEAD LOAD (KIP-FT.).

M_{L+IM}: UN-FACTORED LIVE LOAD MOMENT PLUS DYNAMIC LOAD ALLOWANCE (IMPACT)(KIP-FT.).

M_u (STRENGTH I): FACTORED DESIGN MOMENT (KIP-FT.).
$1.25\ (M_{DC1} + M_{DC2}) + 1.5\ M_{DW} + 1.75\ M_{L+IM}$

f_f: FACTORED CALCULATED NORMAL STRESS AT EDGE OF FLANGE FOR CONTROLLING FLANGE PLATE DUE TO LATERAL BENDING, STRENGTH I OR SERVICE II AS APPLICABLE (KIP-FT.).

$\phi_f M_n$: 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.).

f_s DC1: UN-FACTORED STRESS AT EDGE OF FLANGE FOR CONTROLLING STEEL FLANGE DUE TO VERTICAL NON-COMPOSITE DEAD LOADS AS CALCULATED BELOW (KSI).
M_{DC1}/S_{sc}

f_s DC2: UN-FACTORED STRESS AT EDGE OF FLANGE FOR CONTROLLING STEEL FLANGE DUE TO VERTICAL COMPOSITE DEAD LOADS AS CALCULATED BELOW (KSI).
$M_{DC2}/S_c(3N)$ OR $M_{DC2}/S_c(CR)$ AS APPLICABLE.

f_s DW: UN-FACTORED STRESS AT EDGE OF FLANGE FOR CONTROLLING STEEL FLANGE DUE TO VERTICAL COMPOSITE FUTURE WEARING SURFACE LOADS AS CALCULATED BELOW (KSI).
$M_{DW}/S_c(3N)$ OR $M_{DW}/S_c(CR)$ AS APPLICABLE.

f_s (L+IM): UN-FACTORED STRESS AT EDGE OF FLANGE FOR CONTROLLING STEEL FLANGE DUE TO VERTICAL COMPOSITE LIVE PLUS IMPACT LOADS AS CALCULATED BELOW (KSI).
$M_{L+IM}/S_c(N)$ OR $M_{DW}/S_c(CR)$ AS APPLICABLE.

$f_s + f/2$ (SERVICE II): SUM OF STRESSES AS COMPUTED BELOW (KSI).
$F_{sDC1} + F_{sDC2} + F_{sDW} + 1.3\ F_s\ (L + IM) + f/2$

$0.95R_h F_y f$: COMPOSITE STRESS CAPACITY FOR SERVICE II LOADING ACCORDING TO ARTICLE 6.10.4.2 (KSI).

$f_s + f/3$ (Total)(STRENGTH I): SUM OF STRESSES AS COMPUTED BELOW ON NON-COMPACT SECTION (KSI).
$1.25\ (F_{sDC1} + F_{sDC2}) + 1.5\ F_{sDW} + 1.75\ F_s\ (L + IM) + f/3$

$\phi_f F_n$: NON-COMPACT COMPOSITE POSITIVE OR NEGATIVE STRESS CAPACITY FOR STRENGTH I LOADING ACCORDING TO ARTICLE 6.10.7 OR 6.10.8 (KSI).

V_f: MAXIMUM FACTORED SHEAR RANGE IN SPAN COMPUTED ACCORDING TO ARTICLE 6.10.10.

NOTE:
M_L AND R_L INCLUDE THE EFFECTS OF CENTRIFUGAL FORCE AND SUPERELEVATION.

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3/30/2020

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CHECKED BY . . . SP . . . . . SCALE . NONE . . . . .

T·Y·LIN INTERNATIONAL

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

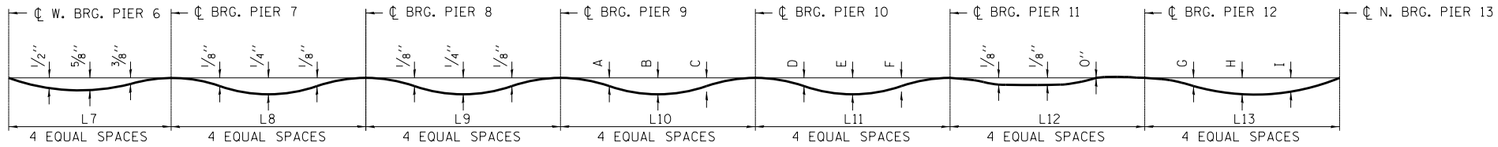
REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
UNIT 2 - GIRDER TABLES - 3

SHEET SC - 131 OF 234

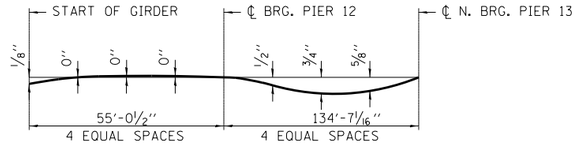
406 OF 606



DEAD LOAD DEFLECTION DIAGRAM GIRDERS 1-5, 10 & 11 - STEEL SELF WEIGHT

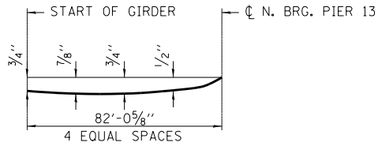
(INCLUDES WEIGHT OF STRUCTURAL STEEL ONLY)

GIRDER	A	B	C	D	E	F	G	H	I	L7	L8	L9	L10	L11	L12	L13
1	1/8"	1/4"	1/8"	1/8"	1/4"	1/8"	1/4"	1/2"	1/2"	134'-9 7/8"	139'-2 7/8"	127'-6 1/8"	135'-9 1/16"	134'-10 11/16"	135'-4"	128'-0 7/8"
2	1/8"	1/4"	1/8"	1/8"	1/4"	1/8"	3/8"	5/8"	1/2"	134'-9 1/16"	139'-11 3/8"	128'-8 15/16"	137'-2 1/8"	135'-5 5/8"	136'-9 3/8"	129'-5 1/2"
3	1/8"	1/4"	1/8"	1/8"	3/8"	1/4"	3/8"	5/8"	1/2"	134'-9 1/16"	140'-7 3/4"	129'-11 3/4"	138'-8 1/4"	138'-0 9/16"	138'-2 3/4"	130'-10 1/8"
4	1/4"	3/8"	1/8"	1/4"	3/8"	1/4"	3/8"	3/4"	5/8"	134'-8 3/4"	141'-4 5/16"	131'-2 9/16"	140'-11 1/16"	139'-7 1/2"	139'-8 1/8"	131'-11 13/16"
5	1/4"	3/8"	1/8"	1/4"	3/8"	1/4"	1/2"	3/4"	5/8"	134'-8 1/2"	142'-0 15/16"	132'-5 3/8"	141'-7 1/16"	141'-2 1/8"	141'-1 1/2"	133'-7 1/16"
10	1/4"	3/8"	1/8"	1/4"	3/8"	1/4"	1/2"	7/8"	3/4"	134'-8 5/16"	142'-9 1/16"	133'-8 1/16"	143'-7 15/16"	144'-5 5/8"	145'-0 3/8"	140'-4 5/16"
11	1/4"	3/8"	1/8"	1/4"	1/2"	1/4"	1/2"	1"	3/4"	134'-8 1/4"	143'-6 1/4"	134'-11 1/4"	145'-1 3/8"	146'-0 9/16"	146'-5 1/4"	141'-9 5/16"



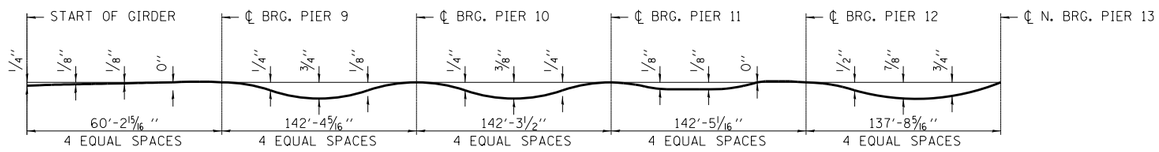
DEAD LOAD DEFLECTION DIAGRAM GIRDER 6 - STEEL SELF WEIGHT

(INCLUDES WEIGHT OF STRUCTURAL STEEL ONLY)



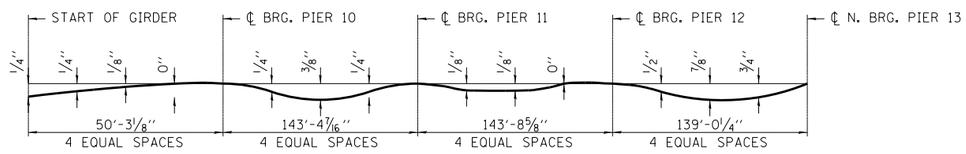
DEAD LOAD DEFLECTION DIAGRAM GIRDER 7 - STEEL SELF WEIGHT

(INCLUDES WEIGHT OF STRUCTURAL STEEL ONLY)



DEAD LOAD DEFLECTION DIAGRAM GIRDER 8 - STEEL SELF WEIGHT

(INCLUDES WEIGHT OF STRUCTURAL STEEL ONLY)



DEAD LOAD DEFLECTION DIAGRAM GIRDER 9 - STEEL SELF WEIGHT

(INCLUDES WEIGHT OF STRUCTURAL STEEL ONLY)

NOTE:

THE CALCULATED DEFLECTIONS OF THE PRIMARY GIRDERS UNDER STEEL SELF-WEIGHT SHALL BE USED TO DETAIL THE CROSS FRAME CONNECTIONS, AND TO ERECT THE STRUCTURAL STEEL SUCH THAT THE GIRDERS WILL BE PLUMB WITHIN A TOLERANCE OF ±1/8" IN. PER VERTICAL FT. THROUGHOUT WHEN SUPPORTING THEIR OWN WEIGHT.

P:\60254057-294_5-9\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\0162101.5_unit2_steel_dl_defl.dgn
3/30/2020

DRAWN BY . . . . RH . . . . .
CHECKED BY . . . SP . . . . .
DATE . 4-3-2020 . . .
SCALE . NONE . . . . .

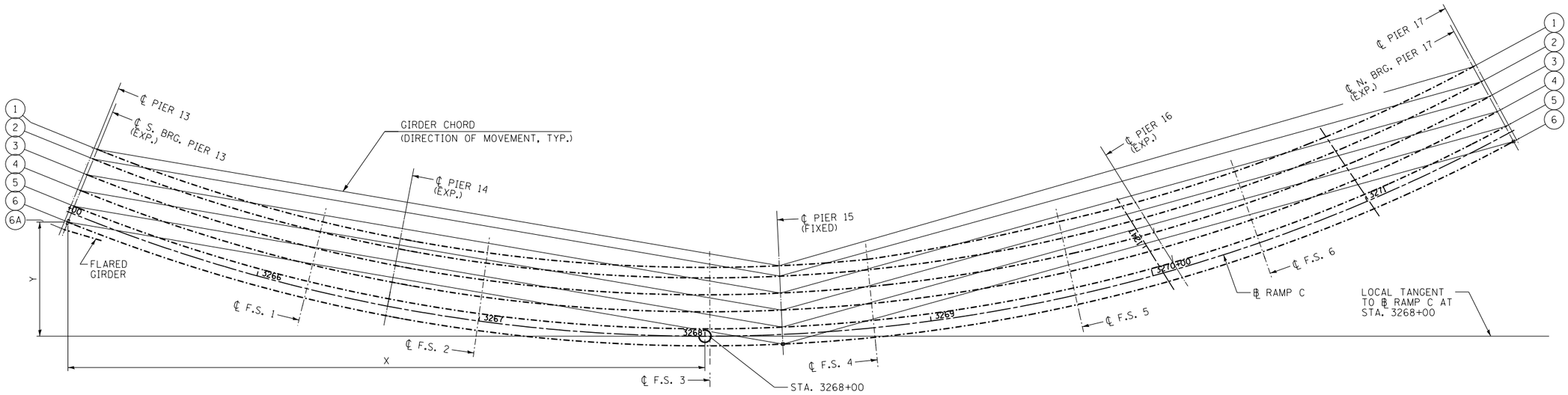
TYLIN INTERNATIONAL

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
UNIT 2 STEEL DEAD LOAD DEFL.



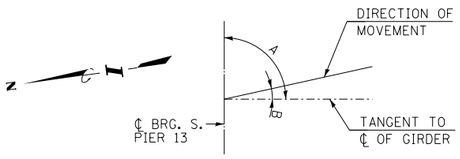
GIRDER LAYOUT PLAN - SPANS 14 THRU 17

LAYOUT DIMESIONS - SPANS 14 THRU 17

GIRDER	℄ S. BRG. PIER 13		℄ F.S. 1		℄ PIER 14		℄ F.S. 2		℄ F.S. 3		℄ PIER 15		℄ F.S. 4		℄ F.S. 5		℄ PIER 16		℄ F.S. 6		℄ N. BRG. PIER 17	
	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y
1	-267.952	82.388	-168.539	50.462	-134.320	43.051	-95.979	36.798	2.063	30.336	32.745	31.083	71.496	33.914	156.038	50.540	189.845	58.998	233.645	72.633	338.697	118.865
2	-269.677	78.142	-169.619	46.008	-135.180	38.549	-96.593	32.257	2.077	25.753	32.956	26.504	71.954	29.353	157.680	43.222	193.986	52.365	236.103	65.548	342.272	112.278
3	-272.511	71.194	-171.385	38.718	-136.588	31.183	-97.599	24.824	2.098	18.253	33.299	19.012	72.703	21.891	159.322	35.904	198.124	45.738	238.562	58.462	345.850	105.685
4	-275.322	64.245	-173.151	31.429	-137.995	23.816	-98.605	17.392	2.120	10.753	33.641	11.520	73.452	14.428	160.964	28.586	202.258	39.117	241.020	51.377	349.428	99.090
5	-278.145	57.296	-174.918	24.140	-139.403	16.449	-99.611	9.960	2.142	3.253	33.984	4.028	74.201	6.966	162.606	21.268	206.389	32.501	243.479	44.291	353.005	92.498
6	-280.968	50.348	-176.684	16.851	-140.811	9.083	-100.617	2.528	2.163	-4.247	34.329	-3.465	74.951	-0.497	164.248	13.950	210.517	25.891	245.937	37.205	356.584	85.907
6A	-282.348	46.951	-266.122	42.170																		

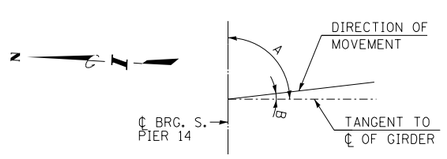
F.S. = FIELD SPLICE

GIRDER	A	B
1	89°52'35.87''	12°18'06.64''
2	89°52'44.96''	12°18'14.35''
3	89°52'51.86''	12°18'19.04''
4	89°51'51.83''	12°17'16.85''
5	89°52'54.36''	12°18'17.22''
6	89°52'58.68''	12°18'19.49''
6A	84°18'33.07''	00°00'00''



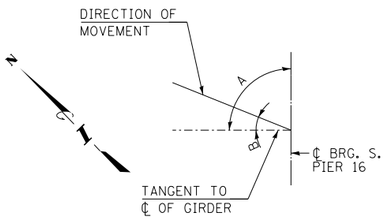
BEARING ORIENTATION - PIER 13 S. BRG.

GIRDER	A	B
1	90°00'00''	06°43'12.25''
2	90°00'00''	06°43'12.25''
3	90°00'00''	06°43'12.25''
4	90°00'00''	06°43'12.25''
5	90°00'00''	06°43'12.25''
6	90°00'00''	06°43'12.25''



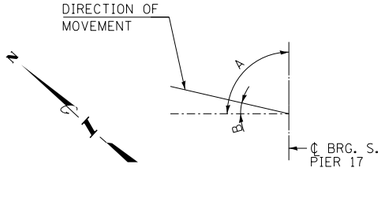
BEARING ORIENTATION - PIER 14

GIRDER	A	B
1	73°27'56.54''	05°22'17.73''
2	73°38'34.05''	06°30'03.61''
3	73°48'57.68''	06°35'15.43''
4	73°59'08.05''	06°40'20.61''
5	74°09'05.62''	06°45'19.41''
6	74°18'50.73''	06°50'11.95''



BEARING ORIENTATION - PIER 16

GIRDER	A	B
1	89°52'45.88''	12°21'46.8''
2	89°52'50.41''	12°52'31.68''
3	89°52'54.83''	12°52'33.88''
4	89°52'59.17''	12°52'36.05''
5	89°53'03.38''	12°52'38.14''
6	89°53'07.58''	12°52'40.26''



BEARING ORIENTATION - PIER 17 N. BRG.

NOTES:

1. ALL LAYOUT DIMENSIONS ARE RELATIVE TO THE LOCAL TANGENT TO ℄ RAMP C AT STA. 3268+00

P:\60254057-294.5-91\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\0162101.5_unit3-girderlayout.dgn
3/30/2020

DRAWN BY . . . JM . . . .
CHECKED BY . . . SP . . . .
DATE . 4-3-2020 . . .
SCALE . NONE . . . .

TY·LIN INTERNATIONAL

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

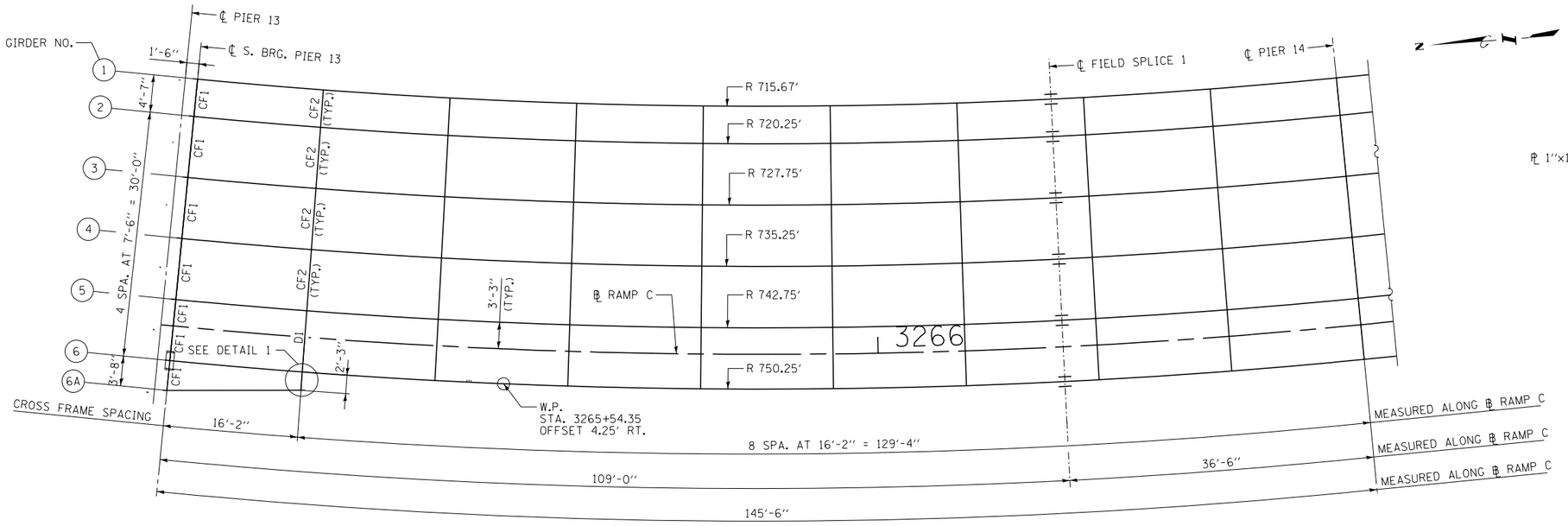
REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

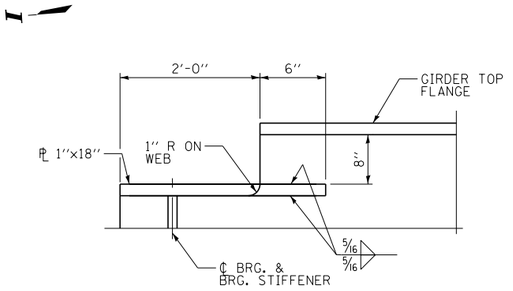
I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
UNIT 3 - GIRDER LAYOUT

SHEET SC - 133 OF 234

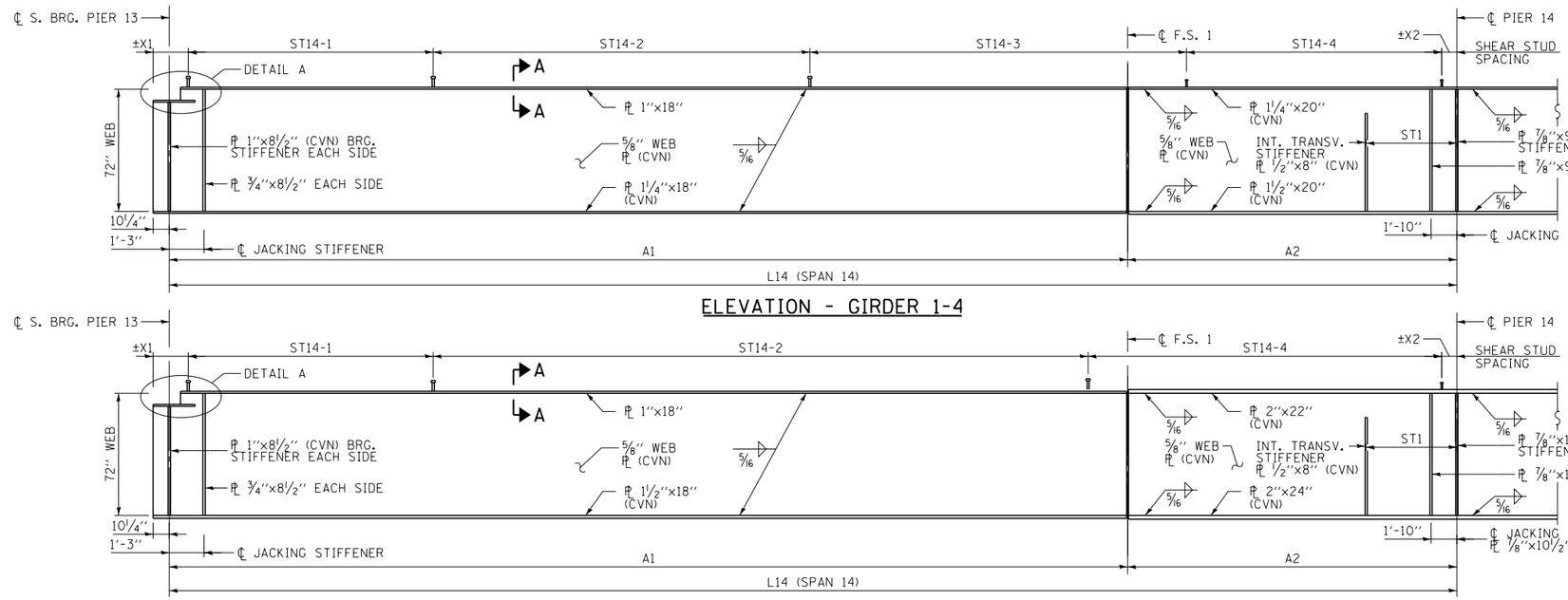
408 OF 606



UNIT 3 - FRAMING PLAN SPAN 14

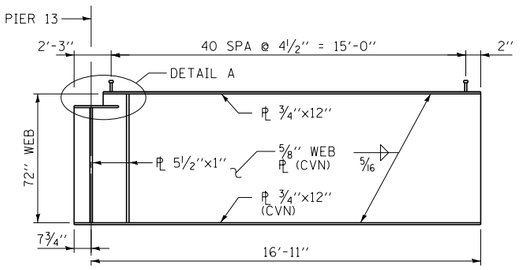


DETAIL A



ELEVATION - GIRDER 1-4

ELEVATION - GIRDER 5-6



ELEVATION - GIRDER 6A

(FOR ADDITIONAL DETAILS, SEE SHT. SC-__ OF ___)

GIRDER LENGTHS

GIRDER	A1	A2	L14
1	104'-6 1/16"	35'-0 3/16"	139'-6 1/4"
2	105'-2 1/4"	35'-2 7/8"	140'-5 1/8"
3	106'-3 9/16"	35'-7 5/16"	141'-10 7/8"
4	107'-4 7/8"	35'-11 11/16"	143'-4 9/16"
5	108'-6 1/4"	36'-4 1/8"	144'-10 5/16"
6	109'-7 9/16"	36'-8 1/2"	146'-4 1/16"

SHEAR STUD SPACING

GIRDER	ST14-1	ST14-2	ST14-3	ST14-4	X1	X2
1	15 SPA. AT 12"	39 SPA. AT 16"	33 SPA. AT 15"	29 SPA. AT 12"	2'-6"	1¼"
2	15 SPA. AT 12"	39 SPA. AT 16"	34 SPA. AT 15"	29 SPA. AT 12"	2'-6"	4¼"
3	15 SPA. AT 12"	40 SPA. AT 16"	34 SPA. AT 15"	29 SPA. AT 12"	2'-6"	5 11/16"
4	15 SPA. AT 12"	39 SPA. AT 16"	35 SPA. AT 15"	31 SPA. AT 12"	2'-6"	3/16"
5	41 SPA. AT 9"	105 SPA. AT 11"	NA	21 SPA. AT 9"	2'-6"	5 11/16"
6	39 SPA. AT 9"	109 SPA. AT 11"	NA	20 SPA. AT 9"	2'-6"	5/16"

NOTES:

1. WORK THIS SHEET WITH SHEETS SC-134 THRU SC-143.
2. PLACE ALL CROSS FRAMES RADIALLY FROM ℄ RAMP C, EXCEPT AS NOTED.
3. "CVN" DENOTES CHARPY-V-NOTCH IMPACT ENERGY REQUIREMENTS, ZONE 2.
4. ALL CROSS FRAMES BETWEEN GIRDERS SHALL BE INSTALLED WITH ERECTION PINS AND BOLTS IN ACCORDANCE WITH THE ERECTION PLAN APPROVED BY THE ENGINEER. INDIVIDUAL CROSS FRAMES AT SUPPORTS MAY BE TEMPORARILY DISCONNECTED TO INSTALL BEARING ANCHOR RODS.
5. FOR SHEAR STUD LOCATIONS AT FIELD SPLICE, SEE SHEAR STUD DETAIL AT SPLICES, SHEET SC-138.
6. FOR DETAIL 1 AND DIAPHRAGM D1, SEE SHEET SC-140.

P:\60254057-294_5-9\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\0162101.5_unit3_fr-pln-span14.dgn
3/30/2020

DRAWN BY . . . JM . . . .
CHECKED BY . . . SP . . . .
DATE . 4-3-2020 . . .
SCALE . NONE . . . .

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THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

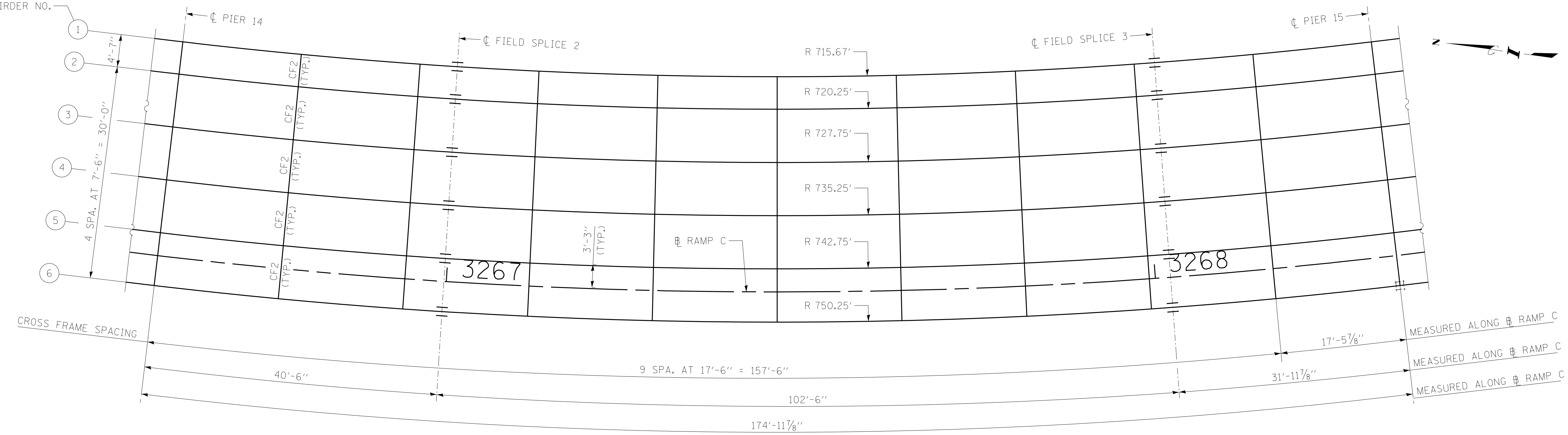
REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

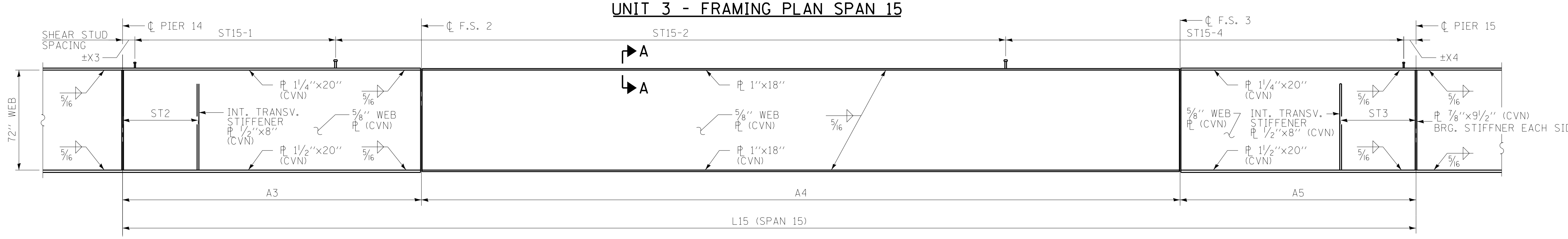
I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
UNIT 3 - FRAMING PLAN SPAN 14

SHEET SC - 134 OF 234

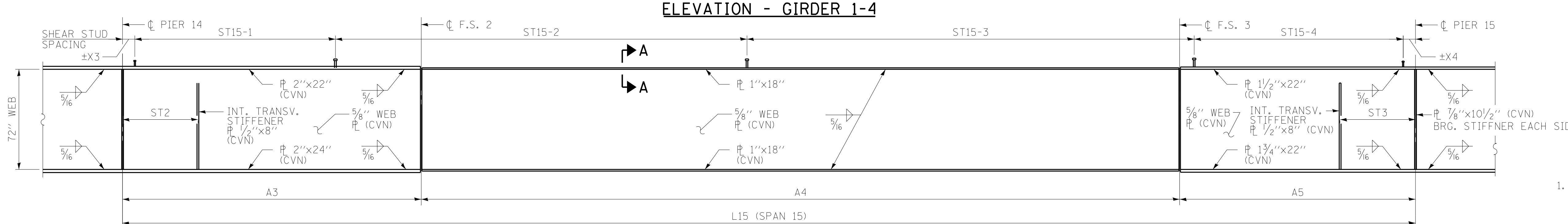
409 OF 606



UNIT 3 - FRAMING PLAN SPAN 15



ELEVATION - GIRDER 1-4



ELEVATION - GIRDER 5-6

NOTES:

1. FOR NOTES, SEE SHEET SC-134 OF 234.

GIRDER LENGTHS

GIRDER	A3	A4	A5	L15	ST2	ST3
1	38'-10 1/4"	98'-4"	30'-8 5/16"	167'-10 1/2"		
2	39'-1 3/16"	98'-11 9/16"	30'-10 11/16"	168'-11 7/16"		
3	39'-6 1/8"	99'-11 15/16"	31'-2 9/16"	170'-8 9/16"		
4	39'-11"	101'- 0 1/4"	31'-6 3/8"	172'-5 5/8"		
5	40'-3 7/8"	102'-0 5/8"	31'-10 1/4"	174'-2 3/4"		
6	40'-8 3/4"	103'-1"	32'-2 1/8"	175'-11 7/8"		

SHEAR STUD SPACING

GIRDER	ST15-1	ST15-2	ST15-3	ST15-4	X3	X4
1	17 SPA. AT 12"	92 SPA. AT 15"	NA	34 SPA. AT 12"	7 3/16"	7 3/16"
2	18 SPA. AT 12"	92 SPA. AT 15"	NA	35 SPA. AT 12"	5 3/8"	5 3/8"
3	19 SPA. AT 12"	92 SPA. AT 15"	NA	36 SPA. AT 12"	4 13/16"	4 13/16"
4	18 SPA. AT 12"	95 SPA. AT 15"	NA	35 SPA. AT 12"	4 5/16"	4 5/16"
5	24 SPA. AT 9"	15 SPA. AT 12"	134 SPA. AT 11"	24 SPA. AT 9"	2 3/8"	2 3/8"
6	24 SPA. AT 9"	16 SPA. AT 12"	135 SPA. AT 11"	24 SPA. AT 9"	1 7/16"	1 7/16"

DRAWN BY JM
CHECKED BY SP
DATE 4-3-2020
SCALE NONE

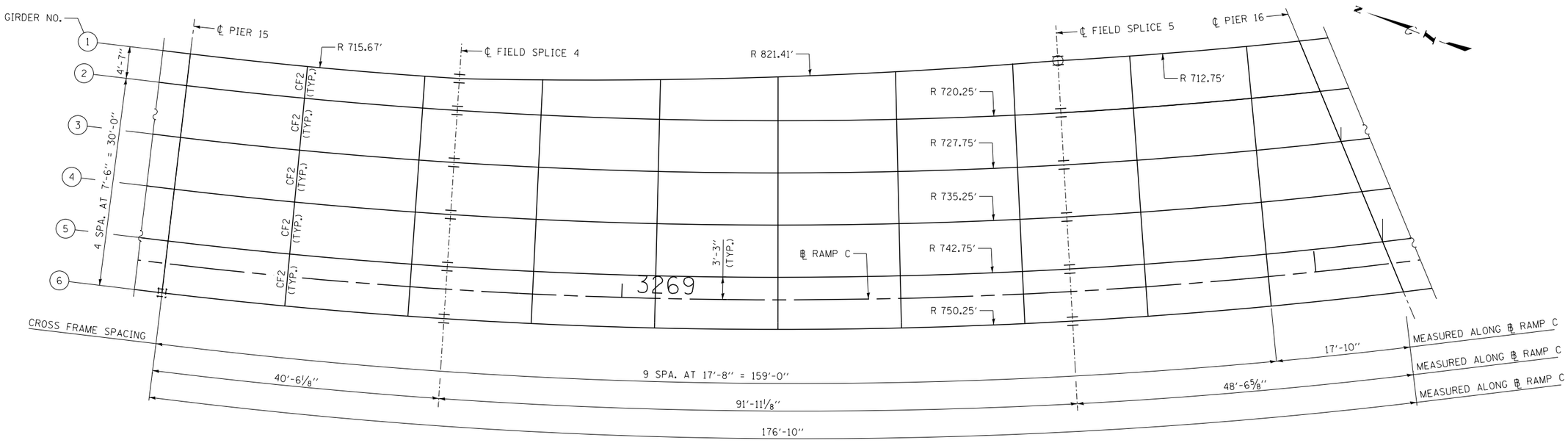
TYLIN INTERNATIONAL

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

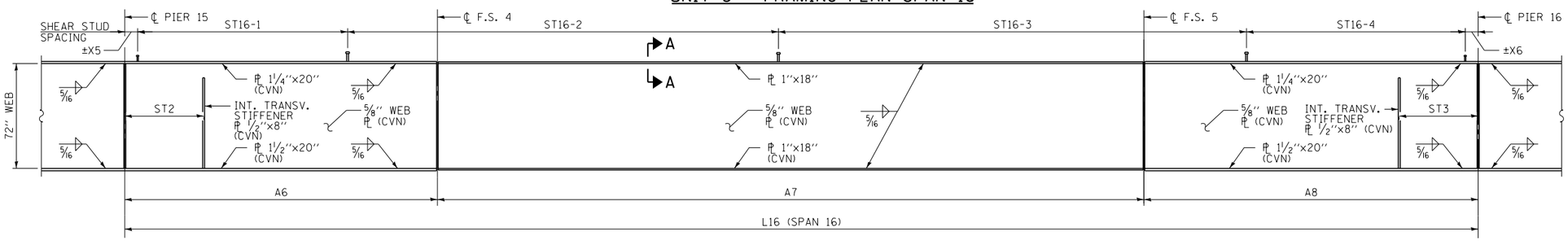
REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495
I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
UNIT 3 - FRAMING PLAN SPAN 15

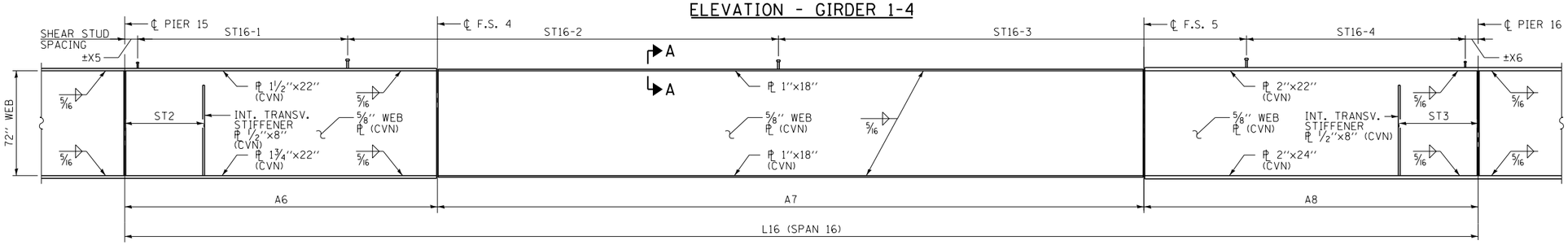
P:\6025402\57-294.5-9\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\0162101.5_unit3_frpln-span15.dgn
3/30/2020



UNIT 3 - FRAMING PLAN SPAN 16



ELEVATION - GIRDER 1-4



ELEVATION - GIRDER 5-6

GIRDER LENGTHS

GIRDER	A6	A7	A8	L16	ST2	ST3
1	38′-10 5/16″	86′-2 7/16″	34′-10 3/16″	159′-10 15/16″		
2	39′-1 5/16″	86′-10 3/4″	37′-5 5/16″	163′-5 5/16″		
3	39′-6 3/16″	87′-9 9/16″	40′-0 3/8″	167′-4 3/16″		
4	39′-11 1/16″	88′-8 7/16″	42′-7 7/16″	171′-3″		
5	40′-3 15/16″	89′-7 5/16″	45′-2 1/2″	175′-1 3/4″		
6	40′-8 13/16″	90′-6 1/8″	47′-9 1/2″	179′-0 1/2″		

SHEAR STUD SPACING

GIRDER	ST16-1	ST16-2	ST16-3	ST16-4	X5	X6
1	16 SPA. AT 12″	40 SPA. AT 14″	80 SPA. AT 12″	22 SPA. AT 9″	2 5/8″	2 5/8″
2	17 SPA. AT 12″	41 SPA. AT 14″	82 SPA. AT 12″	22 SPA. AT 9″	1″	1″
3	18 SPA. AT 12″	40 SPA. AT 14″	84 SPA. AT 12″	24 SPA. AT 9″	3 13/16″	3 13/16″
4	18 SPA. AT 12″	41 SPA. AT 14″	86 SPA. AT 12″	25 SPA. AT 9″	4	4
5	24 SPA. AT 9″	148 SPA. AT 10″	12 SPA. AT 15″	24 SPA. AT 9″	4 7/8″	4 7/8″
6	25 SPA. AT 9″	151 SPA. AT 10″	12 SPA. AT 15″	25 SPA. AT 9″	4 1/4″	4 1/4″

NOTES:

1. FOR NOTES, SEE SHEET SC-134 OF 234.

DRAWN BY . . . . JM . . . . . DATE . 4-3-2020 . . .
CHECKED BY . . . SP . . . . . SCALE . NONE . . . . .

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THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

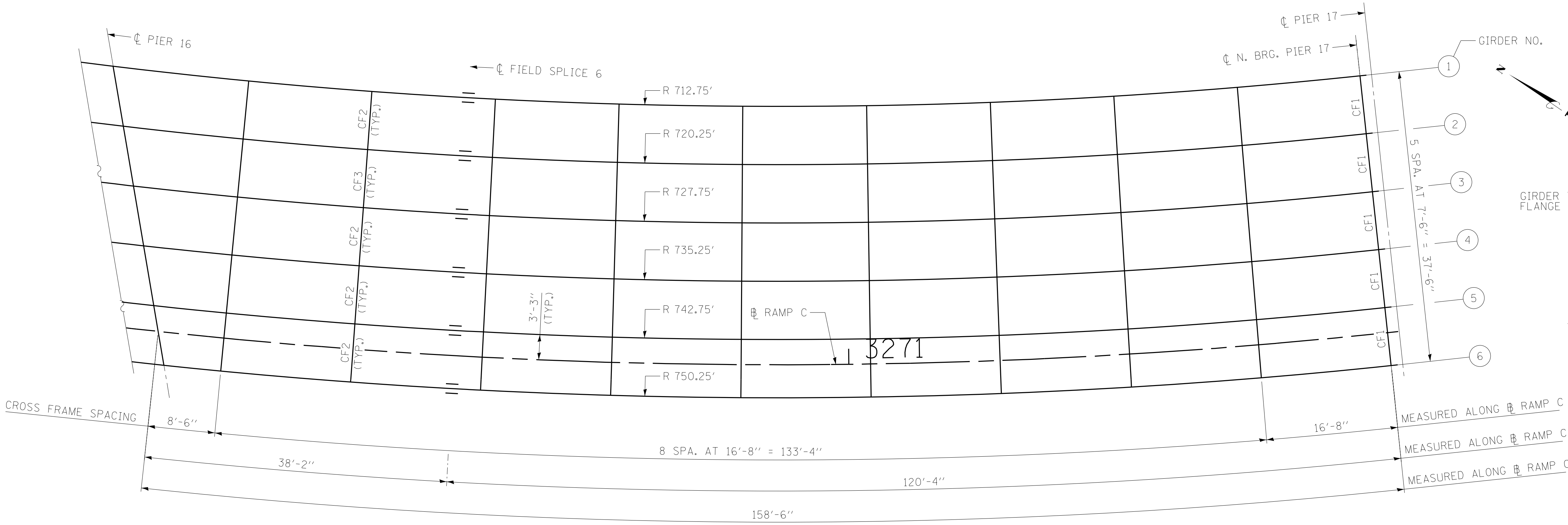
REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

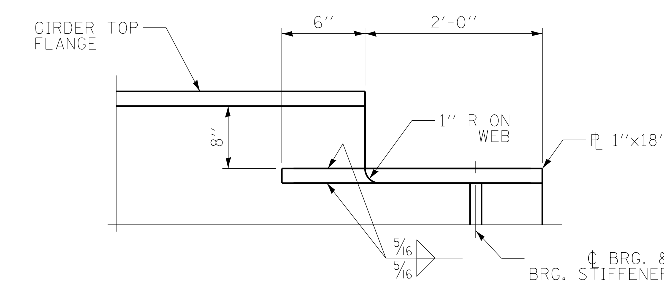
I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
UNIT 3 - FRAMING PLAN SPAN 16

SHEET SC - 136 OF 234

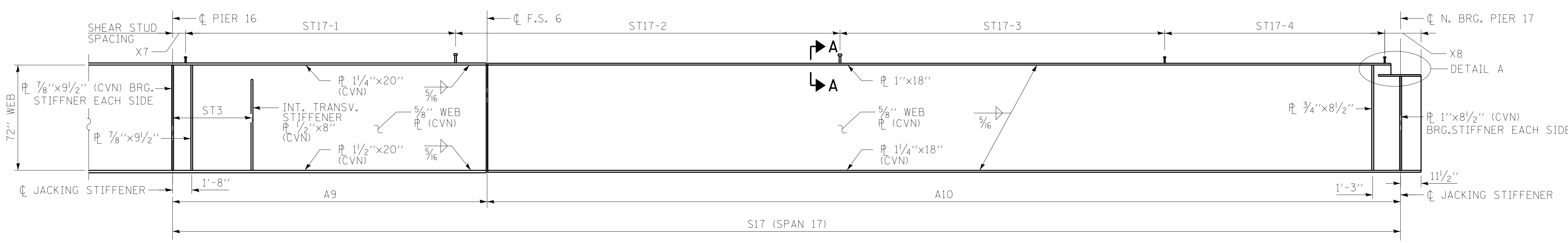
411 OF 606



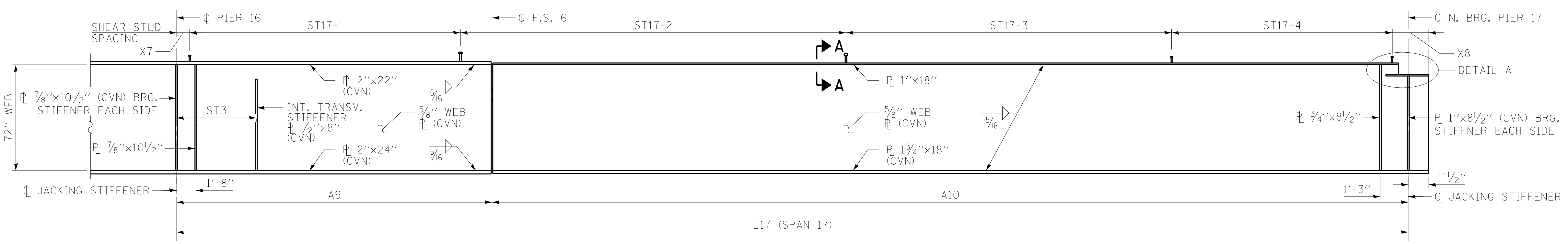
UNIT 3 - FRAMING PLAN SPAN 17



DETAIL A



ELEVATION - GIRDER 1-4



ELEVATION - GIRDER 5-6

GIRDER LENGTHS

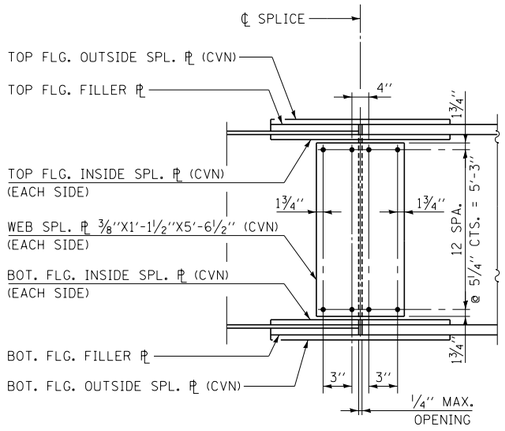
GIRDER	A9	A10	L17	ST3
1	45′-10 9/16″	114′-10 13/16″	160′-9 3/8″	
2	44′-1 11/16″	116′-1 1/2″	160′-3 1/8″	
3	42′-4 13/16″	117′-4 3/16″	159′-8 15/16″	
4	40′-7 15/16″	118′-6 7/8″	159′-2 13/16″	
5	38′-11 1/16″	119′-9 9/16″	158′-8 5/8″	
6	37′-2 1/4″	121′-0 1/4″	158′-2 9/16″	

SHEAR STUD SPACING

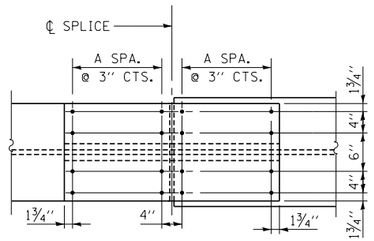
GIRDER	ST17-1	ST17-2	ST17-3	ST17-4	X7	X8
1	23 SPA. AT 9″	89 SPA. AT 13″	24 SPA. AT 14″	23 SPA. AT 9″	4 1/8″	2′-6″
2	23 SPA. AT 9″	88 SPA. AT 13″	25 SPA. AT 14″	22 SPA. AT 9″	6 1/8″	2′-6″
3	23 SPA. AT 9″	88 SPA. AT 13″	24 SPA. AT 14″	23 SPA. AT 9″	5 1/8″	2′-6″
4	22 SPA. AT 9″	88 SPA. AT 13″	25 SPA. AT 14″	22 SPA. AT 9″	2 5/8″	2′-6″
5	22 SPA. AT 9″	95 SPA. AT 10″	49 SPA. AT 11″	33 SPA. AT 6″	1 3/8″	2′-6″
6	22 SPA. AT 9″	95 SPA. AT 10″	48 SPA. AT 11″	34 SPA. AT 6″	0″	2′-6″

NOTES:

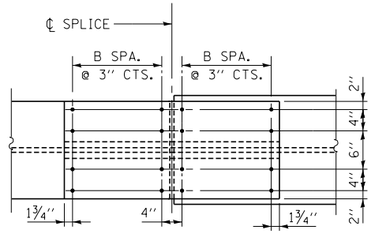
1. FOR NOTES, SEE SHEET SC-134 OF 234.



WEB PLATES



TOP FLANGE SPLICE

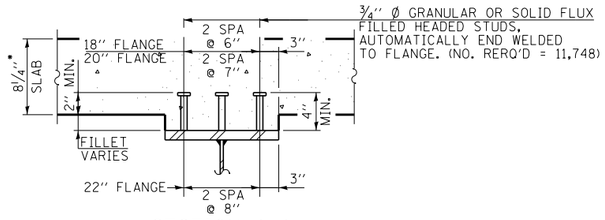


BOTTOM FLANGE SPLICE

FIELD SPLICE 1 THRU 6

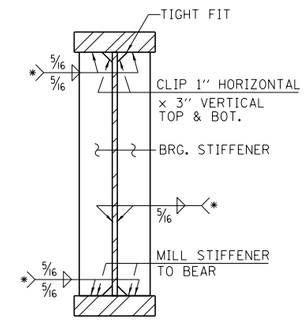
FIELD SPLICE TABLE OF DIMENSIONS

GIRDER	FIELD SPLICE NO.	TOP FLANGE SPLICE PL DIMENSIONS		BOTTOM FLANGE SPLICE PL DIMENSIONS		FILLER PL DIMENSIONS		BOLT SPACING	
		OUTSIDE PL	INSIDE PL	OUTSIDE PL	INSIDE PL	TOP PL	BOTTOM PL	A	B
G1 G2 G3 G4	1	11/16''×18''×31½''	11/16''×8''×31½''	⅞''×18''×43½''	¾''×8''×43½''	¼''×18''×15⅝''	¼''×18''×21⅝''	4	6
	2	11/16''×18''×31½''	11/16''×8''×31½''	⅞''×18''×43½''	¾''×8''×43½''	¼''×18''×15⅝''	¼''×18''×21⅝''	4	6
	3	11/16''×18''×31½''	11/16''×8''×31½''	⅞''×18''×43½''	¾''×8''×43½''	¼''×18''×15⅝''	¼''×18''×21⅝''	4	6
	4	11/16''×18''×31½''	11/16''×8''×31½''	⅞''×18''×43½''	¾''×8''×43½''	¼''×18''×15⅝''	¼''×18''×21⅝''	4	6
	5	11/16''×18''×31½''	11/16''×8''×31½''	⅞''×18''×43½''	¾''×8''×43½''	¼''×18''×15⅝''	¼''×18''×21⅝''	4	6
	6	11/16''×18''×31½''	11/16''×8''×31½''	⅞''×18''×43½''	¾''×8''×43½''	¼''×18''×15⅝''	¼''×18''×21⅝''	4	6
G5 G6	1	11/16''×18''×37½''	11/16''×8''×37½''	1¼''×18''×49½''	1¼''×8''×49½''	1''×18''×18⅝''	¼''×18''×24⅝''	5	7
	2	11/16''×18''×37½''	11/16''×8''×37½''	1¼''×18''×49½''	1¼''×8''×49½''	1''×18''×18⅝''	¼''×18''×24⅝''	5	7
	3	11/16''×18''×37½''	11/16''×8''×37½''	1¼''×18''×49½''	1¼''×8''×49½''	1''×18''×18⅝''	¼''×18''×24⅝''	5	7
	4	11/16''×18''×37½''	11/16''×8''×37½''	1¼''×18''×49½''	1¼''×8''×49½''	1''×18''×18⅝''	¼''×18''×24⅝''	5	7
	5	11/16''×18''×37½''	11/16''×8''×37½''	1¼''×18''×49½''	1¼''×8''×49½''	1''×18''×18⅝''	¼''×18''×24⅝''	5	7
	6	11/16''×18''×37½''	11/16''×8''×37½''	1¼''×18''×49½''	1¼''×8''×49½''	1''×18''×18⅝''	¼''×18''×24⅝''	5	7



SECTION A-A

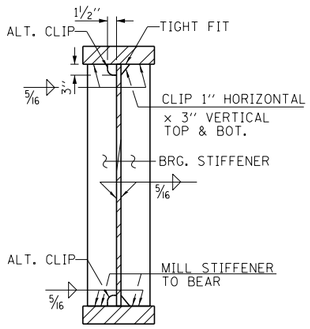
*PRIOR TO GRINDING



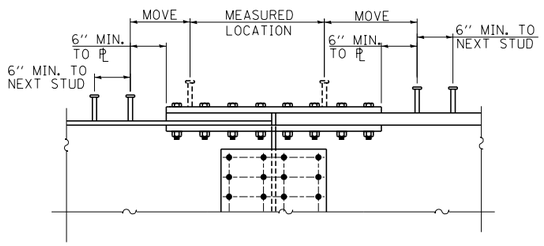
BEARING STIFFENERS

(DETAIL SIMILAR AT JACKING STIFFENERS)

* TERMINATE ¼'' (±⅛'') FROM THE END OF PLATE INTERSECTS.



ALTERNATE CLIP DETAILS

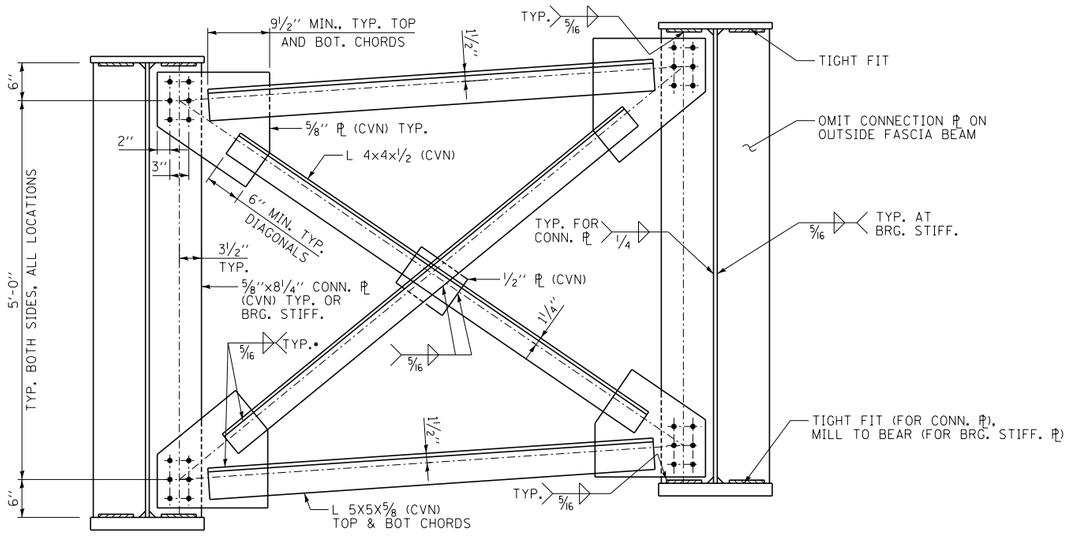


SHEAR STUD DETAIL AT SPLICES AND FLANGE TRANSITIONS

DO NOT PLACE SHEAR STUDS ON SPLICE PLATES. MOVE ROW OF STUDS TO 6'' BEYOND NEAREST EDGE OF SPLICE PLATE FROM MEASURED LOCATION. SIMILARLY, MOVE STUDS AS REQUIRED TO MAINTAIN 6'' CLEAR BETWEEN STUDS AND WELDED FLANGE TRANSITIONS.

P:\60254057-294,59\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\016201.5_unit3-girder dtls.dgn
3/30/2020

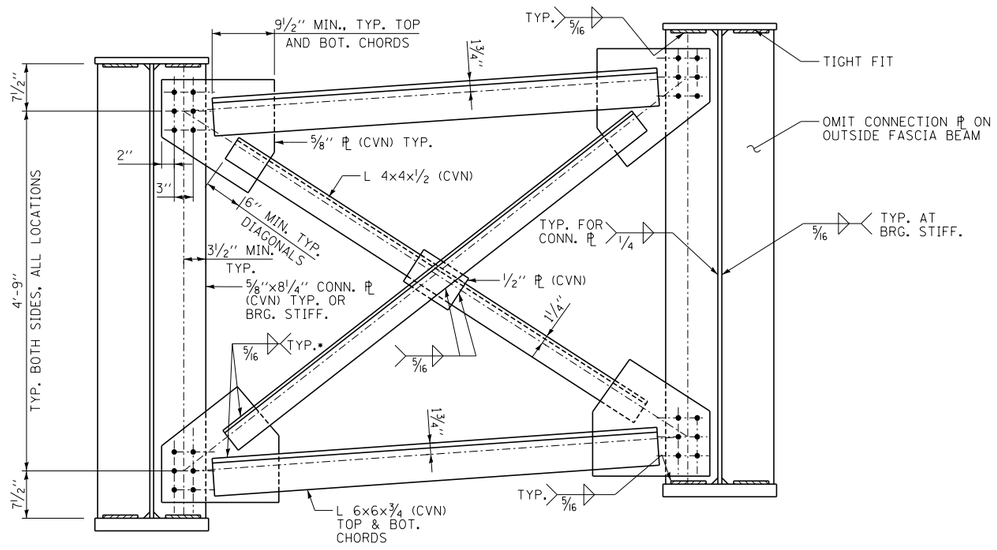
DRAWN BY . . . JM	DATE . 4-3-2020	TY·LIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	CONTRACT I-19-4495
CHECKED BY . . . SP	SCALE . NONE		REVISIONS: NO. / DATE / DESCRIPTION	I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 116) UNIT 3 - GIRDER DETAILS
				SHEET SC - 138 OF 234 413 OF 606



INTERIOR CROSS FRAME-CF2

(180 REQUIRED)

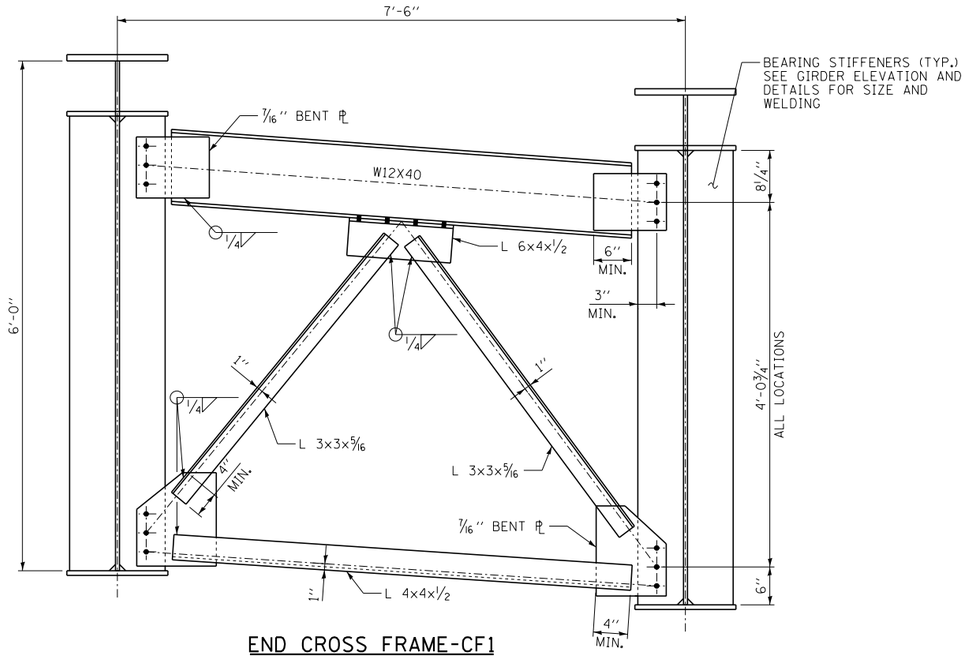
• FILLET WELD ANGLES ALONG 3 SIDES ON ONE FACE OF GUSSET PLATE.



INTERIOR CROSS FRAME-CF3

(9 REQUIRED)

• FILLET WELD ANGLES ALONG 3 SIDES ON ONE FACE OF GUSSET PLATE.



END CROSS FRAME-CF1

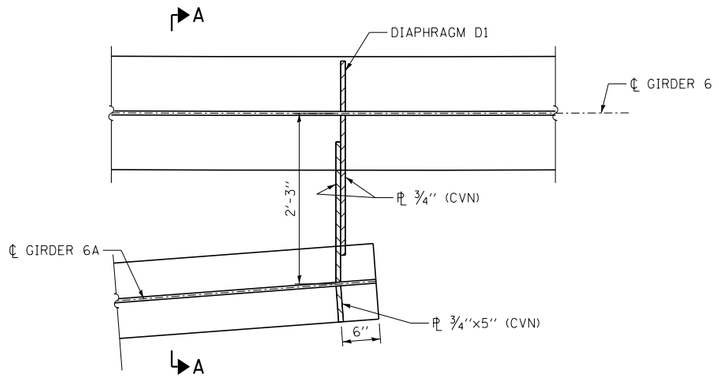
(11 REQUIRED)

NOTES:

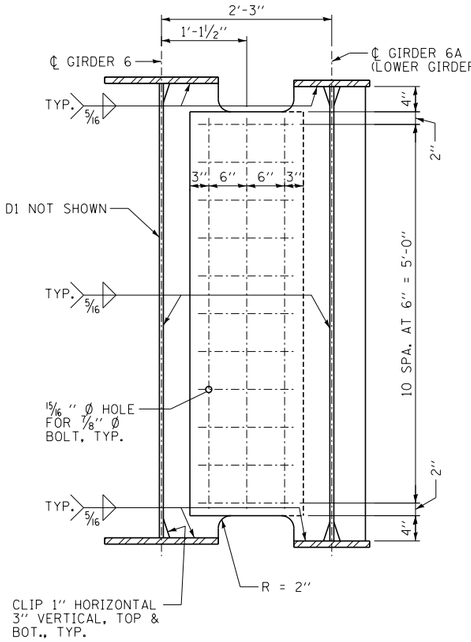
1. ALL CROSS FRAMES OR DIAPHRAGMS BETWEEN BEAMS OR GIRDERS SHALL BE INSTALLED WITH ERECTION PINS AND BOLTS IN ACCORDANCE WITH THE ERECTION PLAN APPROVED BY THE ENGINEER. INDIVIDUAL CROSS FRAMES OR DIAPHRAGMS AT SUPPORTS MAY BE TEMPORARILY DISCONNECTED TO INSTALL BEARING ANCHOR RODS.
2. "CVN" DENOTES CHARPY-V-NOTCH IMPACT ENGERY REQUIREMENTS, ZONE 2.
3. BOLTS SHALL BE ⅞" Ø IN HOLES 15/16 " Ø.
4. TWO HARDENED WASHERS SHALL BE REQUIRED FOR EACH SET OF OVERSIZED HOLES.
5. THE CONTRACTOR SHALL EITHER:
   A. REAM DIAPHRAGM AND/OR CROSS FRAME CONNECTION HOLES DURING SHOP ASSEMBLY, OR
   B. PROVIDE DETAILING AND FABRICATION CONTROLS ACCEPTABLE TO THE ENGINEER WHICH ENSURES ACCURACY SUCH THAT FIELD REAMING WILL NOT EXCEED THE AMOUNT PERMITTED IN ARTICLE 505.08(I) OF THE STANDARD SPECIFICATIONS.

P:\60254057-294_5-9\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\016z101.5_unit3-cross_frame_det.dgn
3/30/2020

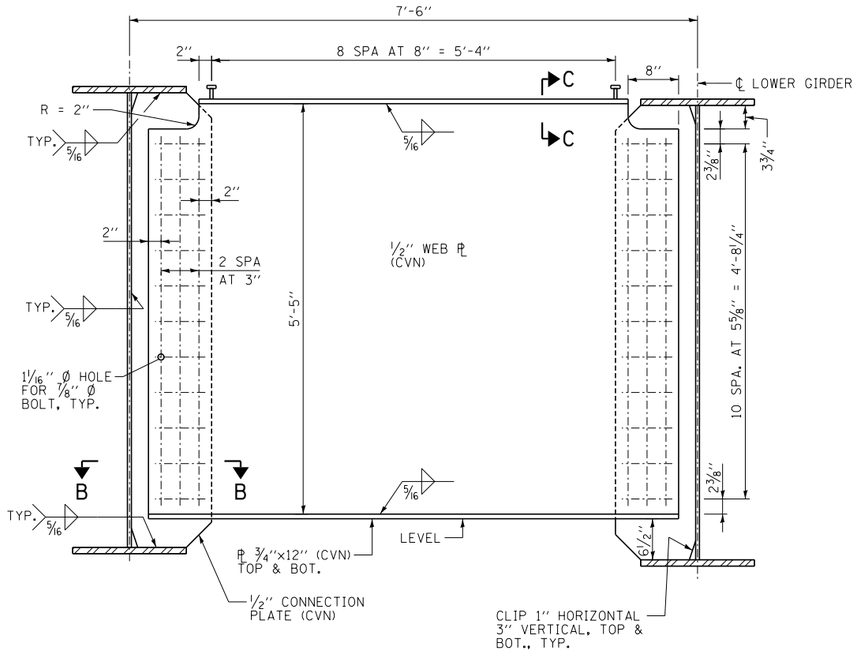
DRAWN BY . . . SP . . .	DATE . 4-3-2020 . . .	TY·LIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	REVISIONS			CONTRACT I-19-4495	SHEET SC - 139 OF 234
CHECKED BY . . . SP . . .	SCALE . NONE . . .			NO.	DATE	DESCRIPTION	I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 116) UNIT 3 - CROSS FRAME DETAILS	414 OF 606



DETAIL 1

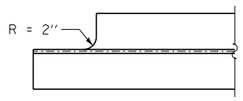


SECTION A-A



DIAPHRAGM D1

(CONNECTION PLATE WELDING DETAILS)



SECTION B-B

NOTES:

1. ALL STRUCTURAL STEEL SHALL BE AASHTO M270 GRADE 50.
2. TWO HARDENED WASHERS REQUIRED FOR EACH SET OF OVERSIZED HOLES.
3. "CVN" DENOTES CHARPY-V-NOTCH ENERGY REQUIREMENTS, ZONE 2.

P:\682540\57-294_5-01\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\016201.5_unit3_girder 6a-d1s.dgn
3/30/2020

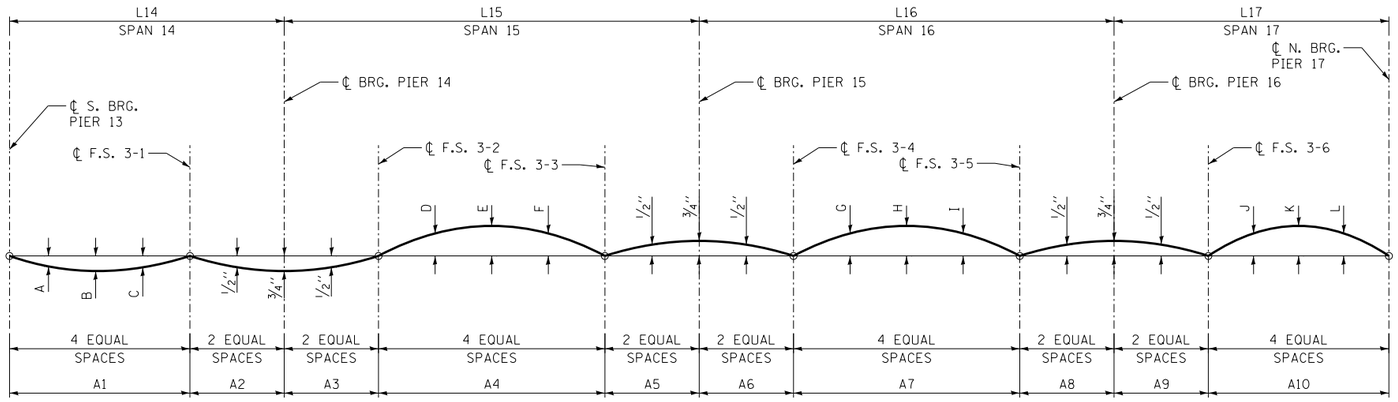
DRAWN BY . . . SP	DATE . 4-3-2020	TYLIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	REVISIONS NO.	DATE	DESCRIPTION	CONTRACT I-19-4495
CHECKED BY . . . SP	SCALE . NONE						I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 116) UNIT 3 - STEEL DETAILS

SHEET SC - 140 OF 234

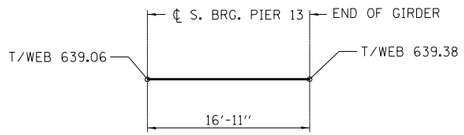
415 OF 606

NOTE:

THE CONTRACTOR IS ALERTED THAT CAMBER AND DEAD LOAD DEFLECTION VALUES SHOWN ON THE PLANS WERE DEVELOPED BASED ON THE DECK POURING SEQUENCE SHOWN IN THE CONTRACT DRAWINGS. ANY DEVIATION FROM THIS POURING SEQUENCE WILL RESULT IN CHANGES TO CAMBER AND ELEVATIONS THAT REFLECT DEAD LOAD DEFLECTIONS. IF THE CONTRACTOR WISHES TO CHANGE THE SEQUENCE, THEN THE PROPOSED PLAN REVISIONS AND DESIGN CALCULATIONS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL. THE CALCULATIONS SHALL BE PREPARED AND SEALED BY A LICENSED STRUCTURAL ENGINEER IN ILLINOIS.

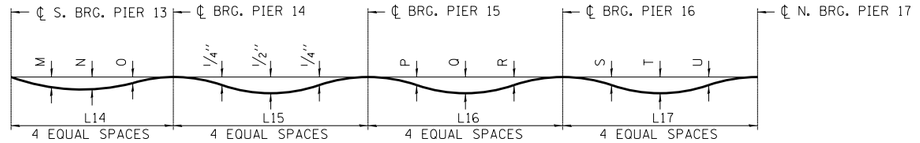


UNIT 3 - CAMBER DIAGRAM GIRDERS 1 THRU 6



UNIT 3 - CAMBER DIAGRAM GIRDER 6A

(TOP OF WEB ELEVATIONS FOR FABRICATION ONLY)



DEAD LOAD DEFLECTION DIAGRAM - STEEL SELF WEIGHT

(INCLUDES WEIGHT OF STRUCTURAL STEEL ONLY)

CAMBER DIMENSIONS

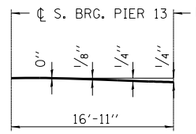
GIRDER	A	B	C	D	E	F	G	H	I	J	K	L
1	1/2"	3/4"	1/2"	2 1/4"	3"	2 1/4"	1 3/4"	2 1/4"	1 3/4"	3 3/4"	5"	3 3/4"
2	1/2"	3/4"	1/2"	2 1/4"	3"	2 1/4"	2 1/4"	3"	2 1/4"	3 3/4"	5"	3 3/4"
3	1/2"	3/4"	1/2"	2 1/2"	3 1/4"	2 1/2"	2"	2 1/2"	2"	3 1/2"	4 1/2"	3 1/2"
4	0"	0"	0"	2 3/4"	3 1/2"	2 3/4"	2 1/4"	3"	2 1/4"	4"	5 1/4"	4"
5	0"	0"	0"	3 1/4"	4 1/4"	3 1/4"	2 3/4"	3 1/2"	2 3/4"	4 1/4"	5 3/4"	4 1/4"
6	0"	0"	0"	3"	4"	3"	3 1/4"	4 1/4"	3 1/4"	4 1/2"	6"	4 1/2"

TOP OF WEB ELEVATIONS

(FOR FABRICATION ONLY)

GIRDER	℄ S. BRG. PIER 13	℄ F.S. 3-1	℄ BRG. PIER 14	℄ F.S. 3-2	℄ F.S. 3-3	℄ BRG. PIER 15	℄ F.S. 3-4	℄ F.S. 3-5	℄ BRG. PIER 16	℄ F.S. 3-6	℄ N. BRG. PIER 17
1	637.46	639.67	640.47	641.49	643.66	644.02	644.34	644.10	643.79	643.23	640.10
2	637.73	639.95	640.75	641.77	643.94	644.30	644.62	644.56	644.22	643.68	640.55
3	638.18	640.39	641.21	642.24	644.35	644.73	645.07	645.01	644.64	644.12	641.00
4	638.63	640.83	641.63	642.66	644.79	645.17	645.51	645.45	645.05	644.55	641.45
5	639.08	641.24	642.04	643.06	645.19	645.57	645.92	645.85	645.43	644.95	641.89
6	639.15	641.53	642.41	643.51	645.64	646.03	646.37	646.30	645.86	645.40	642.34

GIRDER	M	N	O	P	Q	R	S	T	U	L14	L15	L16	L17
1	3/8"	1/2"	1/2"	1/8"	1/4"	1/8"	1/2"	7/8"	3/4"	104'-6 1/16"	167'-10 1/2"	159'-10 3/16"	160'-9 3/8"
2	3/8"	1/2"	1/2"	1/8"	1/4"	1/8"	1/2"	1"	3/4"	105'-2 1/4"	168'-11 1/16"	163'-5 5/16"	160'-3 1/8"
3	1/2"	5/8"	5/8"	1/8"	3/8"	1/8"	1/2"	1"	3/4"	106'-3 3/16"	170'-8 9/16"	167'-4 3/16"	159'-8 15/16"
4	1/2"	5/8"	5/8"	1/4"	3/8"	1/8"	1/2"	1"	7/8"	107'-4 1/8"	172'-5 5/8"	171'-3"	159'-2 1/16"
5	1/2"	5/8"	5/8"	1/4"	3/8"	1/8"	1/2"	1 1/8"	7/8"	108'-6 1/4"	174'-2 3/4"	175'-1 3/4"	158'-8 5/8"
6	5/8"	3/4"	3/4"	1/4"	3/8"	1/8"	1/2"	1 1/8"	7/8"	109'-7 9/16"	175'-11 1/8"	179'-0 1/2"	158'-2 9/16"



DEAD LOAD DEFLECTION DIAGRAM GIRDER 6A - STEEL SELF WEIGHT

(INCLUDES WEIGHT OF STRUCTURAL STEEL ONLY)

NOTES:

1. THE CALCULATED DEFLECTIONS OF THE PRIMARY GIRDERS UNDER STEEL SELF-WEIGHT SHALL BE USED TO DETAIL THE DIAPHRAGMS, AND THE CROSS FRAME CONNECTIONS, AND TO ERECT THE STRUCTURAL STEEL SUCH THAT THE GIRDERS WILL BE PLUMB WITHIN A TOLERANCE OF ±1/8" IN. PER VERTICAL FT. THROUGHOUT WHEN SUPPORTING THEIR OWN WEIGHT.
2. FOR A1-A10 DIMENSIONS, SEE FRAMING PLAN SHEETS SC-134 TO SC-137.

P:\68254057-294_5-IN\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\B162101.5_unt3_camber_diagram.dgn
3/30/2020

DRAWN BY . . . RH . . . .
CHECKED BY . . . SP . . . .
DATE . 4-3-2020 . . .
SCALE . NONE . . . .

T·Y·LIN INTERNATIONAL

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
UNIT 3 - CAMBER DIAGRAM

SHEET SC - 141 OF 234

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GIRDER 1

EXTERIOR GIRDER MOMENT TABLE								
		0.4 SP. 14	PIER 14	0.5 SP. 15	PIER 15	0.5 SP. 16	PIER 16	0.6 SP 17
I_s	(IN^4)	73,280	93,151	67,404	93,151	67,404	93,151	73,280
$I_c(n)$	(IN^4)	138,832	162,822	125,604	162,822	130,491	173,664	148,305
$I_c(3n)$	(IN^4)	104,039	124,720	95,053	124,720	98,477	131,782	110,672
$I_c(cr)$	(IN^4)		106,270		106,270		106,270	
S_s	(IN^3)	2,076	2,614	1,822	2,614	1,822	2,614	2,076
$S_c(n)$	(IN^3)	2,594	3,117	2,287	3,117	2,313	3,168	2,641
$S_c(3n)$	(IN^3)	2,372	2,889	2,088	2,889	2,114	2,938	2,421
$S_c(cr)$	(IN^3)		2,749		2,749		2,749	
S_{xc}	(IN^3)	2495	2,711	2196	2,716	2241	2,702	2469
DC1	(K/')	0.97	1.02	0.96	1.02	1.02	1.18	1.13
M_{DC1}	('K)	1,082	2,530	964	2,186	752	3,090	1,797
DC2	(K/')	0.19	0.19	0.19	0.19	0.19	0.19	0.19
M_{DC2}	('K)	209	457	191	398	137	495	298
DW	(K/')	0.342	0.342	0.342	0.342	0.342	0.342	0.342
M_{DW}	('K)	376	823	343	716	247	892	537
M_{L+IM}	('K)	2,047	2,570	1,999	2,599	1,970	2,763	2,391
f_f (STRENGTH I)	('K)	1.96	5.47	6.29	4.96	1.12	3.77	3.61
$M_u + \frac{1}{3} f_f S_{xc}$	('K)	5,896	9,878	5,841	9,227	4,999	10,938	7,857
$\phi_f M_n$	('K)		-		-		-	
f_s DC1	(KSI)	6.25	11.61	6.35	10.03	4.95	14.18	10.39
f_s DC2	(KSI)	1.06	1.99	1.10	1.74	0.78	2.16	1.48
f_s DW	(KSI)	1.90	3.59	1.97	3.13	1.40	3.89	2.66
f_s (L+IM)	(KSI)	9.47	11.22	10.49	11.34	10.22	12.06	10.87
f_f (SERVICE II)	(KSI)	1.47	4.14	4.73	3.75	0.84	2.86	2.73
$f_s + \frac{1}{2}$ (SERVICE II)	(KSI)	22.26	33.85	25.42	31.52	20.84	37.34	30.01
$0.95R_h F_{yf}$	(KSI)	47.50	47.50	47.50	47.50	47.50	47.50	47.50
$f_s + \frac{1}{3}$ (TOTAL)(STRENGTH I)	(KSI)	29.2	43.9	32.7	40.9	27.5	48.6	39.0
$\phi_f F_n$	(KSI)	50.0	50.00	50.0	50.00	50.0	50.00	50.0
V_f	(K)	59.9	59.85	62.9	62.88	69.6	69.59	69.6

GIRDER 1

EXTERIOR GIRDER REACTION TABLE						
		PIER 13	PIER 14	PIER 15	PIER 16	PIER 17
R_{DC1}	(K)	44.6	193.0	175.3	228.4	60.4
R_{DC2}	(K)	8.4	35.4	32.4	36.8	9.9
R_{DW}	(K)	15.2	63.7	58.3	66.2	17.8
R_{L+IM}	(K)	76.4	179.7	181.5	186.6	81.9
R_{Total}	(K)	144.6	471.7	447.5	518.0	170.0

GIRDER 4

INTERIOR GIRDER MOMENT TABLE								
		0.4 SP. 14	PIER 14	0.5 SP. 15	PIER 15	0.5 SP. 16	PIER 16	0.6 SP 17
I_s	(IN^4)	73,280	100,485	67,404	100,485	67,404	100,485	73,280
$I_c(n)$	(IN^4)	151,368	179,013	136,432	179,013	136,432	179,013	151,368
$I_c(3n)$	(IN^4)	112,995	138,447	102,989	138,447	102,989	138,447	112,995
$I_c(cr)$	(IN^4)		112,684		112,684		112,684	
S_s	(IN^3)	2,076	2,680	1,822	2,680	1,822	2,680	2,076
$S_c(n)$	(IN^3)	2,656	3,188	2,343	3,188	2,343	3,188	2,656
$S_c(3n)$	(IN^3)	2,437	2,975	2,147	2,975	2,147	2,975	2,437
$S_c(cr)$	(IN^3)		2,798		2,798		2,798	
S_{xc}	(IN^3)	2514	2,759	2228	2,763	2248	2,755	2459
DC1	(K/')	1.08	1.15	1.07	1.15	1.07	1.15	1.08
M_{DC1}	('K)	1,436	2,965	1,132	2,629	941	3,299	2,004
DC2	(K/')	0.19	0.19	0.19	0.19	0.19	0.19	0.19
M_{DC2}	('K)	257	495	217	451	175	535	340
DW	(K/')	0.342	0.342	0.342	0.342	0.342	0.342	0.342
M_{DW}	('K)	462	890	390	812	316	963	612
M_{L+IM}	('K)	1,724	2,009	1,636	2,126	1,665	2,076	1,821
f_f (STRENGTH I)	('K)	2.05	5.47	6.11	5.07	4.80	3.61	0.58
$M_u + \frac{1}{3} f_f S_{xc}$	('K)	5,970	9,595	5,513	9,178	5,083	10,147	7,075
$\phi_f M_n$	('K)		-		-		-	
f_s DC1	(KSI)	8.30	13.28	7.46	11.77	6.20	14.77	11.58
f_s DC2	(KSI)	1.27	2.12	1.21	1.93	0.98	2.29	1.67
f_s DW	(KSI)	2.27	3.82	2.18	3.48	1.77	4.13	3.01
f_s (L+IM)	(KSI)	7.79	8.62	8.38	9.12	8.53	8.90	8.23
f_f (SERVICE II)	(KSI)	1.55	4.15	4.60	3.84	3.61	2.74	0.44
$f_s + \frac{1}{2}$ (SERVICE II)	(KSI)	22.74	32.50	24.04	30.97	21.84	34.15	27.19
$0.95R_h F_{yf}$	(KSI)	47.50	47.5	47.50	47.5	47.50	47.5	47.50
$f_s + \frac{1}{3}$ (TOTAL)(STRENGTH I)	(KSI)	29.7	41.9	30.8	40.0	28.1	44.3	35.7
$\phi_f F_n$	(KSI)	50.0	50	50.0	50	50.0	50	50.0
V_f	(K)	44.7	44.68	46.8	46.79	46.8	46.03	46.0

GIRDER 4

INTERIOR GIRDER REACTION TABLE						
		PIER 13	PIER 14	PIER 15	PIER 16	PIER 17
R_{DC1}	(K)	58.2	192.1	181.0	203.2	68.4
R_{DC2}	(K)	10.0	32.2	30.8	33.7	11.3
R_{DW}	(K)	17.9	58.0	55.4	60.6	20.4
R_{L+IM}	(K)	87.1	150.7	156.4	159.0	85.5
R_{Total}	(K)	173.1	433.1	423.6	456.5	185.5

I_s, S_s: NON-COMPOSITE MOMENT OF INERTIA AND SECTION MODULUS OF THE STEEL SECTION USED FOR COMPUTING F_s (TOTAL-STRENGTH I, AND SERVICE II) DUE TO NON-COMPOSITE DEAD LOADS ($IN.^4$ AND $IN.^3$).

$I_c(n)$, $S_c(n)$: COMPOSITE MOMENT OF INERTIA AND SECTION MODULUS OF THE STEEL AND DECK BASED UPON THE MODULAR RATIO, "N", USED FOR COMPUTING F_s (TOTAL-STRENGTH I, AND SERVICE II) IN UNCRACKED SECTIONS DUE TO SHORT TERM COMPOSITE LIVE LOADS ($IN.^4$ AND $IN.^3$).

$I_c(3n)$, $S_c(3n)$: COMPOSITE MOMENT OF INERTIA AND SECTION MODULUS OF THE STEEL AND DECK BASED UPON 3 TIMES THE MODULAR RATIO, "3N", USED FOR COMPUTING F_s (TOTAL-STRENGTH I, AND SERVICE II) IN UNCRACKED SECTIONS DUE TO LONG-TERM COMPOSITE (SUPERIMPOSED) DEAD LOADS ($IN.^4$ AND $IN.^3$).

$I_c(cr)$, $S_c(cr)$: COMPOSITE MOMENT OF INERTIA AND SECTION MODULUS OF THE STEEL AND LONGITUDINAL DECK REINFORCEMENT, USED FOR COMPUTING F_s (TOTAL-STRENGTH I AND SERVICE II) IN CRACKED SECTIONS, DUE TO BOTH SHORT-TERM COMPOSITE LIVE LOADS AND LONG-TERM COMPOSITE (SUPERIMPOSED) DEAD LOADS ($IN.^4$ AND $IN.^3$).

S_{xc}: SECTION MODULUS ABOUT THE MAJOR AXIS OF SECTION TO THE CONTROLLING FLANGE, TENSION OR COMPRESSION, TAKEN AS YIELD MOMENT WITH RESPECT TO THE CONTROLLING FLANGE OVER THE YIELD STRENGTH OF THE CONTROLLING FLANGE ($IN.^3$).

DC1: UN-FACTORED NON-COMPOSITE DEAD LOAD (KIPS/FT.).

M_{DC1}: 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.).

M_{DC2}: 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.).

M_{DW}: UN-FACTORED MOMENT DUE TO LONG-TERM COMPOSITE (SUPERIMPOSED FUTURE WEARING SURFACE ONLY) DEAD LOAD (KIP-FT.).

M_{L+IM}: UN-FACTORED LIVE LOAD MOMENT PLUS DYNAMIC LOAD ALLOWANCE (IMPACT)(KIP-FT.).

M_u (STRENGTH I): FACTORED DESIGN MOMENT (KIP-FT.).
$1.25\ (M_{DC1} + M_{DC2}) + 1.5\ M_{DW} + 1.75\ M_{L+IM}$

f_f: FACTORED CALCULATED NORMAL STRESS AT EDGE OF FLANGE FOR CONTROLLING FLANGE PLATE DUE TO LATERAL BENDING, STRENGTH I OR SERVICE II AS APPLICABLE (KIP-FT.).

$\phi_f M_n$: 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.).

f_s DC1: UN-FACTORED STRESS AT EDGE OF FLANGE FOR CONTROLLING STEEL FLANGE DUE TO VERTICAL NON-COMPOSITE DEAD LOADS AS CALCULATED BELOW (KSI).
M_{DC1}/S_{nc}

f_s DC2: UN-FACTORED STRESS AT EDGE OF FLANGE FOR CONTROLLING STEEL FLANGE DUE TO VERTICAL COMPOSITE DEAD LOADS AS CALCULATED BELOW (KSI).
$M_{DC2}/S_c(3N)$ OR $M_{DC2}/S_c(CR)$ AS APPLICABLE.

f_s DW: UN-FACTORED STRESS AT EDGE OF FLANGE FOR CONTROLLING STEEL FLANGE DUE TO VERTICAL COMPOSITE FUTURE WEARING SURFACE LOADS AS CALCULATED BELOW (KSI).
$M_{DW}/S_c(3N)$ OR $M_{DW}/S_c(CR)$ AS APPLICABLE.

f_s (L+IM): UN-FACTORED STRESS AT EDGE OF FLANGE FOR CONTROLLING STEEL FLANGE DUE TO VERTICAL COMPOSITE LIVE PLUS IMPACT LOADS AS CALCULATED BELOW (KSI).
$M_{L+IM}/S_c(N)$ OR $M_{DW}/S_c(CR)$ AS APPLICABLE.

$f_s + \frac{1}{2}$ (SERVICE II): SUM OF STRESSES AS COMPUTED BELOW (KSI).
$F_{sDC1} + F_{sDC2} + F_{sDW} + 1.3\ F_s\ (L+IM) + \frac{1}{2}$

$0.95R_hF_y f$: COMPOSITE STRESS CAPACITY FOR SERVICE II LOADING ACCORDING TO ARTICLE 6.10.4.2 (KSI).

$f_s + \frac{1}{3}$ (Total)(STRENGTH I): SUM OF STRESSES AS COMPUTED BELOW ON NON-COMPACT SECTION (KSI).
$1.25\ (F_{sDC1} + F_{sDC2}) + 1.5\ F_{sDW} + 1.75\ F_s\ (L+IM) + \frac{1}{3}$

$\phi_f F_n$: NON-COMPACT COMPOSITE POSITIVE OR NEGATIVE STRESS CAPACITY FOR STRENGTH I LOADING ACCORDING TO ARTICLE 6.10.7 OR 6.10.8 (KSI).

V_f: MAXIMUM FACTORED SHEAR RANGE IN SPAN COMPUTED ACCORDING TO ARTICLE 6.10.10.

NOTE:
M_L AND R_L INCLUDE THE EFFECTS OF CENTRIFUGAL FORCE AND SUPERELEVATION.

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3/30/2020

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CHECKED BY . . . SP . . . .
DATE . 4-3-2020 . . .
SCALE . NONE . . . . .

T·Y·LIN INTERNATIONAL

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
UNIT 3 - GIRDER TABLES - 1

SHEET SC - 142 OF 234

417 OF 606

GIRDER 5

INTERIOR GIRDER MOMENT TABLE								
		0.4 SP. 14	PIER 14	0.5 SP. 15	PIER 15	0.5 SP. 16	PIER 16	0.6 SP 17
I_s	(IN^4)	78,643	145,259	67,404	116,008	67,404	145,259	83,569
$I_c(n)$	(IN^4)	165,691	238,172	136,432	205,768	136,432	238,172	179,446
$I_c(3n)$	(IN^4)	122,355	187,525	102,989	158,357	102,989	187,525	131,141
$I_c(cr)$	(IN^4)		158,605		129,353		158,605	
S_s	(IN^3)	2,328	3,934	1,822	3,225	1,822	3,934	2,578
$S_c(n)$	(IN^3)	2,967	4,460	2,343	3,784	2,343	4,460	3,278
$S_c(3n)$	(IN^3)	2,726	4,221	2,147	3,545	2,147	4,221	3,014
$S_c(cr)$	(IN^3)		4,050		3,351		4,050	
S_{xc}	(IN^3)	2808	4,013	2221	3,315	2240	4,010	3052
DC1	(K/')	1.10	1.26	1.07	1.19	1.07	1.26	1.11
M_{DC1}	('K)	1,645	4,192	1,199	3,083	1,013	4,593	2,371
DC2	(K/')	0.19	0.19	0.19	0.19	0.19	0.19	0.19
M_{DC2}	('K)	290	647	223	518	187	707	407
DW	(K/')	0.342	0.342	0.342	0.342	0.342	0.342	0.342
M_{DW}	('K)	522	1,164	401	933	336	1,273	733
M_{L+IM}	('K)	2,409	3,099	2,152	2,976	2,190	3,270	2,771
f_f (STRENGTH I)	('K)	2.19	4.14	7.38	4.59	3.68	2.73	1.39
$M_u + \frac{1}{3} f_f S_{xc}$	('K)	7,589	13,680	6,601	11,532	6,066	14,562	9,540
$\phi_f M_n$	('K)		-		-		-	
f_s DC1	(KSI)	8.48	12.79	7.90	11.47	6.67	14.01	11.03
f_s DC2	(KSI)	1.28	1.92	1.25	1.85	1.05	2.09	1.62
f_s DW	(KSI)	2.30	3.45	2.24	3.34	1.88	3.77	2.92
f_s (L+IM)	(KSI)	9.74	9.18	11.02	10.66	11.22	9.69	10.14
f_f (SERVICE II)	(KSI)	1.65	3.14	5.55	3.47	2.77	2.07	1.05
$f_s + f/2$ (SERVICE II)	(KSI)	25.54	31.66	28.49	32.26	25.56	33.51	29.29
$0.95R_h F_{yf}$	(KSI)	47.50	47.50	47.50	47.50	47.50	47.50	47.50
$f_s + f/3$ (TOTAL)(STRENGTH I)	(KSI)	33.4	41.0	36.5	41.8	33.3	43.7	38.4
$\phi_f F_n$	(KSI)	50.0	50.00	50.0	50.00	50.0	50.00	50.0
V_f	(K)	56.5	56.50	56.5	55.90	60.3	60.25	60.3

GIRDER 5

INTERIOR GIRDER REACTION TABLE						
		PIER 13	PIER 14	PIER 15	PIER 16	PIER 17
R_{DC1}	(K)	64.8	271.6	220.6	293.4	78.1
R_{DC2}	(K)	10.8	42.3	36.4	45.1	13.0
R_{DW}	(K)	19.5	76.1	65.5	81.1	23.4
R_{L+IM}	(K)	94.4	205.5	198.6	215.3	96.5
R_{Total}	(K)	189.5	595.4	521.1	634.8	211.0

GIRDER 6

EXTERIOR GIRDER MOMENT TABLE								
		0.4 SP. 14	PIER 14	0.5 SP. 15	PIER 15	0.5 SP. 16	PIER 16	0.6 SP 17
I_s	(IN^4)	78,643	145,259	67,404	116,008	67,404	145,259	83,569
$I_c(n)$	(IN^4)	162,192	233,700	133,795	201,718	133,795	233,700	175,504
$I_c(3n)$	(IN^4)	119,767	184,799	100,936	155,705	100,936	184,799	128,292
$I_c(cr)$	(IN^4)		158,605		129,353		158,605	
S_s	(IN^3)	2,328	3,934	1,822	3,225	1,822	3,934	2,578
$S_c(n)$	(IN^3)	2,951	4,442	2,330	3,767	2,330	4,442	3,260
$S_c(3n)$	(IN^3)	2,708	4,206	2,132	3,528	2,132	4,206	2,995
$S_c(cr)$	(IN^3)		4,050		3,351		4,050	
S_{xc}	(IN^3)	2780	4,016	2203	3,316	2221	4,013	3028
DC1	(K/')	1.14	1.30	1.11	1.23	1.11	1.30	1.16
M_{DC1}	('K)	1,814	3,945	1,285	3,027	1,104	4,281	2,490
DC2	(K/')	0.19	0.19	0.19	0.19	0.19	0.19	0.19
M_{DC2}	('K)	301	596	229	497	199	655	418
DW	(K/')	0.342	0.342	0.342	0.342	0.342	0.342	0.342
M_{DW}	('K)	542	1,072	413	895	358	1,178	752
M_{L+IM}	('K)	3,126	3,611	2,830	3,545	2,826	3,802	3,628
f_f (STRENGTH I)	('K)	2.65	4.28	9.05	4.98	2.19	2.81	2.42
$M_u + \frac{1}{3} f_f S_{xc}$	('K)	9,132	14,081	8,019	12,410	7,247	14,904	11,316
$\phi_f M_n$	('K)		-		-		-	
f_s DC1	(KSI)	9.35	12.03	8.46	11.26	7.27	13.06	11.59
f_s DC2	(KSI)	1.33	1.77	1.29	1.78	1.12	1.94	1.67
f_s DW	(KSI)	2.40	3.18	2.32	3.21	2.01	3.49	3.01
f_s (L+IM)	(KSI)	12.71	10.70	14.57	12.69	14.55	11.27	13.35
f_f (SERVICE II)	(KSI)	2.00	3.25	6.80	3.76	1.65	2.13	1.83
$f_s + f/2$ (SERVICE II)	(KSI)	30.61	32.51	34.43	34.63	30.15	34.20	34.55
$0.95R_h F_{yf}$	(KSI)	47.50	47.50	47.50	47.50	47.50	47.50	47.50
$f_s + f/3$ (TOTAL)(STRENGTH I)	(KSI)	40.1	42.2	44.2	45.0	39.7	44.6	45.3
$\phi_f F_n$	(KSI)	50.0	50.00	50.0	50.00	50.0	49.70	50.0
V_f	(K)	78.7	78.72	78.7	76.97	77.0	72.91	76.8

GIRDER 6

EXTERIOR GIRDER REACTION TABLE						
		PIER 13	PIER 14	PIER 15	PIER 16	PIER 17
R_{DC1}	(K)	70.1	196.0	174.0	200.5	83.1
R_{DC2}	(K)	11.4	30.1	28.3	31.4	13.6
R_{DW}	(K)	20.5	54.2	51.0	56.5	24.5
R_{L+IM}	(K)	109.1	169.0	170.1	178.9	114.1
R_{Total}	(K)	211.1	449.3	423.4	467.2	235.2

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3/30/2020

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CHECKED BY . . . SP . . . . . SCALE . NONE . . . . .

T·Y·LIN INTERNATIONAL

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
UNIT 3 - GIRDER TABLES - 2

SHEET SC - 143 OF 234

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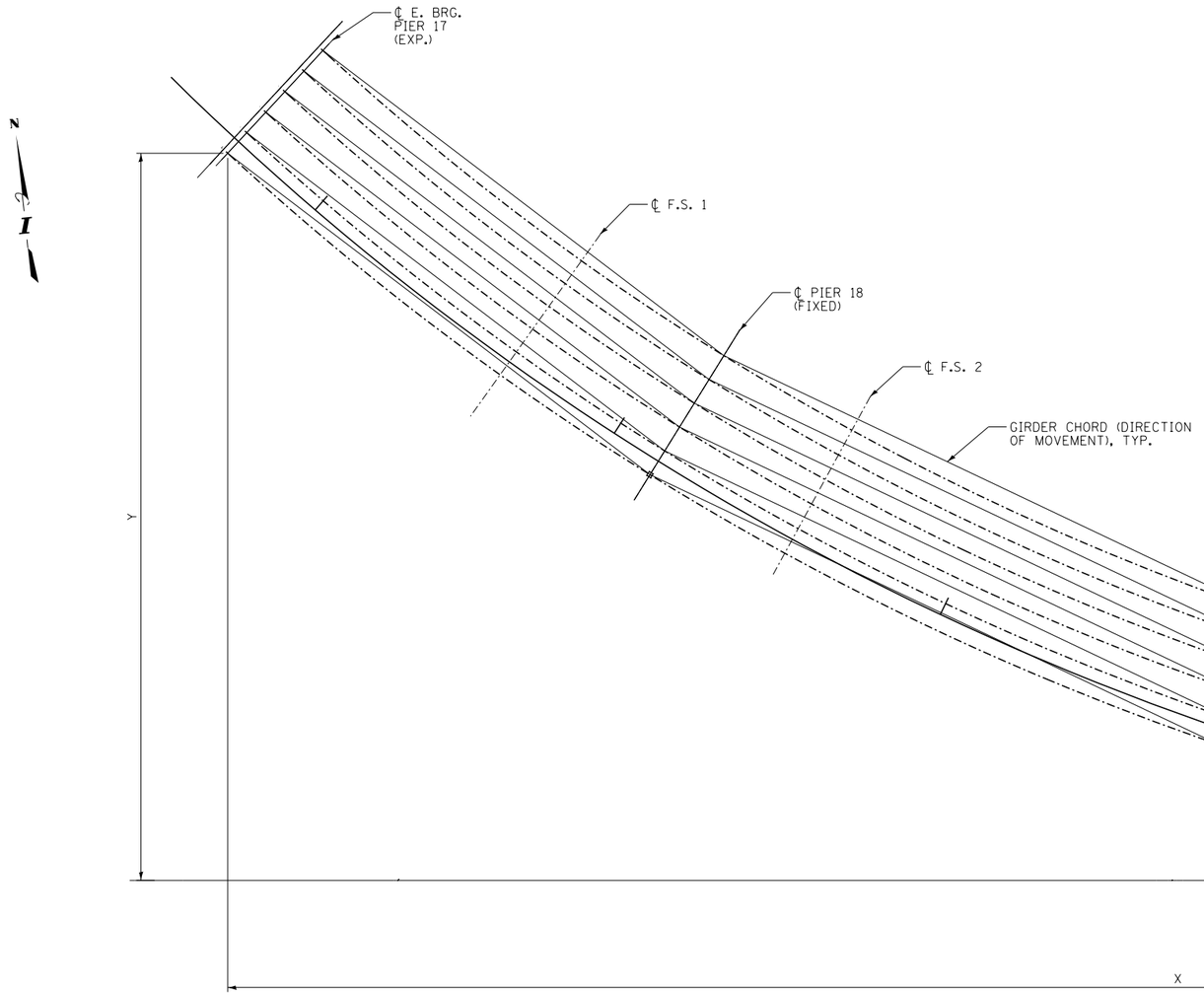
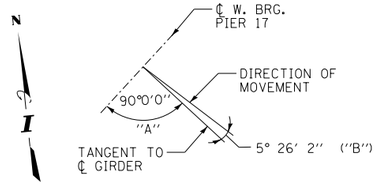
LAYOUT DIMENSIONS-SPANS 17-18

GIRDER	℄ E. BRG. PIER 17		℄ F.S. 1		℄ PIER 18		℄ F.S. 2		℄ BRG. W. ABUT.	
	X	Y	X	Y	X	Y	X	Y	X	Y
1	-483.393′	222.221′	-414.150′	165.920′	-375.968′	140.475′	-341.754′	120.527′	-231.259	71.810
2	-488.480′	216.710′	-418.508′	159.816′	-379.924′	134.103′	-345.350′	113.945′	-233.693	64.716
3	-493.566′	211.198′	-422.866′	153.712′	-383.881′	127.731′	-348.947′	107.364′	-236.126	57.622
4	-498.653′	205.687′	-427.224′	147.608′	-387.837′	121.360′	-352.543′	100.782′	-238.560	50.528
5	-503.739′	200.175′	-431.582′	141.505′	-391.793′	114.988′	-356.139′	94.200′	-240.993	43.433
6	-508.826′	194.663′	-435.940′	135.401′	-395.749′	108.616′	-359.735′	87.619′	-243.423	36.339

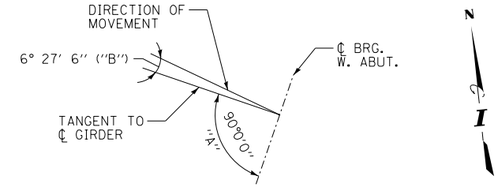
F.S. = FIELD SPLICE



GIRDER LAYOUT PLAN-SPANS 17-18



BEARING ORIENTATION-
E. BRG. PIER 17



BEARING ORIENTATION-
℄ BRG. W. ABUT.

NOTE:

WORK ANGULAR DIMENSIONS "A" AND "B" WITH BEARING SHEETS.

