

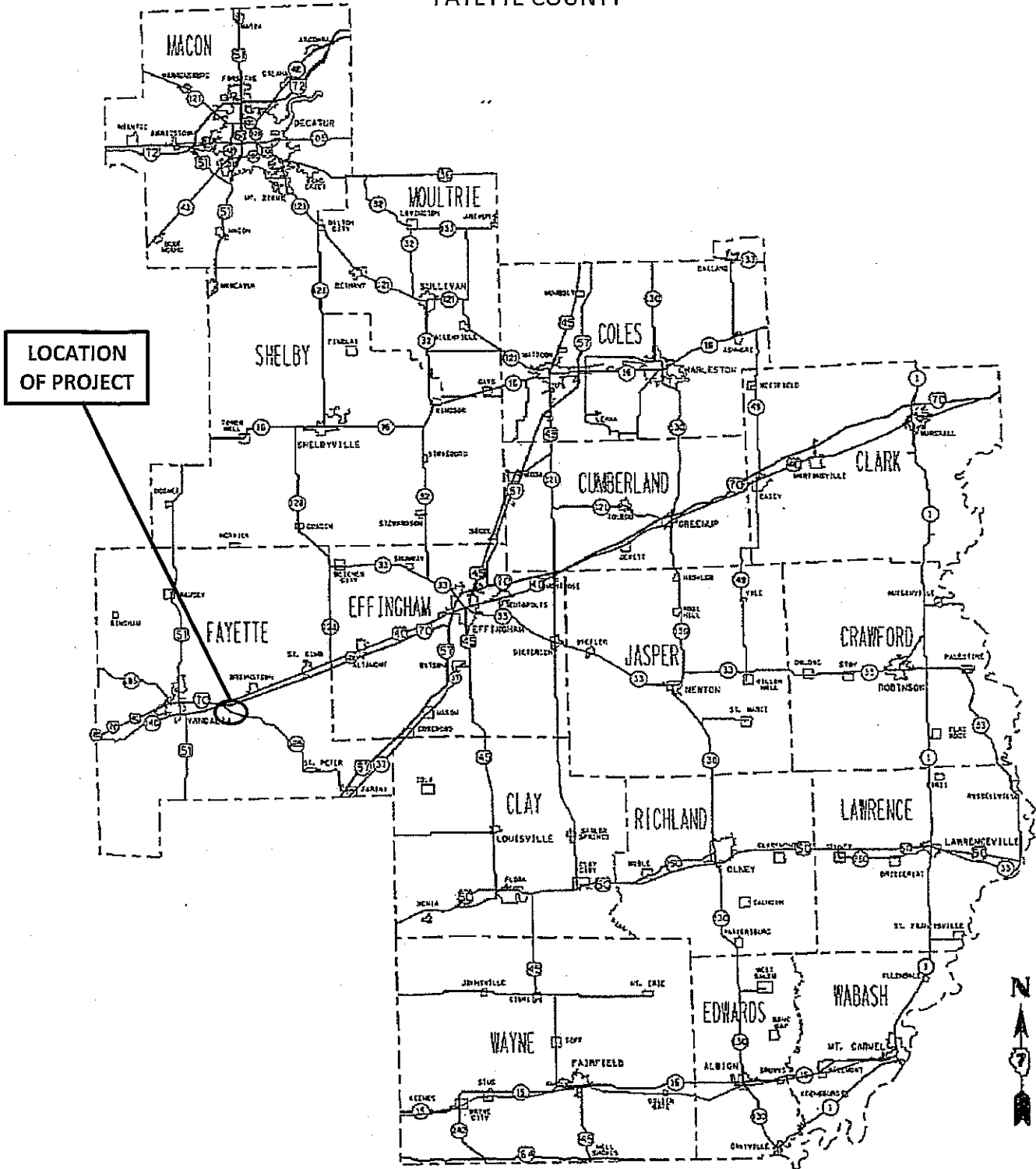
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
**PLANS FOR PROPOSED
DAY LABOR PROJECT**