ALL LAYOUT DIMENSIONS ARE RELATIVE TO THE LOCAL TANGENT TO ℄ RAMP C AT STA. 3277+28.49

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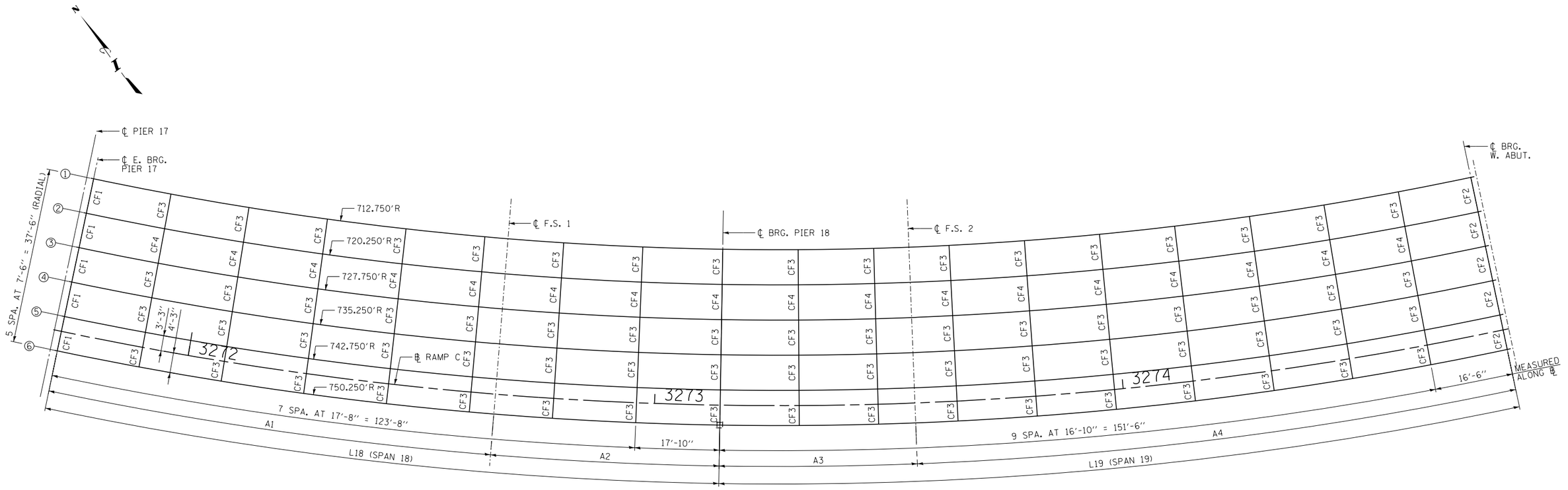
CHECKED BY . . . SP	SCALE . NONE					



FRAMING PLAN

NOTES:

1. FOR GIRDER DIMENSION TABLE, SEE SHEET SC-146 OF 234.
2. ALL STRUCTURAL STEEL SHALL BE AASHTO M270 GRADE 50.
3. PLACE ALL CROSS FRAMES RADIALLY, WITH RESPECT TO ℄ RAMP C.
4. "CVN" DENOTES CHARPY-V-NOTCH IMPACT ENERGY REQUIREMENTS, ZONE 2.
5. ALL CROSS FRAMES BETWEEN GIRDERS SHALL BE INSTALLED WITH ERECTION PINS AND BOLTS IN ACCORDANCE WITH THE ERECTION PLAN APPROVED BY THE ENGINEER. INDIVIDUAL CROS FRAMES AT SUPPORTS MAY BE TEMPORARILY DISCONNECTED TO INSTALL BEARING ANCHOR RODS.

DRAWN BY . . . EKH
CHECKED BY . . . SP
DATE . 4-3-2020
SCALE . NONE

T·Y·LIN INTERNATIONAL

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
UNIT 4 - FRAMING PLAN SPAN 18 AND 19

SHEET SC - 145 OF 234

420 OF 606

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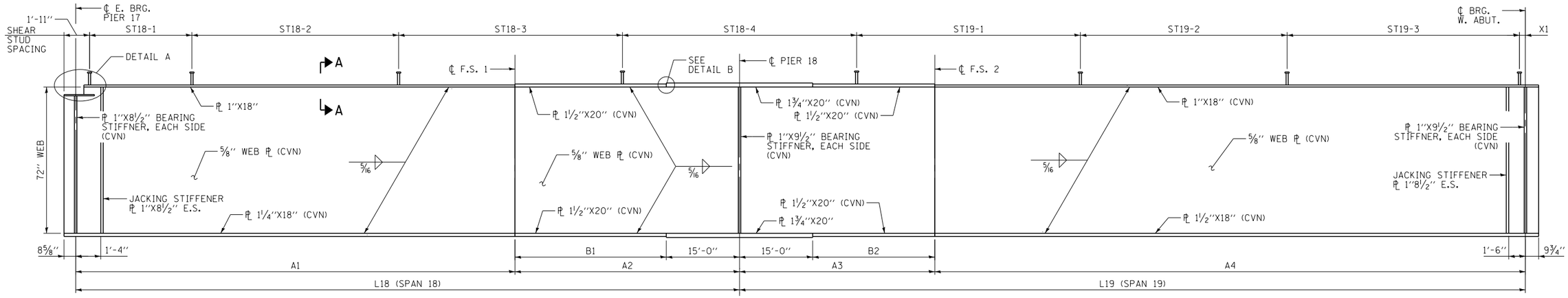
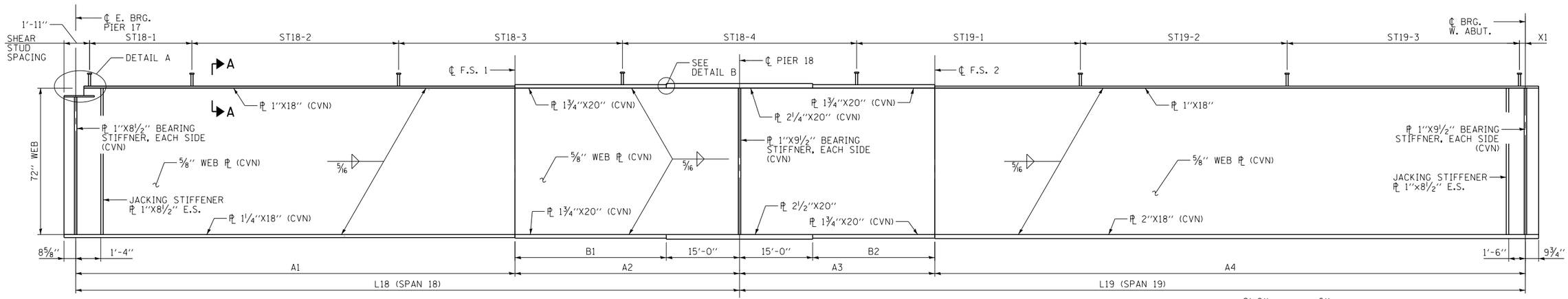


GIRDER ELEVATION 1-4



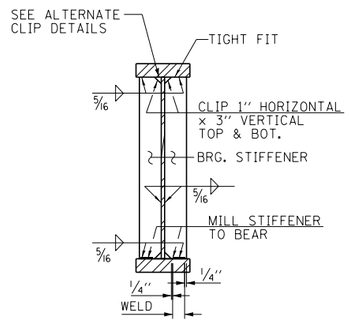
GIRDER ELEVATION 5-6

GIRDER DIMENSIONS

GIRDER	L18	L19	A1	A2	A3	A4	B1	B2
1	135'-1½"	160'-6⅛"	89'-3⅝"	45'-9 15/16"	39'-8 1/16"	120'-10 1/16"	30'-9 15/16"	24'-8 1/16"
2	136'-6¾"	162'-2 7/16"	90'-3 1/16"	46'-3 11/16"	40'-1 1/16"	122'-1 5/16"	31'-3 11/16"	25'-1 1/16"
3	138'-0"	163'-10 11/16"	91'-2½"	46'-9½"	40'-6⅛"	123'-4 9/16"	31'-9½"	25'-6⅛"
4	139'-5¼"	165'-6 15/16"	92'-2"	47'-3¼"	40'-11⅛"	124'-7 13/16"	32'-3¼"	25'-11⅛"
5	140'-10½"	167'-3 3/16"	93'-1 7/16"	47'-9 1/16"	41'-4⅛"	125'-11⅛"	32'-9 1/16"	26'-4⅛"
6	142'-3 11/16"	168'-11½"	94'-0 15/16"	48'-2⅞"	41'-9⅛"	127'-2⅜"	33'-2⅞"	26'-9⅛"

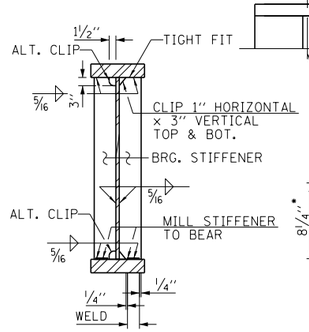
SHEAR STUD SPACING

GIRDER	ST18-1	ST18-2	ST18-3	ST18-4	ST19-1	ST19-2	ST19-3	X1
1	20 SPA. AT 9"	42 SPA. AT 15"	44 SPA. AT 14"	31 SPA. AT 12"	90 SPA. AT 13"	24 SPA. AT 14"	17 SPA. AT 12"	4½"
2	19 SPA. AT 9"	40 SPA. AT 15"	47 SPA. AT 14"	32 SPA. AT 12"	91 SPA. AT 13"	25 SPA. AT 14"	17 SPA. AT 12"	6¾"
3	20 SPA. AT 9"	39 SPA. AT 15"	48 SPA. AT 14"	34 SPA. AT 12"	92 SPA. AT 13"	23 SPA. AT 14"	18 SPA. AT 12"	4"
4	20 SPA. AT 9"	40 SPA. AT 15"	49 SPA. AT 14"	33 SPA. AT 12"	93 SPA. AT 13"	24 SPA. AT 14"	18 SPA. AT 12"	4¼"
5	20 SPA. AT 9"	93 SPA. AT 11"	21 SPA. AT 13"	44 SPA. AT 9"	81 SPA. AT 10"	70 SPA. AT 11"	23 SPA. AT 9"	2½"
6	20 SPA. AT 9"	94 SPA. AT 11"	22 SPA. AT 13"	44 SPA. AT 9"	82 SPA. AT 10"	70 SPA. AT 11"	24 SPA. AT 9"	4 1/16"



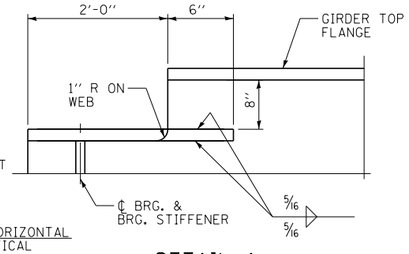
BEARING STIFFENERS

(DETAIL SIMILAR AT JACKING STIFFENERS)

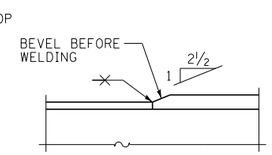


ALTERNATE CLIP DETAILS

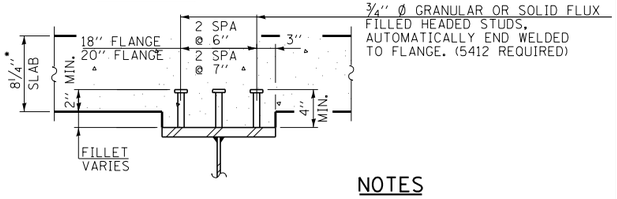
(DETAIL SIMILAR AT JACKING STIFFENERS)



DETAIL A



DETAIL B



SECTION A-A

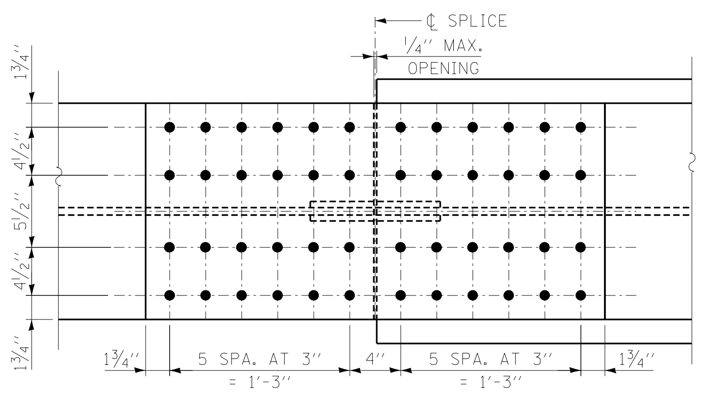
*PRIOR TO GRINDING

NOTES

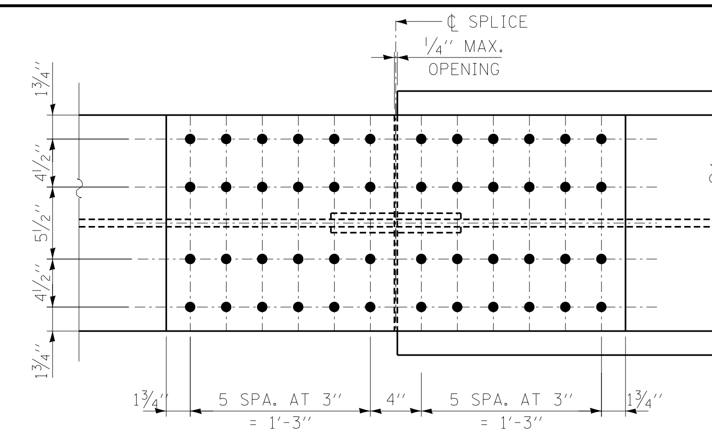
1. "CVN" DENOTES CHARPY-V-NOTCH IMPACT ENERGY REQUIREMENTS, ZONE 2.

P:\60254045\7-294.5-9\STRUCTURAL\RESTART.2018\Ramp C over I-57 and I-294\016210\5.sunit4-girder_elevation.dgn
3/30/2020

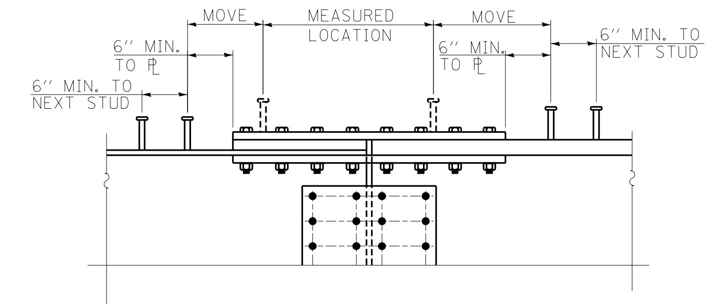
DRAWN BY . . . . EKH	DATE . 4-3-2020 . . .	TY·LIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	REVISIONS NO. | DATE | DESCRIPTION	CONTRACT I-19-4495 I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 116) UNIT 4 - GIRDER ELEVATION	SHEET SC - 146 OF 234 421 OF 606
CHECKED BY . . . SP	SCALE . NONE					



TOP FLANGE SPLICE

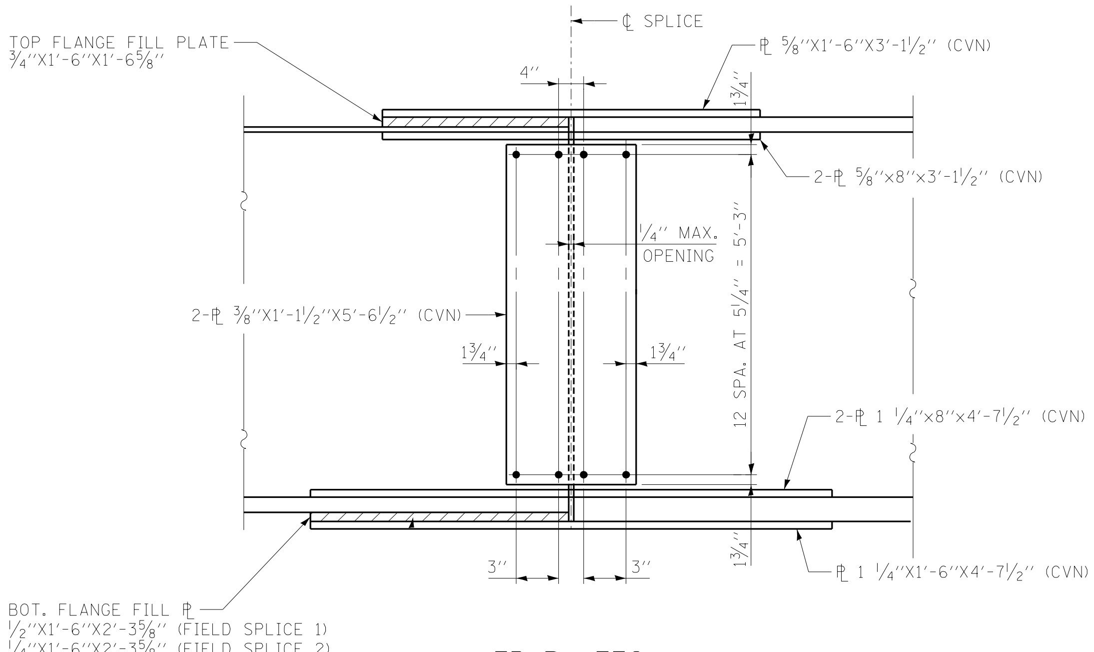


TOP FLANGE SPLICE

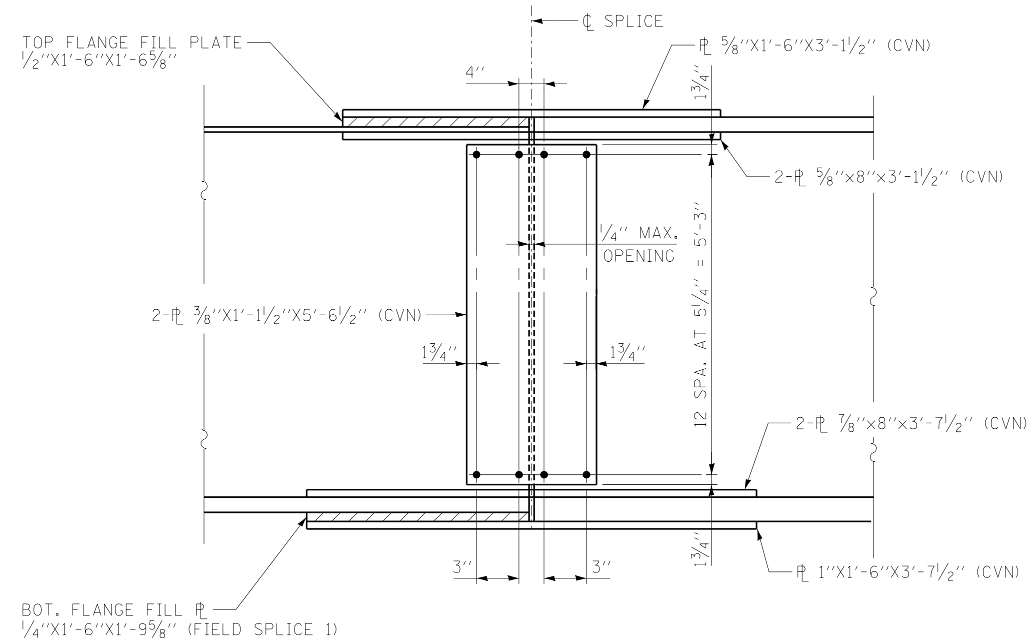


SHEAR STUD DETAIL AT SPLICES AND FLANGE TRANSITIONS

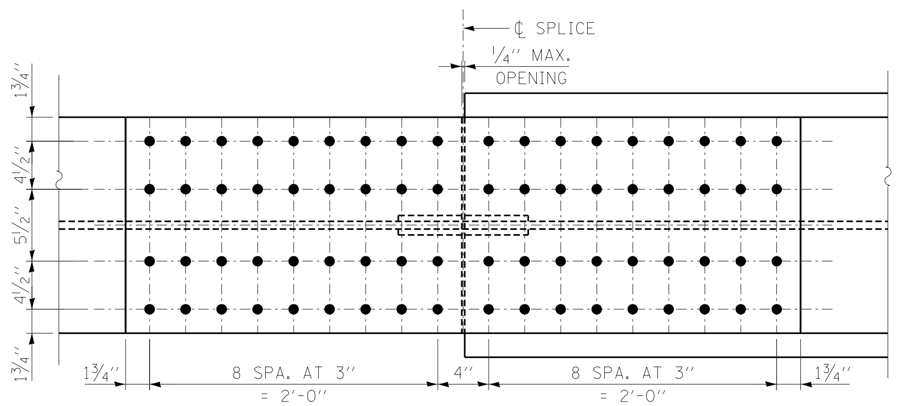
DO NOT PLACE SHEAR STUDS ON SPLICE PLATES. MOVE ROW OF STUDS TO 6" BEYOND NEAREST EDGE OF SPLICE PLATE FROM MEASURED LOCATION. SIMILARLY, MOVE STUDS AS REQUIRED TO MAINTAIN 6" CLEAR BETWEEN STUDS AND WELDED FLANGE TRANSITIONS.



WEB PLATES



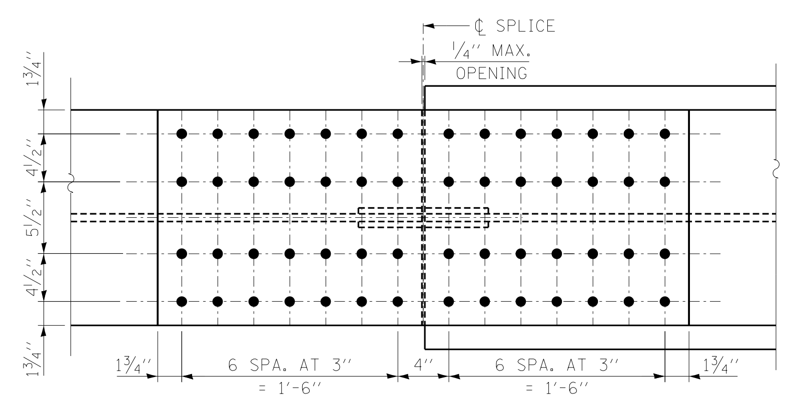
WEB PLATES



BOTTOM FLANGE SPLICE

FIELD SPLICES 1-2 (GIRDERS 5&6)

(4 REQUIRED)



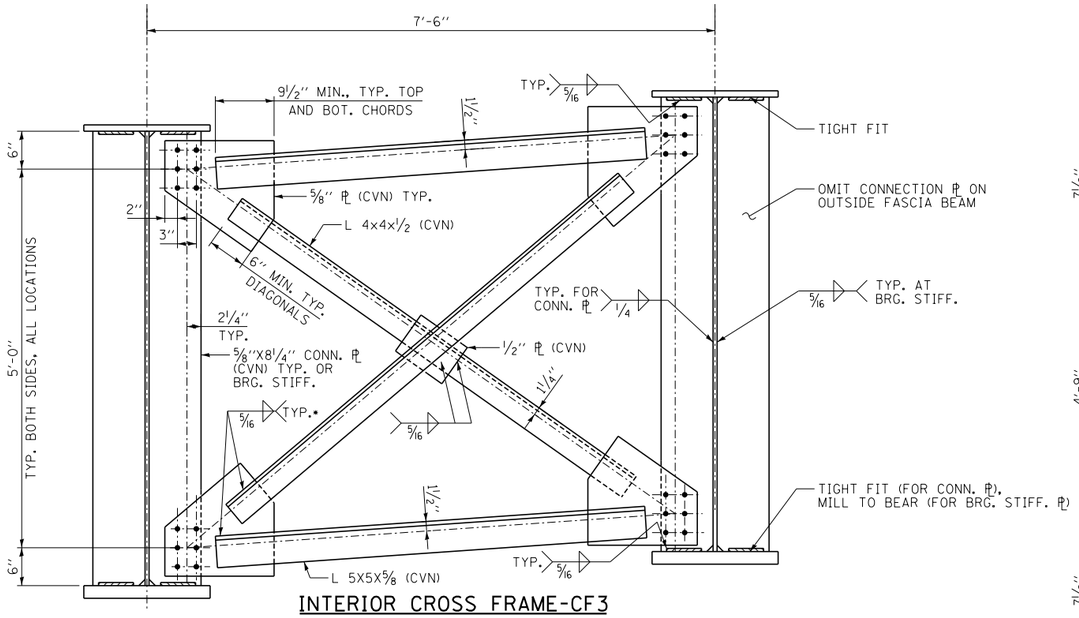
BOTTOM FLANGE SPLICE

FIELD SPLICES 1-2 (GIRDERS 1-4)

(8 REQUIRED)

NOTES:

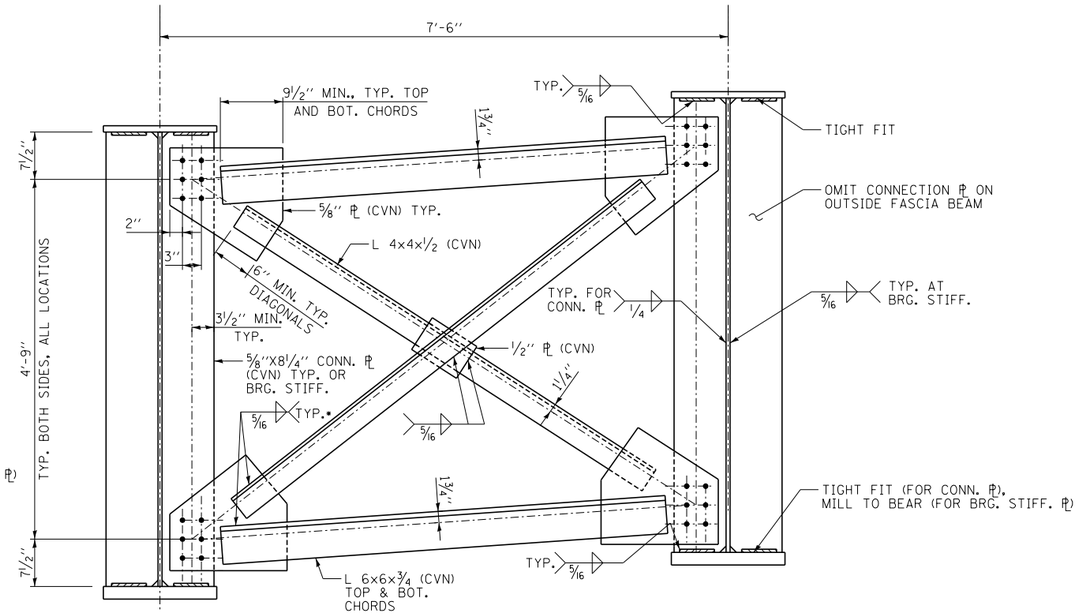
1. "CVN" DENOTES CHARPY-V-NOTCH IMPACT ENERGY REQUIREMENTS, ZONE 2
2. BOLTS SHALL BE 7/8" Ø HS BOLTS IN 15/16 " Ø HOLES.



INTERIOR CROSS FRAME-CF3

(68 REQUIRED)

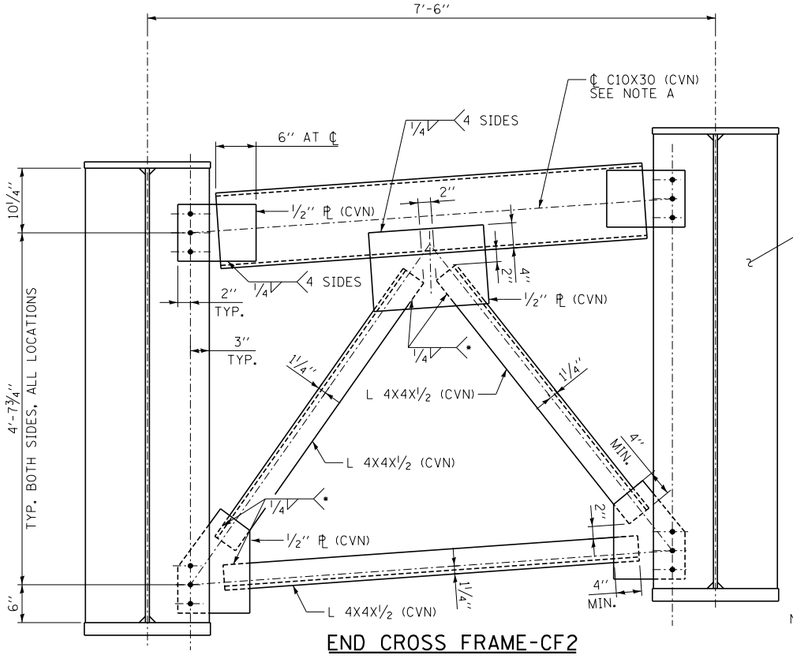
* FILLET WELD ANGLES ALONG 3 SIDES ON ONE FACE OF GUSSET PLATE.



INTERIOR CROSS FRAME-CF4

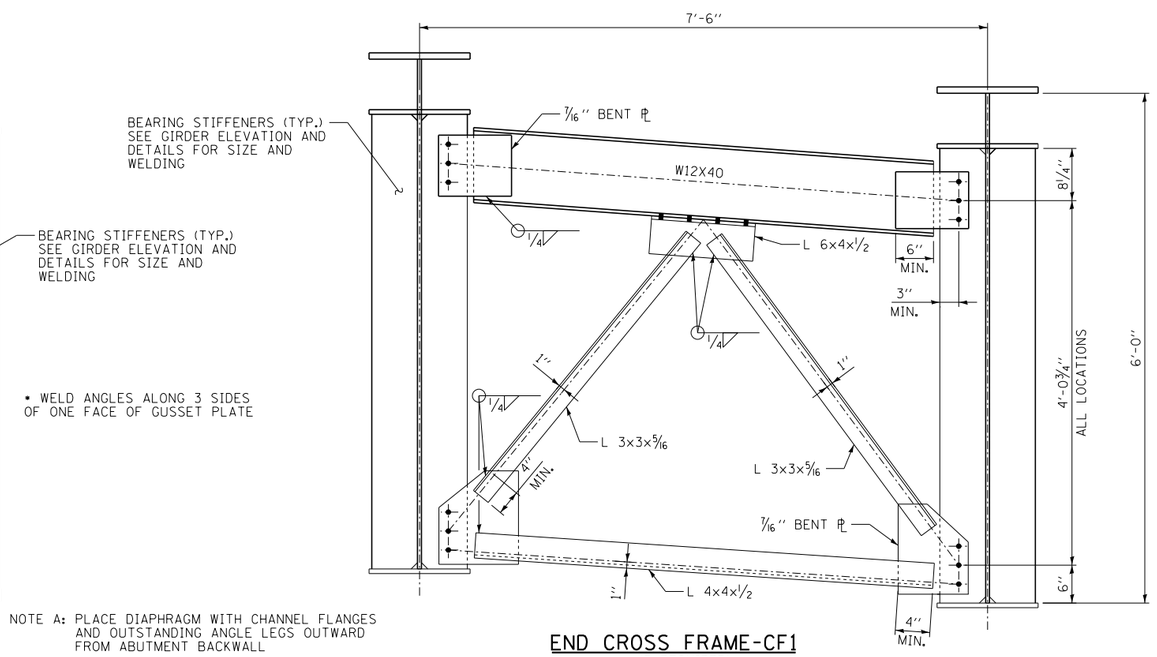
(17 REQUIRED)

* FILLET WELD ANGLES ALONG 3 SIDES ON ONE FACE OF GUSSET PLATE.



END CROSS FRAME-CF2

(5 REQUIRED)



END CROSS FRAME-CF1

(5 REQUIRED)

BEARING STIFFENERS (TYP.) SEE GIRDER ELEVATION AND DETAILS FOR SIZE AND WELDING

* WELD ANGLES ALONG 3 SIDES OF ONE FACE OF GUSSET PLATE

NOTE A: PLACE DIAPHRAGM WITH CHANNEL FLANGES AND OUTSTANDING ANGLE LEGS OUTWARD FROM ABUTMENT BACKWALL

NOTES:

1. ALL CROSS FRAMES OR DIAPHRAGMS BETWEEN BEAMS OR GIRDERS SHALL BE INSTALLED WITH ERECTION PINS AND BOLTS IN ACCORDANCE WITH THE ERECTION PLAN APPROVED BY THE ENGINEER. INDIVIDUAL CROSS FRAMES OR DIAPHRAGMS AT SUPPORTS MAY BE TEMPORARILY DISCONNECTED TO INSTALL BEARING ANCHOR RODS.
2. "CVN" DENOTES CHARPY-V-NOTCH IMPACT ENERGY REQUIREMENTS, ZONE 2.
3. BOLTS SHALL BE ⅞" Ø IN HOLES 15/16 " Ø.
4. TWO HARDENED WASHERS SHALL BE REQUIRED FOR EACH SET OF OVERSIZED HOLES.
5. THE CONTRACTOR SHALL EITHER:
   A. REAM DIAPHRAGM AND/OR CROSS FRAME CONNECTION HOLES DURING SHOP ASSEMBLY, OR
   B. PROVIDE DETAILING AND FABRICATION CONTROLS ACCEPTABLE TO THE ENGINEER WHICH ENSURES ACCURACY SUCH THAT FIELD REAMING WILL NOT EXCEED THE AMOUNT PERMITTED IN ARTICLE 505.08(I) OF THE STANDARD SPECIFICATIONS.

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3/30/2020

DRAWN BY . . . . ME
CHECKED BY . . . SP
DATE . 4-3-2020
SCALE . NONE

T·Y·LIN INTERNATIONAL

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
UNIT 4 - CROSS FRAME DETAILS

SHEET SC - 148 OF 234

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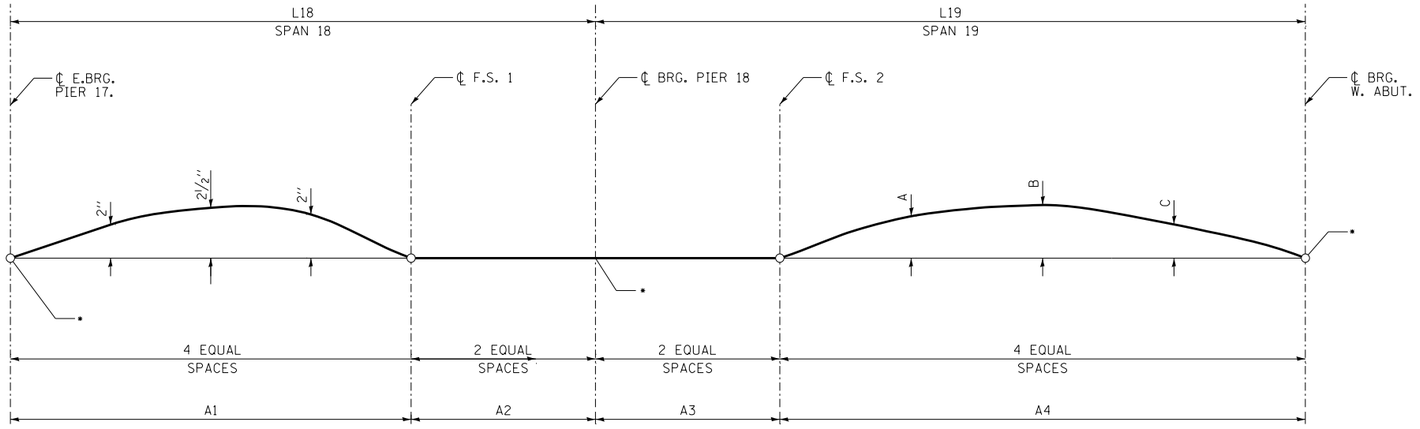


CAMBER DIAGRAM RAMP C

• SEE TABLE FOR TOP OF WEB ELEVATIONS AT PIERS AND ABUTMENTS

***TOP OF WEB ELEVATIONS

RAMP C		GIRDER 1	GIRDER 2	GIRDER 3	GIRDER 4	GIRDER 5	GIRDER 6
	℄ E. BRG. PIER 17.	639.99	640.44	640.89	641.34	641.79	642.24
	℄ F.S. 1	636.23	636.67	637.12	637.57	637.99	638.44
	℄ BRG. PIER 18	633.77	634.23	634.74	635.14	635.58	635.96
	℄ F.S. 2	631.65	632.11	632.60	633.05	633.49	633.94
	℄ BRG. W. ABUT.	624.68	625.13	625.58	626.03	626.48	626.93

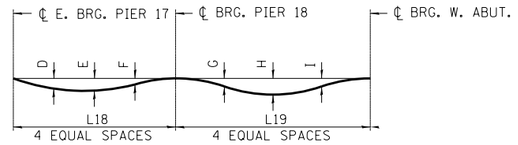
*** FOR FABRICATION ONLY

CAMBER DIMENSIONS

GIRDER	A	B	C
1	1½"	2"	1½"
2	1½"	2"	1½"
3	1½"	2"	1½"
4	2"	2½"	2"
5	2¼"	3"	2¼"
6	2¾"	3½"	2¾"

NOTES

1. THE CONTRACTOR IS ALERTED THAT CAMBER AND DEAD LOAD DEFLECTION VALUES SHOWN ON THE PLANS WERE DEVELOPED BASED ON THE DECK POURING SEQUENCE SHOWN IN THE CONTRACT DRAWINGS. ANY DEVIATION FROM THIS POURING SEQUENCE WILL RESULT IN CHANGES TO CAMBER AND ELEVATIONS THAT REFLECT DEAD LOAD DEFLECTIONS. IF THE CONTRACTOR WISHES TO CHANGE THE SEQUENCE, THEN THE PROPOSED PLAN REVISIONS AND DESIGN CALCULATIONS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL. THE CALCULATIONS SHALL BE PREPARED AND SEALED BY A LICENSED STRUCTURAL ENGINEER IN ILLINOIS.
2. FOR A1-A4 DIMENSIONS, SEE FRAMING PLAN SHEET SC-146



DEAD LOAD DEFLECTION DIAGRAM - STEEL SELF WEIGHT

(INCLUDES WEIGHT OF STRUCTURAL STEEL ONLY)

GIRDER	D	E	F	G	H	I	L18	L19
1	1/4"	3/8"	1/8"	3/8"	3/4"	5/8"	135'-1 1/2"	160'-6 1/8"
2	1/4"	1/4"	1/8"	1/2"	1"	3/4"	136'-6 3/4"	162'-2 1/16"
3	1/4"	1/4"	0"	5/8"	1 1/8"	7/8"	138'-0"	163'-10 11/16"
4	1/4"	1/4"	0"	5/8"	1 1/4"	1"	139'-5 1/4"	165'-6 15/16"
5	1/4"	1/4"	0"	3/4"	1 3/8"	1 1/8"	140'-10 1/2"	167'-3 3/16"
6	1/4"	1/4"	0"	3/4"	1 1/2"	1 1/4"	142'-3 11/16"	168'-11 1/2"

NOTE:
THE CALCULATED DEFLECTIONS OF THE PRIMARY GIRDERS UNDER STEEL SELF-WEIGHT SHALL BE USED TO DETAIL CROSS FRAME CONNECTIONS, AND TO ERECT THE STRUCTURAL STEEL SUCH THAT THE GIRDERS/BEAMS WILL BE PLUMB WITHIN A TOLERANCE OF ±1/8" IN. PER VERTICAL FT. THROUGHOUT WHEN SUPPORTING THEIR OWN WEIGHT.

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3/30/2020

DRAWN BY . . . . SP
CHECKED BY . . . SP
DATE . 4-3-2020
SCALE . NONE

T·Y·LIN INTERNATIONAL

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
UNIT 4 - CAMBER DIAGRAM

SHEET SC - 149 OF 234

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EXTERIOR GIRDER 1

EXTERIOR GIRDER MOMENT TABLE				
		0.4 SP. 18	PIER 18	0.6 SP. 19
I_s	(IN^4)	73,280	114,641	78,643
$I_c(n)$	(IN^4)	149,989	194,766	164,077
$I_c(3n)$	(IN^4)	111,810	152,122	121,020
$I_c(cr)$	(IN^4)	-	127,059	-
S_s	(IN^3)	2,076	3,037	2,328
$S_c(n)$	(IN^3)	2,652	3,537	2,963
$S_c(3n)$	(IN^3)	2,431	3,317	2,720
$S_c(cr)$	(IN^3)	-	3,152	-
S_{xc}	(IN^3)	2545	3,114	2805
DC1	(K/')	1.15	1.25	1.16
M_{DC1}	('K)	1,107	3,372	1,656
DC2	(K/')	0.19	0.19	0.19
M_{DC2}	('k)	182	509	273
DW	(K/')	0.342	0.342	0.342
M_{DW}	('K)	327	917	491
M_{L+IM}	('K)	1,982	2,632	2,404
f_f (STRENGTH I)	(KSI)	0.53	4.10	4.86
$M_u + \frac{1}{3} f_f S_{xc}$	('K)	5,608	11,188	7,734
$\phi_f M_n$	('K)	-	-	-
f_s DC1	(KSI)	6.40	13.32	8.54
f_s DC2	(KSI)	0.90	1.94	1.20
f_s DW	(KSI)	1.61	3.49	2.17
f_s (L+IM)	(KSI)	8.97	10.02	9.74
f_f (SERVICE II)	(KSI)	0.40	3.14	3.67
$f_s + f/2$ (SERVICE II)	(KSI)	20.77	33.35	26.40
$0.95R_h F_{yf}$	(KSI)	47.50	47.50	47.50
$f_s + f/3$ (TOTAL)(STRENGTH I)	(KSI)	27.4	43.2	34.1
$\phi_f F_n$	(KSI)	50.0	46.6	50.0
V_f	(K)	35.5	38.2	34.7

EXTERIOR GIRDER 1

EXTERIOR GIRDER REACTION TABLE				
		PIER 17	PIER 18	W. ABUT.
R_{DC1}	(K)	49.9	244.2	59.5
R_{DC2}	(K)	8.0	37.5	9.4
R_{DW}	(K)	14.4	67.5	16.9
R_{L+IM}	(K)	76.2	184.4	81.9
R_{Total}	(K)	148.5	533.6	167.7

EXTERIOR GIRDER 6

EXTERIOR GIRDER MOMENT TABLE				
		0.4 SP. 18	PIER 18	0.6 SP. 19
I_s	(IN^4)	73,280	150,622	88,116
$I_c(n)$	(IN^4)	149,989	243,438	190,574
$I_c(3n)$	(IN^4)	111,810	192,204	137,782
$I_c(cr)$	(IN^4)	-	164,318	-
S_s	(IN^3)	2,076	4,057	2,826
$S_c(n)$	(IN^3)	2,652	4,587	3,583
$S_c(3n)$	(IN^3)	2,431	4,341	3,291
$S_c(cr)$	(IN^3)	-	4,175	-
S_{xc}	(IN^3)	2538	4,135	3295
DC1	(K/')	1.15	1.33	1.20
M_{DC1}	('K)	1,163	4,649	3,074
DC2	(K/')	0.19	0.19	0.19
M_{DC2}	('K)	213	699	498
DW	(K/')	0.342	0.342	0.342
M_{DW}	('K)	383	1,258	897
M_{L+IM}	('K)	2,836	3,473	3,688
f_f (STRENGTH I)	(KSI)	0.34	4.14	6.39
$M_u + \frac{1}{3} f_f S_{xc}$	('K)	7,282	15,126	12,850
$\phi_f M_n$	('K)	-	-	-
f_s DC1	(KSI)	6.72	13.75	13.05
f_s DC2	(KSI)	1.05	2.01	1.82
f_s DW	(KSI)	1.89	3.62	3.27
f_s (L+IM)	(KSI)	12.83	9.98	12.35
f_f (SERVICE II)	(KSI)	0.26	3.17	4.83
$f_s + f/2$ (SERVICE II)	(KSI)	26.47	33.94	36.61
$0.95R_h F_{yf}$	(KSI)	47.50	47.50	47.50
$f_s + f/3$ (TOTAL)(STRENGTH I)	(KSI)	35.1	44.0	47.2
$\phi_f F_n$	(KSI)	50.0	46.40	50.0
V_f	(K)	35.5	38.20	34.7

EXTERIOR GIRDER 6

GIRDER REACTION TABLE				
		PIER 17	PIER 18	W. ABUT.
R_{DC1}	(K)	57.8	216.1	93.2
R_{DC2}	(K)	9.7	33.4	14.9
R_{DW}	(K)	17.4	60.0	26.7
R_{L+IM}	(K)	105.0	171.1	113.8
R_{Total}	(K)	189.9	480.6	248.6

INTERIOR GIRDER 5

INTERIOR GIRDER MOMENT TABLE				
		0.4 SP. 18	PIER 18	0.6 SP. 19
I_s	(IN^4)	73,280	150,622	88,116
$I_c(n)$	(IN^4)	153,070	284,113	194,999
$I_c(3n)$	(IN^4)	114,183	195,066	140,957
$I_c(cr)$	(IN^4)	-	164,318	-
S_s	(IN^3)	2,076	4,057	2,826
$S_c(n)$	(IN^3)	2,667	5,274	3,602
$S_c(3n)$	(IN^3)	2,448	4,357	3,313
$S_c(cr)$	(IN^3)	-	4,175	-
S_{xc}	(IN^3)	2550	4,133	3332
DC1	(K/')	1.11	1.30	1.16
M_{DC1}	('K)	1,162	4,841	2,815
DC2	(K/')	0.19	0.19	0.19
M_{DC2}	('k)	206	727	467
DW	(K/')	0.342	0.342	0.342
M_{DW}	('K)	372	1,309	841
M_{L+IM}	('K)	2,168	2,903	2,818
f_f (STRENGTH I)	(KSI)	0.29	4.07	5.31
$M_u + \frac{1}{3} f_f S_{xc}$	('K)	6,083	14,472	10,787
$\phi_f M_n$	('K)	-	-	-
f_s DC1	(KSI)	6.72	14.32	11.95
f_s DC2	(KSI)	1.01	2.09	1.69
f_s DW	(KSI)	1.82	3.76	3.05
f_s (L+IM)	(KSI)	9.76	8.34	9.39
f_f (SERVICE II)	(KSI)	0.22	3.12	4.02
$f_s + f/2$ (SERVICE II)	(KSI)	22.34	32.58	30.90
$0.95R_h F_{yf}$	(KSI)	47.50	47.50	47.50
$f_s + f/3$ (TOTAL)(STRENGTH I)	(KSI)	29.6	42.1	39.8
$\phi_f F_n$	(KSI)	50.0	46.5	50.0
V_f	(K)	52.6	52.8	52.0

INTERIOR GIRDER 5

INTERIOR GIRDER REACTION TABLE				
		PIER 17	PIER 18	W. ABUT.
R_{DC1}	(K)	54.7	298.6	89.0
R_{DC2}	(K)	9.2	45.7	14.2
R_{DW}	(K)	16.5	82.3	25.5
R_{L+IM}	(K)	90.9	203.7	96.3
R_{Total}	(K)	171.3	630.3	225.0

I_s, S_s: NON-COMPOSITE MOMENT OF INERTIA AND SECTION MODULUS OF THE STEEL SECTION USED FOR COMPUTING F_s (TOTAL-STRENGTH I, AND SERVICE II) DUE TO NON-COMPOSITE DEAD LOADS ($IN.^4$ AND $IN.^3$).

$I_c(n)$, $S_c(n)$: COMPOSITE MOMENT OF INERTIA AND SECTION MODULUS OF THE STEEL AND DECK BASED UPON THE MODULAR RATIO, "N", USED FOR COMPUTING F_s (TOTAL-STRENGTH I, AND SERVICE II) IN UNCRACKED SECTIONS DUE TO SHORT TERM COMPOSITE LIVE LOADS ($IN.^4$ AND $IN.^3$).

$I_c(3n)$, $S_c(3n)$: COMPOSITE MOMENT OF INERTIA AND SECTION MODULUS OF THE STEEL AND DECK BASED UPON 3 TIMES THE MODULAR RATIO, "3N", USED FOR COMPUTING F_s (TOTAL-STRENGTH I, AND SERVICE II) IN UNCRACKED SECTIONS DUE TO LONG-TERM COMPOSITE (SUPERIMPOSED) DEAD LOADS ($IN.^4$ AND $IN.^3$).

$I_c(cr)$, $S_c(cr)$: COMPOSITE MOMENT OF INERTIA AND SECTION MODULUS OF THE STEEL AND LONGITUDINAL DECK REINFORCEMENT, USED FOR COMPUTING F_s (TOTAL-STRENGTH I AND SERVICE II) IN CRACKED SECTIONS, DUE TO BOTH SHORT-TERM COMPOSITE LIVE LOADS AND LONG-TERM COMPOSITE (SUPERIMPOSED) DEAD LOADS ($IN.^4$ AND $IN.^3$).

S_{xc}: SECTION MODULUS ABOUT THE MAJOR AXIS OF SECTION TO THE CONTROLLING FLANGE, TENSION OR COMPRESSION, TAKEN AS YIELD MOMENT WITH RESPECT TO THE CONTROLLING FLANGE OVER THE YIELD STRENGTH OF THE CONTROLLING FLANGE ($IN.^3$).

DC1: UN-FACTORED NON-COMPOSITE DEAD LOAD (KIPS/FT.).

M_{DC1}: 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.).

M_{DC2}: 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.).

M_{DW}: UN-FACTORED MOMENT DUE TO LONG-TERM COMPOSITE (SUPERIMPOSED FUTURE WEARING SURFACE ONLY) DEAD LOAD (KIP-FT.).

M_{L+IM}: UN-FACTORED LIVE LOAD MOMENT PLUS DYNAMIC LOAD ALLOWANCE (IMPACT)(KIP-FT.).

M_u (STRENGTH I): FACTORED DESIGN MOMENT (KIP-FT.).
$1.25 (M_{DC1} + M_{DC2}) + 1.5 M_{DW} + 1.75 M_{L+IM}$

f_f: FACTORED CALCULATED NORMAL STRESS AT EDGE OF FLANGE FOR CONTROLLING FLANGE PLATE DUE TO LATERAL BENDING, STRENGTH I OR SERVICE II AS APPLICABLE (KIP-FT.).

$\phi_f M_n$: 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.).

f_s DC1: UN-FACTORED STRESS AT EDGE OF FLANGE FOR CONTROLLING STEEL FLANGE DUE TO VERTICAL NON-COMPOSITE DEAD LOADS AS CALCULATED BELOW (KSI).
M_{DC1}/S_{sc}

f_s DC2: UN-FACTORED STRESS AT EDGE OF FLANGE FOR CONTROLLING STEEL FLANGE DUE TO VERTICAL COMPOSITE DEAD LOADS AS CALCULATED BELOW (KSI).
$M_{DC2}/S_c(3N)$ OR $M_{DC2}/S_c(CR)$ AS APPLICABLE.

f_s DW: UN-FACTORED STRESS AT EDGE OF FLANGE FOR CONTROLLING STEEL FLANGE DUE TO VERTICAL COMPOSITE FUTURE WEARING SURFACE LOADS AS CALCULATED BELOW (KSI).
$M_{DW}/S_c(3N)$ OR $M_{DW}/S_c(CR)$ AS APPLICABLE.

f_s (L+IM): UN-FACTORED STRESS AT EDGE OF FLANGE FOR CONTROLLING STEEL FLANGE DUE TO VERTICAL COMPOSITE LIVE PLUS IMPACT LOADS AS CALCULATED BELOW (KSI).
$M_{L+IM}/S_c(N)$ OR $M_{DW}/S_c(CR)$ AS APPLICABLE.

$f_s + f/2$ (SERVICE II): SUM OF STRESSES AS COMPUTED BELOW (KSI).
$F_{sDC1} + F_{sDC2} + F_{sDW} + 1.3 F_s (L+IM) + f/2$

$0.95R_h F_y f$: COMPOSITE STRESS CAPACITY FOR SERVICE II LOADING ACCORDING TO ARTICLE 6.10.4.2 (KSI).

$f_s + f/3$ (Total)(STRENGTH I): SUM OF STRESSES AS COMPUTED BELOW ON NON-COMPACT SECTION (KSI).
$1.25 (F_{sDC1} + F_{sDC2}) + 1.5 F_{sDW} + 1.75 F_s (L+IM) + f/3$

$\phi_f F_n$: NON-COMPACT COMPOSITE POSITIVE OR NEGATIVE STRESS CAPACITY FOR STRENGTH I LOADING ACCORDING TO ARTICLE 6.10.7 OR 6.10.8 (KSI).

V_f: MAXIMUM FACTORED SHEAR RANGE IN SPAN COMPUTED ACCORDING TO ARTICLE 6.10.10.

NOTE:
M_L AND R_L INCLUDE THE EFFECTS OF CENTRIFUGAL FORCE AND SUPERELEVATION.

P:\60254057-294,5-9\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\01621O1.5_unit4_girder_tables01.dgn
3/30/2020

DRAWN BY . . . OR . . . .
CHECKED BY . . . SP . . . .
DATE . 4-3-2020 . . .
SCALE . NONE . . . . .

TY·LIN INTERNATIONAL

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

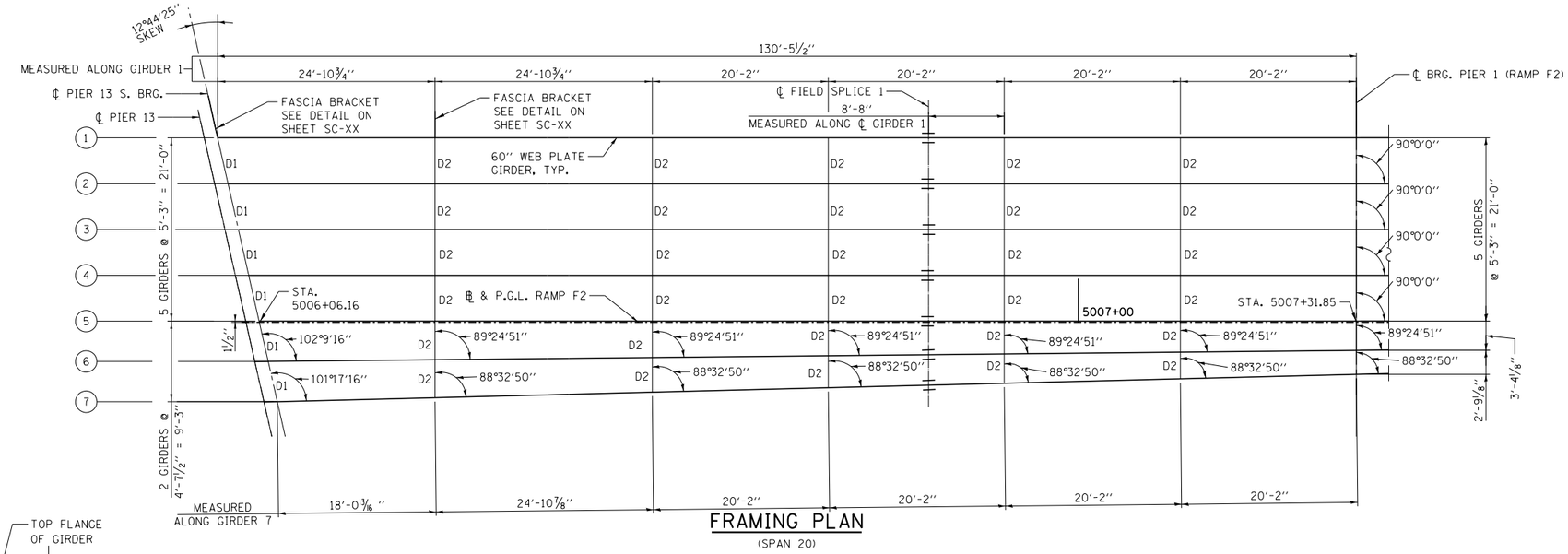
REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
UNIT 4 - GIRDER TABLES

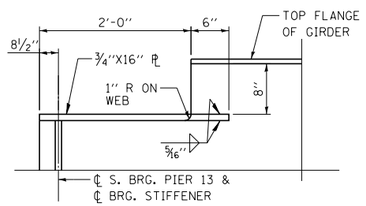
SHEET SC - 150 OF 234

425 OF 606

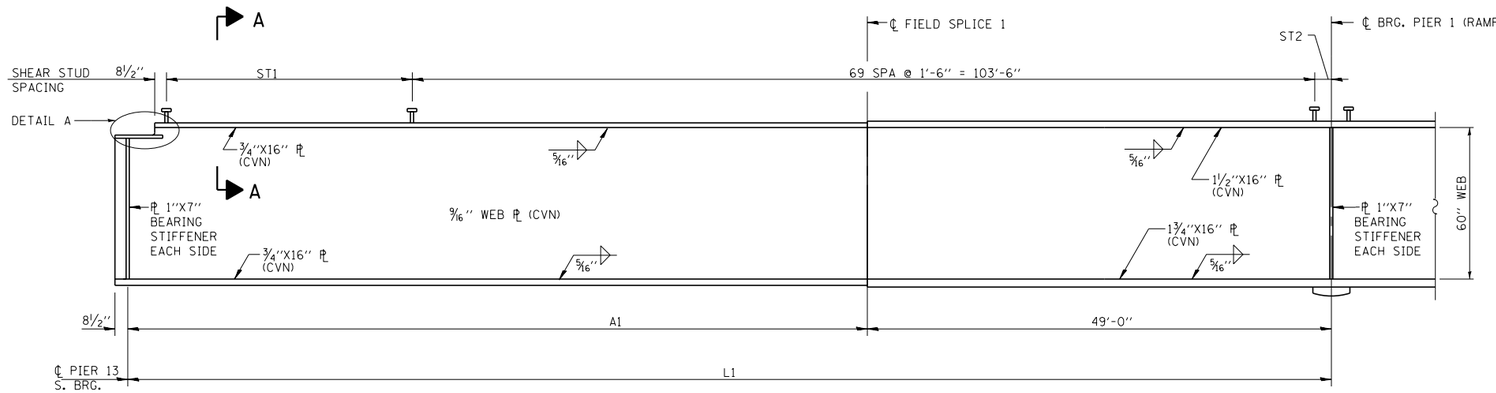


FRAMING PLAN

(SPAN 20)



DETAIL A



GIRDER ELEVATION

NOTES:

1. LOAD CARRYING COMPONENTS DESIGNATED "CVN" SHALL CONFORM TO THE IMPACT TESTING REQUIREMENT, ZONE 2.
2. ALL CROSS FRAMES SHALL BE INSTALLED AS STEEL IS ERECTED AND SECURED WITH ERECTION PINS AND BOLTS EXCEPT AS OTHERWISE NOTED. INDIVIDUAL CROSS FRAMES AT SUPPORTS MAY BE TEMPORARILY DISCONNECTED TO INSTALL BEARING ANCHOR RODS.
3. FOR SHEAR STUD LOCATIONS AT FIELD SPLICE, SEE SHEAR STUD DETAIL AT SPLICES, SHEET S-X.
4. FOR SECTION A-A AND BEARING STIFFENER DETAILS, SEE SHEET S-X.
5. IF THE CONTRACTOR ELECTS TO USE CANTILEVER FORMING BRACKETS ON THE EXTERIOR GIRDERS, 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 GIRDER AT EACH OF THESE ADDITIONAL BRACKET LOCATIONS.

TOP OF WEB ELEVATIONS*

LOCATION	BEAM 1	BEAM 2	BEAM 3	BEAM 4	BEAM 5	BEAM 6	BEAM 7
℄ S. BRG. PIER 13	638.65	638.48	638.39	638.30	638.20	638.12	638.04
℄ SPLICE 1	636.97	636.90	636.82	636.74	636.66	636.62	636.54
℄ BRG. PIER 1	635.80	635.72	635.65	635.57	635.48	635.45	635.37
℄ SPLICE 2	634.46	634.39	634.31	634.23	634.15	N/A	634.05
℄ BRG. SOUTH ABUT.	630.17	630.09	630.01	629.93	629.86	N/A	629.78

*FOR FABRICATION ONLY

CAMBER DIMENSIONS

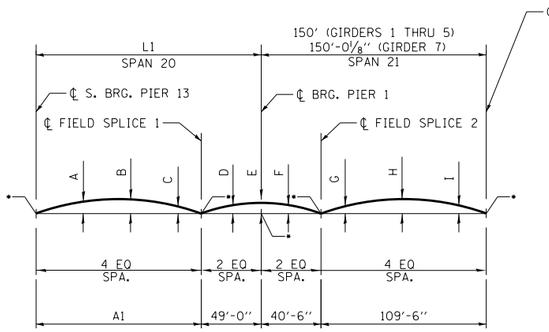
GIRDER	A	B	C	D	E	F	G	H	I
1	2⅛"	3¼"	2¼"	¾"	1"	¾"	4⅜"	6½"	4⅜"
2	2¼"	3½"	2¼"	¾"	⅞"	¾"	4½"	6⅝"	4½"
3	2¼"	3½"	2¼"	¾"	⅞"	¾"	4½"	6⅝"	4½"
4	2⅛"	3⅜"	2¼"	¾"	⅞"	¾"	4½"	6⅝"	4½"
5	2"	3⅛"	2¼"	¾"	⅞"	¾"	4½"	6⅝"	4½"
7	2"	3¼"	2¼"	⅛"	1⅛"	⅛"	4⅜"	6½"	4⅜"

GIRDER DIMENSIONS

GIRDER	A1	L1
1	81'-5½"	130'-5½"
2	80'-3¼"	129'-3¼"
3	79'-1"	128'-1"
4	77'-10¾"	126'-10¾"
5	76'-8⅝"	125'-8⅝"
6	75'-8⅛"	124'-8⅛"
7	74'-8"	123'-8"

WELDED SHEAR STUD SPACING

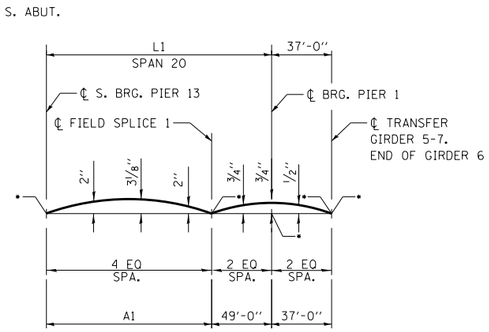
GIRDER	ST1	ST2
1	20 SPA @ 1'-2" = 23'-4"	1'-7½"
2	19 SPA @ 1'-2" = 22'-2"	1'-7¼"
3	18 SPA @ 1'-2" = 21'-0"	1'-7"
4	17 SPA @ 1'-2" = 19'-10"	1'-6¾"
5	16 SPA @ 1'-2" = 18'-8"	1'-6⅝"
6	15 SPA @ 1'-2" = 17'-6"	1'-8⅛"
7	14 SPA @ 1'-2" = 16'-4"	1'-10"



CAMBER DIAGRAM RAMP F2

GIRDERS 1 TO 5, 7

• SEE TABLE FOR TOP OF WEB ELEVATIONS AT PIERS, ABUTMENTS AND SPLICES



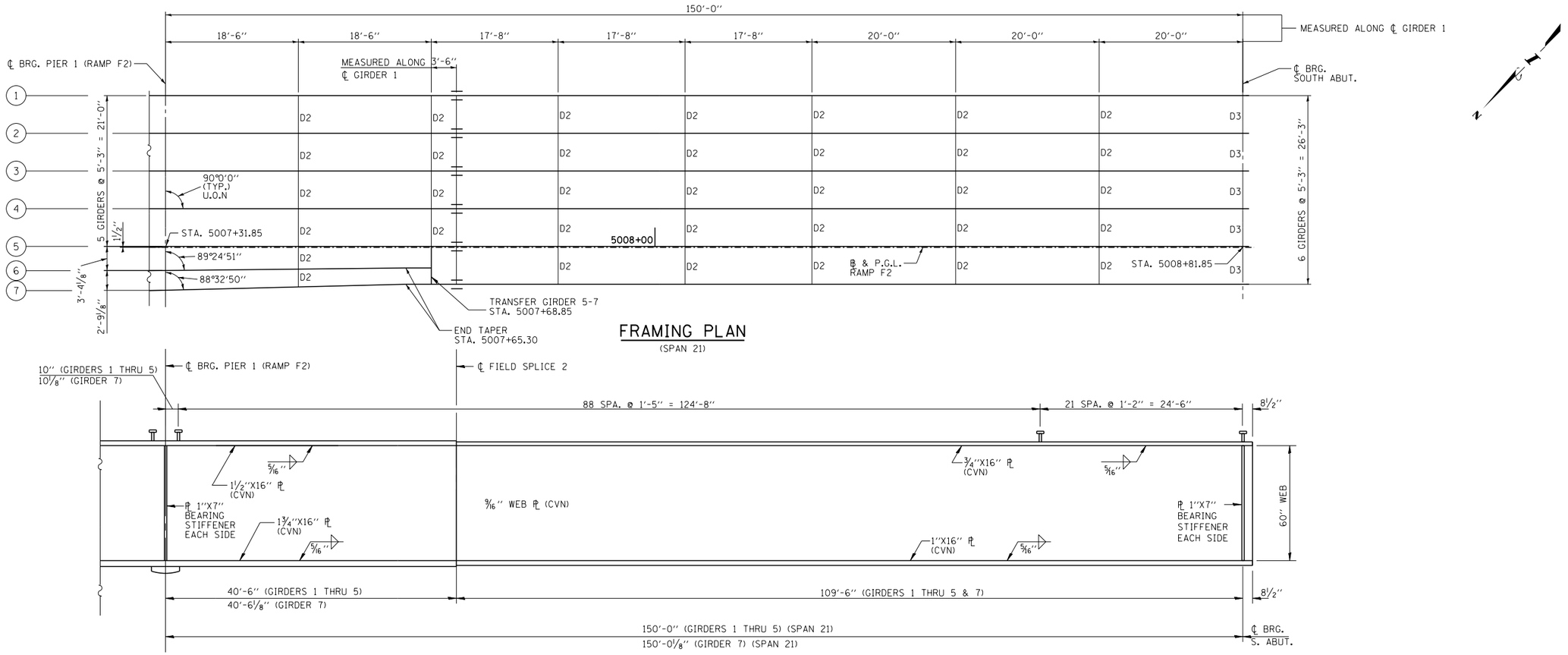
CAMBER DIAGRAM RAMP F2

(GIRDER 6)

• SEE TABLE FOR TOP OF WEB ELEVATIONS AT PIERS, ABUTMENTS AND SPLICES

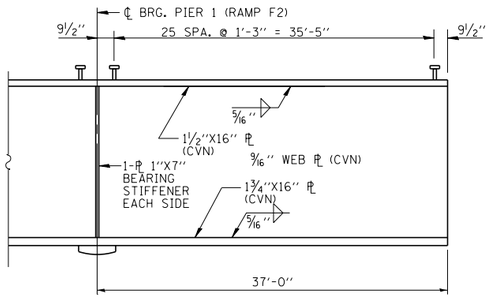
P:\60254057-294_55-91\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\Reference\EJM\4419-sht-frame-001.dgn
3/30/2020

DRAWN BY . . . . . MG	DATE . 3-11-2020	TranSmart/EJM 411 South Wells Street Suite 1000 Chicago, Illinois 60607	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	REVISIONS NO. / DATE / DESCRIPTION	CONTRACT I-19-4495
CHECKED BY . . . . . CK	SCALE . NONE				I-57 AT 294 RAMPS C, D, AND F2 S.N. 016-2101 UNIT 5-FRAMING PLAN - 1
					SHEET SC - 151 OF 234
					426 OF 606



FRAMING PLAN
(SPAN 21)

GIRDER 1 THRU 5 & 7 ELEVATION



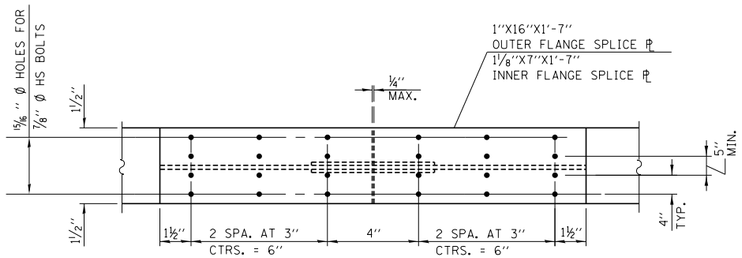
GIRDER 6 ELEVATION

NOTES:

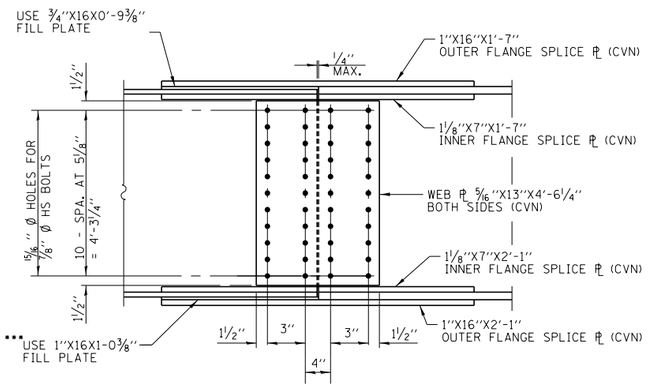
1. LOAD CARRYING COMPONENTS DESIGNATED "CVN" SHALL CONFORM TO THE IMPACT TESTING REQUIREMENT, ZONE 2.
2. ALL CROSS FRAMES SHALL BE INSTALLED AS STEEL IS ERECTED AND SECURED WITH ERECTION PINS AND BOLTS EXCEPT AS OTHERWISE NOTED. INDIVIDUAL CROSS FRAMES AT SUPPORTS MAY BE TEMPORARILY DISCONNECTED TO INSTALL BEARING ANCHOR RODS.
3. FOR SHEAR STUD LOCATIONS AT FIELD SPLICE, SEE SHEAR STUD DETAIL AT SPLICES, SHEET S-X.
4. FOR BEARING STIFFENER DETAILS, SEE SHEET S-X.
5. FOR TRANSFER GIRDER 5-7 DETAILS, SEE SHEET S-X.

DRAWN BY . . . . . MG	DATE . . . . . 3-11-2020 . .	TranSmart/EJM 411 South Wells Street Suite 1000 Chicago, Illinois 60607	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	REVISIONS NO. / DATE / DESCRIPTION	CONTRACT I-19-4495	SHEET SC - 152 OF 234
CHECKED BY . . . . CK	SCALE . . NONE				I-57 AT 294 RAMPS C, D, AND F2 S.N. 016-2101 UNIT 5-FRAMING PLAN - 2	427 . . . . . OF 606

P:\582540\57-294.5-91\STRUCTURAL\RESTART.2018\Ramp C over I-57 and I-294\References\EJM\4419-sht-fr-eme-002.dgn
3/30/2020



TOP FLANGE PLAN

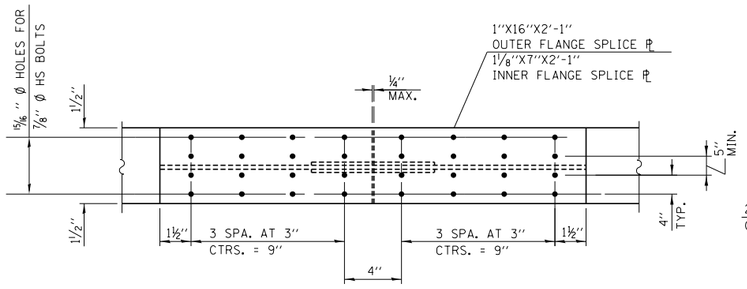


ELEVATION

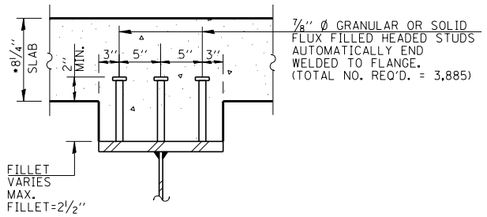
SPLICE DETAIL

(2 REQUIRED EACH GIRDER)

••• FILL PLATE ON BOTTOM FLANGE AT FIELD SPLICE 2 SHALL BE 3/4" THICK



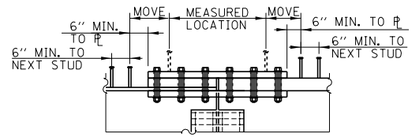
BOTTOM FLANGE PLAN



SECTION A-A

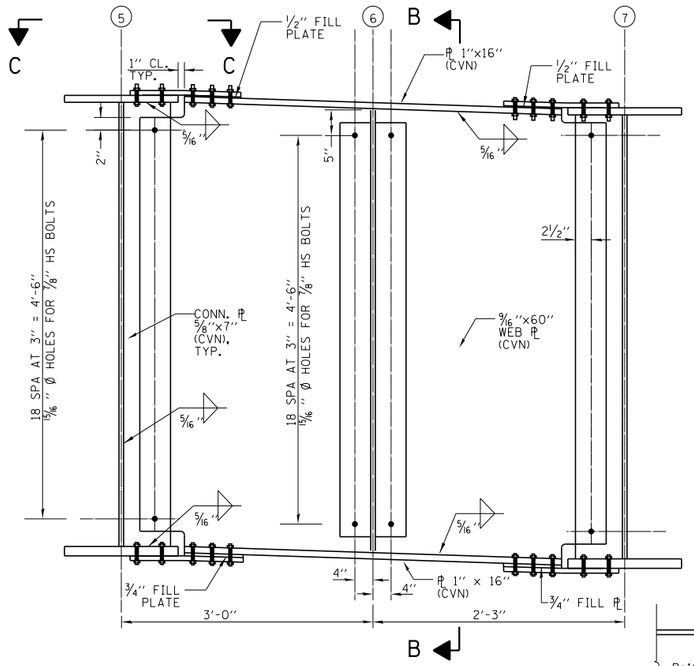
SEE FRAMING PLAN SHEET

• PRIOR TO GRINDING



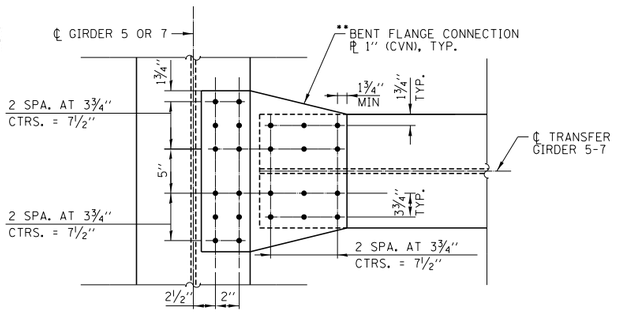
SHEAR STUD DETAIL AT SPLICES AND FLANGE TRANSITIONS

DO NOT PLACE SHEAR STUDS ON SPLICE PLATES. MOVE ROW OF STUDS TO 6" BEYOND NEAREST EDGE OF SPLICE PLATE FROM MEASURED LOCATION.



TRANSFER GIRDER 5-7 ELEVATION

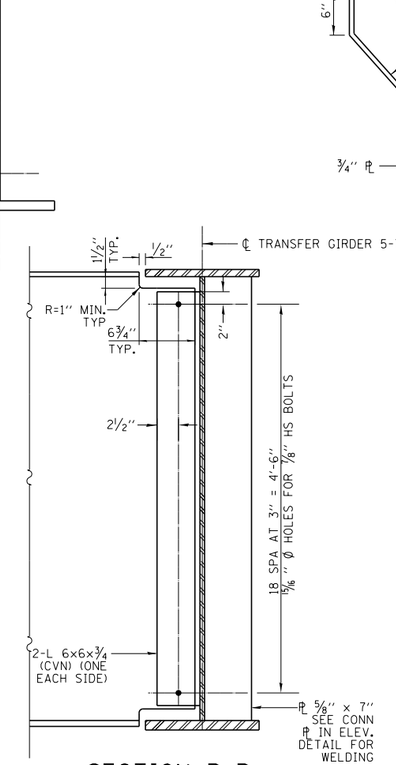
(LOOKING UPSTATION)



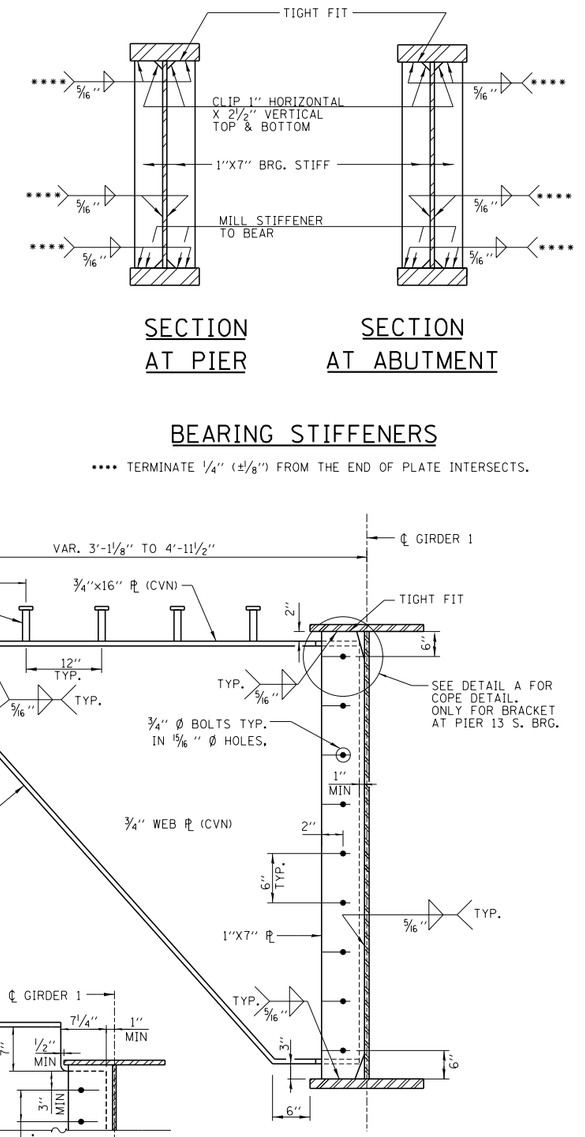
VIEW C-C

TOP & BOT.

•• BEND CONNECTION PLATE AT FLANGE EDGE TO ACCOMODATE SLOPE OF TRANSFER GIRDER



SECTION B-B

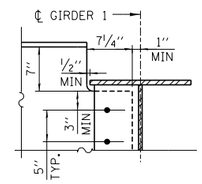


SECTION AT PIER

SECTION AT ABUTMENT

BEARING STIFFENERS

•••• TERMINATE 1/4" (±1/8") FROM THE END OF PLATE INTERSECTS.



DETAIL A

COPED BRACKET DETAIL AT PIER 13 S. BRG. STA. 5006+01.38

FASCIA BRACKET AT GIRDER 1

DIAPHRAGM CONNECTION PLATE NOT SHOWN FOR CLARITY. SEE STEEL CROSS FRAMES SHEET FOR DETAILS

NOTES:

1. LOAD CARRYING COMPONENTS DESIGNATED "CVN" SHALL CONFORM TO THE IMPACT TESTING REQUIREMENT, ZONE 2.
2. BOLTS SHALL BE 7/8" Ø HS BOLTS IN 15/16" Ø HOLES.

P:\60254057-294,5-9\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\Reference\EJM\4419-sht-steel details-001.dgn
3/30/2020

DRAWN BY . . . . MG . . . . .
CHECKED BY . . . . CK . . . . .

DATE . 3-11-2020 . . .
SCALE . NONE . . . .

TranSmart/EJM
411 South Wells Street Suite 1000
Chicago, Illinois 60607

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

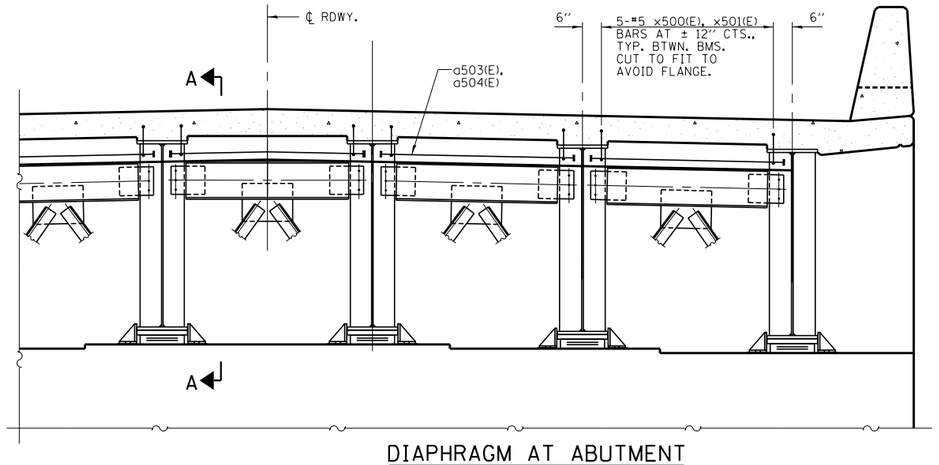
REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

I-57 AT 294 RAMPS C, D, AND F2
S.N. 016-2101
UNIT 5-STEEL DETAILS

SHEET SC - 153 OF 234

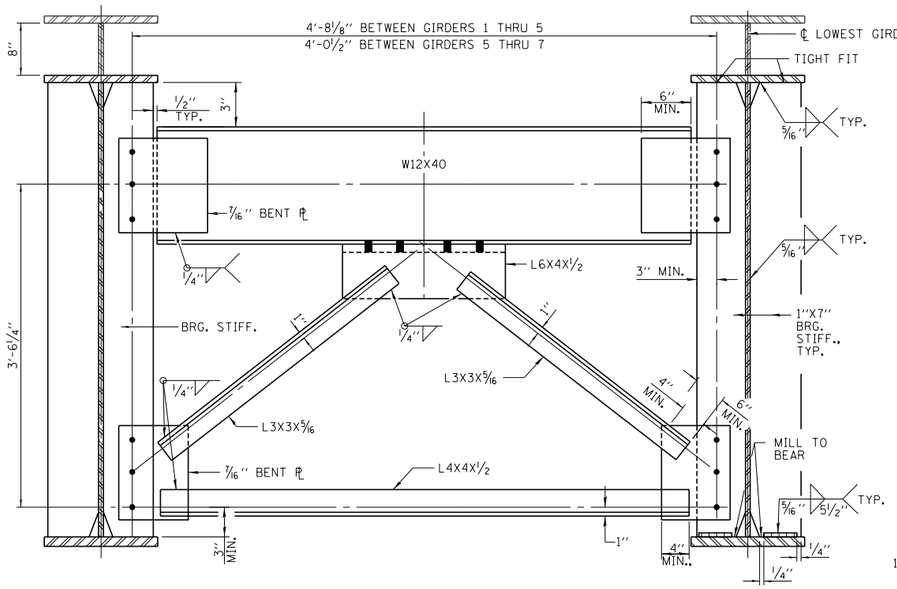
428 OF 606



DIAPHRAGM AT ABUTMENT

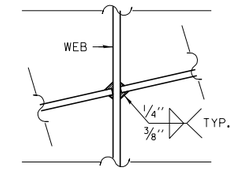
(FULL CROSS FRAME NOT SHOWN FOR CLARITY)

NOTES:
SEE SHEETS SC-78, SC-79 AND SC-80 FOR SUPERSTRUCTURE DETAILS AND BILL OF MATERIAL.



TYPICAL END CROSS FRAME - D1

(6 REQUIRED, D1)

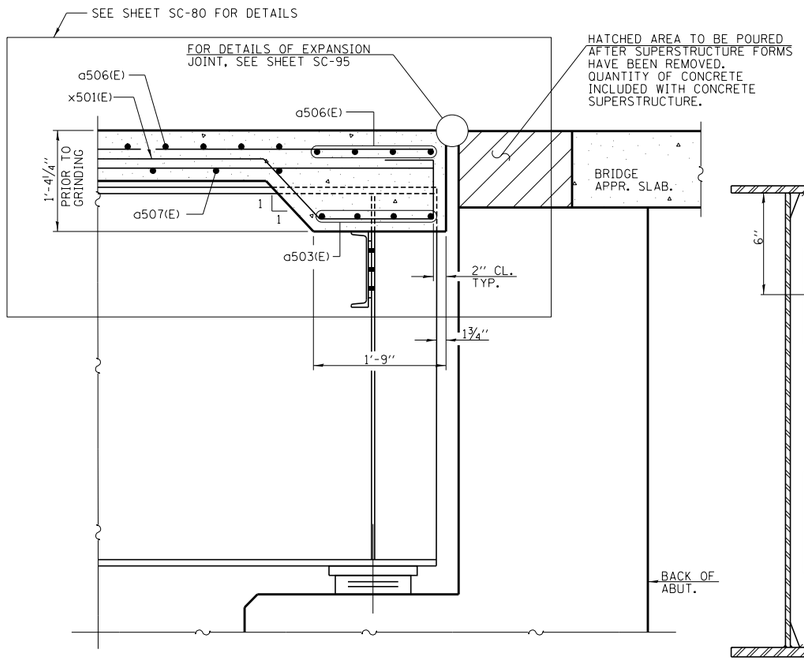


WEB WELD DETAILS

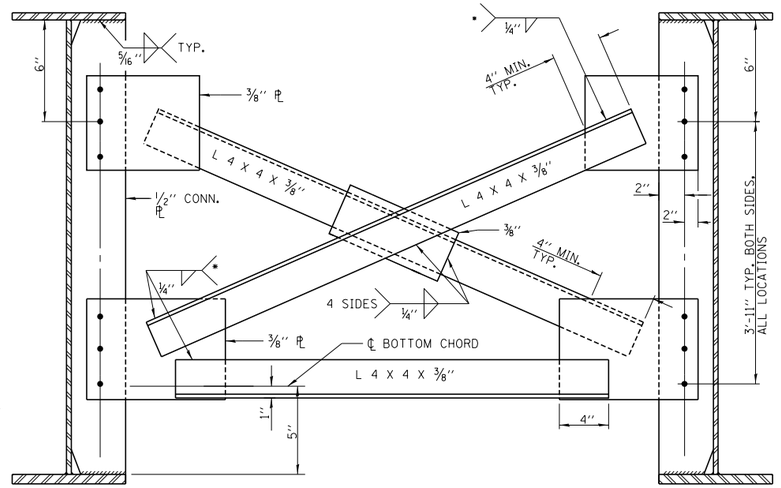
(AT SKEWED D1 CROSS FRAMES)

NOTES:

1. ALL CROSS FRAMES SHALL BE INSTALLED AS STEEL IS ERECTED AND SECURED WITH ERECTION PINS AND BOLTS EXCEPT AS OTHERWISE NOTED. INDIVIDUAL DIAPHRAGMS AT SUPPORTS MAY BE TEMPORARILY DISCONNECTED TO INSTALL BEARING ANCHOR RODS.
2. BOLTS SHALL BE 3/4" Ø IN HOLES 15/16" Ø.
3. TWO HARDENED WASHERS SHALL BE REQUIRED FOR EACH SET OF OVERSIZED HOLES.



SECTION A-A



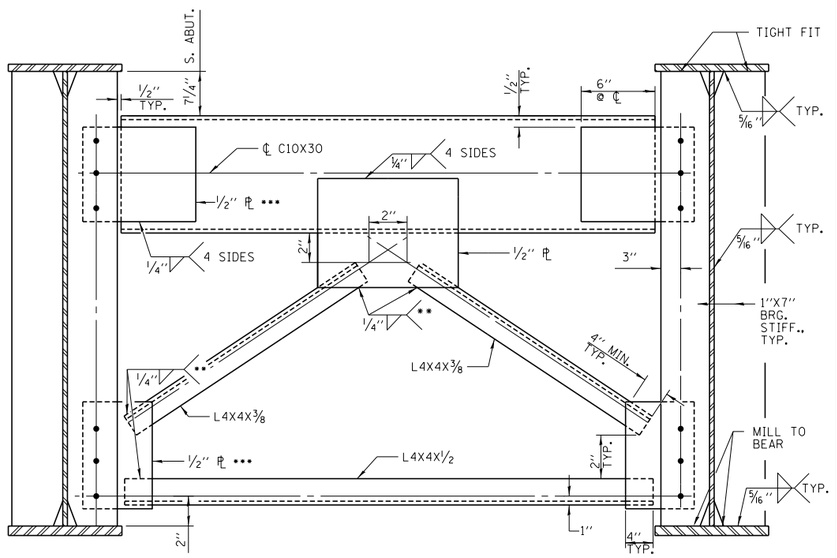
AT CONN. PL

AT INTERMEDIATE STIFFENER

TYPICAL INTERIOR CROSS FRAME - D2

(65 REQUIRED, D2)

* FILLET WELD ANGLES ALONG 3 SIDES ON ONE FACE OF GUSSET PLATE



TYPICAL END CROSS FRAME - D3

(5 REQUIRED, D3)
** WELD ON NEAR SIDE OF 1/2" PLATE
••• 1/2" PLATES TO BE BENT FOR SKEW AT PIER 13

NOTES:
PLACE DIAPHRAGM WITH CHANNEL FLANGES AND OUTSTANDING ANGLE LEGS OUTWARD FROM ABUTMENT BACKWALL.

P:\682540\57-294.5-H\STRUCTURAL\RESTART.2018\Ramp C over I-57 and I-294\Reference\EJM\4419-sht-steel cross frames-001.dgn
3/30/2020

DRAWN BY . . . . . MG . . . . . DATE . . 3-11-2020 . .
CHECKED BY . . . . CK . . . . . SCALE . . NONE . . . .

TranSmart/EJM
411 South Wells Street Suite 1000
Chicago, Illinois 60607

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

I-57 AT 294 RAMPS C, D, AND F2
S.N. 016-2101
UNIT 5-STEEL CROSS FRAMES

INTERIOR GIRDER MOMENT TABLE				
		0.4 SP. 20	PIER	0.6 SP. 21
Is	(in4)	32,270	59,335	35,836.00
Ic(n)	(in4)	76,607	67,429	86,674.00
Ic(3n)	(in^4)	55,073	67,429	61,552.00
Ic(cr)	(in^4)		66,539	
Ss	(in^3)	1,049	1,960	1,235.72
Sc(n)	(in^3)	1,507	2,068	1,750.99
Sc(3n)	(in^3)	1,339	2,068	1,562.63
Sc(cr)	(in^3)		1,961	
DC1	(k/')	4.07	4.07	4.07
MDC1	('k)	728	2,495	1,333.00
DC2	(k/')	0.16	0.16	0.19
MDC2	('k)	129	481	312.00
DW	(k/')	0.26	0.26	0.26
MDW	('k)	235	728	418.00
LLDF		0.45	0.45	0.44
M L + IM	('k)	1,440	1,836	1,685.00
Mu (Strength I)	('k)	3,944	8,025	5,632.00
Øf Mn	('k)			
fs DC1	(ksi)	8.32	15.27	12.94
fs DC2	(ksi)	1.16	2.94	2.40
fs DW	(ksi)	2.11	4.45	3.21
fs (L+IM)	(ksi)	11.47	11.23	11.55
fs (Service II)	(ksi)	26.50	37.28	33.56
0.95Rh Fyf	(ksi)	47.50	47.50	47.50
fs (Total)(Strength I)	(ksi)	35.08	49.11	44.20
Øf Fn	(ksi)	50.00	50.00	50.00
Vf	(k)	38.29	52.50	42.74

GIRDER 6 MOMENT TABLE			
		0.4 SP. 20	PIER
Is	(in4)	32,270	59,335
Ic(n)	(in4)	68,866	63,747
Ic(3n)	(in^4)	49,864	63,747
Ic(cr)	(in^4)	-	63,424
Ss	(in^3)	1,049	1,960
Sc(n)	(in^3)	1,441	2,019
Sc(3n)	(in^3)	1,280	2,019
Sc(cr)	(in^3)	-	1,929
DC1	(k/')	3.84	3.84
MDC1	('k)	1,150	432
DC2	(k/')	0.16	0.16
MDC2	('k)	121	444
DW	(k/')	0.20	0.15
MDW	('k)	218	362
LLDF		0.38	0.34
M L + IM	('k)	1,418	1,758
Mu (Strength I)	('k)	4,397	4,715
Øf Mn	('k)		
fs DC1	(ksi)	13.15	2.65
fs DC2	(ksi)	1.13	2.76
fs DW	(ksi)	2.04	2.25
fs (L+IM)	(ksi)	11.81	10.93
fs (Service II)	(ksi)	31.68	21.88
0.95Rh Fyf	(ksi)	47.50	47.50
fs (Total)(Strength I)	(ksi)	41.59	29.27
Øf Fn	(ksi)	50.00	50.00
Vf	(k)	37.08	51.37

GIRDER REACTION TABLE									
		PIER 13			PIER 1			S. ABUT.	
		INTERIOR	EXTERIOR	GIRDER 6	INTERIOR	EXTERIOR	GIRDER 6	INTERIOR	EXTERIOR
LLDF		0.64	0.64	0.59	0.62	0.62	0.48	0.62	0.62
RDC1	(k)	36.6	40.0	32.6	160.6	153.2	115.0	48.6	45.6
RDC2	(k)	5.3	5.5	5.2	24.3	23.7	23.0	8.7	8.6
RDW	(k)	11.3	13.2	9.9	47.1	44.7	26.6	14.8	13.8
R(L + IM)	(k)	82.7	82.8	79.5	159.1	159.3	128.1	82.0	82.0
RTotal	(k)	135.9	141.5	127.1	391.1	380.9	292.7	154.0	149.9

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^4 AND IN^3).

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) DUE TO SHORT-TERM COMPOSITE LIVE LOADS (IN^4 AND IN^3).

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) DUE TO LONG-TERM COMPOSITE (SUPERIMPOSED) DEAD LOADS (IN^4 AND IN^3).

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^4 AND IN^3).

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.).

LLDF: LIVE LOAD DISTRIBUTION FACTOR

$M_{L + IM}$: 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

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 MDC2 / Sc(cr), AS APPLICABLE.

fs (L+IM): UN-FACTORED STRESS AT EDGE OF FLANGE FOR CONTROLLING STEEL FLANGE DUE TO VERTICAL COMPOSITE LIVE PLUS IMPACT LOADS AS CALCULATED BELOW (KSI).
$M_{L + IM}$ / Sc(n) OR MDC2 / Sc(cr), AS APPLICABLE.

fs (Service II): SUM OF STRESSES AS COMPUTED BELOW (KSI).
fsDC1 + fsDC2 + fsDW + 1.3 fs

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

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 COMPOSITE PORTION OF SPAN COMPUTED ACCORDING TO ARTICLE 6.10.10.

P:\60254501\57-294,5-9\STRUCTURAL\RESTART_2019\Ramp C over I-57 and I-294\Reference\EJM\4419-sht-moment and reaction tables-001.dgn
3/30/2020

DRAWN BY . . . . . MG . . . . . DATE . 3-11-2020 . .
CHECKED BY . . . . PF . . . . . SCALE . NONE . . . .

TranSmart/EJM
411 South Wells Street Suite 1000
Chicago, Illinois 60607

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

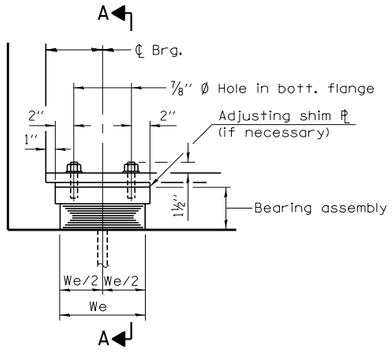
REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

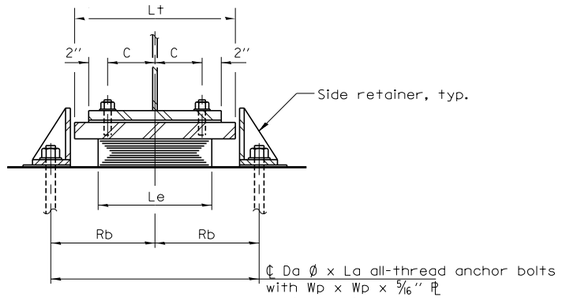
I-57 AT 294 RAMPS C, D, AND F2
S.N. 016-2101
UNIT 5-GIRDER TABLES

SHEET SC - 155 OF 234

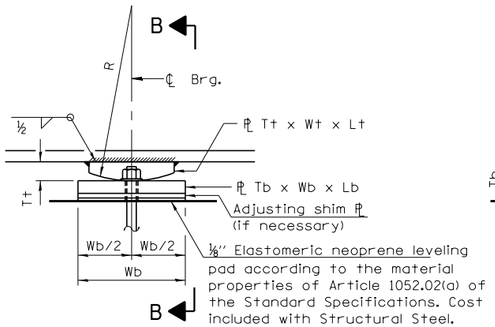
430 OF 606



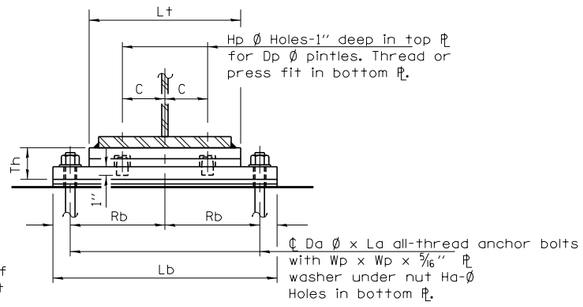
ELEVATION AT ABUT.



SECTION A-A



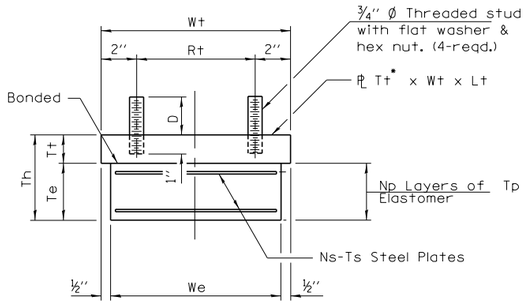
ELEVATION AT PIER



SECTION B-B

TYPE I ELASTOMERIC EXP. BRG.

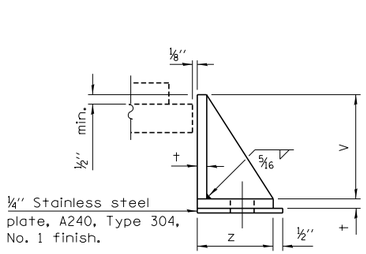
FIXED BEARING



BEARING ASSEMBLY

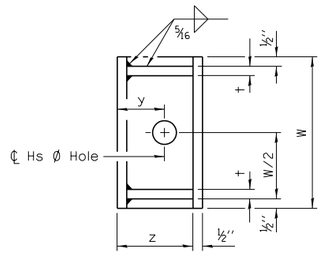
Note:
Shim plates shall not be placed under bearing assembly.

* AT UNIT 5, S. ABUTMENT, TAPER TOP PLATE 2⅛" TO 3" TO FOLLOW ROADWAY PROFILE.

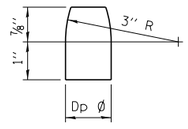


SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.



PINTLE



SHIM PLATES

LOCATION	GIRDER	THICKNESS
PIER 3	1	1⅛"
PIER 3	2	⅞"
PIER 3	3	¾"
PIER 3	4	½"
PIER 3	5	¼"
PIER 3	6	11/16"
UNIT 5, PIER 1	6	¼"

The cost of the fill plates is included in the cost of the bearings. Fill plates shall match the dimensions and the material used for the bottom bearing plates.

FIXED BEARING SCHEDULE

LOCATION	GIRDERS	NO. REQ'D	Th (IN.)	TOP PLATE			BOTTOM PLATE			PINTLES			ANCHOR BOLTS					
				Wt (IN.)	Lt (IN.)	Tt (IN.)	Wb (IN.)	Lb (IN.)	Tb (IN.)	Dp (IN.)	Hp (IN.)	C (IN.)	Rb (IN.)	Da (IN.)	La (IN.)	Ha (IN.)	Wp (IN.)	GRADE
UNIT 1, PIER 3	1-7	7	4⅛	9	19½	2¼	9½	29	1⅞	1¼	1½	4½	12¾	1	12	1½	2¼	F 1554 GR. 55
UNIT 5, PIER 1	1-7	7	4¾	9	17⅝	2⅞	9	24¾	1⅞	1¼	1½	4½	10⅝	1	12	1½	2¼	F 1554 GR. 36

TYPE 1 ELASTOMERIC BEARING SCHEDULE

LOCATION	GIRDERS	NO. REQ'D	** Th (IN.)	ELASTOMER							TOP PLATE						SIDE RETAINER						ANCHOR BOLTS				
				We (IN.)	Le (IN.)	Te (IN.)	Tp (IN.)	Np	Ts (IN.)	Ns (IN.)	Wt (IN.)	Lt (IN.)	Tt (IN.)	Rt (IN.)	D (IN.)	C (IN.)	V (IN.)	z (IN.)	y (IN.)	W (IN.)	t (IN.)	Hs (IN.)	Rb (IN.)	Da (IN.)	La (IN.)	Wp (IN.)	GRADE
UNIT 1, PIER 4	1-5, 7	6	5⅜	15	24	2⅝	¾	3	3/16	2	16	26	2¾	12	3¼	7	5⅜	9⅜	2⅛	16	½	1¼	15¼	1	12	2¼	F 1554 GR. 55
UNIT 1, PIER 5	1-5, 7	6	7 9/16	20	24	4 13/16	13/16	5	3/16	4	21	26	2¾	17	3½	7	7 9/16	10⅜	2⅜	21	½	1½	15½	1¼	15	2¾	F 1554 GR. 55
UNIT 5, PIER 13	1-7	7	5 7/16	14	22	3 5/16	11/16	4	3/16	3	15	24	2⅛	11	2½	6	5 5/16	8¾	1⅞	14	½	1	14	¾	12	2	F 1554 GR. 36
*UNIT 5, S. ABUTMENT	1-5, 7	6	5⅞	14	22	3 5/16	11/16	4	3/16	3	15	24	2⅛	11	2¾	6	5 5/16	8¾	1⅞	14	½	1	14	¾	12	2	F 1554 GR. 36

** AT ℄ BRG.

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type I	Each	25
Anchor Bolts ¾"	Each	26
Anchor Bolts 1"	Each	40
Anchor Bolts 1¼"	Each	12

Notes:
Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternative 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 stainless steel plates shall be included in the cost of elastomeric bearing assembly, Type I.

The structural steel for fixed and elastomeric bearing assembly shall confirm to the requirements of AASHTO M270 Grade 50.

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.

All bearing plates, side retainers, anchor bolts, nuts, washers and pintles shall be galvanized according to AASHTO M111 or M232 as applicable.

Two ⅛" adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.

I-2E-1

6-15-2019

DRAWN BY . . . . JM . . . . . DATE . 4-3-2020 . . .

CHECKED BY . . . SP . . . . . SCALE . NONE . . . . .

TY·LIN INTERNATIONAL

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

REVISIONS		
NO.	DATE	DESCRIPTION

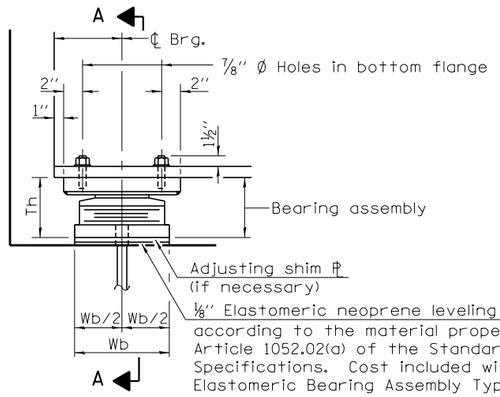
CONTRACT I-19-4495

I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
TYPE I ELASTOMERIC BEARING

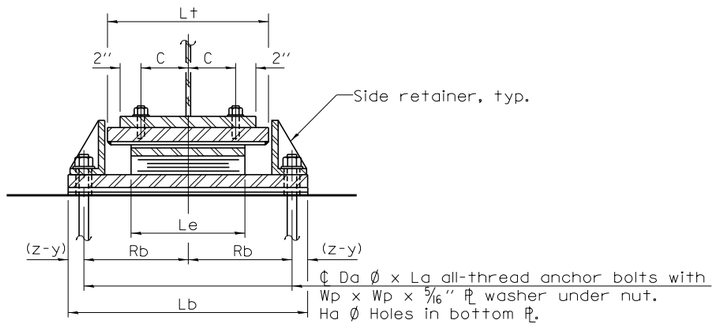
SHEET SC - 156 OF 234

431 OF 606

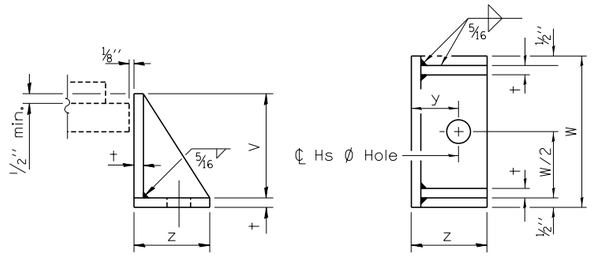
P:\62524057-294.5-91\STRUCTURAL_RESTART_2019\Ramp C over I-57 and I-294\016201.5.E1eBearing1.dgn
3/30/2020



ELEVATION AT ABUT.



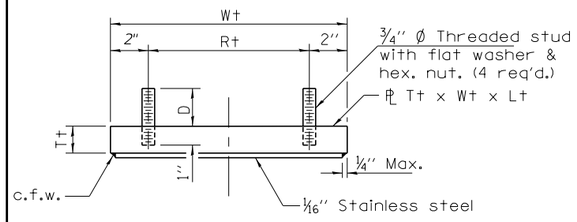
SECTION A-A



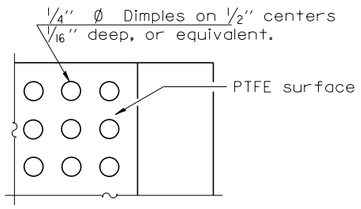
SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.

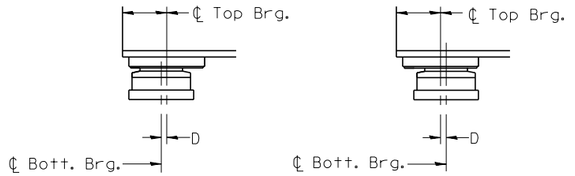
TYPE II ELASTOMERIC EXP. BRG.



TOP BEARING ASSEMBLY



PLAN-PTFE SURFACE



BELOW 50℉. ABOVE 50℉.

D=⅛" per each 100' of expansion for every 15° temp. change from the normal temp. of 50℉.

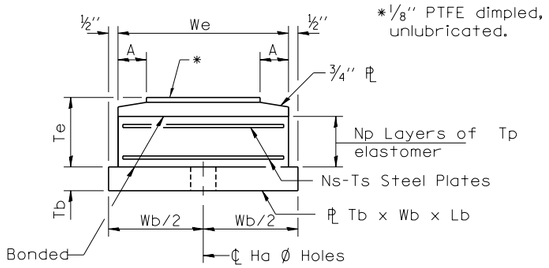
EXPANSION BEARING ORIENTATION

The above diagrams are for informational purposes only to show the amount of expected offset "D" for the current temperature in the field.

SHIM PLATES

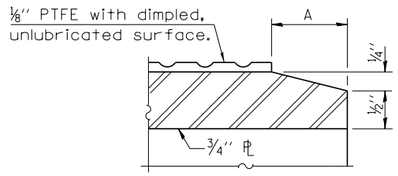
LOCATION	GIRDER	THICKNESS
PIER 6, UNIT 1	4	1 3/8"

The cost of the fill plates is included in the cost of the bearings. Fill plates shall match the dimensions and the material used for the bottom bearing plates.



*⅛" PTFE dimpled, unlubricated.

BOTTOM BEARING ASSEMBLY



SECTION THRU PTFE

Notes:

Side retainers and leveling pad required for the elastomeric bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type II.

The ⅛" PTFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces.

Bonding of ⅛" PTFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.

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.

All Bearing plates shall be AASHTO M 270, Grade 50 and shall be galvanized in accordance with Special Provisions.

TYPE II ELASTOMERIC BEARING SCHEDULE

LOCATION	GIRDERS	NO. REQ'D	Th	ELASTOMER							TOP PLATE						BOTTOM PLATE				SIDE RETAINER						ANCHOR BOLTS					
			(IN.)	We (IN.)	Le (IN.)	Te (IN.)	Tp (IN.)	Np	Ts (IN.)	Ns (IN.)	Wt (IN.)	Lt (IN.)	Tt (IN.)	Rt (IN.)	D (IN.)	C (IN.)	Wb (IN.)	Lb (IN.)	Tb (IN.)	A (IN.)	V (IN.)	z (IN.)	y (IN.)	W (IN.)	t (IN.)	Hs (IN.)	Rb (IN.)	Da (IN.)	La (IN.)	Ha (IN.)	Wp (IN.)	GRADE
UNIT 1, PIER 6, E. BRGS.	1-5, 7	6	8¾	12	18	5 3/16	9/16	6	3/16	5	15	20	1⅞	11	2½	7	13	34¾	1⅝	1½	8¾	7¼	2⅛	10	½	1¼	12¼	1	12	1½	2¼	F 1554 GR. 55

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type II	Each	6
Anchor Bolts 1"	Each	12

I-2E-2

6-15-2019

DRAWN BY . . . JM . . . .

CHECKED BY . . . SP . . . .

DATE . 4-3-2020 . . .

SCALE NONE . . . . .

T·Y·LIN INTERNATIONAL

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

REVISIONS		
NO.	DATE	DESCRIPTION

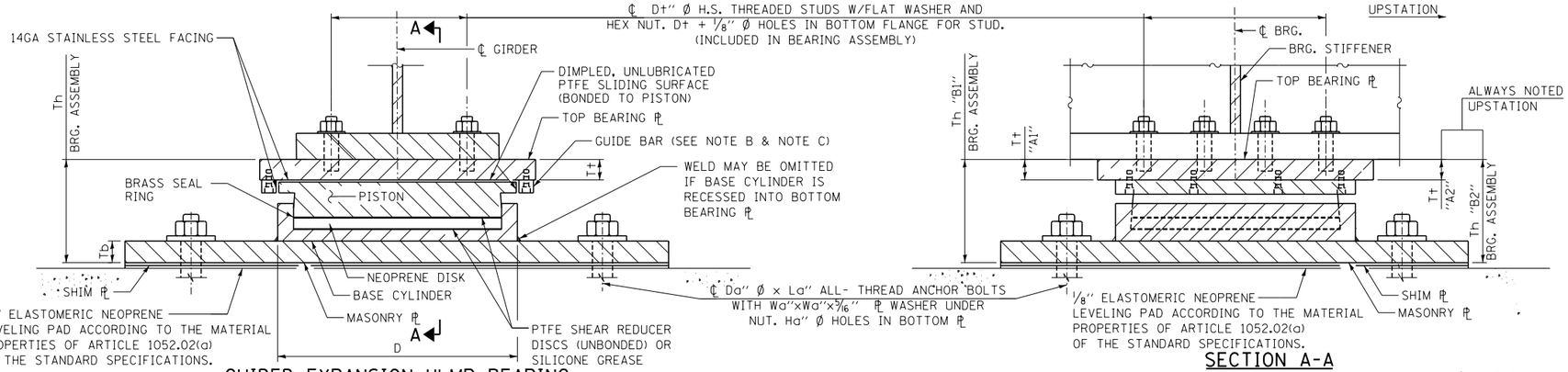
CONTRACT I-19-4495

I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
TYPE II ELASTOMERIC BEARING

SHEET SC - 157 OF 234

432 OF 606

P:\682540\57-294.5-9\STRUCTURAL\RESTART.2018\Ramp C over I-57 and I-294\016210\1.5.ElaBearingT2.dgn
3/30/2020



GUIDED EXPANSION HLMR BEARING

SECTION A-A

NOTES:

1. THE STRUCTURAL STEEL PLATES OF THE BEARING ASSEMBLY SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M270 GRADE 50, AND SHALL BE GALVANIZED , SEE SPECIAL PROVISIONS
2. COST OF TOP AND BOTTOM BEARING PLATES, 1/8" ELASTOMERIC NEOPRENE LEVELING PAD, ADJUSTING SHIMS AND THREADED STUDS WITH WASHERS SHALL BE INCLUDED WITH "HIGH LOAD MULTI-ROTATIONAL BEARINGS, GUIDED EXPANSION, OF THE SIZE AND TYPE SPECIFIED".
3. ANCHOR BOLTS SHALL BE PLACED IN HOLES DRILLED IN THE CONCRETE THROUGH HOLES IN THE BOTTOM BEARING PLATE AFTER MEMBERS ARE IN PLACE.
4. DRILLED AND SET ANCHOR BOLTS SHALL BE INSTALLED ACCORDING TO ARTICLE 521.06 OF THE STANDARD SPECIFICAITONS.
5. TWO 1/8" ADJUSTING SHIMS SHALL BE PROVIDED FOR EACH BEARING IN ADDITION TO ALL OTHER PLATES OF SHIMS AND PLACED AS SHOWN ON BEARING DETAILS.
6. THE 1/8" PTFE SHEET SHALL BE BONDED DIRECTLY TO THE PISTON WITH A TWO-COMPONENT, MEDIUM VISCOSITY EPOXY RESIN, CONFORMING TO THE REQUIREMENTS OF THE FEDERAL SPECIFICATION MMM-A-134, TYPE I. THE BOND AGENT SHALL BE APPLIED ON THE FULL AREA OF THE CONTACT SURFACE.
7. FOR BEARING ORIENTATION DETAILS SEE SHEET SC-100, SC-113, SC-114, SC-133 AND SC-144.
8. IF THE BASE CYLINDER IS RECESSED INTO THE BOTTOM BEARING PLATE, THE THICKNESS OF THE BOTTOM BEARING PLATE SHALL BE Tb PLUS THE DEPTH OF THE RECESS.

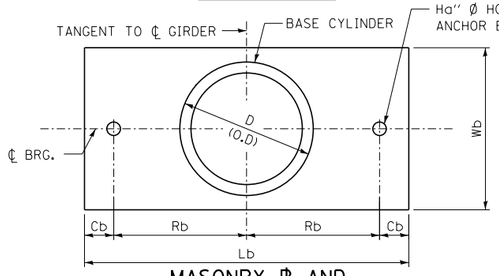
FILL PLATES

LOCATION	GIRDER	THICKNESS
PIER 17, UNIT 3	1	7/8"
PIER 17, UNIT 3	2	7/8"
PIER 17, UNIT 3	3	7/8"
PIER 17, UNIT 3	4	7/8"
PIER 17, UNIT 3	5	1/4"
PIER 17, UNIT 3	6	1/4"
PIER 13, UNIT 3	6A	5/8"

FILL PLATES

LOCATION	GIRDER	THICKNESS
PIER 6, UNIT 2	1	1 1/2"
PIER 6, UNIT 2	2	1 1/4"
PIER 6, UNIT 2	3	5/8"
PIER 6, UNIT 2	4	1 7/8"
PIER 6, UNIT 2	5	3"
PIER 6, UNIT 2	10	1 1/2"
PIER 6, UNIT 2	11	1 1/4"

The cost of the fill plates is included in the cost of the bearings. Fill plates shall match the dimensions and the material used for the bottom bearing plates.



MASONRY PL AND BASE CYLINDER PLAN (GIRDER 6A ONLY)

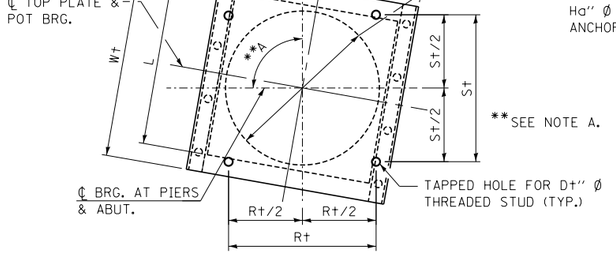
BILL OF MATERIAL

ITEM	UNIT	QUANTITY
HIGH LOAD MULTI-ROTATIONAL BEARINGS, GUIDED EXPANSION - 650K	EACH	6
HIGH LOAD MULTI-ROTATIONAL BEARINGS, GUIDED EXPANSION - 600K	EACH	6
HIGH LOAD MULTI-ROTATIONAL BEARINGS, GUIDED EXPANSION - 450K	EACH	17
HIGH LOAD MULTI-ROTATIONAL BEARINGS, GUIDED EXPANSION - 400K	EACH	23
HIGH LOAD MULTI-ROTATIONAL BEARINGS, GUIDED EXPANSION - 350K	EACH	7
HIGH LOAD MULTI-ROTATIONAL BEARINGS, GUIDED EXPANSION - 250K	EACH	12
HIGH LOAD MULTI-ROTATIONAL BEARINGS, GUIDED EXPANSION - 200K	EACH	37
HIGH LOAD MULTI-ROTATIONAL BEARINGS, NON-GUIDED EXPANSION - 50K	EACH	1
ANCHOR BOLTS, 1"	EACH	344
ANCHOR BOLTS, 1 1/4"	EACH	92

NOTE A:
FOR ANGLES "A" & "B" SEE BEARING ORIENTATION DETAILS ON SHEETS SC-100, SC-113, SC-114, SC-133 AND SC-144

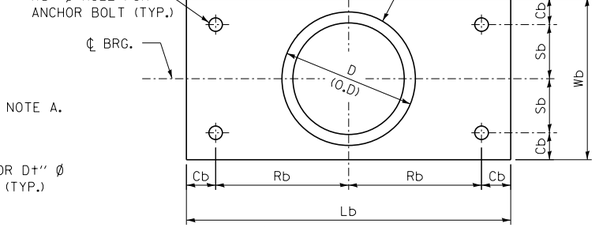
NOTE B:
AS ALTERNATIVES TO THE BOLTED CONNECTION SHOWN, THE GUIDE BARS MAY BE CONNECTED TO THE TOP BEARING PLATE BY GROOVE WELDS OR THE GUIDE BARS AND THE TOP BEARING PLATE MAY BE FABRICATED AS A SINGLE PIECE.

NOTE C:
OMIT GUIDE BARS ON PIER 13, UNIT 3, GIRDER 6A

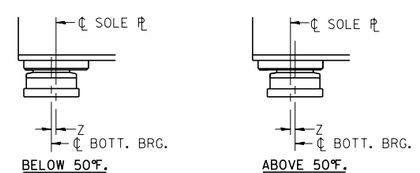


TOP BEARING PL - PISTON PLAN

(4 THREADED STUDS REQUIRED AT EACH BEARING)



MASONRY PL AND BASE CYLINDER PLAN



SETTING ANCHOR BOLTS AT EXP. BRG.

Z=1/8" PER EACH 100° OF EXPANSION FOR EVERY 15° TEMP. CHANGE FROM THE NORMAL TEMP. OF 50°F.

HIGH LOAD MULTI-ROTATIONAL EXPANSION BEARING SCHEDULE

*DOES NOT INCLUDE IMPACT.

LOCATION	QUANTITY EACH	REACTION FOR PAY ITEM (KIPS)	SERVICE VERTICAL DESIGN LOAD * (KIPS)	LATERAL DESIGN LOAD (KIPS)	TOTAL REQUIRED MOVEMENT (IN.)	MAX. FACTORED STRENGTH DESIGN ROTATION (RADIANS)	D (IN.)	L (IN.)	Th (IN.)		TOP PLATE / BEARING ASSEMBLY						MASONRY PLATE						ANCHOR BOLTS				
									B1	B2	W† (IN.)	L† (IN.)	T† (IN.) A1	T† (IN.) A2	D† (IN.)	R† (IN.)	S† (IN.)	Wb (IN.)	Lb (IN.)	Tb (IN.)	Rb (IN.)	Sb (IN.)	Cb (IN.)	Da (IN.)	La (IN.)	Wa (IN.)	Ha (IN.)	ANCHOR TYPE
EAST ABUT.	7	200	168	16	4 1/8	0.02	10	10	7 3/8	7 3/8	16 1/8	15 1/2	1 1/2	1 1/2	3/4	9 1/2	10 1/2	12	27 1/2	2	12	4 1/4	1 3/4	1	12	2 1/4	1 1/2	F 1554 GR. 55
PIER 1	7	400	384	48	2 3/4	0.02	14 1/2	14 1/2	9 3/8	9 3/8	19 1/2	20 1/2	2 1/4	2 1/4	1	15 1/2	14 1/2	16 1/2	31	2 1/4	13 3/4	6 1/2	1 3/4	1	12	2 1/4	1 1/2	F 1554 GR. 55
PIER 2	7	350	338	39	1 3/8	0.02	13 1/2	13 1/2	9 1/8	9 1/8	17	19 1/4	2 1/4	2 1/4	1	14	12 1/2	15 1/2	29 1/4	2 1/4	12 7/8	6	1 3/4	1	12	2 1/4	1 1/2	F 1554 GR. 55
PIER 6, UNIT 2	7	200	175	17	4 1/2	0.02	10	10	7 3/8	7 3/8	16 1/2	15 1/2	1 1/2	1 1/2	3/4	10 1/2	11 1/2	12	28	2	12 1/4	4 1/4	1 3/4	1	12	2 1/4	1 1/2	F 1554 GR. 55
PIER 7	7	450	425	53	3	0.02	15 3/8	15 3/8	9 7/8	9 7/8	20 1/2	22	2 1/4	2 1/4	1	14	15	17 1/2	31 1/2	2 1/4	14	7	1 3/4	1	12	2 1/4	1 1/2	F 1554 GR. 55
PIER 8	7	400	384	45	1 1/2	0.02	14 1/2	14 1/2	9 3/8	9 3/8	18	20 1/2	2 1/4	2 1/4	1	14	12	16 1/2	31 1/2	2 1/4	14	6 1/2	1 3/4	1	12	2 1/4	1 1/2	F 1554 GR. 55
PIER 11	9	400	379	45	1 5/8	0.02	14 1/2	14 1/2	9 3/8	9 3/8	18	20 1/2	2 1/4	2 1/4	1	14	12	16 1/2	31 1/2	2 1/4	14	6 1/2	1 3/4	1	12	2 1/4	1 1/2	F 1554 GR. 55
PIER 12	10	450	445	55	3 1/8	0.02	15 3/8	15 3/8	10 3/8	10 3/8	20 1/2	22	2 1/2	2 1/2	1	14	14	17 1/2	35	2 1/2	15 3/4	7	1 3/4	1	12	2 1/4	1 1/2	F 1554 GR. 55
PIER 13, UNIT 2	11	200	192	21	4 5/8	0.02	10	10	7 5/8	7 5/8	16 3/4	15 1/2	1 1/2	1 1/2	3/4	9	10	12	27 1/2	2 1/4	11 1/2	3 3/4	2 1/4	1 1/4	15	2 3/4	1 3/4	F 1554 GR. 55
PIER 13, UNIT 3	6	200	195	21	3 5/8	0.02	10	10	7 3/8	7 3/8	15 1/2	15 1/2	1 1/2	1 7/8	3/4	9 1/2	9 1/2	12	27 1/2	2	12	4 1/4	1 3/4	1	12	2 1/4	1 1/2	F 1554 GR. 55
PIER 13, UNIT 3 GIRDER 6A	1	50	36	3	3 1/2	0.02	5 3/4	5 3/4	6 1/2	6 1/2	11 1/2	10	1 1/2	1 1/2	3/4	4 1/2	6 1/2	8	21 1/2	1 1/8	9	-	1 3/4	1	12	2 1/4	1 1/2	F 1554 GR. 55
PIER 14	6	600	575	80	2	0.02	17 3/4	17 3/4	11	11 1/2	21 3/4	24	2 3/4	3 1/4	1 1/4	16	16	19 3/4	34 1/2	2 1/4	15	7 5/8	2 1/4	1 1/4	15	2 3/4	1 3/4	F 1554 GR. 55
PIER 16	6	650	611	86	2	0.02	18 1/2	18 1/2	11 1/8	11 1/8	22 1/2	24 1/4	2 3/4	2 3/4	1 1/4	14	14 1/4	20 1/2	36 1/2	2 1/4	16	8	2 1/4	1 1/4	15	2 3/4	1 3/4	F 1554 GR. 55
PIER 17, UNIT 3	6	250	219	25	3 3/4	0.02	11 1/2	11 1/2	8 3/8	7 3/4	17 1/2	17	2 1/4	1 5/8	3/4	10 1/2	10 3/4	13 1/2	28 1/2	2	12 1/2	5	1 3/4	1	12	2 1/4	1 1/2	F 1554 GR. 55
PIER 17, UNIT 4	6	200	174	18	1 5/8	0.02	10	10	7 7/8	7 3/8	13 3/4	15 1/2	2	1 1/2	3/4	10 3/4	8 3/4	12	27 1/2	2	12	4 1/4	1 3/4	1	12	2 1/4	1 1/2	F 1554 GR. 55
WEST ABUT.	6	250	231	28	1 7/8	0.02	11 1/2	11 1/2	8 3/4	7 7/8	15 1/2	17	2 5/8	1 3/4	3/4	11 3/4	10 1/4	13 1/2	30 1/2	2	12	5	1 3/4	1	12	2 1/4	1 1/2	F 1554 GR. 55

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3/30/2020

DRAWN BY . . . . PAK . . . . . DATE . 4-3-2020 . . .
CHECKED BY . . . SP . . . . . SCALE . NONE . . . . .

TY·LIN INTERNATIONAL

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

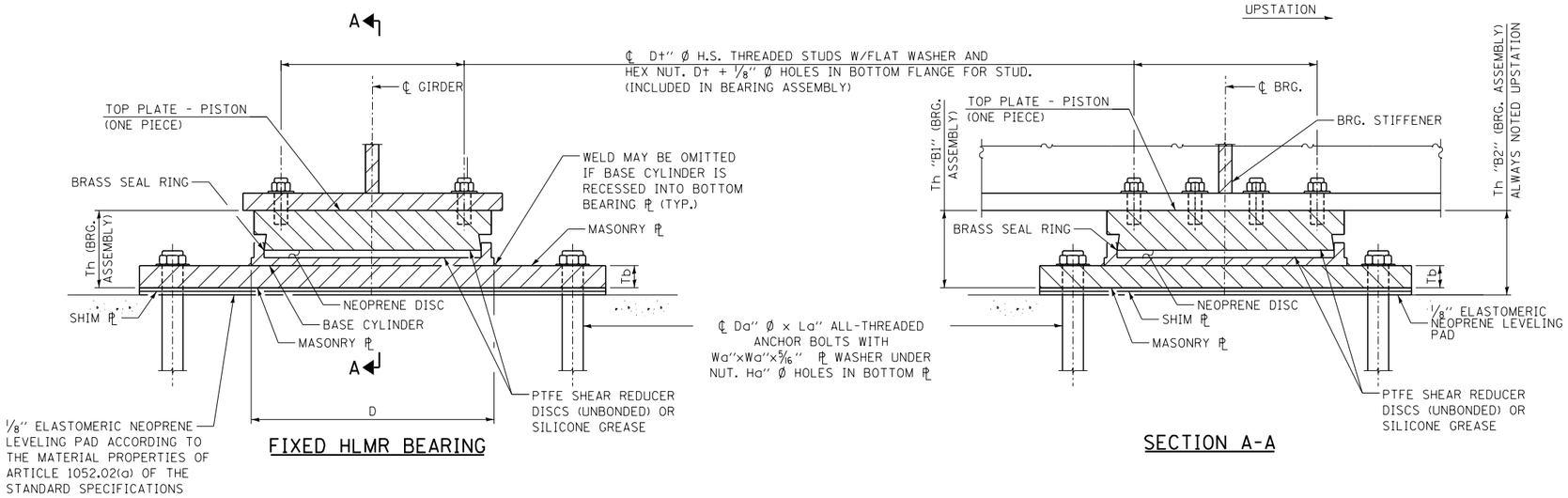
REVISIONS NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
HLMR EXPANSION BEARINGS

SHEET SC - 158 OF 234

433 OF 606

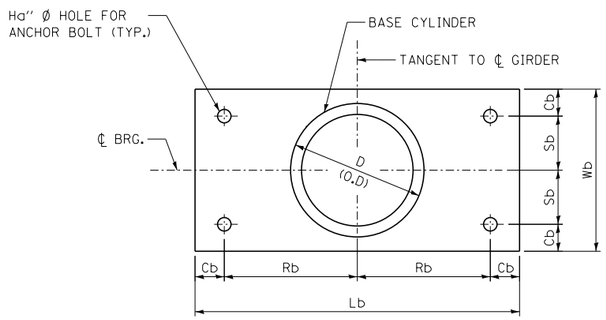


NOTES:

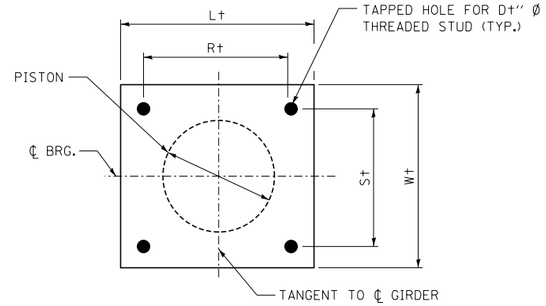
1. THE STRUCTURAL STEEL PLATES OF THE BEARING ASSEMBLY SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M270 GRADE 50, AND SHALL BE GALVANIZED. SEE SPECIAL PROVISIONS.
2. COST OF TOP AND BOTTOM BEARING PLATES, 1/8'' ELASTOMERIC NEOPRENE LEVELING PAD, ADJUSTING SHIMS AND THREADED STUDS WITH WASHERS SHALL BE INCLUDED WITH ''HIGH LOAD MULTI-ROTATIONAL BEARINGS, FIXED, OF THE SIZE AND TYPE SPECIFIED''.
3. ANCHOR BOLTS SHALL BE PLACED IN HOLES DRILLED IN THE CONCRETE THROUGH HOLES IN THE BOTTOM BEARING PLATE AFTER MEMBERS ARE IN PLACE.
4. DRILLED AND SET ANCHOR BOLTS SHALL BE INSTALLED ACCORDING TO ARTICLE 521.06 OF THE STANDARD SPECIFICAITONS.
5. TWO 1/8'' ADJUSTING SHIMS SHALL BE PROVIDED FOR EACH BEARING IN ADDITION TO ALL OTHER PLATES OF SHIMS AND PLACED AS SHOWN ON BEARING DETAILS.
6. IF THE BASE CYLINDER IS RECESSED INTO THE BOTTOM BEARING PLATE, THE THICKNESS OF THE BOTTOM BEARING PLATE SHALL BE Tb PLUS THE DEPTH OF THE RECESS.

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
HIGH LOAD MULTI-ROTATIONAL BEARINGS, FIXED - 600K	EACH	6
HIGH LOAD MULTI-ROTATIONAL BEARINGS, FIXED - 500K	EACH	6
HIGH LOAD MULTI-ROTATIONAL BEARINGS, FIXED - 450K	EACH	9
HIGH LOAD MULTI-ROTATIONAL BEARINGS, FIXED - 400K	EACH	8
ANCHOR BOLTS, 1 1/4''	EACH	24
ANCHOR BOLTS, 1''	EACH	92



MASONRY ℗ AND BASE CYLINDER PLAN



TOP ℗ - PISTON PLAN

(4 THREADED STUDS REQUIRED AT EACH BEARING)

HIGH LOAD MULTI-ROTATIONAL FIXED BEARING SCHEDULE

LOCATION	QUANTITY EACH	REACTION FOR PAY ITEM (KIPS)	SERVICE VERTICAL DESIGN LOAD * (KIPS)	LATERAL DESIGN LOAD (KIPS)	MAX. FACTORED STRENGTH DESIGN ROTATION (RADIANS)	D (IN.)	Th (IN.)		TOP PLATE / BEARING ASSEMBLY					MASONRY PLATE						ANCHOR BOLTS				
							B1	B2	W† (IN.)	L† (IN.)	D† (IN.)	R† (IN.)	S† (IN.)	Wb (IN.)	Lb (IN.)	Tb (IN.)	Rb (IN.)	Sb (IN.)	Cb (IN.)	Da (IN.)	La (IN.)	Wa (IN.)	Ha (IN.)	ANCHOR TYPE
PIER 9	8	400	384	46	0.02	14 1/2	7 1/4	7 1/4	14 1/2	14 1/2	1	10 1/2	10 1/2	16 1/2	28	1 7/8	12 1/4	6 1/2	1 3/4	1	12	2 1/4	1 1/2	F1554 GRADE 55
PIER 10	9	450	404	48	0.02	15 3/8	7 5/8	7 5/8	15 1/2	15 1/2	1	11 1/2	11 1/2	17 1/2	28	1 3/4	12 1/4	7	1 3/4	1	12	2 1/4	1 1/2	F1554 GRADE 55
PIER 15	6	500	499	66	0.02	17	8 1/16	8 1/16	17	17	1 1/4	13	13	19	31 1/2	2	14	7 3/4	1 3/4	1	12	2 1/4	1 1/2	F1554 GRADE 55
PIER 18	6	600	600	86	0.02	18 3/8	9 1/4''	8 1/8''	18 3/8	18 3/8	1 1/4	14 3/8	14 3/8	20 1/2	31	2	13 1/4	8	2 1/4	1 1/4	15	2 3/4	1 3/4	F1554 GRADE 55

* DOES NOT INCLUDE IMPACT.

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3/30/2020

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CHECKED BY . . . SP . . . . . SCALE . NONE . . . . .

T·Y·LIN INTERNATIONAL

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
HLMR FIXED BEARINGS

SHEET SC - 159 OF 234

434 OF 606

52-#5 v (E) BARS AT 12" CTS. E.F.
SEE SECTION THRU ABUT.

FOR REINFORCEMENT
SEE SC-150

ELEV. 632.93

52-#5 u_2(E) BARS AT 12" CTS.
52-#5 v_2(E) BARS AT 12" CTS.
SEE SECTION THRU ABUT.

ELEV. 629.28 *
AT F.F. HATCH
BLOCK

5-#6 h_1(E) BARS
SEE SEC. THRU ABUT.

℄ AND P.G.L.
RAMP C

* ELEV. 631.08 AT
BK. OF ABUT.

* PRIOR TO GRINDING

* ELEV. 632.09
AT F.F. HATCH
BLOCK

2" TYP.

10" TYP.

11-#5 h_5(E) BARS AT 12" CTS. E.F.

7-#5 v_1(E) BARS
AT 6" CTS. E.F.

6-#4 s_1(E) BARS
AT 12" CTS.

11-#4 s_1(E) BARS AT 12" CTS.

8-#4 s_1(E) BARS AT 12" CTS.

11-#4 s_1(E) BARS AT 12" CTS.

7-#5 h (E) BARS AT 12"
CTS. E.F.

13-#4 s_1(E) BARS AT 12" CTS.

11-#4 s_1(E) BARS AT 12" CTS.

5-#5 h_3(E) BARS

5-#5 h_4(E) BARS

5-#5 h_2(E) BARS

5-#5 h_3(E) BARS

5-#11 p_5(E) BARS
SEE SEC THRU
ABUT.

5-#6 u (E)
BARS

4-#6 u_1(E)
BARS

5-#11 p(E) BARS
SEE SEC THRU
ABUT.

6-#11 p_2(E) BARS
SEE SEC THRU
ABUT.

5-#7 p_4(E)

1
1

ELEV. 620.65

6-#11 p_3(E) BARS
SEE SEC THRU ABUT.

ELEV. 619.22

2-#11 p_1(E) BARS
SEE SEC THRU
ABUT.

5-#6 s (E) BARS
EVENLY SPACED

10-#6 s (E) BARS
AT 6" CTS. TYP.

5-#6 s (E) BARS
EVENLY SPACED

10½" TYP.

10½" TYP.

21'-7"

ELEVATION

v_1(E)

3'-6¼"

32'-½"

BK. OF ABUT.

STA. 3248+34.22

℄ RAMP C

18'-9⅛"

h_5(E)

½" PJF

2" CL.

½" PJF

1'-6"

1'-0"

3'-10"

6'-6"

2'-8"

℄ BRG.

1'-9⅛"

N

PROPOSED
SN 016-4102

MSE WALL
PANELS, TYP.

7 6 5 4 3 2 1

8'-½"

2 SPA. AT 8'-8⅞" = 17'-5¾"

4 SPA. AT 7'-6" = 30'-0"

2'-0"

GIRDER SPACING

12'-4⅞"

9'-4⅜"

4 SPA. AT 7'-6" = 30'-0"

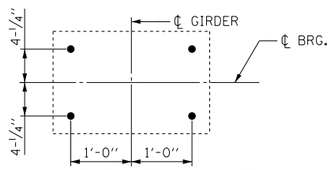
5'-9"

STEP SPACING

57'-6¼"

PLAN

GIRDER	SEAT ELEV.	STEP HEIGHT
1	625.52	
2	625.09	5⅛"
3	624.66	5⅛"
4	624.23	5⅛"
5	623.80	5⅛"
6	623.32	5⅞"
7	622.80	6⅛"



ANCHOR BOLT LAYOUT

NOTES

1. HATCHED AREA TO BE POURED AFTER SUPERSTRUCTURE FALSEWORK HAS BEEN REMOVED. QUANTITY OF CONCRETE INCLUDED WITH CONCRETE SUPERSTRUCTURE.
2. SPACE REINFORCEMENT IN CAP TO MISS ANCHOR BOLTS.
3. POUR STEPS MONOLITHICALLY WITH CAP.
4. FOR CONCRETE ENCASEMENT DETAILS, SEE SHEET SC-210.
5. CONCRETE SEALER TO BE APPLIED TO ALL EXPOSED SURFACES OF THE ABUTMENT.

P:\682540\57-294.5-9\STRUCTURAL\RESTART.2018\Ramp C over I-57 and I-294\016201.5_AbutE.dgn
3/30/2020

DRAWN BY . . . . JM . . . . .
CHECKED BY . . . SP . . . . .

DATE . 4-3-2020 . . . .
SCALE . NONE . . . . .

T·Y·LIN INTERNATIONAL

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

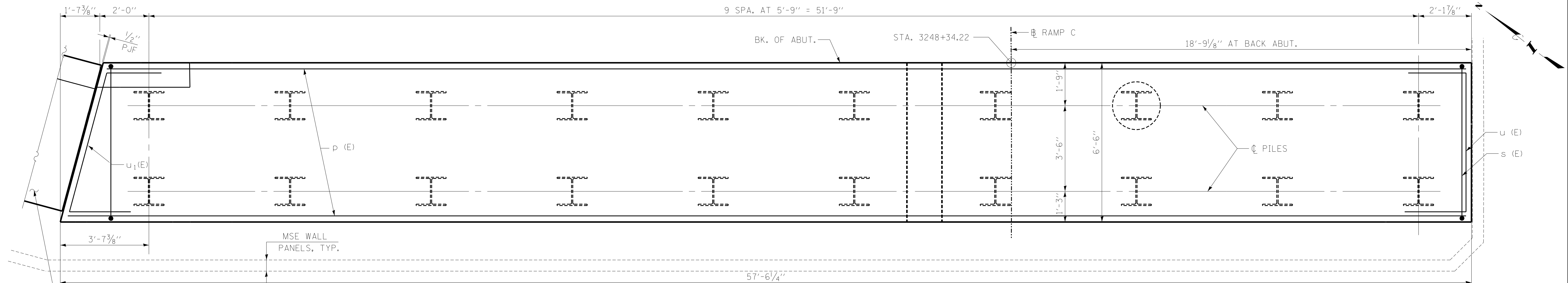
REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

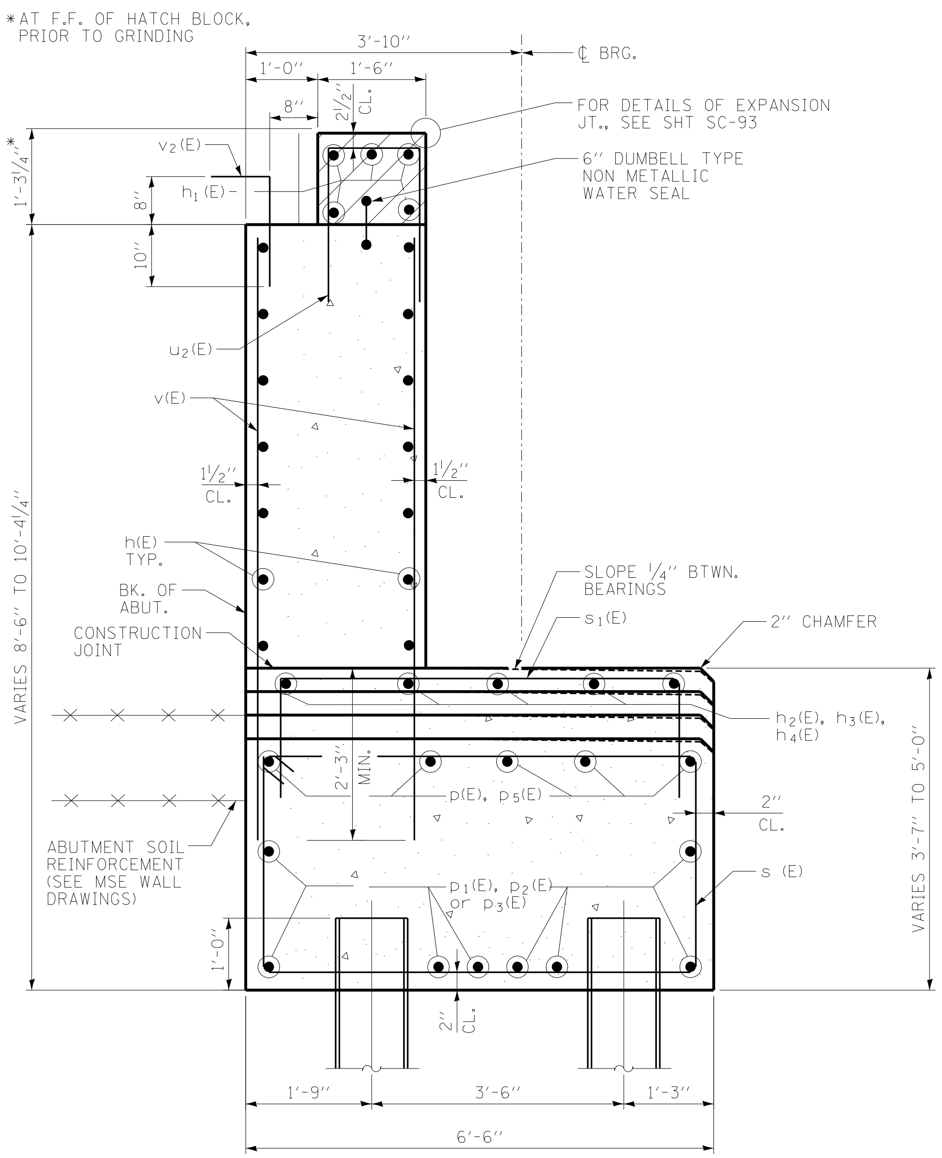
I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
EAST ABUTMENT

SHEET SC - 160 OF 234

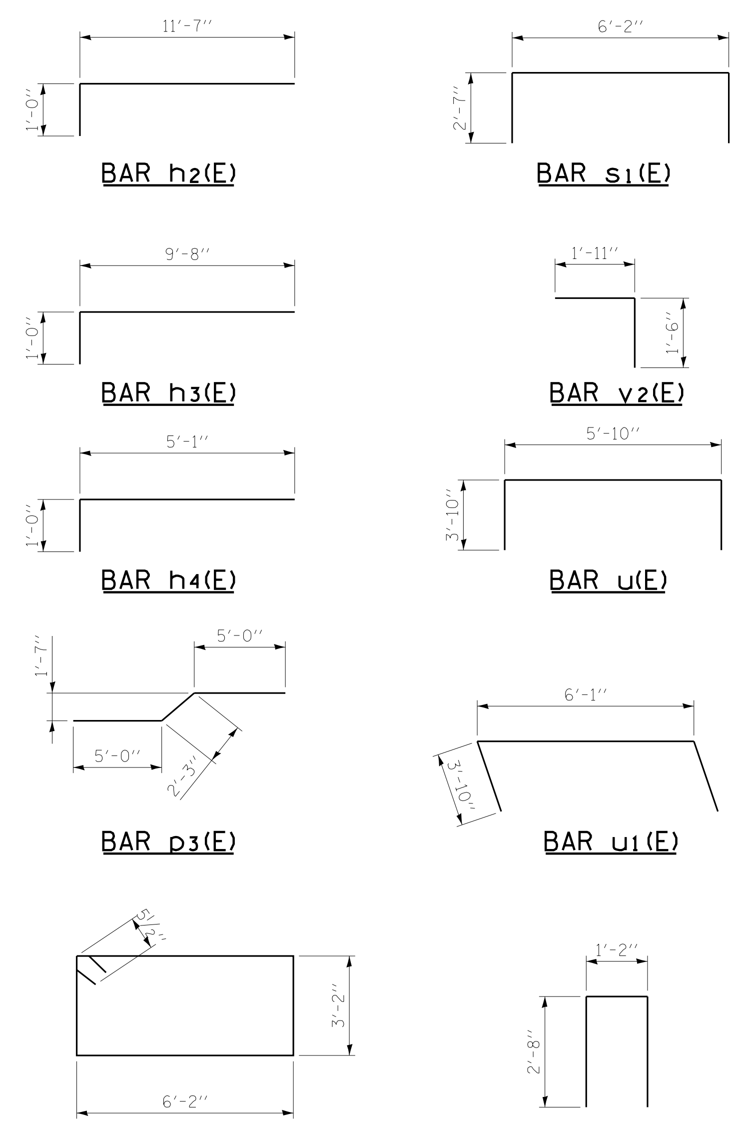
435 OF 606

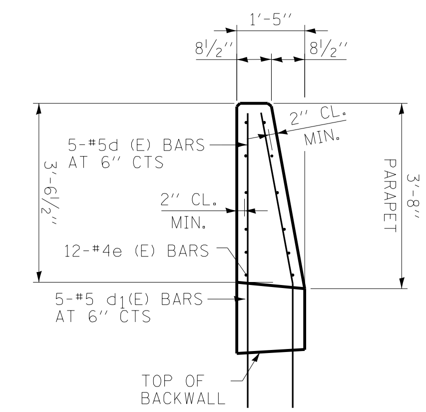


PLAN - PILE CAP

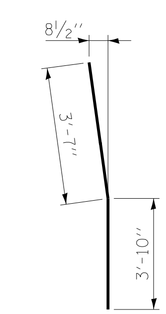


SECTION THRU ABUTMENT





SECTION THRU PARAPET



BAR d1(E)

PILE DATA

PILE TYPE AND SIZE: HP14X73 WITH PILE SHOES
NOMINAL REQUIRED BEARING: 578 KIPS
FACTORED RESISTANCE AVAILABLE: 318 KIPS
ESTIMATED PILE LENGTH: 47 FEET
NO. PRODUCTION PILES: 19
NO. TEST PILES: 1

(dashed circle symbol) INDICATES TEST PILE.

REINFORCEMENT BAR LIST

BAR	NO.	SIZE	LENGTH	SHAPE
d (E)	5	#5	7'-3''	
d_1(E)	5	#5	7'-5''	
e (E)	12	#4	2'-3''	
h (E)	14	#5	51'-11''	
h_1(E)	5	#6	51'-4''	
h_2(E)	5	#5	12'-7''	
h_3(E)	15	#5	10'-8''	
h_4(E)	5	#5	6'-1''	
h_5(E)	22	#5	4'-0''	
p (E)	5	#11	57'-2''	
p_1(E)	2	#11	49'-11''	
p_2(E)	6	#11	34'-4''	
p_3(E)	6	#11	27'-10''	
p_4(E)	5	#7	12'-3''	
p_5(E)	5	#11	27'-10''	
s (E)	60	#6	18'-10''	
s_1(E)	100	#4	11'-4''	
u (E)	5	#6	13'-6''	
u_1(E)	4	#6	13'-9''	
u_2(E)	52	#5	6'-6''	
v (E)	104	#5	7'-7''	
v_1(E)	14	#5	12'-4''	
v_2(E)	52	#5	3'-5''	

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
STRUCTURE EXCAVATION	CU. YD.	192
CONCRETE STRUCTURES	CU. YD.	90.0
REINFORCEMENT BARS, EPOXY COATED	POUND	10,760
FURNISHING STEEL PILES HP 14x73	FOOT	893
DRIVING PILES	FOOT	893
TEST PILES HP 14x73	EACH	1
PILE SHOES	EACH	20
CONCRETE SEALER	SQ. FT.	814

NOTES

1. FOR DETAILS OF PILES SEE SHEET SC-210.

P:\60254\57-294.5-9\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\016210l.5_AbutE_dtls.dgn
3/30/2020

DRAWN BY JM | DATE 4-3-2020
CHECKED BY SP | SCALE NONE

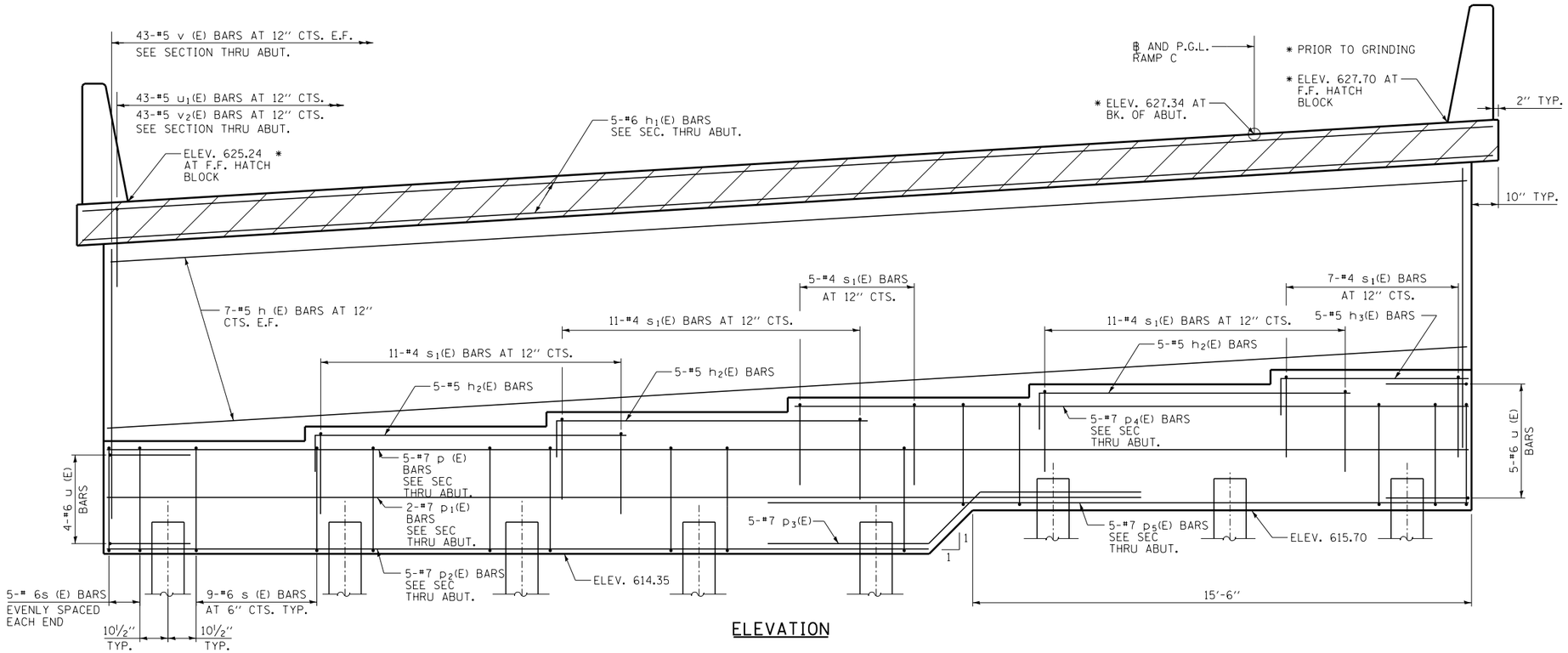
TYLIN INTERNATIONAL

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

REVISIONS		
NO.	DATE	DESCRIPTION

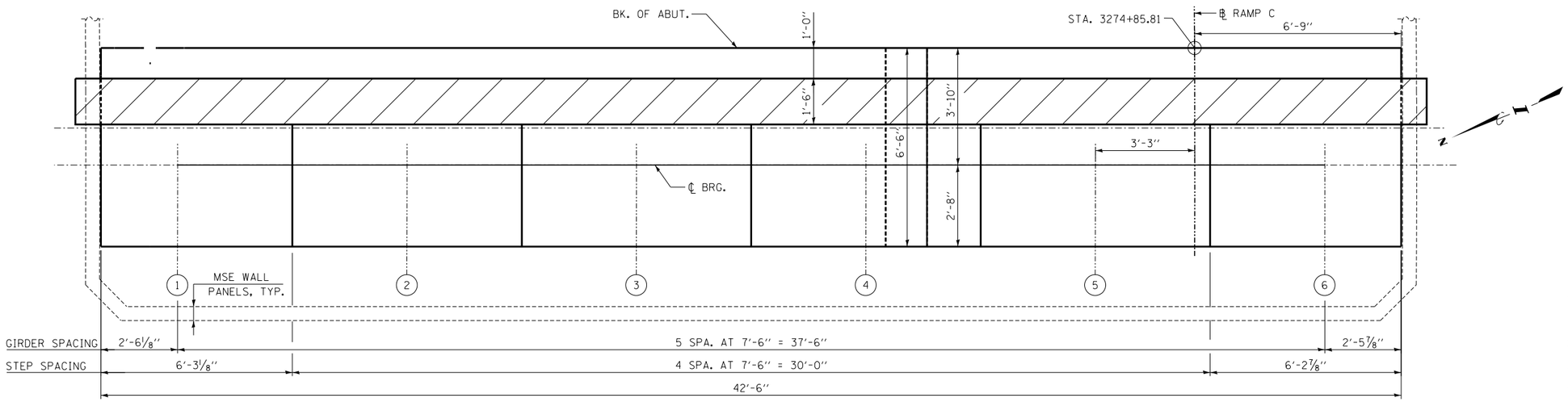
CONTRACT I-19-4495

I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
EAST ABUTMENT DETAILS

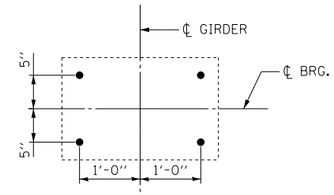


ELEVATION

GIRDER	SEAT ELEV.	STEP HEIGHT
1	617.85	
2	618.30	5⅜"
3	618.75	5⅜"
4	619.20	5⅜"
5	619.61	4⅞"
6	620.06	5⅜"



PLAN



ANCHOR BOLT LAYOUT

NOTES

1. HATCHED AREA TO BE POURED AFTER SUPERSTRUCTURE FALSEWORK HAS BEEN REMOVED. QUANTITY OF CONCRETE INCLUDED WITH CONCRETE SUPERSTRUCTURE.
2. SPACE REINFORCEMENT IN CAP TO MISS ANCHOR BOLTS.
3. POUR STEPS MONOLITHICALLY WITH CAP.
4. FOR CONCRETE ENCASEMENT DETAILS, SEE SHEET SC-210.
5. CONCRETE SEALER TO BE APPLIED TO ALL EXPOSED SURFACES OF THE ABUTMENT.

P:\682540\57-294_5-9\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\016201.5_AbutW.dgn
3/30/2020

DRAWN BY . . . . ME . . . . .
CHECKED BY . . . . SP . . . . .
DATE . 4-3-2020 . . .
SCALE . NONE . . . . .

T·Y·LIN INTERNATIONAL

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

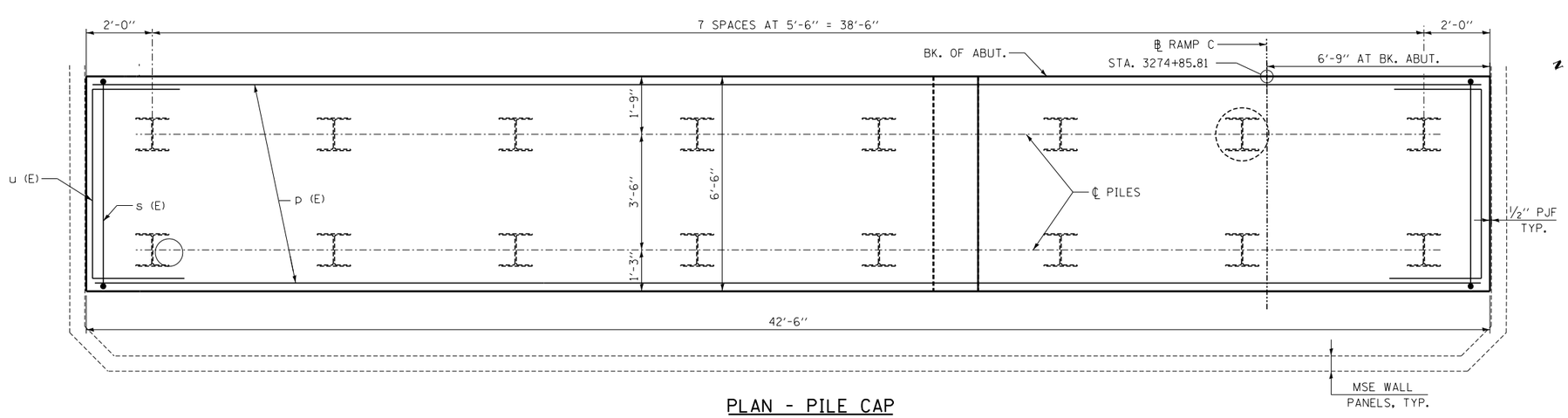
REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

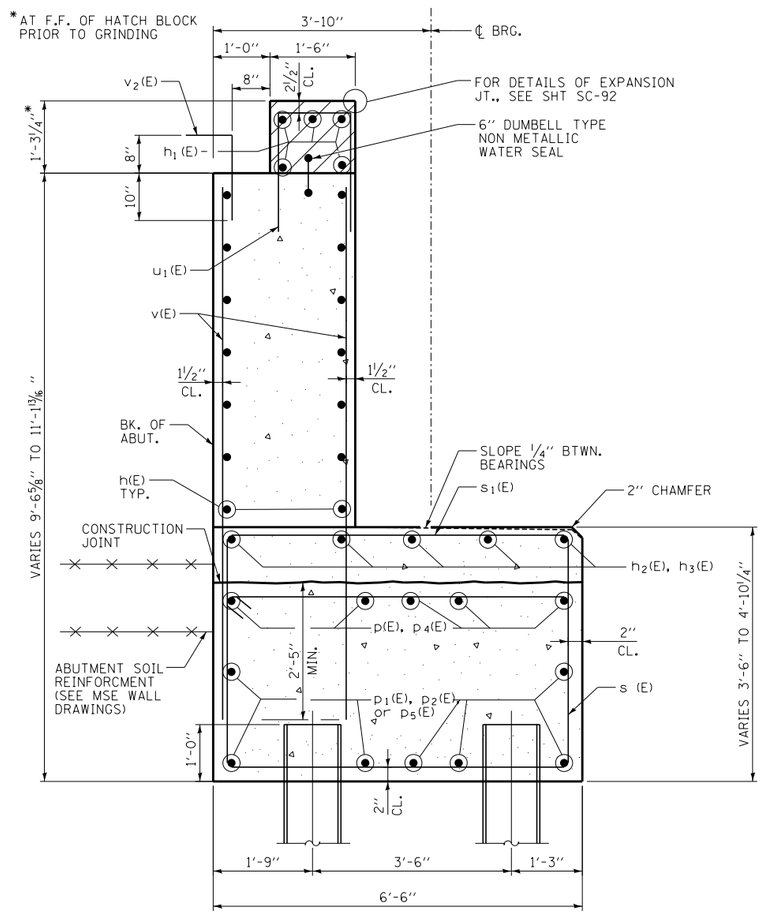
I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
WEST ABUTMENT

SHEET SC - 162 OF 234

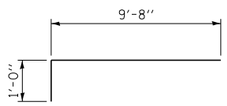
437 OF 606



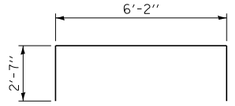
PLAN - PILE CAP



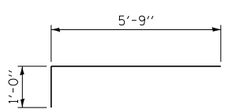
SECTION THRU ABUTMENT



BAR $h_2(E)$



BAR $s_1(E)$



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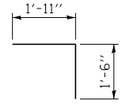
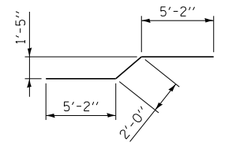
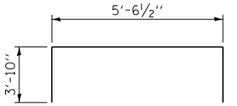


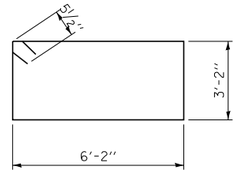
BAR $v_2(E)$



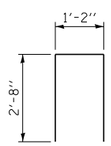
BAR $p_3(E)$



BAR $u(E)$



BAR $s(E)$



BAR $u_1(E)$

PILE DATA

PILE TYPE AND SIZE: HP14X73 WITH PILE SHOES
NOMINAL REQUIRED BEARING: 578 KIPS
FACTORED RESISTANCE AVAILABLE: 302 KIPS
ESTIMATED PILE LENGTH: 51 FEET
NO. PRODUCTION PILES: 15
NO. TEST PILES: 1

INDICATES TEST PILE.

REINFORCEMENT BAR LIST

BAR	NO.	SIZE	LENGTH	SHAPE
h (E)	14	#5	42'-2"	
h_1(E)	5	#6	43'-11"	
h_2(E)	15	#5	10'-8"	
h_3(E)	5	#5	6'-9"	
p (E)	5	#7	42'-4"	
p_1(E)	2	#7	32'-2"	
p_2(E)	5	#7	25'-6"	
p_3(E)	5	#7	12'-3"	
p_4(E)	5	#7	20'-11"	
p_5(E)	5	#7	21'-9"	
s (E)	73	#6	18'-8"	
s_1(E)	45	#4	11'-4"	
u (E)	9	#6	13'-7"	
u_1(E)	43	#5	6'-6"	
v (E)	86	#5	8'-8"	
v_2(E)	43	#5	3'-5"	

BILL OF MATERIAL

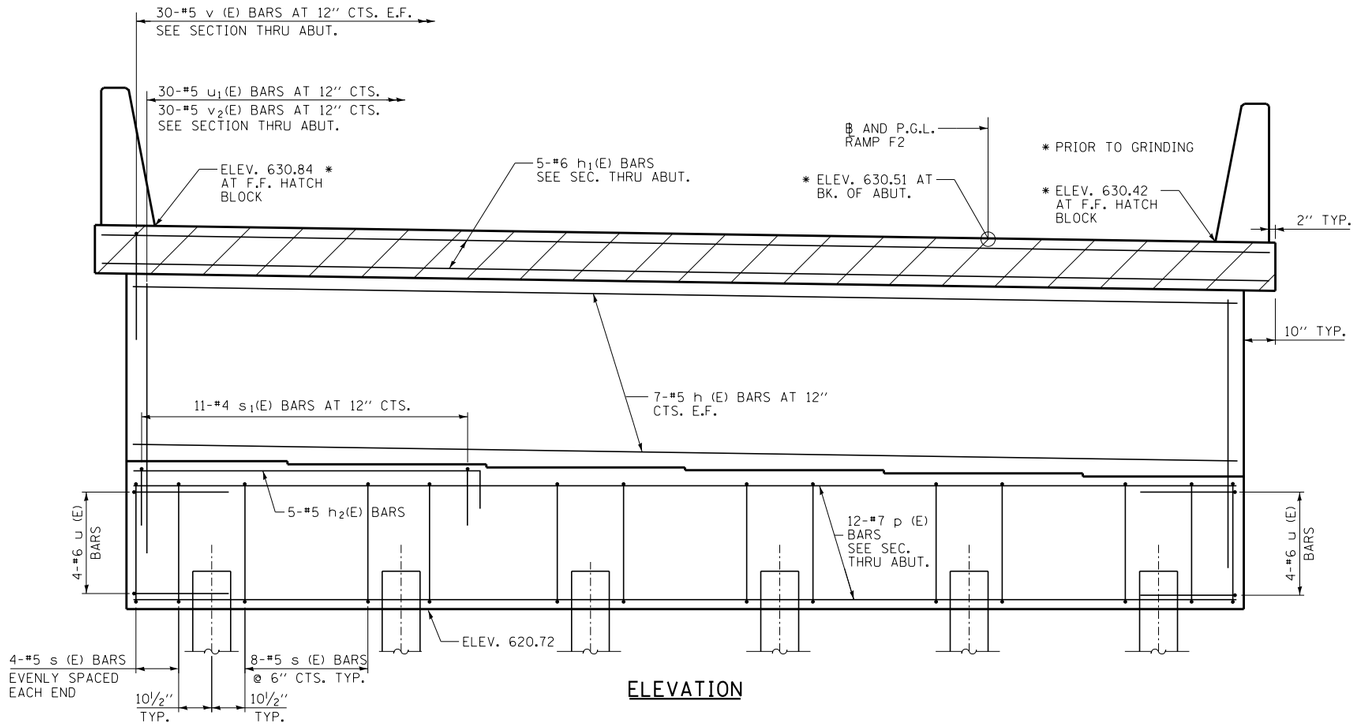
ITEM	UNIT	QUANTITY
STRUCTURE EXCAVATION	CU. YD.	105
CONCRETE STRUCTURES	CU. YD.	63.9
REINFORCEMENT BARS, EPOXY COATED	POUND	6,330
FURNISHING STEEL PILES	FOOT	765
DRIVING PILES	FOOT	765
TEST PILE	EACH	1
PILE SHOES	EACH	16
CONCRETE SEALER	SQ. FT.	618

NOTES

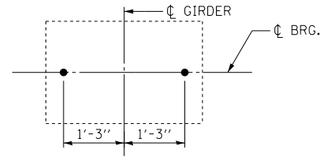
1. FOR DETAILS OF PILES SEE SHEET SC-210.

P:\682540\57-294.5-91\STRUCTURAL\RESTART.2018\Ramp C over I-57 and I-294\0162101.5.AbutW.dt1s.dgn
3/30/2020

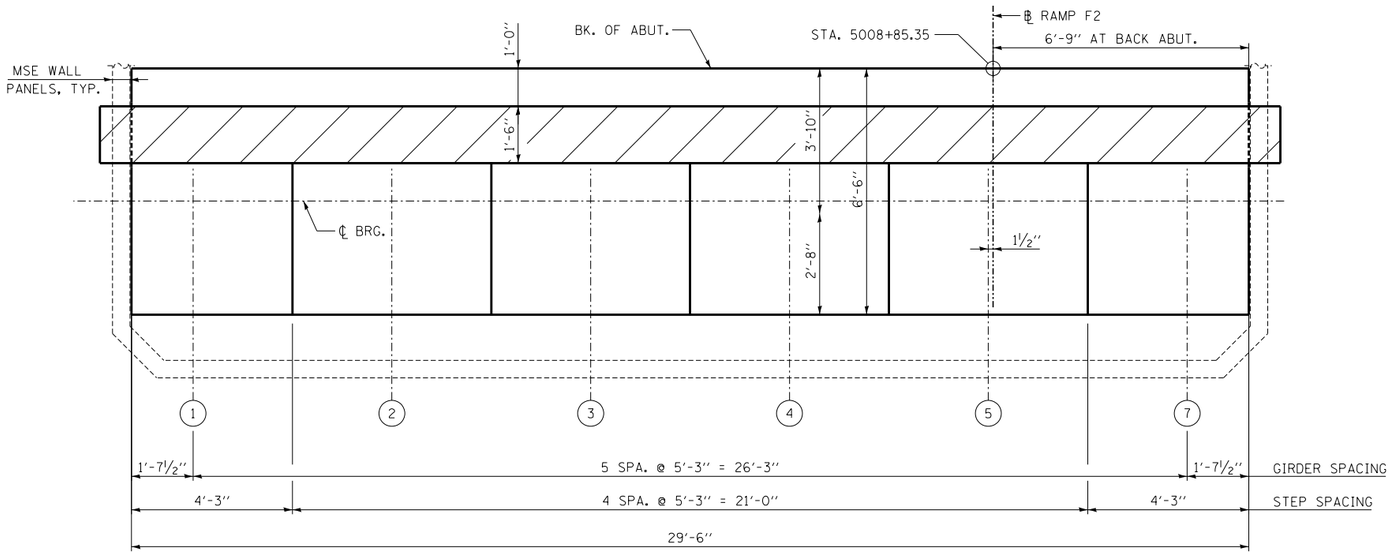
DRAWN BY . . . ME	DATE . 4-3-2020	T·Y·LIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	REVISIONS NO. / DATE / DESCRIPTION	CONTRACT I-19-4495	SHEET SC - 163 OF 234
CHECKED BY . . . SP	SCALE . NONE				I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 116) WEST ABUTMENT DETAILS	438 OF 606



ELEVATION



ANCHOR BOLT LAYOUT



PLAN

GIRDER	SEAT ELEV.	STEP HEIGHT
1	624.61	
2	624.53	1"
3	624.45	1"
4	624.38	7/8"
5	624.30	1"
7	624.22	1"

NOTES

1. HATCHED AREA TO BE POURED AFTER SUPERSTRUCTURE FALSEWORK HAS BEEN REMOVED. QUANTITY OF CONCRETE INCLUDED WITH CONCRETE SUPERSTRUCTURE.
2. SPACE REINFORCEMENT IN CAP TO MISS ANCHOR BOLTS.
3. POUR STEPS MONOLITHICALLY WITH CAP.
4. FOR CONCRETE ENCASEMENT DETAILS, SEE SHEET SC-210.
5. CONCRETE SEALER TO BE APPLIED TO ALL EXPOSED SURFACES OF THE ABUTMENT.

P:\60254057-294,5-91\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\B162101.5_Abut5.dgn
3/30/2020

DRAWN BY . . . JM . . . .
CHECKED BY . . . SP . . . .
DATE . 4-3-2020 . . .
SCALE . NONE . . . .

TY·LIN INTERNATIONAL

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

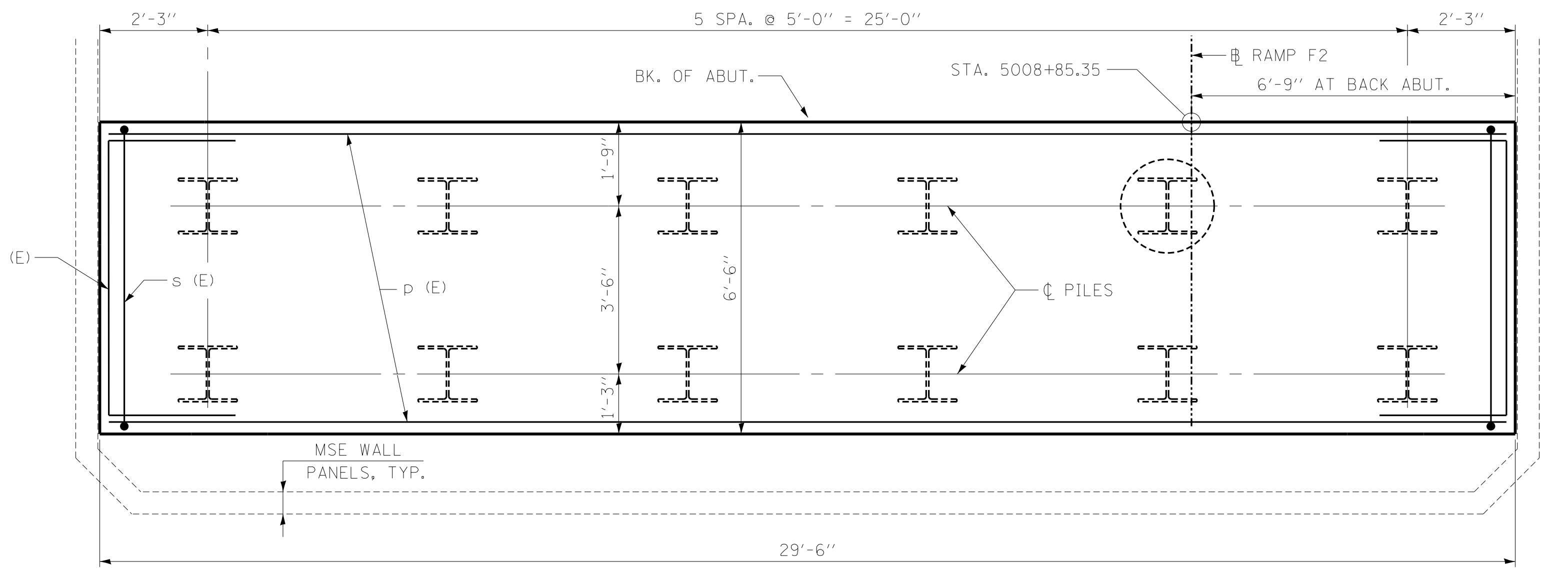
REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

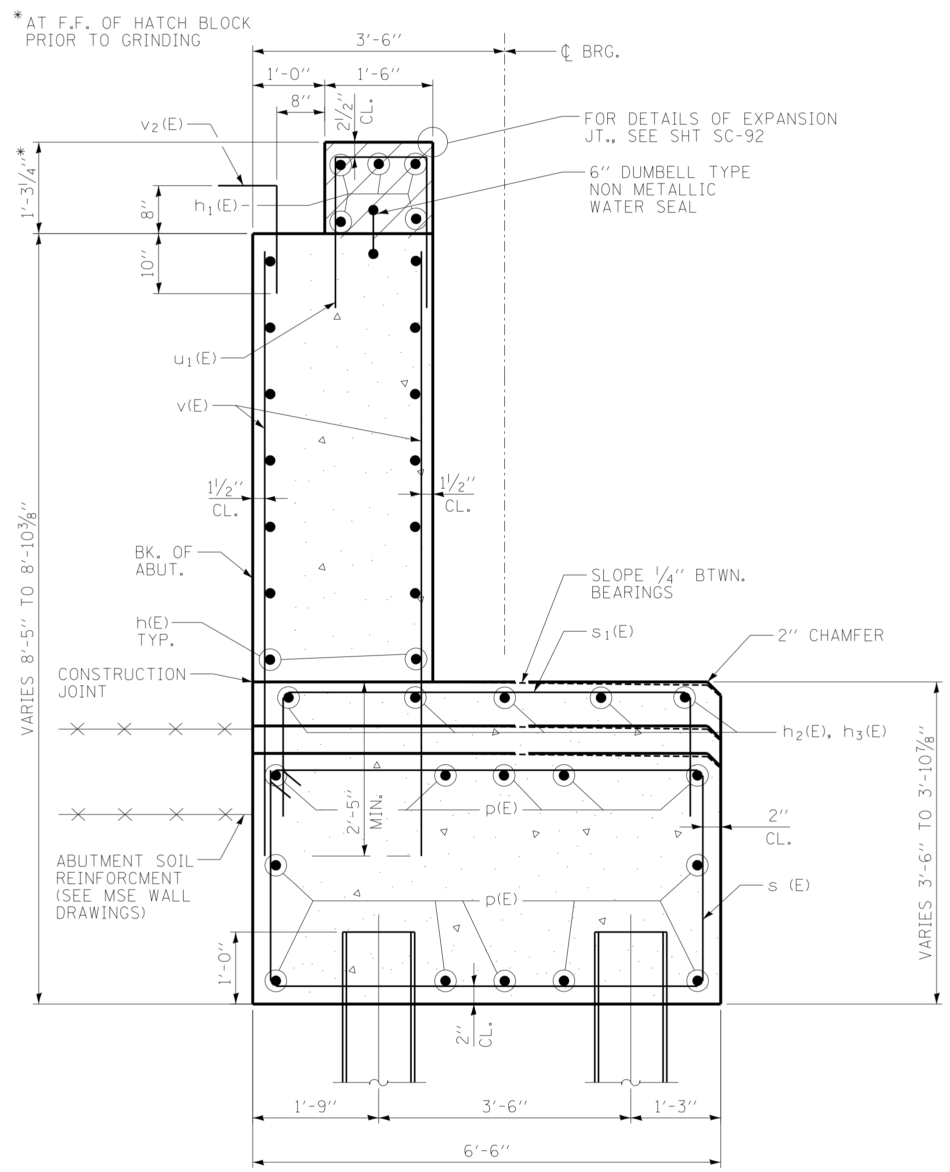
I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
SOUTH ABUTMENT

SHEET SC - 164 OF 234

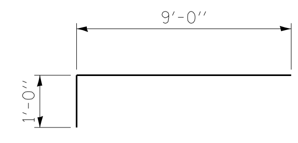
439 OF 606



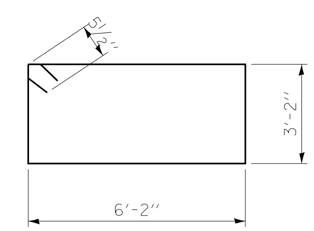
PLAN - PILE CAP



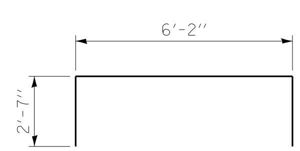
SECTION THRU ABUTMENT



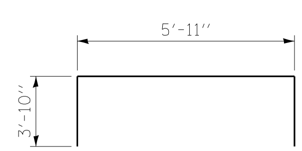
BAR h2(E)



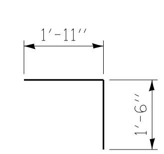
BAR s(E)



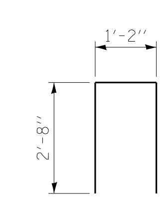
BAR s1(E)



BAR u(E)



BAR v2(E)



BAR u1(E)

PILE DATA

PILE TYPE AND SIZE: HP14X73 WITH PILE SHOES
NOMINAL REQUIRED BEARING: 578 KIPS
FACTORED RESISTANCE AVAILABLE: 295 KIPS
ESTIMATED PILE LENGTH: 49 FEET
NO. PRODUCTION PILES: 11
NO. TEST PILES: 1

INDICATES TEST PILE.

REINFORCEMENT BAR LIST

BAR	NO.	SIZE	LENGTH	SHAPE
h (E)	14	#5	29'-2"	
h_1(E)	5	#6	30'-10"	
h_2(E)	5	#5	10'-0"	
p (E)	12	#7	29'-2"	
s (E)	48	#5	19'-7"	
s_1(E)	11	#4	11'-4"	
u (E)	8	#6	13'-7"	
u_1(E)	30	#5	6'-6"	
v (E)	60	#5	7'-2"	
v_2(E)	30	#5	2'-5"	

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
STRUCTURE EXCAVATION	CU. YD.	172
CONCRETE STRUCTURES	CU. YD.	40.0
REINFORCEMENT BARS, EPOXY COATED	POUND	3,380
FURNISHING STEEL PILES HP 14x73	FOOT	539
DRIVING PILES	FOOT	539
TEST PILE HP 14x73	EACH	1
PILE SHOES	EACH	12
CONCRETE SEALER	SQ. FT.	336

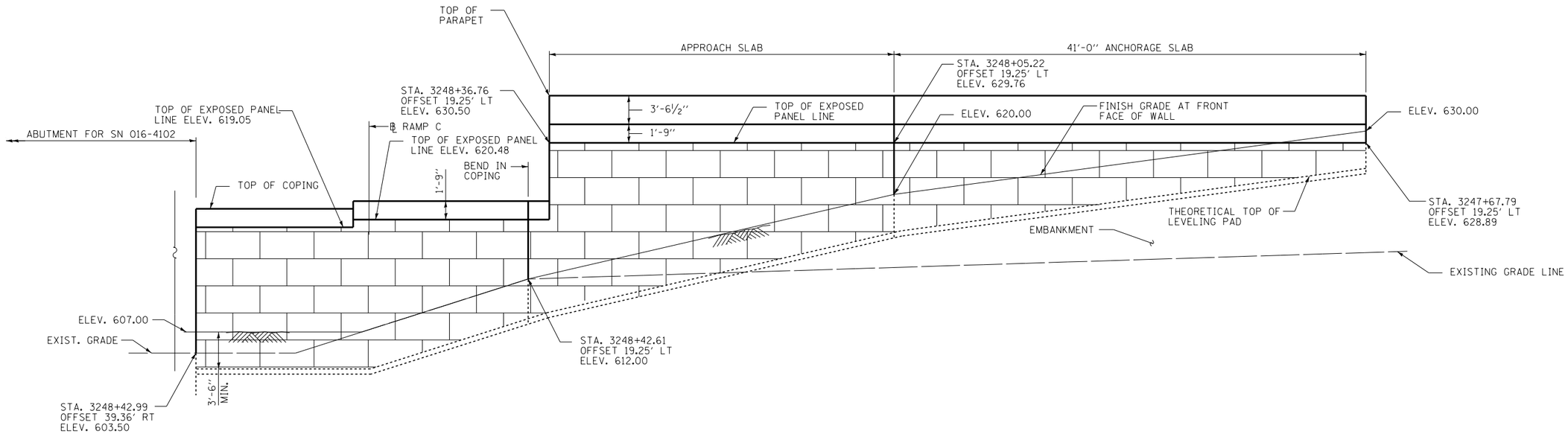
NOTES

1. FOR DETAILS OF PILES SEE SHEET SC-210.

P:\602540\57-294_5-9\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\0162101_S_Abut_S_dtls.dgn
3/30/2020

DRAWN BY JM	DATE 4-3-2020	TYLIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	REVISIONS: NO. / DATE / DESCRIPTION
CHECKED BY SP	SCALE NONE			

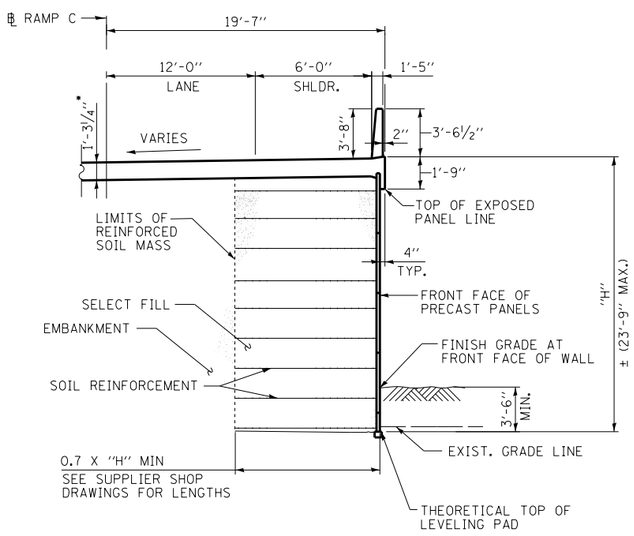
CONTRACT I-19-4495
I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
SOUTH ABUTMENT DETAILS



EAST ABUTMENT WALL-DEVELOPED ELEVATION

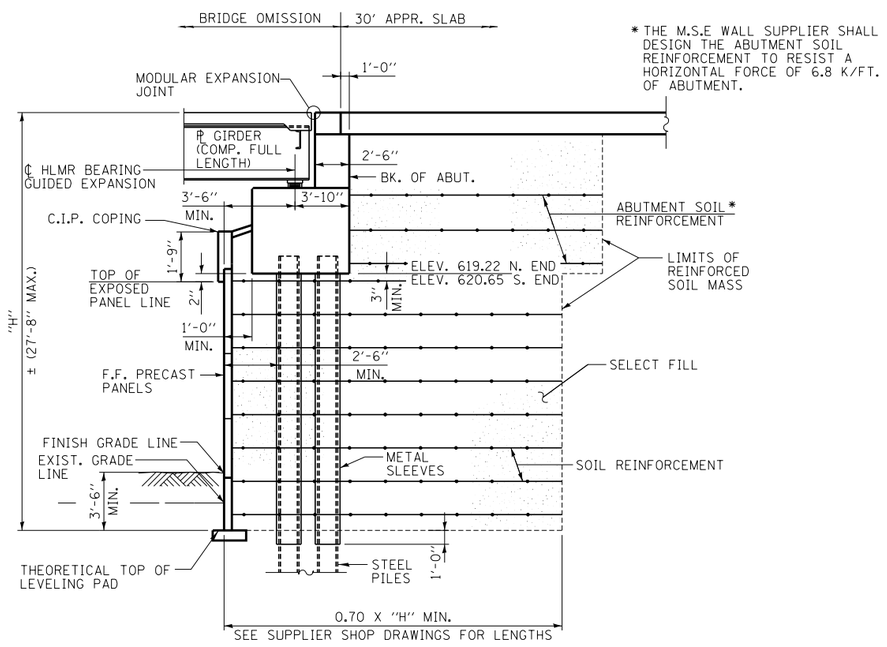
LOOKING EAST

* PRIOR TO GRINDING



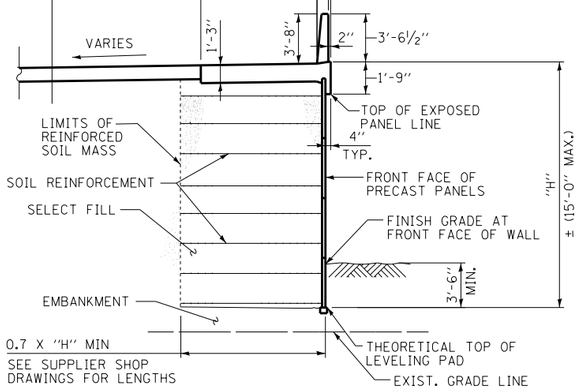
MSE WALL SECTION THRU EAST APPROACH SLAB

(LOOKING DOWNSTATION)



* THE M.S.E WALL SUPPLIER SHALL DESIGN THE ABUTMENT SOIL REINFORCEMENT TO RESIST A HORIZONTAL FORCE OF 6.8 K/FT. OF ABUTMENT.

SECTION THRU EAST ABUTMENT



MSE WALL SECTION THRU EAST ANCHORAGE SLAB

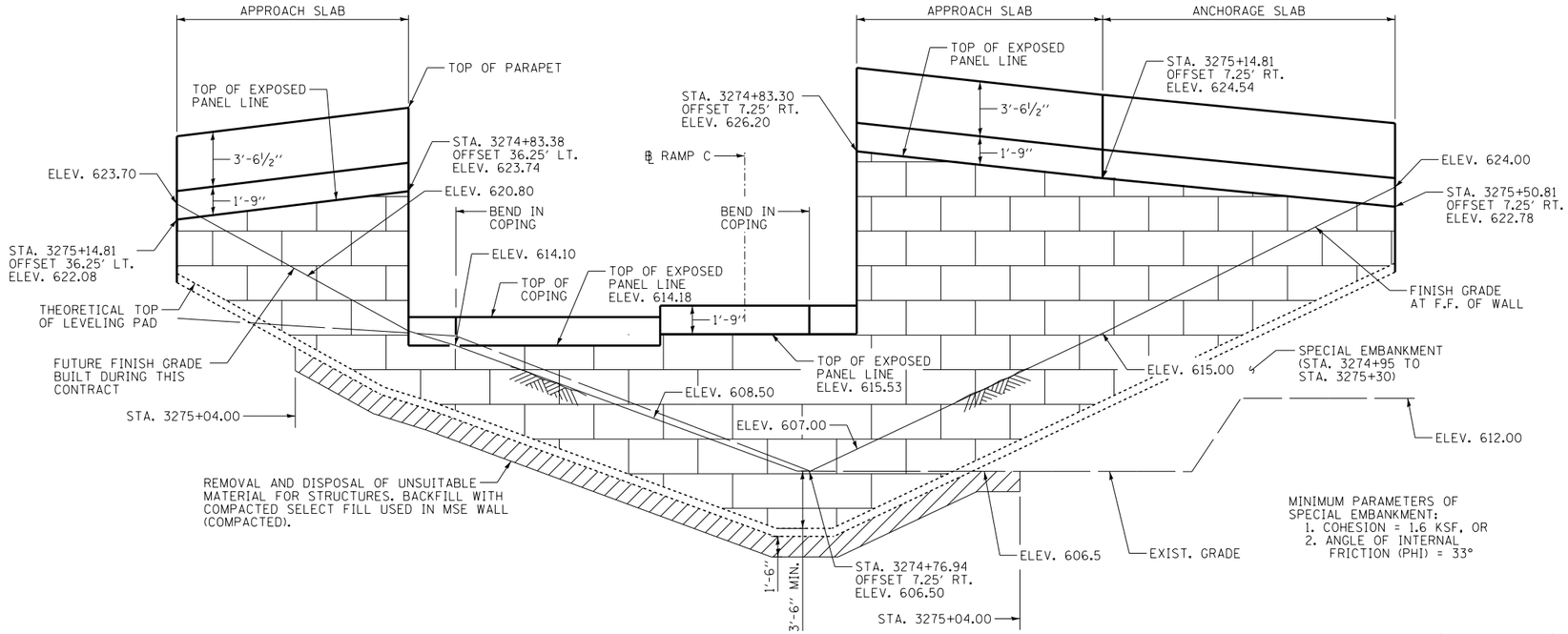
(LOOKING DOWNSTATION)

NOTE:
SLEEVE EACH PILE FROM 1'-0" BELOW TOP OF LEVELING PAD TO BOTTOM OF PROPOSED ABUTMENT AND WINGWALLS BEFORE PLACING AND COMPACTING THE SELECT FILL. FILL THE ANNULAR SPACE BETWEEN THE PILE AND SLEEVE WITH DRY SAND. THE DIAMETER SHALL BE 2'-6". THE COST OF THE SLEEVE ALONG WITH FURNISHING AND PLACEMENT OF THE SAND SHALL BE INCLUDED IN THE PRICE OF "FURNISHING STEEL PILES".

THE MSE WALL PRECAST PANELS SHALL HAVE AN ARCHITECTURAL SURFACE TREATMENT. THE SURFACE SHALL MATCH PATTERN #1104 OR #11016 BY CUSTOM ROCK INTERNATIONAL OR PATTERN #893 OR #894 BY ARCHITECTURAL POLYMERS AS APPROVED BY THE ENGINEER. COST SHALL BE INCLUDED IN MECHANICALLY STABILIZED EARTH RETAINING WALL

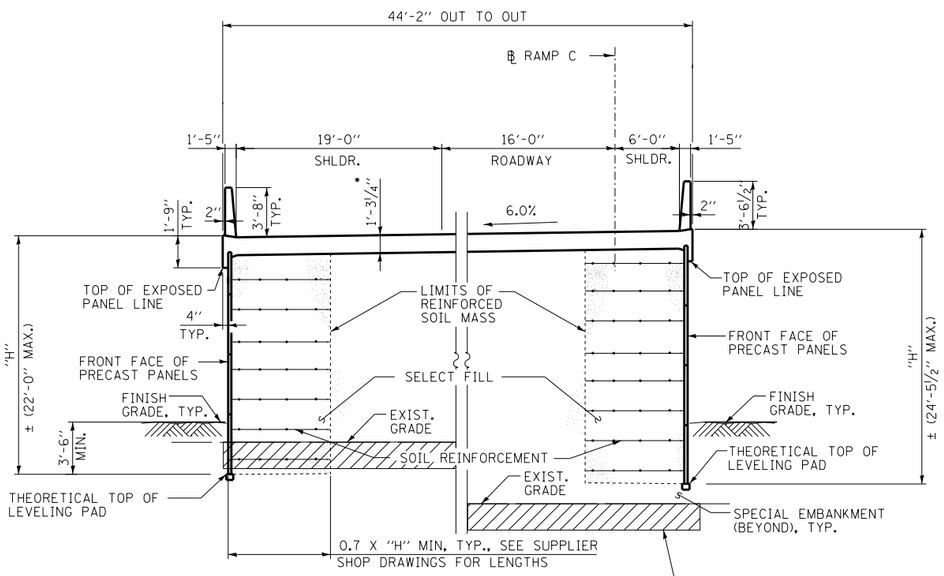
P:\60254057-294.5-9\STRUCTURAL\RESTART.2018\Ramp C over I-57 and I-294\016201.5_AbutE-MSEWall.dgn
3/30/2020

DRAWN BY . . . SP	DATE . 4-3-2020	T·Y·LIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	REVISIONS NO. / DATE / DESCRIPTION	CONTRACT I-19-4495 I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 116) EAST ABUTMENT MSE WALL DETAILS	SHEET SC - 166 OF 234 441 OF 606
CHECKED BY . . . SP	SCALE . NONE					



* PRIOR TO GRINDING

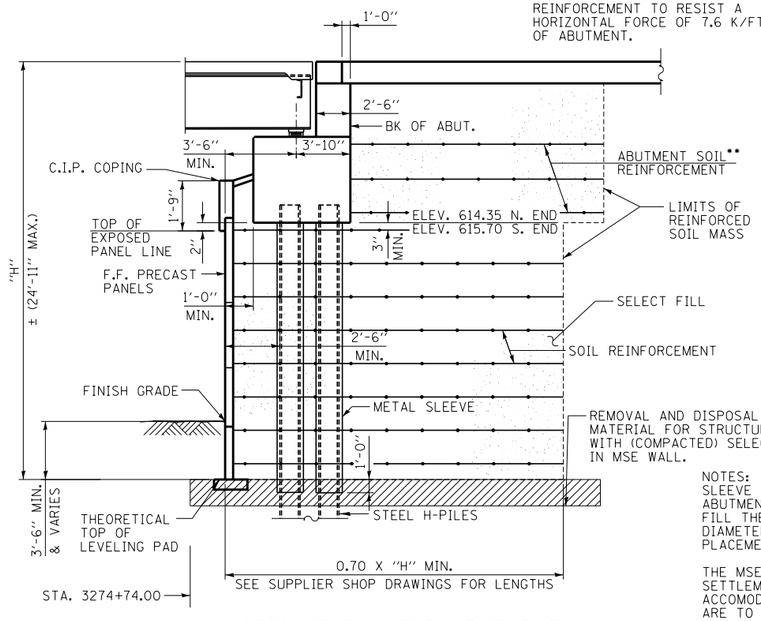
WEST ABUTMENT WALL-DEVELOPED ELEVATION



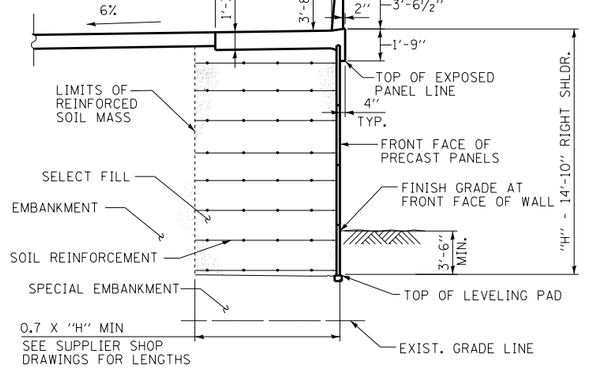
MSE WALL CROSS SECTION AT WEST ABUTMENT APPROACH SLAB

(LOOKING SOUTH)

**THE M.S.E WALL SUPPLIER SHALL DESIGN THE ABUTMENT SOIL REINFORCEMENT TO RESIST A HORIZONTAL FORCE OF 7.6 K/FT. OF ABUTMENT.



SECTION THRU WEST ABUTMENT



MSE WALL SECTION THRU ANCHORAGE SLAB

NOTES:
SLEEVE EACH PILE FROM 1'-0'' BELOW TOP OF LEVELING PAD TO BOTTOM OF PROPOSED ABUTMENT AND WINGWALLS BEFORE PLACING AND COMPACTING THE SELECT FILL. FILL THE ANNULAR SPACE BETWEEN THE PILE AND SLEEVE WITH DRY SAND. THE DIAMETER SHALL BE 2'-6''. THE COST OF THE SLEEVE ALONG WITH FURNISHING AND PLACEMENT OF THE SAND SHALL BE INCLUDED IN THE PRICE OF ''FURNISHING STEEL PILES''.

THE MSE WALL SUPPLIER IS ALERTED TO THE FACT THAT APRROX. 2.6 INCHES OF SETTLEMENT IS ANTICIPATED AND SHALL TAKE APPROPRIATE MEASURES TO ACCOMODATE THIS SETTLEMENT IN THE WALL DESIGN. TWO (2) SETTLEMENT PLATES ARE TO BE INSTALLED AND MONITORED DURING AND AFTER MSE WALL SELECT FILL PLACEMENT. WALL PANELS SHOULD BE INSTALLED AFTER EMBANKMENT SETTLEMENT HAS SLOWED TO MINIMUM RATE OF SETTLEMENT. COST INCLUDED WITH ''MECHANICALLY STABILIZED EARTH RETAINING WALL.''

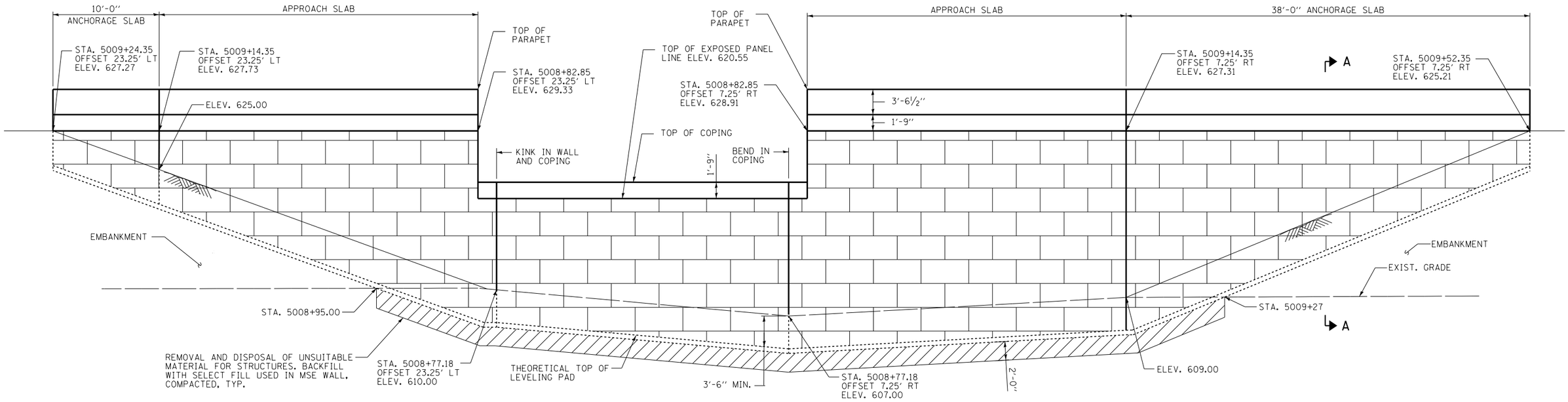
THE MSE WALL PRECAST PANELS SHALL HAVE AN ARCHITECTURAL SURFACE TREATMENT. THE SURFACE SHALL MATCH PATTERN #1104 OR #11016 BY CUSTOM ROCK INTERNATIONAL OR PATTERN #893 OR #894 BY ARCHITECTURAL POLYMERS AS APPROVED BY THE ENGINEER. COST SHALL BE INCLUDED IN MECHANICALLY STABILIZED EARTH RETAINING WALL

P:\60254057-294.5-9\STRUCTURAL\RESTART.2018\Ramp C over I-57 and I-294\016210I.5_Abut1-MSEWall.dgn
3/30/2020

DRAWN BY . . . SP	DATE . 4-3-2020	TY·LIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	REVISIONS NO. / DATE / DESCRIPTION	CONTRACT I-19-4495
CHECKED BY . . . SP	SCALE . NONE				I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 116) WEST ABUTMENT MSE WALL DETAILS

SHEET SC - 167 OF 234

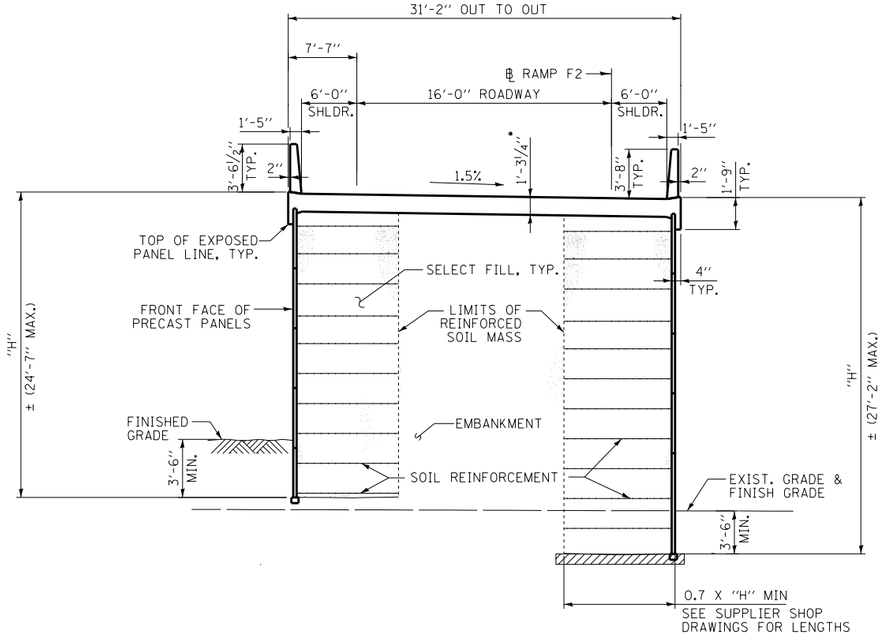
442 OF 606



SOUTH ABUTMENT (RAMP F2)-DEVELOPED ELEVATION

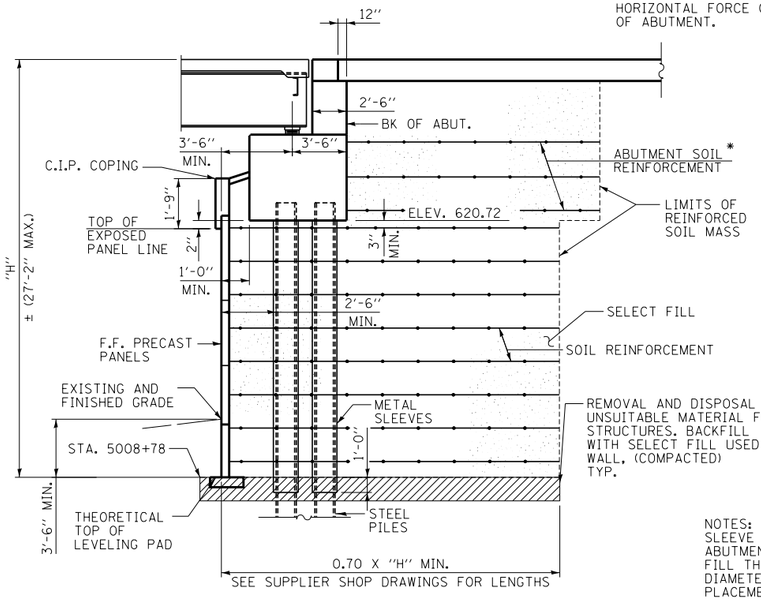
* THE M.S.E WALL SUPPLIER SHALL DESIGN THE ABUTMENT SOIL REINFORCEMENT TO RESIST A HORIZONTAL FORCE OF 6 K/FT. OF ABUTMENT.

• PRIOR TO GRINDING

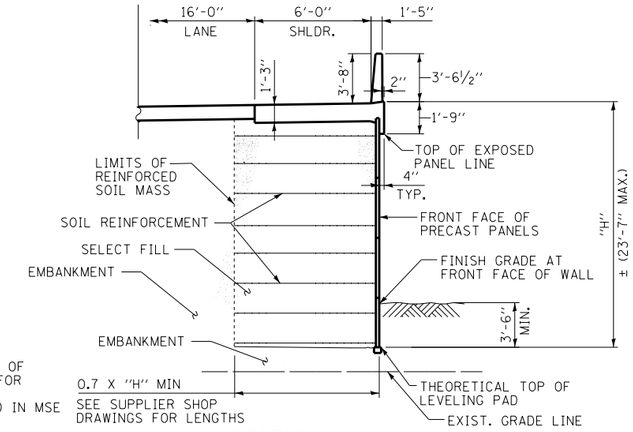


MSE WALL CROSS SECTION AT SOUTH ABUT. (RAMP F2) APPROACH SLAB

(LOOKING SOUTH)



SECTION THRU SOUTH ABUTMENT



SECTION A-A

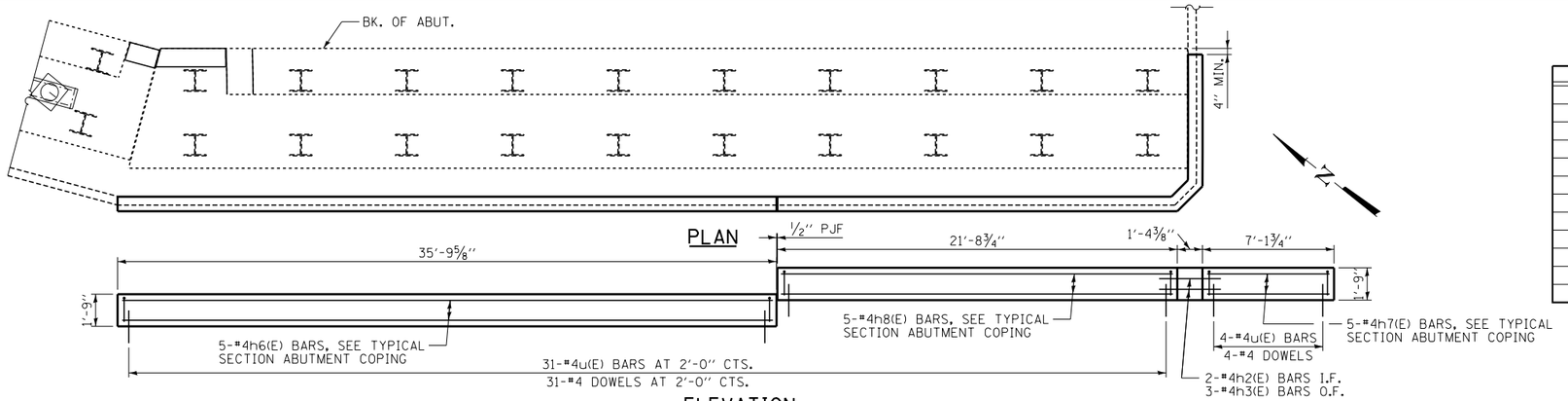
NOTES:
SLEEVE EACH PILE FROM 1'-0" BELOW TOP OF LEVELING PAD TO BOTTOM OF PROPOSED ABUTMENT AND WINGWALLS BEFORE PLACING AND COMPACTING THE SELECT FILL. FILL THE ANNULAR SPACE BETWEEN THE PILE AND SLEEVE WITH DRY SAND. THE DIAMETER SHALL BE 2'-6". THE COST OF THE SLEEVE ALONG WITH FURNISHING AND PLACEMENT OF THE SAND SHALL BE INCLUDED IN THE PRICE OF "FURNISHING STEEL PILES".