IL 185

STR. #026-0091

2 MILES EAST OF BLUFF CITY

FAYETTE COUNTY

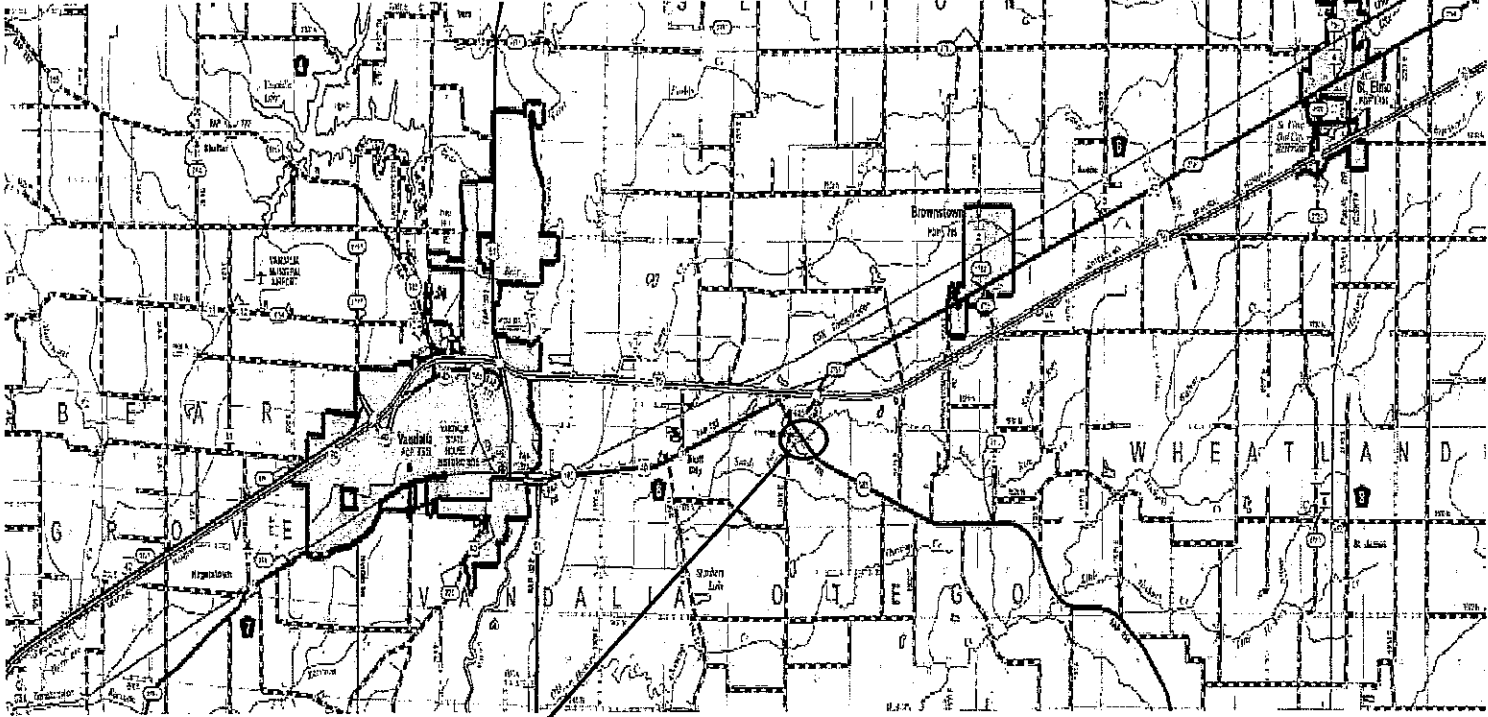


DAY LABOR PROJECT NO. 16F708

DISTRICT 7

IL 185
DAY LABOR PROJECT NO. 16F708
JOINT REPLACEMENT & APPROACH PATCHING
STR. #026-0091
FAYETTE COUNTY

FAYETTE COUNTY
MAP



LOCATION OF
PROPOSED PROJECT

IL 185
 DAY LABOR PROJECT NO. 16F708
 FAYETTE COUNTY
 JOINT REPLACEMENT & APPROACH PATCHING

SUMMARY OF QUANTITIES		
ITEM	UNIT	TOTAL
CONCRETE REMOVAL	CU YD	10.3
CONCRETE SUPERSTRUCTURE	CU YD	10.3
REINFORCEMENT BARS, EPOXY COATED	POUND	1350
BAR SPLICERS	EACH	26
PROTECTIVE COAT	SQ YD	28.3
PREFORMED JOINT STRIP SEAL	FOOT	73
APPROACH SLAB REPAIR (PARTIAL DEPTH)	SQ YD	5.2
PCC BASE COURSE WIDENING, 8"	SQ YD	231.2
TEMPORARY BRIDGE TRAFFIC SIGNALS	EACH	2
TEMPORARY CONCRETE BARRIER	FOOT	299
RELOCATE TEMPORARY CONCRETE BARRIER	FOOT	299
IMPACT ATTENUATORS, TEMPORARY (NON-REDIRECTIVE), TEST LEVEL 3	EACH	2
IMPACT ATTENUATORS, RELOCATE (NON-REDIRECTIVE), TEST LEVEL 3	EACH	2
MOBILIZATION	L SUM	1
TRAFFIC CONTOL STD 701201	L SUM	1
TRAFFIC CONTOL STD 701321	L SUM	1
TRAFFIC CONTOL STD 701326	L SUM	1

STATE OF ILLINOIS

SPECIAL PROVISIONS

The following Special Provisions supplement the "Standard Specifications for Road and Bridge Construction," adopted January 1, 2012, the latest edition of the "Manual on Uniform Traffic Control Devices for Streets and Highways," and the "Manual of Test Procedures for Materials" in effect on the date of invitation for bids, and the Supplemental Specifications and Recurring Special Provisions indicated on the Check Sheet included herein which apply to and govern the construction of Project # 16F708 on IL 185 over Sandy Run Creek in Fayette County at structure number 026-0091 and in case of conflict with any part or parts of said Specifications, the said Special Provisions shall take precedence and shall govern.

IL 185
Day Labor FY 2016
Fayette County
Str# 026-0091
Project# 16F708

Location of Project

The work on this project is located 2.0 miles east of Bluff City on IL 185 over Sandy Run Creek.

Description of Project

The work on this project consists of the removal of two existing expansion joint assemblies and replacing with new strip seal expansion joints, partial depth repair of the south approach slab, and all other work necessary to complete the work.

TRAFFIC CONTROL PLAN

Traffic Control shall be in accordance with the applicable sections of the Standard Specifications for Road and Bridge Construction, the applicable guidelines contained in the Illinois Manual on Uniform Traffic Control Devices for Streets and Highways, these Special Provisions, and any special details and Highway Standards contained herein and in the plans.

Special attention is called to Articles 107.09, 107.14 and 107.15 of the Standard Specifications for Road and Bridge Construction, the following Highway Standards and Recurring Special Provisions relating to traffic control:

Highway Standards:

701001

701006

701011

701321

701201

701901

Std. 701001: This standard should be used for miscellaneous work which is performed 15' away to the edge of the traffic lane. This Traffic Control and Protection shall be included in the cost of the total contract.

Std. 701006: This standard should be used for guardrail, and other miscellaneous work which is performed within 15', but not closer than 2' to the edge of the traffic lane. This Traffic Control and Protection shall be included in the cost of the total contract.

Std. 701011: This standard should be used when the contractor's work is confined to the shoulder. This Traffic Control and Protection shall be included in the cost of the total contract.

Std. 701321: This standard shall be used for all staged bridge repairs for Structure Number 026-0091. The bid price for this traffic control shall include any additional requirements as shown on the stage construction details in the plans. This Traffic Control and Protection shall be paid for at the contract L SUM price for TRAFFIC CONTROL AND PROTECTION, STANDARD 701321. Temporary Pavement Markings required for Standard 701321 will be incidental to Standard 701321. Temporary signals required for Standard 701321 will be paid for separately at the contract unit price each for TEMPORARY BRIDGE TRAFFIC SIGNALS.

Std. 701201: This standard shall be used when the contractor's work will encroach in the area between the centerline and a line 24" outside the edge of pavement for daylight operation. In this case, it will be used to install/remove the traffic control for standard 701321. This Traffic Control and Protection shall be paid for at the contract L SUM price for TRAFFIC CONTROL AND PROTECTION, STANDARD 701201.

The width restriction for the bridge is 11'-6". The contractor will be required to provide width restriction signs (W12-I103-48) at the following five locations:

- a) Eastbound U.S. 40/IL 185, East of U.S. 51 – 4 MILES WITH EAST/IL 185 SIGNS
- b) Westbound U.S. 40, West of I-70 EB Off Ramp – 1/2 MILE WITH EAST/IL 185 SIGNS.
- c) Northbound IL 185, just north of CR 7 (North of Harris Cemetery 2.5 miles north of St. Peter) – 9 MILES
- d) Northbound IL 185, just north of CR 23 (West Side of St. Peter) – 12 MILES
- e) Northbound IL 185, just north of I-57 Interchange at Farina – 18 MILES

A changeable message sign shall be placed in advance of the structure in both directions approximately 1 week prior to work beginning to alert motorists of the upcoming width restriction and staged construction.