THE MSE WALL SUPPLIER IS ALERTED TO THE FACT THAT APRROX. 3.3 INCHES OF SETTLEMENT IS ANTICIPATED AND SHALL TAKE APPROPRIATE MEASURES TO ACCOMODATE THIS SETTLEMENT IN THE WALL DESIGN. TWO (2) SETTLEMENT PLATES ARE TO BE INSTALLED AND MONITORED DURING AND AFTER MSE WALL SELECT FILL PLACEMENT. WALL PANELS SHOULD BE INSTALLED AFTER EMBANKMENT SETTLEMENT HAS SLOWED TO MINIMUM RATE OF SETTLEMENT. COST INCLUDED WITH "MECHANICALLY STABILIZED EARTH RETAINING WALLS."

THE MSE WALL PRECAST PANELS SHALL HAVE AN ARCHITECTURAL SURFACE TREATMENT. THE SURFACE SHALL MATCH PATTERN #1104 OR #11016 BY CUSTOM ROCK INTERNATIONAL OR PATTERN #893 OR #894 BY ARCHITECTURAL POLYMERS AS APPROVED BY THE ENGINEER. COST SHALL BE INCLUDED IN MECHANICALLY STABILIZED EARTH RETAINING WALL

P:\60254057-294.5-91\STRUCTURAL\RESTART.2018\Ramp C over I-57 and I-294\016Z101.5.Abut5-MSEWall.dgn
3/30/2020

DRAWN BY . . . SP . . .	DATE . 4-3-2020 . . .	TY·LIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	REVISIONS NO. / DATE / DESCRIPTION	CONTRACT I-19-4495	SHEET SC - 168 OF 234
CHECKED BY . . . SP . . .	SCALE . NONE . . .				I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 116) SOUTH ABUTMENT MSE WALL DETAILS	443 OF 606

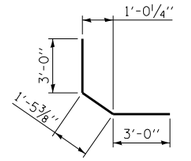


ELEVATION
EAST ABUTMENT MSE WALL COPING

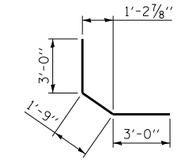
*MSE WALL COPING
BILL OF MATERIAL

BAR	NO.	SIZE	LENGTH	SHAPE
h(E)	10	#4	6'-5"	
h_1(E)	10	#4	7'-6"	
h_2(E)	15	#4	7'-9"	
h_3(E)	10	#4	22'-0"	
h_4(E)	5	#4	15'-3"	
h_5(E)	10	#4	30'-1"	
h_6(E)	5	#4	35'-5"	
h_7(E)	5	#4	28'-1"	
h_8(E)	5	#4	21'-4"	
h_9(E)	5	#4	25'-5"	
u(E)	90	#4	3'-2"	

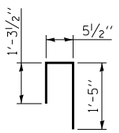
*FOR INFORMATION ONLY



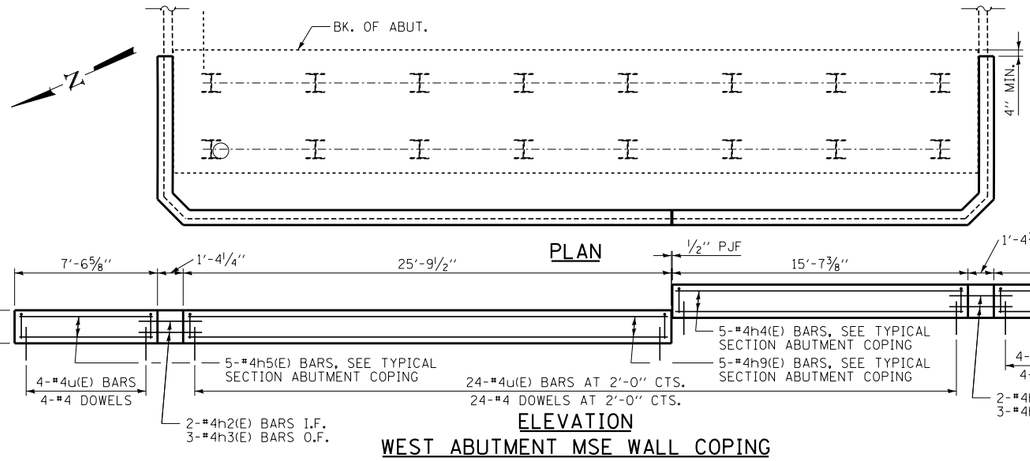
BAR h_2(E)



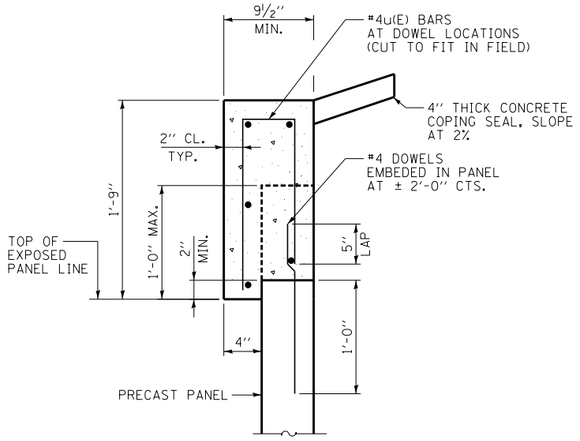
BAR h_3(E)



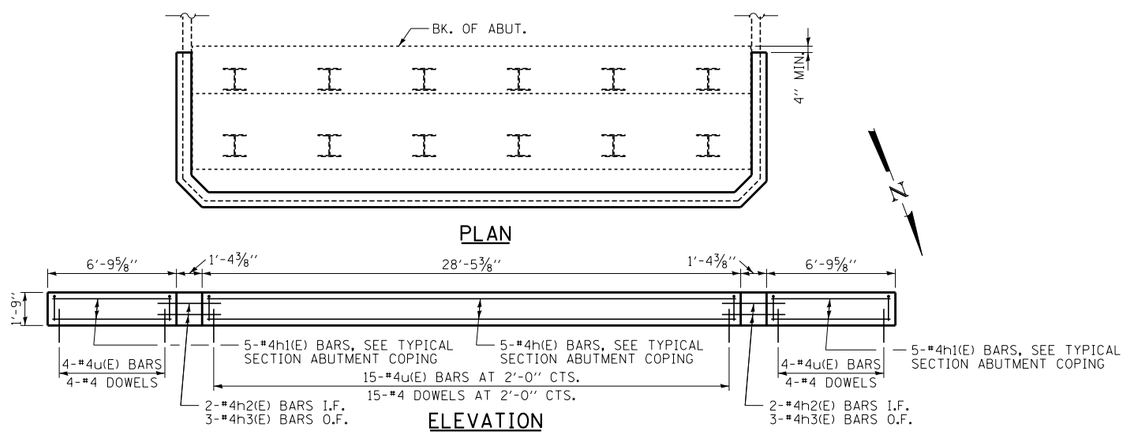
BAR u(E)



ELEVATION
WEST ABUTMENT MSE WALL COPING



TYPICAL SECTION - ABUTMENT COPING



ELEVATION
SOUTH ABUTMENT MSE WALL COPING

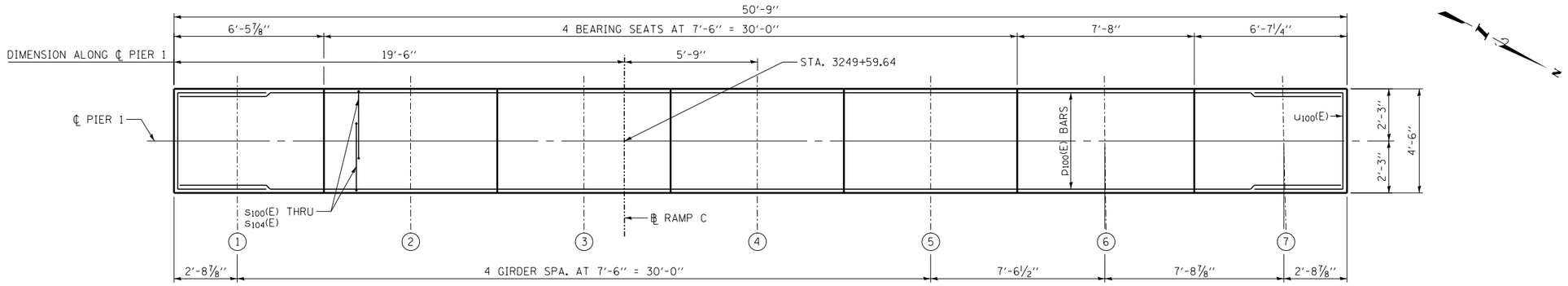
NOTES:

1. THE COSTS OF PREFORMED JOINT FILLER, COPING SEAL, CAST-IN-PLACE CONCRETE COPING, GEOTEXTILE FABRIC, REINFORCEMENT BARS, AND DOWEL BARS ARE INCLUDED IN COST OF "MECHANICALLY STABILIZED EARTH RETAINING WALL".
2. THE CONTRACTOR MAY SUBSTITUTE A PRECAST COPING AT THEIR OWN EXPENSE, THE DETAILS OF WHICH MUST BE INCLUDED IN THE SHOP PLANS AND APPROVED BY THE ENGINEER.

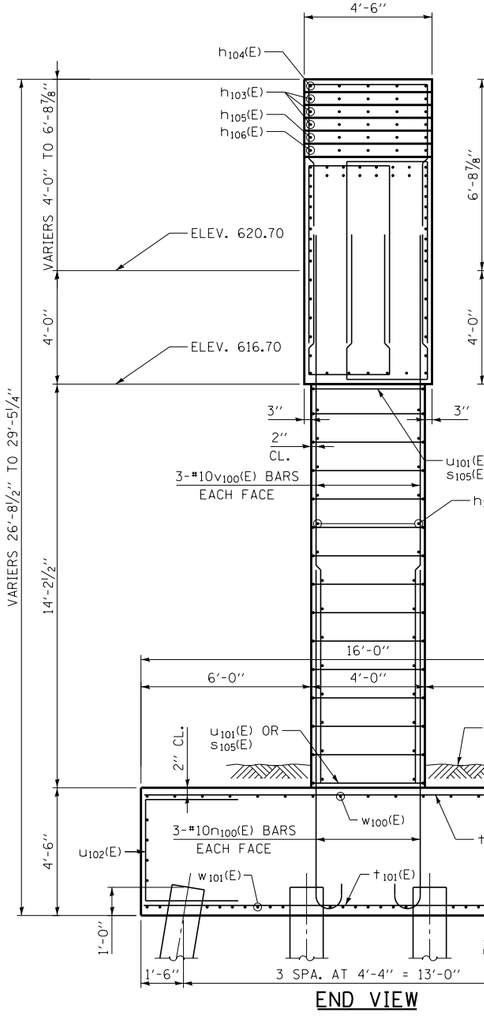
P:\62540\57-294_5-9\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\016201_5_MSE Wall Coping.dgn
3/30/2020

DRAWN BY . . . . JM	DATE . 4-3-2020	TY·LIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	REVISIONS NO. / DATE / DESCRIPTION	CONTRACT I-19-4495	SHEET SC - 169 OF 234
CHECKED BY . . . . SP	SCALE . NONE				I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 116) MSE WALL COPING DETAILS	444 OF 606

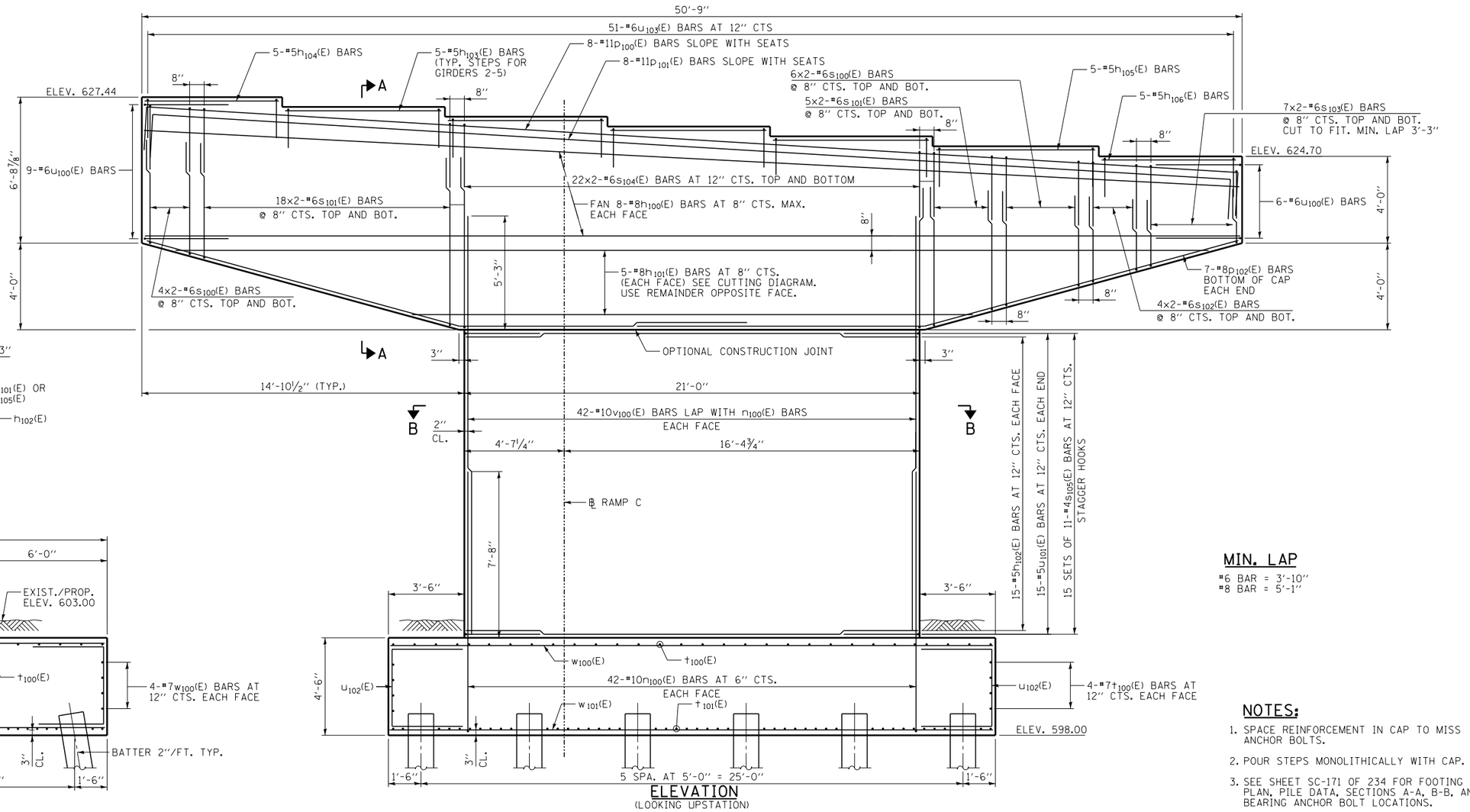
GIRDER	SEAT ELEV.	STEP HEIGHT
1	627.44	
2	626.99	5½″
3	626.53	5½″
4	626.08	5½″
5	625.63	5½″
6	625.17	5½″
7	624.70	5⅝″



TOP PLAN



END VIEW



ELEVATION
(LOOKING UPSTATION)

MIN. LAP

#6 BAR = 3′-10″
#8 BAR = 5′-1″

NOTES:

1. SPACE REINFORCEMENT IN CAP TO MISS ANCHOR BOLTS.
2. POUR STEPS MONOLITHICALLY WITH CAP.
3. SEE SHEET SC-171 OF 234 FOR FOOTING PLAN, PILE DATA, SECTIONS A-A, B-B, AND BEARING ANCHOR BOLT LOCATIONS.

P:\60254\057-294.5-9\STRUCTURAL\RESTART.2018\Ramp C over I-57 and I-294\016210L5.unit-Pier1.dgn
3/30/2020

DRAWN BY . . . OR . . . .
CHECKED BY . . . SP . . . .
DATE . 4-3-2020 . . .
SCALE . NONE . . . . .

T·Y·LIN INTERNATIONAL

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

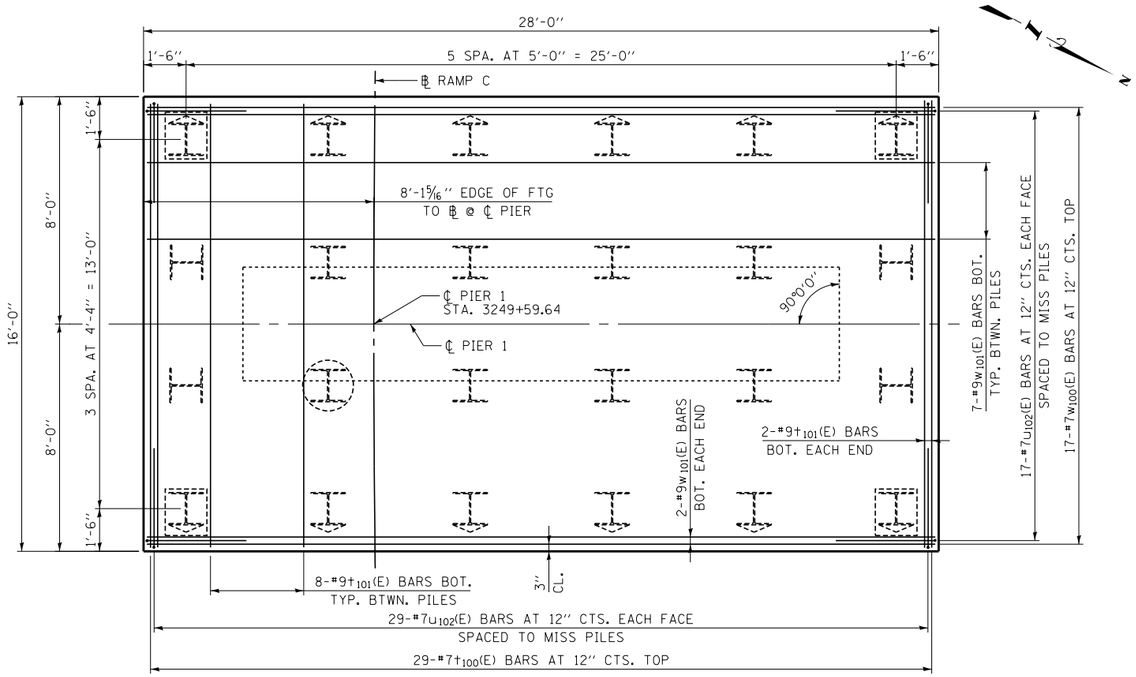
REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

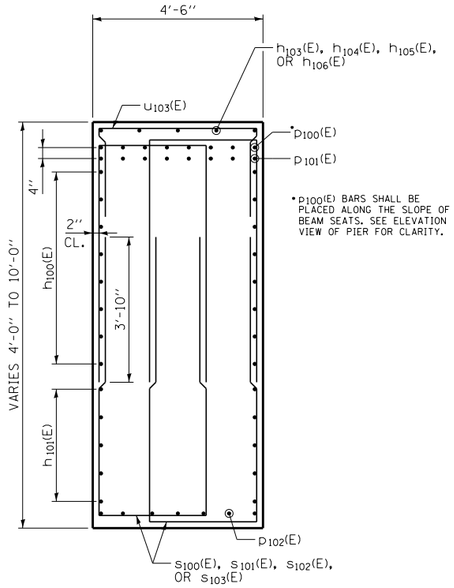
I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
PIER 1 PLAN AND ELEVATION

SHEET SC - 170 OF 234

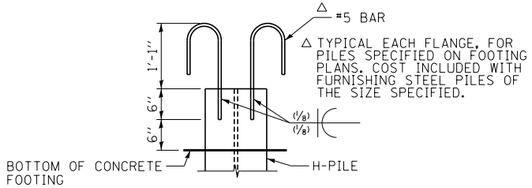
445 OF 606



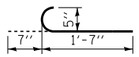
FOOTING PLAN



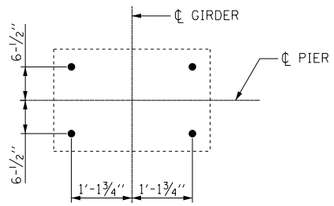
SECTION A-A



PILE WELDED REBAR DETAIL



#5 PILE WELDED REBAR



ANCHOR BOLT LAYOUT

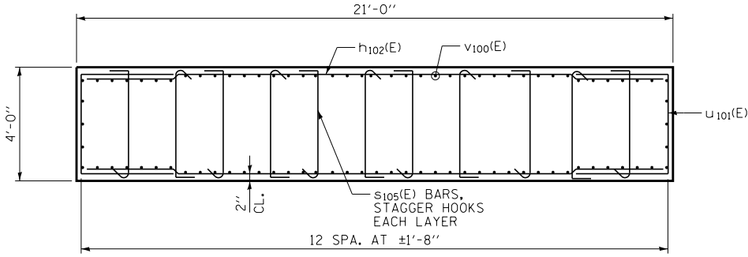
PILE DATA

PILE TYPE AND SIZE: HP14X73 WITH PILES SHOES
NOMINAL REQUIRED BEARING: 560 KIPS
FACTORED RESISTANCE AVAILABLE: 308 KIPS
ESTIMATED PILE LENGTH: 30 FEET
NUMBER OF PILE REQUIRED: 23 PLUS 1 TEST PILE

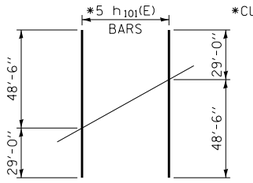
INDICATES BATTERED PILE.

INDICATES TEST PILE.

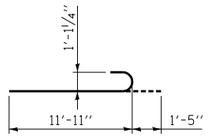
PROPOSED PILE W/ WELDED REBAR



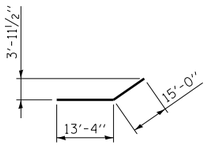
SECTION B-B



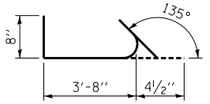
BAR CUTTING DIAGRAM



BAR n100(E)



BAR p102(E)



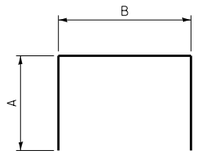
BAR s105(E)

BILL OF MATERIAL

REINFORCEMENT BAR LIST

BAR	NO.	SIZE	LENGTH	SHAPE
h100(E)	16	#8	50'-4"	
h101(E)	5	#8	77'-6"	
h102(E)	30	#5	20'-8"	
h103(E)	20	#5	7'-2"	
h104(E)	5	#5	6'-2"	
h105(E)	5	#5	7'-4"	
h106(E)	5	#5	6'-3"	
n100(E)	90	#10	13'-4"	
p100(E)	8	#11	54'-1"	
p101(E)	8	#11	53'-7"	
p102(E)	14	#8	28'-4"	
s100(E)	40	#6	13'-6"	
s101(E)	92	#6	16'-0"	
s102(E)	16	#6	12'-2"	
s103(E)	28	#6	11'-2"	
s104(E)	88	#6	12'-3"	
s105(E)	165	#4	4'-9"	
t100(E)	37	#7	15'-8"	
t101(E)	44	#9	15'-8"	
u100(E)	15	#6	11'-10"	
u101(E)	30	#5	10'-10"	
u102(E)	92	#7	11'-0"	
u103(E)	51	#6	13'-6"	
v100(E)	90	#10	19'-6"	
w100(E)	25	#7	27'-8"	
w101(E)	25	#9	27'-8"	

ITEM	UNIT	QUANTITY
STRUCTURE EXCAVATION	CU. YD.	176
CONCRETE STRUCTURES	CU. YD.	188.3
REINFORCEMENT BARS, EPOXY COATED	POUND	40,240
FURNISHING STEEL PILES HP 14x73	FOOT	690
DRIVING PILES	FOOT	690
TEST PILE STEEL SHAPE HP 14x73	EACH	1
PILE SHOES	EACH	24



BAR	A	B
p100(E)	2'-0"	50'-1"
p101(E)	2'-0"	49'-7"
s100(E)	5'-4"	2'-10"
s101(E)	6'-7"	2'-10"
s102(E)	4'-8"	2'-10"
s103(E)	4'-2"	2'-10"
s104(E)	6'-7"	2'-10"
u100(E)	3'-10"	4'-2"
u101(E)	3'-7"	3'-8"
u102(E)	3'-6"	4'-0"
u103(E)	2'-7"	4'-2"

BARS p100(E), p101(E), s100(E), s101(E), s102(E), s103(E), s104(E), u100(E), u101(E), u102(E) AND u103(E)

P:\60254057-294,5-91\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\0162101.5_unit-Pier1dtl.dgn
3/30/2020

DRAWN BY . . . OR . . . .
CHECKED BY . . . SP . . . .
DATE . 4-3-2020 . . .
SCALE . NONE . . . .

TY·LIN INTERNATIONAL

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

REVISIONS		
NO.	DATE	DESCRIPTION

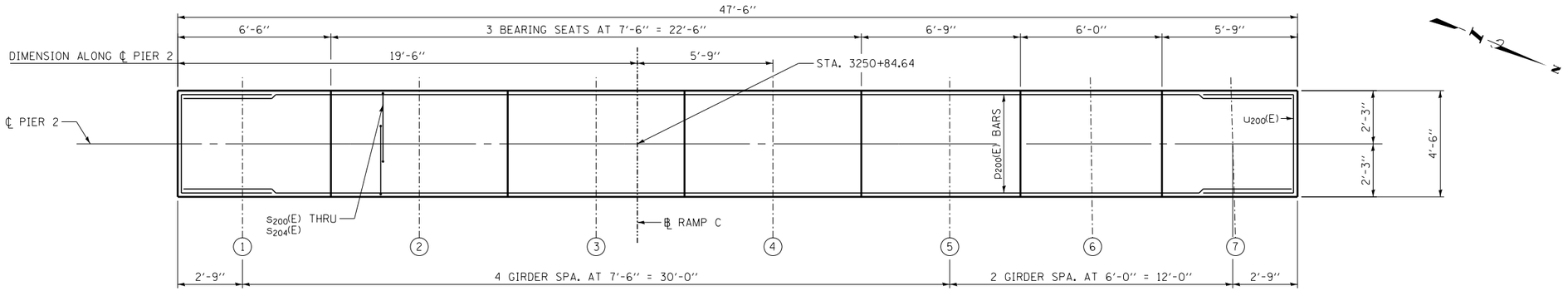
CONTRACT I-19-4495

I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
PIER 1 DETAILS

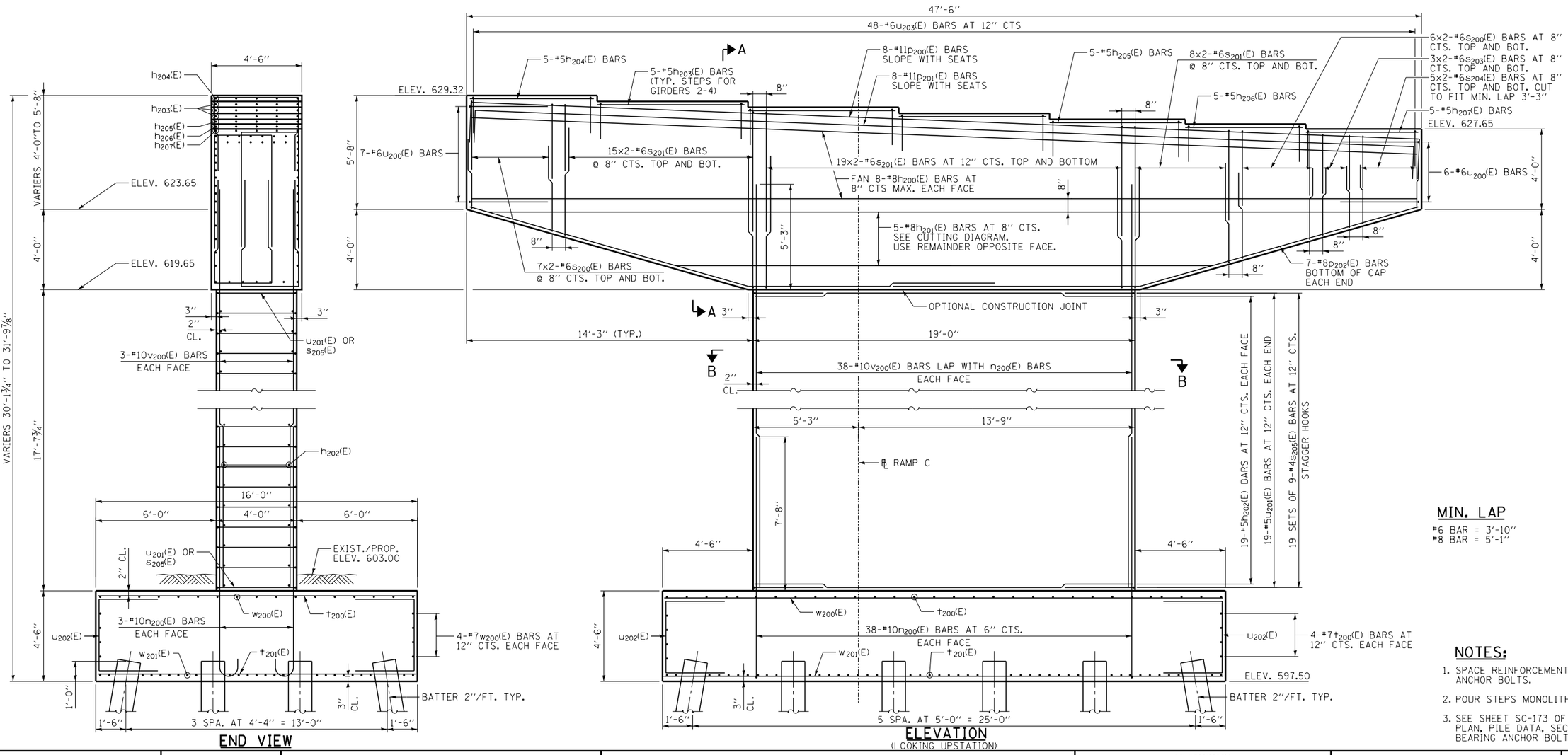
SHEET SC - 171 OF 234

446 OF 606

GIRDER	SEAT ELEV.	STEP HEIGHT
1	629.32	
2	629.02	3 1/2"
3	628.72	3 1/2"
4	628.43	3 1/2"
5	628.12	3 5/8"
6	627.89	2 7/8"
7	627.65	2 7/8"



TOP PLAN



ELEVATION
(LOOKING UPSTATION)

END VIEW

MIN. LAP
#6 BAR = 3'-10"
#8 BAR = 5'-1"

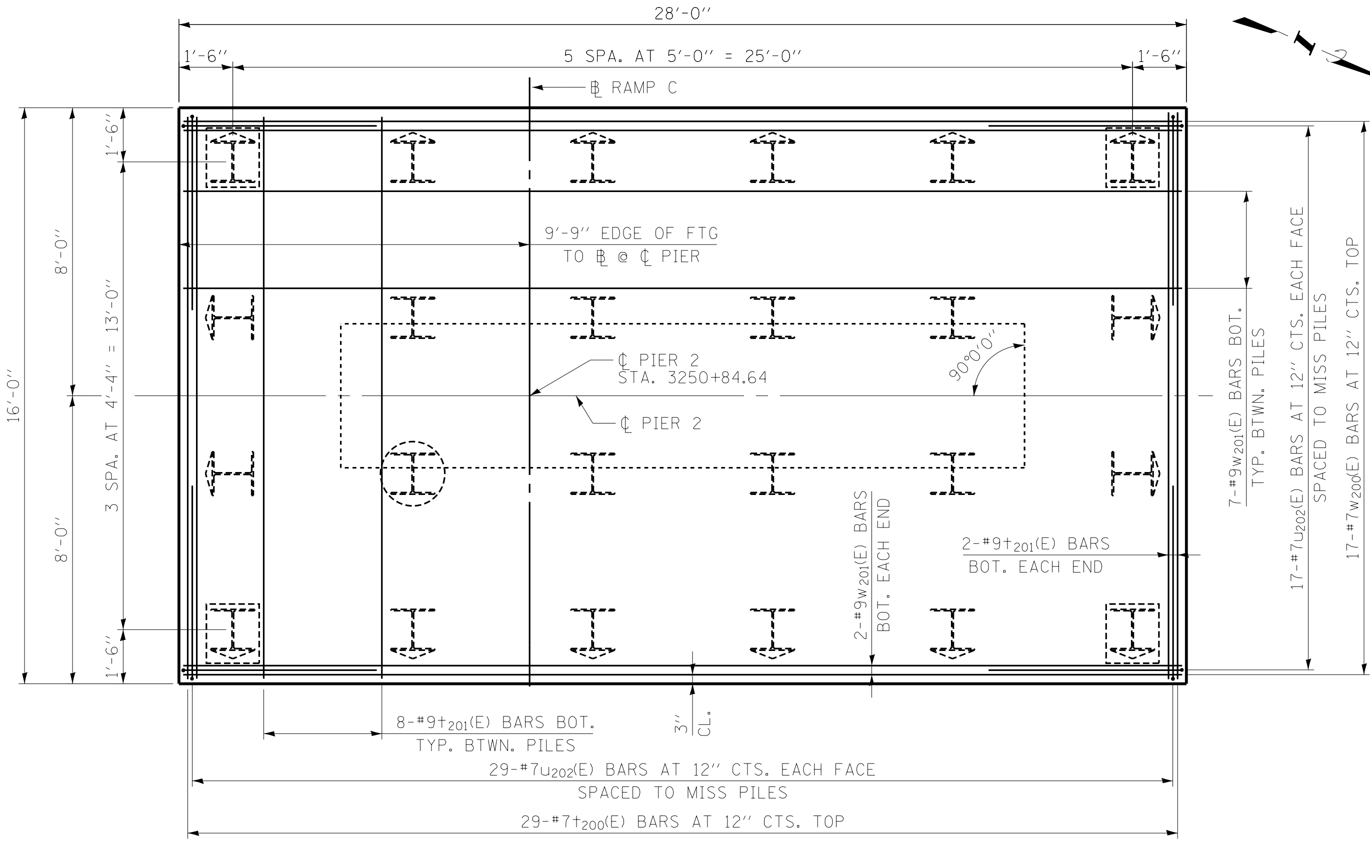
NOTES:
1. SPACE REINFORCEMENT IN CAP TO MISS ANCHOR BOLTS.
2. POUR STEPS MONOLITHICALLY WITH CAP.
3. SEE SHEET SC-173 OF 234 FOR FOOTING PLAN, PILE DATA, SECTIONS A-A, B-B, AND BEARING ANCHOR BOLT LOCATIONS.

P:\602540\57-294.5-91\STRUCTURAL\RESTART.2018\Ramp C over I-57 and I-294\016-2101.5_unit-Pier-2.dgn
3/30/2020

DRAWN BY . . . OR	DATE . 4-3-2020	T·Y·LIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515
CHECKED BY . . . SP	SCALE . NONE		

REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495	SHEET SC - 172 OF 234
I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 116) PIER 2 PLAN AND ELEVATION	447 OF 606

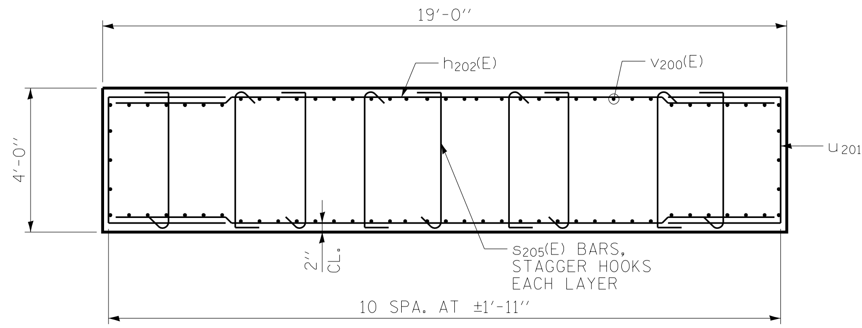


FOOTING PLAN

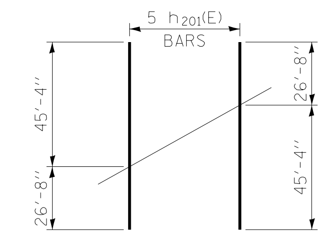
PILE DATA

PILE TYPE AND SIZE: HP14X73 WITH PILES SHOES
NOMINAL REQUIRED BEARING: 578 KIPS
FACTORED RESISTANCE AVAILABLE: 318 KIPS
ESTIMATED PILE LENGTH: 30 FEET
NUMBER OF PILE REQUIRED: 23 PLUS 1 TEST PILE

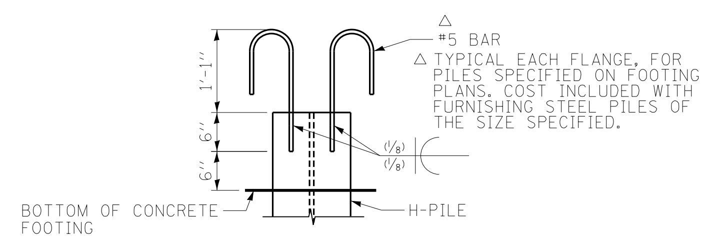
INDICATES BATTERED PILE.
INDICATES TEST PILE.
PROPOSED PILE W/ WELDED REBAR



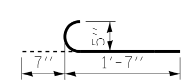
SECTION B-B



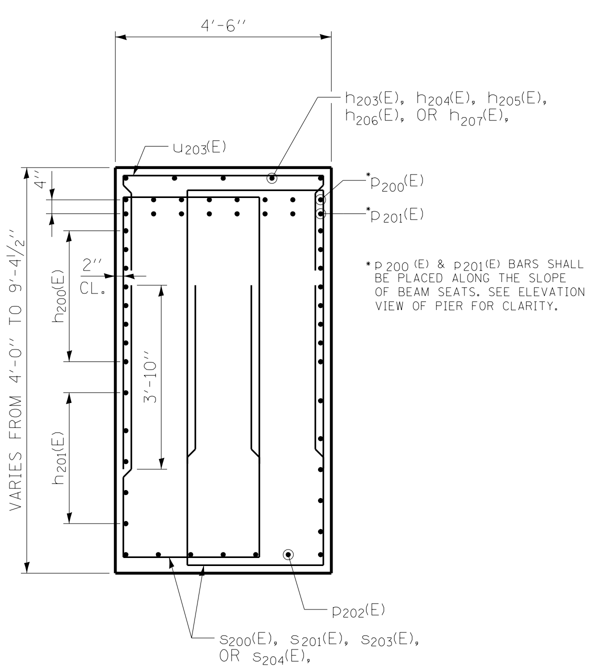
BAR CUTTING DIAGRAM



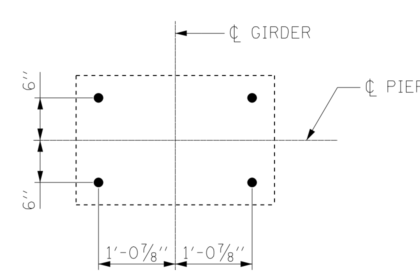
PILE WELDED REBAR DETAIL



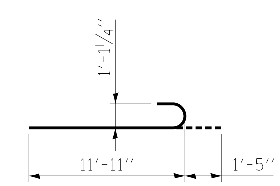
#5 PILE WELDED REBAR



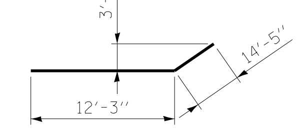
SECTION A-A



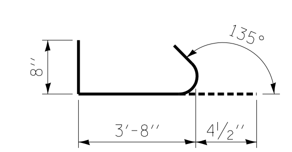
ANCHOR BOLT LAYOUT



BAR n200(E)



BAR p202(E)



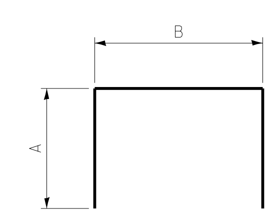
BAR s205(E)

BILL OF MATERIAL

REINFORCEMENT BAR LIST

BAR	NO.	SIZE	LENGTH	SHAPE
h200(E)	16	#8	47'-0"	
h201(E)	5	#8	72'-0"	
h202(E)	38	#5	18'-8"	
h203(E)	15	#5	7'-2"	
h204(E)	5	#5	6'-2"	
h205(E)	5	#5	6'-5"	
h206(E)	5	#5	5'-8"	
h207(E)	5	#5	5'-5"	
n200(E)	82	#10	13'-4"	
p200(E)	8	#11	50'-10"	
p201(E)	8	#11	50'-4"	
p202(E)	14	#8	26'-8"	
s200(E)	52	#6	12'-10"	
s201(E)	168	#6	15'-4"	
s203(E)	12	#6	11'-8"	
s204(E)	20	#6	11'-0"	
s205(E)	171	#4	4'-9"	
t200(E)	37	#7	15'-8"	
t201(E)	44	#9	15'-8"	
u200(E)	13	#6	11'-10"	
u201(E)	38	#5	10'-10"	
u202(E)	92	#7	11'-0"	
u203(E)	48	#6	9'-4"	
v200(E)	82	#10	22'-11"	
w200(E)	25	#7	27'-8"	
w201(E)	25	#9	27'-8"	

ITEM	UNIT	QUANTITY
STRUCTURE EXCAVATION	CU. YD.	176
CONCRETE STRUCTURES	CU. YD.	184.60
REINFORCEMENT BARS, EPOXY COATED	POUND	38,690
FURNISHING STEEL PILES HP 14x73	FOOT	690
DRIVING PILES	FOOT	690
TEST PILE STEEL SHAPE HP 14x73	EACH	1
PILE SHOES	EACH	24

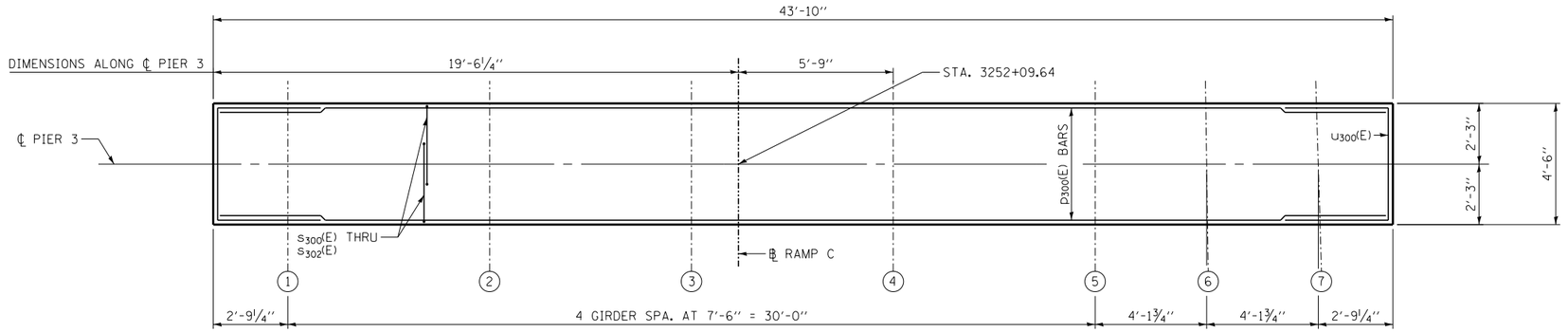


BAR	A	B
p200(E)	2'-0"	46'-10"
p201(E)	2'-0"	46'-4"
s200(E)	5'-0"	2'-10"
s201(E)	6'-3"	2'-10"
s203(E)	4'-5"	2'-10"
s204(E)	4'-1"	2'-10"
u200(E)	3'-10"	4'-2"
u201(E)	3'-7"	3'-8"
u202(E)	3'-6"	4'-0"
u203(E)	2'-7"	4'-2"

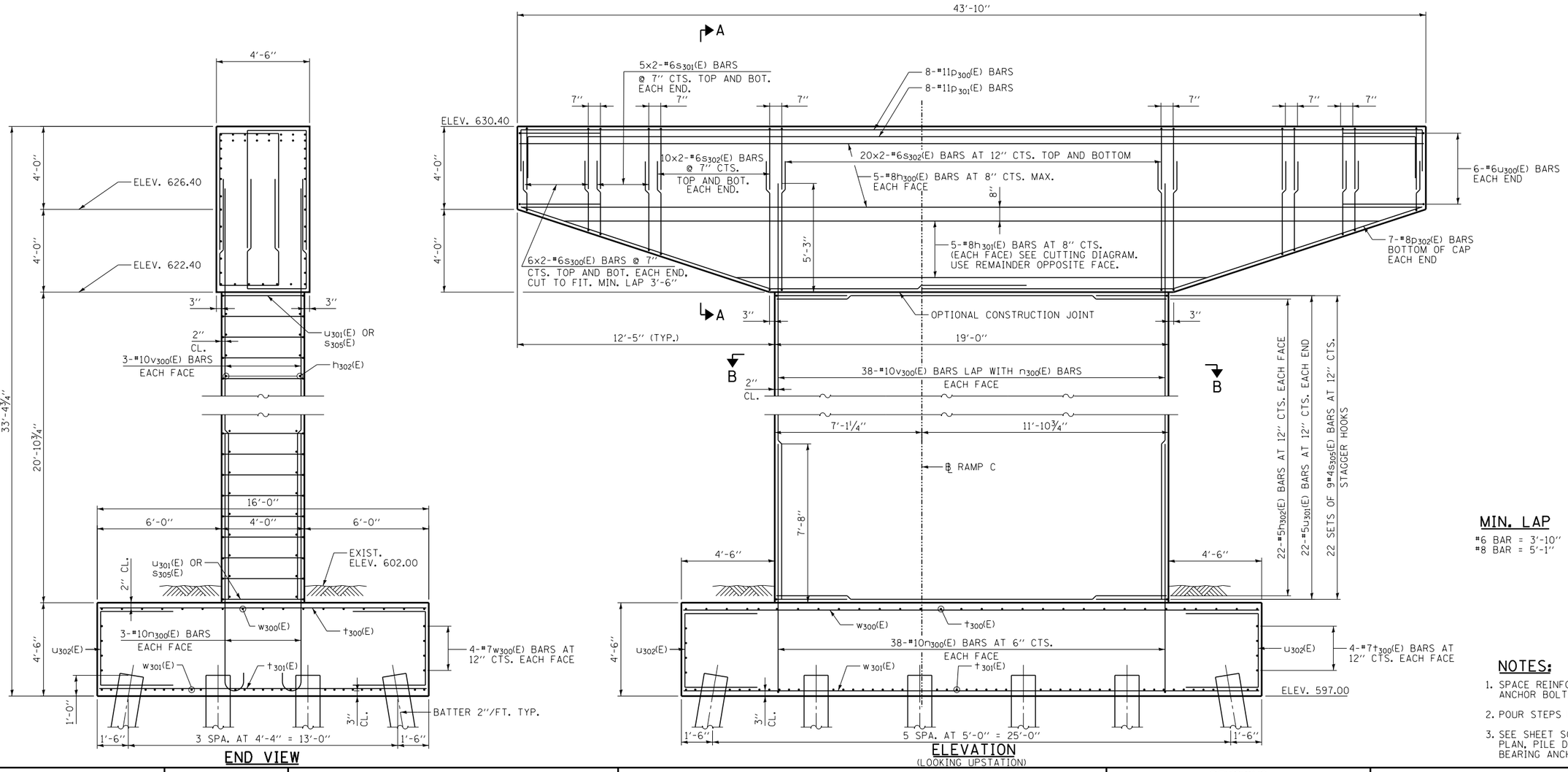
BARS p200(E), p201(E), s200(E), s201(E), s203(E), s204(E), u200(E) u201(E), u202(E), AND u203(E)

DRAWN BY OR	DATE 4-3-2020	TYLIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	REVISIONS	CONTRACT I-19-4495	SHEET SC - 173 OF 234
CHECKED BY SP	SCALE NONE			NO. / DATE / DESCRIPTION	I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 116) PIER 2 DETAILS	448 OF 606

P:\60254005\57-294.5-9\STRUCTURAL\RESTART.2018\Ramp C over I-57 and I-294\0162101.5_unit1-Pier2dtl.dgn 3/30/2020



TOP PLAN



ELEVATION
(LOOKING UPSTATION)

END VIEW

MIN. LAP
#6 BAR = 3'-10"
#8 BAR = 5'-1"

NOTES:
1. SPACE REINFORCEMENT IN CAP TO MISS ANCHOR BOLTS.
2. POUR STEPS MONOLITHICALLY WITH CAP.
3. SEE SHEET SC-175 OF 234 FOR FOOTING PLAN, PILE DATA, SECTIONS A-A, B-B, AND BEARING ANCHOR BOLT LOCATIONS.

P:\602540\57-294.5-91\STRUCTURAL\RESTART.2018\Ramp C over I-57 and I-294\016-2101.5_unit-Pier3.dgn
3/30/2020

DRAWN BY . . . . OR . . . . . DATE . 4-3-2020 . . .
CHECKED BY . . . SP . . . . . SCALE . NONE . . . . .

T·Y·LIN INTERNATIONAL

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

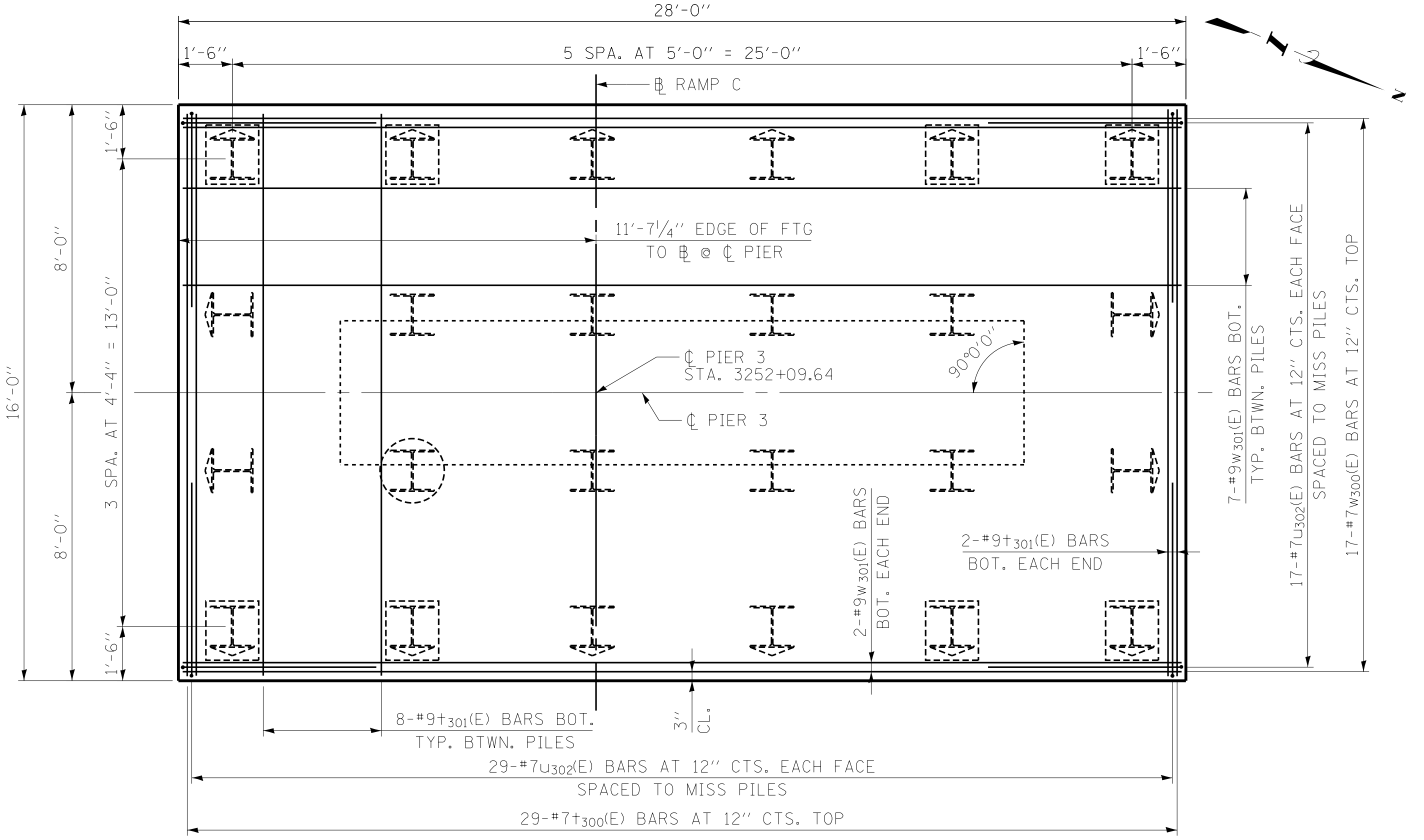
REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
PIER 3 PLAN AND ELEVATION

SHEET SC - 174 OF 234

449 OF 606

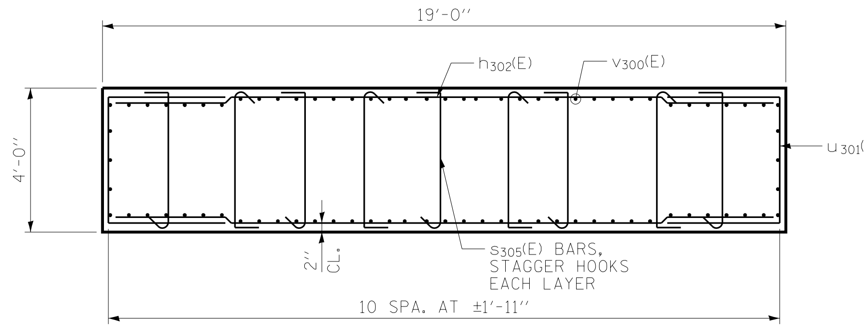


FOOTING PLAN

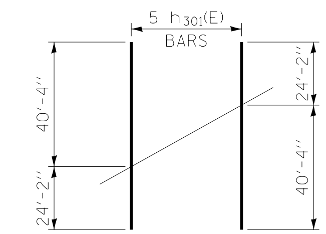
PILE DATA

PILE TYPE AND SIZE: HP14X73 WITH PILES SHOES
NOMINAL REQUIRED BEARING: 564 KIPS
FACTORED RESISTANCE AVAILABLE: 578 KIPS
ESTIMATED PILE LENGTH: 32 FEET
NUMBER OF PILE REQUIRED: 23 PLUS 1 TEST PILE

INDICATES BATTERED PILE.
INDICATES TEST PILE.
PROPOSED PILE W/ WELDED REBAR



SECTION B-B



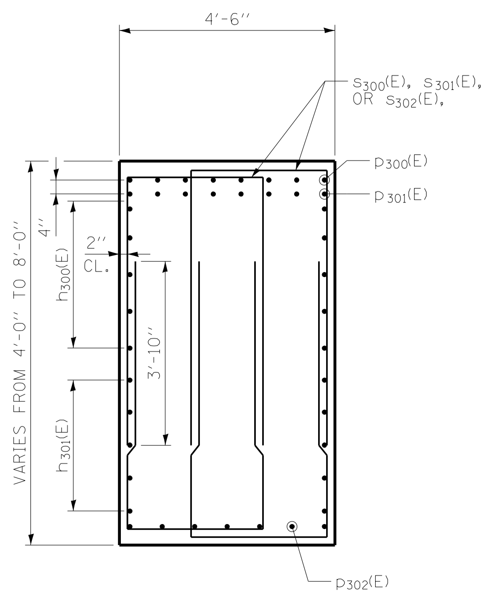
BAR CUTTING DIAGRAM

BILL OF MATERIAL

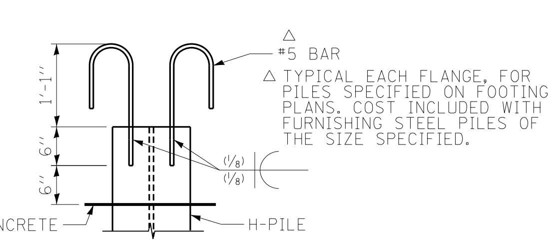
REINFORCEMENT BAR LIST

BAR	NO.	SIZE	LENGTH	SHAPE
h300(E)	10	#8	43'-6"	
h301(E)	5	#8	64'-6"	
h302(E)	44	#5	18'-8"	
n300(E)	82	#10	13'-4"	
p300(E)	8	#11	47'-2"	
p301(E)	8	#11	46'-8"	
p302(E)	14	#8	25'-0"	
s300(E)	48	#6	11'-2"	
s301(E)	40	#6	12'-6"	
s302(E)	160	#6	14'-4"	
s305(E)	198	#4	4'-9"	
t300(E)	37	#7	15'-8"	
t301(E)	44	#9	15'-8"	
u300(E)	12	#6	11'-10"	
u301(E)	44	#5	10'-10"	
u302(E)	92	#7	11'-0"	
v300(E)	82	#10	26'-2"	
w300(E)	25	#7	27'-8"	
w301(E)	25	#9	27'-8"	

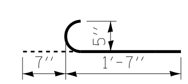
ITEM	UNIT	QUANTITY
STRUCTURE EXCAVATION	CU. YD.	176
CONCRETE STRUCTURES	CU. YD.	183.7
REINFORCEMENT BARS, EPOXY COATED	POUND	37,450
FURNISHING STEEL PILES HP 14x73	FOOT	736
DRIVING PILES	FOOT	736
TEST PILE STEEL SHAPE HP 14x73	EACH	1
PILE SHOES	EACH	24



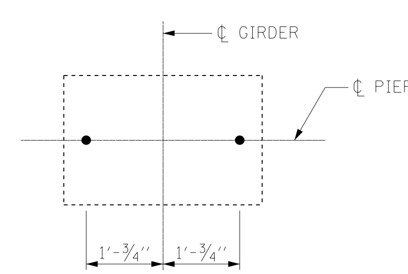
SECTION A-A



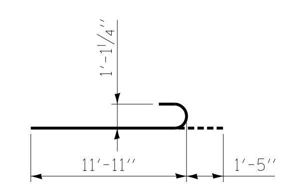
PILE WELDED REBAR DETAIL



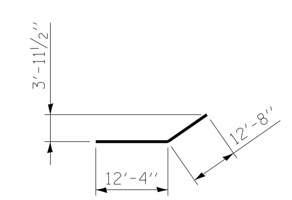
#5 PILE WELDED REBAR



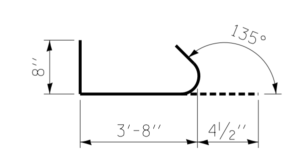
ANCHOR BOLT LAYOUT



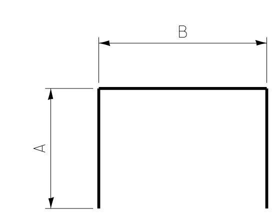
BAR n300(E)



BAR p302(E)



BAR s305(E)



BAR	A	B
p300(E)	2'-0"	43'-2"
p301(E)	2'-0"	42'-8"
s300(E)	4'-2"	2'-10"
s301(E)	4'-10"	2'-10"
s302(E)	5'-9"	2'-10"
u300(E)	3'-10"	4'-2"
u301(E)	3'-7"	3'-8"
u302(E)	3'-6"	4'-0"

BARS p300(E), p301(E), s300(E), s301(E), s302(E), u300(E), u301(E) AND u302(E)

DRAWN BY OR	DATE 4-3-2020
CHECKED BY SP	SCALE NONE

TY·LIN INTERNATIONAL

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

REVISIONS

NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
PIER 3 DETAILS

SHEET SC - 175 OF 234

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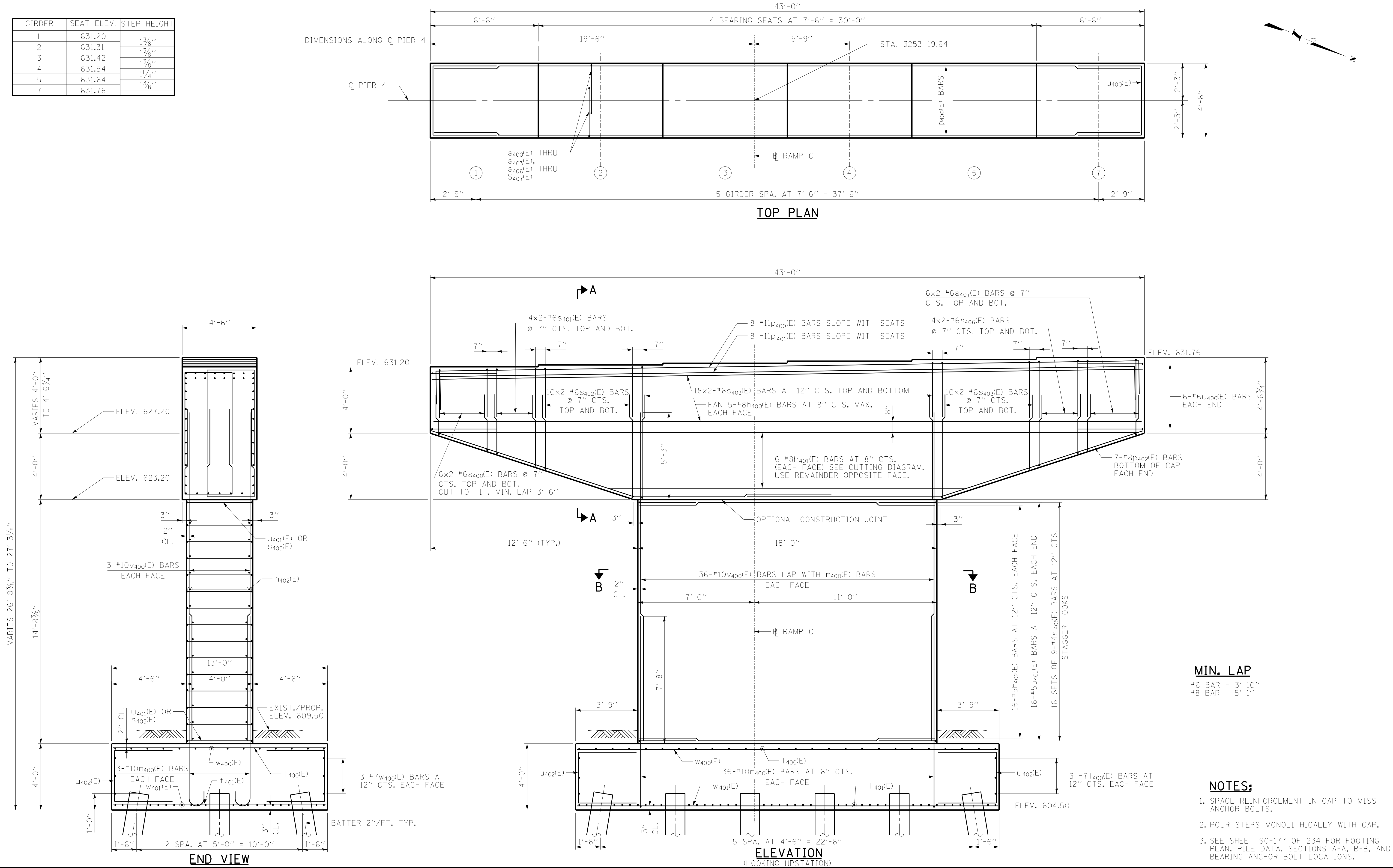
P:\60254\057-294.5-9\STRUCTURAL\RESTART.2018\Ramp C over I-57 and I-294\0162101.5_unit1-Pier3dtl.dgn
3/30/2020

GIRDER	SEAT ELEV.	STEP HEIGHT
1	631.20	
		1 3/8"
2	631.31	
		1 3/8"
3	631.42	
		1 3/8"
4	631.54	
		1 1/4"
5	631.64	
		1 3/8"
7	631.76	



MIN. LAP

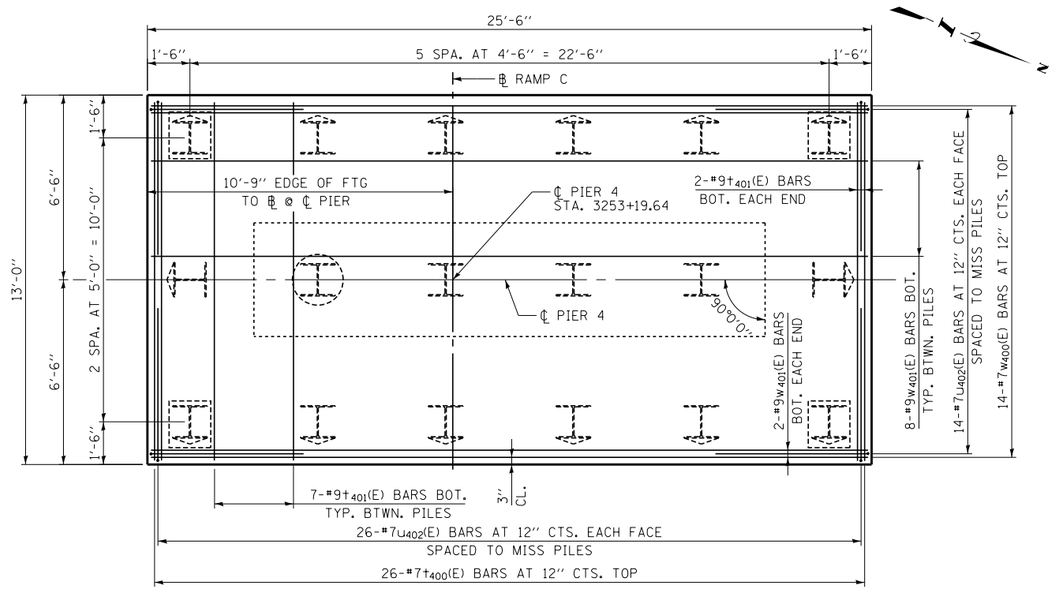
#6 BAR = 3'-10"
#8 BAR = 5'-1"

NOTES:

1. SPACE REINFORCEMENT IN CAP TO MISS ANCHOR BOLTS.
2. POUR STEPS MONOLITHICALLY WITH CAP.
3. SEE SHEET SC-177 OF 234 FOR FOOTING PLAN, PILE DATA, SECTIONS A-A, B-B, AND BEARING ANCHOR BOLT LOCATIONS.

P:\602540\57-294.5-9\STRUCTURAL\RESTART.2018\Ramp C over I-57 and I-294\0162101.5_unit1-Pier4.dgn
3/30/2020

DRAWN BY JM	DATE 4-3-2020	TYLIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	REVISIONS NO. / DATE / DESCRIPTION	CONTRACT I-19-4495	SHEET SC - 176 OF 234
CHECKED BY SP	SCALE NONE				I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 116) PIER 4 PLAN AND ELEVATION	451 OF 606



FOOTING PLAN

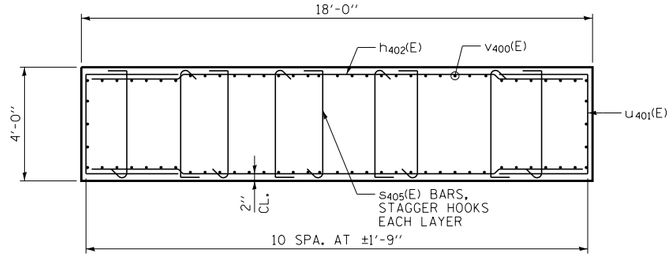
PILE DATA

PILE TYPE AND SIZE: HP14X73 WITH PILES SHOES
NOMINAL REQUIRED BEARING: 495 KIPS
FACTORED RESISTANCE AVAILABLE: 272 KIPS
ESTIMATED PILE LENGTH: 30 FEET
NUMBER OF PILE REQUIRED: 17 PLUS 1 TEST PILE

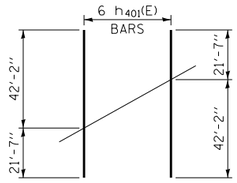
INDICATES BATTERED PILE.

INDICATES TEST PILE.

PROPOSED PILE W/ WELDED REBAR



SECTION B-B



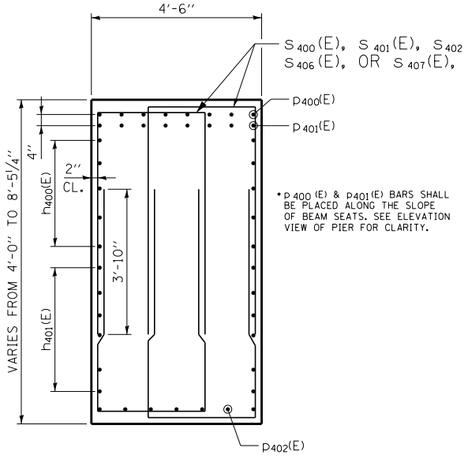
BAR CUTTING DIAGRAM

BILL OF MATERIAL

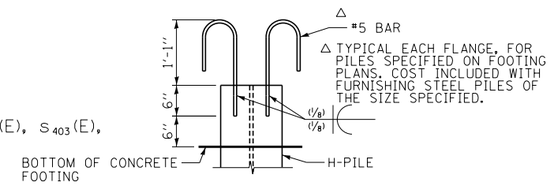
REINFORCEMENT BAR LIST

BAR	NO.	SIZE	LENGTH	SHAPE
h400(E)	10	#8	42'-8"	
h401(E)	6	#8	63'-9"	
h402(E)	32	#5	17'-8"	
n400(E)	78	#10	12'-10"	
p400(E)	8	#11	46'-4"	
p401(E)	8	#11	45'-10"	
p402(E)	14	#8	24'-7"	
s400(E)	24	#6	11'-2"	
s401(E)	16	#6	12'-6"	
s402(E)	36	#6	14'-5"	
s403(E)	108	#6	14'-8"	
s405(E)	144	#4	4'-9"	
s406(E)	16	#6	12'-10"	
s407(E)	24	#6	11'-8"	
t400(E)	32	#7	12'-8"	
t401(E)	39	#9	12'-8"	
u400(E)	12	#6	11'-10"	
u401(E)	32	#5	10'-10"	
u402(E)	80	#7	10'-6"	
v400(E)	78	#10	20'-0"	
w400(E)	20	#7	25'-2"	
w401(E)	20	#9	25'-2"	

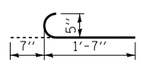
ITEM	UNIT	QUANTITY
STRUCTURE EXCAVATION	CU. YD.	144
CONCRETE STRUCTURES	CU. YD.	139.4
REINFORCEMENT BARS, EPOXY COATED	POUND	30,860
FURNISHING STEEL PILES HP 14x73	FOOT	510
DRIVING PILES	FOOT	510
TEST PILE STEEL SHAPE HP 14x73	EACH	1
PILE SHOES	EACH	18



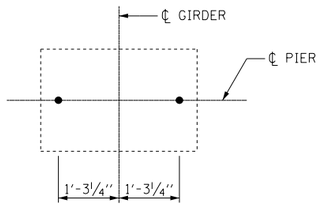
SECTION A-A



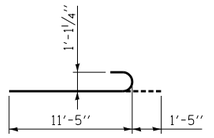
PILE WELDED REBAR DETAIL



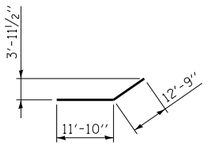
#5 PILE WELDED REBAR



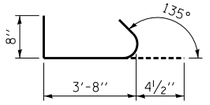
ANCHOR BOLT LAYOUT



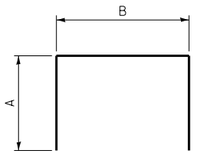
BAR n400(E)



BAR p402(E)



BAR s405(E)



BAR	A	B
p400(E)	2'-0"	42'-4"
p401(E)	2'-0"	41'-10"
s400(E)	4'-2"	2'-10"
s401(E)	4'-10"	2'-10"
s402(E)	5'-9½"	2'-10"
s403(E)	5'-11"	2'-10"
s406(E)	5'-0"	2'-10"
s407(E)	4'-5"	2'-10"
u400(E)	3'-10"	4'-2"
u401(E)	3'-7"	3'-8"
u402(E)	3'-6"	3'-6"

BARS p400(E), p401(E), s400(E), s401(E), s402(E), s403(E), s406(E), s407(E), u400(E), u401(E) AND u402(E)

P:\60254057-294.5-9\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\0162101.5_url1-Pier-441.dgn
3/30/2020

DRAWN BY . . . JM . . . .
CHECKED BY . . . SP . . . .
DATE . 4-3-2020 . . . .
SCALE . NONE . . . .

TY·LIN INTERNATIONAL

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

REVISIONS NO.	DATE	DESCRIPTION

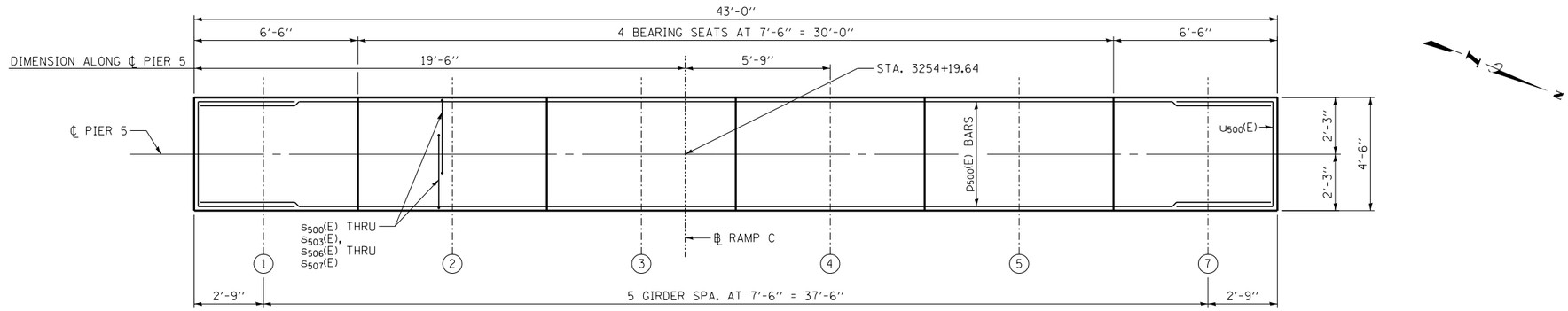
CONTRACT I-19-4495

I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
PIER 4 DETAILS

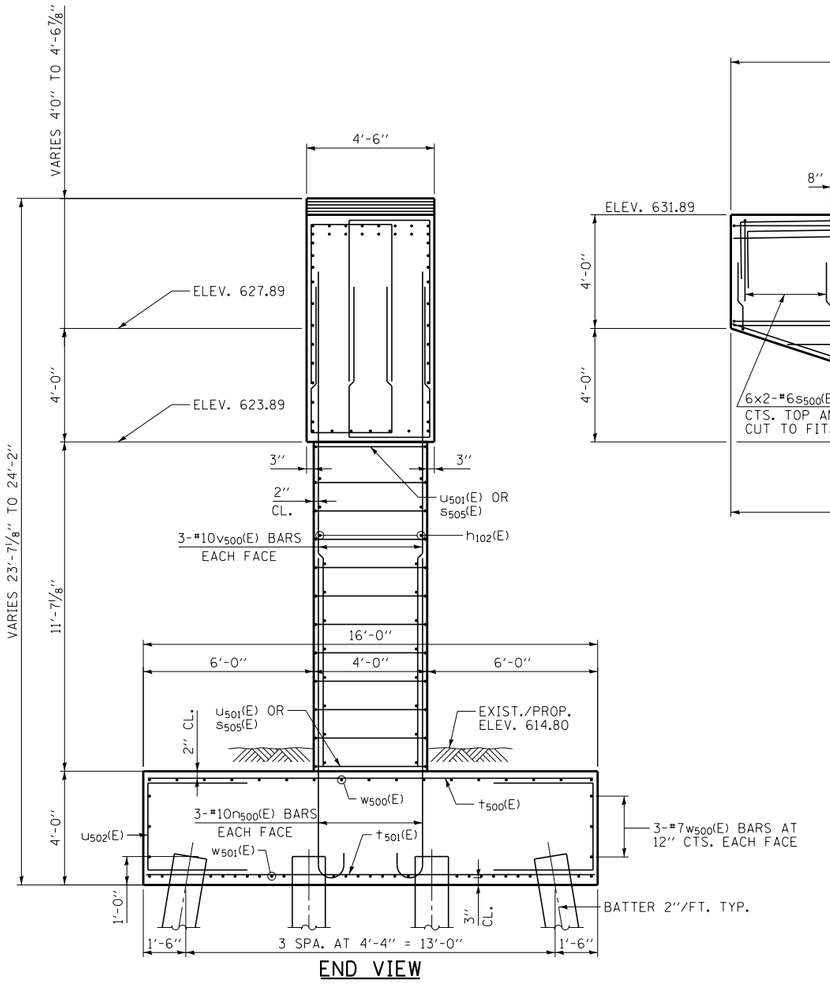
SHEET SC - 177 OF 234

452 OF 606

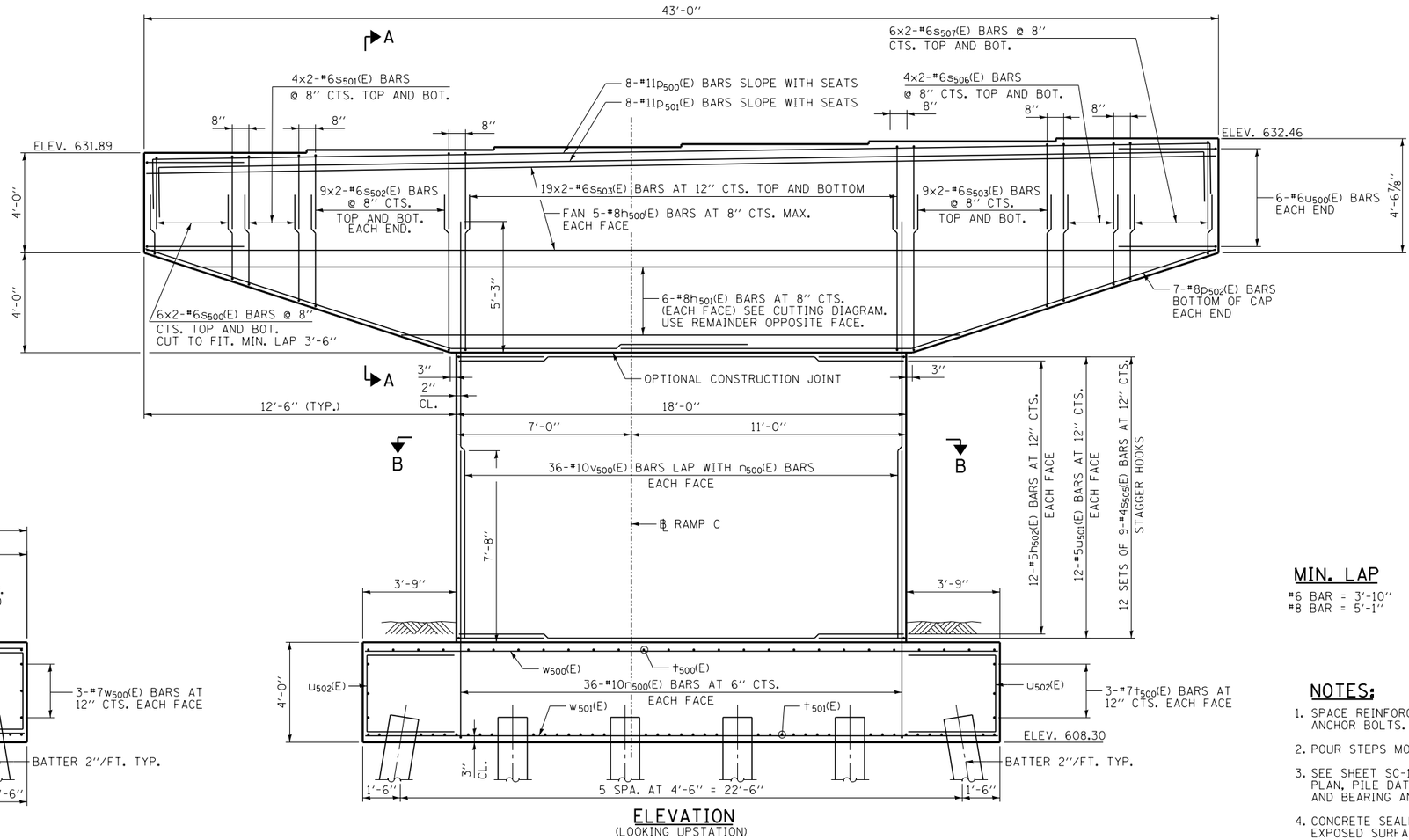
GIRDER	SEAT ELEV.	STEP HEIGHT
1	631.89	
2	632.01	1 3/8"
3	632.12	1 3/8"
4	632.23	1 3/8"
5	632.34	1 3/8"
7	632.46	1 3/8"



TOP PLAN



END VIEW



ELEVATION
(LOOKING UPSTATION)

MIN. LAP
#6 BAR = 3'-10"
#8 BAR = 5'-1"

NOTES:
1. SPACE REINFORCEMENT IN CAP TO MISS ANCHOR BOLTS.
2. POUR STEPS MONOLITHICALLY WITH CAP.
3. SEE SHEET SC-179 OF 234 FOR FOOTING PLAN, PILE DATA, SECTIONS A-A AND B-B, AND BEARING ANCHOR BOLT LOCATIONS.
4. CONCRETE SEALER TO BE APPLIED TO ALL EXPOSED SURFACES OF THE PIER.

P:\682540\57-294.5-9\STRUCTURAL\RESTART.2018\Ramp C over I-57 and I-294\0162101.5.un11-Pier5.dgn
3/30/2020

DRAWN BY . . . . JM . . . . . | DATE . 4-3-2020 . . . .
CHECKED BY . . . SP . . . . . | SCALE . NONE . . . . .

T·Y·LIN INTERNATIONAL

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

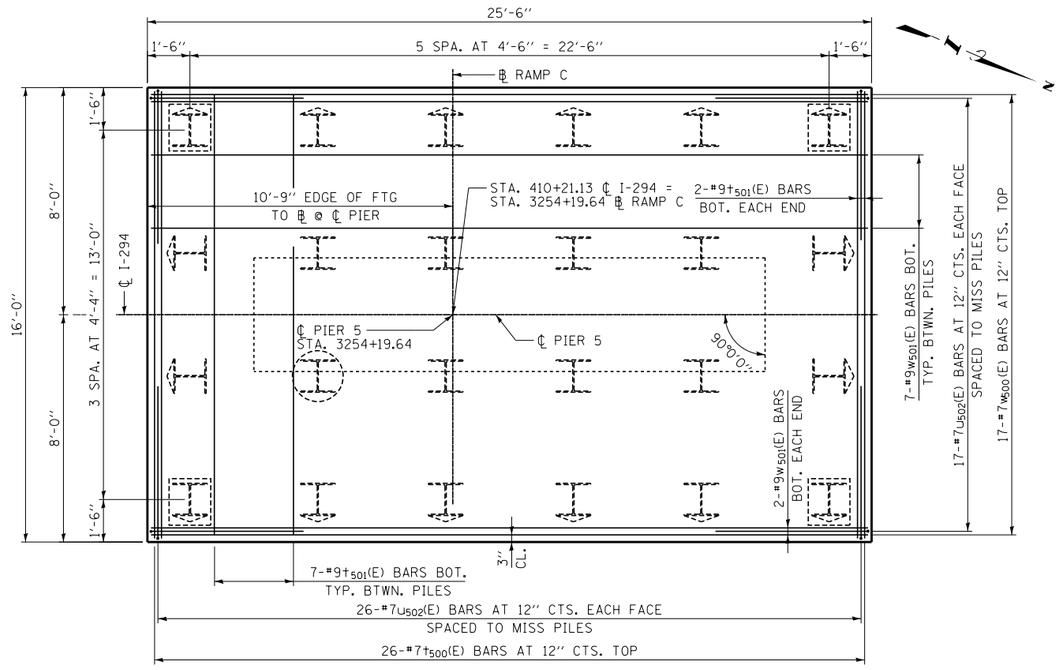
REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
PIER 5 PLAN AND ELEVATION

SHEET SC - 178 OF 234

453 OF 606



FOOTING PLAN

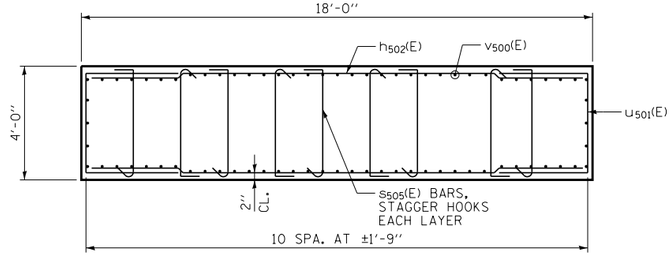
PILE DATA

PILE TYPE AND SIZE: HP14X73 WITH PILES SHOES
NOMINAL REQUIRED BEARING: 407 KIPS
FACTORED RESISTANCE AVAILABLE: 224 KIPS
ESTIMATED PILE LENGTH: 44 FEET
NUMBER OF PILE REQUIRED: 23 PLUS 1 TEST PILE

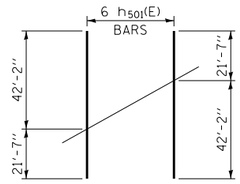
INDICATES BATTERED PILE.

INDICATES TEST PILE.

PROPOSED PILE W/ WELDED REBAR



SECTION B-B



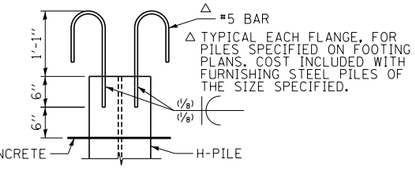
BAR CUTTING DIAGRAM

BILL OF MATERIAL

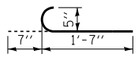
REINFORCEMENT BAR LIST

BAR	NO.	SIZE	LENGTH	SHAPE
h500(E)	10	#8	42'-8"	
h501(E)	6	#8	63'-9"	
h502(E)	24	#5	17'-8"	
n500(E)	78	#10	12'-10"	
p500(E)	8	#11	46'-8"	
p501(E)	8	#11	16'-2"	
p502(E)	14	#8	24'-7"	
s500(E)	24	#6	11'-2"	
s501(E)	16	#6	12'-6"	
s502(E)	36	#6	14'-5"	
s503(E)	112	#6	14'-6"	
s505(E)	108	#4	4'-9"	
s506(E)	16	#6	12'-10"	
s507(E)	24	#6	11'-8"	
t500(E)	32	#7	15'-8"	
t501(E)	39	#9	15'-8"	
u500(E)	12	#6	11'-10"	
u501(E)	24	#5	10'-10"	
u502(E)	86	#7	10'-6"	
v500(E)	78	#10	16'-10"	
w500(E)	25	#7	25'-2"	
w501(E)	25	#9	25'-2"	

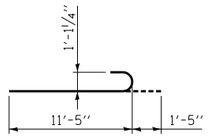
ITEM	UNIT	QUANTITY
STRUCTURE EXCAVATION	CU. YD.	179
CONCRETE STRUCTURES	CU. YD.	142.4
REINFORCEMENT BARS, EPOXY COATED	POUND	30,010
FURNISHING STEEL PILES HP 14x73	FOOT	1012
DRIVING PILES	FOOT	1012
TEST PILE STEEL SHAPE HP 14x73	EACH	1
PILE SHOES	EACH	24
CONCRETE SEALER	SQ. FT.	1659



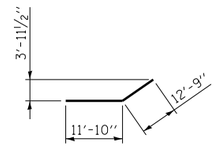
PILE WELDED REBAR DETAIL



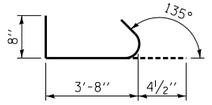
#5 PILE WELDED REBAR



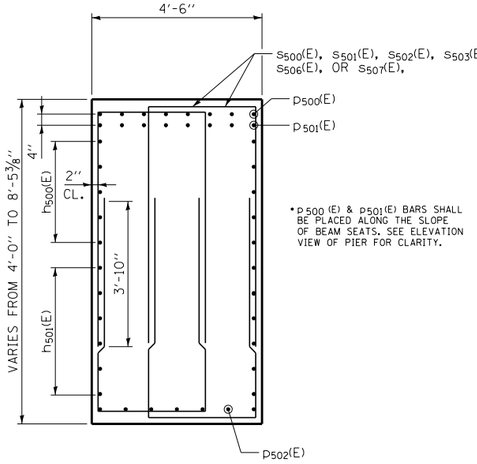
BAR n500(E)



BAR p502(E)

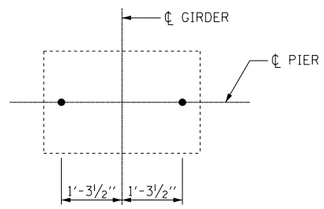


BAR s505(E)

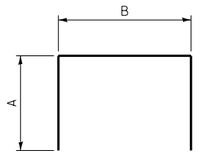


* p500(E) & p501(E) BARS SHALL BE PLACED ALONG THE SLOPE OF BEAM SEATS. SEE ELEVATION VIEW OF PIER FOR CLARITY.

SECTION A-A



ANCHOR BOLT LAYOUT



BAR	A	B
p500(E)	2'-0"	42'-4"
p501(E)	2'-0"	41'-10"
s500(E)	4'-2"	2'-10"
s501(E)	4'-10"	2'-10"
s502(E)	5'-9½"	2'-10"
s503(E)	5'-11"	2'-10"
s506(E)	5'-0"	2'-10"
s507(E)	4'-5"	2'-10"
u500(E)	3'-10"	4'-2"
u501(E)	3'-7"	3'-8"
u502(E)	3'-6"	3'-6"

BARS p500(E), p501(E), s500(E), s501(E), s502(E), s503(E), s506(E), s507(E), u500(E), u501(E) AND u502(E)

P:\60254057-294,5-9\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\0162101.5_sht41-Pier-Det1.dgn
3/30/2020

DRAWN BY . . . JM . . . .
CHECKED BY . . . SP . . . .
DATE . 4-3-2020 . . .
SCALE . NONE . . . .

TY·LIN INTERNATIONAL

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
PIER 5 DETAILS

SHEET SC - 179 OF 234

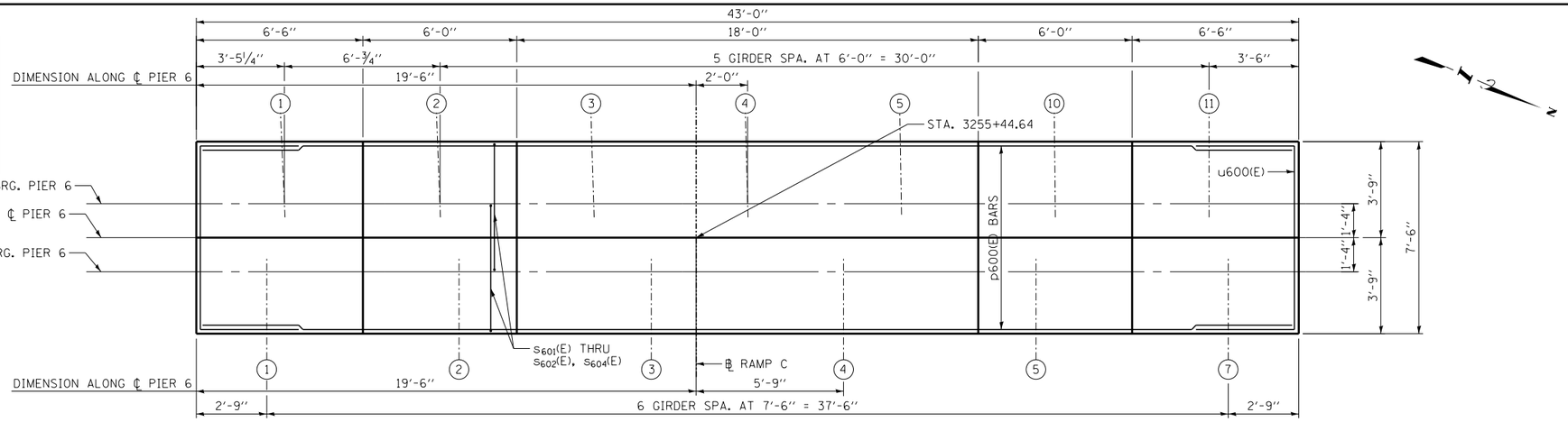
454 OF 606

E. BRGS.

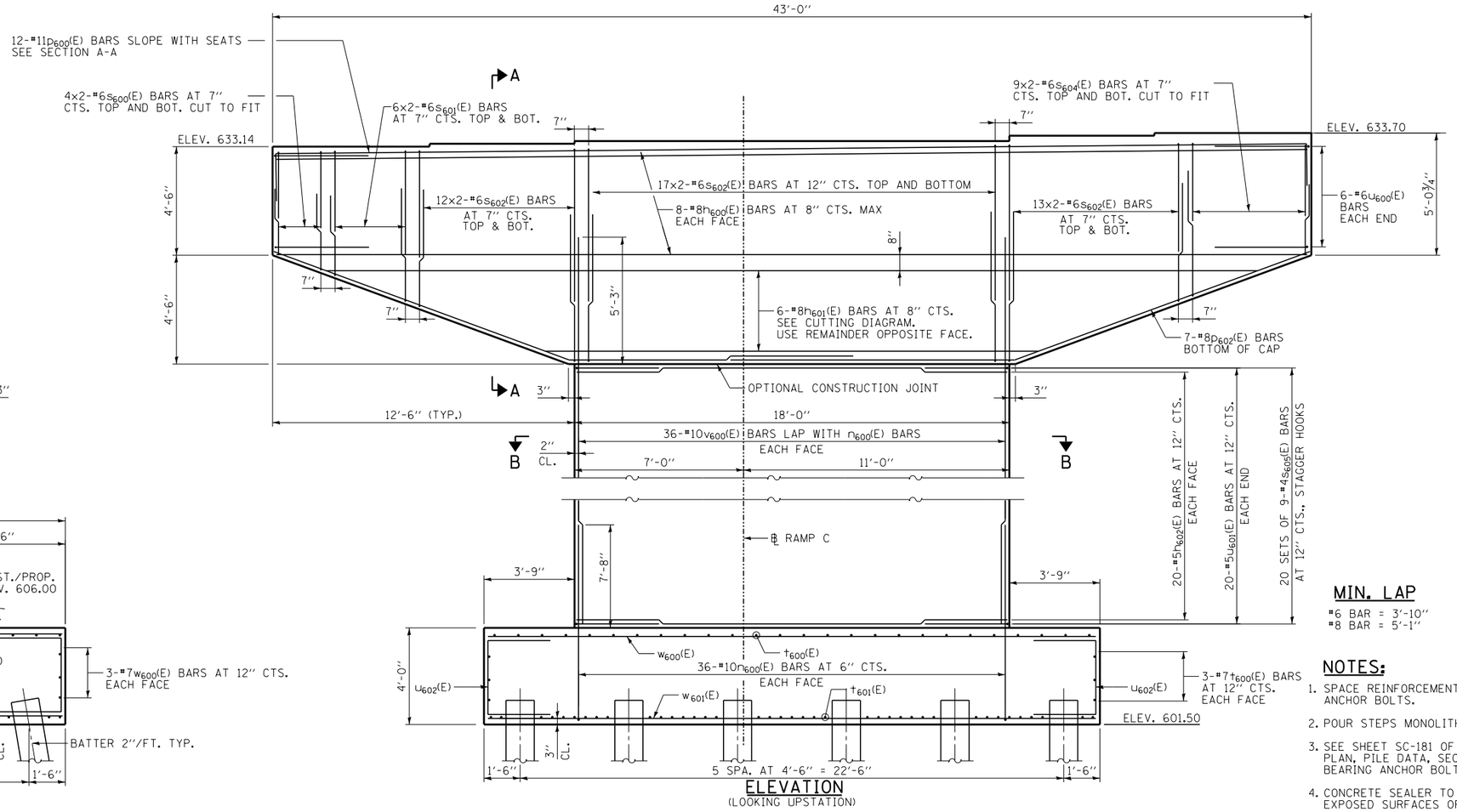
GIRDER	SEAT ELEV.	STEP HEIGHT
1	633.14	
2	633.25	1 3/8"
3	633.37	1 3/8"
4	633.37	2 5/8"
5	633.59	1 3/8"
7	633.70	1 3/8"

W. BRGS.

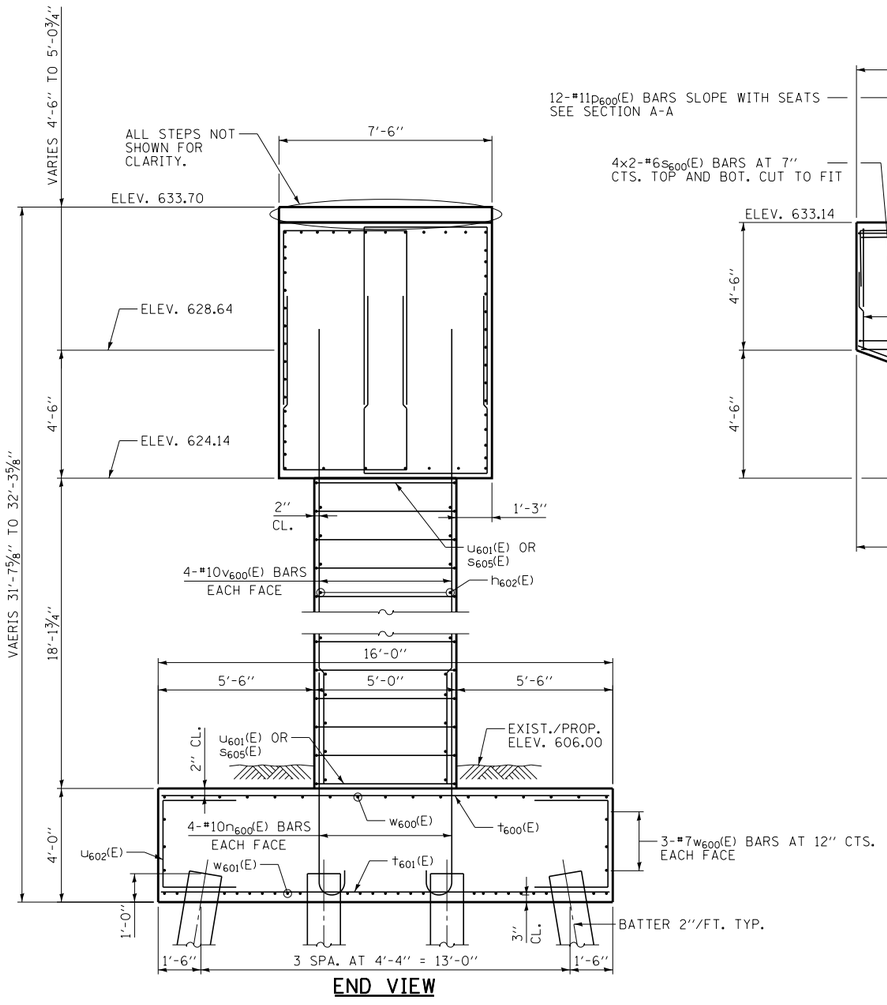
GIRDER	SEAT ELEV.	STEP HEIGHT
1	633.14	
2	633.25	1 3/8"
3	633.37	1 3/8"
4	633.37	-
5	633.37	-
10	633.59	2 5/8"
11	633.70	1 3/8"



TOP PLAN



ELEVATION
(LOOKING UPSTATION)



END VIEW

MIN. LAP

#6 BAR = 3'-10"
#8 BAR = 5'-1"

NOTES:

1. SPACE REINFORCEMENT IN CAP TO MISS ANCHOR BOLTS.
2. POUR STEPS MONOLITHICALLY WITH CAP.
3. SEE SHEET SC-181 OF 234 FOR FOOTING PLAN, PILE DATA, SECTIONS A-A, B-B, AND BEARING ANCHOR BOLT LOCATIONS.
4. CONCRETE SEALER TO BE APPLIED TO ALL EXPOSED SURFACES OF THE PIER.

P:\60254057-294_5-9\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\016201.5.unv1-Pier6.dgn
3/30/2020

DRAWN BY . . . . . OR
CHECKED BY . . . . . SP
DATE . 4-3-2020 . . .
SCALE . NONE . . . . .