TEMPORARY PORTABLE BRIDGE TRAFFIC SIGNALS

Effective: August 1, 2003
Revised: January 1, 2007

Description. At the Contractor's option, temporary portable bridge traffic signals may be used in place of temporary bridge traffic signals. Work shall be according to Article 701.18(b) of the Standard Specifications, except as follows:

Materials. Materials shall be according to the following Articles/Sections of the Standard Specifications.

Item Article/Section	
(a) Traffic Signal Head	1078
(b) Electric Cable	1076.04
(c) Controller	1073
(d) Controller Cabinet.....	1074.03
(e) Detector Loop	1079

CONSTRUCTION REQUIREMENTS

General. The temporary portable bridge traffic signals shall be trailer-mounted units. The trailer-mounted units shall be set up securely and level. Each unit shall be self-contained and consist of two signal heads. The left signal head shall be mounted on a mast arm capable of extending over the travel lane. Each unit shall contain a solar cell system to facilitate battery charging. There shall be a minimum of 12 days backup reserve battery supply and the units shall be capable of operating with a 120 V power supply from a generator or electrical service.

All signal heads located over the travel lane shall be mounted at a minimum height of 17 ft (5 m) from the bottom of the signal back plate to the top of the road surface. All far right signal heads located outside the travel lane shall be mounted at a minimum height of 8 ft (2.4 m) from the bottom of the signal back plate to the top of the adjacent travel lane surface.

The long all red intervals for the traffic signal controller shall be adjustable up to 250 seconds in one-second increments.

As an alternative to detector loops, temporary portable bridge traffic signals may be equipped with microwave sensors or other approved methods of vehicle detection and traffic actuation. All portable traffic signal units shall be interconnected using hardwire communication cable or radio communication equipment. If radio communication is used, a site analysis shall be completed to ensure that there is no interference present that would affect the traffic signal operation. The radio equipment shall meet all applicable FCC requirements.

The temporary portable bridge traffic signal system shall meet the physical display and operational requirements of conventional traffic signals as specified in Part IV of the Manual on Uniform Traffic Control Devices (MUTCD). The signal system shall be designed to continuously operate over an ambient temperature range between -30 °F (34 °C) and 120 °F (48 °C).

When not being utilized to inform and direct traffic, portable signals shall be treated as non-operating equipment according to Article 701.11 of the Standard Specifications.

Basis of Payment. This work will be paid for according to Article 701.20(c) of the Standard Specifications.

IMPACT ATTENUATORS, TEMPORARY (BDE)

Effective: November 1, 2003

Revised: ~~January 1, 2007~~ January 1, 2012

Description. This work shall consist of furnishing, installing, maintaining, and removing temporary impact attenuators of the category and test level specified.

Materials. Materials shall ~~meet the requirements of~~ be according to the impact attenuator manufacturer's specifications and the following:

Item	Article/Section
(a) Fine Aggregate (Note 1).....	1003.01
(b) Steel Posts, Structural Shapes, and Plates	1006.04
(c) Rail Elements, End Section Plates, and Splice Plates	1006.25
(d) Bolts, Nuts, Washers and Hardware.....	1006.25
(e) Hollow Structural Tubing	1006.27(b)
(f) Wood Posts and Wood Blockouts	1007.01, 1007.02, 1007.06
(g) Preservative Treatment.....	1007.12
(h) Packaged Rapid Hardening Mortar	1018.01

Note 1. Fine aggregate shall be FA 1 or FA 2, Class A quality. The sand shall be unbagged and shall have a maximum moisture content of five percent.

CONSTRUCTION REQUIREMENTS

General. Impact Attenuators shall meet the testing criteria contained in either the National Cooperative Highway Research Program (NCHRP) Report 350 or MASH ~~for the test level specified and shall be on the Department's approved list.~~

Installation. Impact attenuators shall be installed according to the manufacturer's specifications and include all necessary transitions between the impact attenuator and the item to which it is attached. ~~Regrading of slopes or approaches for the installation shall be as shown on the plans.~~

Attenuator bases, when required by the manufacturer, shall be constructed on a prepared subgrade according to the manufacturer's specifications. The surface of the base shall be slightly sloped or crowned to facilitate drainage.

~~Impact attenuators shall be installed according to the manufacturer's specifications and include all necessary transitions between the impact attenuator and the item to which it is attached.~~

When water filled attenuators are used between November 1 and April 15, they shall contain anti-freeze according to the manufacturer's recommendations.

Markings. Sand module impact attenuators shall be striped with alternating reflectorized Type AA or Type AP fluorescent orange and reflectorized white horizontal, circumferential stripes. There shall be at least two of each stripe on each module.

Other types of impact attenuators shall have a terminal marker applied to their nose and reflectors along their sides.

Maintenance. All maintenance of the impact attenuators shall be the responsibility of the Contractor until removal is directed by the Engineer.

Relocate. When relocation of temporary impact attenuators is specified, they shall be removed, relocated and reinstalled at the new location. The reinstallation requirements shall be the same as those for a new installation.

Removal. When the Engineer determines the temporary impact attenuators are no longer required, the installation shall be dismantled with all hardware becoming the property of the Contractor.

Surplus material shall be disposed of according to Article 202.03. Anti-freeze, when present, shall be disposed of/recycled according to local ordinances.

When impact attenuators have been anchored to the pavement, the anchor holes shall be repaired with rapid set mortar; only enough water to permit placement and consolidation by rodding shall be used and the material shall be struck-off flush.

Method of Measurement. This work will be measured for payment as each, where each is defined as one complete installation.

Basis of Payment. This work will be paid for at the contract unit price per each for IMPACT ATTENUATORS, TEMPORARY (FULLY REDIRECTIVE, NARROW); IMPACT ATTENUATORS, TEMPORARY (FULLY REDIRECTIVE, WIDE); IMPACT ATTENUATORS, TEMPORARY (FULLY REDIRECTIVE, RESETTABLE); IMPACT ATTENUATORS, TEMPORARY (SEVERE USE, NARROW); IMPACT ATTENUATORS, TEMPORARY (SEVERE USE, WIDE); or IMPACT ATTENUATORS, TEMPORARY (NON-REDIRECTIVE) of the test level specified.

Relocation of the devices will be paid for at the contract unit price per each for IMPACT ATTENUATORS, RELOCATE (FULLY REDIRECTIVE); IMPACT ATTENUATORS, RELOCATE (SEVERE USE); or IMPACT ATTENUATORS, RELOCATE (NON-REDIRECTIVE); of the test level specified.

Regrading of slopes or approaches will be paid for according to Section 202 and/or Section 204 of the Standard Specifications.

80110

SIGN PANELS AND SIGN PANEL OVERLAYS (BDE)

Effective: November 1, 2008

Description. This work shall consist of furnishing, fabricating, and installing sign panels and/or sign panel overlays. Work shall be according to Sections 720 and 721 of the Standard Specifications, except as modified herein.

Materials. Type AP and AZ sheeting shall meet the requirements of the special provision, "Retroreflective Sheeting, Nonreflective Sheeting, and Translucent Overlay Film for Highway Signs". Type ZZ sheeting shall meet the requirements of the special provision, "Type ZZ Retroreflective Sheeting, Nonreflective Sheeting, and Translucent Overlay Film for Highway Signs".

The sheeting for the background, legend, border, shields, and symbols shall be provided by the same manufacturer.

CONSTRUCTION REQUIREMENTS

Fabrication. Signs shall be fabricated according to the current Bureau of Operations Policy Memorandum, "Fabrication of Highway Signs", the MUTCD, the FHWA Standard Highway Signs manual, the Illinois standard highway signs, and as shown on the plans.

Signs shall be fabricated such that the material for the background, legend, border, shields, and symbols is applied in the preferred orientation for the maximum retroreflectivity per the manufacturer's recommendation. The nesting of legend, border, shields, or symbols will not be permitted.
80212

CLASS BS AGGREGATE OPTIMIZATION

For superstructure construction, Class BS concrete shall contain a blend of two or more coarse aggregate sizes blended in accordance with Article 1004.02(d). The blended aggregate will consist of CA-7 or CA-11 with CA-13, CA14, or CA-16. The blended coarse aggregate gradation shall have a minimum of 45 percent passing the 1/2 in. (12.5 mm) sieve and a maximum of 60 percent passing the 1/2 in. (12.5 mm) at the discretion of the Engineer.

The cost of compliance with this requirement shall be considered included in the cost of CONCRETE SUPERSTRUCTURES.

CONSTRUCTION AIR QUALITY - DIESEL VEHICLE EMISSIONS CONTROL (BDE)

Effective: April 1, 2009

Revised: ~~July 1, 2009~~ January 2, 2012

Diesel Vehicle Emissions Control. The reduction of construction air emissions shall be accomplished by using cleaner burning diesel fuel. The term "equipment" refers to any and all diesel fuel powered devices rated at 50 hp and above, to be used on the project site in excess of seven calendar days over the course of the construction period on the project site (including any "rental" equipment).

All equipment on the jobsite, with engine ratings of 50 hp and above, shall be required to: use Ultra Low Sulfur Diesel fuel (ULSD) exclusively (15 ppm sulfur content or less).

Diesel powered equipment in non-compliance will not be allowed to be used on the project site, and is also subject to a notice of non-compliance as outlined below.

The Contractor shall submit copies of monthly summary reports and include certified copies of the ULSD diesel fuel delivery slips for diesel fuel delivered to the jobsite for the reporting time period, noting the quantity of diesel fuel used. certify that only ULSD will be used in all jobsite

equipment. The certification shall be presented to the Department prior to the commencement of the work.

If any diesel powered equipment is found to be in non-compliance with any portion of this specification, the Engineer will issue the Contractor a notice of non-compliance and identify an appropriate period of time, as outlined below under environmental deficiency deduction, in which to bring the equipment into compliance or remove it from the project site.

Any costs associated with bringing any diesel powered equipment into compliance with these diesel vehicle emissions controls shall be considered as included in the contract unit prices bid for the various items of work involved and no additional compensation will be allowed. The Contractor's compliance with this notice and any associated regulations shall also not be grounds for a claim.

Environmental Deficiency Deduction. When the Engineer is notified, or determines that an environmental control deficiency exists, he/she will notify the Contractor in writing, and direct the Contractor to correct the deficiency within a specified time period. The specified time-period, which begins upon Contractor notification, will be from 1/2 hour to 24 hours long, based on the urgency of the situation and the nature of the deficiency. The Engineer shall be the sole judge regarding the time period.

The deficiency will be based on lack of repair, maintenance and diesel vehicle emissions control.

If the Contractor fails to correct the deficiency within the specified time frame, a daily monetary deduction will be imposed for each calendar day or fraction thereof the deficiency continues to exist. The calendar day(s) will begin when the time period for correction is exceeded and end with the Engineer's written acceptance of the correction. The daily monetary deduction will be \$1,000.00 for each deficiency identified.

If a Contractor or subcontractor accumulates three environmental deficiency deductions in a contract period, the Contractor will be shutdown until the deficiency is corrected. Such a shutdown will not be grounds for any extension of contract time, waiver of penalties, or be grounds for any claim.

80237

CONSTRUCTION AIR QUALITY - IDLING RESTRICTIONS (BDE)

Effective: April 1, 2009

Idling Restrictions. The Contractor shall establish truck-staging areas for all diesel powered vehicles that are waiting to load or unload material at the jobsite. Staging areas shall be located where the diesel emissions from the equipment will have a minimum impact on adjacent sensitive receptors. The Department will review the selection of staging areas, whether within or outside the existing highway right-of-way, to avoid locations near sensitive areas or populations to the extent possible. Sensitive receptors include, but are not limited to, hospitals, schools, residences, motels, hotels, daycare facilities, elderly housing and convalescent facilities. Diesel powered engines

shall also be located as far away as possible from fresh air intakes, air conditioners, and windows. The Engineer will approve staging areas before implementation.