TY·LIN INTERNATIONAL

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

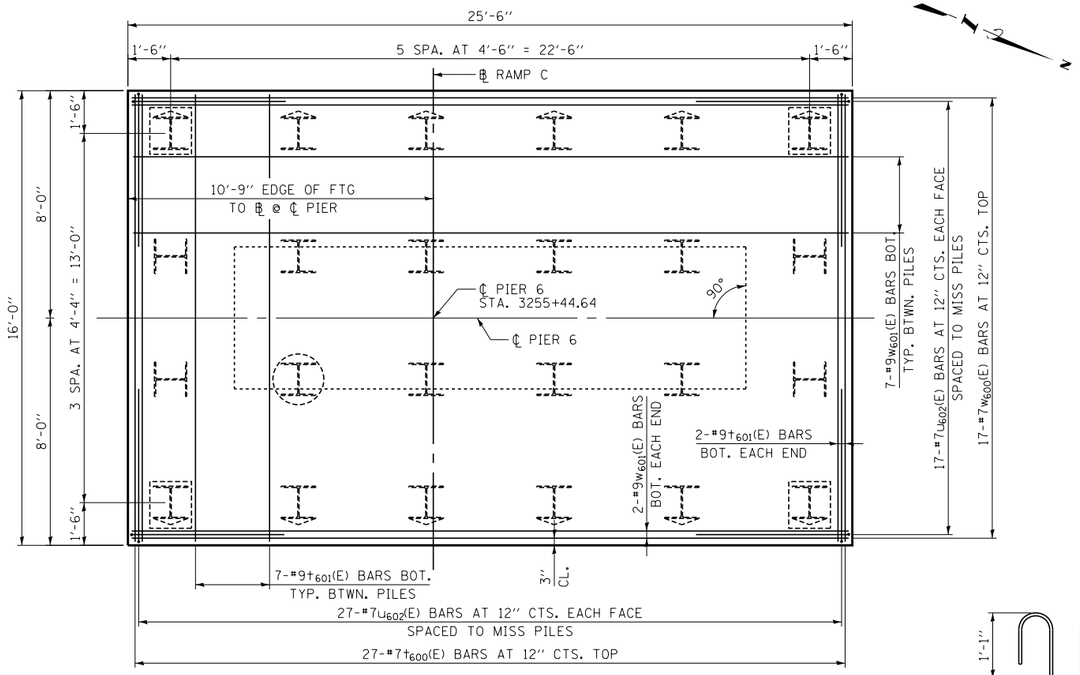
REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

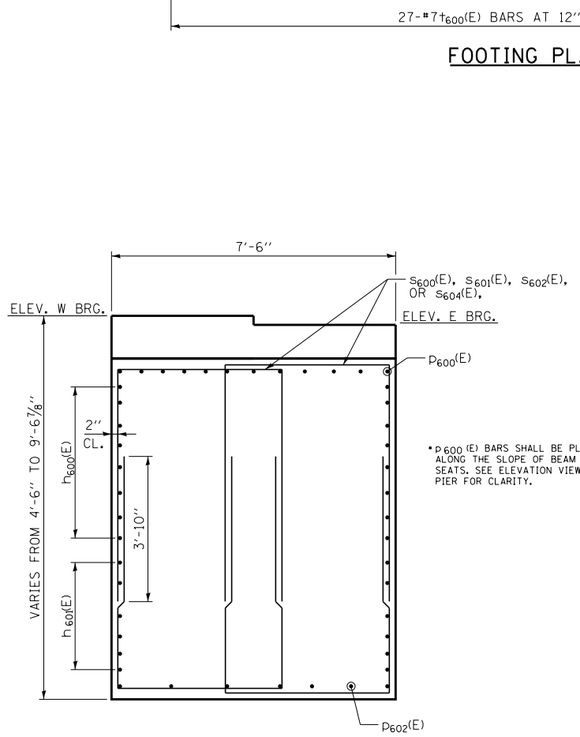
I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
PIER 6 PLAN AND ELEVATION

SHEET SC - 180 OF 234

455 OF 606



FOOTING PLAN



* p600(E) BARS SHALL BE PLACED ALONG THE SLOPE OF BEAM SEATS. SEE ELEVATION VIEW OF PIER FOR CLARITY.

SECTION A-A

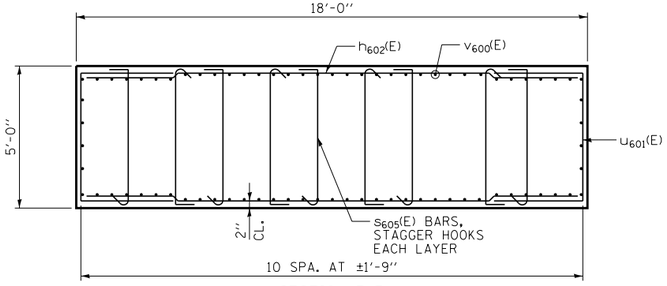
PILE DATA

PILE TYPE AND SIZE: HP14X73 WITH PILES SHOES
NOMINAL REQUIRED BEARING: 543 KIPS
FACTORED RESISTANCE AVAILABLE: 299 KIPS
ESTIMATED PILE LENGTH: 33 FEET
NUMBER OF PILE REQUIRED: 23 PLUS 1 TEST PILE

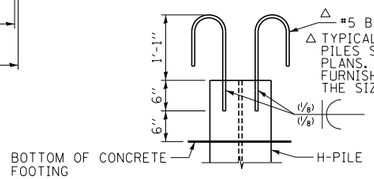
INDICATES BATTERED PILE.

INDICATES TEST PILE.

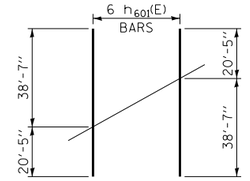
PROPOSED PILE W/ WELDED REBAR



SECTION B-B



PILE WELDED REBAR DETAIL



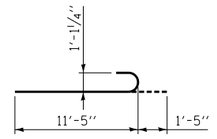
BAR CUTTING DIAGRAM

BILL OF MATERIAL

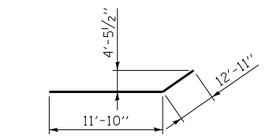
REINFORCEMENT BAR LIST

BAR	NO.	SIZE	LENGTH	SHAPE
h600(E)	8	#8	42'-8"	
h601(E)	6	#8	59'-0"	
h602(E)	40	#5	17'-8"	
n600(E)	80	#10	12'-10"	
p600(E)	12	#11	46'-4"	
p602(E)	14	#8	24'-9"	
s600(E)	16	#6	13'-6"	
s601(E)	24	#6	15'-0"	
s602(E)	168	#6	17'-8"	
s604(E)	36	#6	15'-0"	
s605(E)	180	#4	5'-9"	
t600(E)	35	#7	15'-8"	
t601(E)	39	#9	15'-8"	
u600(E)	12	#6	14'-10"	
u601(E)	40	#5	11'-10"	
u602(E)	88	#7	10'-6"	
v600(E)	80	#10	23'-9"	
w600(E)	25	#7	25'-2"	
w601(E)	25	#9	25'-2"	

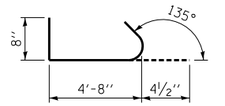
ITEM	UNIT	QUANTITY
STRUCTURE EXCAVATION	CU. YD.	134
CONCRETE STRUCTURES	CU. YD.	217.4
REINFORCEMENT BARS, EPOXY COATED	POUND	35,170
FURNISHING STEEL PILES HP 14x73	FOOT	759
DRIVING PILES	FOOT	759
TEST PILE STEEL SHAPE HP 14x73	EACH	1
PILE SHOES	EACH	24
CONCRETE SEALER	SQ. FT.	2368



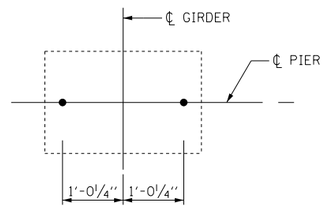
BAR n600(E)



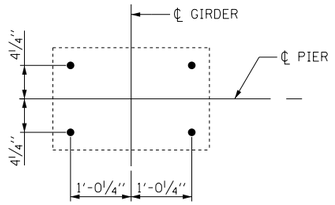
BAR p602(E)



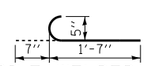
BAR s605(E)



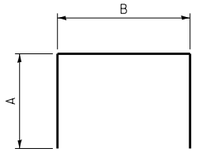
ANCHOR BOLT LAYOUT (SPAN 6)



ANCHOR BOLT LAYOUT (SPAN 7)



#5 PILE WELDED REBAR



BAR	A	B
p600(E)	2'-0"	42'-4"
s600(E)	4'-4"	4'-10"
s601(E)	5'-1"	4'-10"
s602(E)	6'-5"	4'-10"
s604(E)	5'-1"	4'-10"
u600(E)	3'-10"	7'-2"
u601(E)	3'-7"	4'-8"
u602(E)	3'-6"	3'-6"

BARS p600(E), s600(E), s601(E), s602(E), s604(E), u600(E), u601(E), u602(E)

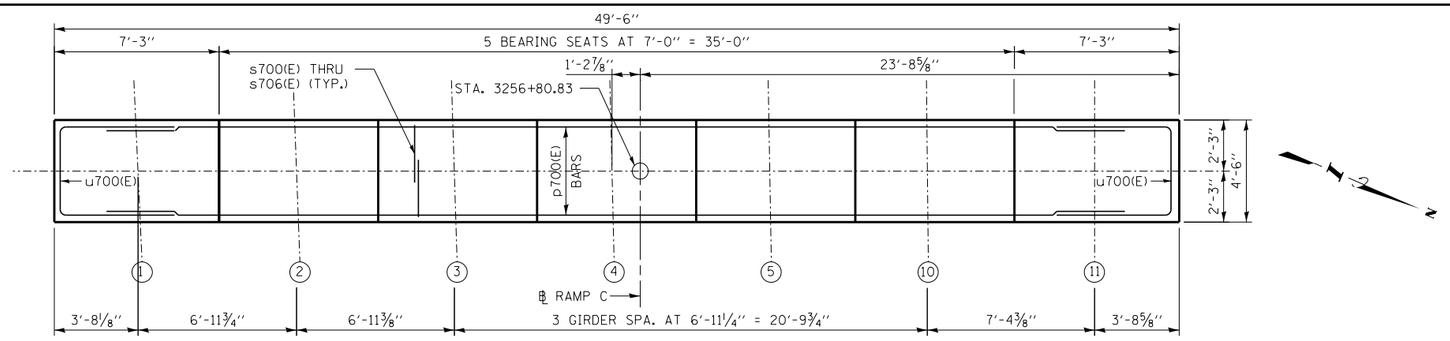
DRAWN BY	DATE	TYLIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	REVISIONS NO. / DATE / DESCRIPTION	CONTRACT I-19-4495	SHEET SC - 181 OF 234
CHECKED BY SP	SCALE NONE				I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 116) PIER 6 DETAILS	456 OF 606

P:\62S4S457-294,5-91\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\016210I.5_Unit1-Pier6d1.dgn
3/30/2020

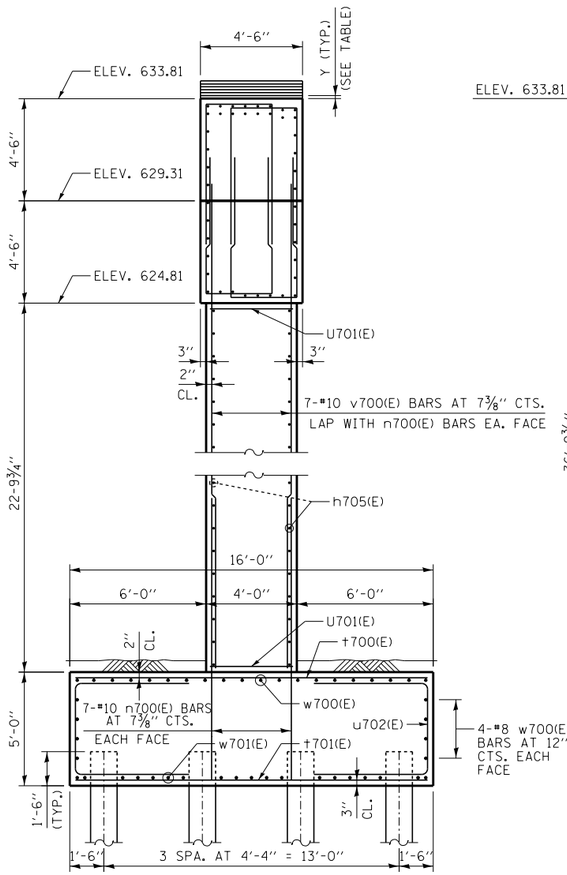
BEARING SEAT ELEVATIONS

GIRDER	ELEV.	Y
1	633.81	-
2	633.96	1¾″
3	634.08	1½″
4	634.17	1⅛″
5	634.31	1⅝″
10	634.46	1¾″
11	634.62	1⅞″

A = 2-#6 s700(E) BARS AT 6″ CTS. IN PAIRS TOP & BOTTOM
B = 2-#6 s701(E) BARS AT 6″ CTS. IN PAIRS TOP & BOTTOM
C = 4-#6 s702(E) BARS AT 6″ CTS. IN PAIRS TOP & BOTTOM
D = 9-#6 s703(E) BARS AT 6″ CTS. IN PAIRS TOP & BOTTOM
E = 13-#6 s704(E) BARS AT 6″ CTS. IN PAIRS TOP & BOTTOM
F = 11-#6 s705(E) BARS AT 6″ CTS. IN PAIRS TOP & BOTTOM
G = 6-#6 s706(E) BARS AT 6″ CTS. IN PAIRS TOP & BOTTOM

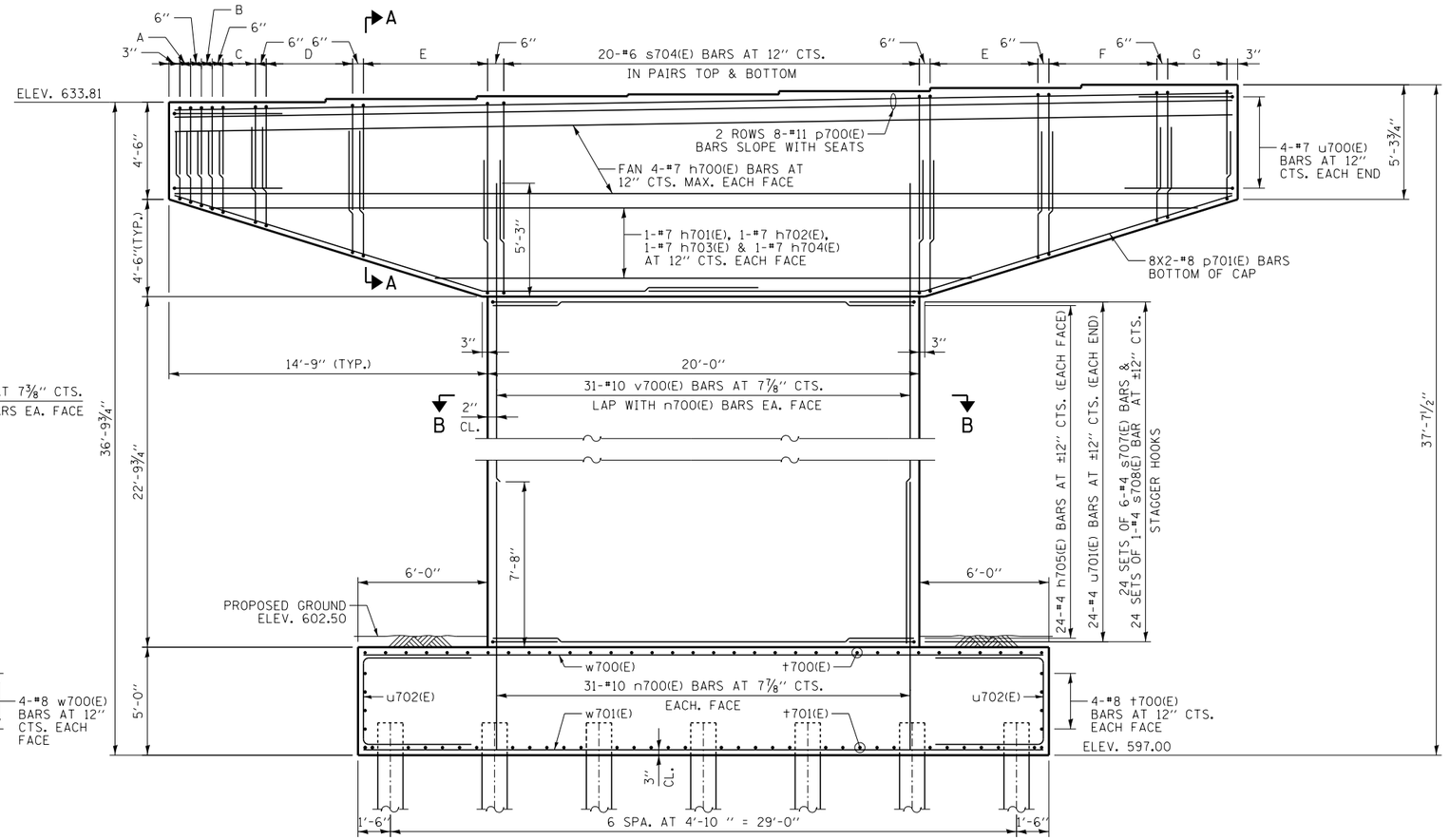


TOP PLAN



END VIEW

MIN. LAP
(UNLESS OTHERWISE NOTED)
#6 BARS = 3′-10″
#8 BARS = 5′-1″



ELEVATION
(LOOKING UPSTATION)

NOTES:

1. SPACE REINFORCEMENT IN CAP TO MISS ANCHOR BOLTS.
2. POUR STEPS MONOLITHICALLY WITH CAP.
3. SEE SHEET SC-183 FOR FOOTING PLAN, PILE DATA, SECTION A-A, B-B AND ANCHOR BOLT LAYOUT.
4. FOR BAR LIST AND BILL OF MATERIAL, SEE SHEET SC-183.

P:\682540\57-294,5-91\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\Reference\Juneau\JAI-Pier 7-Plan & Elevation.dgn
3/30/2020

DRAWN BY . . . EER . . . . . DATE . 3-10-2020 . . .
CHECKED BY . . . DLM . . . . . SCALE . NONE . . . . .

JUNEAU ENGINEERING & LAND SURVEYING

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

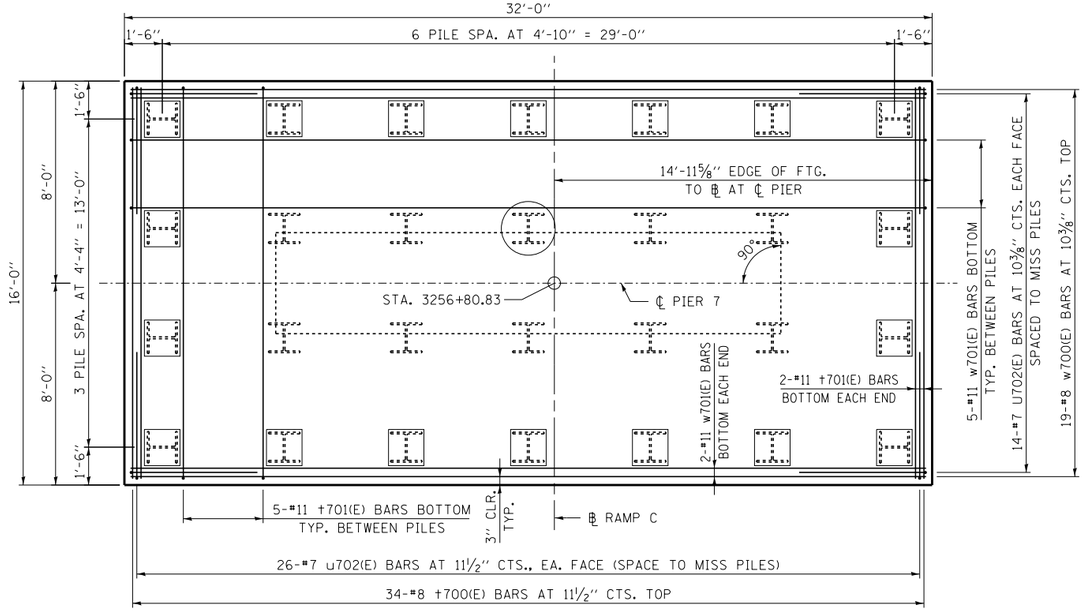
REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4419

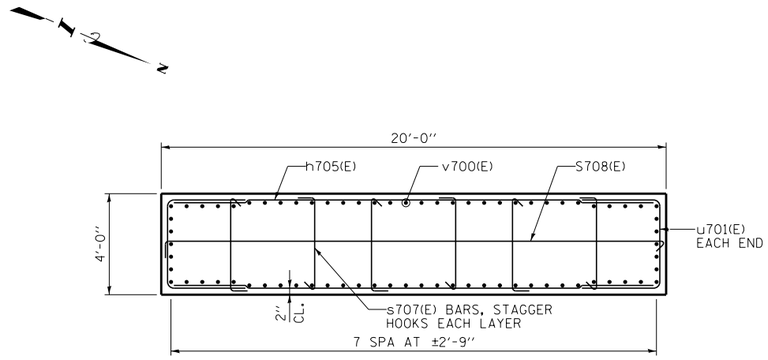
I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
PIER 7 PLAN AND ELEVATION

SHEET SC - 182 OF 234

457 OF 606



FOOTING PLAN



SECTION B-B

REINFORCEMENT BAR LIST

BAR	NO.	SIZE	LENGTH	SHAPE
h700(E)	8	#7	49'-2"	
h701(E)	2	#7	46'-2"	
h702(E)	2	#7	39'-9"	
h703(E)	2	#7	33'-4"	
h704(E)	2	#7	26'-11"	
h705(E)	48	#4	19'-8"	
n700(E)	72	#10	13'-11"	
p700(E)	16	#11	49'-2"	
p701(E)	16	#8	28'-2"	
s700(E)	8	#6	10'-6"	
s701(E)	8	#6	11'-0"	
s702(E)	16	#6	11'-6"	
s703(E)	36	#6	13'-0"	
s704(E)	184	#6	15'-6"	
s705(E)	44	#6	14'-0"	
s706(E)	24	#6	12'-0"	
s707(E)	144	#4	4'-9"	
s708(E)	24	#4	20'-9"	
†700(E)	42	#8	15'-6"	
†701(E)	34	#11	15'-6"	
u700(E)	8	#7	14'-0"	
u701(E)	48	#4	9'-6"	
u702(E)	80	#7	6'-6"	
v700(E)	72	#10	28'-1"	
w700(E)	27	#8	31'-6"	
w701(E)	19	#11	31'-6"	

LEGEND

PROPOSED PILE

TEST PILE

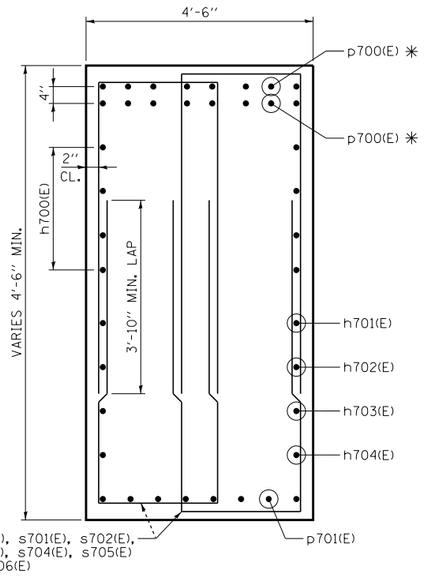
PROPOSED PILE W/ WELDED REBAR

PILE DATA

PILE TYPE AND SIZE: HP14x73 WITH PILE SHOES
NOMINAL REQUIRED BEARING: 578 KIPS
FACTORED RESISTANCE AVAILABLE: 318 KIPS
ESTIMATED PILE LENGTH: 28 FEET
NUMBER OF PILES REQUIRED: 27 PILES PLUS 1 TEST PILE

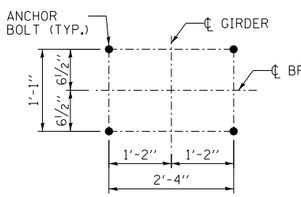
BILL OF MATERIAL

ITEM	UNIT	QUANTITY
STRUCTURE EXCAVATION	CU. YD.	146.7
CONCRETE STRUCTURES	CU. YD.	229.0
REINFORCEMENT BARS, EPOXY COATED	POUND	39,690
FURNISHING STEEL PILES HP14X73	FOOT	756
DRIVING PILES	FOOT	756
TEST PILE STEEL HP14X73	EACH	1
PILE SHOES	EACH	28

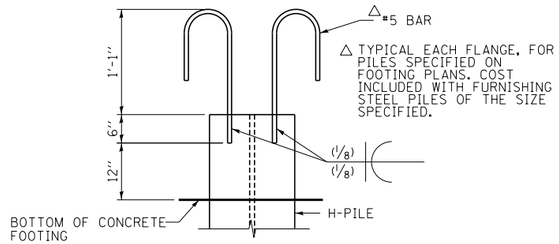


SECTION A-A

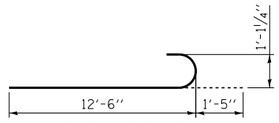
✳ p700(E) BARS SHALL BE PLACED ALONG THE SLOPE OF BEAM SEATS. SEE ELEVATION VIEW FOR CLARITY.



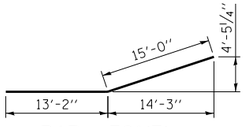
ANCHOR BOLT LAYOUT



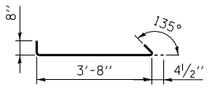
PILE WELDED REBAR DETAIL



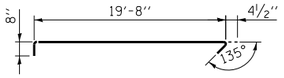
BAR n700(E)



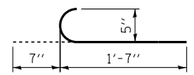
BAR p701(E)



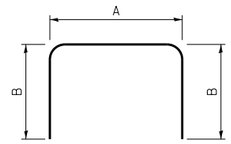
BAR s707(E)



BAR s708(E)



#5 PILE WELDED REBAR



BARS s700(E)-s706(E) u700(E)-u702(E)

A & B DIMENSIONS

BAR	A	B
s700(E)	2'-6"	4'-0"
s701(E)	2'-6"	4'-3"
s702(E)	2'-6"	4'-6"
s703(E)	2'-6"	5'-3"
s704(E)	2'-6"	6'-6"
s705(E)	2'-6"	5'-9"
s706(E)	2'-6"	4'-9"
u700(E)	4'-0"	5'-0"
u701(E)	3'-8"	2'-11"
u702(E)	4'-2"	1'-2"

P:\62\2540\57-294,5-91\STRUCTURAL\RESTART_2019\Ramp C over I-57 and I-294\Reference\Juneau\JAI-Pier 7-Details.dgn
3/30/2020

DRAWN BY . . . . EER . . . . . DATE . 3-10-2020 . . .
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JUNEAU ENGINEERING & LAND SURVEYING

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

REVISIONS		
NO.	DATE	DESCRIPTION

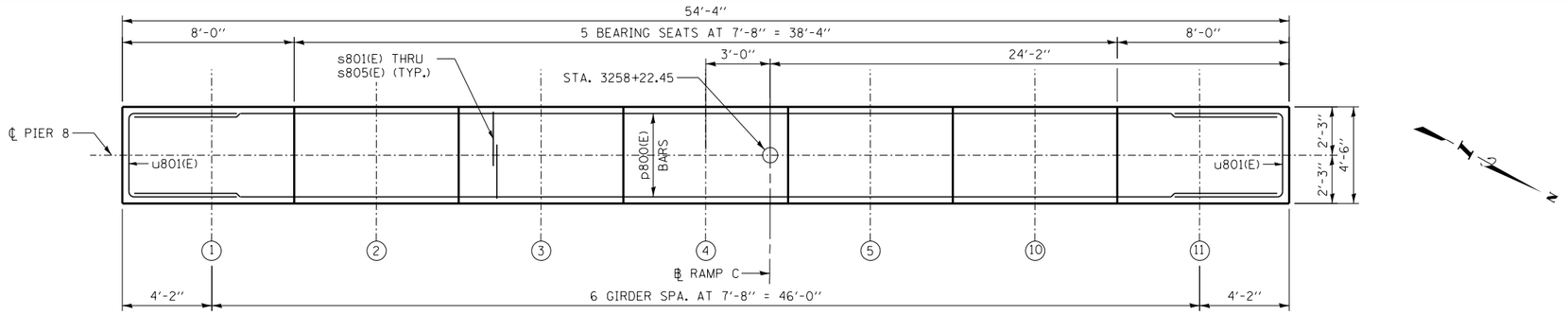
CONTRACT I-19-4419
I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
PIER 7 DETAILS

SHEET SC - 183 OF 234
458 OF 606

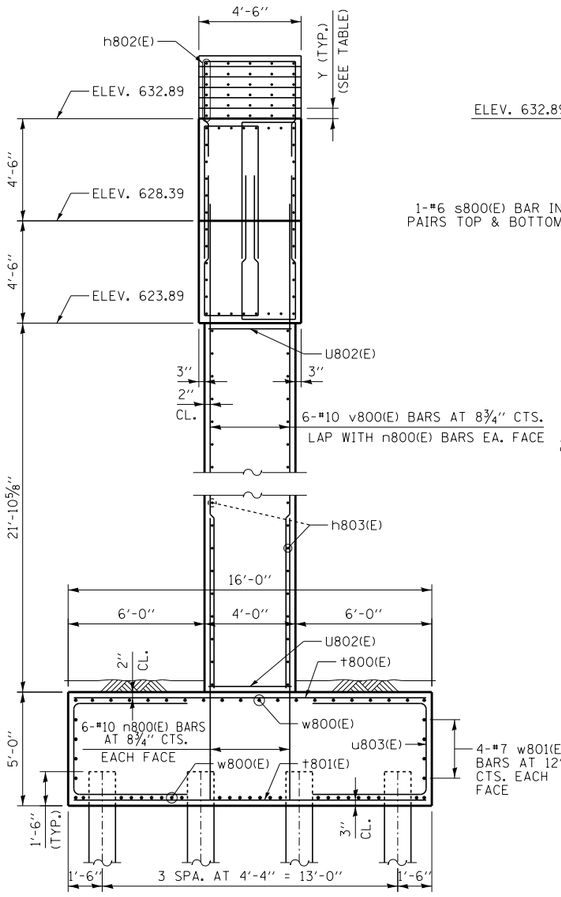
BEARING SEAT ELEVATIONS

GIRDER	ELEV.	Y
1	632.89	-
2	633.38	5⅛"
3	633.81	5⅛"
4	634.24	5⅛"
5	634.72	5¾"
10	635.22	6"
11	635.62	4¾"

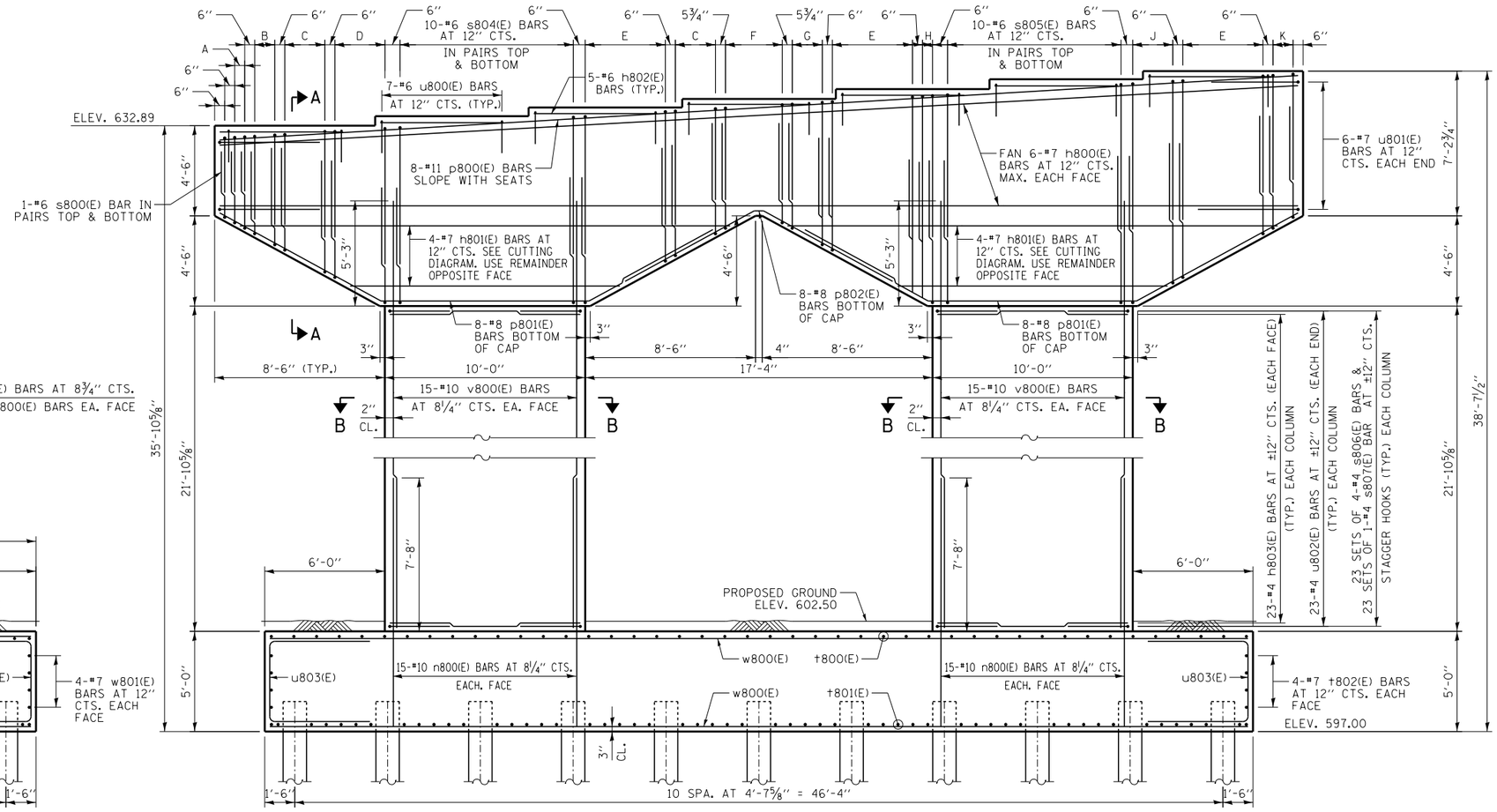
A = 2-#6 s801(E) BARS AT 6" CTS. IN PAIRS TOP & BOTTOM
B = 3-#6 s802(E) BARS AT 6" CTS. IN PAIRS TOP & BOTTOM
C = 5-#6 s803(E) BARS AT 6" CTS. IN PAIRS TOP & BOTTOM
D = 6-#6 s804(E) BARS AT 6" CTS. IN PAIRS TOP & BOTTOM
E = 9-#6 s804(E) BARS AT 6" CTS. IN PAIRS TOP & BOTTOM
F = 7-#6 s802(E) BARS AT 5¾" CTS. IN PAIRS TOP & BOTTOM
G = 4-#6 s803(E) BARS AT 6" CTS. IN PAIRS TOP & BOTTOM
H = 2-#6 s805(E) BARS AT 6" CTS. IN PAIRS TOP & BOTTOM
J = 5-#6 s805(E) BARS AT 6" CTS. IN PAIRS TOP & BOTTOM
K = 3-#6 s803(E) BARS AT 6" CTS. IN PAIRS TOP & BOTTOM



TOP PLAN



END VIEW



ELEVATION
(LOOKING UPSTATION)

MIN. LAP
(UNLESS OTHERWISE NOTED)
#6 BARS = 3'-10"
#8 BARS = 5'-1"

NOTES:
1. SPACE REINFORCEMENT IN CAP TO MISS ANCHOR BOLTS.
2. POUR STEPS MONOLITHICALLY WITH CAP.
3. SEE SHEET SC-185 FOR FOOTING PLAN, PILE DATA, SECTION A-A, B-B AND ANCHOR BOLT LAYOUT.
4. FOR BAR LIST AND BILL OF MATERIAL, SEE SHEET SC-185.

P:\68254\057-294.5-91\STRUCTURAL_RESTART_2019\Ramp C over I-57 and I-294\Reference\Juneau\JAI-Pier 8-Plan & Elevation.dgn
3/30/2020

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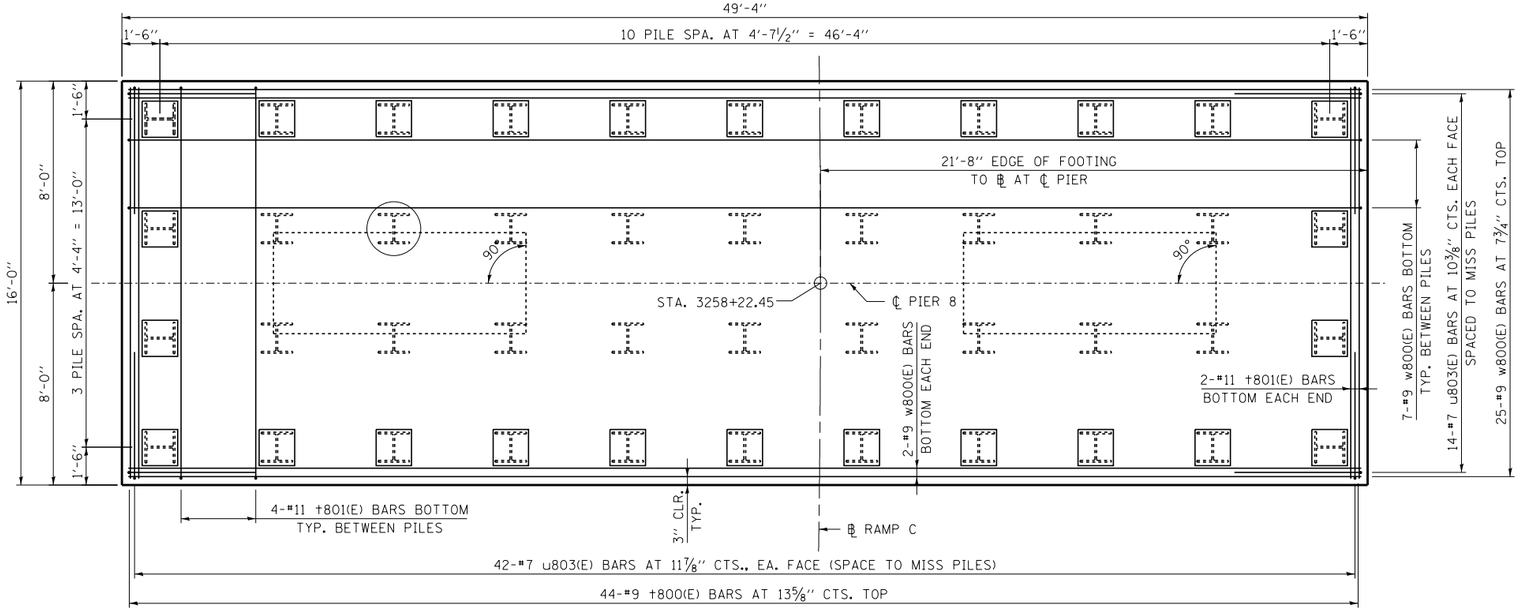
JUNEAU ENGINEERING & LAND SURVEYING

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4419
I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
PIER 8 PLAN AND ELEVATION

SHEET SC - 184 OF 234
459 OF 606



FOOTING PLAN

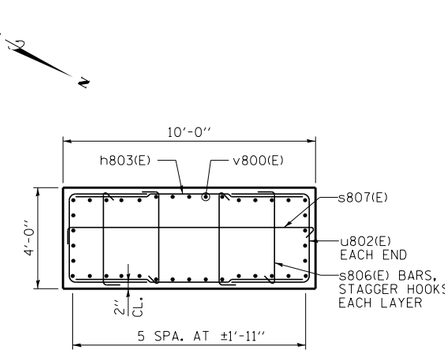
LEGEND

PROPOSED PILE

TEST PILE

PROPOSED PILE W/ WELDED REBAR

✳ p800(E) BARS SHALL BE PLACED ALONG THE SLOPE OF BEAM SEATS. SEE ELEVATION VIEW FOR CLARITY.



SECTION B-B

PILE DATA

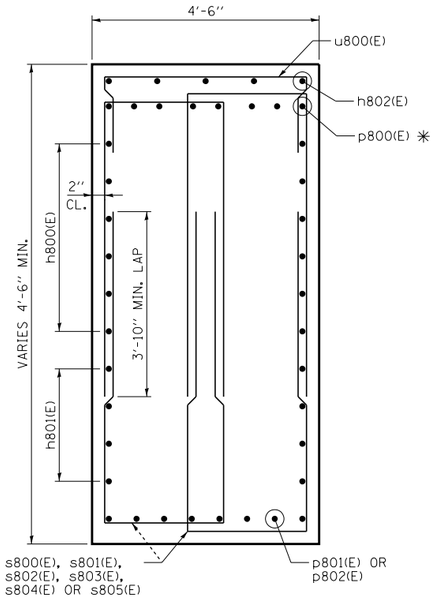
PILE TYPE AND SIZE: HP14x73 WITH PILE SHOES
NOMINAL REQUIRED BEARING: 578 KIPS
FACTORED RESISTANCE AVAILABLE: 318 KIPS
ESTIMATED PILE LENGTH: 28 FEET
NUMBER OF PILES REQUIRED: 43 PILES PLUS 1 TEST PILE

REINFORCEMENT BAR LIST

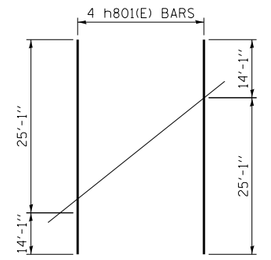
BAR	NO.	SIZE	LENGTH	SHAPE
h800(E)	12	#7	54'-0"	—
h801(E)	8	#7	39'-2"	—
h802(E)	35	#6	6'-0"	—
h803(E)	92	#4	9'-8"	—
n800(E)	76	#10	13'-11"	⊃
p800(E)	8	#11	54'-0"	—
p801(E)	16	#8	26'-5"	⌒
p802(E)	8	#8	17'-3"	⌒
s800(E)	4	#6	10'-6"	⊐
s801(E)	8	#6	11'-0"	⊐
s802(E)	40	#6	12'-6"	⊐
s803(E)	56	#6	13'-6"	⊐
s804(E)	172	#6	16'-0"	⊐
s805(E)	68	#6	17'-0"	⊐
s806(E)	184	#4	4'-9"	⊐
s807(E)	46	#4	10'-9"	⊐
†800(E)	44	#9	15'-6"	—
†801(E)	44	#11	15'-6"	—
†802(E)	8	#7	15'-6"	—
u800(E)	49	#6	8'-0"	⊐
u801(E)	12	#7	14'-2"	⊐
u802(E)	92	#4	9'-6"	⊐
u803(E)	112	#7	6'-6"	⊐
v800(E)	76	#10	27'-3"	—
w800(E)	50	#9	48'-10"	—
w801(E)	8	#7	48'-10"	—

BILL OF MATERIAL

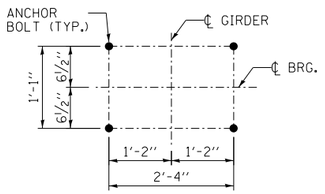
ITEM	UNIT	QUANTITY
STRUCTURE EXCAVATION	CU. YD.	217.3
CONCRETE STRUCTURES	CU. YD.	292.4
REINFORCEMENT BARS, EPOXY COATED	POUND	47,300
FURNISHING STEEL PILES HP14X83	FOOT	1,204
DRIVING PILES	FOOT	1,204
TEST PILE STEEL HP14X83	EACH	1
PILE SHOES	EACH	44



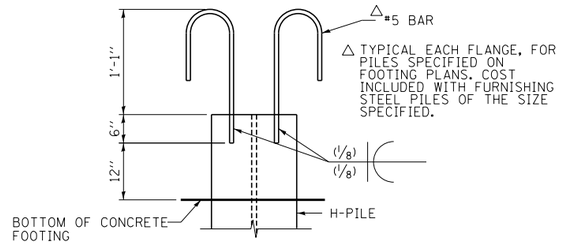
SECTION A-A



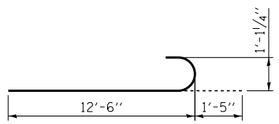
BAR CUTTING DIAGRAM



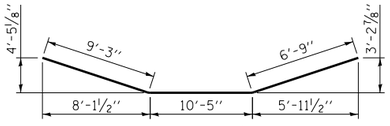
ANCHOR BOLT LAYOUT



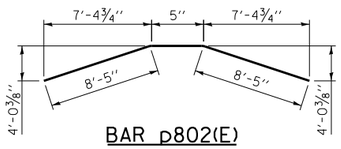
PILE WELDED REBAR DETAIL



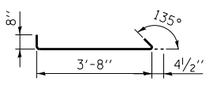
BAR n800(E)



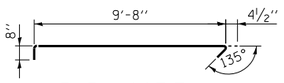
BAR p801(E)



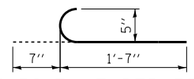
BAR p802(E)



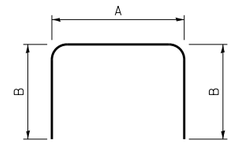
BAR s806(E)



BAR s807(E)



#5 PILE WELDED REBAR



BARS s800(E)-s805(E) u800(E)-u803(E)

A & B DIMENSIONS

BAR	A	B
s800(E)	2'-6"	4'-0"
s801(E)	2'-6"	4'-3"
s802(E)	2'-6"	5'-0"
s803(E)	2'-6"	5'-6"
s804(E)	2'-6"	6'-9"
s805(E)	2'-6"	7'-3"
u800(E)	4'-2"	1'-11"
u801(E)	4'-2"	5'-0"
u802(E)	3'-8"	2'-11"
u803(E)	4'-2"	1'-2"

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CHECKED BY . . . . DLM . . . . . SCALE . NONE . . . . .

JUNEAU ENGINEERING & LAND SURVEYING

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4419
I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
PIER 8 DETAILS

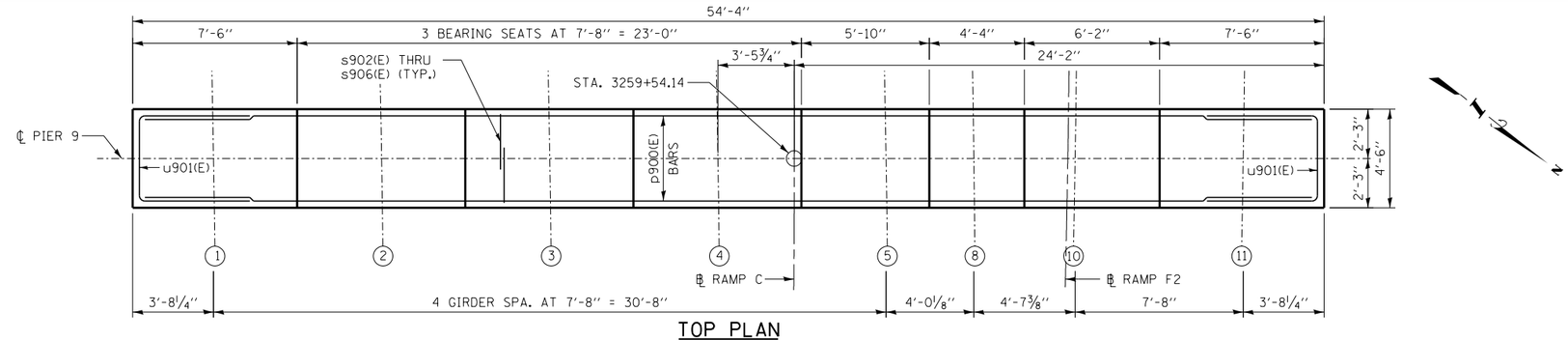
SHEET SC - 185 OF 234
460 OF 606

P:\62254\057-294_5-91\STRUCTURAL_RESTART_2019\Ramp C over I-57 and I-294\Reference\Juneau\JAI-Pier 8-Details.dgn
3/30/2020

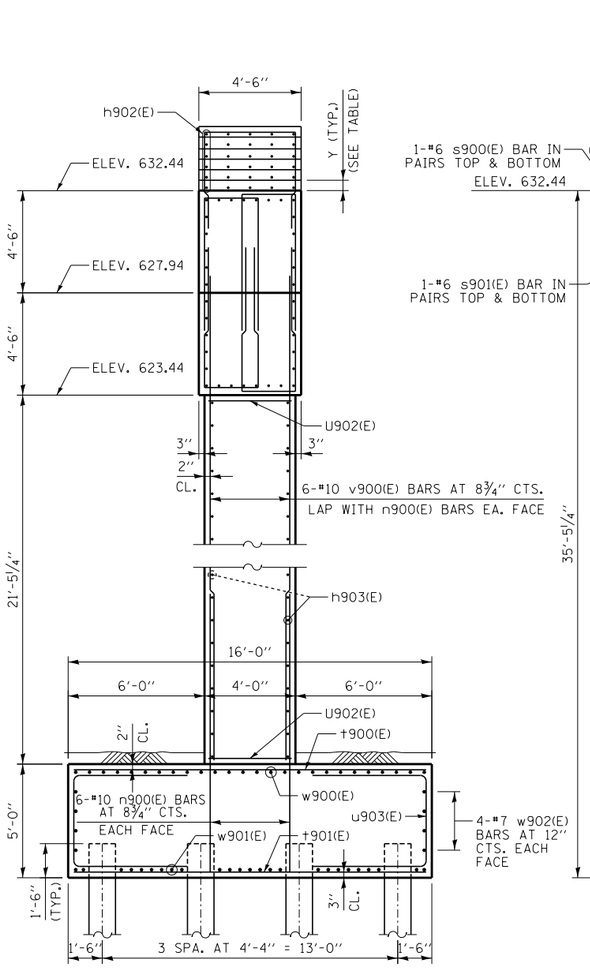
BEARING SEAT ELEVATIONS

GIRDER	ELEV.	Y
1	632.44	-
2	632.89	5⅜"
3	633.37	5¾"
4	633.83	5½"
5	634.28	5⅜"
8	634.50	2⅝"
10	634.81	3¾"
11	635.25	5¼"

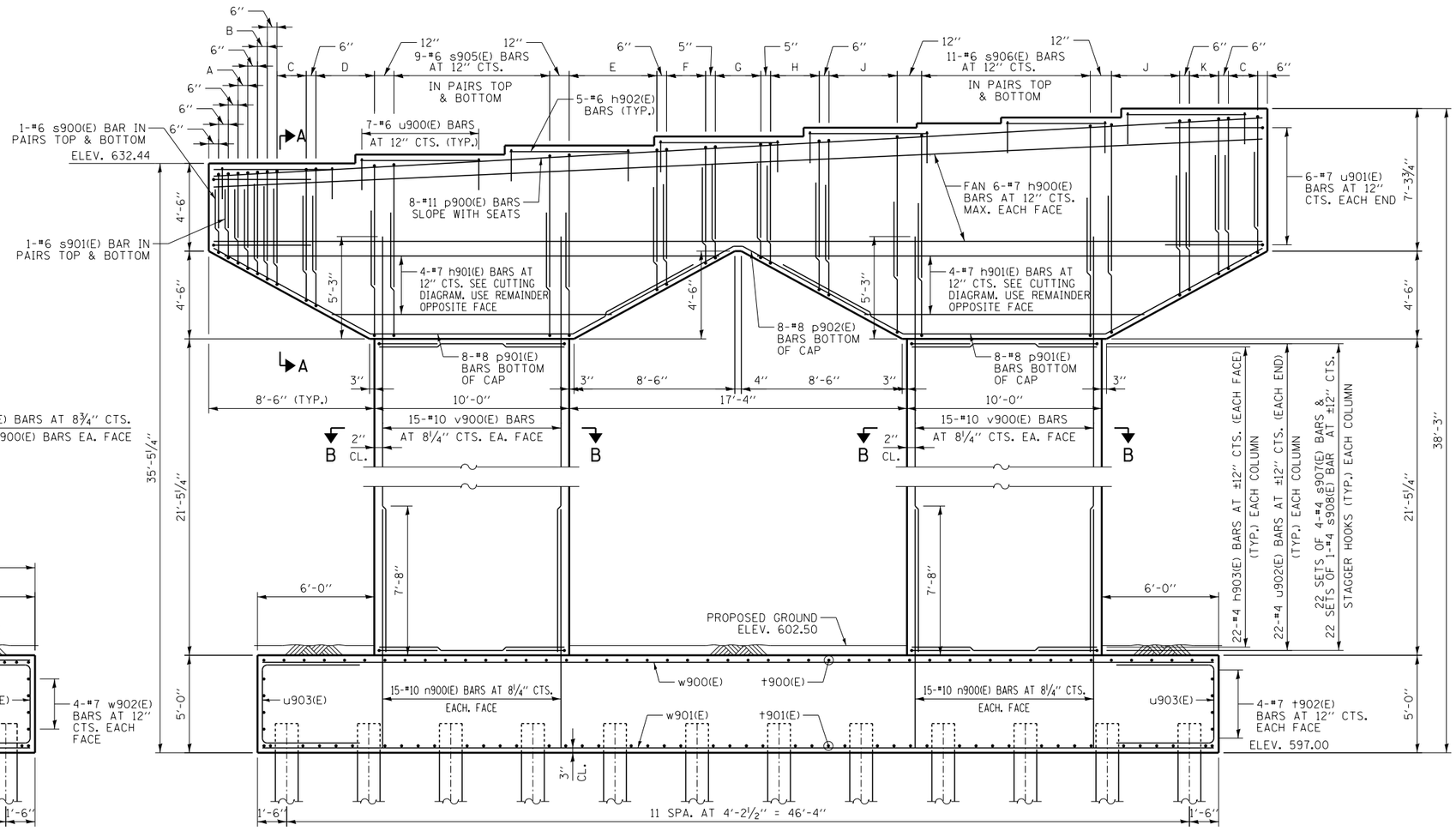
A = 2-#6 s902(E) BARS AT 6" CTS. IN PAIRS TOP & BOTTOM
B = 2-#6 s903(E) BARS AT 6" CTS. IN PAIRS TOP & BOTTOM
C = 4-#6 s904(E) BARS AT 6" CTS. IN PAIRS TOP & BOTTOM
D = 7-#6 s905(E) BARS AT 6" CTS. IN PAIRS TOP & BOTTOM
E = 10-#6 s905(E) BARS AT 6" CTS. IN PAIRS TOP & BOTTOM
F = 5-#6 s904(E) BARS AT 6" CTS. IN PAIRS TOP & BOTTOM
G = 6-#6 s903(E) BARS AT 6" CTS. IN PAIRS TOP & BOTTOM
H = 6-#6 s904(E) BARS AT 6" CTS. IN PAIRS TOP & BOTTOM
J = 8-#6 s906(E) BARS AT 6" CTS. IN PAIRS TOP & BOTTOM
K = 4-#6 s905(E) BARS AT 6" CTS. IN PAIRS TOP & BOTTOM



TOP PLAN



END VIEW



ELEVATION
(LOOKING UPSTATION)

MIN. LAP
(UNLESS OTHERWISE NOTED)

#6 BARS = 3'-10"
#8 BARS = 5'-1"

NOTES:

1. SPACE REINFORCEMENT IN CAP TO MISS ANCHOR BOLTS.
2. POUR STEPS MONOLITHICALLY WITH CAP.
3. SEE SHEET SC-187 FOR FOOTING PLAN, PILE DATA, SECTION A-A, B-B AND ANCHOR BOLT LAYOUT.
4. FOR BAR LIST AND BILL OF MATERIAL, SEE SHEET SC-187.

P:\68254\057-294.5-91\STRUCTURAL_RESTART_2018\Ramp C over I-57 and I-294\Reference\Juneau\JAI-Pier 9-Plan & Elevation.dgn
3/30/2020

DRAWN BY . . . . EER . . . . . DATE . 3-10-2020 . . .
CHECKED BY . . . DLM . . . . . SCALE . NONE . . . . .

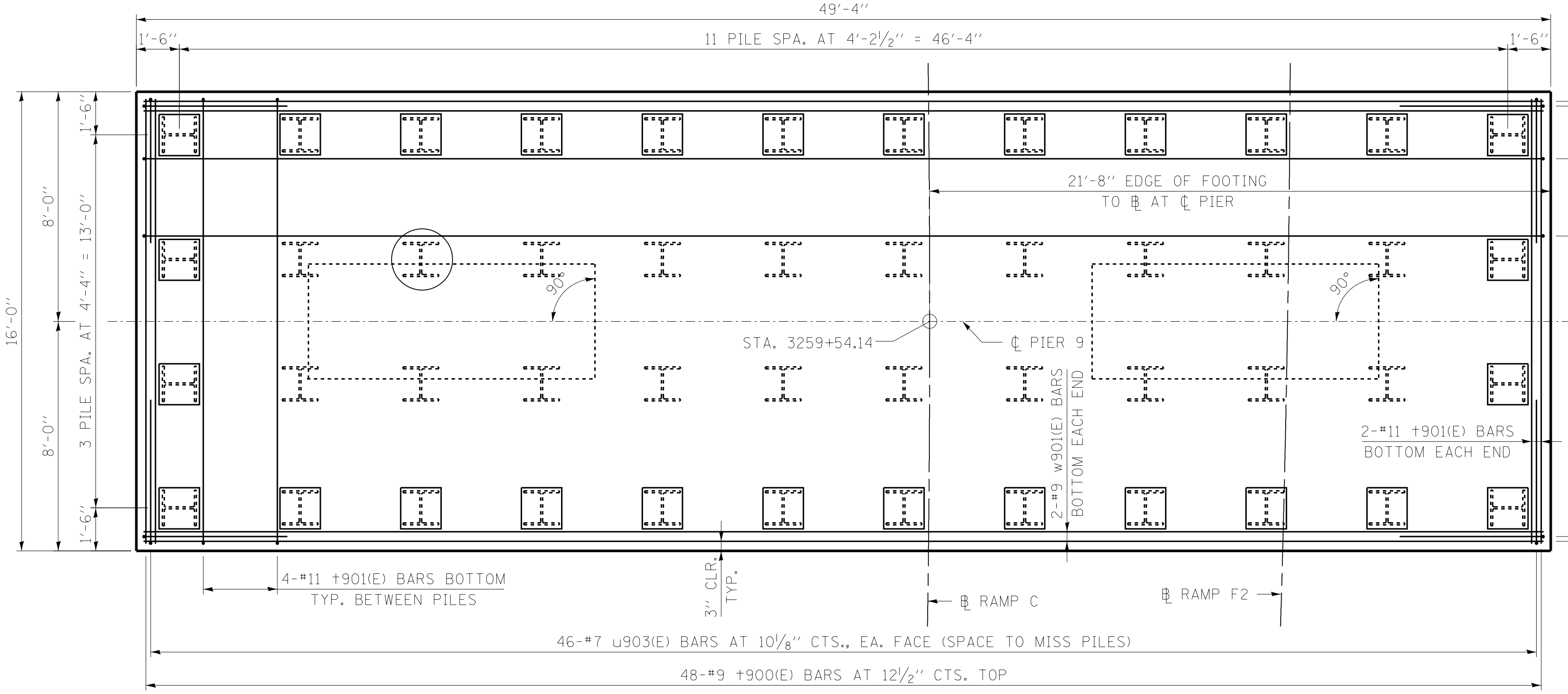
JUNEAU ENGINEERING & LAND SURVEYING

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

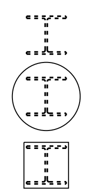
REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4419
I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
PIER 9 PLAN AND ELEVATION

SHEET SC - 196 OF 234
461 OF 606

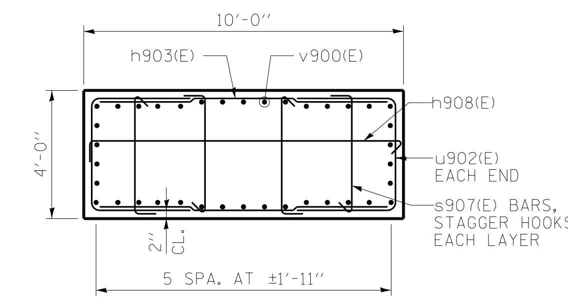


LEGEND



FOOTING PLAN

✳ p900(E) BARS SHALL BE PLACED ALONG THE SLOPE OF BEAM SEATS. SEE ELEVATION VIEW FOR CLARITY.



SECTION B-B

PILE DATA

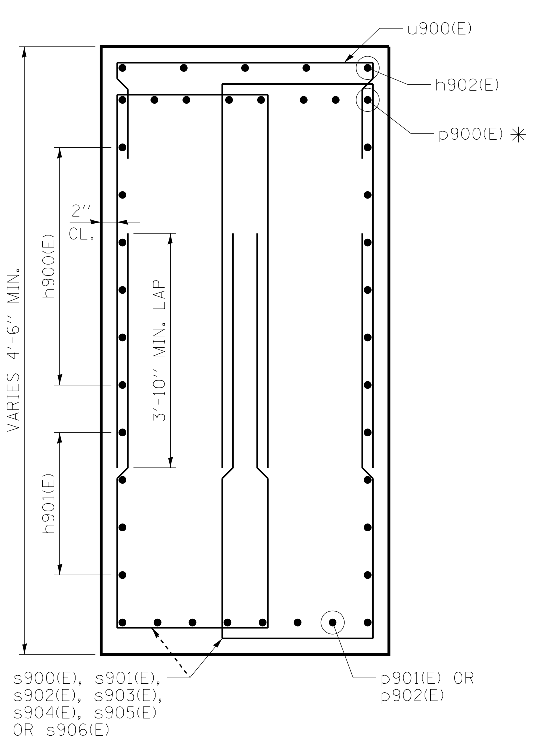
PILE TYPE AND SIZE: HP14x73 WITH PILE SHOES
NOMINAL REQUIRED BEARING: 578 KIPS
FACTORED RESISTANCE AVAILABLE: 318 KIPS
ESTIMATED PILE LENGTH: 28 FEET
NUMBER OF PILES REQUIRED: 47 PILES PLUS 1 TEST PILE

REINFORCEMENT BAR LIST

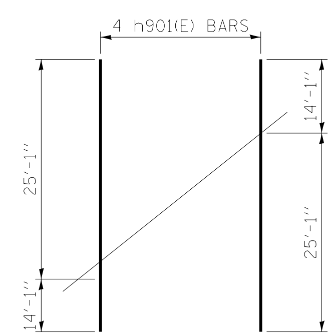
BAR	NO.	SIZE	LENGTH	SHAPE
h900(E)	12	#7	54'-0"	
h901(E)	8	#7	39'-2"	
h902(E)	35	#6	6'-0"	
h903(E)	88	#4	9'-8"	
n900(E)	76	#10	13'-11"	
p900(E)	8	#11	54'-0"	
p901(E)	16	#8	26'-5"	
p902(E)	8	#8	17'-3"	
s900(E)	4	#6	10'-6"	
s901(E)	4	#6	11'-0"	
s902(E)	8	#6	11'-6"	
s903(E)	32	#6	12'-0"	
s904(E)	60	#6	14'-0"	
s905(E)	120	#6	16'-0"	
s906(E)	108	#6	17'-0"	
s907(E)	176	#4	4'-9"	
s908(E)	44	#4	10'-9"	
t900(E)	48	#11	15'-6"	
t901(E)	48	#9	15'-6"	
t902(E)	8	#7	15'-6"	
u900(E)	49	#6	8'-0"	
u901(E)	12	#7	14'-2"	
u902(E)	88	#4	9'-6"	
u903(E)	120	#7	6'-6"	
v900(E)	76	#10	26'-9"	
w900(E)	25	#11	48'-10"	
w901(E)	25	#9	48'-10"	
w902(E)	8	#7	48'-10"	

BILL OF MATERIAL

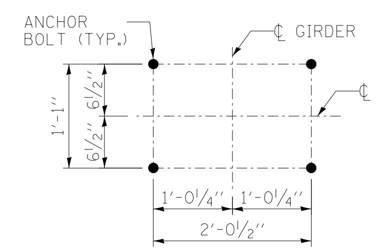
ITEM	UNIT	QUANTITY
STRUCTURE EXCAVATION	CU. YD.	217.3
CONCRETE STRUCTURES	CU. YD.	291.3
REINFORCEMENT BARS, EPOXY COATED	POUND	49,830
FURNISHING STEEL PILES HP14X73	FOOT	1,316
DRIVING PILES	FOOT	1,316
TEST PILE STEEL HP14X73	EACH	1
PILE SHOES	EACH	48



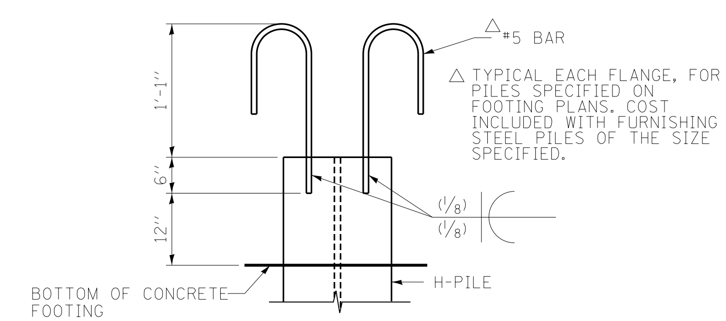
SECTION A-A



BAR CUTTING DIAGRAM



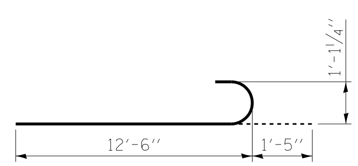
ANCHOR BOLT LAYOUT



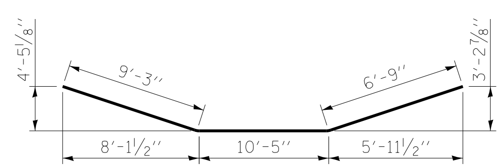
PILE WELDED REBAR DETAIL

A & B DIMENSIONS

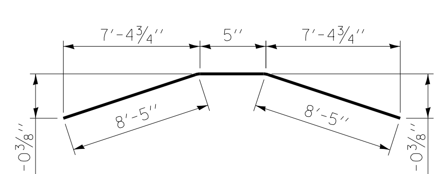
BAR	A	B
s900(E)	2'-6"	4'-0"
s901(E)	2'-6"	4'-3"
s902(E)	2'-6"	4'-6"
s903(E)	2'-6"	4'-9"
s904(E)	2'-6"	5'-9"
s905(E)	2'-6"	6'-9"
s906(E)	2'-6"	7'-3"
u900(E)	4'-2"	1'-11"
u901(E)	4'-2"	5'-0"
u902(E)	3'-8"	2'-11"
u903(E)	4'-2"	1'-2"



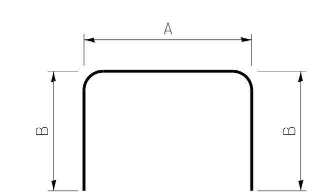
BAR n900(E)



BAR p901(E)

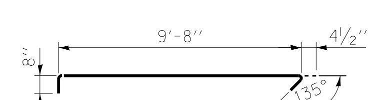


BAR p902(E)

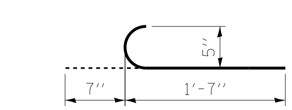


BARS s900(E)-s906(E)
u900(E)-u903(E)

BAR s907(E)



BAR s908(E)



#5 PILE WELDED REBAR

DRAWN BY EER | DATE 3-10-2020
CHECKED BY DLM | SCALE NONE

JUNEAU ENGINEERING & LAND SURVEYING

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4419

I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
PIER 9 DETAILS

SHEET SC - 187 OF 234

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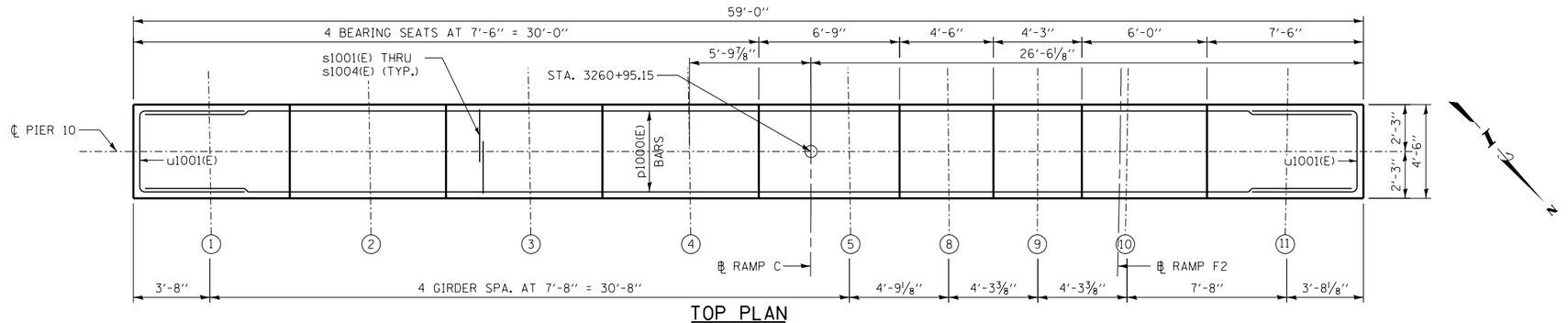
P:\60254\57-294_5-9\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\Reference\Juneau\JA\-Pier 9-Details.dgn
3/30/2020

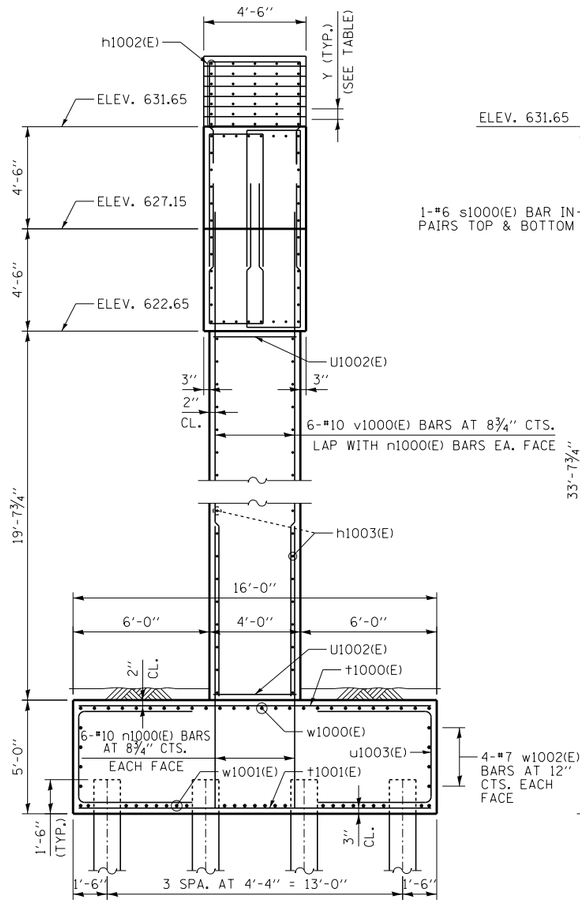
BEARING SEAT ELEVATIONS

GIRDER	ELEV.	Y
1	631.65	-
2	632.10	5⅜″
3	632.58	5¾″
4	633.04	5½″
5	633.50	5½″
8	633.79	3½″
9	634.04	3″
10	634.31	3¼″
11	634.77	5½″

A = 2-#6 s1001(E) BARS AT 6″ CTS. IN PAIRS TOP & BOTTOM
B = 2-#6 s1002(E) BARS AT 6″ CTS. IN PAIRS TOP & BOTTOM
C = 5-#6 s1003(E) BARS AT 6″ CTS. IN PAIRS TOP & BOTTOM
D = 6-#6 s1004(E) BARS AT 6″ CTS. IN PAIRS TOP & BOTTOM
E = 10-#6 s1004(E) BARS AT 6″ CTS. IN PAIRS TOP & BOTTOM
F = 6-#6 s1003(E) BARS AT 6″ CTS. IN PAIRS TOP & BOTTOM
G = 3-#6 s1004(E) BARS AT 6″ CTS. IN PAIRS TOP & BOTTOM
H = 8-#6 s1005(E) BARS AT 6″ CTS. IN PAIRS TOP & BOTTOM
J = 8-#6 s1004(E) BARS AT 6″ CTS. IN PAIRS TOP & BOTTOM

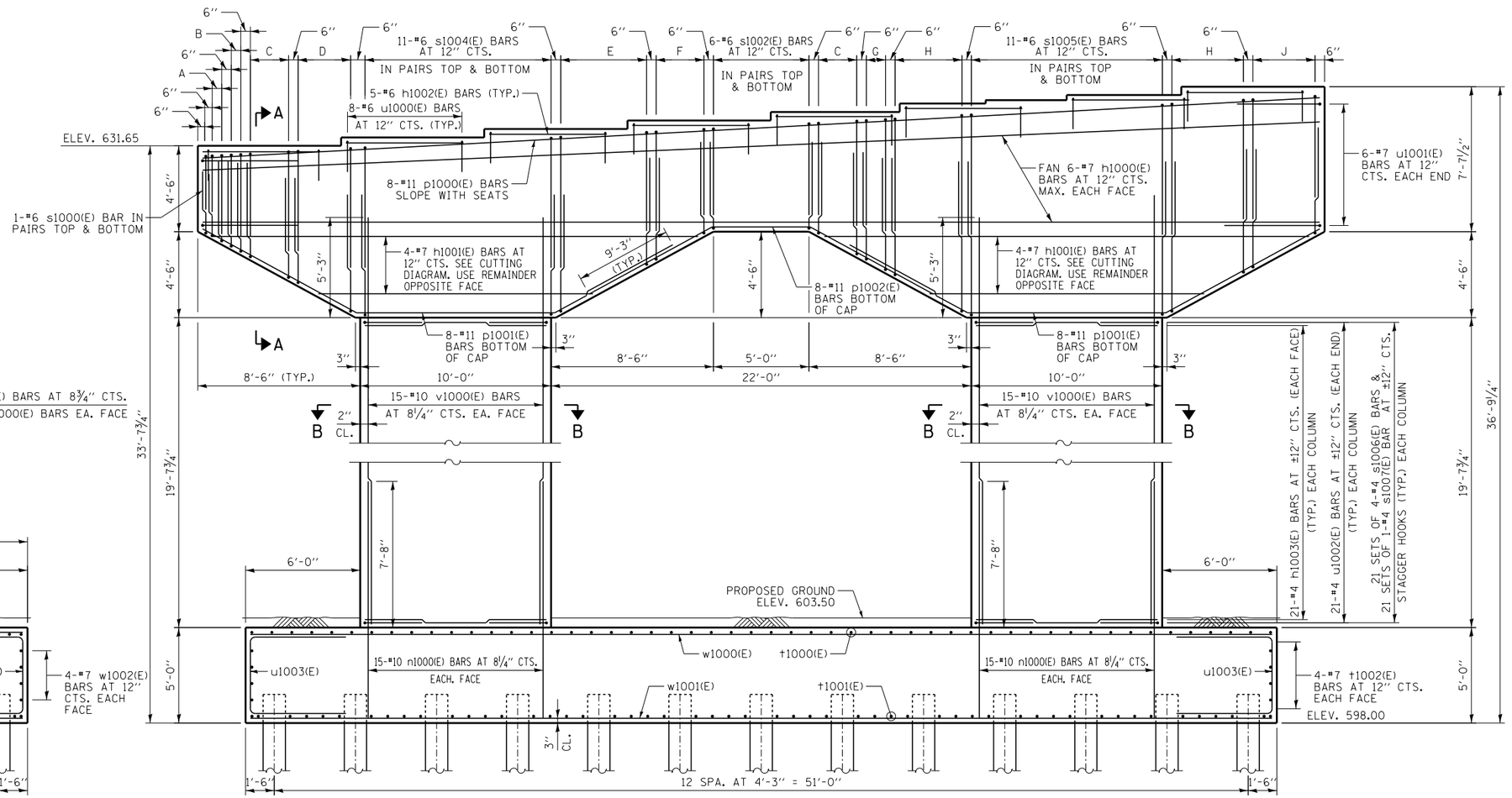


TOP PLAN



END VIEW

MIN. LAP
(UNLESS OTHERWISE NOTED)
#6 BARS = 3′-10″
#11 BARS = 12′-6″



ELEVATION
(LOOKING UPSTATION)

NOTES:

1. SPACE REINFORCEMENT IN CAP TO MISS ANCHOR BOLTS.
2. POUR STEPS MONOLITHICALLY WITH CAP.
3. SEE SHEET SC-189 FOR FOOTING PLAN, PILE DATA, SECTION A-A, B-B AND ANCHOR BOLT LAYOUT.
4. FOR BAR LIST AND BILL OF MATERIAL, SEE SHEET SC-189.

P:\682540\57-294_5-1\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\Reference\Juneau\JAI-Pier 10-Plan & Elevation.dgn
3/30/2020

DRAWN BY . . . . EER . . . . . DATE . 3-10-2020 . . .
CHECKED BY . . . DLM . . . . . SCALE . NONE . . . . .

JUNEAU ENGINEERING & LAND SURVEYING

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

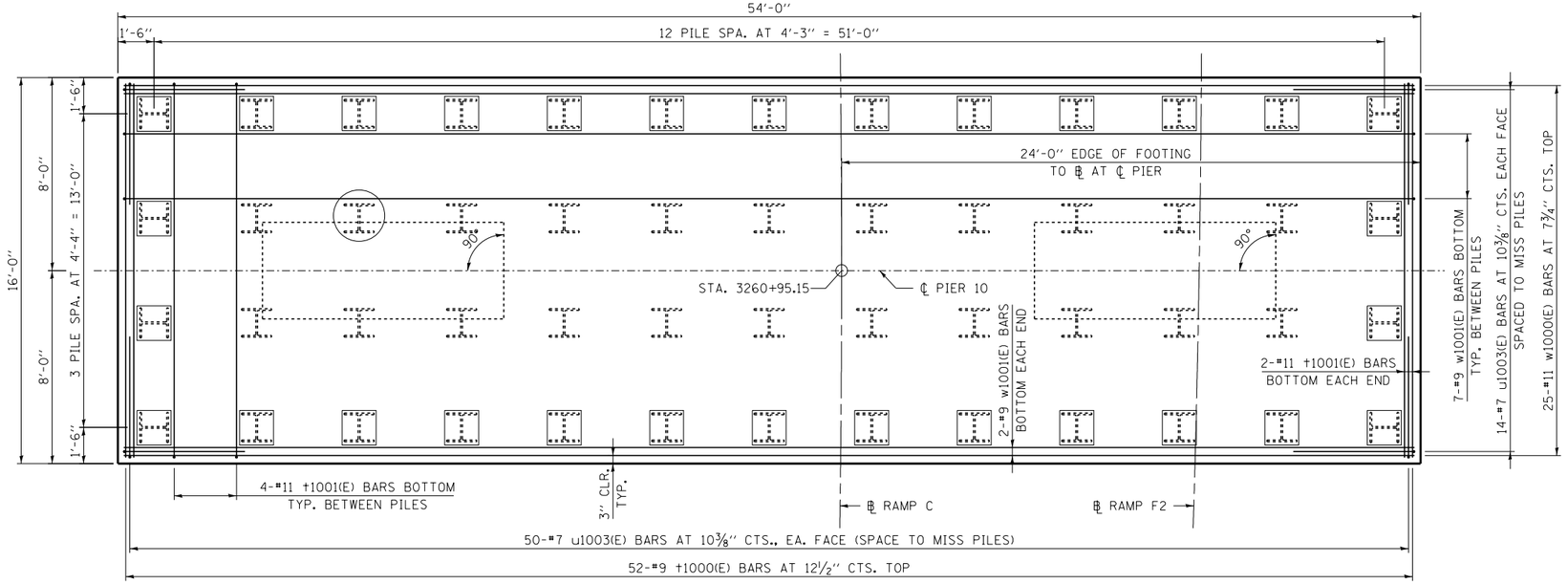
REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4419

I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
PIER 10 PLAN AND ELEVATION

SHEET SC - 188 OF 234

463 OF 606



FOOTING PLAN

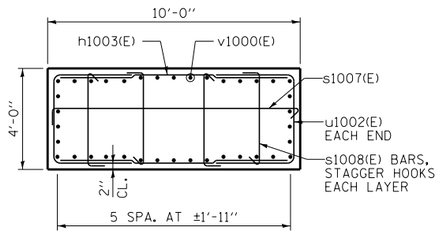
LEGEND

PROPOSED PILE

TEST PILE

PROPOSED PILE W/ WELDED REBAR

✳ p1000(E) BARS SHALL BE PLACED ALONG THE SLOPE OF BEAM SEATS. SEE ELEVATION VIEW FOR CLARITY.



SECTION B-B

PILE DATA

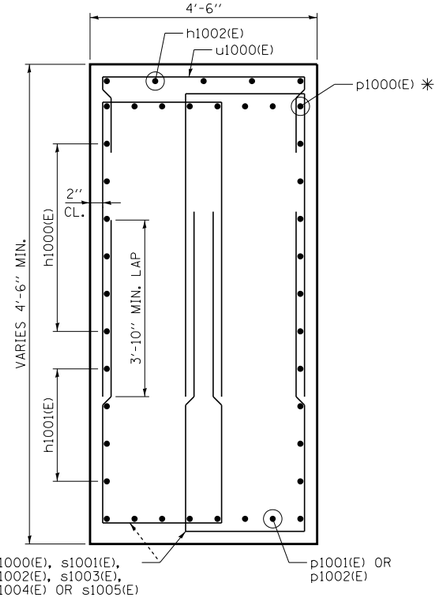
PILE TYPE AND SIZE: HP14x73 WITH PILE SHOES
NOMINAL REQUIRED BEARING: 578 KIPS
FACTORED RESISTANCE AVAILABLE: 318 KIPS
ESTIMATED PILE LENGTH: 28 FEET
NUMBER OF PILES REQUIRED: 51 PILES PLUS 1 TEST PILE

REINFORCEMENT BAR LIST

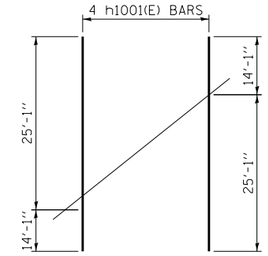
BAR	NO.	SIZE	LENGTH	SHAPE
h1000(E)	12	#7	58'-8"	——
h1001(E)	8	#7	39'-2"	——
h1002(E)	40	#6	7'-0"	——
h1003(E)	84	#4	9'-8"	——
n1000(E)	76	#10	13'-11"	⊔
p1000(E)	8	#11	58'-8"	——
p1001(E)	16	#11	28'-11"	⟋⟍
p1002(E)	8	#11	23'-7"	⟋⟍
s1000(E)	4	#6	10'-6"	⊐
s1001(E)	8	#6	11'-0"	⊐
s1002(E)	32	#6	12'-0"	⊐
s1003(E)	64	#6	13'-6"	⊐
s1004(E)	152	#6	16'-0"	⊐
s1005(E)	108	#6	17'-6"	⊐
s1006(E)	168	#4	4'-9"	⊐
s1007(E)	42	#4	10'-9"	⊐
†1000(E)	52	#9	15'-6"	——
†1001(E)	52	#11	15'-6"	——
†1002(E)	8	#7	15'-6"	——
u1000(E)	64	#6	8'-0"	⊔
u1001(E)	12	#7	14'-2"	⊔
u1002(E)	84	#4	9'-6"	⊔
u1003(E)	128	#7	6'-6"	⊔
v1000(E)	76	#10	24'-11"	——
w1000(E)	25	#11	53'-6"	——
w1001(E)	25	#9	53'-6"	——
w1002(E)	8	#7	53'-6"	——

BILL OF MATERIAL

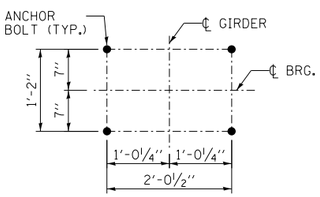
ITEM	UNIT	QUANTITY
STRUCTURE EXCAVATION	CU. YD.	236.3
CONCRETE STRUCTURES	CU. YD.	306.0
REINFORCEMENT BARS, EPOXY COATED	POUND	54,250
FURNISHING STEEL PILES HP14X73	FOOT	1,428
DRIVING PILES	FOOT	1,428
TEST PILE STEEL HP14X73	EACH	1
PILE SHOES	EACH	52



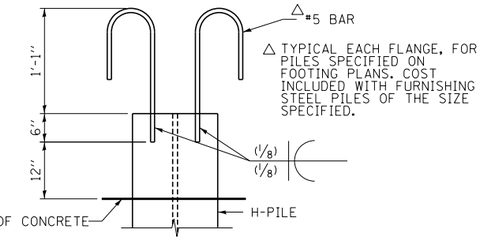
SECTION A-A



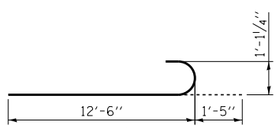
BAR CUTTING DIAGRAM



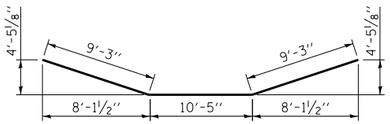
ANCHOR BOLT LAYOUT



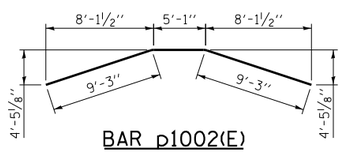
PILE WELDED REBAR DETAIL



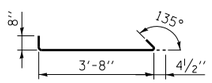
BAR n1000(E)



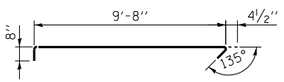
BAR p1001(E)



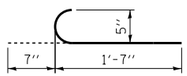
BAR p1002(E)



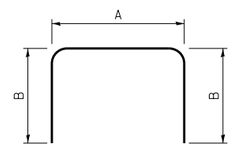
BAR s1006(E)



BAR s1007(E)



#5 PILE WELDED REBAR



BARS s1000(E)-s1005(E) u1000(E)-u1003(E)

A & B DIMENSIONS

BAR	A	B
s1000(E)	2'-6"	4'-0"
s1001(E)	2'-6"	4'-3"
s1002(E)	2'-6"	4'-9"
s1003(E)	2'-6"	5'-6"
s1004(E)	2'-6"	6'-9"
s1005(E)	2'-6"	7'-6"
u1000(E)	4'-2"	1'-11"
u1001(E)	4'-2"	5'-0"
u1002(E)	3'-8"	2'-11"
u1003(E)	4'-2"	1'-2"

P:\60254057-294,55-91\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\Reference\Juneau\JAI-Pier 10-Details.dgn
3/30/2020

DRAWN BY . . . . EER . . . . . DATE . 3-10-2020 . . .
CHECKED BY . . . DLM . . . . . SCALE . NONE . . . . .

JUNEAU ENGINEERING & LAND SURVEYING

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

REVISIONS NO.	DATE	DESCRIPTION

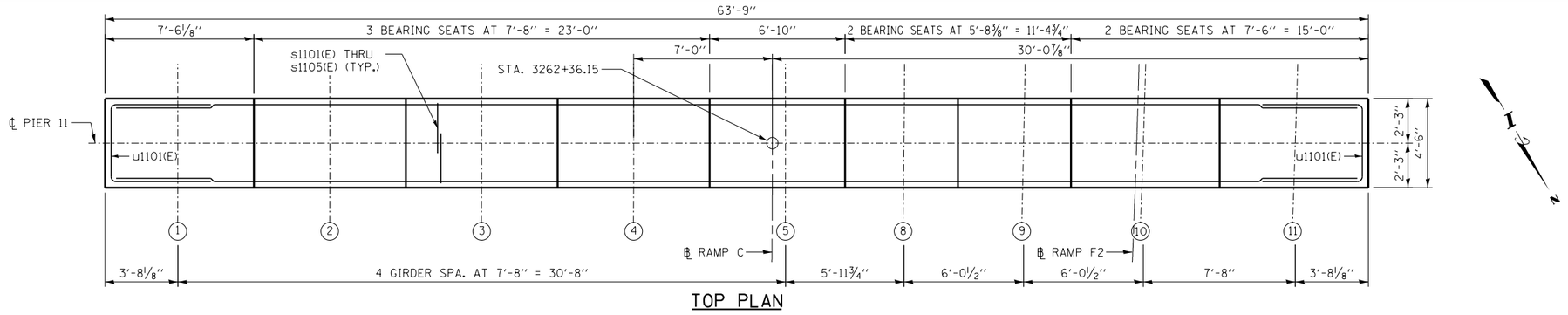
CONTRACT I-19-4419
I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
PIER 10 DETAILS

SHEET SC - 189 OF 234
464 OF 606

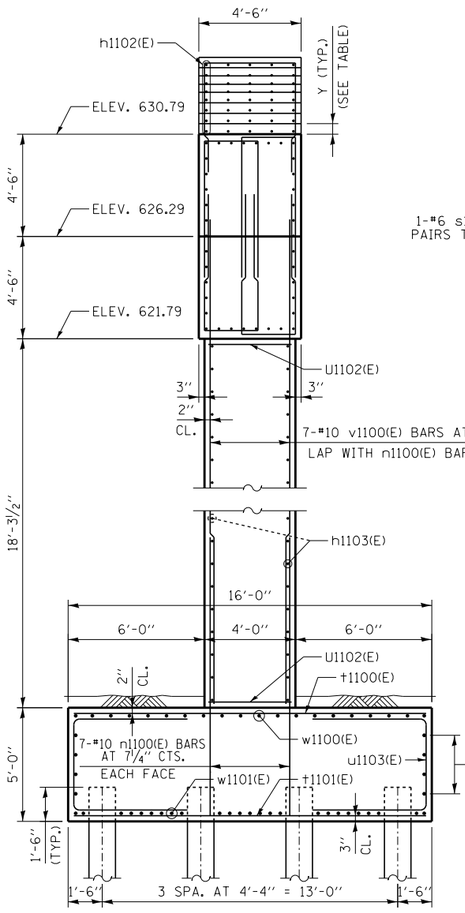
BEARING SEAT ELEVATIONS

GIRDER	ELEV.	Y
1	630.79	-
2	631.23	5¼″
3	631.72	5⅞″
4	632.18	5½″
5	632.62	5¼″
8	632.90	3⅜″
9	633.30	4¾″
10	633.65	4¼″
11	634.12	5⅝″

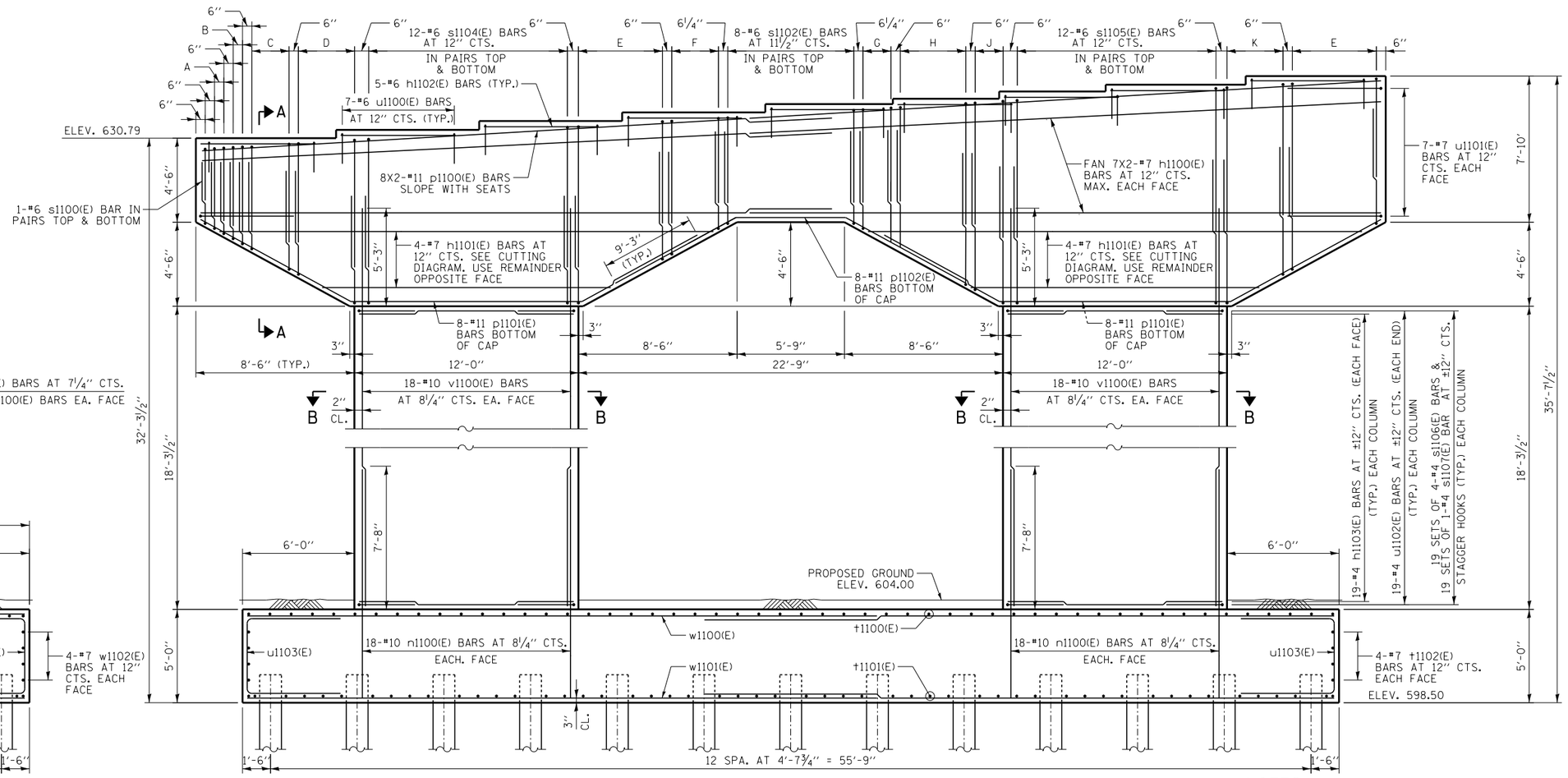
A = 2-#6 s1101(E) BARS AT 6″ CTS. IN PAIRS TOP & BOTTOM
B = 2-#6 s1102(E) BARS AT 6″ CTS. IN PAIRS TOP & BOTTOM
C = 5-#6 s1103(E) BARS AT 6″ CTS. IN PAIRS TOP & BOTTOM
D = 7-#6 s1104(E) BARS AT 6″ CTS. IN PAIRS TOP & BOTTOM
E = 10-#6 s1104(E) BARS AT 6″ CTS. IN PAIRS TOP & BOTTOM
F = 6-#6 s1103(E) BARS AT 6″ CTS. IN PAIRS TOP & BOTTOM
G = 4-#6 s1103(E) BARS AT 6″ CTS. IN PAIRS TOP & BOTTOM
H = 8-#6 s1104(E) BARS AT 6″ CTS. IN PAIRS TOP & BOTTOM
J = 4-#6 s1105(E) BARS AT 6″ CTS. IN PAIRS TOP & BOTTOM
K = 7-#6 s1105(E) BARS AT 6″ CTS. IN PAIRS TOP & BOTTOM



TOP PLAN



END VIEW



ELEVATION
(LOOKING UPSTATION)

MIN. LAP
(UNLESS OTHERWISE NOTED)

#6 BARS = 3′-10″
#11 BARS = 10′-6″

NOTES:

1. SPACE REINFORCEMENT IN CAP TO MISS ANCHOR BOLTS.
2. POUR STEPS MONOLITHICALLY WITH CAP.
3. SEE SHEET SC-191 FOR FOOTING PLAN, PILE DATA, SECTION A-A, B-B AND ANCHOR BOLT LAYOUT.
4. FOR BAR LIST AND BILL OF MATERIAL, SEE SHEET SC-191.

P:\682540\57-294,59-91\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\Reference\Juneau\JAI-Pier 11-Plan & Elevation.dgn
3/30/2020

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CHECKED BY . . . . DLM . . . . .
DATE . 3-10-2020 . . .
SCALE . NONE . . . . .

JUNEAU ENGINEERING & LAND SURVEYING

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

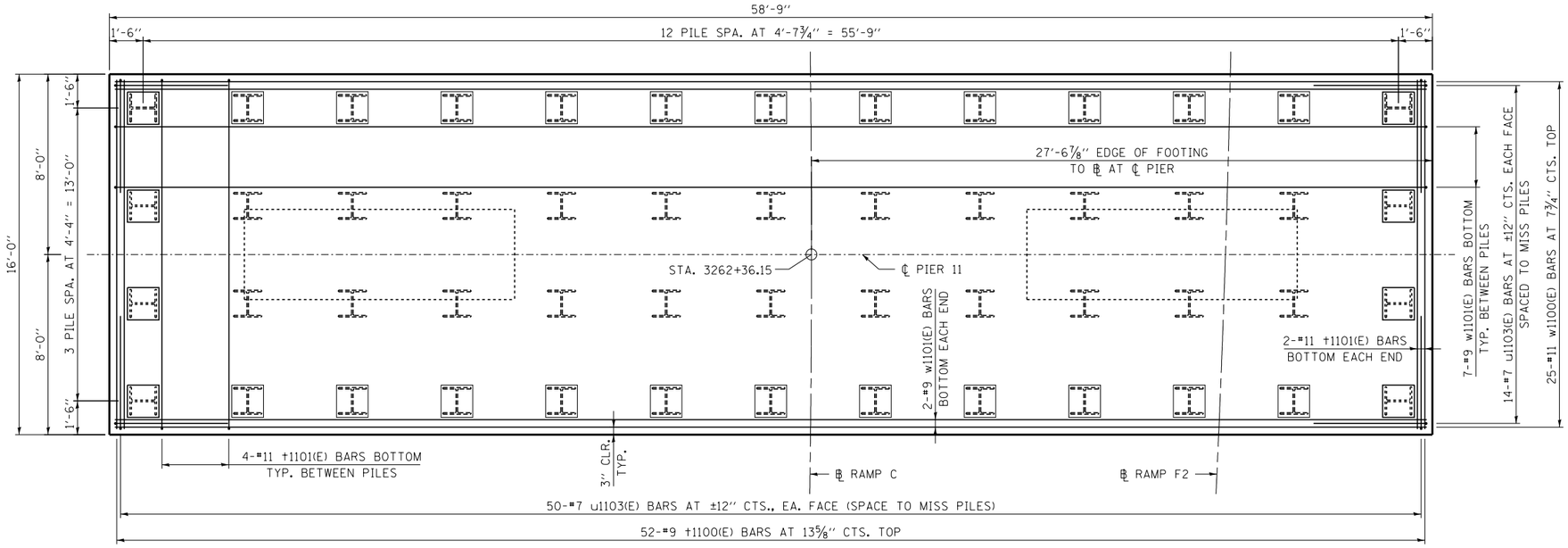
REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4419

I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
PIER 11 PLAN AND ELEVATION

SHEET SC - 190 OF 234

465 OF 606



FOOTING PLAN

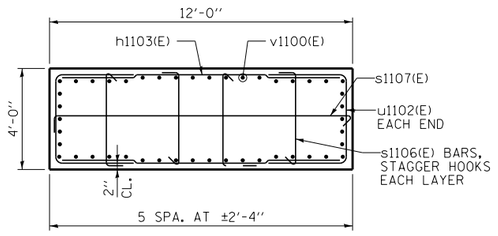
LEGEND

PROPOSED PILE

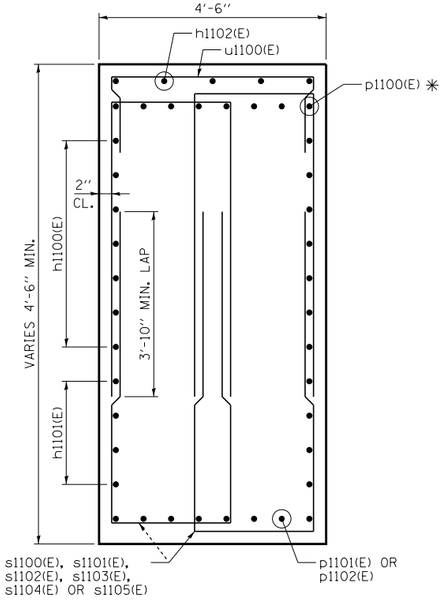
TEST PILE

PROPOSED PILE W/ WELDED REBAR

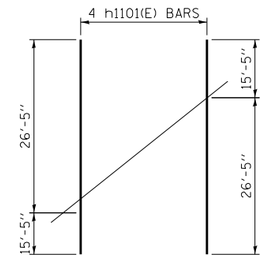
✳ p1100(E) BARS SHALL BE PLACED ALONG THE SLOPE OF BEAM SEATS. SEE ELEVATION VIEW FOR CLARITY.



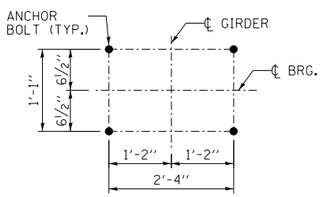
SECTION B-B



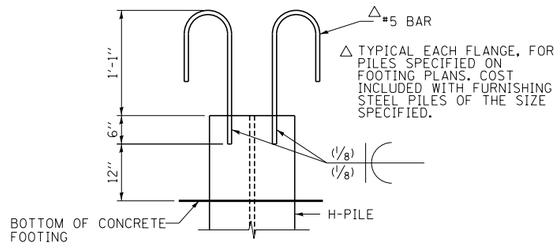
SECTION A-A



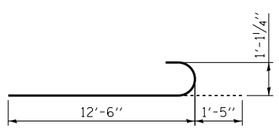
BAR CUTTING DIAGRAM



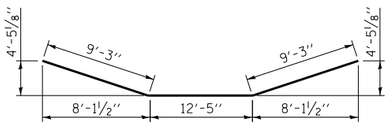
ANCHOR BOLT LAYOUT



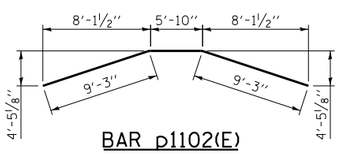
PILE WELDED REBAR DETAIL



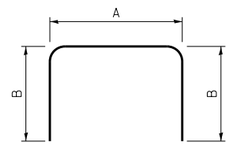
BAR n1100(E)



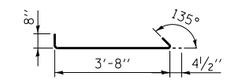
BAR p1101(E)



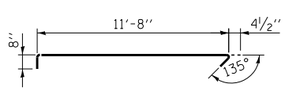
BAR p1102(E)



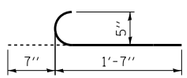
BARS s1100(E)-s1105(E) u1100(E)-u1103(E)



BAR s1106(E)



BAR s1107(E)



#5 PILE WELDED REBAR

PILE DATA

PILE TYPE AND SIZE: HP14x73 WITH PILE SHOES
NOMINAL REQUIRED BEARING: 578 KIPS
FACTORED RESISTANCE AVAILABLE: 318 KIPS
ESTIMATED PILE LENGTH: 31 FEET
NUMBER OF PILES REQUIRED: 51 PILES PLUS 1 TEST PILE

REINFORCEMENT BAR LIST

BAR	NO.	SIZE	LENGTH	SHAPE
h1100(E)	28	#7	34'-3"	—
h1101(E)	8	#7	41'-10"	—
h1102(E)	45	#6	6'-0"	—
h1103(E)	76	#4	11'-8"	—
n1100(E)	92	#10	13'-11"	⊃
p1100(E)	16	#11	37'-0"	—
p1101(E)	16	#11	30'-11"	⌒
p1102(E)	8	#11	24'-4"	⌒
s1100(E)	4	#6	10'-6"	⊐
s1101(E)	8	#6	11'-0"	⊐
s1102(E)	40	#6	12'-6"	⊐
s1103(E)	60	#6	13'-6"	⊐
s1104(E)	188	#6	16'-0"	⊐
s1105(E)	92	#6	18'-0"	⊐
s1106(E)	152	#4	4'-9"	⊐
s1107(E)	38	#4	12'-9"	⊐
†1100(E)	52	#9	15'-6"	—
†1101(E)	52	#11	15'-6"	—
†1102(E)	8	#7	15'-6"	—
u1100(E)	63	#6	8'-0"	⊐
u1101(E)	14	#7	14'-2"	⊐
u1102(E)	76	#4	9'-6"	⊐
u1103(E)	128	#7	6'-6"	⊐
v1100(E)	92	#10	23'-8"	—
w1100(E)	25	#11	58'-3"	—
w1101(E)	25	#9	58'-3"	—
w1102(E)	8	#7	58'-3"	—

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
STRUCTURE EXCAVATION	CU. YD.	255.6
CONCRETE STRUCTURES	CU. YD.	335.8
REINFORCEMENT BARS, EPOXY COATED	POUND	59,650
FURNISHING STEEL PILES HP14X73	FOOT	1,581
DRIVING PILES	FOOT	1,581
TEST PILE STEEL HP14X73	EACH	1
PILE SHOES	EACH	52

A & B DIMENSIONS

BAR	A	B
s1100(E)	2'-6"	4'-0"
s1101(E)	2'-6"	4'-3"
s1102(E)	2'-6"	5'-0"
s1103(E)	2'-6"	5'-6"
s1104(E)	2'-6"	6'-9"
s1105(E)	2'-6"	7'-9"
u1100(E)	4'-2"	1'-11"
u1101(E)	4'-2"	5'-0"
u1102(E)	3'-8"	2'-11"
u1103(E)	4'-2"	1'-2"

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JUNEAU ENGINEERING & LAND SURVEYING

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4419
I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
PIER 11 DETAILS

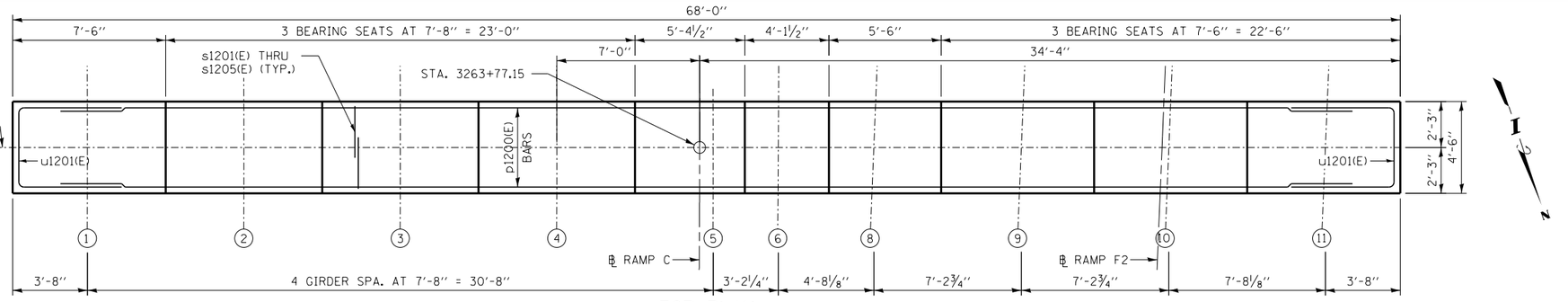
SHEET SC - 191 OF 234
466 OF 606

P:\68254057-294,5-9\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\Reference\Juneau\JAI-Pier 11-Details.dgn
3/30/2020

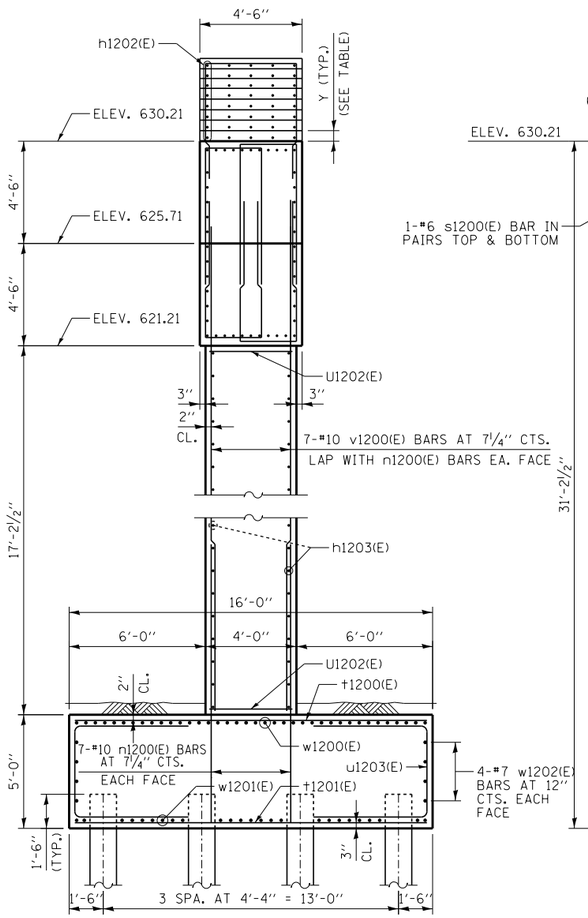
BEARING SEAT ELEVATIONS

GIRDER	ELEV.	Y
1	630.21	-
2	630.68	5⅝″
3	631.13	5⅜″
4	631.60	5⅛″
5	632.06	5½″
6	632.25	2¼″
8	632.51	3⅛″
9	632.72	2½″
10	632.93	2½″
11	633.15	2⅝″

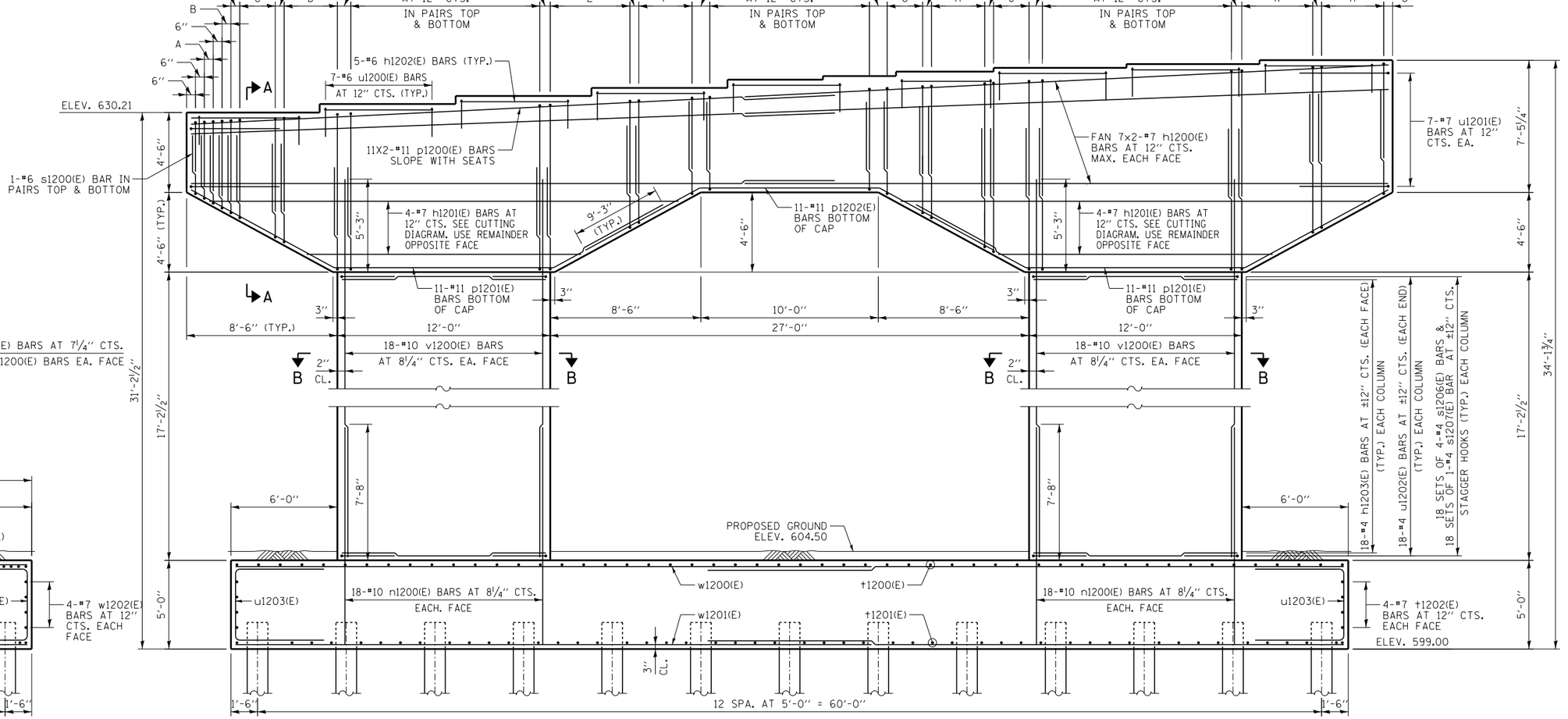
A = 2-#6 s1201(E) BARS AT 6″ CTS. IN PAIRS TOP & BOTTOM
B = 2-#6 s1202(E) BARS AT 6″ CTS. IN PAIRS TOP & BOTTOM
C = 5-#6 s1203(E) BARS AT 6″ CTS. IN PAIRS TOP & BOTTOM
D = 7-#6 s1204(E) BARS AT 6″ CTS. IN PAIRS TOP & BOTTOM
E = 10-#6 s1204(E) BARS AT 6″ CTS. IN PAIRS TOP & BOTTOM
F = 7-#6 s1203(E) BARS AT 6″ CTS. IN PAIRS TOP & BOTTOM
G = 4-#6 s1203(E) BARS AT 6″ CTS. IN PAIRS TOP & BOTTOM
H = 8-#6 s1204(E) BARS AT 6″ CTS. IN PAIRS TOP & BOTTOM
J = 5-#6 s1205(E) BARS AT 6″ CTS. IN PAIRS TOP & BOTTOM
K = 9-#6 s1205(E) BARS AT 6″ CTS. IN PAIRS TOP & BOTTOM



TOP PLAN



ELEVATION



ELEVATION
(LOOKING UPSTATION)

MIN. LAP
(UNLESS OTHERWISE NOTED)
#6 BARS = 3′-10″
#11 BARS = 10′-6″

NOTES:
1. SPACE REINFORCEMENT IN CAP TO MISS ANCHOR BOLTS.
2. POUR STEPS MONOLITHICALLY WITH CAP.
3. SEE SHEET SC-193 FOR FOOTING PLAN, PILE DATA, SECTION A-A, B-B AND ANCHOR BOLT LAYOUT.
4. FOR BAR LIST AND BILL OF MATERIAL, SEE SHEET SC-193.

P:\602540\57-294.5-9\STRUCTURAL\RESTART.2018\Ramp C over I-57 and I-294\Reference\Juneau\JAI-Pier 12-Plan & Elevation.dgn
3/30/2020

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CHECKED BY . . . DLM . . . . . SCALE . NONE . . . . .

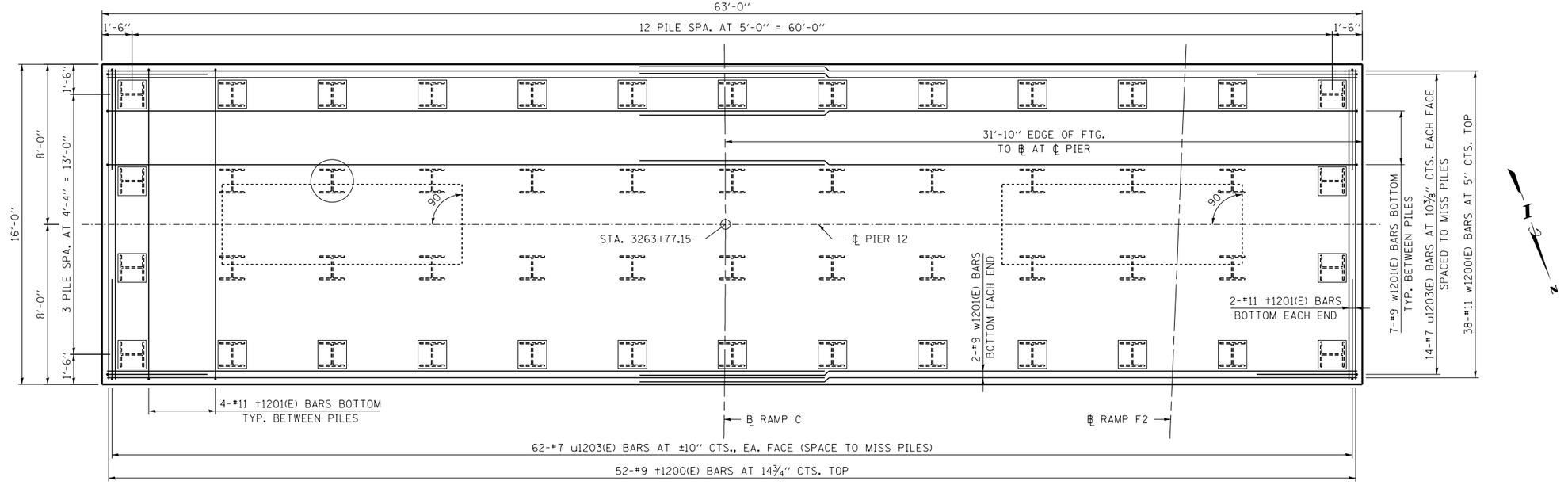
JUNEAU ENGINEERING & LAND SURVEYING

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4419

I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
PIER 12 PLAN AND ELEVATION



LEGEND

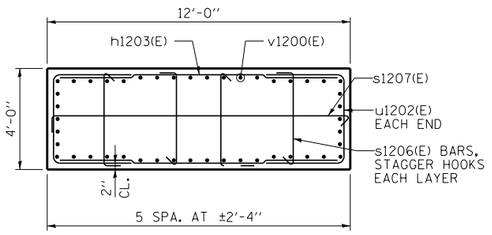
PROPOSED PILE

TEST PILE

PROPOSED PILE W/ WELDED REBAR

✳ p1200(E) BARS SHALL BE PLACED ALONG THE SLOPE OF BEAM SEATS. SEE ELEVATION VIEW FOR CLARITY.

FOOTING PLAN



SECTION B-B

PILE DATA

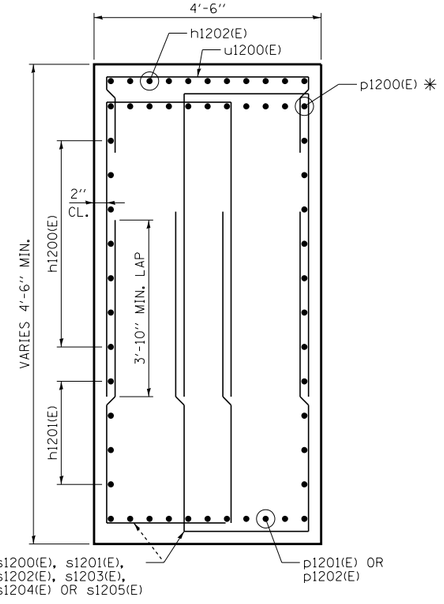
PILE TYPE AND SIZE: HP14x73 WITH PILE SHOES
NOMINAL REQUIRED BEARING: 578 KIPS
FACTORED RESISTANCE AVAILABLE: 318 KIPS
ESTIMATED PILE LENGTH: 31 FEET
NUMBER OF PILES REQUIRED: 51 PILES PLUS 1 TEST PILE

REINFORCEMENT BAR LIST

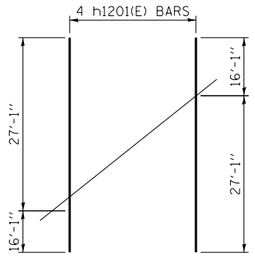
BAR	NO.	SIZE	LENGTH	SHAPE
h1200(E)	28	#7	36'-5"	—
h1201(E)	8	#7	43'-2"	—
h1202(E)	45	#6	6'-0"	—
h1203(E)	72	#4	11'-8"	—
n1200(E)	92	#10	13'-11"	⊃
p1200(E)	22	#11	40'-2"	—
p1201(E)	22	#11	30'-11"	⟋⟍
p1202(E)	11	#11	28'-9"	⟋⟍
s1200(E)	4	#6	10'-6"	⊐
s1201(E)	8	#6	11'-0"	⊐
s1202(E)	48	#6	12'-6"	⊐
s1203(E)	64	#6	13'-6"	⊐
s1204(E)	180	#6	16'-0"	⊐
s1205(E)	104	#6	18'-0"	⊐
s1206(E)	144	#4	4'-9"	⊐
s1207(E)	36	#4	12'-9"	⊐
†1200(E)	52	#9	15'-6"	—
†1201(E)	52	#11	15'-6"	—
†1202(E)	8	#7	15'-6"	—
u1200(E)	63	#6	8'-0"	⊔
u1201(E)	14	#7	14'-2"	⊔
u1202(E)	72	#4	9'-6"	⊔
u1203(E)	152	#7	6'-6"	⊔
v1200(E)	92	#10	22'-6"	—
w1200(E)	76	#11	36'-6"	—
w1201(E)	50	#9	34'-10"	—
w1202(E)	16	#7	33'-9"	—

BILL OF MATERIAL

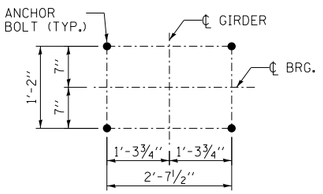
ITEM	UNIT	QUANTITY
STRUCTURE EXCAVATION	CU. YD.	273.0
CONCRETE STRUCTURES	CU. YD.	348.9
REINFORCEMENT BARS, EPOXY COATED	POUND	71,540
FURNISHING STEEL PILES HP14X73	FOOT	1,581
DRIVING PILES	FOOT	1,581
TEST PILE STEEL HP14X73	EACH	1
PILE SHOES	EACH	52



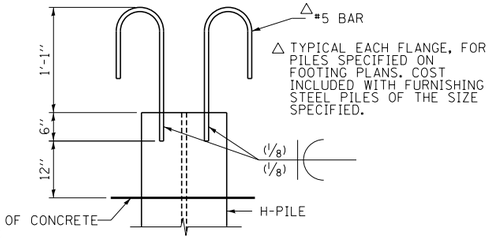
SECTION A-A



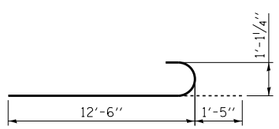
BAR CUTTING DIAGRAM



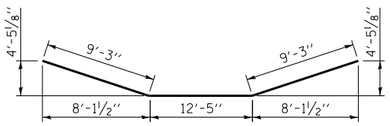
ANCHOR BOLT LAYOUT



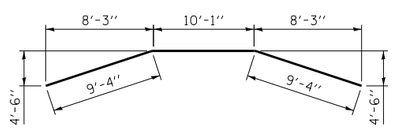
PILE WELDED REBAR DETAIL



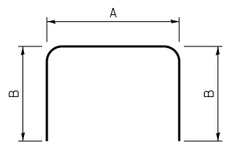
BAR n1200(E)



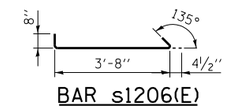
BAR p1201(E)



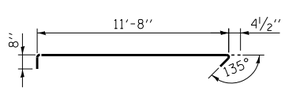
BAR p1202(E)



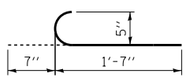
BARS s1200(E)-s1205(E) u1200(E)-u1203(E)



BAR s1206(E)



BAR s1207(E)



#5 PILE WELDED REBAR

A & B DIMENSIONS

BAR	A	B
s1200(E)	2'-6"	4'-0"
s1201(E)	2'-6"	4'-3"
s1202(E)	2'-6"	5'-0"
s1203(E)	2'-6"	5'-6"
s1204(E)	2'-6"	6'-9"
s1205(E)	2'-6"	7'-9"
u1200(E)	4'-2"	1'-11"
u1201(E)	4'-2"	5'-0"
u1202(E)	3'-8"	2'-11"
u1203(E)	4'-2"	1'-2"

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CHECKED BY . . . . DLM . . . . . SCALE . NONE . . . . .

JUNEAU ENGINEERING & LAND SURVEYING

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

REVISIONS NO.	DATE	DESCRIPTION

CONTRACT I-19-4419

I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
PIER 12 DETAILS

SHEET SC - 193 OF 234

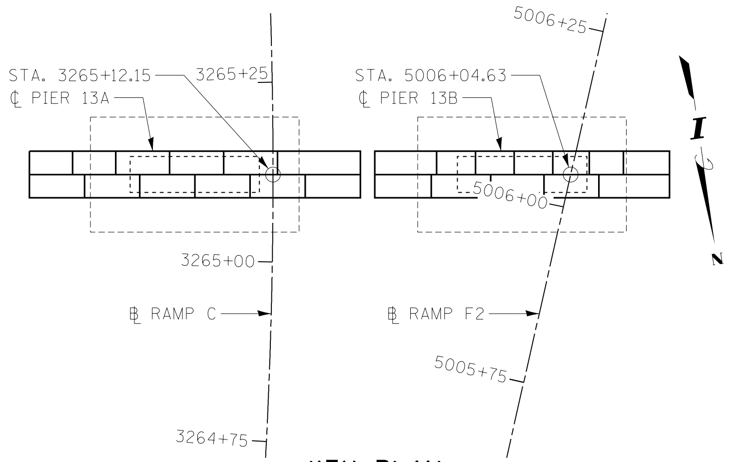
468 OF 606

BEARING SEAT ELEVATIONS

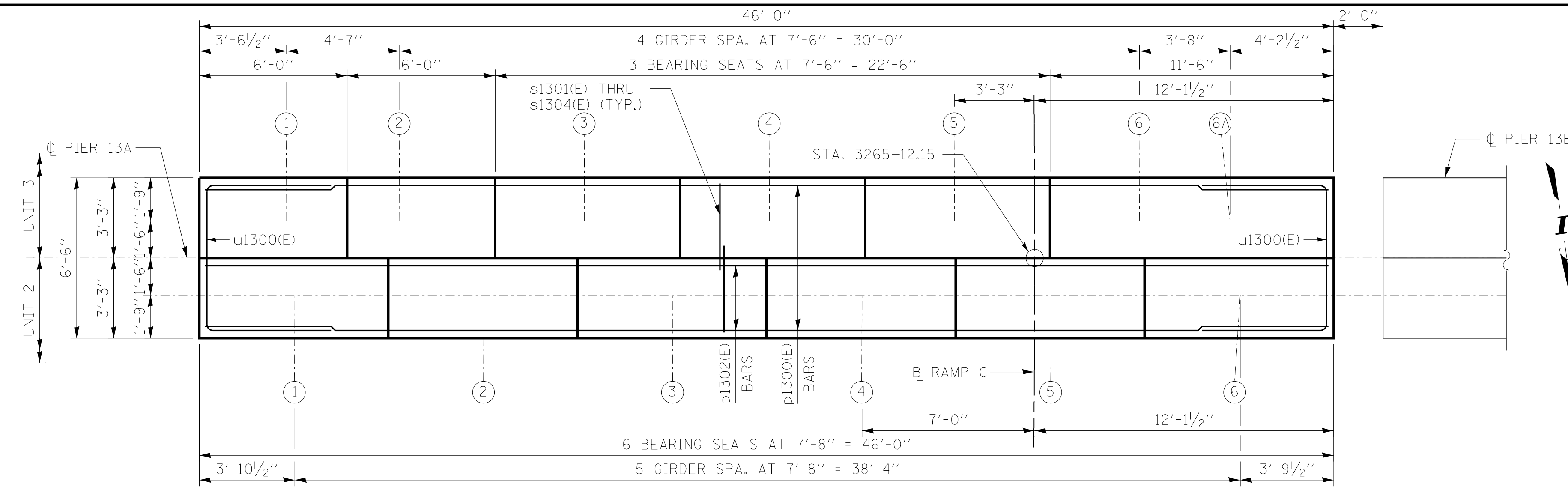
UNIT 2		
GIRDER	ELEV.	Y
1	631.69	-
2	632.15	5½″
3	632.61	5½″
4	633.07	5½″
5	633.47	4¾″
6	633.23	2⅞″

BEARING SEAT ELEVATIONS

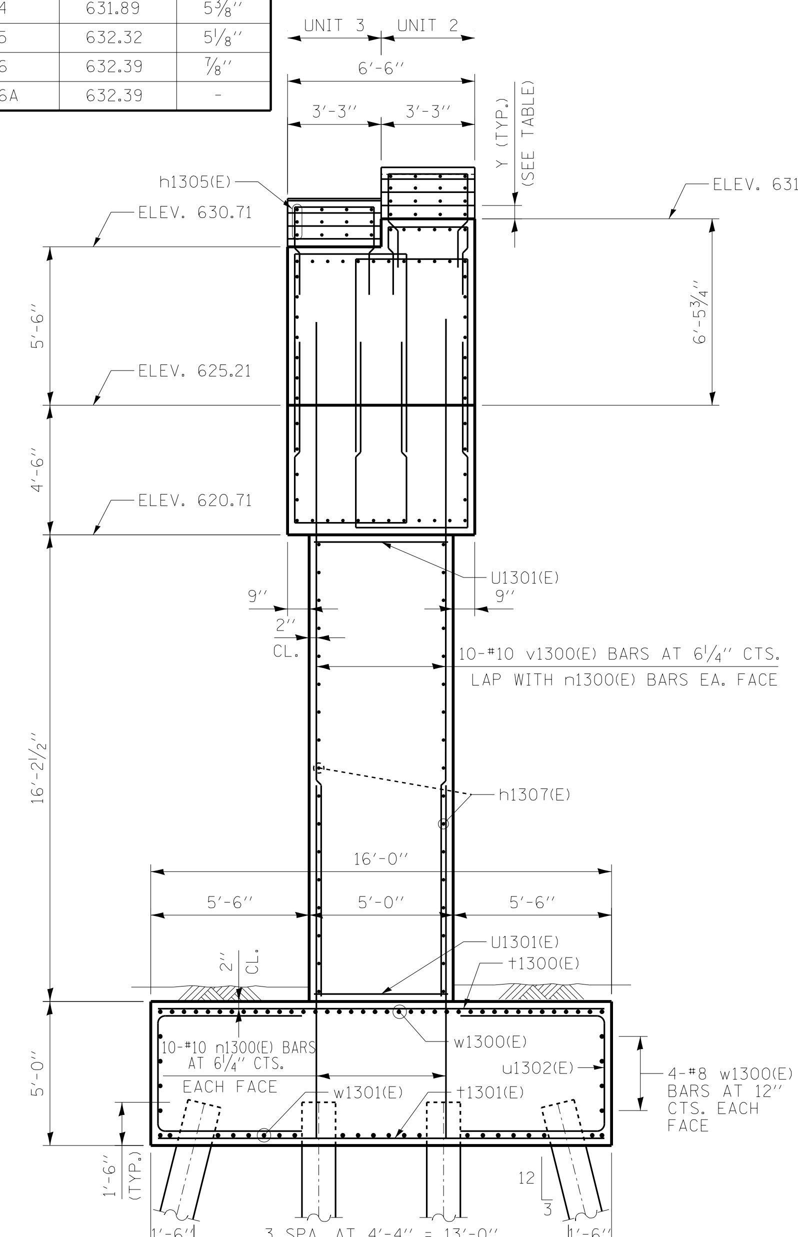
UNIT 3		
GIRDER	ELEV.	Y
1	630.71	-
2	630.99	3⅜″
3	631.44	5⅜″
4	631.89	5⅜″
5	632.32	5⅛″
6	632.39	⅞″
6A	632.39	-



KEY PLAN



TOP PLAN



END VIEW

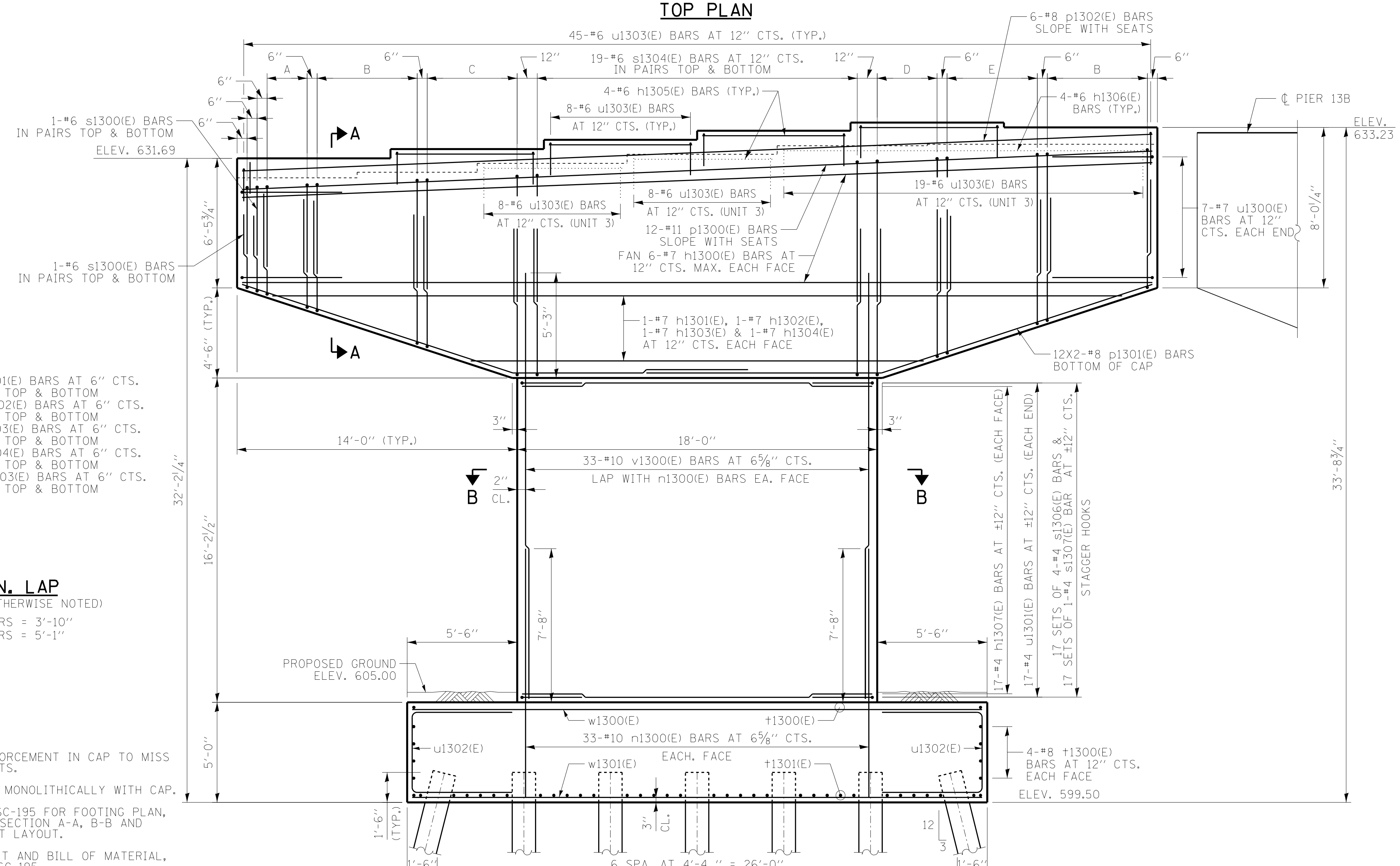
A = 5-#6 s1301(E) BARS AT 6″ CTS. IN PAIRS TOP & BOTTOM
B = 11-#6 s1302(E) BARS AT 6″ CTS. IN PAIRS TOP & BOTTOM
C = 9-#6 s1303(E) BARS AT 6″ CTS. IN PAIRS TOP & BOTTOM
D = 6-#6 s1304(E) BARS AT 6″ CTS. IN PAIRS TOP & BOTTOM
E = 10-#6 s1303(E) BARS AT 6″ CTS. IN PAIRS TOP & BOTTOM

MIN. LAP
(UNLESS OTHERWISE NOTED)

#6 BARS = 3′-10″
#8 BARS = 5′-1″

NOTES:

1. SPACE REINFORCEMENT IN CAP TO MISS ANCHOR BOLTS.
2. POUR STEPS MONOLITHICALLY WITH CAP.
3. SEE SHEET SC-195 FOR FOOTING PLAN, PILE DATA, SECTION A-A, B-B AND ANCHOR BOLT LAYOUT.
4. FOR BAR LIST AND BILL OF MATERIAL, SEE SHEET SC-195.
4. CONCRETE SEALER TO BE APPLIED TO ALL EXPOSED SURFACES OF THE PIER.



ELEVATION
(LOOKING UPSTATION)

DRAWN BY EER	DATE 3-10-2020	JUNEAU ENGINEERING & LAND SURVEYING	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515
CHECKED BY DLM	SCALE NONE		

REVISIONS: NO. | DATE | DESCRIPTION

CONTRACT I-19-4419

I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
PIER 13A PLAND AND ELEVATION

SHEET SC - 194 OF 234

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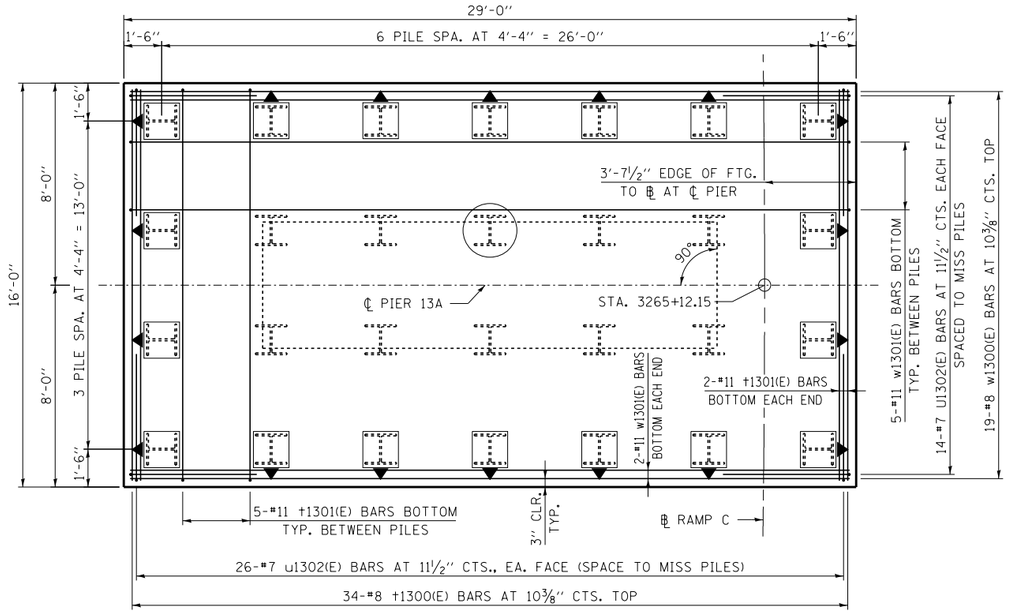
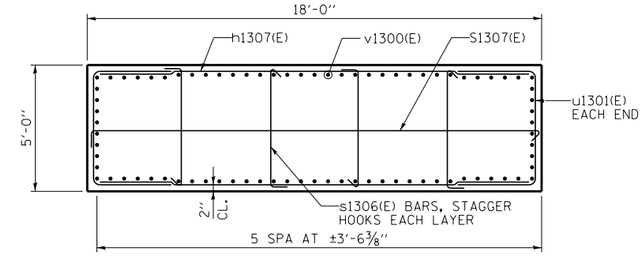
P:\602540\57-294_5-9\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\Reference\Juneau\JA\-Pier 13A-Plan & Elevation.dgn 3/30/2020



FOOTING PLAN



SECTION B-B

LEGEND

- PROPOSED PILE
- PROPOSED BATTERED PILE 4:1 (V:H)
- TEST PILE
- PROPOSED PILE W/ WELDED REBAR

PILE DATA

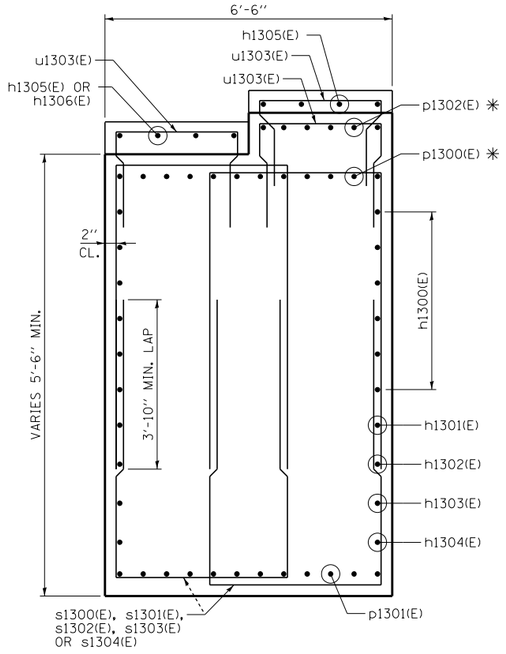
PILE TYPE AND SIZE: HP14x73 WITH PILE SHOES
NOMINAL REQUIRED BEARING: 578 KIPS
FACTORED RESISTANCE AVAILABLE: 318 KIPS
ESTIMATED PILE LENGTH: 29 FEET
NUMBER OF PILES REQUIRED: 27 PILES PLUS 1 TEST PILE

REINFORCEMENT BAR LIST

BAR	NO.	SIZE	LENGTH	SHAPE
h1300(E)	12	#7	45'-8"	——
h1301(E)	2	#7	42'-10"	——
h1302(E)	2	#7	36'-9"	——
h1303(E)	2	#7	30'-8"	——
h1304(E)	2	#7	24'-6"	——
h1305(E)	24	#6	7'-6"	——
h1306(E)	4	#6	18'-6"	——
h1307(E)	34	#4	17'-8"	——
n1300(E)	82	#10	13'-11"	⊔
p1300(E)	12	#11	45'-8"	——
p1301(E)	24	#8	26'-6"	——
p1302(E)	6	#8	45'-8"	——
s1300(E)	8	#6	13'-6"	⊓
s1301(E)	20	#6	14'-6"	⊓
s1302(E)	88	#6	16'-6"	⊓
s1303(E)	76	#6	18'-0"	⊓
s1304(E)	100	#6	19'-0"	⊓
s1306(E)	68	#4	5'-9"	⊓
s1307(E)	17	#4	18'-9"	⊓
†1300(E)	42	#8	15'-6"	——
†1301(E)	34	#11	15'-6"	——
u1300(E)	14	#7	16'-0"	⊔
u1301(E)	34	#4	10'-6"	⊔
u1302(E)	80	#7	6'-6"	⊔
u1303(E)	112	#6	6'-10"	⊔
v1300(E)	82	#10	21'-6"	——
w1300(E)	27	#8	28'-6"	——
w1301(E)	19	#11	28'-6"	——

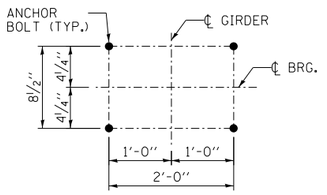
BILL OF MATERIAL

ITEM	UNIT	QUANTITY
STRUCTURE EXCAVATION	CU. YD.	134.4
CONCRETE STRUCTURES	CU. YD.	252.5
REINFORCEMENT BARS, EPOXY COATED	POUND	40,840
FURNISHING STEEL PILES HP14X73	FOOT	783
DRIVING PILES	FOOT	783
TEST PILE STEEL HP14X133	EACH	1
PILE SHOES	EACH	28
CONCRETE SEALER	SQ. FT.	1481

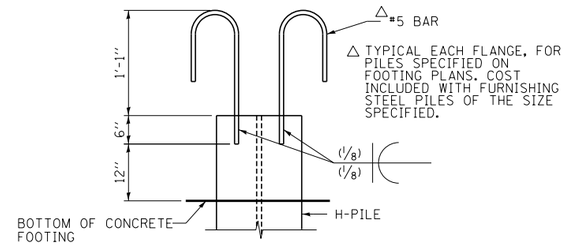


SECTION A-A

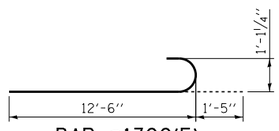
✳ p1300(E) AND p1302(E) BARS SHALL BE PLACED ALONG THE SLOPE OF BEAM SEATS. SEE ELEVATION VIEW FOR CLARITY.



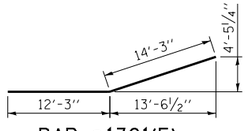
ANCHOR BOLT LAYOUT
(UNIT 2 & UNIT 3)



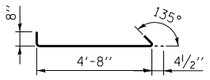
PILE WELDED REBAR DETAIL



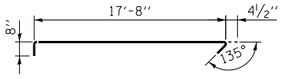
BAR n1300(E)



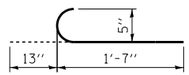
BAR p1301(E)



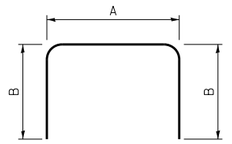
BAR s1306(E)



BAR s1307(E)



#5 PILE WELDED REBAR



BARS s1300(E)-s1305(E)
u1300(E)-u1303(E)

A & B DIMENSIONS

BAR	A	B
s1300(E)	4'-6"	4'-6"
s1301(E)	4'-6"	5'-0"
s1302(E)	4'-6"	6'-0"
s1303(E)	4'-6"	6'-9"
s1304(E)	4'-6"	7'-3"
u1300(E)	6'-0"	5'-0"
u1301(E)	4'-8"	2'-11"
u1302(E)	4'-2"	1'-2"
u1303(E)	3'-0"	1'-11"

P:\62540\57-294_5-9\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\Reference\Juneau\IA1-Pier 13A-Details.dgn
3/30/2020

DRAWN BY . . . . EER . . . . . DATE . 3-10-2020 . . .
CHECKED BY . . . . DLM . . . . . SCALE . NONE . . . . .

JUNEAU ENGINEERING & LAND SURVEYING

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4419
I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
PIER 13A DETAILS

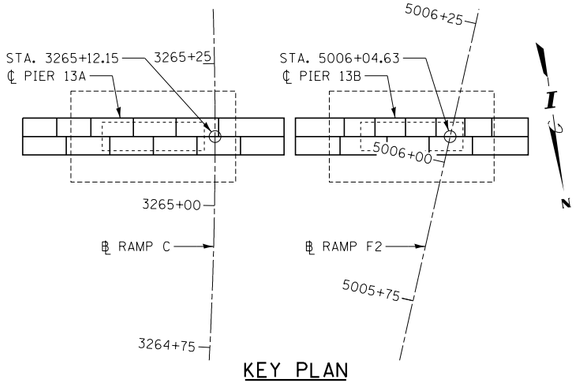
SHEET SC - 195 OF 234
470 OF 606

BEARING SEAT ELEVATIONS

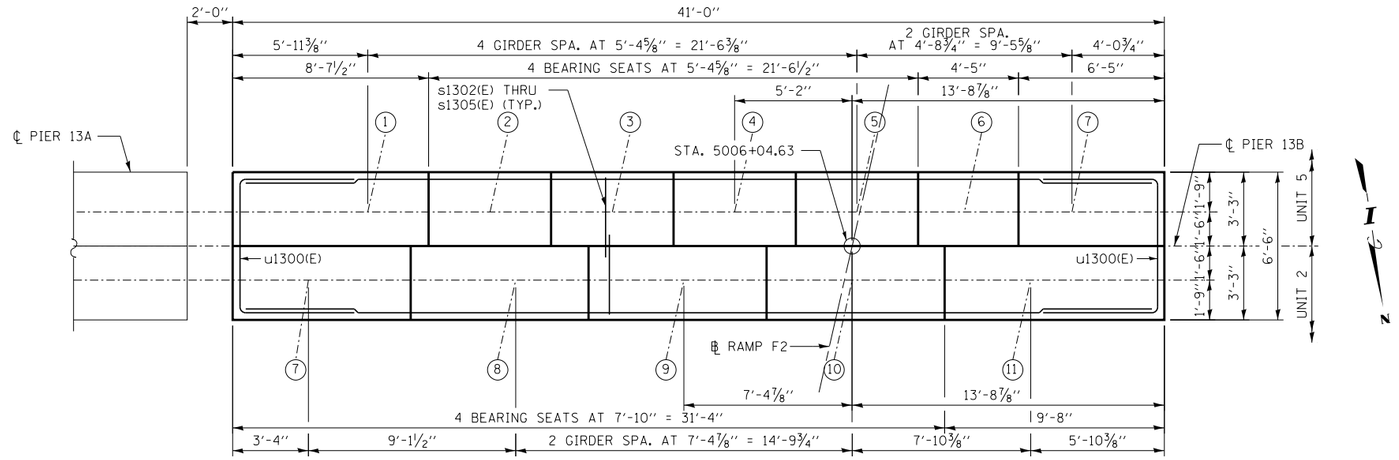
UNIT 2		
GIRDER	ELEV.	Y
7	632.95	-
8	632.70	3"
9	632.58	1½"
10	632.45	1½"
11	632.31	1⅝"

BEARING SEAT ELEVATIONS

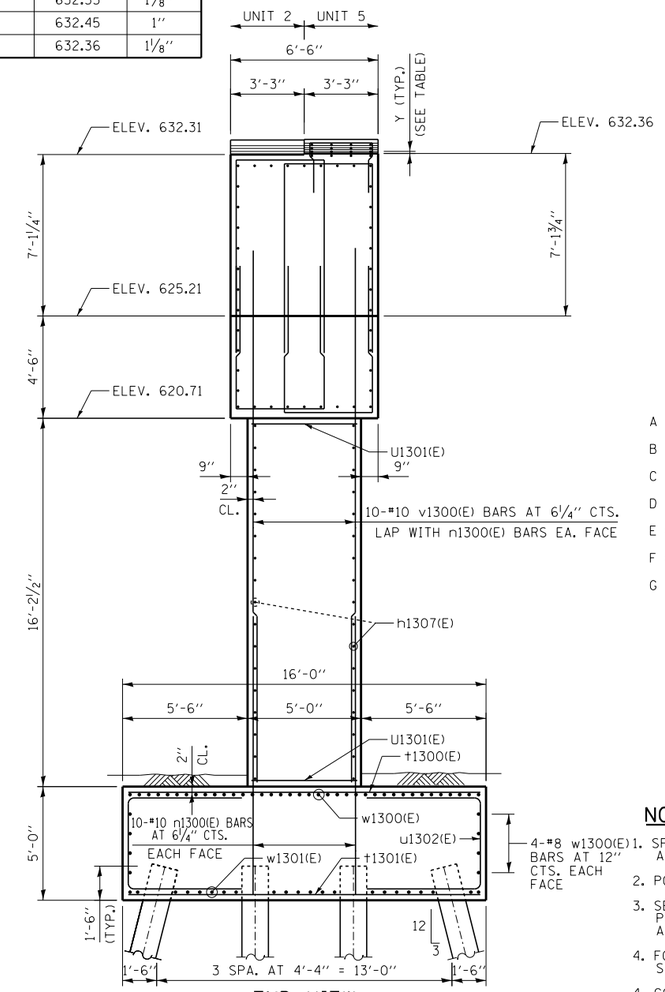
UNIT 5		
GIRDER	ELEV.	Y
1	632.98	-
2	632.81	2"
3	632.71	1¼"
4	632.62	1⅛"
5	632.53	1⅛"
6	632.45	1"
7	632.36	1⅛"



KEY PLAN



TOP PLAN



END VIEW

A = 5-#6 s1302(E) BARS AT 6" CTS. IN PAIRS TOP & BOTTOM
B = 8-#6 s1303(E) BARS AT 6" CTS. IN PAIRS TOP & BOTTOM
C = 5-#6 s1304(E) BARS AT 6" CTS. IN PAIRS TOP & BOTTOM
D = 5-#6 s1305(E) BARS AT 6" CTS. IN PAIRS TOP & BOTTOM
E = 4-#6 s1305(E) BARS AT 6" CTS. IN PAIRS TOP & BOTTOM
F = 4-#6 s1304(E) BARS AT 6" CTS. IN PAIRS TOP & BOTTOM
G = 7-#6 s1302(E) BARS AT 6" CTS. IN PAIRS TOP & BOTTOM

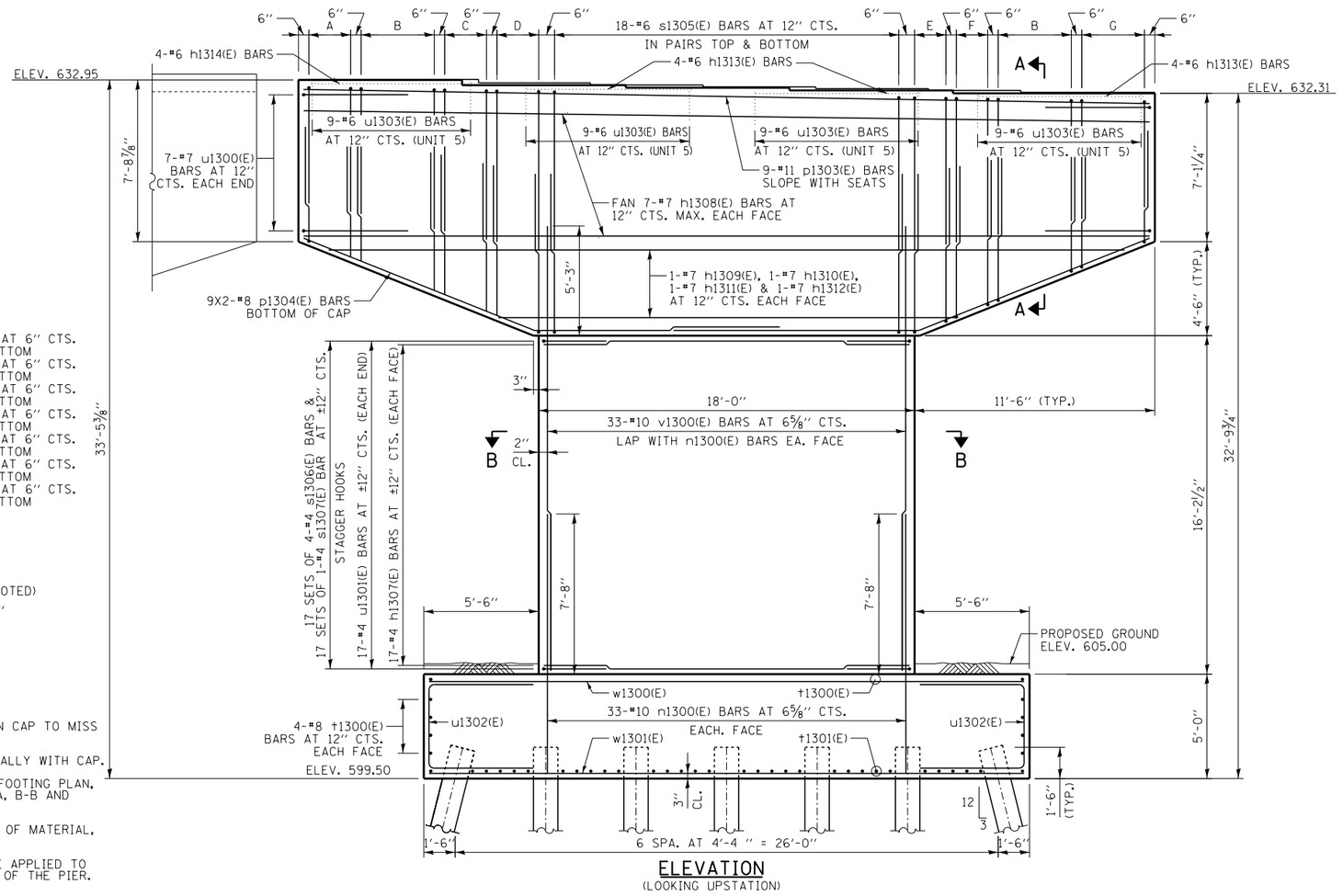
33'-5⅜"

MIN. LAP
(UNLESS OTHERWISE NOTED)

#6 BARS = 3'-10"
#8 BARS = 5'-1"

NOTES:

1. SPACE REINFORCEMENT IN CAP TO MISS ANCHOR BOLTS.
2. POUR STEPS MONOLITHICALLY WITH CAP.
3. SEE SHEET SC-197 FOR FOOTING PLAN, PILE DATA, SECTION A-A, B-B AND ANCHOR BOLT LAYOUT.
4. FOR BAR LIST AND BILL OF MATERIAL, SEE SHEET SC-197.
4. CONCRETE SEALER TO BE APPLIED TO ALL EXPOSED SURFACES OF THE PIER.



ELEVATION
(LOOKING UPSTATION)

P:\62540\57-294_5-9\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\Reference\Juneau\JA1-Pier 13B-Plan & Elevation.dgn
3/30/2020

DRAWN BY . . . EER . . . . . DATE . 3-10-2020 . . .
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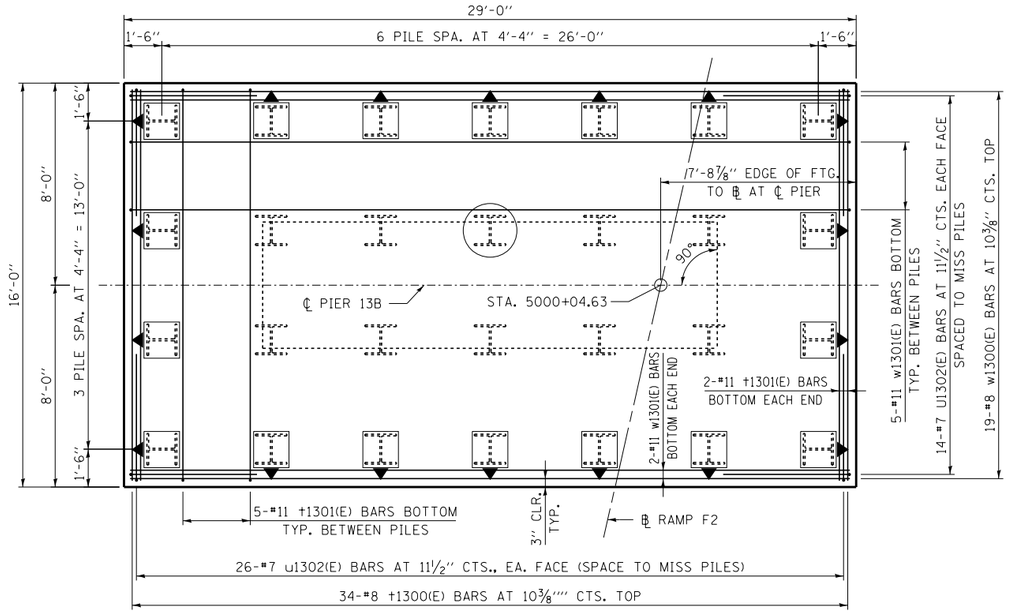
JUNEAU ENGINEERING & LAND SURVEYING

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

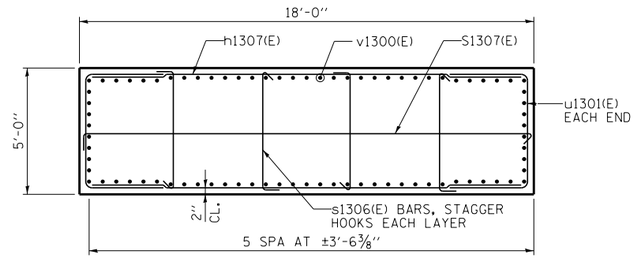
REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4419
I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
PIER 13B PLAN AND ELEVATION

SHEET SC - 196 OF 234
471 OF 606



FOOTING PLAN



SECTION B-B

LEGEND

- PROPOSED PILE
- PROPOSED BATTERED PILE 4:1 (V:H)
- TEST PILE
- PROPOSED PILE W/ WELDED REBAR

PILE DATA

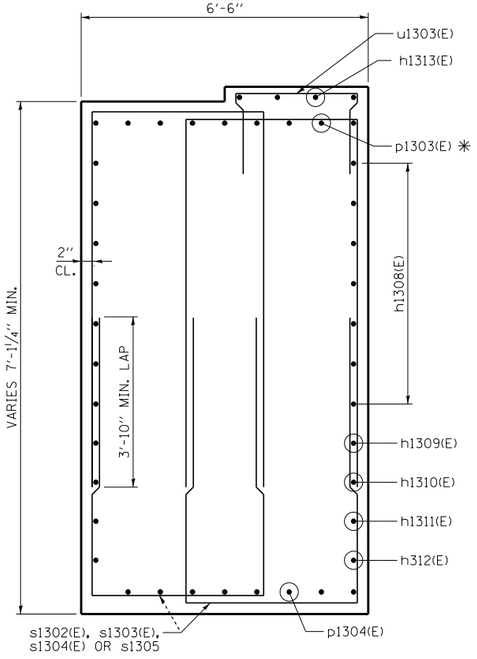
PILE TYPE AND SIZE: HP14x73 WITH PILE SHOES
NOMINAL REQUIRED BEARING: 578 KIPS
FACTORED RESISTANCE AVAILABLE: 318 KIPS
ESTIMATED PILE LENGTH: 29 FEET
NUMBER OF PILES REQUIRED: 27 PILES PLUS 1 TEST PILE

REINFORCEMENT BAR LIST

BAR	NO.	SIZE	LENGTH	SHAPE
h1307(E)	34	#4	17'-8"	
h1308(E)	14	#7	40'-8"	
h1309(E)	2	#7	38'-5"	
h1310(E)	2	#7	33'-5"	
h1311(E)	2	#7	28'-5"	
h1312(E)	2	#7	23'-5"	
h1313(E)	32	#6	8'-0"	
n1300(E)	82	#10	13'-11"	
p1303(E)	9	#11	40'-8"	
p1304(E)	18	#8	24'-2"	
s1302(E)	48	#6	16'-6"	
s1303(E)	64	#6	18'-0"	
s1304(E)	36	#6	19'-0"	
s1305(E)	108	#6	20'-0"	
s1306(E)	68	#4	5'-9"	
s1307(E)	17	#4	18'-9"	
†1300(E)	42	#8	15'-6"	
†1301(E)	34	#11	15'-6"	
u1300(E)	14	#7	16'-0"	
u1301(E)	34	#4	10'-6"	
u1302(E)	80	#7	6'-6"	
u1303(E)	36	#6	6'-10"	
v1300(E)	82	#10	21'-6"	
w1300(E)	27	#8	28'-6"	
w1301(E)	19	#11	28'-6"	

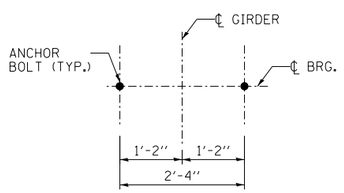
BILL OF MATERIAL

ITEM	UNIT	QUANTITY
STRUCTURE EXCAVATION	CU. YD.	134.4
CONCRETE STRUCTURES	CU. YD.	245.4
REINFORCEMENT BARS, EPOXY COATED	POUND	37,330
FURNISHING STEEL PILES HP14X133	FOOT	783
DRIVING PILES	FOOT	783
TEST PILE STEEL HP14X133	EACH	1
PILE SHOES	EACH	28
CONCRETE SEALER	SQ. FT.	1481

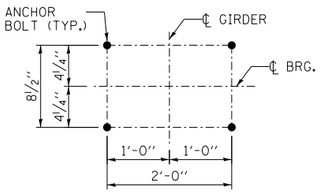


SECTION A-A

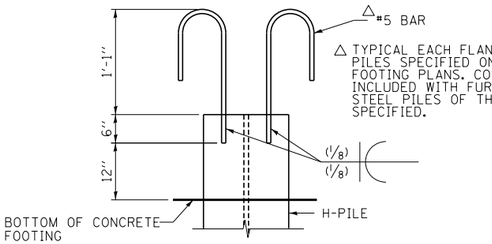
✳ p800(E) BARS SHALL BE PLACED ALONG THE SLOPE OF BEAM SEATS. SEE ELEVATION VIEW FOR CLARITY.



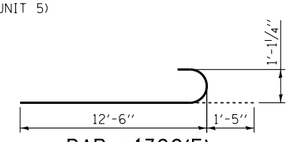
ANCHOR BOLT LAYOUT
(UNIT 5)



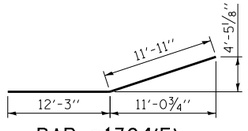
ANCHOR BOLT LAYOUT
(UNIT 2)



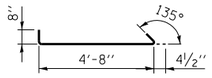
PILE WELDED REBAR DETAIL



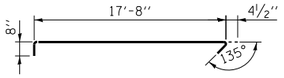
BAR n1300(E)



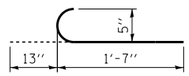
BAR p1304(E)



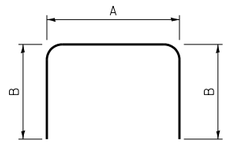
BAR s1306(E)



BAR s1307(E)



#5 PILE WELDED REBAR



BARS s1302(E)-s1305(E)
u1300(E)-u1303(E)

A & B DIMENSIONS

BAR	A	B
s1302(E)	4'-6"	6'-0"
s1303(E)	4'-6"	6'-9"
s1304(E)	4'-6"	7'-3"
s1305(E)	4'-6"	7'-9"
u1300(E)	6'-0"	5'-0"
u1301(E)	4'-8"	2'-11"
u1302(E)	4'-2"	1'-2"
u1303(E)	3'-0"	1'-11"

P:\68254057-294_5-9\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\Reference\Juneau\JAI-Pier 13B-Details.dgn
3/30/2020

DRAWN BY . . . . EER
CHECKED BY . . . . DLM
DATE . 3-10-2020
SCALE . NONE

JUNEAU ENGINEERING & LAND SURVEYING

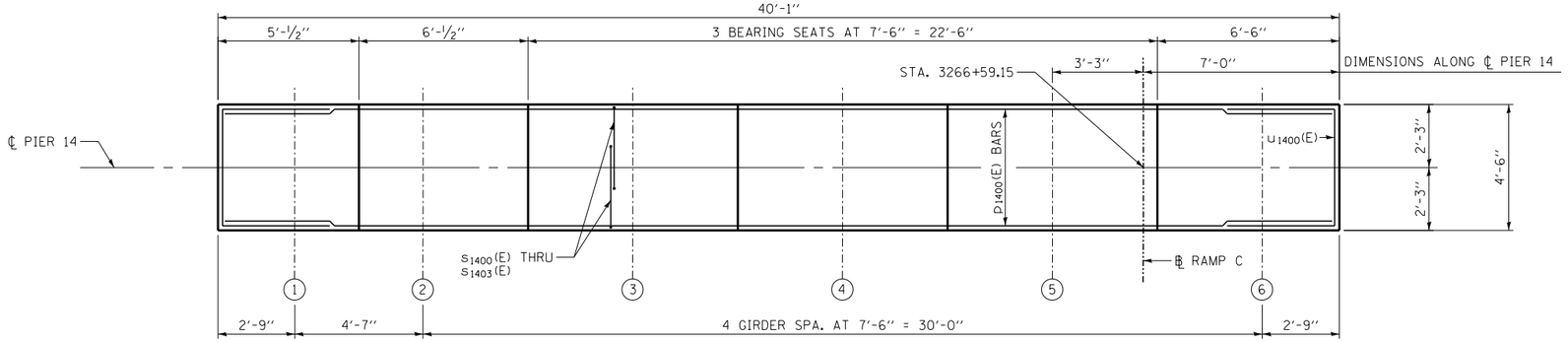
THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

REVISIONS		
NO.	DATE	DESCRIPTION

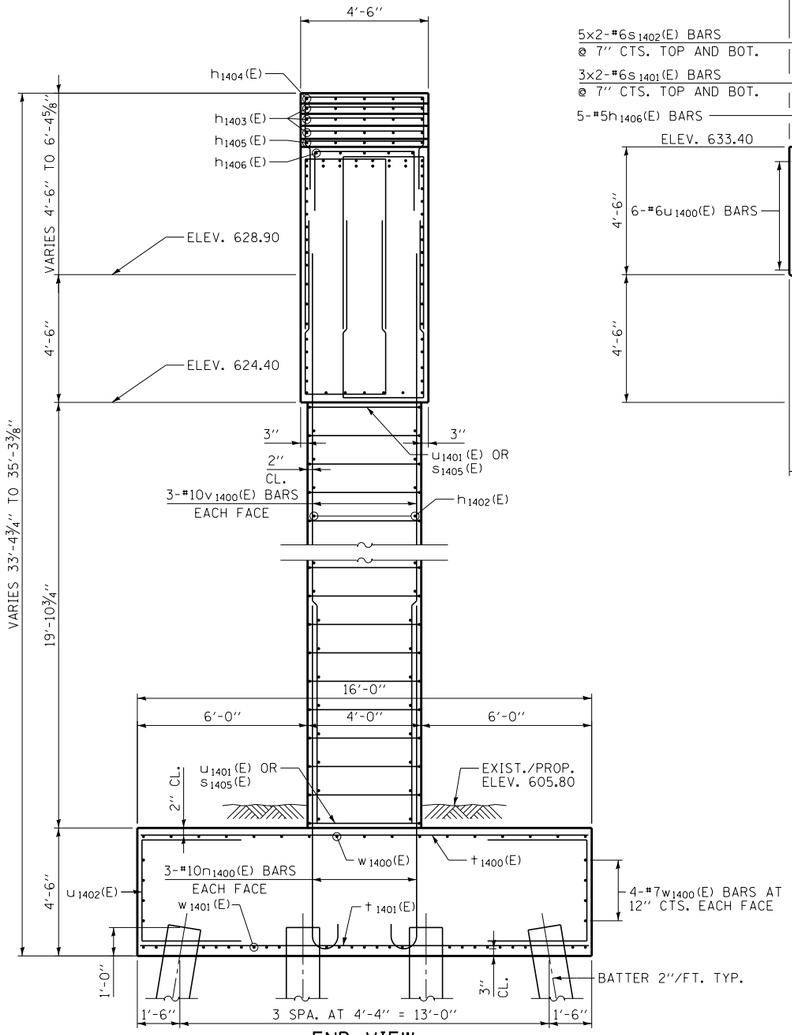
CONTRACT I-19-4419
I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
PIER 13B DETAILS

SHEET SC - 197 OF 234
472 OF 606

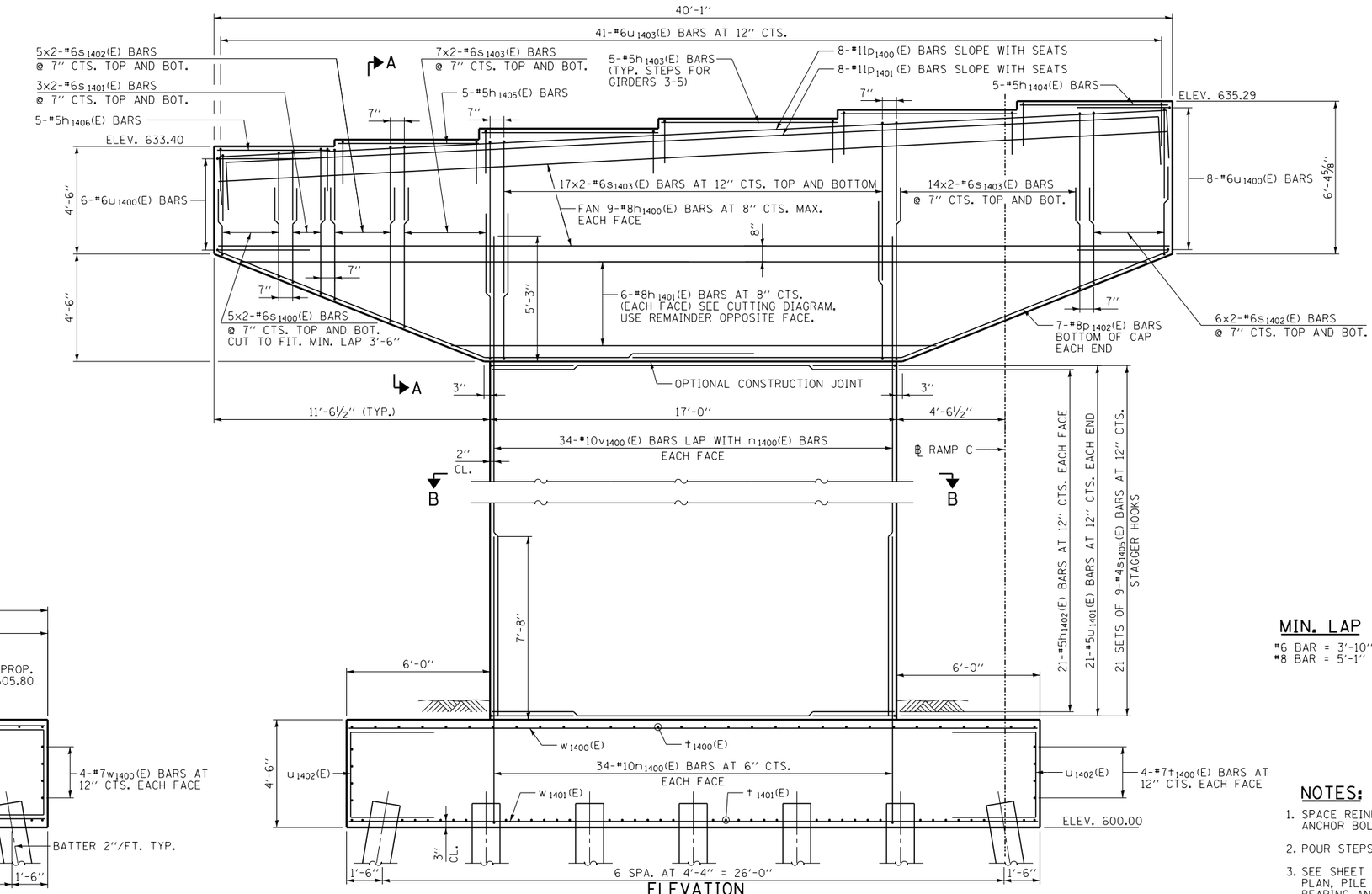
GIRDER	SEAT ELEV.	STEP HEIGHT
1	633.40	
2	633.68	3 3/8"
3	634.13	5 1/2"
4	634.56	5 1/8"
5	634.92	4 3/8"
6	635.29	4 3/8"



TOP PLAN



END VIEW



ELEVATION
(LOOKING UPSTATION)

MIN. LAP
#6 BAR = 3'-10"
#8 BAR = 5'-1"

NOTES:
1. SPACE REINFORCEMENT IN CAP TO MISS ANCHOR BOLTS.
2. POUR STEPS MONOLITHICALLY WITH CAP.
3. SEE SHEET SC-199 OF 234 FOR FOOTING PLAN, PILE DATA, SECTIONS A-A, B-B, AND BEARING ANCHOR BOLT LOCATIONS.

P:\60254057-294.5-91\STRUCTURAL\RESTART.2018\Ramp C over I-57 and I-294\016210I.5.unit3-Pier14.dgn
3/30/2020

DRAWN BY . . . OR	DATE . 4-3-2020
CHECKED BY . . . SP	SCALE . NONE

T·Y·LIN INTERNATIONAL

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

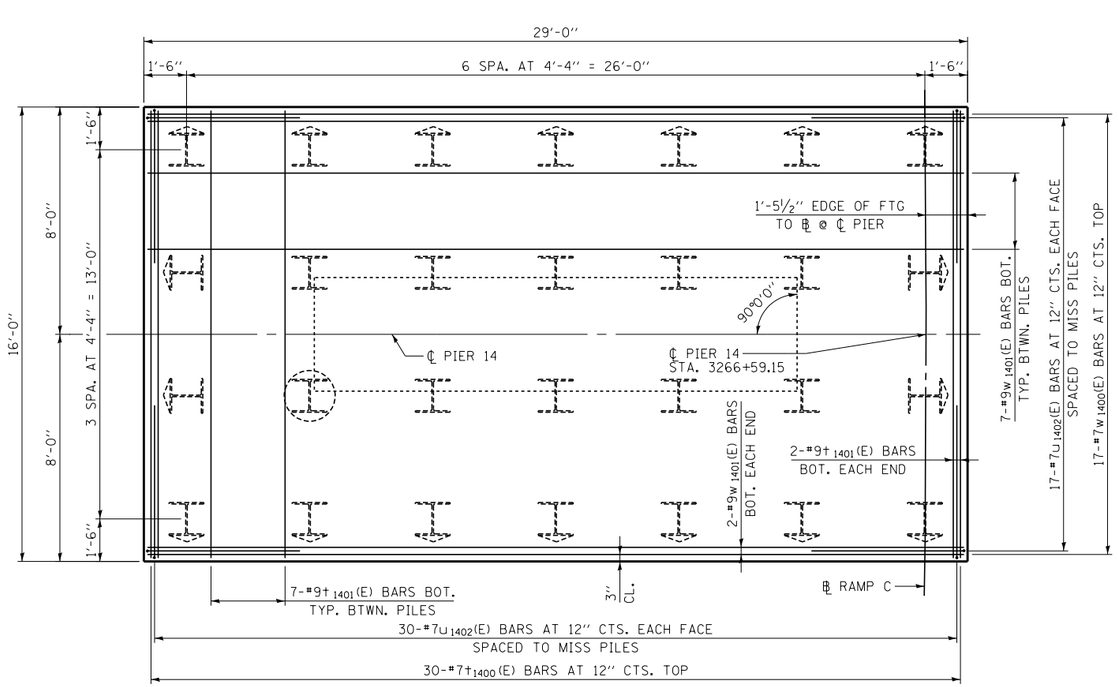
REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
PIER 14 PLAN AND ELEVATION

SHEET SC - 198 OF 234

473 OF 606



FOOTING PLAN

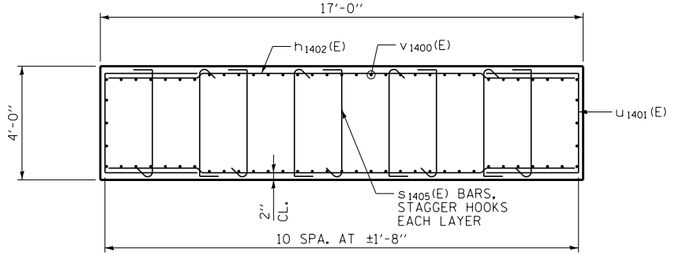
PILE DATA

PILE TYPE AND SIZE: HP14X73 WITH PILES SHOES
NOMINAL REQUIRED BEARING: 516 KIPS
FACTORED RESISTANCE AVAILABLE: 284 KIPS
ESTIMATED PILE LENGTH: 33 FEET
NUMBER OF PILE REQUIRED: 27 PLUS 1 TEST PILE

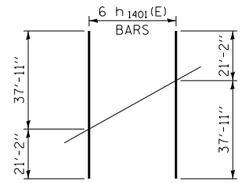
INDICATES BATTERED PILE.

INDICATES TEST PILE.

PROPOSED PILE W/ WELDED REBAR



SECTION B-B



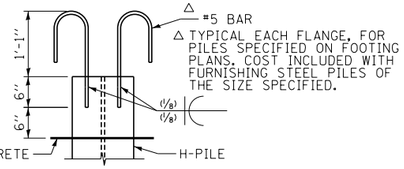
BAR CUTTING DIAGRAM

BILL OF MATERIAL

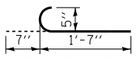
REINFORCEMENT BAR LIST

BAR	NO.	SIZE	LENGTH	SHAPE
h 1400(E)	18	#8	39'-9"	
h 1401(E)	6	#8	55'-9"	
h 1402(E)	42	#5	16'-8"	
h 1403(E)	15	#5	7'-2"	
h 1404(E)	5	#5	6'-2"	
h 1405(E)	5	#5	5'-8"	
h 1406(E)	5	#5	4'-8"	
n 1400(E)	74	#10	13'-4"	
p 1400(E)	8	#11	43'-5"	
p 1401(E)	8	#11	42'-11"	
p 1402(E)	14	#8	23'-4"	
s 1400(E)	20	#6	11'-6"	
s 1401(E)	12	#6	12'-4"	
s 1402(E)	44	#6	13'-10"	
s 1403(E)	152	#6	16'-7"	
s 1405(E)	189	#4	4'-9"	
t 1400(E)	38	#7	15'-8"	
t 1401(E)	46	#9	15'-8"	
u 1400(E)	14	#6	11'-10"	
u 1401(E)	42	#5	10'-10"	
u 1402(E)	94	#7	11'-0"	
u 1403(E)	41	#6	9'-4"	
v 1400(E)	74	#10	25'-2"	
w 1400(E)	25	#7	28'-8"	
w 1401(E)	25	#9	28'-8"	

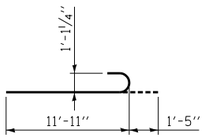
ITEM	UNIT	QUANTITY
STRUCTURE EXCAVATION	CU. YD.	208
CONCRETE STRUCTURES	CU. YD.	185.7
REINFORCEMENT BARS, EPOXY COATED	POUND	37,390
FURNISHING STEEL PILES HP 14x73	FOOT	891
DRIVING PILES	FOOT	891
TEST PILE STEEL SHAPE HP 14x73	EACH	1
PILE SHOES	EACH	28



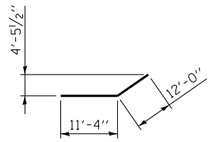
PILE WELDED REBAR DETAIL



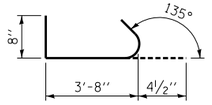
#5 PILE WELDED REBAR



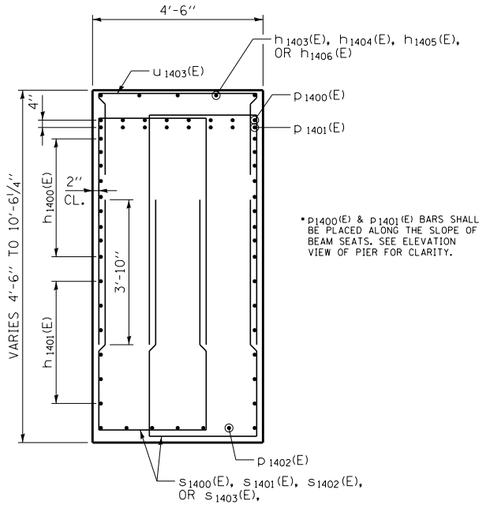
BAR n 1400(E)



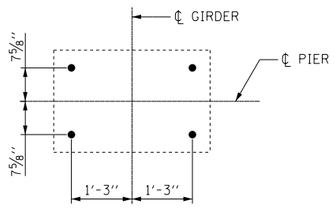
BAR p 1402(E)



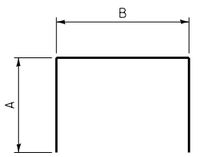
BAR s 1405(E)



SECTION A-A



ANCHOR BOLT LAYOUT



BAR	A	B
p1400(E)	2'-0"	39'-5"
p 1401(E)	2'-0"	38'-11"
s1400(E)	4'-4"	2'-10"
s 1401(E)	4'-9"	2'-10"
s1402(E)	5'-6"	2'-10"
s1403(E)	6'-10½"	2'-10"
u1400(E)	3'-10"	4'-2"
u1401(E)	3'-7"	3'-8"
u1402(E)	3'-6"	4'-0"
u1403(E)	2'-7"	4'-2"

BARS p1400(E), p 1401(E), s1400(E), s 1401(E), s1402(E), s1403(E), u1400(E), u1401(E), u1402(E) AND u1403(E)

DRAWN BY . . . OR . . . .
CHECKED BY . . . SP . . . .
DATE . 4-3-2020 . . .
SCALE . NONE . . . . .

TYLIN INTERNATIONAL

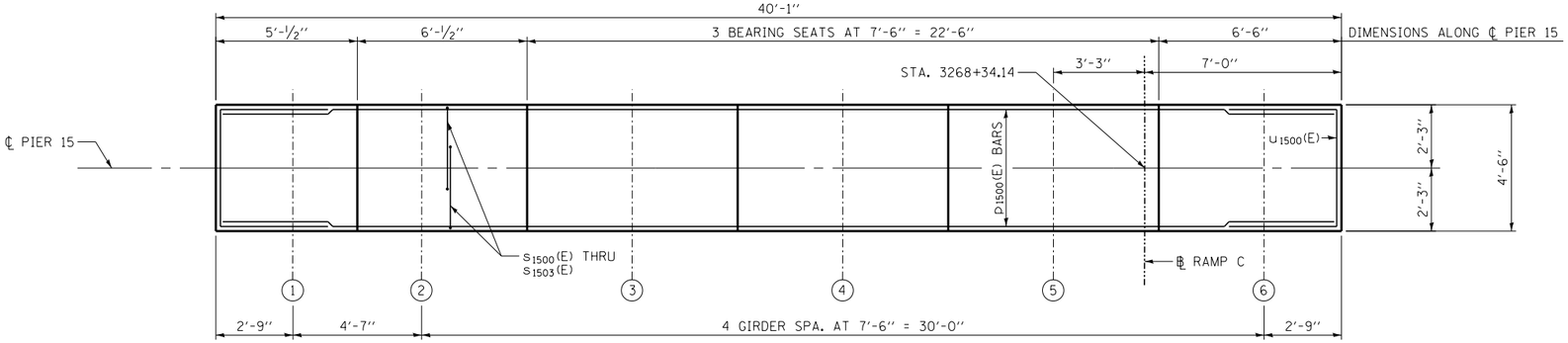
THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

REVISIONS		
NO.	DATE	DESCRIPTION

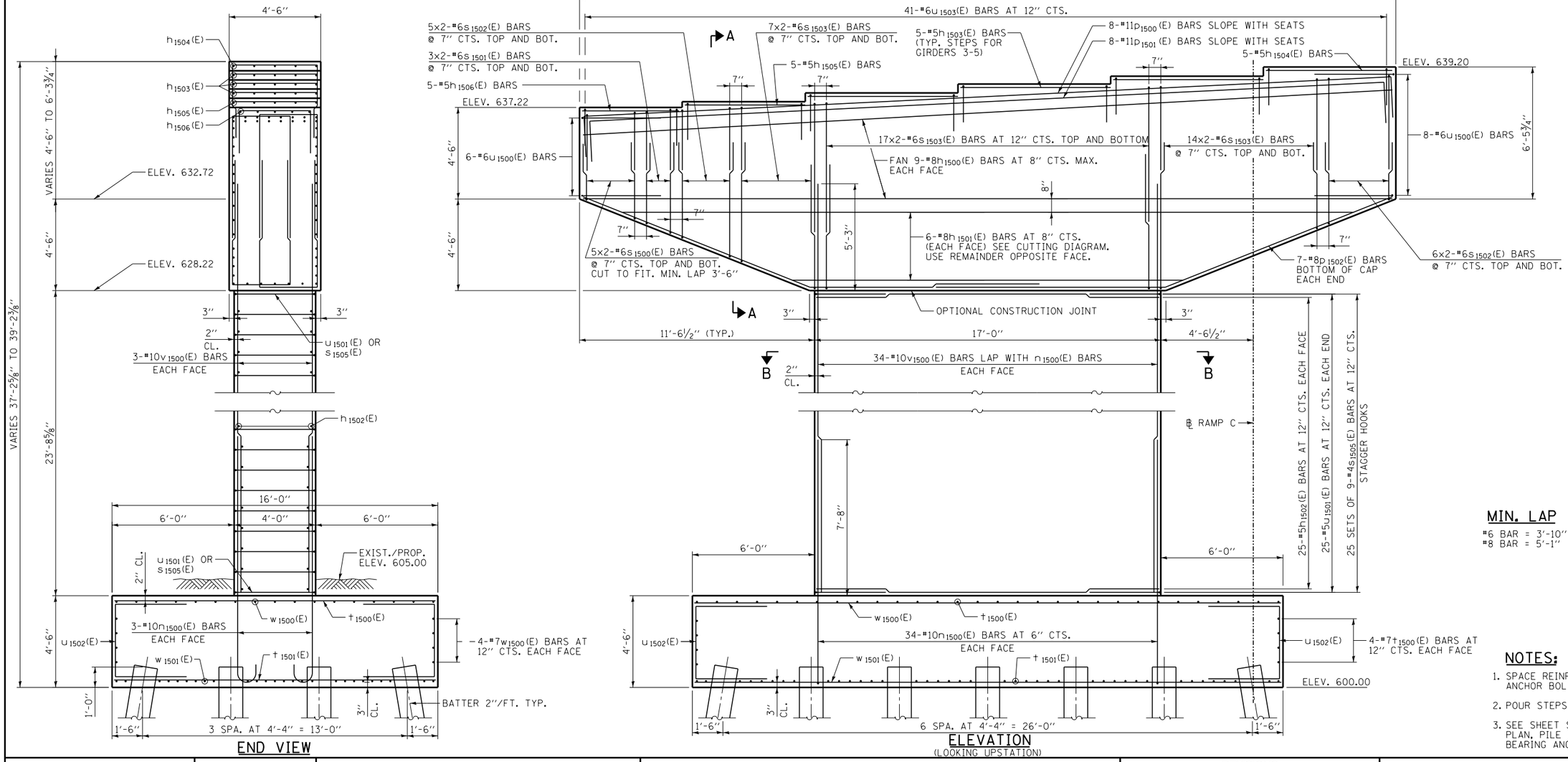
CONTRACT I-19-4495

I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
PIER 14 DETAILS

GIRDER	SEAT ELEV.	STEP HEIGHT
1	637.22	
2	637.50	3 3/8"
3	637.92	5 1/8"
4	638.36	5 1/4"
5	638.75	4 5/8"
6	639.20	5 1/2"



TOP PLAN



ELEVATION
(LOOKING UPSTATION)

END VIEW

MIN. LAP

#6 BAR = 3'-10"
#8 BAR = 5'-1"

NOTES:

1. SPACE REINFORCEMENT IN CAP TO MISS ANCHOR BOLTS.
2. POUR STEPS MONOLITHICALLY WITH CAP.
3. SEE SHEET SC-201 OF 234 FOR FOOTING PLAN, PILE DATA, SECTIONS A-A, B-B, AND BEARING ANCHOR BOLT LOCATIONS.

P:\60254B\57-294.5-91\STRUCTURAL\RESTART.2018\Ramp C over I-57 and I-294\016210I.5_unit3-Pier15.dgn
3/30/2020

DRAWN BY . . . OR . . . .
CHECKED BY . . . SP . . . .
DATE . 4-3-2020 . . .
SCALE . NONE . . . .

T·Y·LIN INTERNATIONAL

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

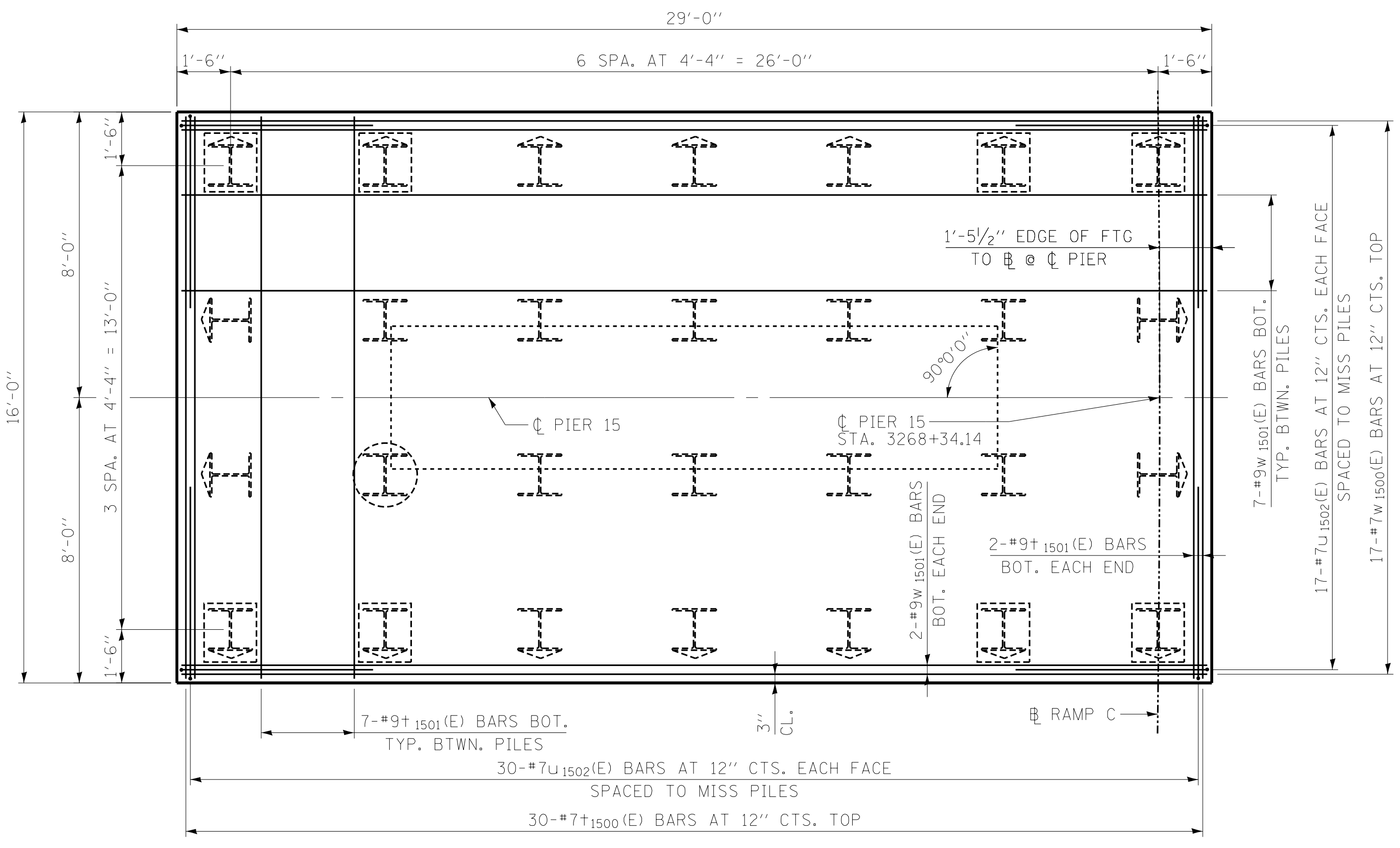
REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
PIER 15 PLAN AND ELEVATION

SHEET SC - 200 OF 234

475 OF 606



FOOTING PLAN

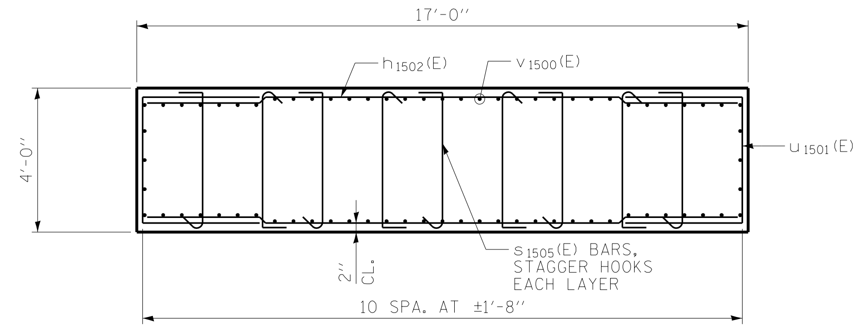
PILE DATA

PILE TYPE AND SIZE: HP14X73 WITH PILES SHOES
NOMINAL REQUIRED BEARING: 503 KIPS
FACTORED RESISTANCE AVAILABLE: 277 KIPS
ESTIMATED PILE LENGTH: 28 FEET
NUMBER OF PILE REQUIRED: 27 PLUS 1 TEST PILE

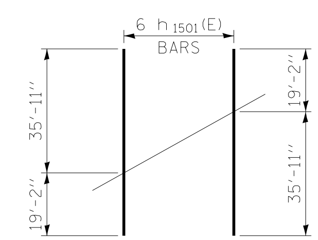
INDICATES BATTERED PILE.

INDICATES TEST PILE.

PROPOSED PILE W/ WELDED REBAR



SECTION B-B

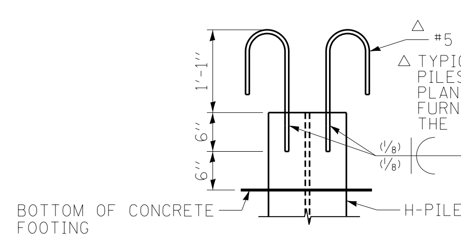


BAR CUTTING DIAGRAM

BILL OF MATERIAL

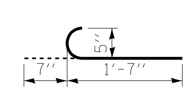
REINFORCEMENT BAR LIST				
BAR	NO.	SIZE	LENGTH	SHAPE
h 1500(E)	18	#8	39'-9"	straight
h 1501(E)	6	#8	59'-1"	straight
h 1502(E)	50	#5	16'-8"	straight
h 1503(E)	15	#5	7'-2"	straight
h 1504(E)	5	#5	6'-2"	straight
h 1505(E)	5	#5	5'-8"	straight
h 1506(E)	5	#5	4'-8"	straight
n 1500(E)	74	#10	13'-4"	hooked
p 1500(E)	8	#11	43'-5"	bent
p 1501(E)	8	#11	42'-11"	bent
p 1502(E)	14	#8	23'-4"	bent
s 1500(E)	20	#6	11'-6"	stirrup
s 1501(E)	12	#6	12'-4"	stirrup
s 1502(E)	44	#6	13'-10"	stirrup
s 1503(E)	152	#6	16'-7"	stirrup
s 1505(E)	225	#4	4'-9"	hooked
t 1500(E)	38	#7	15'-8"	straight
t 1501(E)	46	#9	15'-8"	straight
u 1500(E)	14	#6	11'-10"	stirrup
u 1501(E)	50	#5	10'-10"	stirrup
u 1502(E)	94	#7	11'-0"	stirrup
u 1503(E)	41	#6	9'-4"	stirrup
v 1500(E)	74	#10	29'-0"	straight
w 1500(E)	25	#7	28'-8"	straight
w 1501(E)	25	#9	28'-8"	straight

ITEM	UNIT	QUANTITY
STRUCTURE EXCAVATION	CU. YD.	165
CONCRETE STRUCTURES	CU. YD.	195.1
REINFORCEMENT BARS, EPOXY COATED	POUND	39,000
FURNISHING STEEL PILES HP 14x73	FOOT	756
DRIVING PILES	FOOT	756
TEST PILE STEEL SHAPE HP 14x73	EACH	1
PILE SHOES	EACH	28

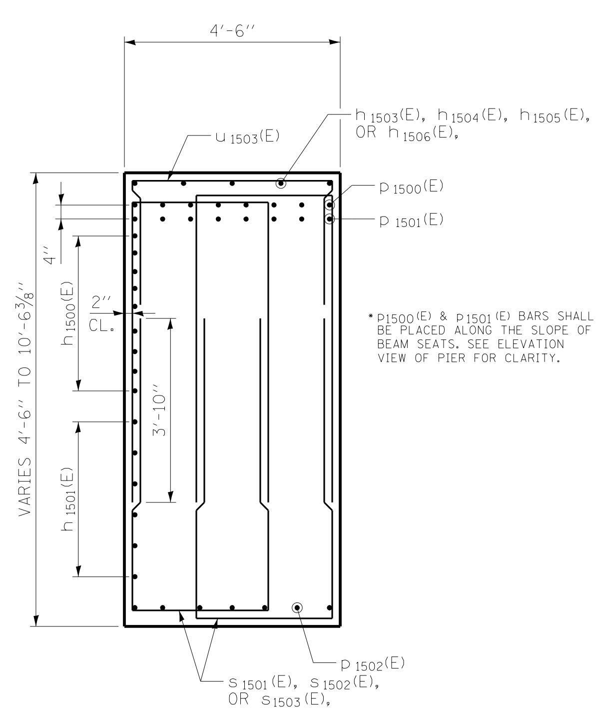


△ TYPICAL EACH FLANGE, FOR PILES SPECIFIED ON FOOTING PLANS. COST INCLUDED WITH FURNISHING STEEL PILES OF THE SIZE SPECIFIED.

PILE WELDED REBAR DETAIL

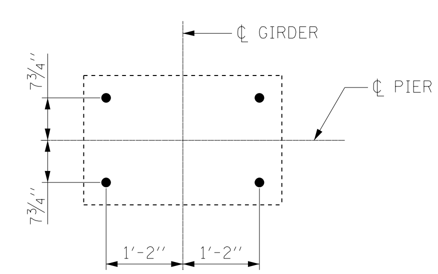


#5 PILE WELDED REBAR

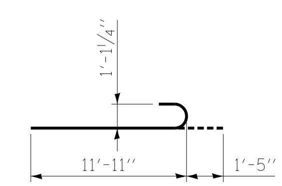


* p1500(E) & p1501(E) BARS SHALL BE PLACED ALONG THE SLOPE OF BEAM SEATS. SEE ELEVATION VIEW OF PIER FOR CLARITY.

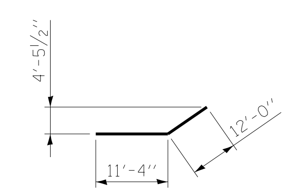
SECTION A-A



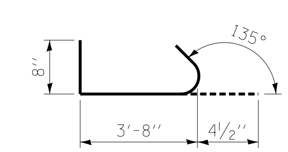
ANCHOR BOLT LAYOUT



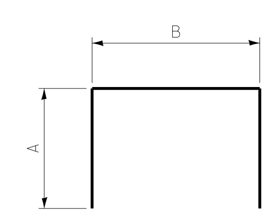
BAR n1500(E)



BAR p1502(E)



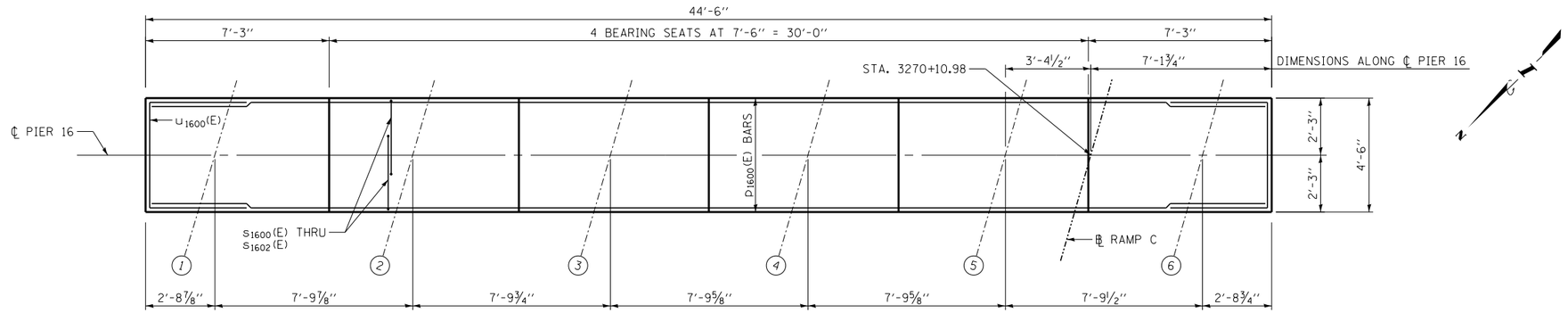
BAR s1505(E)



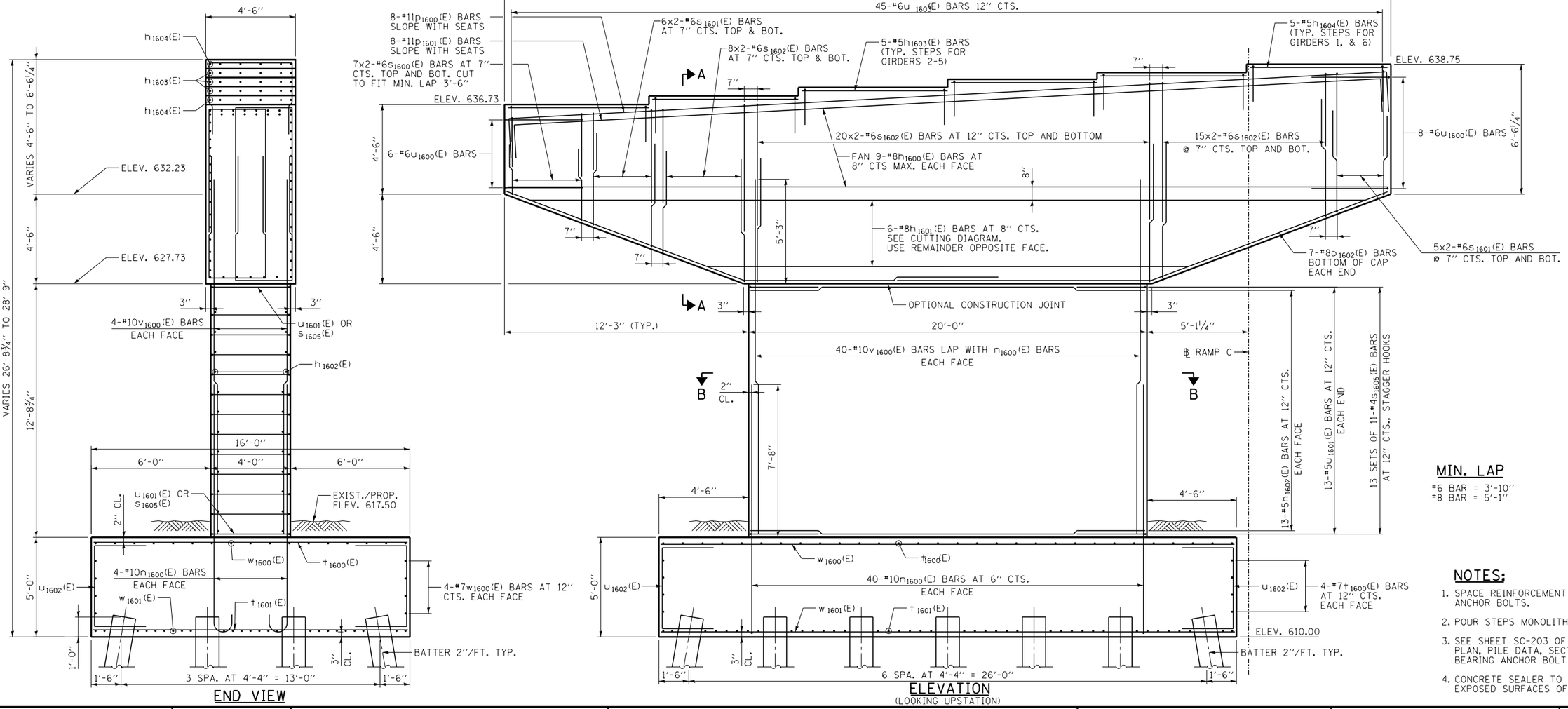
BAR	A	B
p 1500(E)	2'-0"	39'-5"
p 1501(E)	2'-0"	38'-11"
s 1500(E)	4'-4"	2'-10"
s 1501(E)	4'-9"	2'-10"
s 1502(E)	5'-6"	2'-10"
s 1503(E)	6'-10½"	2'-10"
u 1500(E)	3'-10"	4'-2"
u 1501(E)	3'-7"	3'-8"
u 1502(E)	3'-6"	4'-0"
u 1503(E)	2'-7"	4'-2"

BARS p1500(E), p1501(E), s1500(E), s1501(E), s1502(E), s1503(E), u1500(E), u1501(E), u1502(E) AND u1503(E)

GIRDER	SEAT ELEV.	STEP HEIGHT
1	636.73	
2	637.15	5 1/8"
3	637.58	5 1/8"
4	637.99	5"
5	638.33	4"
6	638.75	5 1/8"



TOP PLAN



ELEVATION
(LOOKING UPSTATION)

END VIEW

MIN. LAP

#6 BAR = 3'-10"
#8 BAR = 5'-1"

NOTES:

1. SPACE REINFORCEMENT IN CAP TO MISS ANCHOR BOLTS.
2. POUR STEPS MONOLITHICALLY WITH CAP.
3. SEE SHEET SC-203 OF 234 FOR FOOTING PLAN, PILE DATA, SECTIONS A-A, B-B, AND BEARING ANCHOR BOLT LOCATIONS.
4. CONCRETE SEALER TO BE APPLIED TO ALL EXPOSED SURFACES OF THE PIER.