Diesel powered vehicle operators may not cause or allow the motor vehicle, when it is not in motion, to idle for more than a total of 10 minutes within any 60 minute period, except under any of the following circumstances:

- 1) The motor vehicle has a gross vehicle weight rating of less than 8000 lb (3630 kg).
- 2) The motor vehicle idles while forced to remain motionless because of on-highway traffic, an official traffic control device or signal, or at the direction of a law enforcement official.
- 3) The motor vehicle idles when operating defrosters, heaters, air conditioners, or other equipment solely to prevent a safety or health emergency.
- 4) A police, fire, ambulance, public safety, other emergency or law enforcement motor vehicle, or any motor vehicle used in an emergency capacity, idles while in an emergency or training mode and not for the convenience of the vehicle operator.
- 5) The primary propulsion engine idles for maintenance, servicing, repairing, or diagnostic purposes if idling is necessary for such activity.
- 6) A motor vehicle idles as part of a government inspection to verify that all equipment is in good working order, provided idling is required as part of the inspection.
- 7) When idling of the motor vehicle is required to operate auxiliary equipment to accomplish the intended use of the vehicle (such as loading, unloading, mixing, or processing cargo; controlling cargo temperature; construction operations, lumbering operations; oil or gas well servicing; or farming operations), provided that this exemption does not apply when the vehicle is idling solely for cabin comfort or to operate non-essential equipment such as air conditioning, heating, microwave ovens, or televisions.
- 8) When the motor vehicle idles due to mechanical difficulties over which the operator has no control.
- 9) The outdoor temperature is less than 32 °F (0 °C) or greater than 80 °F (26 °C).

When the outdoor temperature is greater than or equal to 32 °F (0 °C) or less than or equal to 80 °F (26 °C), a person who operates a motor vehicle operating on diesel fuel shall not cause or allow the motor vehicle to idle for a period greater than 30 minutes in any 60 minute period while waiting to weigh, load, or unload cargo or freight, unless the vehicle is in a line of vehicles that regularly and periodically moves forward.

The above requirements do not prohibit the operation of an auxiliary power unit or generator set as an alternative to idling the main engine of a motor vehicle operating on diesel fuel.

Environmental Deficiency Deduction. When the Engineer is notified, or determines that an environmental control deficiency exists based on non-compliance with the idling

restrictions, he/she will notify the Contractor, and direct the Contractor to correct the deficiency.

If the Contractor fails to correct the deficiency a monetary deduction will be imposed. The monetary deduction will be \$1,000.00 for each deficiency identified.

80239



**Illinois Department
of Transportation**

COMPUTED BY: MRW
 DATE: 3/3/2016
 CHECKED BY: _____
 DATE: _____

ROUTE: IL 185
 SECTION: _____
 COUNTY: Fayette
 SHEET: _____

COMPUTATIONS	ITEM DESCRIPTION	UNIT	CODE NUMBER
	PCC Base Course Widening, 8"	SQ YD	

NORTH OF THE STRUCTURE

Width = 4 ft
 Length = 130 ft
 Area = (4' X 130') / 9 = 57.8 sq yd.
 Total = 57.8 sq yd X 2 sides = 115.6 sq yd

SOUTH OF THE STRUCTURE

Width = 4 ft
 Length = 130 ft
 Area = (4' X 130') / 9 = 57.8 sq yd.
 Total = 57.8 sq yd X 2 sides = 115.6 sq yd

Total Area for both north and south = 115.6 sq yd. + 115.6 sq yd. = **231.2 sq yd.**

GENERAL NOTES

Existing reinforcement bars extending into the removal area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost included with Concrete Removal.

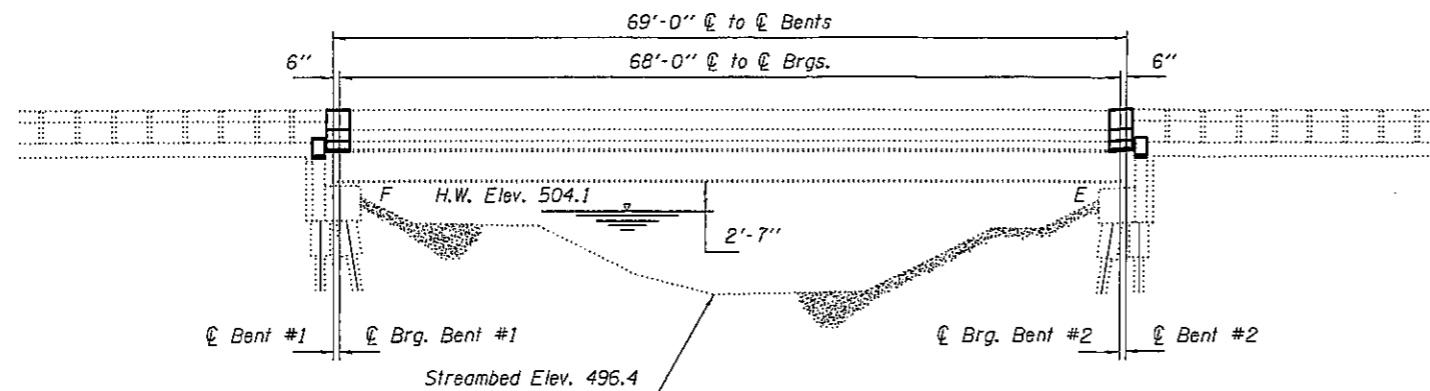
Joint openings shall be adjusted according to Article 520.04 of the Std. Specs. when the deck is poured at an ambient temperature other than 50° F.

Prior to pouring the new concrete deck, all heavy or loose rust, loose mill scale, and other loose or potentially detrimental foreign material shall be removed from the surfaces in contact with concrete. Tightly adhered point may remain unless otherwise noted. Removal shall be accomplished by methods that will not damage the steel and the cost will be included in the pay item covering removal of the existing concrete.

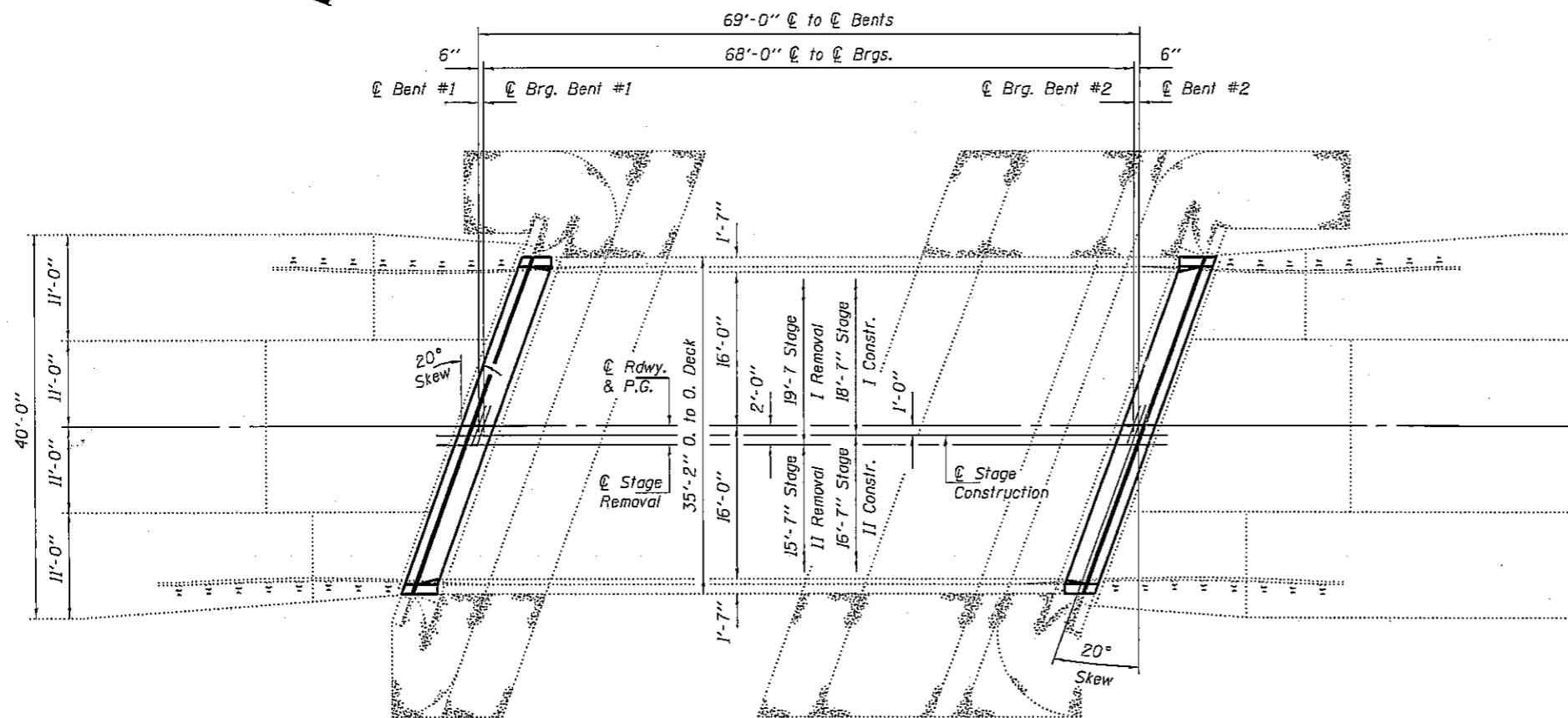
Reinforcement bars designated (E) shall be epoxy coated.

Plan dimensions and details relative to existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

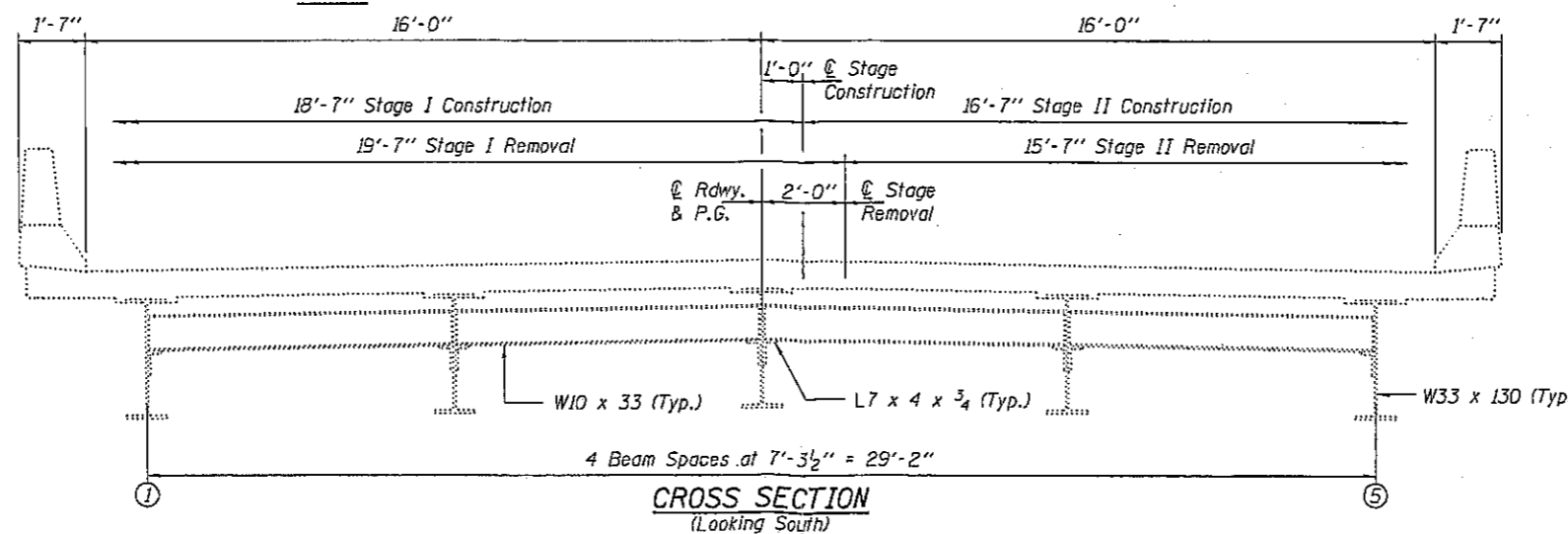
The deck surface shall have its final finish tined according to Article 420.09(e)(1) of the Standard Specifications. Cost included with Concrete Superstructure.



ELEVATION



PLAN



CROSS SECTION
(Looking South)

TOTAL BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Concrete Removal	Cu. Yd.	10.3
Concrete Superstructure	Cu. Yd.	10.3
Preformed Joint Strip Seal	Foot	73
Reinforcement Bars, Epoxy Coated	Pound	1350
Bar Splicers	Each	26
* Protective Coat	Sq. Yd.	28.3
** Approach Slab Repair (Partial Depth)	Sq. Yd.	5.2

* On new concrete only
** See sheet 3 of 6.