P:\682540\57-294,5-91\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\Q162101.5_unit3-Pier16.dgn
3/30/2020

DRAWN BY . . . . OR . . . . . | DATE . 4-3-2020 . . .
CHECKED BY . . . . SP . . . . . | SCALE . NONE . . . . .

T·Y·LIN INTERNATIONAL

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

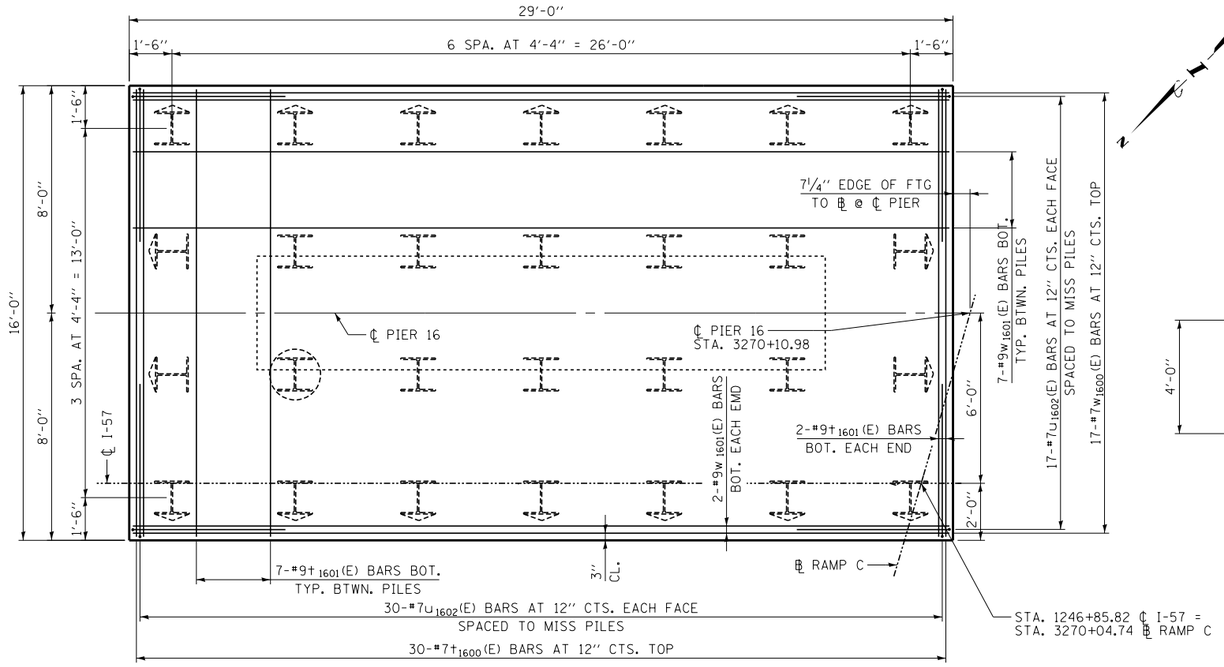
REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
PIER 16 PLAN AND ELEVATION

SHEET SC - 202 OF 234

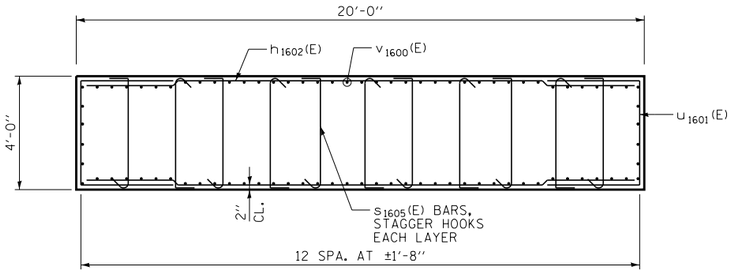
477 OF 606



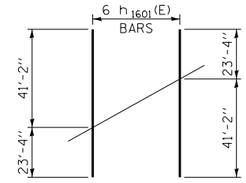
FOOTING PLAN

PILE DATA

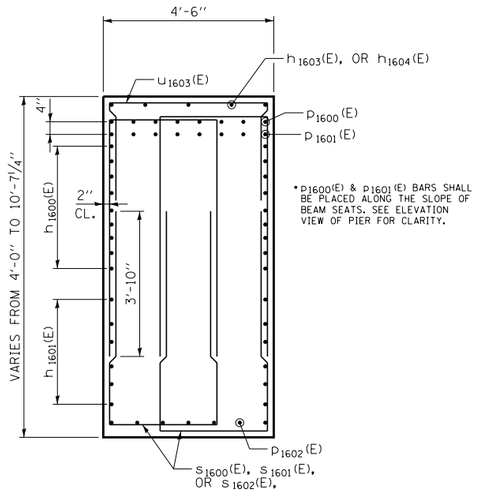
PILE TYPE AND SIZE: HP14X73 WITH PILES SHOES
NOMINAL REQUIRED BEARING: 500 KIPS
FACTORED RESISTANCE AVAILABLE: 275 KIPS
ESTIMATED PILE LENGTH: 46 FEET
NUMBER OF PILE REQUIRED: 27 PLUS 1 TEST PILE



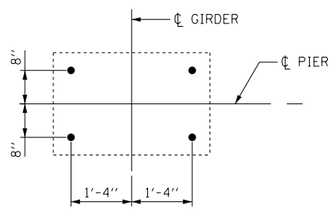
SECTION B-B



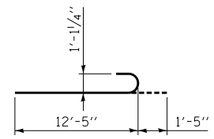
BAR CUTTING DIAGRAM



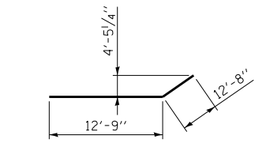
SECTION A-A



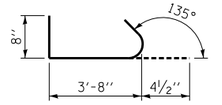
ANCHOR BOLT LAYOUT



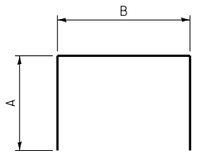
BAR n1600(E)



BAR p1602(E)



BAR s1605(E)



BAR	A	B
p1600(E)	2'-0"	43'-10"
p1601(E)	2'-0"	43'-4"
s1600(E)	4'-7"	2'-10"
s1601(E)	5'-4"	2'-10"
s1602(E)	6'-10"	2'-10"
u1600(E)	3'-10"	4'-2"
u1601(E)	3'-7"	3'-8"
u1602(E)	3'-6"	4'-6"
u1603(E)	2'-7"	4'-2"

BARS p1600(E), p1601(E), s1600(E), s1601(E), s1602(E), u1600(E), u1601(E), u1602, u1603

BILL OF MATERIAL

REINFORCEMENT BAR LIST

BAR	NO.	SIZE	LENGTH	SHAPE
h1600(E)	18	#8	44'-2"	
h1601(E)	6	#8	64'-6"	
h1602(E)	26	#5	19'-8"	
h1603(E)	20	#5	7'-2"	
h1604(E)	10	#5	6'-11"	
n1600(E)	88	#10	13'-10"	
p1600(E)	8	#11	47'-10"	
p1601(E)	8	#11	47'-4"	
p1602(E)	7	#8	25'-5"	
s1600(E)	28	#6	12'-0"	
s1601(E)	44	#6	13'-6"	
s1602(E)	172	#6	16'-6"	
s1605(E)	143	#4	4'-9"	
t1600(E)	38	#7	15'-8"	
t1601(E)	46	#9	15'-8"	
u1600(E)	14	#6	11'-10"	
u1601(E)	26	#5	10'-10"	
u1602(E)	94	#7	11'-6"	
u1603(E)	45	#6	9'-4"	
v1600(E)	88	#10	18'-0"	
w1600(E)	25	#7	28'-8"	
w1601(E)	25	#9	28'-8"	

ITEM	UNIT	QUANTITY
STRUCTURE EXCAVATION	CU. YD.	212
CONCRETE STRUCTURES	CU. YD.	188.9
REINFORCEMENT BARS, EPOXY COATED	POUND	37,550
FURNISHING STEEL PILES HP 14x73	FOOT	1242
DRIVING PILES	FOOT	1242
TEST PILE STEEL SHAPE HP 14x73	EACH	1
PILE SHOES	EACH	28
CONCRETE SEALER	SQ. FT.	2062

P:\68254\057-294.5-91\STRUCTURAL_RESTART_2018\Ramp C over I-57 and I-294\016210I.5_Unit3-Pier16dtl.dgn
3/30/2020

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CHECKED BY . . . SP
DATE . 4-3-2020
SCALE . NONE

TY·LIN INTERNATIONAL

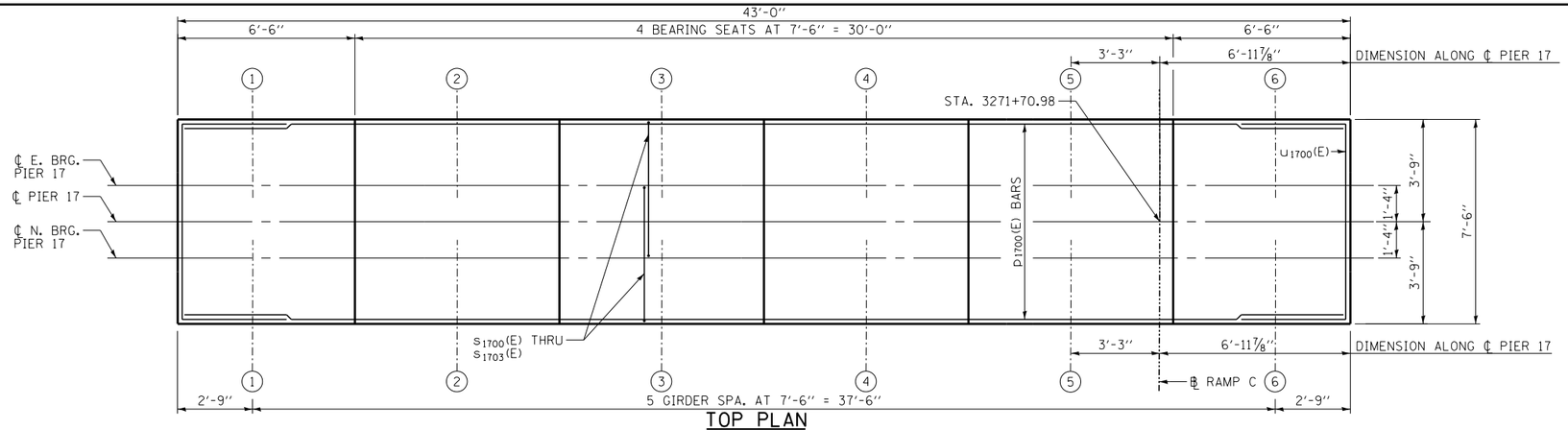
THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

REVISIONS		
NO.	DATE	DESCRIPTION

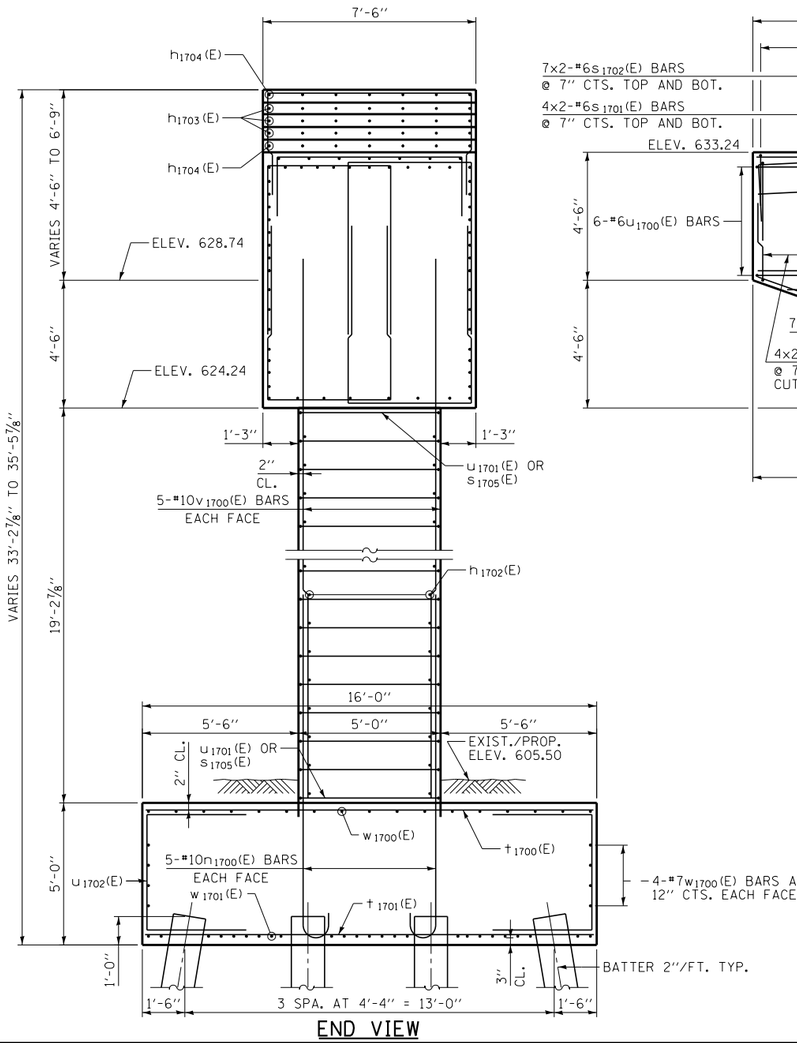
CONTRACT I-19-4495
I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
PIER 16 DETAILS

SHEET SC - 203 OF 234
478 OF 606

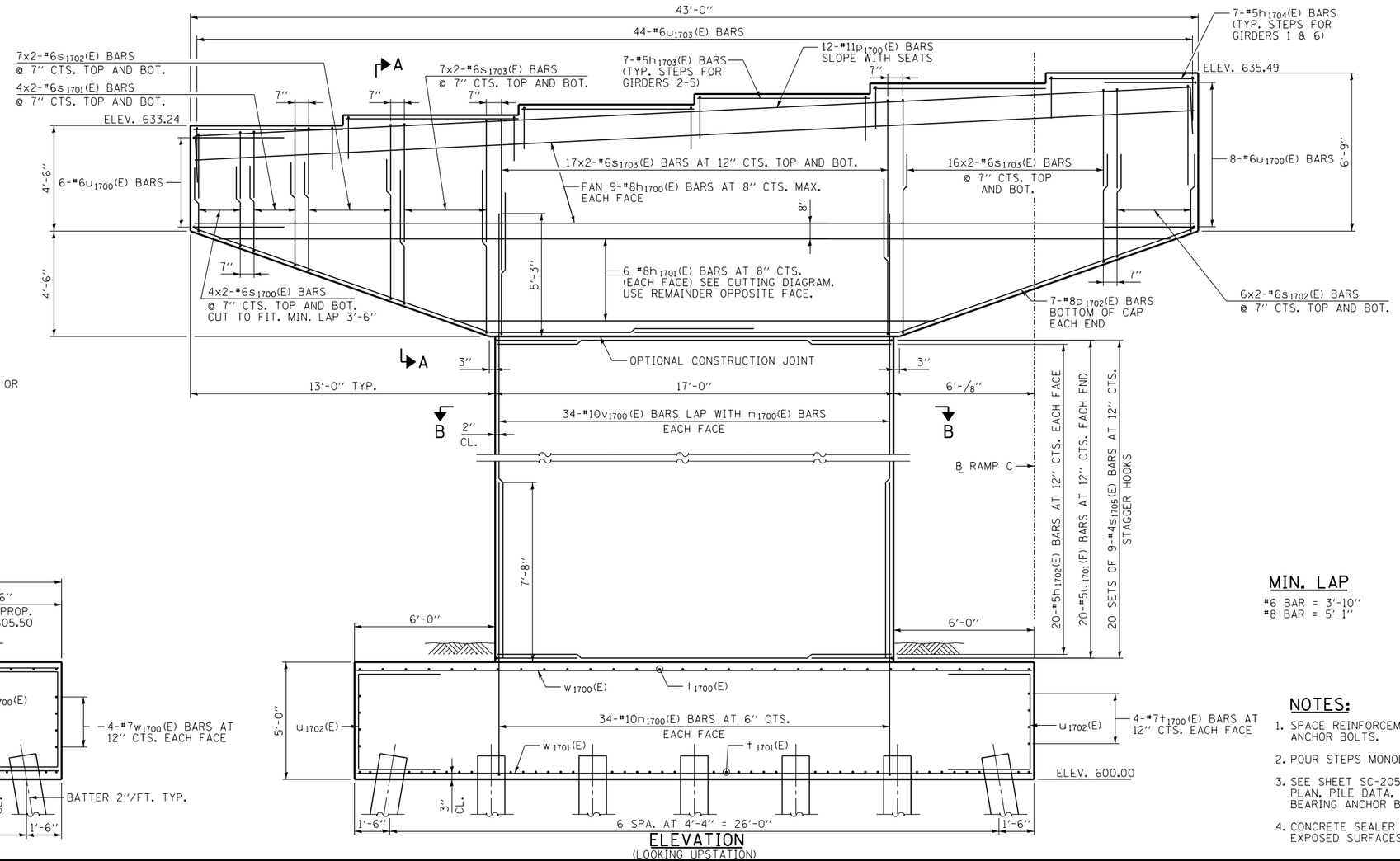
GIRDER	SEAT ELEV.	STEP HEIGHT
1	633.24	
2	633.69	5 3/8
3	634.14	5 3/8
4	634.59	5 3/8
5	635.04	5 3/8
6	635.49	5 3/8



TOP PLAN



END VIEW



ELEVATION
(LOOKING UPSTATION)

MIN. LAP
#6 BAR = 3'-10"
#8 BAR = 5'-1"

NOTES:
1. SPACE REINFORCEMENT IN CAP TO MISS ANCHOR BOLTS.
2. POUR STEPS MONOLITHICALLY WITH CAP.
3. SEE SHEET SC-205 OF 234 FOR FOOTING PLAN, PILE DATA, SECTIONS A-A, B-B, AND BEARING ANCHOR BOLT LOCATIONS.
4. CONCRETE SEALER TO BE APPLIED TO ALL EXPOSED SURFACES OF THE PIER.

P:\60254057-294.5-91\STRUCTURAL_RESTART_2019\Ramp C over I-57 and I-294\016201.5_unit3-Pier17.dgn
3/30/2020

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CHECKED BY . . . SP . . . . . SCALE . NONE . . . . .

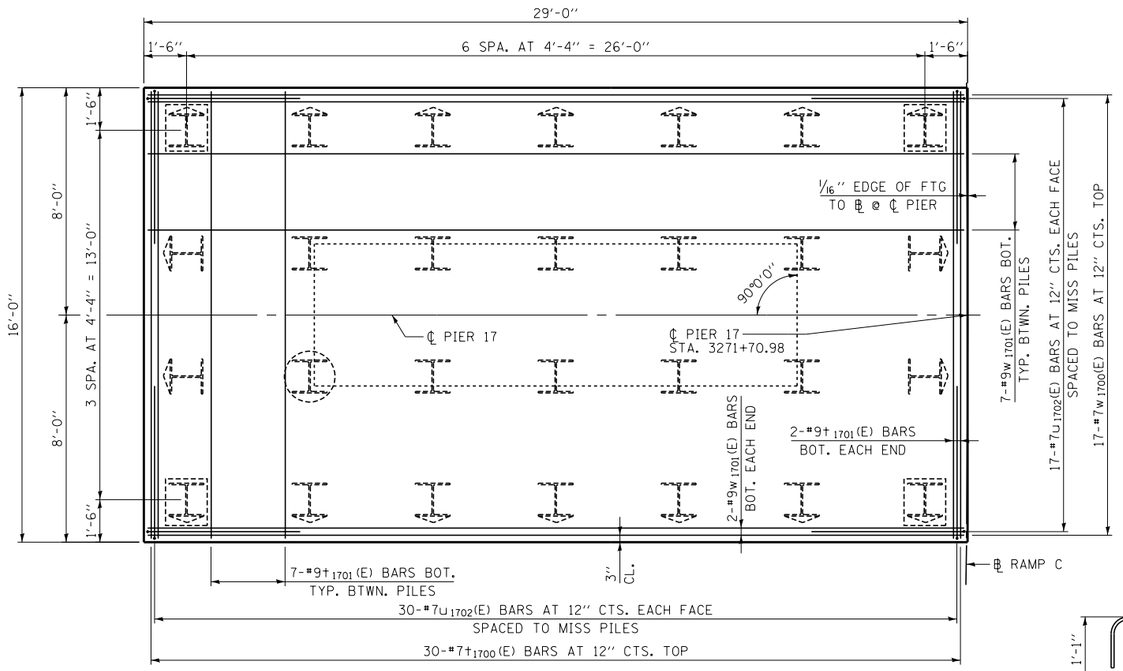
TY·LIN INTERNATIONAL

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

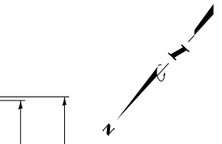
REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495
I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
PIER 17 PLAN AND ELEVATION

SHEET SC - 204 OF 234
479 OF 606



FOOTING PLAN



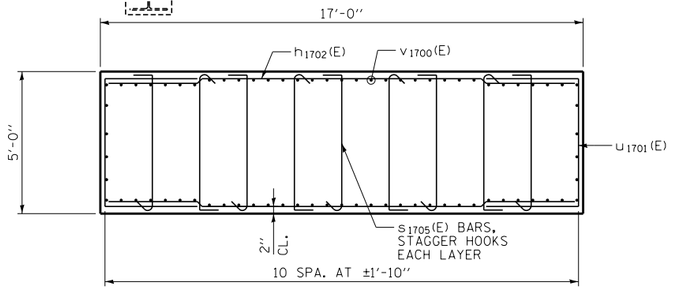
PILE DATA

PILE TYPE AND SIZE: HP14X73 WITH PILES SHOES
NOMINAL REQUIRED BEARING: 445 KIPS
FACTORED RESISTANCE AVAILABLE: 245 KIPS
ESTIMATED PILE LENGTH: 33 FEET
NUMBER OF PILE REQUIRED: 27 PLUS 1 TEST PILE

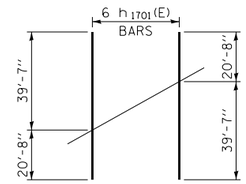
INDICATES BATTERED PILE.

INDICATES TEST PILE.

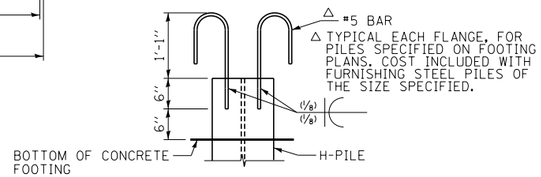
PROPOSED PILE W/ WELDED REBAR



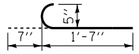
SECTION B-B



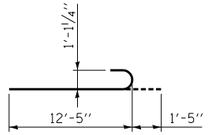
BAR CUTTING DIAGRAM



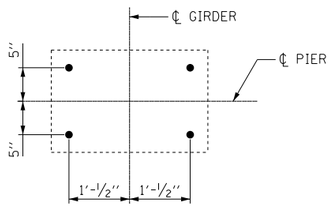
PILE WELDED REBAR DETAIL



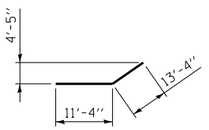
#5 PILE WELDED REBAR



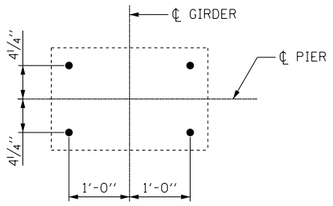
BAR n1700(E)



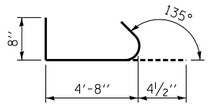
ANCHOR BOLT LAYOUT (SPAN 17)



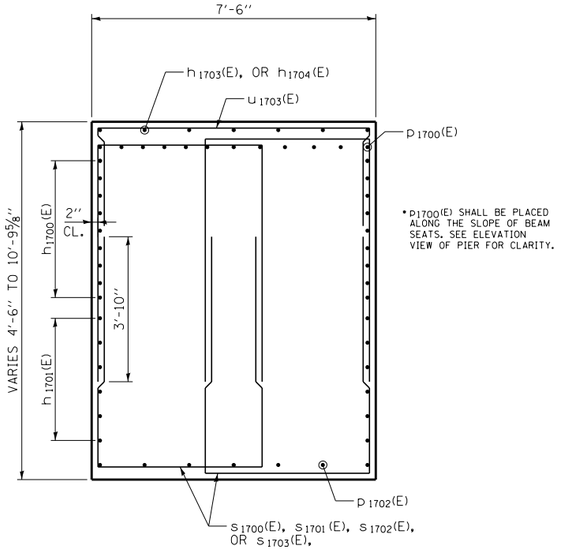
BAR p1702(E)



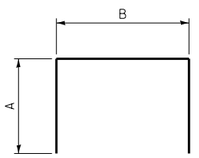
ANCHOR BOLT LAYOUT (SPAN 18)



BAR s1705(E)



SECTION A-A



BAR	A	B
p1700(E)	2'-0"	42'-4"
s1700(E)	4'-8"	4'-10"
s1701(E)	4'-8"	4'-10"
s1702(E)	5'-7"	4'-10"
s1703(E)	6'-11"	4'-10"
u1700(E)	3'-10"	7'-2"
u1701(E)	3'-7"	4'-8"
u1702(E)	3'-6"	4'-6"
u1703(E)	2'-7"	7'-2"

BARS p1700(E), s1700(E), s1701(E), s1702(E), s1703(E), u1700(E), u1701(E), u1702(E) AND u1703(E)

BILL OF MATERIAL

REINFORCEMENT BAR LIST

BAR	NO.	SIZE	LENGTH	SHAPE
h1700(E)	18	#8	42'-8"	
h1701(E)	6	#8	60'-3"	
h1702(E)	40	#5	16'-8"	
h1703(E)	24	#5	7'-2"	
h1704(E)	14	#5	6'-2"	
n1700(E)	78	#10	13'-10"	
p1700(E)	12	#11	46'-4"	
p1702(E)	14	#8	24'-8"	
s1700(E)	16	#6	14'-2"	
s1701(E)	16	#6	14'-2"	
s1702(E)	52	#6	16'-0"	
s1703(E)	160	#6	18'-8"	
s1705(E)	180	#4	5'-9"	
t1700(E)	38	#7	15'-8"	
t1701(E)	46	#9	15'-8"	
u1700(E)	14	#6	14'-10"	
u1701(E)	40	#5	11'-10"	
u1702(E)	94	#7	11'-6"	
u1703(E)	44	#6	12'-4"	
v1700(E)	78	#10	24'-9"	
w1700(E)	25	#7	28'-8"	
w1701(E)	25	#9	28'-8"	

ITEM	UNIT	QUANTITY
STRUCTURE EXCAVATION	CU. YD.	181
CONCRETE STRUCTURES	CU. YD.	251
REINFORCEMENT BARS, EPOXY COATED	POUND	39,320
FURNISHING STEEL PILES HP 14x73	FOOT	891
DRIVING PILES	FOOT	891
TEST PILE STEEL SHAPE HP 14x73	EACH	1
PILE SHOES	EACH	28
CONCRETE SEALER	SQ. FT.	2583

P:\682540\57-294_5-91\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\Q162101.5_unit3-Pier17dtl.dgn
3/30/2020

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CHECKED BY . . . SP	SCALE . NONE		

REVISIONS		
NO.	DATE	DESCRIPTION

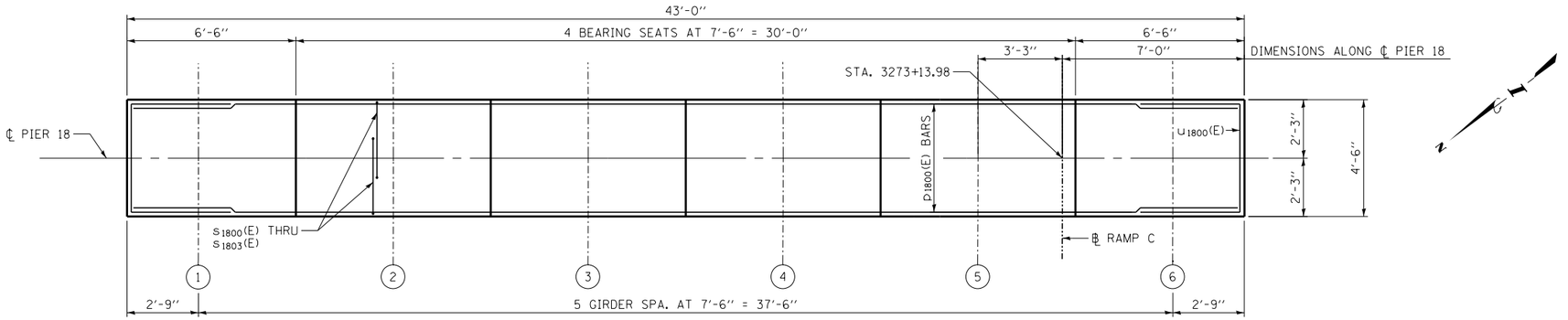
CONTRACT I-19-4495

I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
PIER 17 DETAILS

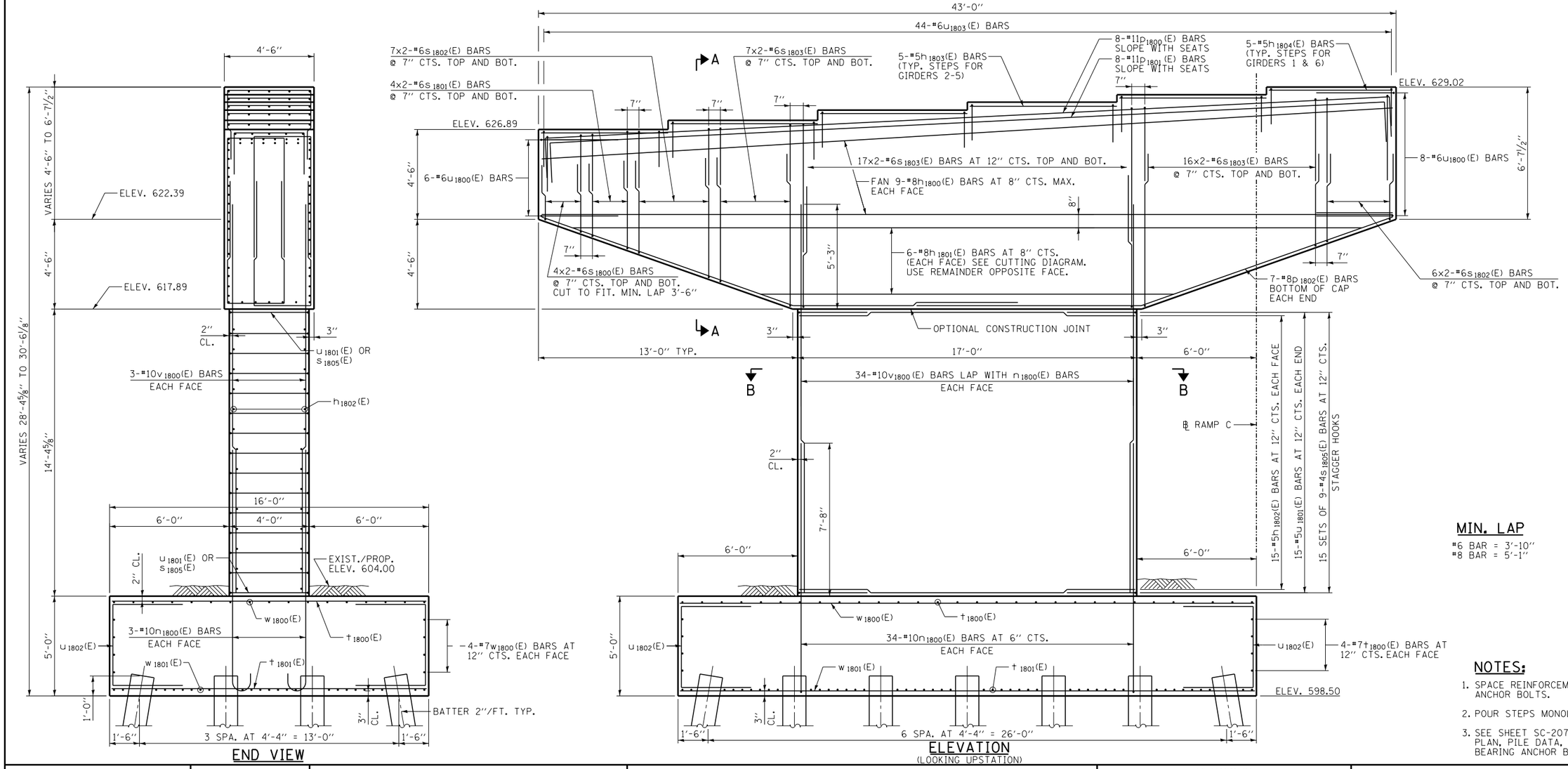
SHEET SC - 205 OF 234

480 OF 606

GIRDER	SEAT ELEV.	STEP HEIGHT
1	626.89	
2	627.35	5½″
3	627.86	6″
4	628.26	4⅞″
5	628.63	4½″
6	629.02	4⅝″



TOP PLAN



ELEVATION
(LOOKING UPSTATION)

END VIEW

MIN. LAP

#6 BAR = 3′-10″
#8 BAR = 5′-1″

NOTES:

1. SPACE REINFORCEMENT IN CAP TO MISS ANCHOR BOLTS.
2. POUR STEPS MONOLITHICALLY WITH CAP.
3. SEE SHEET SC-207 OF 234 FOR FOOTING PLAN, PILE DATA, SECTIONS A-A, B-B, AND BEARING ANCHOR BOLT LOCATIONS.

P:\62R2540\57-294.5-91\STRUCTURAL_RESTART_2019\Ramp C over I-57 and I-294\016210I.5_unit4-Pier18.dgn
3/30/2020

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THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

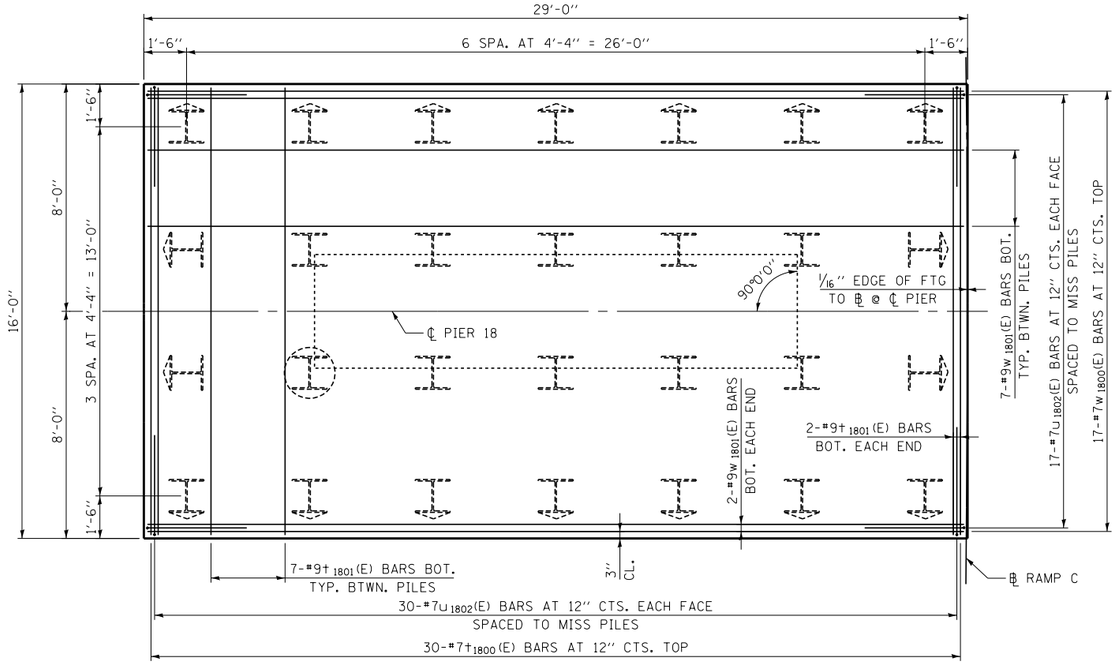
REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
PIER 18 PLAN AND ELEVATION

SHEET SC -206 OF 234

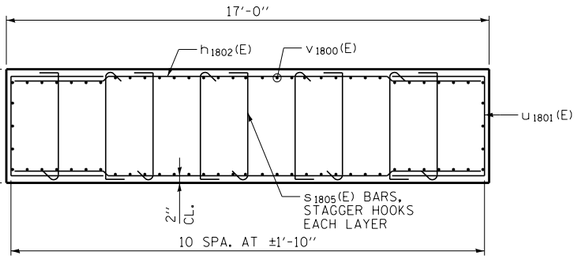
481 OF 606



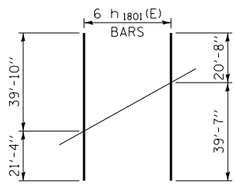
FOOTING PLAN

PILE DATA

PILE TYPE AND SIZE: HP14X73 WITH PILES SHOES
NOMINAL REQUIRED BEARING: 464 KIPS
FACTORED RESISTANCE AVAILABLE: 255 KIPS
ESTIMATED PILE LENGTH: 32 FEET
NUMBER OF PILE REQUIRED: 27 PLUS 1 TEST PILE



SECTION B-B



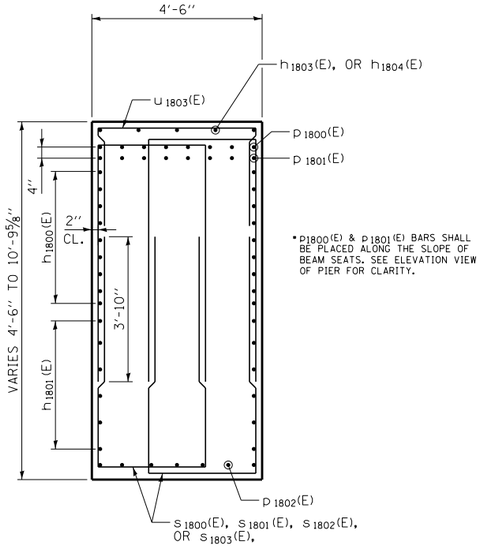
BAR CUTTING DIAGRAM

BILL OF MATERIAL

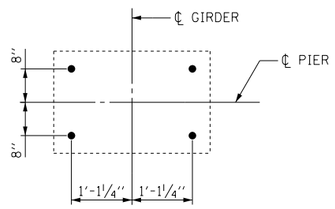
REINFORCEMENT BAR LIST

BAR	NO.	SIZE	LENGTH	SHAPE
h 1800(E)	18	#8	42'-8"	
h 1801(E)	6	#8	60'-3"	
h 1802(E)	30	#5	16'-8"	
h 1803(E)	20	#5	7'-2"	
h 1804(E)	10	#5	6'-2"	
n 1800(E)	74	#10	13'-10"	
p 1800(E)	8	#11	46'-4"	
p 1801(E)	8	#11	45'-10"	
p 1802(E)	14	#8	24'-8"	
s 1800(E)	16	#6	11'-2"	
s 1801(E)	16	#6	12'-2"	
s 1802(E)	52	#6	14'-0"	
s 1803(E)	160	#6	16'-8"	
s 1805(E)	135	#4	4'-9"	
t 1800(E)	38	#7	15'-8"	
t 1801(E)	46	#9	15'-8"	
u 1800(E)	14	#6	11'-10"	
u 1801(E)	30	#5	10'-10"	
u 1802(E)	94	#7	11'-6"	
u 1803(E)	44	#6	9'-4"	
v 1800(E)	74	#10	19'-8"	
w 1800(E)	25	#7	28'-8"	
w 1801(E)	25	#9	28'-8"	

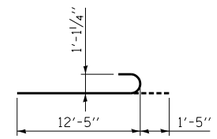
ITEM	UNIT	QUANTITY
STRUCTURE EXCAVATION	CU. YD.	181
CONCRETE STRUCTURES	CU. YD.	184.8
REINFORCEMENT BARS, EPOXY COATED	POUND	36,330
FURNISHING STEEL PILES HP 14x73	FOOT	891
DRIVING PILES	FOOT	891
TEST PILE STEEL SHAPE HP 14x73	EACH	1
PILE SHOES	EACH	28



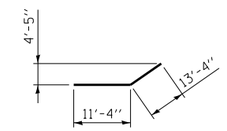
SECTION A-A



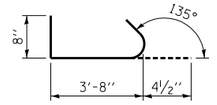
ANCHOR BOLT LAYOUT



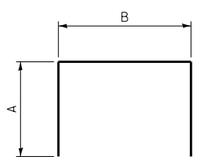
BAR n 1800(E)



BAR p 1802(E)



BAR s 1805(E)



BAR	A	B
p 1800(E)	2'-0"	42'-4"
p 1801(E)	2'-0"	41'-10"
s 1800(E)	4'-2"	2'-10"
s 1801(E)	4'-8"	2'-10"
s 1802(E)	5'-7"	2'-10"
s 1803(E)	6'-11"	2'-10"
u 1800(E)	3'-10"	4'-2"
u 1801(E)	3'-7"	3'-8"
u 1802(E)	3'-6"	4'-6"
u 1803(E)	2'-7"	4'-2"

BARS p 1800(E), p 1801(E), s 1800(E), s 1801(E), s 1802(E), s 1803(E), u 1800(E), u 1801(E), u 1802(E) AND u 1803(E)

P:\68254057-294.5-91\STRUCTURAL\RESTART.2018\Ramp C over I-57 and I-294\016-2101.5_unit4-Pier18d1.dgn
3/30/2020

DRAWN BY . . . JM . . . .
CHECKED BY . . . SP . . . .
DATE . 4-3-2020 . . . .
SCALE . NONE . . . . .

T·Y·LIN INTERNATIONAL

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

REVISIONS		
NO.	DATE	DESCRIPTION

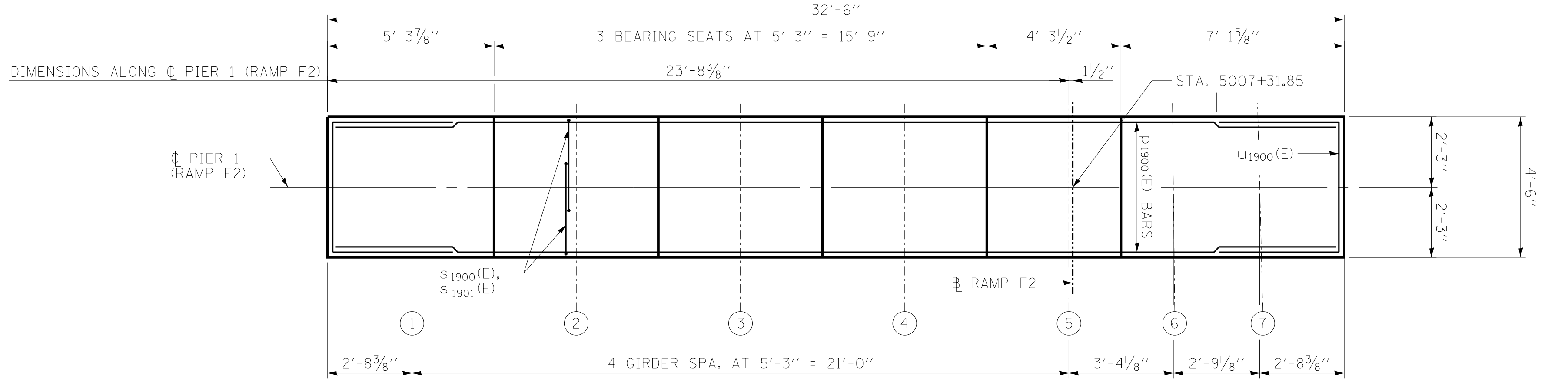
CONTRACT I-19-4495

I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
PIER 18 DETAILS

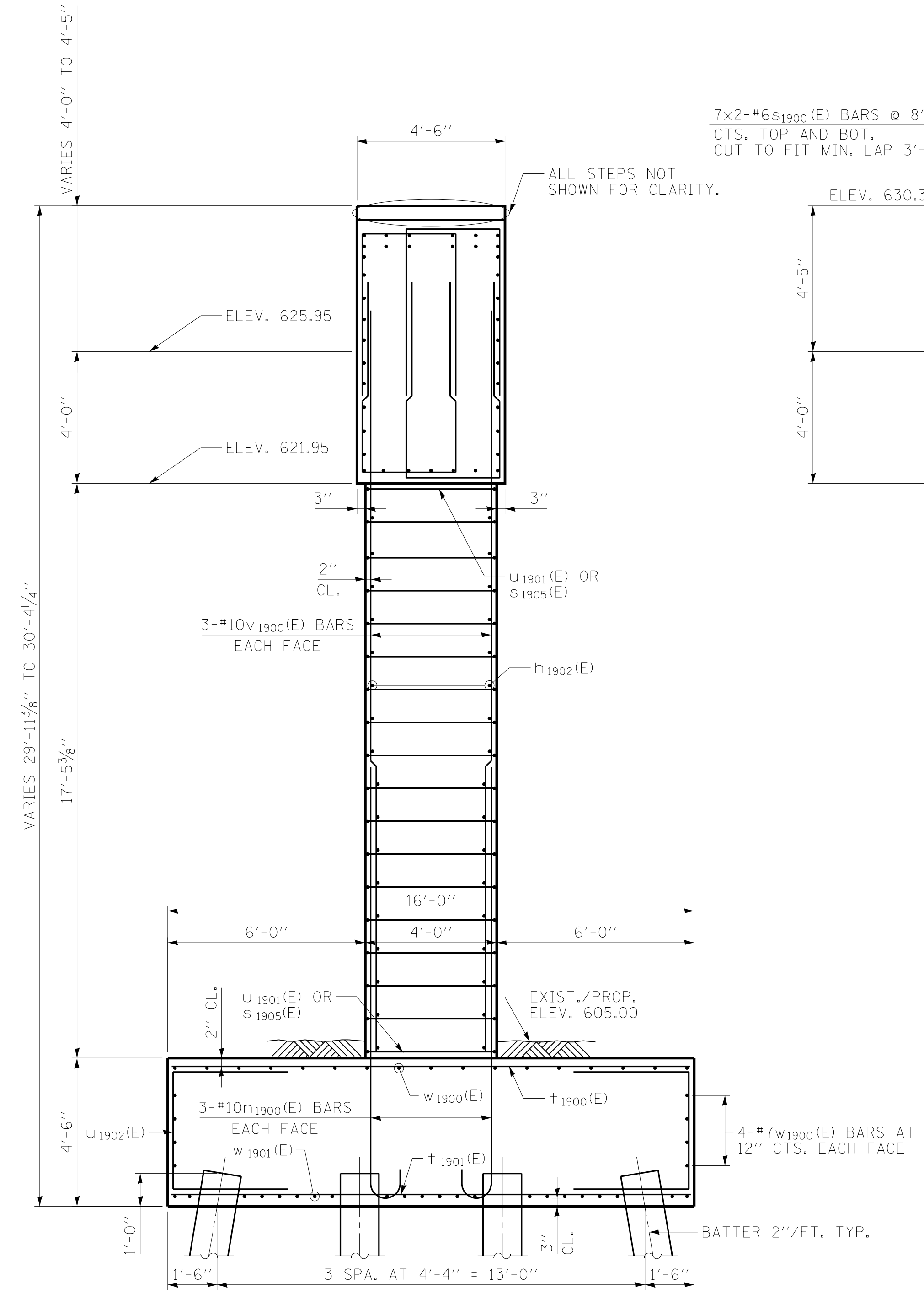
SHEET SC - 207 OF 234

482 OF 606

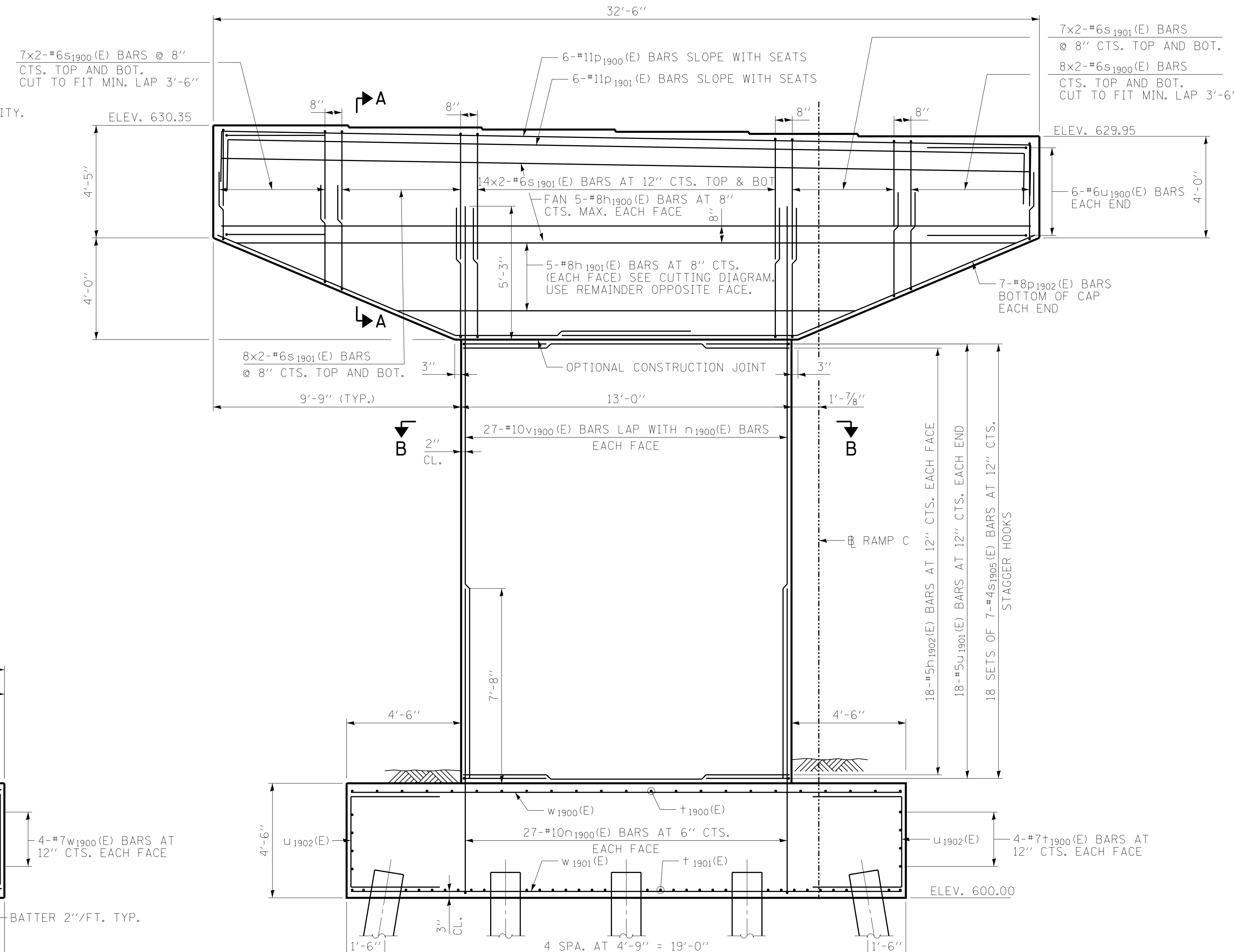
GIRDER	SEAT ELEV.	STEP HEIGHT
1	630.35	
		7/8"
2	630.28	
		1"
3	630.20	
		1"
4	630.12	
		1"
5	630.04	
		1 1/8"
6	629.95	
		-
7	629.95	



TOP PLAN



END VIEW



ELEVATION

(LOOKING UPSTATION)

MIN. LAP

#6 BAR = 3'-10"
#8 BAR = 5'-1"

NOTES:

1. SPACE REINFORCEMENT IN CAP TO MISS ANCHOR BOLTS.
2. POUR STEPS MONOLITHICALLY WITH CAP.
3. SEE SHEET SC-209 OF 234 FOR FOOTING PLAN, PILE DATA, SECTIONS A-A, B-B, AND BEARING ANCHOR BOLT LOCATIONS.

P:\6025401\57-294_5-9\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\0162101_5_unit5-PierF2.dgn
3/30/2020

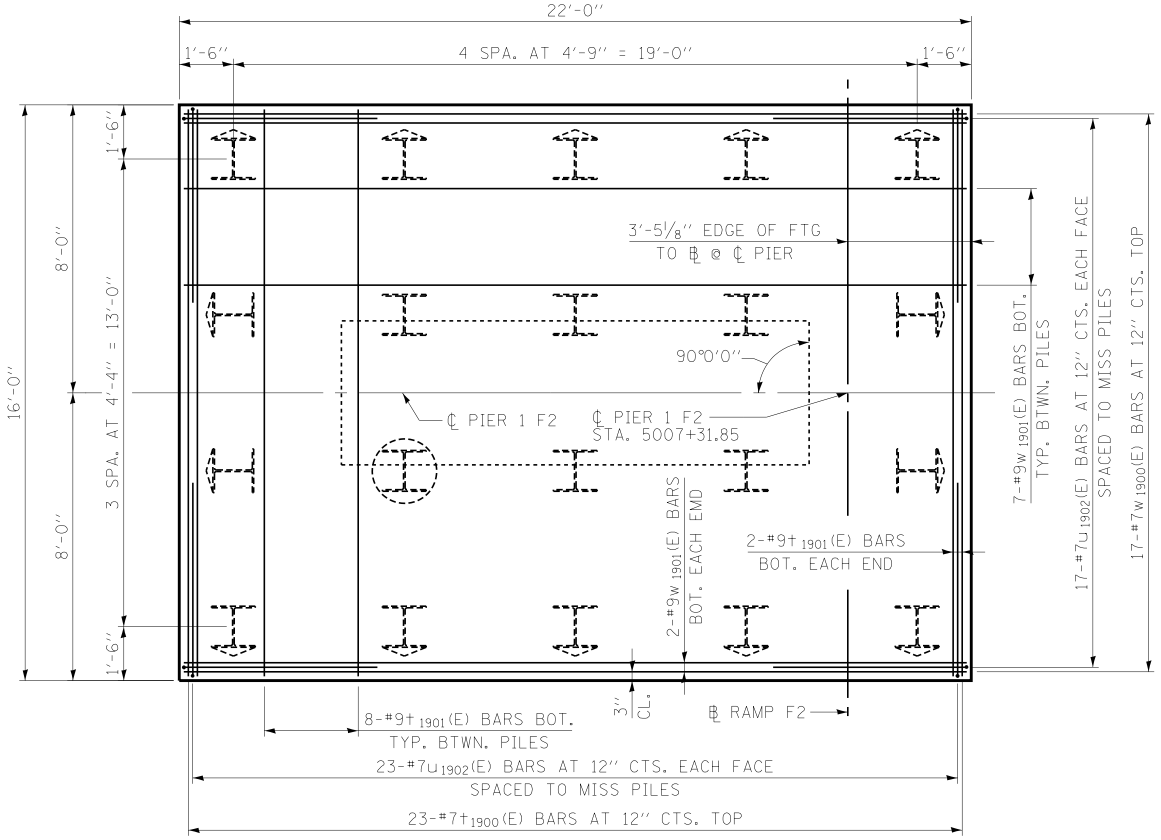
DRAWN BY JM	DATE 4-3-2020	TYLIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY, 2700 OGDEN AVENUE, DOWNERS GROVE, ILLINOIS 60515
CHECKED BY SP	SCALE NONE		

REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

SHEET SC - 208 OF 234

I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
PIER 1 (RAMP F2) PLAN AND ELEVATION

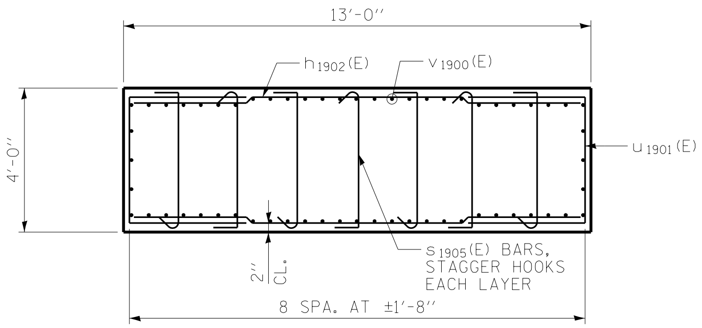


FOOTING PLAN

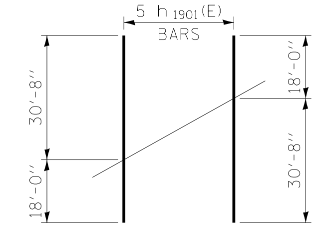
PILE DATA

PILE TYPE AND SIZE: HP14X73 WITH PILES SHOES
NOMINAL REQUIRED BEARING: 507 KIPS
FACTORED RESISTANCE AVAILABLE: 279 KIPS
ESTIMATED PILE LENGTH: 34 FEET
NUMBER OF PILE REQUIRED: 19 PLUS 1 TEST PILE

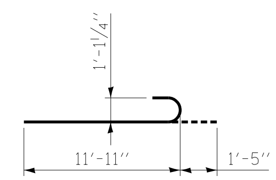
INDICATES BATTERED PILE. INDICATES TEST PILE.



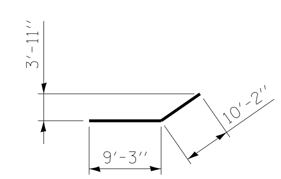
SECTION B-B



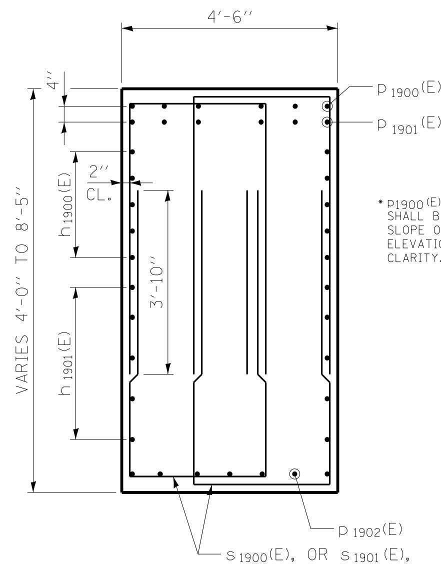
BAR CUTTING DIAGRAM



BAR n1900(E)

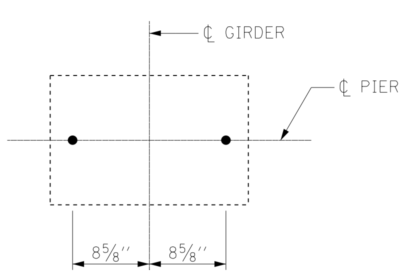


BAR p1902(E)

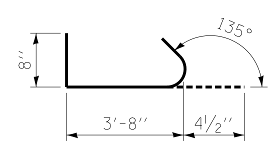


* p1900(E) & p1901(E) BARS SHALL BE PLACED ALONG THE SLOPE OF BEAM SEATS. SEE ELEVATION VIEW OF PIER FOR CLARITY.

SECTION A-A



ANCHOR BOLT LAYOUT



BAR s1905(E)

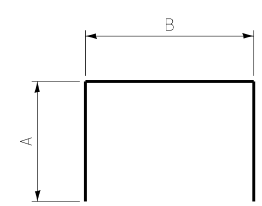
BILL OF MATERIAL

REINFORCEMENT BAR LIST

BAR	NO.	SIZE	LENGTH	SHAPE
h1900(E)	10	#8	32'-2"	straight
h1901(E)	5	#8	48'-8"	straight
h1902(E)	34	#5	12'-8"	straight
h1903(E)	2	#8	29'-0"	straight
n1900(E)	60	#10	13'-4"	
p1900(E)	6	#11	35'-10"	
p1901(E)	6	#11	35'-4"	
p1902(E)	14	#8	19'-5"	
s1900(E)	60	#6	12'-6"	
s1901(E)	116	#6	14'-6"	
s1905(E)	144	#4	4'-9"	
t1900(E)	31	#7	15'-8"	
t1901(E)	36	#9	15'-8"	
u1900(E)	12	#6	11'-10"	
u1901(E)	34	#5	10'-10"	
u1902(E)	80	#7	10'-9"	
v1900(E)	60	#10	21'-10"	
w1900(E)	25	#7	21'-8"	
w1901(E)	25	#9	21'-8"	

ITEM	UNIT	QUANTITY
STRUCTURE EXCAVATION	CU. YD.	165
CONCRETE STRUCTURES	CU. YD.	130.3
REINFORCEMENT BARS, EPOXY COATED	POUND	26,400
FURNISHING STEEL PILES HP 14x73	FOOT	646
DRIVING PILES	FOOT	646
TEST PILE STEEL SHAPE HP 14x73	EACH	1
PILE SHOES	EACH	20

BAR	A	B
p1900(E)	2'-0"	31'-10"
p1901(E)	2'-0"	31'-4"
s1900(E)	4'-10"	2'-10"
s1901(E)	5'-11"	2'-10"
u1900(E)	3'-10"	4'-2"
u1901(E)	3'-7"	3'-8"
u1902(E)	3'-6"	4'-0"



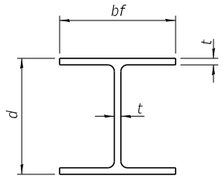
BARS p1900(E), s1900(E), s1901(E), u1900(E), u1901(E), AND u1902(E)

DRAWN BY JM	DATE 4-3-2020	TYLIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	REVISIONS: NO. / DATE / DESCRIPTION	CONTRACT I-19-4495
CHECKED BY SP	SCALE NONE				I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 116) PIER 1 (RAMP F2) DETAILS

SHEET SC - 209 OF 234

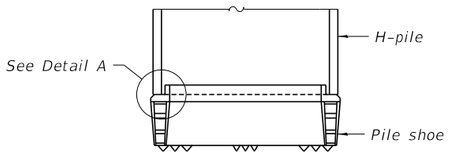
484 OF 606

P:\6025401\57-294.5-9\STRUCTURAL\RESTART 2018\Ramp C over I-57 and I-294\016210I.5_unit5-PierF2d1.dgn
3/30/2020

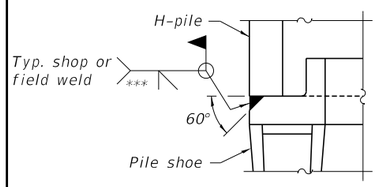


STEEL PILE TABLE

Designation	Depth d	Flange width bf	Web and Flange thickness t	Encasement diameter A
HP 14x117	14¼"	14⅞"	13/16"	30"
x102	14"	14¾"	1/16"	30"
x89	13⅞"	14¾"	⅝"	30"
x73	13⅝"	14⅝"	½"	30"
HP 12x84	12¼"	12¼"	1/16"	24"
x74	12⅛"	12¼"	⅝"	24"
x63	12"	12⅛"	½"	24"
x53	11¾"	12"	7/16"	24"
HP 10x57	10"	10¼"	9/16"	24"
x42	9¾"	10⅛"	7/16"	24"
HP 8x36	8"	8⅛"	7/16"	18"



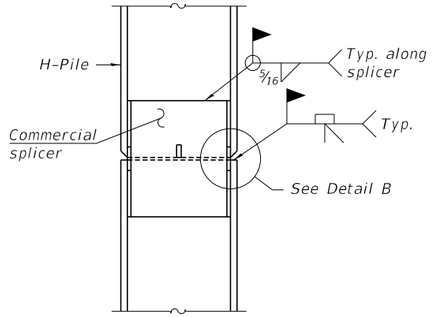
ELEVATION



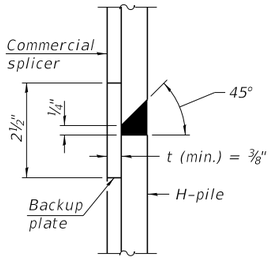
DETAIL A

SHOE ATTACHMENT

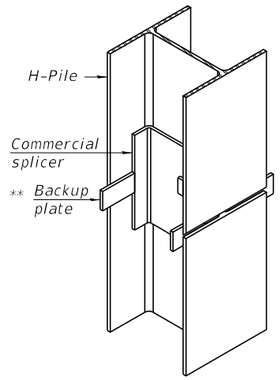
Note:
The steel H-piles shall be according to AASHTO M270 Grade 50.



ELEVATION

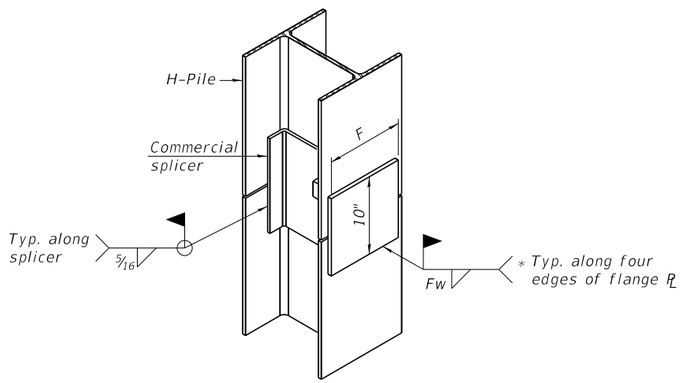


DETAIL "B"



ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE



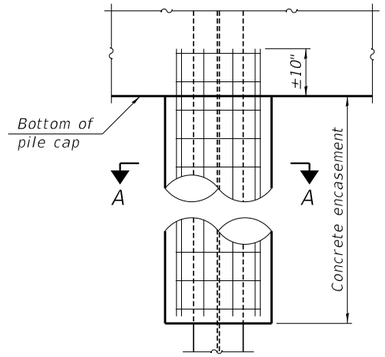
ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE ALTERNATE

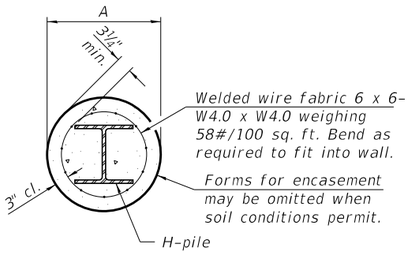
* Interrupt welds ¼" from end of web and/or each flange.

** Remove portions of backup plates that extend outside the flanges.

*** Weld size per pile shoe manufacturer (5/16" min.).



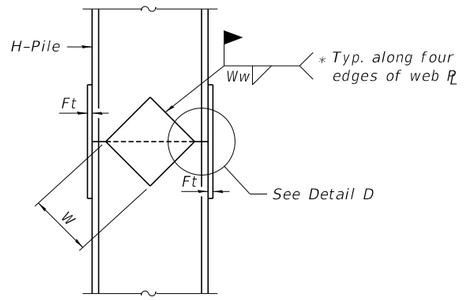
ELEVATION



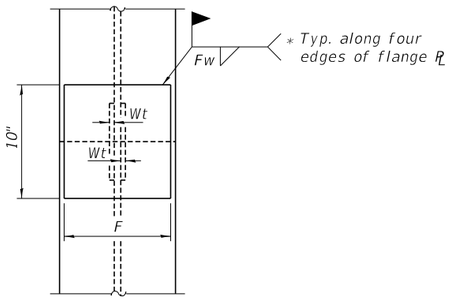
SECTION A-A

INDIVIDUAL PILE CONCRETE ENCASEMENT

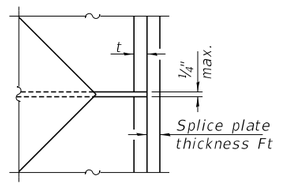
(when specified)



ELEVATION



END VIEW



DETAIL D

Designation	F	Ft	Fw	W	Wt	Ww
HP 14x117	12½"	1"	⅞"	7¾"	⅝"	½"
x102	12½"	⅞"	¾"	7¾"	⅝"	½"
x89	12½"	¾"	1/16"	7¾"	⅝"	½"
x73	12½"	⅝"	9/16"	7¾"	⅝"	½"
HP 12x84	10"	⅞"	1/16"	6½"	⅝"	½"
x74	10"	⅞"	1/16"	6½"	⅜"	½"
x63	10"	⅝"	½"	6½"	½"	⅜"
x53	10"	⅝"	½"	6½"	½"	⅜"
HP 10x57	8"	¾"	9/16"	5¼"	½"	⅜"
x42	8"	⅝"	9/16"	5¼"	½"	⅜"
HP 8x36	7"	⅝"	7/16"	4¼"	½"	⅜"

WELDED PLATE FIELD SPLICE

F-HP 1-1-2020

DRAWN BY . . . JM	DATE . 4-3-2020	T·Y·LIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515
CHECKED BY . . . SP	SCALE . NONE		

REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
HP PILE DETAILS

SHEET SC - 210 OF 234

485 OF 606

P:\682540\57-294.5-9\STRUCTURAL\RESTART.2018\Ramp C over I-57 and I-294\016210l.5_hp-pile-details.dgn
3/30/2020

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Naperville, Illinois 60565
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SOIL BORING LOG

PAGE 1 of 1
DATE 4/26/2010
LOGGED BY MR
JOB NUMBER P-91-186-08
GSI JOB No. 08015

ROUTE I-294 & I-57
DESCRIPTION I-57 & I-294 Interchange Improvements (PTB 146, Item 1)
SECTION –
LOCATION Ramp C Retaining Wall
COUNTY Cook
DRILLING METHOD Hollow Stem Auger/Rotary HAMMER TYPE Diedrich Automatic

STRUCT. NO. –
Station –
BORING NO. **RW-01**
Station: 3275+13
Offset: 42.5' Left
Ground Surface Elev. *606.1*

Surface Water Elev. *n/a*
Stream Bed Elev. *n/a*
Groundwater Elevation:
First Encounter *601.1*
Upon Completion *n/a*
After ____ Hrs. ____

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
605.1			
12.0" TOPSOIL–black	AS	–	27
	3		
SILTY CLAY LOAM–dark brown & gray–stiff (A–6)	3		
	4	1.25P	22
603.1			
SILTY SAND–brown–loose (A–2/A–3)	2		
	3		
▼601.1 –5	3	NP	19
	1		
SANDY LOAM to SILTY CLAY LOAM–gray–very loose to loose (A–2/A–4)	2		
	2	NP	25
	1		
–10	1	NP	30
	1		
	2		
	4	<0.25P	40
593.1			
SANDY LOAM–gray–medium dense (A–2)	4		
	6		
–15	6	NP	20
590.6			
SILTY LOAM–gray–medium dense (A–4)	5		
	6		
	6	NP	22
588.1			
SAND & GRAVEL–gray–medium dense (A–1)	6		
	6		
–20	6	NP	10

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
SAND & GRAVEL–medium dense (A–1) 585.6			
	5		
SILT–gray–medium dense (A–4)	7		
	10	NP	19
583.1			
	7		
	10		
–25	11	3.25P	11
SILTY CLAY LOAM–gray–very stiff to stiff (A–4)	6		
	7		
	7	1.1B	10
578.1			
SANDY LOAM to LOAM–gray–medium dense (A–2/A–4)	5		
	7		
–30	7	NP	10
574.1			
SANDY LOAM with Fractured Rock–gray–dense (A–2)	10		
	21		
–35	35	NP	11
570.6			
Drillers Observation: Possible Bedrock			
End Of Boring @ –38.5'			
Hollow Stem Augers to –10.0'			
Rotary Drilling to Completion			
Diedrich Automatic Hammer			
10.0' Of 4.0"ø Casing Used 567.6			
–40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B–Bulge, S–Shear, P–Penetrometer) ST–Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in Italics above moist (%)
NR–No Recovery

Geo Services, Inc.
Geotechnical, Environmental & Civil Engineering
805 Amherst Court, Suite 204
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SOIL BORING LOG

PAGE 1 of 1
DATE 12/28/2009
LOGGED BY DR
JOB NUMBER P-91-186-08
GSI JOB No. 08015

ROUTE I-294 & I-57
DESCRIPTION I-57 & I-294 Interchange Improvements (PTB 146, Item 1)
SECTION –
LOCATION Ramp F2 Retaining Wall
COUNTY Cook
DRILLING METHOD Hollow Stem Auger/Rotary HAMMER TYPE CME Automatic

STRUCT. NO. –
Station –
BORING NO. **RW-37**
Station: 5006+15
Offset: 23.0' Left
Ground Surface Elev. *605.3*

Surface Water Elev. *n/a*
Stream Bed Elev. *n/a*
Groundwater Elevation:
First Encounter *600.8*
Upon Completion *n/a*
After ____ Hrs. ____

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
TOPSOIL–black	AS	–	29
	2		
	2		
	2	2.0P	18
602.3			
SANDY LOAM–dark gray–loose (A–2)	1		
	2		
–5	2	NP	20
599.8			
SAND & GRAVEL–gray–very loose (A–3)	1		
	0		
	1	NP	22
597.3			
Clayey SAND & GRAVEL–brown–medium dense (A–2)	10		
	16		
–10	17	NP	17
594.8			
SILTY LOAM with Fractured Rock–gray–medium dense to very dense (A–2)	33		
	50/2"		
		NP	8
	23		
	15		
–15	14	NP	11
	16		
	19		
	20	NP	9
	18		
	20		
–20	29	NP	10

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
	30		
	43		
	40	NP	9
SILTY LOAM with Fractured Rock–gray–medium dense to very dense (A–2)	53		
	50/3"		
–25		NP	9
	50/5"		
		NP	10
	47		
	50/2"		
–30		NP	10
571.8			
Drillers Observation: Apparent Bedrock –35			
568.8			
End Of Boring @ –36.5'			
Hollow Stem Augers to –10.0'			
Rotary Drilling To Completion			
CME Automatic Hammer			
–40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B–Bulge, S–Shear, P–Penetrometer) ST–Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in Italics above moist (%)
NR–No Recovery

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Naperville, Illinois 60565
(630) 355-2638

SOIL BORING LOG

PAGE 1 of 1
DATE 12/28/2009
LOGGED BY DR
JOB NUMBER P-91-186-08
GSI JOB No. 08015

ROUTE I-294 & I-57
DESCRIPTION I-57 & I-294 Interchange Improvements (PTB 146, Item 1)
SECTION –
LOCATION Ramp F2 Retaining Wall
COUNTY Cook
DRILLING METHOD Hollow Stem Auger/Rotary HAMMER TYPE CME Automatic

STRUCT. NO. –
Station –
BORING NO. **RW-38**
Station: 5006+65
Offset: 23.0' Right
Ground Surface Elev. *605.3*

Surface Water Elev. *n/a*
Stream Bed Elev. *n/a*
Groundwater Elevation:
First Encounter *601.3*
Upon Completion *n/a*
After ____ Hrs. ____

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
604.3			
VEGETATION	AS	–	377
	2		
	2		
	2	1.0P	16
602.3			
SANDY CLAY LOAM–brown–very loose (A–2)	1		
	1		
–5	1	0.5P	22
599.8			
SAND & GRAVEL–brown & gray–loose (A–1)	2		
	2		
	2	NP	16
	4		
	2		
–10	2	NP	26
	5		110
593.8			
CLAY–gray–stiff (A–6)	10		
592.8	13	1.6B	20
SILTY LOAM with Fractured Rock–gray–dense (A–2)	24		
	24		
–15	25	NP	11
589.3			
FRACTURED ROCK–gray–dense (A–1)	8		
	15		
587.3	17	NP	11
SILTY LOAM with Fractured Rock–gray–very dense (A–2)	6		
	32		
–20	35	NP	11

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
	50/5"		
		NP	12
SILTY LOAM with Fractured Rock–gray–very dense (A–2)	38		
	50/3"		
–25		NP	10
	43		
	50/2"		
		NP	12
577.3			
	50/4"		
		NP	11
FRACTURED ROCK–gray–very dense (A–1)			
572.3			
Drillers Observation: Apparent Bedrock –35			
569.3			
End Of Boring @ –36.0'			
Hollow Stem Augers to –10.0'			
Rotary Drilling To Completion			
CME Automatic Hammer			
–40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B–Bulge, S–Shear, P–Penetrometer) ST–Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in Italics above moist (%)
NR–No Recovery

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DATE . 4-3-2020 . . .
SCALE . NONE . . . . .

TY·LIN INTERNATIONAL

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

REVISIONS NO.	DATE	DESCRIPTION

CONTRACT I-19-4495
I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
BORING LOGS - 1

SHEET SC - 211 OF 234
486 OF 606

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SOIL BORING LOG

PAGE 1 of 1
DATE 12/23/2009
LOGGED BY DR
JOB NUMBER P-91-186-08
GSI JOB No. 08015
ROUTE I-294 & I-57
DESCRIPTION I-57 & I-294 Interchange Improvements (PTB 146, Item 1)
SECTION –
LOCATION Ramp F2 Retaining Wall
COUNTY Cook
DRILLING METHOD Hollow Stem Auger/Rotary HAMMER TYPE CME Automatic
STRUCT. NO. –
Station –
BORING NO. **RW-39**
Station: 5007+15
Offset: 23.0' Left
Ground Surface Elev. 605.3
Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter 600.3
Upon Completion n/a
After ____ Hrs. ____

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
VEGETATION 604.3	AS	–	321
	2		
	2		
SANDY CLAY LOAM–dark brown & gray–loose (A–2) Apparent Fill	2	1.75P	19
	2		
▼ –5	2	NP	17
599.3			
SAND–brown–loose (A–3)	1		
	2		
	2	NP	23
597.3			
Fine SAND–gray–medium dense (A–2)	7		
	9		
–10	9	NP	16
594.3			
SAND–gray–medium dense (A–3)	6		
	8		
	11	NP	22
	7		
	9		
–15	7	NP	21
589.3			
SILTY LOAM to LOAM–gray–medium dense (A–4)	2		
	5		
	9	NP	10
587.3			
SILTY LOAM with Fractured Rock–gray–dense to very dense (A–2)	10		
	15		
–20	15	NP	17

SILTY LOAM with Fractured Rock–gray–dense to very dense (A–2)

571.8
Drillers Observation: Apparent Bedrock
568.8
End Of Boring @ –36.5'
Hollow Stem Augers To –10.0'
Rotary Drilling To Completion
12.0' Of 4.0"ø Casing Used
CME Automatic Hammer

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
–25	23		
	27		
	38	NP	9
	38		
	50/4"		
		NP	10
	30		
	47		
	50/2"	NP	10
	37		
	50/5"		
–30		NP	10
–35			
–40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B=Bulge, S=Shear, P=Penetrometer) ST=Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in Italics above moist (%)
NR=No Recovery

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SOIL BORING LOG

PAGE 1 of 1
DATE 12/23/2009
LOGGED BY DR
JOB NUMBER P-91-186-08
GSI JOB No. 08015
ROUTE I-294 & I-57
DESCRIPTION I-57 & I-294 Interchange Improvements (PTB 146, Item 1)
SECTION –
LOCATION Ramp F2 Retaining Wall
COUNTY Cook
DRILLING METHOD Hollow Stem Auger/Rotary HAMMER TYPE CME Automatic
STRUCT. NO. –
Station –
BORING NO. **RW-40**
Station: 5007+65
Offset: 23.0' Right
Ground Surface Elev. 605.3
Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter 600.3
Upon Completion n/a
After ____ Hrs. ____

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
VEGETATION 604.3	AS	–	194
	2		*115*
CLAY LOAM–brown & gray–stiff (A–6) Fill	2		
602.8	3	1.1B	16
SANDY LOAM–dark gray–loose (A–2) Fill	2		
601.3			
▼ –5	2	NP	21
SAND–brown–loose (A–3)	1		
	1		
	1	NP	27
596.3			
SILTY LOAM with Fractured Rock–gray–very loose to medium dense (A–2)	1		
	2	NP	21
–10			
592.3	10		
	6		*135*
SILTY CLAY LOAM to SILTY LOAM–gray–dense to very dense (A–4)	13		
	21	3.0B	9
	30		*130*
	32		
	47	2.75B	11
	26		*128*
–20	50/4"	3.0B	12

SILTY CLAY LOAM to SILTY LOAM–gray–dense to very dense (A–4)

571.3
Drillers Observation: Apparent Bedrock
566.3
End Of Boring @ –37.0'
Hollow Stem Augers To –10.0'
Rotary Drilling To Completion
12.0' Of 4.0"ø Casing Used
CME Automatic Hammer

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
	43		*120*
	50/3"		
		3.0B	15
	34		*122*
	49		
–25	50/3"	3.0B	14
	44		*123*
	50/4"		
		1.9B	14
	50/3"		
–30			NR
–35	50/2"		
–40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B=Bulge, S=Shear, P=Penetrometer) ST=Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in Italics above moist (%)
NR=No Recovery

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SOIL BORING LOG

PAGE 1 of 1
DATE January 4, 2010
LOGGED BY DR
JOB NUMBER P-91-186-08
GSI JOB No. 08015
ROUTE I-294 & I-57
DESCRIPTION I-57 & I-294 Interchange Improvements (PTB 146, Item 1)
SECTION –
LOCATION Ramp F2 Retaining Wall
COUNTY Cook
DRILLING METHOD Hollow Stem Auger/Rotary HAMMER TYPE CME Automatic
STRUCT. NO. –
Station –
BORING NO. **RW-41**
Station: 5008+15
Offset: 23.0' Left
Ground Surface Elev. 605.9
Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter n/a
Upon Completion n/a
After ____ Hrs. ____

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
13.0" TOPSOIL–black 604.8	AS	–	29
	1		
	2		
CLAY LOAM–brown–very stiff (A–6)	3	2.0P	23
602.4			
	1		
▼ –5	1	NP	27
SANDY LOAM–gray–very loose to loose (A–2)	1		
	1		
	1	NP	24
	2		
	3		
–10	4	NP	19
595.4			
SANDY LOAM with Fractured Rock–gray–medium dense (A–2)	12		
	11		
	10	NP	12
	8		
	8		
590.9 –15	4	NP	17
SILTY LOAM with Fractured Rock–gray–dense (A–2)	9		
	13		
	17	NP	12
	19		
	27		
–20	35	NP	7

SILTY LOAM with Fractured Rock (A–2) 585.4

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
	24		
SILTY LOAM–gray–very dense (A–4)	39		
582.9	42	NP	10
	50/5"		
SILTY LOAM with Fractured Rock–gray–very dense (A–2)			
–25		NP	8
580.4			
	50/5"		
FRACTURED ROCK–gray–very dense (A–1)		NP	11
577.9			
	39		
	50/5"		
SILTY LOAM with Fractured Rock–gray–very dense (A–2)			
–30		NP	13
573.4			
Drillers Observation: Possible Bedrock.			
–35			
570.4			
End Of Boring @ –35.5'			
Hollow Stem Augers to –10.0'			
Rotary Drilling To Completion			
CME Automatic Hammer			
–40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B=Bulge, S=Shear, P=Penetrometer) ST=Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in Italics above moist (%)
NR=No Recovery

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3/30/2020

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CHECKED BY . . . SP . . . .
DATE . 4-3-2020 . . .
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2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

REVISIONS NO.	DATE	DESCRIPTION

CONTRACT I-19-4495
I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
BORING LOGS - 2

SHEET SC - 212 OF 234
487 OF 606

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SOIL BORING LOG

PAGE 1 of 1
DATE January 4, 2010
LOGGED BY DR
JOB NUMBER P-91-186-08
GSI JOB No. 08015
ROUTE I-294 & I-57
DESCRIPTION I-57 & I-294 Interchange Improvements (PTB 146, Item 1)
SECTION –
LOCATION Ramp F2 Retaining Wall
COUNTY Cook
DRILLING METHOD Hollow Stem Auger/Rotary HAMMER TYPE CME Automatic
STRUCT. NO. –
Station –
BORING NO. **RW-42**
Station: 5008+65
Offset: 23.0' Right
Ground Surface Elev. 605.9
Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter 601.4
Upon Completion n/a
After _____ Hrs. _____

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
604.8	AS	–	24	13.0" TOPSOIL–black
	2		107	
603.4	2			CLAY LOAM–dark brown & gray–medium stiff (A–6) Apparent Fill
	2	0.7B	20	
	1			SANDY CLAY LOAM–dark brown–very loose (A–2) Possible Fill
601.4 ▼				
–5	1			
	2	NP	26	
	1			Fine SAND–brown–very loose (A–2/A–3)
	1	NP	27	
596.4	1			
–10	1	NP	17	
594.4	7		108	CLAYEY SAND & GRAVEL–gray–very loose (A–2)
593.4	3			CLAY–gray–very stiff (A–6)
	11	2.0B	21	
	15			SANDY LOAM–gray–medium dense (A–2)
–15	10			
	6	NP	15	
590.4				
	13			SILTY LOAM with Fractured Rock–gray–dense to very dense (A–2)
	17			
	21	NP	11	
	14			
–20	22			
	27	NP	11	

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
	18			
	20			
	30	NP	13	SILTY LOAM with Fractured Rock–gray–dense to very dense (A–2)
	35			
–25	50/5"			
		NP	13	
	42			
	50/3"			
		NP	14	
	50/5"			
–30		NP	13	
573.4				
				Drillers Observation: Possible Bedrock.
–35				
570.4				
				End Of Boring @ –35.5' Hollow Stem Augers to –10.0' Rotary Drilling To Completion CME Automatic Hammer
–40				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B=Bulge, S=Shear, P=Penetrometer) ST=Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR=No Recovery

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SOIL BORING LOG

PAGE 1 of 1
DATE 12/29/2009
LOGGED BY DR
JOB NUMBER P-91-186-08
GSI JOB No. 08015
ROUTE I-294 & I-57
DESCRIPTION I-57 & I-294 Interchange Improvements (PTB 146, Item 1)
SECTION –
LOCATION Ramp F2 Retaining Wall
COUNTY Cook
DRILLING METHOD Hollow Stem Auger/Rotary HAMMER TYPE CME Automatic
STRUCT. NO. –
Station –
BORING NO. **RW-43**
Station: 5009+15
Offset: 23.0' Left
Ground Surface Elev. 610.0
Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter 602.5
Upon Completion n/a
After _____ Hrs. _____

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
	AS	–	18	
	2			
	2			TOPSOIL–dark brown to black
	3	–	30	
607.0				
	1			
	3			CLAY LOAM–dark brown, gray & black–stiff to very stiff (A–6) Fill
–5	4	2.0P	21	
	2		105	
602.5 ▼	3			
	3	1.3B	19	
	1			SANDY CLAY LOAM–brown–very loose (A–2)
	1			
–10	1	–	23	
599.5				
	1			SAND–brown & gray–loose (A–2)
	2			
	4	NP	22	
597.0				
	1			SILTY CLAY LOAM–gray–very soft (A–4/A–6)
	1			
–15	2	<0.25P	23	
594.5				
	11			SAND, GRAVEL & FRACTURED ROCK–gray–dense to very dense (A–1)
	15			
	15	NP	8	
	15			
	22			
–20	29	NP	2	

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
	7			SAND, GRAVEL & FRACTURED ROCK–gray–dense to very dense (A–1)
	30			
	42	NP	8	
587.0				
	50/5"			
–25		NP	9	
	28			
	50/4"			
		NP	9	
	50/5"			SILTY LOAM with Fractured Rock–gray–very dense (A–2)
–30		NP	8	
	50/4"			
–35		NP	9	
573.5				
				Drillers Observation: Apparent Bedrock
				End Of Boring @ –39.5' Hollow Stem Augers to –10.0' Rotary Drilling To Completion CME Automatic Hammer
570.5				
–40				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B=Bulge, S=Shear, P=Penetrometer) ST=Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR=No Recovery

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3/30/2020

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CHECKED BY . . . SP . . . .
DATE . 4-3-2020 . . .
SCALE . NONE . . . .

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THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

REVISIONS NO.	DATE	DESCRIPTION

CONTRACT I-19-4495
I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
BORING LOGS - 3

SHEET SC - 213 OF 234
488 OF 606

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SOIL BORING LOG

PAGE 1 of 1
DATE 11/30/2009
LOGGED BY DR
JOB NUMBER P-91-186-08
GSI JOB No. 08015
ROUTE I-294 & I-57
DESCRIPTION I-57 & I-294 Interchange Improvements (PTB 146, Item 1)
SECTION –
LOCATION Ramp C Bridge
COUNTY Cook
DRILLING METHOD Hollow Stem Auger/Rotary HAMMER TYPE CME Automatic
STRUCT. NO. XXX
Station –
BORING NO. **SB-06**
Station: 3247+11
Offset: 13.0' Right
Ground Surface Elev. 605.0

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter 600.5
Upon Completion n/a
After ____ Hrs. ____

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
604.2				8.0" TOPSOIL–black
	AS	–	24	
	3		*107*	
	4			CLAY–brown & gray–
	5	3.5B	19	very stiff (A–6)
	4			
600.5	3			
–5	4	NP	24	
				Fine SAND–brown–
	8			loose to medium dense (A–2)
	10			
	14	NP	24	
596.5				
	7			SANDY LOAM–gray–
	9			medium dense (A–2)
–10	13	NP	20	
594.5				
	11			
	14			SILTY LOAM–gray–dense (A–4)
	17	NP	19	
	13			
	17			
590.0 –15	19	NP	19	
	16			
	20			SILT–gray–dense to very dense (A–4)
	23	NP	18	
	18			
	21			
–20	27	NP	19	

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
	14			SILT–gray–dense to very dense (A–4)
	22			
	36	NP	21	
	34			
	50/4"			
580.0 –25		NP	16	
	50/4"			SANDY LOAM with Fractured Rock–
				gray–very dense (A–2)
		NP	11	
	50/5"			
575.5				
Drillers Observation: Apparent Bedrock 575.0 –30		NP	11	
				RUN 1 (–30.0' to –40.0')
				Silurian System Niagaran Series Dolomite
				Light gray to gray & fine grained with horizontal bedding. Horizontal fractures @ –31.8' & –33.8'. 1/4" clay parting @ –33.9'. Horizontal fractures @ –34.4', –34.6', –34.7' & –36.9'.
				Recovery=88.5%
				R.Q.D.=83.0%
–35				RUN 1
				End Of Boring @ –40.0'
				Hollow Stem Augers to –10.0'
				Rotary Drilling To Completion
				10.0' of 4.0"ø Casing Used
				32.0' of 3.0"ø Casing Used
				CME Automatic Hammer
565.0 –40				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (SB=Bulge, S=Shear, P=Penetrometer) ST=Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR=No Recovery

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ROCK CORE LOG

PAGE 1 of 1
DATE 11/30/2009
LOGGED BY DR
JOB NUMBER P-91-186-08
GSI JOB No. 08015
ROUTE I-294 & I-57
DESCRIPTION I-57 & I-294 Interchange Improvements (PTB 146, Item 1)
SECTION –
LOCATION Ramp C Bridge
COUNTY Cook
CORING METHOD Rotary Wash
STRUCT. NO. XXX
Station –
CORING BARREL TYPE & SIZE NX Double Swivel–10 ft
Core Diameter 2.0 in
BORING NO. **SB-06**
Station: 3247+11
Offset: 13.0' Right
Top of Rock Elev. 575.5
Begin Core Elev. 575.0
Ground Surface Elev. 605.0

DEPTH (ft)	CORE RUN (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)	
575.0						RUN 1 (–30.0' to –40.0')
	1	88.5	83.0	n/a	2760	Silurian System Niagaran Series Dolomite
					–30.0	
						Light gray to gray & fine grained with horizontal bedding. Horizontal fractures @ –31.8' & –33.8'. 1/4" clay parting @ –33.9'. Horizontal fractures @ –34.4', –34.6', –34.7' & –36.9'.
–35						
–40						

Color pictures of the cores Yes Cores will be stored for examination for XX
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D–2938)

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3/30/2020

DRAWN BY JM	DATE 4-3-2020	T-Y-LIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515
CHECKED BY SP	SCALE NONE		

REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495
I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
BORING LOGS - 4

SHEET SC - 214 OF 234
489 OF 606

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SOIL BORING LOG

PAGE 1 of 2
DATE 11/30-12/1/2009
LOGGED BY DR
JOB NUMBER P-91-186-08
GSI JOB No. 08015
ROUTE I-294 & I-57
DESCRIPTION I-57 & I-294 Interchange Improvements (PTB 146, Item 1)
SECTION –
LOCATION Ramp C Bridge
COUNTY Cook
DRILLING METHOD Hollow Stem Auger/Rotary HAMMER TYPE CME Automatic
STRUCT. NO. XXX
Station –
BORING NO. **SB-07**
Station: 3249+26
Offset: 5.0' Right
Ground Surface Elev. 603.7
Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter 595.2
Upon Completion n/a
After ____ Hrs. ____

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
603.0 7.0" TOPSOIL-black	AS	–	50		13		
	3				16		
	4				19	NP	19
SILTY CLAY LOAM-brown & gray-medium dense (A-4)	11	–	18	SILT-gray-dense to very dense (A-4)			
599.7	6				17		
	16				17		
–5	17	NP	10	–25	22	NP	20
SILTY LOAM-gray-dense (A-4)				577.7	50/4"		
	13			FRACTURED ROCK-very dense (A-1)			
	21						
	29	NP	11		NP		13
▼595.2				575.7			
	7				50/5"		
SANDY LOAM-gray-medium dense (A-2)	11			SANDY LOAM with Fractured Rock-gray-very dense (A-2)			
–10	15	NP	20	–30		NP	9
593.2				572.7			
	13			Drillers Observation: Apparent Bedrock 572.2			
SILT-gray-dense (A-4)	19			RUN 1 (–31.5' to –41.5') Silurian System Niagaran Series Dolomite			
591.2	22	NP	20				
				Light gray & fine grained with horizontal bedding. Some oil staining from –39.6' to –40.0'. Horizontal fractures @ –32.4', –32.7', –32.8', –33.5', –34.6', –35.2', –35.4', –35.6' & –40.0'.			
	17						
	23						
SILTY LOAM-gray-dense to very dense (A-4)	24	NP	9				
–15				–35			
	28			Recovery=97.0% R.Q.D.=90.5%	RUN 1		
586.7	30						
	31	NP	13				
SILT-gray-dense to very dense (A-4)							
	25						
	27						
–20	27	NP	17	–40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (SB-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS-Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in Italics above moist (%)
NR-No Recovery

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Naperville, Illinois 60565
(630) 355-2838

SOIL BORING LOG

PAGE 2 of 2
DATE 11/30-12/1/2009
LOGGED BY DR
JOB NUMBER P-91-186-08
GSI JOB No. 08015
ROUTE I-294 & I-57
DESCRIPTION I-57 & I-294 Interchange Improvements (PTB 146, Item 1)
SECTION –
LOCATION Ramp C Bridge
COUNTY Cook
DRILLING METHOD Hollow Stem Auger/Rotary HAMMER TYPE CME Automatic
STRUCT. NO. XXX
Station –
BORING NO. **SB-07**
Station: 3249+26
Offset: 5.0' Right
Ground Surface Elev. 603.7
Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter 595.2
Upon Completion n/a
After ____ Hrs. ____

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
RUN 1 continued.	RUN 1						
562.2							
End Of Boring @ –41.5' Hollow Stem Augers to –10.0' Rotary Drilling To Completion 10.0' of 4.0"ø Casing Used 33.0' of 3.0"ø Casing Used CME Automatic Hammer							
–45				–65			
–50				–70			
–55				–75			
–60				–80			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (SB-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS-Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in Italics above moist (%)
NR-No Recovery

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ROCK CORE LOG

PAGE 1 of 1
DATE 11/30-12/1/2009
LOGGED BY DR
JOB NUMBER P-91-186-08
GSI JOB No. 08015
ROUTE I-294 & I-57
DESCRIPTION I-57 & I-294 Interchange Improvements (PTB 146, Item 1)
SECTION –
LOCATION Ramp C Bridge
COUNTY Cook
CORING METHOD Rotary Wash
STRUCT. NO. XXX
Station –
CORING BARREL TYPE & SIZE NX Double Swivel-10 ft
Core Diameter 2.0 in
Top of Rock Elev. 572.7
Begin Core Elev. 572.2
BORING NO. **SB-07**
Station: 3249+26
Offset: 5.0' Right
Ground Surface Elev. 603.7

DEPTH (ft)	CORE RUN (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)
572.2 RUN 1 (–31.5' to –41.5') Silurian System Niagaran Series Dolomite	1	97.0	90.5	n/a	991@ –31.6
Light gray & fine grained with horizontal bedding. Some oil staining from –39.6' to –40.0'. Horizontal fractures @ –32.4', –32.7', –32.8', –33.5', –34.6', –35.2', –35.4', –35.6' & –40.0'.					
–5					
–10					

Color pictures of the cores Yes Cores will be stored for examination for XX
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)

P:\68Z540\57-294.5-9\STRUCTURAL\RESTART.2018\Ramp C over I-57 and I-294\08Z2101.5_boring_logs05.dgn
3/30/2020

DRAWN BY JM
CHECKED BY SP
DATE 4-3-2020
SCALE NONE

TY·LIN INTERNATIONAL

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495
I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
BORING LOGS - 5

SHEET SC - 215 OF 234
490 OF 606

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SOIL BORING LOG

PAGE 1 of 1
DATE 11/23/2009
LOGGED BY DR
JOB NUMBER P-91-186-08
GSI JOB No. 08015
ROUTE I-294 & I-57
DESCRIPTION I-57 & I-294 Interchange Improvements (PTB 146, Item 1)
SECTION –
LOCATION Ramp C Bridge
COUNTY Cook
DRILLING METHOD Hollow Stem Auger/Rotary HAMMER TYPE CME Automatic
STRUCT. NO. XXX
Station –
BORING NO. **SB-08**
Station: 3252+19
Offset: 2.0' Right
Ground Surface Elev. 604.9

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter 598.9
Upon Completion n/a
After ___ Hrs. ___

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
				13.0" TOPSOIL–black
603.8	AS	–	31	SILTY CLAY–gray–stiff to very stiff (A–6)
	1			
	1			
	2	0.5P	26	SILTY CLAY–brown & gray–medium stiff (A–6) Wet
600.4	2			
–5	2	NP	20	SANDY LOAM–brown & gray–loose (A–2)
▼598.9	3			
	3			SAND–brown–loose (A–3)
	4	NP	23	
595.9	7			
–10	11			
	17	NP	12	SILTY LOAM–gray–very dense (A–4)
	20			
592.9	35			
	50/4"	NP	11	SANDY LOAM with Fractured Rock–gray–very dense (A–2)
	29			
589.9	46			
–15	50/2"	–	12	
	7		110	
	8			
	11	1.9B	20	SILTY CLAY–gray–stiff to very stiff (A–6)
	8		114	
–20	10			
	12	3.0B	18	

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
583.9	50/3"			SILTY CLAY–gray–stiff to very stiff (A–6)
	50/5"		NR	SANDY LOAM with Fractured Rock–gray–very dense (A–2)
–25		NP	9	
576.9	50/5"			
		NP	9	
576.4				Drillers Observation: Apparent Bedrock
				RUN 1 (–28.5' to –38.5') Silurian System Niagaran Series Dolomite
–30				Gray with horizontal bedding becoming light gray with oil staining @ –36.5'. Fine grained. Horizontal fractures @ –29.1, –30.0', –30.4', –31.0' & –32.4'. Highly fractured from –32.8' to –33.2'. Horizontal fracture @ –37.3'.
				Recovery=100.0% R.Q.D.=97.0%
				RUN 1
–35				
				End Of Boring @ –38.5' Hollow Stem Augers to –10.0' Rotary Drilling To Completion
566.4				10.0' of 4.0"ø Casing Used 30.0' of 3.0"ø Casing Used CME Automatic Hammer
–40				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (SB=Bulge, S=Shear, P=Penetrometer) ST=Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR=No Recovery

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ROCK CORE LOG

PAGE 1 of 1
DATE 11/23/2009
LOGGED BY DR
JOB NUMBER P-91-186-08
GSI JOB No. 08015
ROUTE I-294 & I-57
DESCRIPTION I-57 & I-294 Interchange Improvements (PTB 146, Item 1)
SECTION –
LOCATION Ramp C Bridge
COUNTY Cook
CORING METHOD Rotary Wash
STRUCT. NO. XXX
Station –
CORING BARREL TYPE & SIZE NX Double Swivel–10ft
Core Diameter 2.0 in
BORING NO. **SB-08**
Station: 3252+19
Offset: 2.0' Right
Top of Rock Elev. 576.9
Begin Core Elev. 576.4
Ground Surface Elev. 604.9

DEPTH (ft)	CORE RUN (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)	
576.4						RUN 1 (–28.5' to –38.5') Silurian System Niagaran Series Dolomite
	1	100.0	97.0	n/a	2560	Gray with horizontal bedding becoming light gray with oil staining @ –36.5'. Fine grained. Horizontal fractures @ –29.1, –30.0', –30.4', –31.0' & –32.4'. Highly fractured from –32.8' to –33.2'. Horizontal fracture @ –37.3'.
–33.5					–28.5	
–38.5						

Color pictures of the cores Yes Cores will be stored for examination for XX
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)

P:\62\2540\57-294,5-91\STRUCTURAL_RESTART_2018\Ramp C over I-57 and I-294\01\62101.5_boring_logs06.dgn
3/30/2020

DRAWN BY . . . JM . . . .
CHECKED BY . . . SP . . . .
DATE . 4-3-2020 . . .
SCALE . NONE . . . .