EXPIRES 11-30-2016

DESIGNED *Sean Chace*
CHECKED *Stephan Ryan*
DRAWN *J. Schneller*
CHECKED *SMR*

PASSED

David Carl Puze
ACTING ENGINEER OF BRIDGES AND STRUCTURES

DATE MARCH 4, 2016

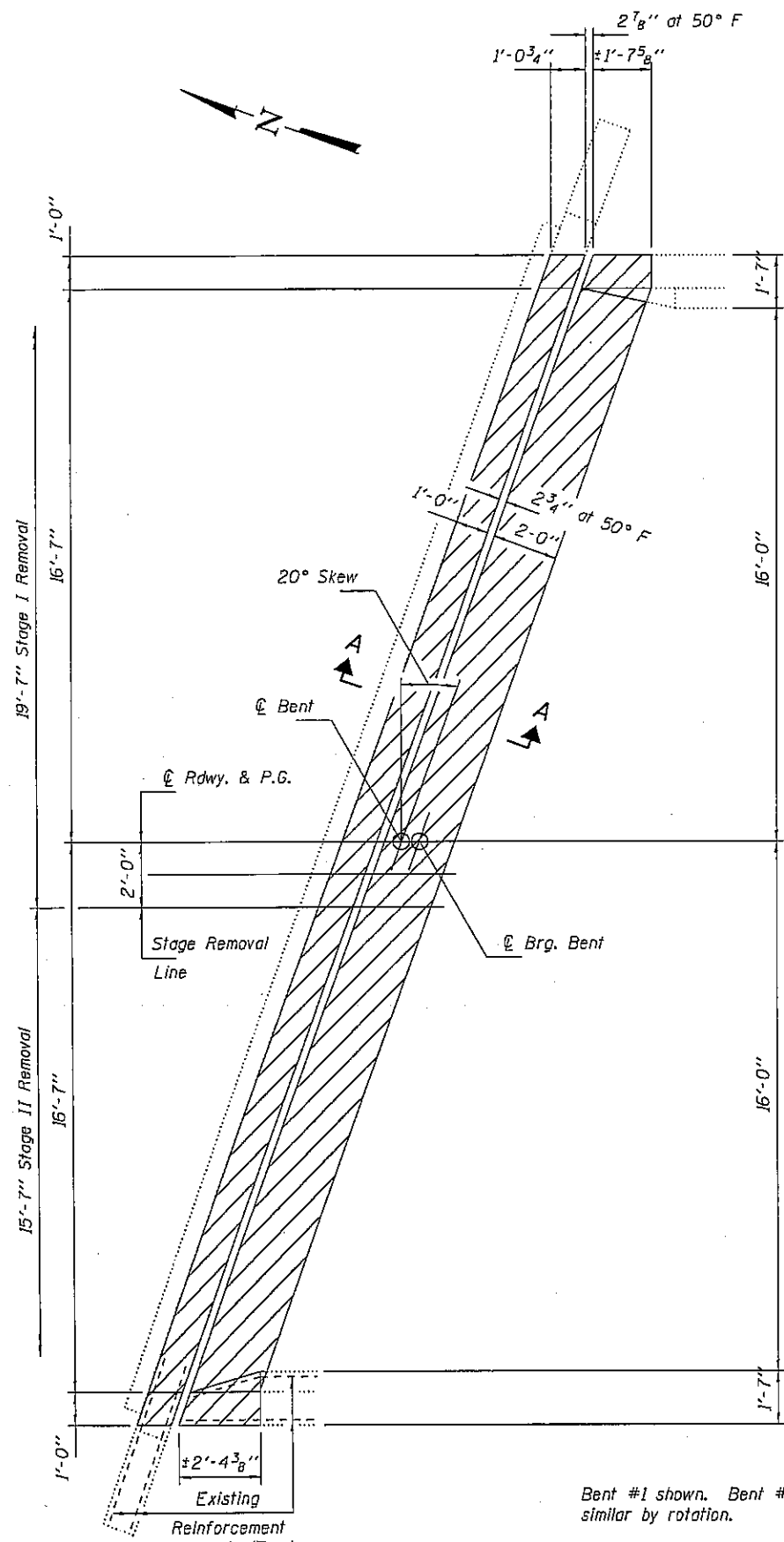
REVISED
REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