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THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

REVISIONS NO.	DATE	DESCRIPTION

CONTRACT I-19-4495
I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
BORING LOGS - 6

SHEET SC - 216 OF 234
491 OF 606

SOIL BORING LOG

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PAGE 1 of 2
DATE 5/3/2010
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JOB NUMBER P-91-186-08
GSI JOB No. 08015

ROUTE I-294 & I-57 | DESCRIPTION I-57 & I-294 Interchange Improvements (PTB 146, Item 1)
SECTION – | LOCATION Ramp C Bridge
COUNTY Cook | DRILLING METHOD Hollow Stem Auger/Rotary | HAMMER TYPE CME Automatic

STRUCT. NO. XXX
Station –
BORING NO. **SB-09**
Station: 3254+76
Offset: 2.0' Right
Ground Surface Elev. 613.5

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter n/a
Upon Completion n/a
After ____ Hrs. ____

Description	Elev.	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
12.0" ASPHALT	612.5				
CRUSHED STONE–dense (Fill)			17		
			23		
	610.5		30	NP	9
CLAY to CLAY LOAM–brown & gray–very stiff to hard (A-6) Fill			3		
			5		
		-5	6	2.0P	18
			4		*108*
			6	4.6S@	
			10	14.1%	20
			3		*103*
			6		
	603.0	-10	8	3.5B	21
SILTY CLAY LOAM–dark brown & gray–medium stiff (A-4/A-6) Wet			2		*86*
			3		
			4	0.5B	30
			1		
			1		
	598.0	-15	2	0.75P	23
SILTY SAND–gray–loose (A-2)			2		
			3		
	595.5		4	NP	25
SAND–gray–loose (A-3)			3		
			4		
		-20	4	NP	23

Description	Elev.	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
SAND–gray–loose (A-3)	593.0				
SILTY LOAM to SILT–gray–dense to very dense (A-4)			6		
			12		
			26	NP	13
			21		
			29		
	588.0	-25	36	4.5+P	12
SAND, GRAVEL & FRACTURED ROCK–gray–very dense (A-1)			50/2"		
	585.5			NP	11
SILTY LOAM to SILT–gray–dense (A-4)			18		
			19		
		-30	22	NP	15
			12		
			16		
		-35	21	NP	22
			10		
			19		
		-40	31	NP	20

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (SB-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

SOIL BORING LOG

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PAGE 2 of 2
DATE 5/3/2010
LOGGED BY MR
JOB NUMBER P-91-186-08
GSI JOB No. 08015

ROUTE I-294 & I-57 | DESCRIPTION I-57 & I-294 Interchange Improvements (PTB 146, Item 1)
SECTION – | LOCATION Ramp C Bridge
COUNTY Cook | DRILLING METHOD Hollow Stem Auger/Rotary | HAMMER TYPE CME Automatic

STRUCT. NO. XXX
Station –
BORING NO. **SB-09**
Station: 3254+76
Offset: 2.0' Right
Ground Surface Elev. 613.5

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter n/a
Upon Completion n/a
After ____ Hrs. ____

Description	Elev.	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
SILTY LOAM to SILT–gray–dense (A-4)	571.5				
Cobbles & Boulders.	570.0				
RUN 1 -43.5' to -49.5' (-43.5' to -46.2') Cobbles & Boulders	567.3	-45	RUN 1		
(-46.2' to -49.5') Silurian System Niagaran Series Dolomite Light gray to gray with horizontal bedding. Fine grained with some varving. Horizontal fractures @ -47.5', -48.1', -48.3' & -48.5'. Recovery=100.0% R.Q.D.=90.6%	564.0				
End Of Boring @ -49.5' Hollow Stem Augers to -10.0' Rotary Drilling To Completion 10.0' of 4.0"ø Casing Used CME Automatic Hammer		-50			
		-55			
		-60			

Depth scale (second column): -65, -70, -75, -80

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (SB-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

ROCK CORE LOG

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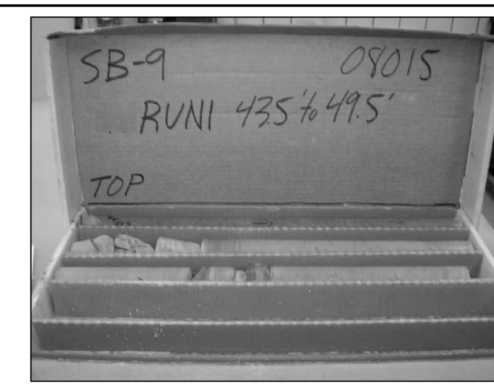
PAGE 1 of 1
DATE 5/3/2010
LOGGED BY MR
JOB NUMBER P-91-186-08
GSI JOB No. 08015

ROUTE I-294 & I-57 | DESCRIPTION I-57 & I-294 Interchange Improvements (PTB 146, Item 1)
SECTION – | LOCATION Ramp C Bridge
COUNTY Cook | CORING METHOD Rotary Wash

STRUCT. NO. XXX
Station –
BORING NO. **SB-09**
Station: 3254+76
Offset: 2.0' Right
Ground Surface Elev. 613.5

CORING BARREL TYPE & SIZE NX Double Swivel-10 ft
Core Diameter 2.0 in
Top of Rock Elev. 567.3
Begin Core Elev. 570.0

Description	Elev.	DEPTH (ft)	CORE RUN (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)
RUN 1 -43.5' to -49.5' (-43.5' to -46.2') Cobbles & Boulders	570.0		1	n/a	n/a	n/a	n/a
(-46.2' to -49.5') Silurian System Niagaran Series Dolomite Light gray to gray with horizontal bedding. Fine grained with some varving. Horizontal fractures @ -47.5', -48.1', -48.3' & -48.5'. 100.0% Water loss @ -45.0'.	567.3	-48.5	1	100.0	90.6	n/a	n/a
		-10					



Color pictures of the cores Yes Cores will be stored for examination for XX
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)

DRAWN BY JM	DATE 4-3-2020	TYLIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	CONTRACT I-19-4495
CHECKED BY SP	SCALE NONE			I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 116) BORING LOGS - 7

REVISIONS

NO.	DATE	DESCRIPTION

SHEET SC - 217 OF 234

492 OF 606

SOIL BORING LOG (Page 1 of 2)

Geo Services, Inc.
Geotechnical, Environmental & Civil Engineering
805 Amberst Court, Suite 204
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(630) 355-2838

PAGE 1 of 2
DATE 12/3/2009
LOGGED BY DR
JOB NUMBER P-91-186-08
GSI JOB No. 08015

ROUTE I-294 & I-57
DESCRIPTION I-57 & I-294 Interchange Improvements (PTB 146, Item 1)
SECTION –
LOCATION Ramp C Bridge
COUNTY Cook
DRILLING METHOD Hollow Stem Auger/Rotary
HAMMER TYPE CME Automatic

STRUCT. NO. XXX
Station –
BORING NO. **SB-10**
Station: 3255+59
Offset: 2.0' Right
Ground Surface Elev. 605.0

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter 598.0 ▼
Upon Completion n/a
After ___ Hrs.

Description	Elev.	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
13.0" TOPSOIL–black	603.9		AS	–	22
SILTY CLAY–brown & gray–stiff (A-6) Wet	602.0		2		
			3		
			3	1.5P	26
SILTY CLAY LOAM–gray–loose (A-4)	599.0		1		
			2		
		-5	2	0.5P	24
SILTY CLAY–gray–medium stiff (A-4/A-6) Wet ▼	597.0		1		
			1		
			1	0.5P	27
SAND–gray–loose (A-3)	594.5		2		
			4		
		-10	5	NP	18
SILTY CLAY–gray–stiff (A-6) Wet	592.0		14		
			37		
			50	1.0P	25
SILTY CLAY LOAM–gray–very stiff (A-4/A-6)	587.0		18		*131*
			19		
		-15	21	3.1B	11
			13		*119*
			17		
			18	2.3B	15
FRACTURED ROCK & GRAVEL–gray–dense (A-1)			14		
			16		
		-20	18	NP	3
FRACTURED ROCK & GRAVEL–gray–dense (A-1)	584.0				
SILT–gray–medium dense (A-4)	582.0		8		
			12		
			12	NP	21
SILTY CLAY–gray–stiff to very stiff (A-6)	577.0		6		*111*
			9		
		-25	14	1.9B	19
			8		*123*
			11		
			14	3.0B	14
Clayey SAND, GRAVEL & FRACTURED ROCK–gray–very dense (A-2)	571.5		50/3"		
		-30		NP	15
Drillers Observation: Apparent Bedrock	570.5				
RUN 1 (-34.5' to -44.5') Silurian System Niagaran Series Dolomite Light gray & fine grained with horizontal bedding. Oil staining from -36.8' to -37.5' & from -39.5' to -41.5'. Vertical fracture with intersecting horizontal fractures from -34.5' to -35.4'. Possible 2.0' clay seam from -37.5' to -39.5'. Vertical fracture with intersecting horizontal fractures from -39.8' to -40.4'. Horizontal fractures @ -40.3' & -43.5'. 1/2" clay parting @ -43.7'.		-35 to -40	RUN 1		

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (SB–Bulge, S–Shear, P–Penetrometer) ST–Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR–No Recovery

SOIL BORING LOG (Page 2 of 2)

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PAGE 2 of 2
DATE 12/3/2009
LOGGED BY DR
JOB NUMBER P-91-186-08
GSI JOB No. 08015

ROUTE I-294 & I-57
DESCRIPTION I-57 & I-294 Interchange Improvements (PTB 146, Item 1)
SECTION –
LOCATION Ramp C Bridge
COUNTY Cook
DRILLING METHOD Hollow Stem Auger/Rotary
HAMMER TYPE CME Automatic

STRUCT. NO. XXX
Station –
BORING NO. **SB-10**
Station: 3255+59
Offset: 2.0' Right
Ground Surface Elev. 605.0

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter 598.0 ▼
Upon Completion n/a
After ___ Hrs.

Description	Elev.	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Recovery=80.0% R.Q.D.=65.5%	560.5	-45	RUN 1		
End Of Boring @ -44.5' Hollow Stem Augers to -10.0' Rotary Drilling To Completion 10.0' of 4.0"ø Casing Used 36.0' of 3.0"ø Casing Used CME Automatic Hammer		-50, -55, -60			
		-65, -70, -75, -80			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (SB–Bulge, S–Shear, P–Penetrometer) ST–Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR–No Recovery

ROCK CORE LOG (Page 1 of 1)

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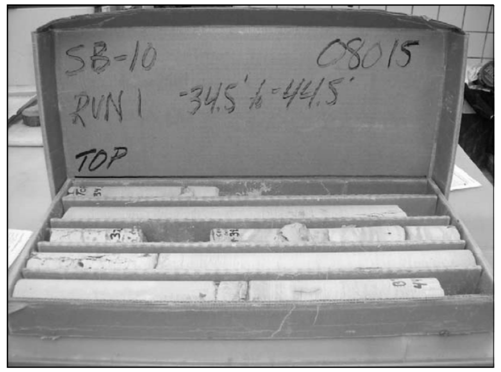
PAGE 1 of 1
DATE 12/3/2009
LOGGED BY DR
JOB NUMBER P-91-186-08
GSI JOB No. 08015

ROUTE I-294 & I-57
DESCRIPTION I-57 & I-294 Interchange Improvements (PTB 146, Item 1)
SECTION –
LOCATION Ramp C Bridge
COUNTY Cook
CORING METHOD Rotary Wash

STRUCT. NO. XXX
Station –
BORING NO. **SB-10**
Station: 3255+59
Offset: 2.0' Right
Ground Surface Elev. 605.0

CORING BARREL TYPE & SIZE NX Double Swivel–10 ft
Core Diameter 2.0 in
Top of Rock Elev. 571.5
Begin Core Elev. 570.5

Description	Elev.	DEPTH (ft)	CORE RUN (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)
RUN 1 (-34.5' to -44.5') Silurian System Niagaran Series Dolomite Light gray & fine grained with horizontal bedding. Oil staining from -36.8' to -37.5' & from -39.5' to -41.5'. Vertical fracture with intersecting horizontal fractures from -34.5' to -35.4'. Possible 2.0' clay seam from -37.5' to -39.5'. Vertical fracture with intersecting horizontal fractures from -39.8' to -40.4'. Horizontal fractures @ -40.3' & -43.5'. 1/2" clay parting @ -43.7'.	570.5	-34.5 to -44.5	1	80.0	65.5	n/a	1017@ -35.4



Color pictures of the cores Yes Cores will be stored for examination for XX
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)

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SOIL BORING LOG

PAGE 1 of 2
DATE 12/4/2009
LOGGED BY DR
JOB NUMBER P-91-186-08
GSI JOB No. 08015
ROUTE I-294 & I-57
DESCRIPTION I-57 & I-294 Interchange Improvements (PTB 146, Item 1)
SECTION –
LOCATION Ramp C Bridge
COUNTY Cook
DRILLING METHOD Hollow Stem Auger/Rotary
HAMMER TYPE CME Automatic
STRUCT. NO. XXX
Station –
BORING NO. **SB-11**
Station: 3257+09
Offset: 23.5' Right
Ground Surface Elev. 604.5
Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter 599.5 ▼
Upon Completion n/a ▽
After ______ Hrs. ▽

	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
12.0" TOPSOIL–black 603.5		AS	–	23
SILTY CLAY–dark brown & gray–stiff (A–6) 602.5		1		
		2		
SILTY CLAY LOAM–brown & gray–very loose (A–4)		2	1.0P	25
		1		*90*
		1		
▼ 599.0	–5	2	0.5P	32
SAND–brown & gray–loose (A–3)		2		
597.5		3		
SAND–gray–medium dense (A–3)		4	NP	20
		3		
		5		
	–10	9	NP	20
593.0		11		*134*
SILTY CLAY LOAM–gray–medium dense (A–4)		12		
591.5		12	0.8B	10
SAND–gray–dense (A–3)		9		
		14		
	–15	16	NP	24
588.5				
CLAY LOAM–gray–very stiff (A–6)		8		
		17		
586.0		25	3.5P	16
SANDY LOAM with Fractured Rock–gray–very dense (A–2)		50/5"		
	–20		NP	10

	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
SANDY LOAM with Fractured Rock–gray–very dense (A–2)		34		*129*
		50/4"	0.6S@ 11.8%	11
		50/5"		*135*
	–25		1.2S@ 7.1%	9
		50/3"		
			NP	11
		50/5"		
	–30		2.5P	10
571.0				
Drillers Observation: Apparent Bedrock 570.0				
RUN 1 (–34.5' to –44.5') Silurian System Niagaran Series Dolomite Light gray & fine grained with horizontal bedding. Oil staining from –38.2' to –38.6'. Transverse fracture @ –34.9'. Highly fractured from –35.4' to –35.8'. Horizontal fractures @ –36.3'. 1/2" clay parting @ –36.5'. Transverse fracture @ –37.4'. Horizontal fractures @ –38.0', –38.6', –39.0', –39.6' & –39.7'. Transverse fracture @ –41.5'. Horizontal fractures @ –42.2', –43.3' & –44.1'.	–35 –40	RUN 1		

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (SB–Bulge, S–Shear, P–Penetrometer) ST–Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR–No Recovery

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SOIL BORING LOG

PAGE 2 of 2
DATE 12/4/2009
LOGGED BY DR
JOB NUMBER P-91-186-08
GSI JOB No. 08015
ROUTE I-294 & I-57
DESCRIPTION I-57 & I-294 Interchange Improvements (PTB 146, Item 1)
SECTION –
LOCATION Ramp C Bridge
COUNTY Cook
DRILLING METHOD Hollow Stem Auger/Rotary
HAMMER TYPE CME Automatic
STRUCT. NO. XXX
Station –
BORING NO. **SB-11**
Station: 3257+09
Offset: 23.5' Right
Ground Surface Elev. 604.5
Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter 599.5 ▼
Upon Completion n/a ▽
After ______ Hrs. ▽

	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Recovery=96.5% R.Q.D.=78.5% 50.0% Water Loss @ –40.0'. 560.0		RUN 1		
End Of Boring @ –44.5' Hollow Stem Augers to –10.0' Rotary Drilling To Completion 10.0' of 4.0"ø Casing Used 36.0' of 3.0"ø Casing Used CME Automatic Hammer	–45 –50 –55 –60			

	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
	–65 –70 –75 –80			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (SB–Bulge, S–Shear, P–Penetrometer) ST–Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR–No Recovery

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ROCK CORE LOG

PAGE 1 of 1
DATE 12/4/2009
LOGGED BY DR
JOB NUMBER P-91-186-08
GSI JOB No. 08015
ROUTE I-294 & I-57
DESCRIPTION I-57 & I-294 Interchange Improvements (PTB 146, Item 1)
SECTION –
LOCATION Ramp C Bridge
COUNTY Cook
CORING METHOD Rotary Wash
STRUCT. NO. XXX
Station –
CORING BARREL TYPE & SIZE NX Double Swivel–10 ft
Core Diameter 2.0 in
Top of Rock Elev. 571.0
Begin Core Elev. 570.0
BORING NO. **SB-11**
Station: 3257+09
Offset: 23.5' Right
Ground Surface Elev. 604.5

	DEPTH (ft)	CORE RUN (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)
RUN 1 (–34.5' to –44.5') 570.0 Silurian System Niagaran Series Dolomite Light gray & fine grained with horizontal bedding. Oil staining from –38.2' to –38.6'. Transverse fracture @ –34.9'. Highly fractured from –35.4' to –35.8'. Horizontal fractures @ –36.3'. 1/2" clay parting @ –36.5'. Transverse fracture @ –37.4'. Horizontal fractures @ –38.0', –38.6', –39.0', –39.6' & –39.7'. Transverse fracture @ –41.5'. Horizontal fractures @ –42.2', –43.3' & –44.1'. 50.0% Water Loss @ –40.0'.	–39.5 –44.5	1	96.5	78.5	n/a	1488@ –35.8'

Color pictures of the cores Yes Cores will be stored for examination for XX
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D–2938)

DRAWN BY JM
CHECKED BY SP
DATE 4-3-2020
SCALE NONE

TYLININTERNATIONAL

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495
I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
BORING LOGS - 9

SHEET SC - 219 OF 234
494 OF 606

P:\602540(57-294_5-9)\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\0162101_5_boring_logs09.dgn
3/30/2020

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SOIL BORING LOG

PAGE 1 of 2
DATE 12/7/2009
LOGGED BY DR
JOB NUMBER P-91-186-08
GSI JOB No. 08015
ROUTE I-294 & I-57
DESCRIPTION I-57 & I-294 Interchange Improvements (PTB 146, Item 1)
SECTION –
LOCATION Ramp C Bridge
COUNTY Cook
DRILLING METHOD Hollow Stem Auger/Rotary HAMMER TYPE CME Automatic
STRUCT. NO. XXX
Station –
BORING NO. **SB-12**
Station: 3257+09
Offset: 28.0' Left
Ground Surface Elev. 604.5
Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter 598.0
Upon Completion n/a
After ____ Hrs. ____

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
603.5 12.0" TOPSOIL–black	AS	–	23
	1		*94*
	1		
	2	0.9B	30
SILTY CLAY LOAM–brown & gray–very loose (A–4)			
	1		*96*
–5	1		
	2	0.4B	28
▼598.0	2		
	2		
	3	NP	18
SAND–brown & gray–loose to medium dense (A–3)			
	4		
	7		
–10	11	NP	15
594.0			
	12		
	17		
SAND–gray–dense (A–3)	22	NP	21
	13		
590.0	18		
–15	22	4.5P	12
CLAY LOAM–gray–hard (A–6)			
588.5	43		
FRACTURED ROCK–gray–very dense (A–1)	50/4"	NP	9
586.5			
LOAM with Fractured Rock–gray–very dense (A–2)	28		
	40		
–20	32	NP	9

LOAM with Fractured Rock–gray–very dense (A–2)

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
	27		
	32		
	32	NP	10
	18		
	40		
–25	50/3"	NP	10
	50/5"		
		NP	12
	50/5"		
–30		NP	11
572.5			
Drillers Observation: Apparent Bedrock. 571.5			
RUN 1 (–33.0' to –43.0') Silurian System Niagaran Series Dolomite			
Light gray & fine grained with horizontal bedding. Oil staining from –40.2' to –40.5'. Horizontal fracture with thin clay parting @ –40.5'.			
–35			
RUN 1			
Recovery=98.0% R.Q.D.=96.7%			
–40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (SB–Bulge, S–Shear, P–Penetrometer) ST–Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR–No Recovery

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SOIL BORING LOG

PAGE 2 of 2
DATE 12/7/2009
LOGGED BY DR
JOB NUMBER P-91-186-08
GSI JOB No. 08015
ROUTE I-294 & I-57
DESCRIPTION I-57 & I-294 Interchange Improvements (PTB 146, Item 1)
SECTION –
LOCATION Ramp C Bridge
COUNTY Cook
DRILLING METHOD Hollow Stem Auger/Rotary HAMMER TYPE CME Automatic
STRUCT. NO. XXX
Station –
BORING NO. **SB-12**
Station: 3257+09
Offset: 28.0' Left
Ground Surface Elev. 604.5
Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter 598.0
Upon Completion n/a
After ____ Hrs. ____

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Run 1 continued.			
	RUN 1		
561.5			
End Of Boring @ –43.0' Hollow Stem Augers to –10.0' Rotary Drilling To Completion 10.0' of 4.0"ø Casing Used 35.0' of 3.0"ø Casing Used CME Automatic Hammer			
–45			
–50			
–55			
–60			

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
–65			
–70			
–75			
–80			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (SB–Bulge, S–Shear, P–Penetrometer) ST–Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR–No Recovery

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ROCK CORE LOG

PAGE 1 of 1
DATE 12/7/2009
LOGGED BY DR
JOB NUMBER P-91-186-08
GSI JOB No. 08015
ROUTE I-294 & I-57
DESCRIPTION I-57 & I-294 Interchange Improvements (PTB 146, Item 1)
SECTION –
LOCATION Ramp C Bridge
COUNTY Cook
CORING METHOD Rotary Wash
STRUCT. NO. XXX
Station –
CORING BARREL TYPE & SIZE NX Double Swivel–10 ft
Core Diameter 2.0 in
Top of Rock Elev. 572.5
Begin Core Elev. 571.5
BORING NO. **SB-12**
Station: 3257+09
Offset: 28.0' Left
Ground Surface Elev. 604.5

DEPTH (ft)	CORE RUN (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)
571.5					
RUN 1 (–33.0' to –43.0') Silurian System Niagaran Series Dolomite	1	98.0	96.7	n/a	1229@ –33.3
Light gray & fine grained with horizontal bedding. Oil staining from –40.2' to –40.5'. Horizontal fracture with thin clay parting @ –40.5'.					
–38					
–43					

Color pictures of the cores Yes Cores will be stored for examination for XX
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D–2938)

P:\68254057-294_5-91\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\01621B1.5_boring_logs18.dgn
3/30/2020

DRAWN BY . . . JM . . .	DATE . 4-3-2020 . . .	TY·LIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515
CHECKED BY . . . SP . . .	SCALE . NONE . . .		

REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495
I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
BORING LOGS - 10

SHEET SC - 220 OF 234
495 OF 606

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Naperville, Illinois 60565
(630) 355-2838

SOIL BORING LOG

PAGE 1 of 2
DATE 12/7-8/2009
LOGGED BY DR
JOB NUMBER P-91-186-08
GSI JOB No. 08015
ROUTE I-294 & I-57
DESCRIPTION I-57 & I-294 Interchange Improvements (PTB 146, Item 1)
SECTION –
LOCATION Ramp C Bridge
COUNTY Cook
DRILLING METHOD Hollow Stem Auger/Rotary HAMMER TYPE CME Automatic
STRUCT. NO. XXX
Station –
BORING NO. SB-13
Station: 3259+09
Offset: 23.5' Right
Ground Surface Elev. 604.2

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter 599.2
Upon Completion n/a
After ____ Hrs. ____

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
				12.0" TOPSOIL–black
603.2	AS	–	33	
	1			SILTY CLAY–brown & gray–medium stiff (A–6) Wet
	1			
	2	0.75P	28	
601.2				SILTY LOAM–brown & gray–loose (A–4)
	2			
	2			
599.2 ▼	2	NP	24	
–5				Coarse SAND–brown–loose (A–3)
597.7	3		*128*	
	11	3.8S@		CLAY LOAM–gray–very stiff to hard (A–6)
	11	8.5%	12	
	12		*130*	
	15	6.3S@		
–10	17	13.9%	11	
	10		*126*	
	19			
	29	2.2B	13	
591.2				SILTY LOAM to SILT–gray–medium dense to dense (A–4)
	13			
	24			
–15	22	NP	14	
	7			
	11			
	12	NP	15	
	4			
	5			
–20	7	NP	13	

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
				SILTY LOAM to SILT–gray–medium dense to dense (A–4)
	5			
	6			
	11	NP	21	
	9			
	11			
–25	15	NP	21	
	13			
	14			
	16	NP	15	
575.2	52		*130*	
	50/3"			
–30		1.9B	11	SILTY CLAY LOAM with Fractured Rock–gray–very dense (A–4)
573.2				
				Drillers Observation: Apparent Bedrock.
572.2				RUN 1 (–32.0' to –42.0') Silurian System Niagaran Series Dolomite
				Light gray & fine grained with horizontal bedding, becoming mottled gray from –36.5' to –37.5'. Horizontal fractures @ –33.2', –33.4' & –33.9'. Vertical fracture from –33.9' to –34.5'. Horizontal fracture with thin clay parting @ –35.2'. Horizontal fractures @ –35.7', –35.9', –36.3' & –33.6'. Vertical fracture with intersecting horizontal fractures from –33.6' to –37.1' & from –37.6' to –38.3'.
–35				RUN 1
				Recovery=92.0%
				R.Q.D.=59.5%
–40				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (SB–Bulge, S–Shear, P–Penetrometer) ST–Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in Italics above moist (%)
NR–No Recovery

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SOIL BORING LOG

PAGE 2 of 2
DATE 12/7-8/2009
LOGGED BY DR
JOB NUMBER P-91-186-08
GSI JOB No. 08015
ROUTE I-294 & I-57
DESCRIPTION I-57 & I-294 Interchange Improvements (PTB 146, Item 1)
SECTION –
LOCATION Ramp C Bridge
COUNTY Cook
DRILLING METHOD Hollow Stem Auger/Rotary HAMMER TYPE CME Automatic
STRUCT. NO. XXX
Station –
BORING NO. SB-13
Station: 3259+09
Offset: 23.5' Right
Ground Surface Elev. 604.2

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter 599.2
Upon Completion n/a
After ____ Hrs. ____

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
				Run 1 continued.
562.2				RUN 1
				End Of Boring @ –42.0' Hollow Stem Augers to –10.0' Rotary Drilling To Completion 10.0' of 4.0"ø Casing Used 34.0' of 3.0"ø Casing Used CME Automatic Hammer
–45				
–50				
–55				
–60				

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
–65			
–70			
–75			
–80			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (SB–Bulge, S–Shear, P–Penetrometer) ST–Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in Italics above moist (%)
NR–No Recovery

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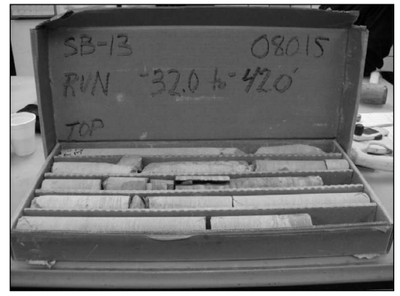
(630) 355-2838

ROCK CORE LOG

PAGE 1 of 1
DATE 12/7-8/2009
LOGGED BY DR
JOB NUMBER P-91-186-08
GSI JOB No. 08015
ROUTE I-294 & I-57
DESCRIPTION I-57 & I-294 Interchange Improvements (PTB 146, Item 1)
SECTION –
LOCATION Ramp C Bridge
COUNTY Cook
CORING METHOD Rotary Wash
STRUCT. NO. XXX
Station –
BORING NO. SB-13
Station: 3259+09
Offset: 23.5' Right
Ground Surface Elev. 604.2
CORING BARREL TYPE & SIZE NX Double Swivel–10 ft
Core Diameter 2.0 in
Top of Rock Elev. 573.2
Begin Core Elev. 572.2

DEPTH (ft)	CORE RUN (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)	Description
572.2	1	92.0	59.5	n/a	1281@ –32.2	RUN 1 (–32.0' to –42.0') Silurian System Niagaran Series Dolomite Light gray & fine grained with horizontal bedding, becoming mottled gray from –36.5' to –37.5'. Horizontal fractures @ –33.2', –33.4' & –33.9'. Vertical fracture from –33.9' to –34.5'. Horizontal fracture with thin clay parting @ –35.2'. Horizontal fractures @ –35.7', –35.9', –36.3' & –33.6'. Vertical fracture with intersecting horizontal fractures from –33.6' to –37.1' & from –37.6' to –38.3'.
–37						
–42						



Color pictures of the cores Yes Cores will be stored for examination for XX
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D–2938)

P:\68254057-294_5-IN\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\B162101.5.boring.log11.dgn
3/30/2020

DRAWN BY JM	DATE 4-3-2020	T-Y LIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515
CHECKED BY SP	SCALE NONE		

REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495
I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
BORING LOGS - 11

SHEET SC - 221 OF 234
496 OF 606

Geo Services, Inc.
Geotechnical, Environmental & Civil Engineering
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Naperville, Illinois 60565
(630) 355-2838

SOIL BORING LOG

PAGE 1 of 2
DATE 12/8-9/2009
LOGGED BY DR
JOB NUMBER P-91-186-08
GSI JOB No. 08015
ROUTE I-294 & I-57
DESCRIPTION I-57 & I-294 Interchange Improvements (PTB 146, Item 1)
SECTION –
LOCATION Ramp C Bridge
COUNTY Cook
DRILLING METHOD Hollow Stem Auger/Rotary HAMMER TYPE CME Automatic
STRUCT. NO. XXX
Station –
BORING NO. SB-14
Station: 3259+09
Offset: 33.5' Left
Ground Surface Elev. 604.0
Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter 600.0
Upon Completion n/a
After ____ Hrs. ____

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
602.9	AS	–	52	13.0" TOPSOIL–black
	1		*94*	
	1			SILTY CLAY–dark brown & gray–soft (A–6) Wet
601.0	2	0.4B	29	
	1			SILTY LOAM–brown & gray–very loose (A–4)
–5	2	NP	27	
597.5	2			
	4			SAND–brown & gray–loose (A–3)
	5	NP	21	
595.5	4		*130*	
	5			
–10	9	NP	21	SILTY LOAM to SILT–gray–medium dense to dense (A–4)
	13		*126*	
	13			
	15	NP	20	
	11			
	15			
–15	19	NP	12	
	7			
	19			
	11	NP	13	
	7			
	9			
–20	13	NP	23	

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
	16			SILTY LOAM to SILT–gray–medium dense to dense (A–4)
	25			
581.0	22	NP	14	
	21			
	34			
–25	40	NP	10	SILTY LOAM with Fractured Rock–gray–dense to very dense (A–2)
	41			
	50/5"			
576.0		NP	9	
	50/5"			
		NP	10	SANDY LOAM with Fractured Rock–gray–very dense (A–2)
572.0				
				Drillers Observation: Apparent Bedrock.
571.0				
				RUN 1 (–33.0' to –43.0') Silurian System Niagaran Series Dolomite.
–35				Light gray to gray & fine grained with horizontal bedding. Horizontal fractures @ –33.1', –33.3', –33.9', –34.1', –34.2', –34.5', –35.2', –37.5' & –39.2'.
				RUN 1
				Recovery=98.0% R.Q.D.=87.0% 100.0% Water Loss @ –34.0'.
–40				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (SB–Bulge, S–Shear, P–Penetrometer) ST–Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR–No Recovery

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SOIL BORING LOG

PAGE 2 of 2
DATE 12/8-9/2009
LOGGED BY DR
JOB NUMBER P-91-186-08
GSI JOB No. 08015
ROUTE I-294 & I-57
DESCRIPTION I-57 & I-294 Interchange Improvements (PTB 146, Item 1)
SECTION –
LOCATION Ramp C Bridge
COUNTY Cook
DRILLING METHOD Hollow Stem Auger/Rotary HAMMER TYPE CME Automatic
STRUCT. NO. XXX
Station –
BORING NO. SB-14
Station: 3259+09
Offset: 33.5' Left
Ground Surface Elev. 604.0
Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter 600.0
Upon Completion n/a
After ____ Hrs. ____

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
				Run 1 continued.
561.0				RUN 1
				End Of Boring @ –43.0' Hollow Stem Augers to –10.0' Rotary Drilling To Completion 10.0' of 4.0"ø Casing Used 35.0' of 3.0"ø Casing Used CME Automatic Hammer
–45				
–50				
–55				
–60				

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
–65			
–70			
–75			
–80			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (SB–Bulge, S–Shear, P–Penetrometer) ST–Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR–No Recovery

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ROCK CORE LOG

PAGE 1 of 1
DATE 12/8-9/2009
LOGGED BY DR
JOB NUMBER P-91-186-08
GSI JOB No. 08015
ROUTE I-294 & I-57
DESCRIPTION I-57 & I-294 Interchange Improvements (PTB 146, Item 1)
SECTION –
LOCATION Ramp C Bridge
COUNTY Cook
CORING METHOD Rotary Wash
STRUCT. NO. XXX
Station –
CORING BARREL TYPE & SIZE NX Double Swivel–10 ft
Core Diameter 2.0 in
Top of Rock Elev. 572.0
BORING NO. SB-14
Station: 3259+09
Offset: 33.5' Left
Begin Core Elev. 571.0
Ground Surface Elev. 604.0

DEPTH (ft)	CORE RUN (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)	
571.0	1	98.0	87.0	n/a	1166@ –33.3	RUN 1 (–33.0' to –43.0') Silurian System Niagaran Series Dolomite
						Light gray to gray & fine grained with horizontal bedding. Horizontal fractures @ –33.1', –33.3', –33.9', –34.1', –34.2', –34.5', –35.2', –37.5' & –39.2'.
						100.0% Water Loss @ –34.0'.
–38						
–43						

Color pictures of the cores Yes Cores will be stored for examination for XX
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D–2938)

P:\60254057-294,5-91\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\0162101.5.boring_logs12.dgn
3/30/2020

DRAWN BY JM	DATE 4-3-2020	TY·LIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515
CHECKED BY SP	SCALE NONE		

REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495
I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
BORING LOGS - 12

SHEET SC - 222 OF 234
497 OF 606

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SOIL BORING LOG

PAGE 1 of 2
DATE 12/9-10/2009
LOGGED BY DR
JOB NUMBER P-91-186-08
GSI JOB No. 08015
ROUTE I-294 & I-57
DESCRIPTION I-57 & I-294 Interchange Improvements (PTB 146, Item 1)
SECTION –
LOCATION Ramp F2 Bridge
COUNTY Cook
DRILLING METHOD Hollow Stem Auger/Rotary
HAMMER TYPE CME Automatic
STRUCT. NO. XXX
Station –
BORING NO. **SB-15**
Station: 5002+00
Offset: 11.5' Right
Ground Surface Elev. *604.5*
Surface Water Elev. *n/a*
Stream Bed Elev. *n/a*
Groundwater Elevation:
First Encounter *599.0* ▼
Upon Completion *n/a* ▽
After ____ Hrs. ____ ▽

		DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
14.0" TOPSOIL–black	*603.3*		AS	–	50
SILTY CLAY–brown & gray– medium stiff to stiff (A-6) Wet			1 2 2	0.75P	25
Silt seams from -3.5' to -5.0'.		-5	2 3 4	1.25P	25
	▼*599.0*				
SAND & GRAVEL–brown– medium dense (A-1)			3 10 10	NP	10
	595.5				
Fine SAND–gray–medium dense (A-2)		-10	6 11 18	NP	21
	594.0				
SANDY LOAM–gray– medium dense to dense (A-2)			10 11 13	NP	21
		-15	10 14 19	NP	23
	589.0				
SILTY LOAM to LOAM–gray– medium dense to dense (A-4)			18 19 22	NP	13
	584.5	-20	10 10 14	NP	12

		DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
SILT–gray– medium dense to dense (A-4)			10 12 17	NP	20
		-25	12 15 19	NP	17
	578.0		13		
SILT–gray–dense (A-4)			18 22	NP	14
	576.5				
SANDY LOAM with Fractured Rock– gray–very dense (A-2)		-30	40 50/2"	NP	11
	573.0				
Drillers Observation: Apparent Bedrock	*572.0*				
RUN 1 (-32.5' to -42.5') Silurian System Niagaran Series Dolomite Light gray to gray & fine grained with horizontal bedding. Varved from -36.9' to -37.6'. Horizontal fractures @ -32.9' & -33.4'. 1/4" clay parting @ -35.1'. Horizontal fractures @ -37.2', -37.3', -38.2' & -38.3'. 1/4" clay parting @ -38.4'. Horizontal fractures @ -39.9' & -41.2'. Recovery=98.0% R.Q.D.=94.5%		-35 -40	RUN 1		

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (SB–Bulge, S–Shear, P–Penetrometer) ST–Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR–No Recovery

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SOIL BORING LOG

PAGE 2 of 2
DATE 12/9-10/2009
LOGGED BY DR
JOB NUMBER P-91-186-08
GSI JOB No. 08015
ROUTE I-294 & I-57
DESCRIPTION I-57 & I-294 Interchange Improvements (PTB 146, Item 1)
SECTION –
LOCATION
COUNTY Cook
DRILLING METHOD Hollow Stem Auger/Rotary
HAMMER TYPE CME Automatic
STRUCT. NO. XXX
Station –
BORING NO. **SB-15**
Station: 5002+00
Offset: 11.5' Right
Ground Surface Elev. *604.5*
Surface Water Elev. *n/a*
Stream Bed Elev. *n/a*
Groundwater Elevation:
First Encounter *599.0* ▼
Upon Completion *n/a* ▽
After ____ Hrs. ____ ▽

		DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Run 1 continued.	*562.0*		RUN 1		
End Of Boring @ -42.5' Hollow Stem Augers to -10.0' Rotary Drilling To Completion 10.0' of 4.0"ø Casing Used 33.0' of 3.0"ø Casing Used CME Automatic Hammer		-45 -50 -55 -60			

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
-65 -70 -75 -80			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (SB–Bulge, S–Shear, P–Penetrometer) ST–Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR–No Recovery

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ROCK CORE LOG

PAGE 1 of 1
DATE 12/9-10/2009
LOGGED BY DR
JOB NUMBER P-91-186-08
GSI JOB No. 08015
ROUTE I-294 & I-57
DESCRIPTION I-57 & I-294 Interchange Improvements (PTB 146, Item 1)
SECTION –
LOCATION
COUNTY Cook
CORING METHOD Rotary Wash
STRUCT. NO. XXX
Station –
CORING BARREL TYPE & SIZE NX Double Swivel-10 ft
Core Diameter 2.0 in
Top of Rock Elev. *573.0*
Begin Core Elev. *572.0*
BORING NO. **SB-15**
Station: 5002+00
Offset: 11.5' Right
Ground Surface Elev. *604.5*

		DEPTH (ft)	CORE RUN (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)
RUN 1 (-32.5' to -42.5') Silurian System Niagaran Series Dolomite Light gray to gray & fine grained with horizontal bedding. Varved from -36.9' to -37.6'. Horizontal fractures @ -32.9' & -33.4'. 1/4" clay parting @ -35.1'. Horizontal fractures @ -37.2', -37.3', -38.2' & -38.3'. 1/4" clay parting @ -38.4'. Horizontal fractures @ -39.9' & -41.2'.	*572.0*	-37.5 -42.5	1	98.0	94.5	n/a	1365@ -32.5

Color pictures of the cores Yes Cores will be stored for examination for XX
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)

P:\602540(57-294_5-9)\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\0162101_5_boring_logs13.dgn
3/30/2020

DRAWN BY JM	DATE 4-3-2020	TYLIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	CONTRACT I-19-4495	SHEET SC - 223 OF 234
CHECKED BY SP	SCALE NONE			I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 116) BORING LOGS - 13	498 OF 606

REVISIONS		
NO.	DATE	DESCRIPTION

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SOIL BORING LOG

PAGE 1 of 2
DATE 12/11/2009
LOGGED BY DR
JOB NUMBER P-91-186-08
GSI JOB No. 08015

ROUTE I-294 & I-57
DESCRIPTION I-57 & I-294 Interchange Improvements (PTB 146, Item 1)
SECTION –
LOCATION Ramp C Bridge
COUNTY Cook
DRILLING METHOD Hollow Stem Auger/Rotary HAMMER TYPE CME Automatic

STRUCT. NO. XXX
Station –
BORING NO. **SB-16**
Station: 3261+20
Offset: 37.0' Left
Ground Surface Elev. 604.7

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter 599.7
Upon Completion n/a
After ____ Hrs. ____

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
603.6				
	AS	–	38	13.0" TOPSOIL–black
	1			
	1			
	2	0.5P	28	SILTY CLAY–brown & gray–medium stiff to stiff (A–6) Wet
	1			
	2			
–5	3	1.0P	25	
598.7				
	4			SAND & GRAVEL–brown–medium dense (A–1)
	12			
	17	NP	8	
596.2				
	10			SANDY LOAM to LOAM–gray–dense (A–2)
	14			
–10	16	NP	22	
	10			
	14			
	16	NP	22	
591.7				
	13			SILTY LOAM–gray–dense (A–4)
	23			
–15	29	NP	9	
	18			
	18			
	19	NP	10	
	13			
	17			
–20	17	NP	14	
				SILTY LOAM–gray–ense (A–4)
581.7				
				SILTY CLAY LOAM–gray–stiff (A–4/A–6)
578.7				
				SANDY LOAM with Fractured Rock–gray–dense to very dense (A–2)
573.2				
				Drillers Observation: Apparent Bedrock
572.2				
				RUN 1 (–32.5' to –42.5') Silurian System Niagaran Series Dolomite Light gray to gray & fine grained with horizontal bedding. Varved from –37.5' to –38.3'. Some oil staining from –35.3' to –36.0', –37.7' to –38.0' & –39.1' to –39.4'. Tight vertical fracture from –35.3' to –36.0'. Horizontal fractures @ –35.5'. 3/4" clay parting @ –36.1'. Horizontal fractures @ –36.2', –37.5' & –38.3'. Vertical fracture w/ intersecting horizontal fractures from –38.8' to –39.4'. Horizontal fractures @ –40.9', –41.8' & –42.0'. Recovery=100.0% R.Q.D.=89.5% 100.0% Water loss @ –42.5'
	12			
	15	NP	14	
	10		110	
	11	1.4S@		
–25	14	14.1%	20	
	29			
	19			
	16	NP	9	
	21			
	42			
–30	43	NP	10	
				RUN 1
–35				
–40				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (SB–Bulge, S–Shear, P–Penetrometer) ST–Shelby Tube Sample VS–Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in Italics above moist (%)
NR–No Recovery

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SOIL BORING LOG

PAGE 2 of 2
DATE 12/11/2009
LOGGED BY DR
JOB NUMBER P-91-186-08
GSI JOB No. 08015

ROUTE I-294 & I-57
DESCRIPTION I-57 & I-294 Interchange Improvements (PTB 146, Item 1)
SECTION –
LOCATION Ramp C Bridge
COUNTY Cook
DRILLING METHOD Hollow Stem Auger/Rotary HAMMER TYPE CME Automatic

STRUCT. NO. XXX
Station –
BORING NO. **SB-16**
Station: 3261+20
Offset: 37.0' Left
Ground Surface Elev. 604.7

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter 599.7
Upon Completion n/a
After ____ Hrs. ____

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
				Run 1 continued.
562.2				RUN 1
				End Of Boring @ –42.5' Hollow Stem Augers to –10.0' Rotary Drilling To Completion 10.0' of 4.0"ø Casing Used 34.0' of 3.0"ø Casing Used CME Automatic Hammer
–45				
–50				
–55				
–60				
–65				
–70				
–75				
–80				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (SB–Bulge, S–Shear, P–Penetrometer) ST–Shelby Tube Sample VS–Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in Italics above moist (%)
NR–No Recovery

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ROCK CORE LOG

PAGE 1 of 1
DATE 12/11/2009
LOGGED BY DR
JOB NUMBER P-91-186-08
GSI JOB No. 08015

ROUTE I-294 & I-57
DESCRIPTION I-57 & I-294 Interchange Improvements (PTB 146, Item 1)
SECTION –
LOCATION Ramp C Bridge
COUNTY Cook
CORING METHOD Rotary Wash

STRUCT. NO. XXX
Station –
BORING NO. **SB-16**
Station: 3261+20
Offset: 37.0' Left
Ground Surface Elev. 604.7

CORING BARREL TYPE & SIZE NX Double Swivel–10 ft
Core Diameter 2.0 in
Top of Rock Elev. 573.2
Begin Core Elev. 572.2

DEPTH (ft)	CORE RUN (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)	Description
572.2						RUN 1 (–32.5' to –42.5') Silurian System Niagaran Series Dolomite Light gray to gray & fine grained with horizontal bedding. Varved from –37.5' to –38.3'. Some oil staining from –35.3' to –36.0', –37.7' to –38.0' & –39.1' to –39.4'. Tight vertical fracture from –35.3' to –36.0'. Horizontal fractures @ –35.5'. 3/4" clay parting @ –36.1'. Horizontal fractures @ –36.2', –37.5' & –38.3'. Vertical fracture w/ intersecting horizontal fractures from –38.8' to –39.4'. Horizontal fractures @ –40.9', –41.8' & –42.0'. 100.0% Water loss @ –42.5'.
	1	100.0	89.5	n/a	1254@ –32.9	
–37.5						
–42.5						

Color pictures of the cores Yes Cores will be stored for examination for XX
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D–2938)

P:\68Z540\57-294_5-9\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\B162101.5_boring_logs14.dgn
3/30/2020

DRAWN BY JM	DATE 4-3-2020	T·Y·LIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515
CHECKED BY SP	SCALE NONE		

REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495
I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
BORING LOGS - 14

SHEET SC - 224 OF 234
499 OF 606

SOIL BORING LOG

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PAGE 1 of 2
DATE 12/16/2009
LOGGED BY DR
JOB NUMBER P-91-186-08
GSI JOB No. 08015
ROUTE I-294 & I-57
DESCRIPTION I-57 & I-294 Interchange Improvements (PTB 146, Item 1)
SECTION –
LOCATION Ramp F2 Bridge
COUNTY Cook
DRILLING METHOD Hollow Stem Auger/Rotary
HAMMER TYPE CME Automatic
STRUCT. NO. XXX
Station –
BORING NO. **SB-17**
Station: 5004+14
Offset: 12.0' Right
Ground Surface Elev. 605.0
Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter 600.0 ▼
Upon Completion n/a
After ___ Hrs.

Description	Elev.	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
18.0" TOPSOIL-black			AS	–	22
	603.5		3		
SILTY LOAM-dark brown & gray-loose (A-4) Fill			3		
			3	NP	15
	601.5				
SANDY LOAM-dark brown & gray-loose (A-2) Fill			2		
			2		
	600.0	-5	2	1.0P	20
SILT-brown & gray-medium dense (A-4) ▼			2		
	598.0		3		
SAND-brown & gray-medium dense (A-3)			7	1.0P	23
	596.5				
SILT-gray-medium dense (A-4)			5		
			8		
		-10	11	NP	21
			4		
			5		
			5	NP	19
			8		
			12		
		-15	12	NP	20
			4		
			7		
			8	2.5P	20
			6		*114*
			10		
		-20	12	4.3B	18

Description	Elev.	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
SILT-gray-medium dense (A-4)			7		
			10		
			14	4.0P	18
	582.0				
SILTY LOAM with Fractured Rock-gray-medium dense to very dense (A-2)			8		
			13		
		-25	14	NP	10
			50/5"		
				NP	13
			53		*134*
			50/4"		
		-30		2.2B	10
	573.0				
Drillers Observation: Apparent Bedrock	572.0				
RUN 1 (-33.0' to -43.0') Silurian System Niagaran Series Dolomite Light gray to gray & fine grained with horizontal bedding. Horizontal fractures @ -34.6', -34.7' & -39.0'. 1/2" clay parting @ -40.4'. Recovery=86.5% R.Q.D.=57.5%		-35	RUN 1		
		-40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (SB-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

SOIL BORING LOG

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PAGE 2 of 2
DATE 12/16/2009
LOGGED BY DR
JOB NUMBER P-91-186-08
GSI JOB No. 08015
ROUTE I-294 & I-57
DESCRIPTION I-57 & I-294 Interchange Improvements (PTB 146, Item 1)
SECTION –
LOCATION Ramp F2 Bridge
COUNTY Cook
DRILLING METHOD Hollow Stem Auger/Rotary
HAMMER TYPE CME Automatic
STRUCT. NO. XXX
Station –
BORING NO. **SB-17**
Station: 5004+14
Offset: 12.0' Right
Ground Surface Elev. 605.0
Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter 600.0 ▼
Upon Completion n/a
After ___ Hrs.

Description	Elev.	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
RUN 1 continued.			RUN 1		
	562.0				
End Of Boring @ -43.0' Hollow Stem Augers to -10.0' Rotary Drilling To Completion 12.0' of 4.0"ø Casing Used 35.0' of 3.0"ø Casing Used CME Automatic Hammer		-45			
		-50			
		-55			
		-60			

Description	Elev.	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
		-65			
		-70			
		-75			
		-80			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (SB-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

ROCK CORE LOG

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PAGE 1 of 1
DATE 12/16/2009
LOGGED BY DR
JOB NUMBER P-91-186-08
GSI JOB No. 08015
ROUTE I-294 & I-57
DESCRIPTION I-57 & I-294 Interchange Improvements (PTB 146, Item 1)
SECTION –
LOCATION Ramp F2 Bridge
COUNTY Cook
CORING METHOD Rotary Wash
STRUCT. NO. XXX
Station –
CORING BARREL TYPE & SIZE NX Double Swivel-10 ft
Core Diameter 2.0 in
Top of Rock Elev. 573.0
Begin Core Elev. 572.0
BORING NO. **SB-17**
Station: 5004+14
Offset: 12.0' Right
Ground Surface Elev. 605.0

Description	Elev.	DEPTH (ft)	CORE RUN (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)
RUN 1 (-33.0' to -43.0') Silurian System Niagaran Series Dolomite Light gray to gray & fine grained with horizontal bedding. Horizontal fractures @ -34.6', -34.7' & -39.0'. 1/2" clay parting @ -40.4'.	572.0		1	86.5	57.5	n/a	1273@ -33.0'
		-38					
		-43					

Color pictures of the cores Yes
Cores will be stored for examination for XX
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)

P:\6025408\57-294_5-9\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\016-2101_5_boring_logs15.dgn
3/30/2020

DRAWN BY JM	DATE 4-3-2020	TYLIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	CONTRACT I-19-4495
CHECKED BY SP	SCALE NONE			I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 116) BORING LOGS - 15

REVISIONS

NO.	DATE	DESCRIPTION

SHEET SC - 225 OF 234

500 OF 606

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SOIL BORING LOG

PAGE 1 of 2
DATE 12/15/2009
LOGGED BY DR
JOB NUMBER P-91-186-08
GSI JOB No. 08015
ROUTE I-294 & I-57
DESCRIPTION I-57 & I-294 Interchange Improvements (PTB 146, Item 1)
SECTION –
LOCATION Ramp C Bridge
COUNTY Cook
DRILLING METHOD Hollow Stem Auger/Rotary HAMMER TYPE CME Automatic
STRUCT. NO. XXX
Station –
BORING NO. SB-18
Station: 3263+30
Offset: 37.5' Left
Ground Surface Elev. 605.0

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter 599.0
Upon Completion n/a
After ____ Hrs. ____

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
605.0				12.0" TOPSOIL & VEGETATION–black
	AS	–	65	
	2			
	2			TOPSOIL–black
	3	11	25	
600.5				
	1			
	3			CLAY LOAM–brown & gray–stiff (A–6)
–5	3	1.5P	25	
599.5				SILTY LOAM–brown & gray–
	2			loose (A–4)
598.5				
	8			
	8	NP	19	Silty SAND & GRAVEL–brown–
				medium dense (A–2)
	3			
	4			
–10	6	NP	12	
594.5				
	14			SAND & GRAVEL–gray–dense (A–1)
	17			
	20	NP	23	
591.5				
	10			
	7			
–15	8	NP	18	
				SILTY LOAM to SILT–gray–
	7			medium dense (A–4)
	7			
	8	NP	23	
	6			
	10			
–20	12	NP	20	

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
	8			SILTY LOAM to SILT–gray–
	9			medium dense (A–4)
	12	NP	20	
	9			
	11			
–25	11	NP	16	
	8			
	12			
	12	NP	16	
577.0				
	54			
	50/3"			
–30		NP	9	
				FRACTURED ROCK–gray–
				very dense (A–1)
	50/5"			
570.0 –35		NP	11	
				Drillers Observation: Apparent Bedrock 569.5
				RUN 1 (–35.5' to –45.5')
				Silurian System Niagaran Series Dolomite
				Light gray to gray & fine grained with horizontal bedding. Vertical fracture with intersecting horizontal fractures from –35.5' to –39.1'. Horizontal fractures @ –40.5', –40.6', –43.3', –44.1' & –44.9'.
				Recovery=95.0%
				R.Q.D.=57.2%
				50.0% Water Loss @ –37.0'
–40				

RUN 1

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (SB–Bulge, S–Shear, P–Penetrometer) ST–Shelby Tube Sample VS–Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR–No Recovery

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SOIL BORING LOG

PAGE 2 of 2
DATE 12/15/2009
LOGGED BY DR
JOB NUMBER P-91-186-08
GSI JOB No. 08015
ROUTE I-294 & I-57
DESCRIPTION I-57 & I-294 Interchange Improvements (PTB 146, Item 1)
SECTION –
LOCATION Ramp C Bridge
COUNTY Cook
DRILLING METHOD Hollow Stem Auger/Rotary HAMMER TYPE CME Automatic
STRUCT. NO. XXX
Station –
BORING NO. SB-18
Station: 3263+30
Offset: 37.5' Left
Ground Surface Elev. 605.0

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter 599.0
Upon Completion n/a
After ____ Hrs. ____

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
				Recovery=95.0%
				R.Q.D.=57.2%
				50.0% Water Loss @ –37.0'
–45				
559.5				
				End Of Boring @ –45.5'
				Hollow Stem Augers to –15.0'
				Rotary Drilling To Completion
				15.0' of 4.0"ø Casing Used
				37.0' of 3.0"ø Casing Used
				CME Automatic Hammer
–50				
–55				
–60				

RUN 1

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
–65			
–70			
–75			
–80			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (SB–Bulge, S–Shear, P–Penetrometer) ST–Shelby Tube Sample VS–Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR–No Recovery

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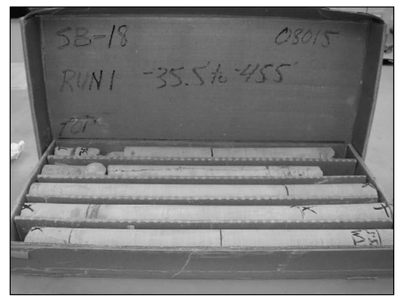
ROCK CORE LOG

PAGE 1 of 1
DATE 12/15/2009
LOGGED BY DR
JOB NUMBER P-91-186-08
GSI JOB No. 08015
ROUTE I-294 & I-57
DESCRIPTION I-57 & I-294 Interchange Improvements (PTB 146, Item 1)
SECTION –
LOCATION Ramp C Bridge
COUNTY Cook
CORING METHOD Rotary Wash
STRUCT. NO. XXX
Station –
CORING BARREL TYPE & SIZE NX Double Swivel–10 ft
Core Diameter 2.0 in
Top of Rock Elev. 570.0
Begin Core Elev. 569.5
BORING NO. SB-18
Station: 3263+30
Offset: 37.5' Left
Ground Surface Elev. 605.0

DEPTH (ft)	CORE RUN (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)	
569.5						RUN 1 (–35.5' to –45.5')
	1	95.0	57.2	n/a	1159@ –39.2	Silurian System Niagaran Series Dolomite
						Light gray to gray & fine grained with horizontal bedding. Vertical fracture with intersecting horizontal fractures from –35.5' to –39.1'. Horizontal fractures @ –40.5', –40.6', –43.3', –44.1' & –44.9'.
						50.0% Water Loss @ –37.0'
–40.5						
–45.5						



Color pictures of the cores Yes Cores will be stored for examination for XX
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D–2938)

P:\68254\057-294.5-91\STRUCTURAL_RESTART_2018\Ramp C over I-57 and I-294\016210I.5_boring_logs16.dgn
3/30/2020

DRAWN BY JM	DATE 4-3-2020	TY·LIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515
CHECKED BY SP	SCALE NONE		

REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495
I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
BORING LOGS - 16

SHEET SC - 226 OF 234
501 OF 606

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SOIL BORING LOG

PAGE 1 of 2
DATE 12/17/2009
LOGGED BY DR
JOB NUMBER P-91-186-08
GSI JOB No. 08015
ROUTE I-294 & I-57
DESCRIPTION I-57 & I-294 Interchange Improvements (PTB 146, Item 1)
SECTION –
LOCATION Ramp F2 Bridge
COUNTY Cook
DRILLING METHOD Hollow Stem Auger/Rotary HAMMER TYPE CME Automatic
STRUCT. NO. XXX
Station –
BORING NO. **SB-19**
Station: 5005+65
Offset: 23.0' Right
Ground Surface Elev. 605.0

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter 599.5
Upon Completion n/a
After ____ Hrs. ____

DEPTH (ft)	BLOWS /6"	UCS Qu (tsf)	MOIST (%)	
604.0				12.0" TOPSOIL & VEGETATION–black
	AS	–	195	
	2			
	2			TOPSOIL–black
602.0	2	NP	21	
				SANDY LOAM–black– loose (A–2) Apparent Fill
	1			
–5	2	NP	16	
▼599.5				
	7			SAND–brown– medium dense to dense (A–3)
	9			
	13	NP	20	
	7			
595.0 –10	12	NP	20	
	19			
	3			SILTY LOAM to SILT–gray– loose to medium dense (A–4)
	3			
	4	NP	9	
–15	5			
	8			
	6	NP	20	
	6			
	6			
	6	NP	21	
	6			
	7			
–20	8	NP	14	

DEPTH (ft)	BLOWS /6"	UCS Qu (tsf)	MOIST (%)	
	7			SILTY LOAM to SILT–gray– loose to medium dense (A–4)
	7			
582.0	8	NP	16	
	30			
	31			
–25	31	4.5P	12	
	27			SILTY LOAM with Fractured Rock– gray–very dense (A–2)
	40			
	32	NP	11	
	28			
	50/5"			
–30		NP	10	
573.0				
				Drillers Observation: Apparent Bedrock
572.0				
				RUN 1 (–33.0' to –43.0') Silurian System Niagaran Series Dolomite
–35				Light gray to gray & fine grained with horizontal bedding. Horizontal fractures @ –33.6' & –33.9'. Vertical fracture from –26.8' to –37.6'. Horizontal fracture @ –38.2. Vertical fracture with numerous horizontal fractures from –38.4' to –40.0'. Horizontal fracture @ –42.5'.
				Recovery=97.5% R.Q.D.=66.3%
				RUN 1
–40				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (SB–Bulge, S–Shear, P–Penetrometer) ST–Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR–No Recovery

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SOIL BORING LOG

PAGE 2 of 2
DATE 12/17/2009
LOGGED BY DR
JOB NUMBER P-91-186-08
GSI JOB No. 08015
ROUTE I-294 & I-57
DESCRIPTION I-57 & I-294 Interchange Improvements (PTB 146, Item 1)
SECTION –
LOCATION Ramp F2 Bridge
COUNTY Cook
DRILLING METHOD Hollow Stem Auger/Rotary HAMMER TYPE CME Automatic
STRUCT. NO. XXX
Station –
BORING NO. **SB-19**
Station: 5005+65
Offset: 23.0' Right
Ground Surface Elev. 605.0

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter 599.5
Upon Completion n/a
After ____ Hrs. ____

DEPTH (ft)	BLOWS /6"	UCS Qu (tsf)	MOIST (%)	
				RUN 1 continued.
562.0				
				RUN 1
				End Of Boring @ –43.0' Hollow Stem Augers to –10.0' Rotary Drilling To Completion 12.0' of 4.0"ø Casing Used 35.0' of 3.0"ø Casing Used CME Automatic Hammer
–45				
–50				
–55				
–60				

DEPTH (ft)	BLOWS /6"	UCS Qu (tsf)	MOIST (%)
–65			
–70			
–75			
–80			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (SB–Bulge, S–Shear, P–Penetrometer) ST–Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR–No Recovery

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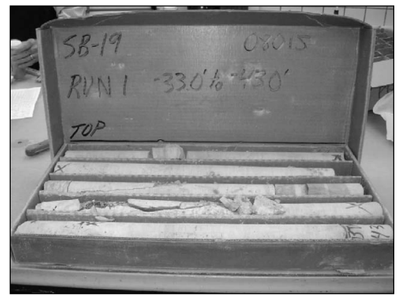
ROCK CORE LOG

PAGE 1 of 1
DATE 12/17/2009
LOGGED BY DR
JOB NUMBER P-91-186-08
GSI JOB No. 08015
ROUTE I-294 & I-57
DESCRIPTION I-57 & I-294 Interchange Improvements (PTB 146, Item 1)
SECTION –
LOCATION Ramp F2 Bridge
COUNTY Cook
CORING METHOD Rotary Wash
STRUCT. NO. XXX
Station –
BORING NO. **SB-19**
Station: 5005+65
Offset: 23.0' Right
Ground Surface Elev. 605.0
CORING BARREL TYPE & SIZE NX Double Swivel–10 ft
Core Diameter 2.0 in
Top of Rock Elev. 573.0
Begin Core Elev. 572.0

DEPTH (ft)	CORE RUN (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)	
572.0						RUN 1 (–33.0' to –43.0') Silurian System Niagaran Series Dolomite
	1	97.5	66.3	n/a	1193@ –33.0'	Light gray to gray & fine grained with horizontal bedding. Horizontal fractures @ –33.6' & –33.9'. Vertical fracture from –26.8' to –37.6'. Horizontal fracture @ –38.2. Vertical fracture with numerous horizontal fractures from –38.4' to –40.0'. Horizontal fracture @ –42.5'.
–38.0						
–43.0						



Color pictures of the cores Yes Cores will be stored for examination for XX
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D–2938)

P:\60254057-294_5-9\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\0162101_5_boring_logs17.dgn
3/30/2020

DRAWN BY JM	DATE 4-3-2020	TY·LIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	REVISIONS NO. / DATE / DESCRIPTION	CONTRACT I-19-4495 I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 116) BORING LOGS - 17	SHEET SC - 227 OF 234 502 OF 606
CHECKED BY SP	SCALE NONE					

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SOIL BORING LOG

PAGE 1 of 2
DATE 12/18-21/2009
LOGGED BY DR
JOB NUMBER P-91-186-08
GSI JOB No. 08015
ROUTE I-294 & I-57
DESCRIPTION I-57 & I-294 Interchange Improvements (PTB 146, Item 1)
SECTION –
LOCATION Ramp C Bridge
COUNTY Cook
DRILLING METHOD Hollow Stem Auger/Rotary HAMMER TYPE CME Automatic
STRUCT. NO. XXX
Station –
BORING NO. **SB-20**
Station: 3264+88
Offset: 37.5' Left
Ground Surface Elev. 605.2
Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter 598.7
Upon Completion n/a
After ____ Hrs. ____

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
604.2	AS	–	88	12.0" TOPSOIL & VEGETATION–black
	2			
	2			
	3	1.75P	17	CLAY LOAM to LOAM–gray–stiff (A–4) Apparent Fill
	2			
600.2	3			
–5	5	1.5P	20	SILTY LOAM with Fractured Rock–gray–dense to very dense (A–2)
	3			
	4			SANDY LOAM–brown–medium dense (A–2)
597.2	7	NP	14	
	7			
	12			
–10	17	NP	23	SAND–brown–medium dense to dense (A–3)
	11			
	15			
592.2	15	NP	22	
	4			SILTY LOAM–gray–dense (A–4)
590.7	5			
–15	25	NP	10	SILTY LOAM with Fractured Rock–gray–dense to very dense (A–2)
	16			
	16			
	19	NP	10	
	17			
	20			
–20	18	NP	10	

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
	48			
	50/5"			
		NP	11	
	27			
	30			
–25	38	NP	9	
	29			
	50/4"			
		NP	9	
	50/3"			
–30		NP	10	
572.7				Drillers Observation: Apparent Bedrock
571.7				RUN 1 (–33.5' to –43.5') Silurian System Niagaran Series Dolomite
–35				Light gray to gray & fine grained with horizontal bedding. Horizontal fractures @ –34.5' & –37.4'. Small vug @ –39.7'. Horizontal fracture –40.7'. Recovery=97.5% R.Q.D.=95.0%
–40				RUN 1

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (SB–Bulge, S–Shear, P–Penetrometer) ST–Shelby Tube Sample VS–Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR–No Recovery

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SOIL BORING LOG

PAGE 2 of 2
DATE 12/18-21/2009
LOGGED BY DR
JOB NUMBER P-91-186-08
GSI JOB No. 08015
ROUTE I-294 & I-57
DESCRIPTION I-57 & I-294 Interchange Improvements (PTB 146, Item 1)
SECTION –
LOCATION Ramp C Bridge
COUNTY Cook
DRILLING METHOD Hollow Stem Auger/Rotary HAMMER TYPE CME Automatic
STRUCT. NO. XXX
Station –
BORING NO. **SB-20**
Station: 3264+88
Offset: 37.5' Left
Ground Surface Elev. 605.2
Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter 598.7
Upon Completion n/a
After ____ Hrs. ____

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
				RUN 1 continued.
561.7				RUN 1
				End Of Boring @ –43.5'
				Hollow Stem Augers to –10.0'
–45				Rotary Drilling To Completion
				19.0' of 4.0"ø Casing Used
				35.0' of 3.0"ø Casing Used
				CME Automatic Hammer
–50				
–55				
–60				

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
–65			
–70			
–75			
–80			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (SB–Bulge, S–Shear, P–Penetrometer) ST–Shelby Tube Sample VS–Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR–No Recovery

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ROCK CORE LOG

PAGE 1 of 1
DATE 12/18-21/2009
LOGGED BY DR
JOB NUMBER P-91-186-08
GSI JOB No. 08015
ROUTE I-294 & I-57
DESCRIPTION I-57 & I-294 Interchange Improvements (PTB 146, Item 1)
SECTION –
LOCATION Ramp C Bridge
COUNTY Cook
CORING METHOD Rotary Wash
STRUCT. NO. XXX
Station –
CORING BARREL TYPE & SIZE NX Double Swivel–10 ft
Core Diameter 2.0 in
Top of Rock Elev. 572.7
Begin Core Elev. 571.7
BORING NO. **SB-20**
Station: 3264+88
Offset: 37.5' Left
Ground Surface Elev. 605.2

DEPTH (ft)	CORE RUN (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)	Description
571.7	1	97.5	95.0	n/a	1321@ –33.8	RUN 1 (–33.5' to –43.5') Silurian System Niagaran Series Dolomite
						Light gray to gray & fine grained with horizontal bedding. Horizontal fractures @ –34.5' & –37.4'. Small vug @ –39.7'. Horizontal fracture –40.7'.
–38.5						
–43.5						

Color pictures of the cores Yes . Cores will be stored for examination for XX
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D–2938)

P:\68254057-294_5-91\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\08201.5_boring_log18.dgn
3/30/2020

DRAWN BY . . . . JM	DATE . 4-3-2020 . . .	TY·LIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515
CHECKED BY . . . SP	SCALE . NONE		

REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495

I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
BORING LOGS - 18

SHEET SC - 228 OF 234

503 OF 606

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(630) 355-2838

SOIL BORING LOG

PAGE 1 of 2
DATE 12/22/2009
LOGGED BY DR
JOB NUMBER P-91-186-08
GSI JOB No. 08015

ROUTE I-294 & I-57
DESCRIPTION I-57 & I-294 Interchange Improvements (PTB 146, Item 1)
SECTION –
LOCATION Ramp C Bridge
COUNTY Cook
DRILLING METHOD Hollow Stem Auger/Rotary HAMMER TYPE CME Automatic

STRUCT. NO. XXX
Station –
BORING NO. **SB-21**
Station: 3266+20
Offset: 15.0' Left
Ground Surface Elev. 605.3

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter 600.3
Upon Completion n/a
After ____ Hrs. ____

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	DESCRIPTION
604.3				12.0" TOPSOIL–black
	AS	–	33	
	1			
	2			SILTY LOAM to LOAM–brown–
	2	NP	17	loose (A–4) Apparent Fill
602.3				
	1			
	2			SANDY LOAM–brown & gray–
–5	1	NP	21	very loose (A–4) Apparent Fill
600.3				▼
	1			
	1			Silty SAND & GRAVEL–brown & gray–
	2	NP	17	very loose to medium dense (A–2)
	8			
	9			
–10	12	NP	20	
594.8				
	12			SAND–brown–medium dense (A–3)
	12			
	17	NP	21	
592.3				
	5			
	18			SILT–gray–dense (A–4)
–15	18	NP	13	
589.8				
	18			
	32			
	50/3"	NP		FRACTURED ROCK–gray–
				very dense (A–1)
	37			
	50/5"			
–20		NP	14	

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	DESCRIPTION
582.3				FRACTURED ROCK–gray–
	50/2"			very dense (A–1)
		NP	15	
	38			
	50/5"			SILTY LOAM–gray–very dense (A–4)
–25		NP	9	
579.8				
	42			
	51			
	50/2"	NP	9	SILTY LOAM with Fractured Rock–
	50/4"			gray–very dense (A–2)
–30		NP	9	
571.8				
				Drillers Observation: Apparent Bedrock
570.8				
–35				RUN 1 (–34.5' to –44.5')
				Silurian System Niagaran Series Dolomite
				Light gray to gray with horizontal bedding. Fine grained & becoming darker gray @ –39.4'. Horizontal fractures @ –34.7', –34.8', –35.1', –35.9' & –38.2'. Vertical fracture with intersecting horizontal fractures from –39.5' to –41.6'.
				RUN 1
				Recovery=86.5%
–40				R.Q.D.=57.5

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (SB–Bulge, S–Shear, P–Penetrometer) ST–Shelby Tube Sample VS–Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in Italics above moist (%)
NR–No Recovery

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SOIL BORING LOG

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LOGGED BY DR
JOB NUMBER P-91-186-08
GSI JOB No. 08015

ROUTE I-294 & I-57
DESCRIPTION I-57 & I-294 Interchange Improvements (PTB 146, Item 1)
SECTION –
LOCATION Ramp C Bridge
COUNTY Cook
DRILLING METHOD Hollow Stem Auger/Rotary HAMMER TYPE CME Automatic

STRUCT. NO. XXX
Station –
BORING NO. **SB-21**
Station: 3266+20
Offset: 15.0' Left
Ground Surface Elev. 605.3

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter 600.3
Upon Completion n/a
After ____ Hrs. ____

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	DESCRIPTION
				RUN 1 continued.
				RUN 1
560.8				
–45				End Of Boring @ –44.5'
				Hollow Stem Augers to –10.0'
				Rotary Drilling To Completion
				18.0' of 4.0"ø Casing Used
				36.0' of 3.0"ø Casing Used
				CME Automatic Hammer
–50				
–55				
–60				

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
–65			
–70			
–75			
–80			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (SB–Bulge, S–Shear, P–Penetrometer) ST–Shelby Tube Sample VS–Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in Italics above moist (%)
NR–No Recovery

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ROCK CORE LOG

PAGE 1 of 1
DATE 12/22/2009
LOGGED BY DR
JOB NUMBER P-91-186-08
GSI JOB No. 08015

ROUTE I-294 & I-57
DESCRIPTION I-57 & I-294 Interchange Improvements (PTB 146, Item 1)
SECTION –
LOCATION Ramp C Bridge
COUNTY Cook
CORING METHOD Rotary Wash

STRUCT. NO. XXX
Station –
BORING NO. **SB-21**
Station: 3266+20
Offset: 15.0' Left
Ground Surface Elev. 605.3

CORING BARREL TYPE & SIZE NX Double Swivel–10 ft
Core Diameter 2.0 in
Top of Rock Elev. 571.8
Begin Core Elev. 570.8

DEPTH (ft)	CORE RUN (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)	DESCRIPTION
570.8						RUN 1 (–34.5' to –44.5')
	1	86.5	57.5	n/a	1214@ –35.2	Silurian System Niagaran Series Dolomite
						Light gray to gray with horizontal bedding. Fine grained & becoming darker gray @ –39.4'. Horizontal fractures @ –34.7', –34.8', –35.1', –35.9' & –38.2'. Vertical fracture with intersecting horizontal fractures from –39.5' to –41.6'.
–39.5						
–44.5						

Color pictures of the cores Yes Cores will be stored for examination for XX
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D–2938)

P:\68254057-294.5-9\STRUCTURAL\RESTART.2018\Ramp C over I-57 and I-294\0162101.5_boring_logs19.dgn
3/30/2020

DRAWN BY JM	DATE 4-3-2020	T·Y·LIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515
CHECKED BY SP	SCALE NONE		

REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495
I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
BORING LOGS - 19

SHEET SC - 229 OF 234
504 OF 606

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SOIL BORING LOG

PAGE 1 of 2
DATE 12/14/2009
LOGGED BY DR
JOB NUMBER P-91-186-08
GSI JOB No. 08015

ROUTE I-294 & I-57
DESCRIPTION I-57 & I-294 Interchange Improvements (PTB 146, Item 1)
SECTION –
LOCATION Ramp C Bridge
COUNTY Cook
DRILLING METHOD Hollow Stem Auger/Rotary HAMMER TYPE CME Automatic

STRUCT. NO. XXX
Station –
BORING NO. **SB-22**
Station: 3268+10
Offset: 15.0' Left
Ground Surface Elev. 606.2

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter 599.7
Upon Completion n/a
After ____ Hrs. ____

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
605.5				7.0" TOPSOIL–black
–5	AS 2 4	–	35	
	4	NP	14	SANDY CLAY LOAM–black–loose (A–2) Fill
602.7				
	1			SILTY LOAM with Fractured Rock–gray–medium dense to very dense (A–2)
	2			
–5	3	NP	15	
				SANDY LOAM–brown–loose (A–2)
	1			
599.2	2			
	2	NP	25	
				SAND with Gravel–gray–loose (A–3)
	2			
	2			
596.2 –10	2	NP	20	
	1			
				574.7
	8			SILTY CLAY–gray–medium dense (A–6)
	10	–	31	Drillers Observation: Apparent Bedrock 573.7
				RUN 1 (–32.5' to –42.5') Silurian System Niagaran Series Dolomite
	5		111	Light gray to gray with horizontal bedding. Fine gained becoming lighter gray @ –40.4'. Horizontal fracture @ –34.4'. Weathered horizontal fractures with clay partings from –34.5' to –34.7'. Vertical fracture from –34.7' to –35.4'. Weathered horizontal fractures with clay partings from –35.4' to –35.9'. 1.0" clay parting @ –36.4'. Horizontal fractures @ –37.2' & –37.6'. Vertical fracture from –39.1' to –40.3'. Horizontal fracture @ –41.2'. Horizontal fracture with 1/4" clay parting @ –41.8'. Recovery=95.5% R.Q.D.=64.5%
591.7	10			
–15	7	1.5B	19	
				SILTY LOAM with Fractured Rock–gray–medium dense to very dense (A–2)
	26			
	13			
	13	NP	11	
	34			
	35			
–20	50/2"	4.5P	9	

RUN 1

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (SB–Bulge, S–Shear, P–Penetrometer) ST–Shelby Tube Sample VS–Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR–No Recovery

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SOIL BORING LOG

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DATE 12/14/2009
LOGGED BY DR
JOB NUMBER P-91-186-08
GSI JOB No. 08015

ROUTE I-294 & I-57
DESCRIPTION I-57 & I-294 Interchange Improvements (PTB 146, Item 1)
SECTION –
LOCATION Ramp C Bridge
COUNTY Cook
DRILLING METHOD Hollow Stem Auger/Rotary HAMMER TYPE CME Automatic

STRUCT. NO. XXX
Station –
BORING NO. **SB-22**
Station: 3268+10
Offset: 15.0' Left
Ground Surface Elev. 606.2

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter 599.7
Upon Completion n/a
After ____ Hrs. ____

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
				RUN 1 continued.
563.7				RUN 1
				End Of Boring @ –42.5' Hollow Stem Augers to –10.0' Rotary Drilling To Completion 10.0' of 4.0"ø Casing Used 34.0' of 3.0"ø Casing Used CME Automatic Hammer
–45				
–50				
–55				
–60				
–65				
–70				
–75				
–80				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (SB–Bulge, S–Shear, P–Penetrometer) ST–Shelby Tube Sample VS–Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR–No Recovery

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ROCK CORE LOG

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DATE 12/14/2009
LOGGED BY DR
JOB NUMBER P-91-186-08
GSI JOB No. 08015

ROUTE I-294 & I-57
DESCRIPTION I-57 & I-294 Interchange Improvements (PTB 146, Item 1)
SECTION –
LOCATION Ramp C Bridge
COUNTY Cook
CORING METHOD Rotary Wash

STRUCT. NO. XXX
Station –
BORING NO. **SB-22**
Station: 3268+10
Offset: 15.0' Left
Ground Surface Elev. 606.2

CORING BARREL TYPE & SIZE NX Double Swivel–10 ft
Core Diameter 2.0 in
Top of Rock Elev. 574.7
Begin Core Elev. 573.7

DEPTH (ft)	CORE RUN (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)	Description
573.7						RUN 1 (–32.5' to –42.5') Silurian System Niagaran Series Dolomite
	1	95.5	64.5	n/a	xxxx@ –xx.x	Light gray to gray with horizontal bedding. Fine gained becoming lighter gray @ –40.4'. Horizontal fracture @ –34.4'. Weathered horizontal fractures with clay partings from –34.5' to –34.7'. Vertical fracture from –34.7' to –35.4'. Weathered horizontal fractures with clay partings from –35.4' to –35.9'. 1.0" clay parting @ –36.4'. Horizontal fractures @ –37.2' & –37.6'. Vertical fracture from –39.1' to –40.3'. Horizontal fracture @ –41.2'. Horizontal fracture with 1/4" clay parting @ –41.8'.
–37.5						
–42.5						

Color pictures of the cores Yes Cores will be stored for examination for XX
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D–2938)

P:\60254857-294,5-91\STRUCTURAL\RESTART_2019\Ramp C over I-57 and I-294\B162101.5_boring_log20.dgn
3/30/2020

DRAWN BY JM	DATE 4-3-2020	TYLIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	CONTRACT I-19-4495	SHEET SC - 230 OF 234
CHECKED BY SP	SCALE NONE		REVISIONS: NO. / DATE / DESCRIPTION	I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 116) BORING LOGS - 20	505 OF 606

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SOIL BORING LOG

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DATE 7/6/2011
LOGGED BY DR
JOB NUMBER P-91-186-08
GSI JOB No. 08015
ROUTE I-294 & I-57
DESCRIPTION I-57 & I-294 Interchange Improvements (PTB 146, Item 1)
SECTION –
LOCATION Ramp C Bridge
COUNTY Cook
DRILLING METHOD Hollow Stem Auger/Rotary HAMMER TYPE CME Automatic
STRUCT. NO. XXX
Station –
BORING NO. **SB-23**
Station: 1246+98
Offset: 62.5' Right
Ground Surface Elev. 618.5

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter n/a
Upon Completion n/a
After ____ Hrs. ____

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
				14.0" ASPHALT
				617.4
	3		109	
	5			
	7	5.9B	18	
				SILTY CLAY LOAM–gray–very loose to loose (A–4)
				595.5
	1		102	
	2			CLAYEY SAND with Gravel–gray–medium dense (A–2)
–5	5	2.6B	24	
				593.0
	18		120	CLAY LOAM–brown & gray–very stiff to hard (A–6) Fill
	16			
	10	9.0B	15	
				CLAY–gray–stiff (A–6)
				590.5
	5		103	
	5			
–10	4	2.0B	24	CLAYEY SAND & GRAVEL–gray–dense (A–2)
	5		108	
	7			
	8	3.8B	21	
				586.5
	1		111	CLAY LOAM–gray–medium dense (A–4)
	3			
–15	3	1.5B	19	
	603.0			
	1		98	SANDY CLAY LOAM–gray–very loose (A–2/A–6) Wet
	1			
	3	0.3B	27	
	600.5			
	1			SILTY CLAY LOAM–gray–very loose to loose (A–4)
	1			
–20	2	–	25	

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
	1			
	3			
	5	–	30	
	2			
	7			
–25	8	NP	12	
	3		106	
	4			
	7	1.5P	22	
	25			
	23			
–30	22	NP	12	
	6		136	
	13			
–35	16	2.3B	9	
	30			
	50/6"			
–40		NP	9	

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (SB–Bulge, S–Shear, P–Penetrometer) ST–Shelby Tube Sample VS–Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR–No Recovery

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SOIL BORING LOG

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DATE 7/6/2011
LOGGED BY DR
JOB NUMBER P-91-186-08
GSI JOB No. 08015
ROUTE I-294 & I-57
DESCRIPTION I-57 & I-294 Interchange Improvements (PTB 146, Item 1)
SECTION –
LOCATION Ramp C Bridge
COUNTY Cook
DRILLING METHOD Hollow Stem Auger/Rotary HAMMER TYPE CME Automatic
STRUCT. NO. XXX
Station –
BORING NO. **SB-23**
Station: 1246+98
Offset: 62.5' Right
Ground Surface Elev. 618.5

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter n/a
Upon Completion n/a
After ____ Hrs. ____

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
				CLAY LOAM with Fractured Rock–gray–very dense (A–2)
	20			
	45			
–45	32	–	9	
				571.5
				FRACTURED ROCK–very dense (A–1)
	50/5"			
				569.0
–50		NP	8	Drillers Observation: Apparent Bedrock.
				568.0
				RUN 1 (–50.5' to –60.5') Silurian System Niagaran Series Dolomite Light gray mottled gray with some varving. Fine grained with horizontal bedding. Large vug @ –51.0'. Horizontal fractures @ –61.5', –52.2', –52.9', –53.7', –54.7', –56.0', –57.0', –57.3', –57.6', –57.8', –58.1' & –58.7'. Recovery=98.0% R.Q.D.=82.5%
–55				RUN 1
–60				

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
				Run 1 continued. 556.0
				End Of Boring @ –60.5' Hollow Stem Augers to –10.0' Rotary Drilling To Completion 10.0' of 4.0"ø Casing Used CME Automatic Hammer
–65				
–70				
–75				
–80				

RUN 1

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (SB–Bulge, S–Shear, P–Penetrometer) ST–Shelby Tube Sample VS–Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR–No Recovery

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ROCK CORE LOG

PAGE 1 of 1
DATE 7/6/2011
LOGGED BY DR
JOB NUMBER P-91-186-08
GSI JOB No. 08015
ROUTE I-294 & I-57
DESCRIPTION I-57 & I-294 Interchange Improvements (PTB 146, Item 1)
SECTION –
LOCATION Ramp C Bridge
COUNTY Cook
CORING METHOD Rotary Wash
STRUCT. NO. XXX
Station –
CORING BARREL TYPE & SIZE NX Double Swivel–10 ft
Core Diameter 2.0 in
Top of Rock Elev. 569.0
BORING NO. **SB-23**
Station: 1246+98
Offset: 62.5' Right
Begin Core Elev. 568.0
Ground Surface Elev. 618.5

DEPTH (ft)	CORE RUN (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)	
568.0						RUN 1 (–50.5' to –60.5') Silurian System Niagaran Series Dolomite Light gray mottled gray with some varving. Fine grained with horizontal bedding. Large vug @ –51.0'. Horizontal fractures @ –61.5', –52.2', –52.9', –53.7', –54.7', –56.0', –57.0', –57.3', –57.6', –57.8', –58.1' & –58.7'.
	1	98.0	82.5	n/a	859@ –51.6	
–55.5						
–60.5						

Color pictures of the cores Yes Cores will be stored for examination for XX
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D–2938)

P:\68254\05\57-294_5-91\STRUCTURAL_RESTART_2018\Ramp C over I-57 and I-294\01621\01.5_boring_log21.dgn
3/30/2020

DRAWN BY JM
CHECKED BY SP
DATE 4-3-2020
SCALE NONE

TY·LIN INTERNATIONAL

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495
I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
BORING LOGS - 21

SHEET SC - 231 OF 234
506 OF 606

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SOIL BORING LOG

PAGE 1 of 2
DATE 1/28/2010
LOGGED BY DR
JOB NUMBER P-91-186-08
GSI JOB No. 08015

ROUTE I-294 & I-57
DESCRIPTION I-57 & I-294 Interchange Improvements (PTB 146, Item 1)
SECTION –
LOCATION Ramp C Bridge
COUNTY Cook
DRILLING METHOD Hollow Stem Auger/Rotary HAMMER TYPE CME Automatic

STRUCT. NO. XXX
Station –
BORING NO. **SB-24**
Station: 3271+64
Offset: 30.0' Left
Ground Surface Elev. 603.7

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter 598.2
Upon Completion n/a
After ____ Hrs. ____

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
602.6				13.0" TOPSOIL–black
	AS 5	– *120*	20	
	6 6	2.4S	13	SANDY CLAY LOAM–brown & gray–very stiff (A–6)
599.7	2		*86*	
–5	1 2	.06B	30	CLAY LOAM–brown & gray–medium stiff (A–6) Wet
▼598.2				
	1 2 4	NP	28	SAND–gray–loose (A–3)
–10	2	NP	20	
593.2				
	1 3 5	NP	13	SILTY LOAM–gray–loose (A–4)
590.7				
	16 15			SILTY LOAM with Fractured Rock–gray–medium dense (A–2)
588.7 –15	12	NP	10	
	12 14 17	NP	21	
	9 13			
–20	14	NP	23	

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
	11			SAND–gray–medium dense to dense (A–3)
578.2				
	8 9			SAND & GRAVEL–gray–medium dense (A–1)
576.2	4	NP	13	
	5 5			SILTY LOAM with Fractured Rock–gray–medium dense (A–2)
–30	6	NP	11	
571.2				
				Drillers Observation: Apparent Bedrock.
569.2				
–35				RUN 1 (–34.5' to –38.5') Silurian System Niagaran Series Dolomite Light gray &fine grained with horizontal bedding. Highly fractured to –37.5' with some light oil staining from –37.5' to –37.8'. Recovery=100.0% R.Q.D.=31.9% 100.0% Water Loss @ –35.0'.
565.2				RUN 1
				RUN 2 (–38.5' to –47.0') Silurian System Niagaran Series Dolomite
–40				RUN 2

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (SB–Bulge, S–Shear, P–Penetrometer) ST–Shelby Tube Sample VS–Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR–No Recovery

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SOIL BORING LOG

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DATE 1/28/2010
LOGGED BY DR
JOB NUMBER P-91-186-08
GSI JOB No. 08015

ROUTE I-294 & I-57
DESCRIPTION I-57 & I-294 Interchange Improvements (PTB 146, Item 1)
SECTION –
LOCATION Ramp C Bridge
COUNTY Cook
DRILLING METHOD Hollow Stem Auger/Rotary HAMMER TYPE CME Automatic

STRUCT. NO. XXX
Station –
BORING NO. **SB-24**
Station: 3271+64
Offset: 30.0' Left
Ground Surface Elev. 603.7

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter 598.2
Upon Completion n/a
After ____ Hrs. ____

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
				Light gray to gray & fine grained with horizontal bedding, becoming darker gray & varved from –38.3' to –39.0'. Vertical fracture with intersecting horizontal fractures from –37.6' to –38.3'. Horizontal fractures @ –38.7', –39.2', –39.5', –40.2', –41.8', –42.7' & –43.6'. Light oil staining from –39.8' to –40.1'.
				RUN 2
				Recovery=97.6% R.Q.D.=83.5%
–45				
556.7				
				End Of Boring @ –47' Hollow Stem Augers to –10.0' Rotary Drilling To Completion 12.0' of 4.0"ø Casing Used 36.0' of 3.0"ø Casing Used CME Automatic Hammer
–50				
–55				
–60				

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
–65			
–70			
–75			
–80			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (SB–Bulge, S–Shear, P–Penetrometer) ST–Shelby Tube Sample VS–Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR–No Recovery

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ROCK CORE LOG

PAGE 1 of 1
DATE 1/28/2010
LOGGED BY DR
JOB NUMBER P-91-186-08
GSI JOB No. 08015

ROUTE I-294 & I-57
DESCRIPTION I-57 & I-294 Interchange Improvements (PTB 146, Item 1)
SECTION –
LOCATION Ramp C Bridge
COUNTY Cook
CORING METHOD Rotary Wash

STRUCT. NO. XXX
Station –
BORING NO. **SB-24**
Station: 3271+64
Offset: 30.0' Left
Ground Surface Elev. 603.7

CORING BARREL TYPE & SIZE NX Double Swivel–10 ft
Core Diameter 2.0 in
Top of Rock Elev. 571.2
Begin Core Elev. 569.2

DEPTH (ft)	CORE RUN (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)	
569.2	1	100.0	31.9	n/a	1316@ –34.5	RUN 1 (–34.5' to –38.5') Silurian System Niagaran Series Dolomite Light gray &fine grained with horizontal bedding. Highly fractured to –37.5' with some light oil staining from –37.5' to –37.8'. 100.0% Water Loss @ –35.0'.
565.2	2	97.6	83.5	n/a	1416@ –40.2	RUN 2 (–38.5' to –47.0') Silurian System Niagaran Series Dolomite Light gray to gray & fine grained with horizontal bedding, becoming darker gray & varved from –38.3' to –39.0'. Vertical fracture with intersecting horizontal fractures from –37.6' to –38.3'. Horizontal fractures @ –38.7', –39.2', –39.5', –40.2', –41.8', –42.7' & –43.6'. Light oil staining from –39.8' to –40.1'.
–39.5						
–44.5						

Color pictures of the cores Yes Cores will be stored for examination for XX
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D–2938)

P:\60254057-294,5-91\STRUCTURAL\RESTART_2018\Ramp C over I-57 and I-294\0162101.5_boring_logs22.dgn
3/30/2020

DRAWN BY JM	DATE 4-3-2020	TY·LIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515
CHECKED BY SP	SCALE NONE		

REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495
I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
BORING LOGS - 22

SHEET SC - 232 OF 234
507 OF 606

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SOIL BORING LOG

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DATE 2/9/2010
LOGGED BY DR
JOB NUMBER P-91-186-08
GSI JOB No. 08015

ROUTE I-294 & I-57
DESCRIPTION I-57 & I-294 Interchange Improvements (PTB 146, Item 1)
SECTION –
LOCATION Ramp C Bridge
COUNTY Cook
DRILLING METHOD Hollow Stem Auger/Rotary HAMMER TYPE CME Automatic

STRUCT. NO. XXX
Station –
BORING NO. **SB-25**
Station: 3272+48
Offset: 18.0' Left
Ground Surface Elev. 605.9

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter 598.4
Upon Completion n/a
After ____ Hrs. ____

DEPTH (ft)	BLOWS /6"	UCS Qu (tsf)	MOIST (%)	Description
605.6				3.0" Clayey TOPSOIL-dark brown
	AS 2	–	21	CLAY LOAM-brown & gray-very stiff (A-6) Fill
603.9				
	5 5	3.0P	18	
	2			CLAY LOAM-gray-stiff (A-4/A-6)
–5	3	1.5P	17	
599.9				
	2			
	3 3	NP	21	SAND-brown-loose (A-3)
597.4				
	2 3			SANDY LOAM-dark brown-loose (A-2)
595.9 –10	4	NP	19	
	1			SILTY LOAM-gray-very loose (A-4)
	1 1	NP	28	
591.9	4		109	
	3			
–15	6	1.7B	20	SILTY CLAY-gray-stiff (A-6)
590.4				
	11			
	13 17	NP	22	SAND-gray-medium dense to (A-3)
	9			
	12 15	NP	25	

DEPTH (ft)	BLOWS /6"	UCS Qu (tsf)	MOIST (%)	Description
	11			
	12 14	NP	21	
	9			SAND-gray-medium dense to (A-3)
–25	10 11	NP	22	
	8			
	10 11	NP	23	
577.9				
	7			SANDY LOAM with Gravel-gray-medium dense to dense (A-2)
–30	4 5	NP	13	
	14			
	16			
–35	12	NP	11	
570.4				
Drillers Observation: Apparent Bedrock 569.9				
				RUN 1 (–36.0' to –46.0') Silurian System Niagaran Series Dolomite
				RUN 1

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SOIL BORING LOG

DATE 2/9/2010
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JOB NUMBER P-91-186-08
GSI JOB No. 08015

ROUTE I-294 & I-57
DESCRIPTION I-57 & I-294 Interchange Improvements (PTB 146, Item 1)
SECTION –
LOCATION Ramp C Bridge
COUNTY Cook
DRILLING METHOD Hollow Stem Auger/Rotary HAMMER TYPE CME Automatic

STRUCT. NO. XXX
Station –
BORING NO. **SB-25**
Station: 3272+48
Offset: 18.0' Left
Ground Surface Elev. 605.9

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter 598.4
Upon Completion n/a
After ____ Hrs. ____

DEPTH (ft)	BLOWS /6"	UCS Qu (tsf)	MOIST (%)	Description
				Light gray with horizontal bedding. Fine grained with some varving & oil staining. Horizontal fractures @ –36.6' & –36.8'. Vertical fracture with intersecting horizontal fractures from –37.0' to –38.6'. Horizontal fractures @ –39.3', –40.0', –40.2', –41.2' & –43.4'. Horizontal fracture with thin clay parting & –43.8'.
				RUN 1
				Recovery=98.0% R.Q.D.=66.2 100% Water Loss @ –39.0'
–45				
559.9				
				End Of Boring @ –46.0' Hollow Stem Augers to –10.0' Rotary Drilling To Completion 10.0' of 4.0"ø Casing Used 38.0' of 3.0"ø Casing Used CME Automatic Hammer

DEPTH (ft)	BLOWS /6"	UCS Qu (tsf)	MOIST (%)
–65			
–70			
–75			

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ROCK CORE LOG

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JOB NUMBER P-91-186-08
GSI JOB No. 08015

ROUTE I-294 & I-57
DESCRIPTION I-57 & I-294 Interchange Improvements (PTB 146, Item 1)
SECTION –
LOCATION Ramp C Bridge
COUNTY Cook
CORING METHOD Rotary Wash

STRUCT. NO. XXX
Station –
BORING NO. **SB-25**
Station: 3272+48
Offset: 18.0' Left
Ground Surface Elev. 605.9

CORING BARREL TYPE & SIZE NX Double Swivel-10 ft
Core Diameter 2.0 in
Top of Rock Elev. 570.4
Begin Core Elev. 569.9

DEPTH (ft)	CORE RUN (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)	Description
569.9	1	98.0	66.2	n/a	1189@ –38.6	RUN 1 (–36.0' to –46.0') Silurian System Niagaran Series Dolomite Light gray with horizontal bedding. Fine grained with some varving & oil staining. Horizontal fractures @ –36.6' & –36.8'. Vertical fracture with intersecting horizontal fractures from –37.0' to –38.6'. Horizontal fractures @ –39.3', –40.0', –40.2', –41.2' & –43.4'. Horizontal fracture with thin clay parting & –43.8'. 100% Water Loss @ –39.0'
–41						
–46						

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3/30/2020

DRAWN BY JM	DATE 4-3-2020	TY·LIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515	REVISIONS NO. DATE DESCRIPTION	CONTRACT I-19-4495 I-57 AT 294 RAMPS C, D, AND F2 SN 016-2101 (BRIDGE NO. 116) BORING LOGS - 23
CHECKED BY SP	SCALE NONE				SHEET SC - 233 OF 234 508 OF 606

SOIL BORING LOG

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PAGE 1 of 2
DATE 1/11/2010
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JOB NUMBER P-91-186-08
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ROUTE I-294 & I-57
DESCRIPTION I-57 & I-294 Interchange Improvements (PTB 146, Item 1)
SECTION –
LOCATION Ramp C Bridge
COUNTY Cook
DRILLING METHOD Hollow Stem Auger/Rotary
HAMMER TYPE CME Automatic

STRUCT. NO. XXX
Station –
BORING NO. **SB-26**
Station: 3274+03
Offset: 16.0' Right
Ground Surface Elev. 605.7

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter 601.2 ▼
Upon Completion n/a ▽
After ___ Hrs. ___

Description	Elev.	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
11.0" TOPSOIL–black	604.8		AS	–	44
CLAY LOAM–dark brown & gray–stiff (A–6) Possible Fill	602.2		2, 3, 3	1.25P	24
SANDY LOAM to LOAM–dark brown & gray–loose (A–2) ▼	597.7	–5	1, 2, 2	NP	27
			1, 3, 4	NP	19
SANDY LOAM–gray–loose (A–2)	594.7	–10	2, 4, 5	NP	17
SILTY CLAY–gray–very soft (A–6) Wet	592.7		1, 0, 1	0.25P	34
SAND & GRAVEL–gray–medium dense (A–3)	589.7	–15	7, 9, 5	NP	14
SILT–gray–medium dense (A–4)	587.7		3, 5, 8	NP	15
SAND–gray–medium dense (A–3)		–20	3, 5, 5	NP	21
SAND–gray–medium dense (A–3)	582.7		6, 8, 14	NP	17
CLAY–gray–stiff (A–6)	580.2	–25	6, 11, 13	1.75B	*109* / 20
SAND–gray–dense (A–3)			11, 14, 18	NP	20
	572.2	–30	13, 15, 15	NP	21
FRACTURED ROCK–gray–medium dense (A–1)	567.7	–35	8, 14, 6	NP	13
Drillers Observation: Apparent Bedrock	566.7				
RUN 1 (–39.0' to –49.0') Silurian System Niagaran Series Dolomite		–40	RUN 1		

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (SB–Bulge, S–Shear, P–Penetrometer) ST–Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR–No Recovery

SOIL BORING LOG

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JOB NUMBER P-91-186-08
GSI JOB No. 08015

ROUTE I-294 & I-57
DESCRIPTION I-57 & I-294 Interchange Improvements (PTB 146, Item 1)
SECTION –
LOCATION Ramp C Bridge
COUNTY Cook
DRILLING METHOD Hollow Stem Auger/Rotary
HAMMER TYPE CME Automatic

STRUCT. NO. XXX
Station –
BORING NO. **SB-26**
Station: 3274+03
Offset: 16.0' Right
Ground Surface Elev. 605.7

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter 601.2 ▼
Upon Completion n/a ▽
After ___ Hrs. ___

Light gray to gray & fine grained with horizontal bedding. Dark gray & varved from –43.8' to –44.2'. Horizontal fractures @ –39.1', –39.7', –40.1', –42.3', –43.8', –44.2' & –45.2'. Thin clay parting @ –45.6'. Horizontal fractures @ –47.3' & –48.3'.

Recovery=93.0%
R.Q.D.=85.3%
100.0% Water Loss @ –42.5'

RUN 1 (depth –45)

556.7

End Of Boring @ –49.0'
Hollow Stem Augers to –10.0'
Rotary Drilling To Completion
12.0' of 4.0"ø Casing Used
40.0' of 3.0"ø Casing Used
CME Automatic Hammer

Depth marks: –45, –50, –55, –60, –65, –70, –75, –80

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (SB–Bulge, S–Shear, P–Penetrometer) ST–Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR–No Recovery

ROCK CORE LOG

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PAGE 1 of 1
DATE 1/11/2010
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JOB NUMBER P-91-186-08
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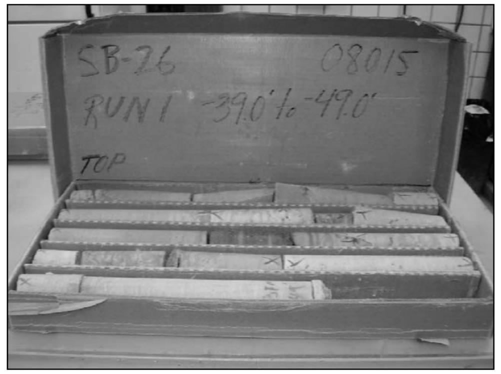
ROUTE I-294 & I-57
DESCRIPTION I-57 & I-294 Interchange Improvements (PTB 146, Item 1)
SECTION –
LOCATION Ramp C Bridge
COUNTY Cook
CORING METHOD Rotary Wash

STRUCT. NO. XXX
Station –
BORING NO. **SB-26**
Station: 3274+03
Offset: 16.0' Right
Ground Surface Elev. 605.7

CORING BARREL TYPE & SIZE NX Double Swivel–10 ft
Core Diameter 2.0 in
Top of Rock Elev. 567.7
Begin Core Elev. 566.7

Description	Elev.	DEPTH (ft)	CORE RUN (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)
RUN 1 (–39.0' to –49.0') Silurian System Niagaran Series Dolomite Light gray to gray & fine grained with horizontal bedding. Dark gray & varved from –43.8' to –44.2'. Horizontal fractures @ –39.1', –39.7', –40.1', –42.3', –43.8', –44.2' & –45.2'. Thin clay parting @ –45.6'. Horizontal fractures @ –47.3' & –48.3'.	566.7	–44, –49	1	93.0	85.3	n/a	1183@ –39.2'



Color pictures of the cores Yes Cores will be stored for examination for XX
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D–2938)

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3/30/2020

DRAWN BY JM	DATE 4-3-2020	TYLIN INTERNATIONAL	THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY 2700 OGDEN AVENUE DOWNERS GROVE, ILLINOIS 60515
CHECKED BY SP	SCALE NONE		

REVISIONS		
NO.	DATE	DESCRIPTION

CONTRACT I-19-4495
I-57 AT 294 RAMPS C, D, AND F2
SN 016-2101 (BRIDGE NO. 116)
BORING LOGS - 24

SHEET SC - 234 OF 234
509 OF 606