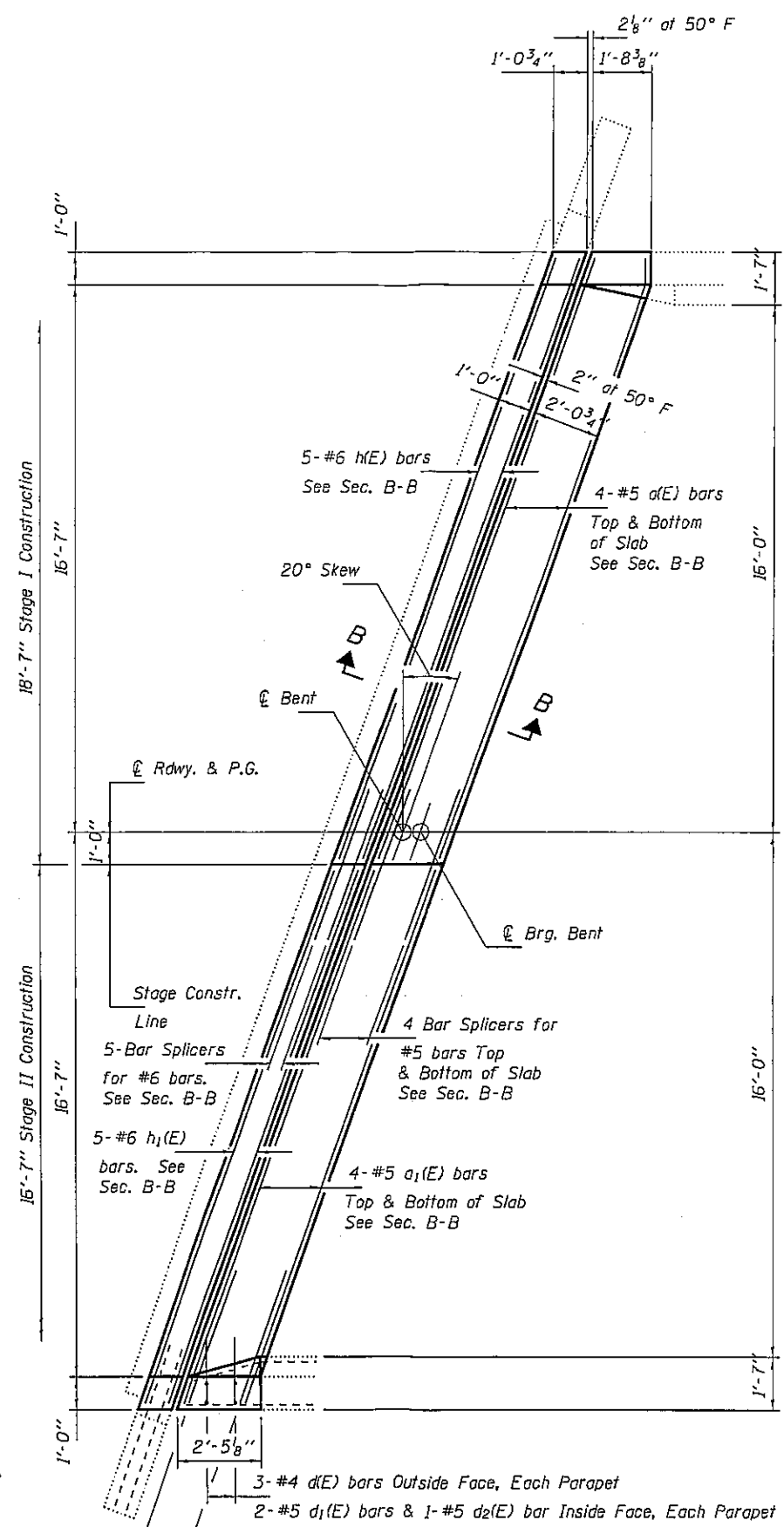
PLAN & ELEVATION
SN 026-0091

SHEET NO. 1 OF 6 SHEETS

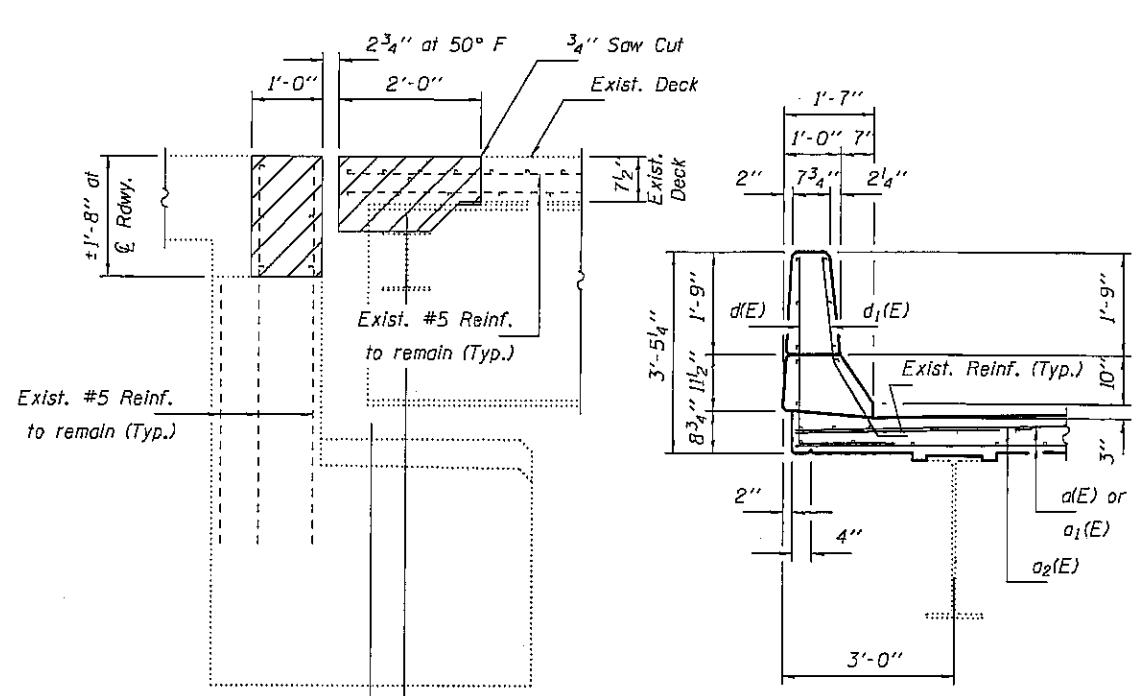
F.A. RITE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TSD	112BR	FAYETTE	-	-
CONTRACT NO.				
ILLINOIS FED. AID PROJECT				



REMOVAL PLAN



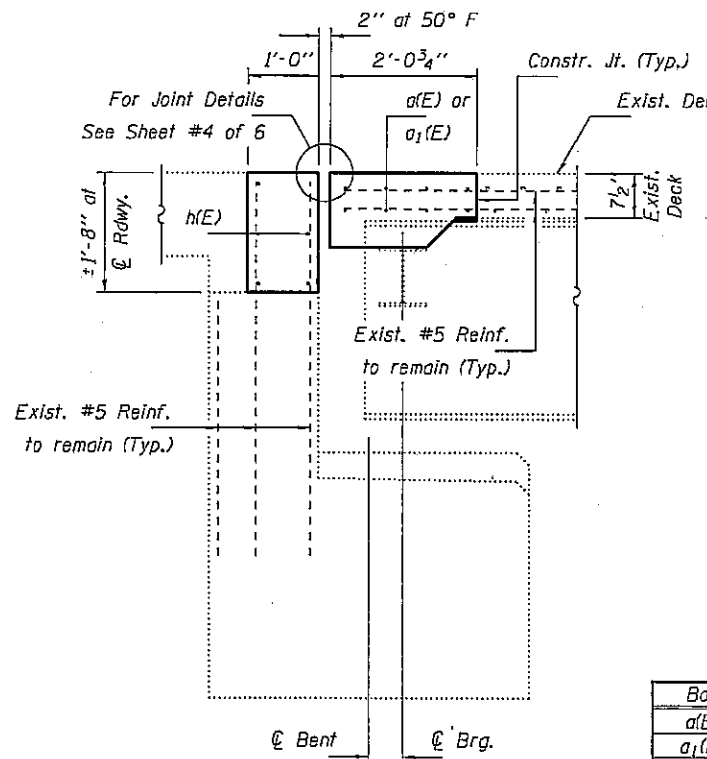
REPLACEMENT PLAN



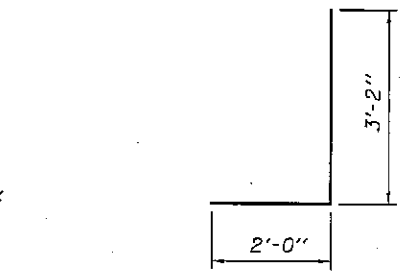
SECTION THRU PARAPET



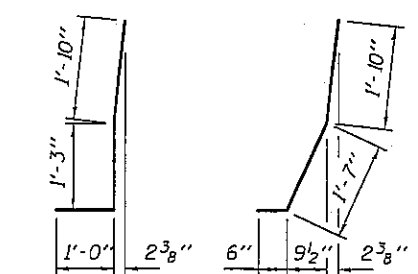
SECTION A-A
(Near E Rdwy.)



SECTION B-B
(Near E Rdwy.)



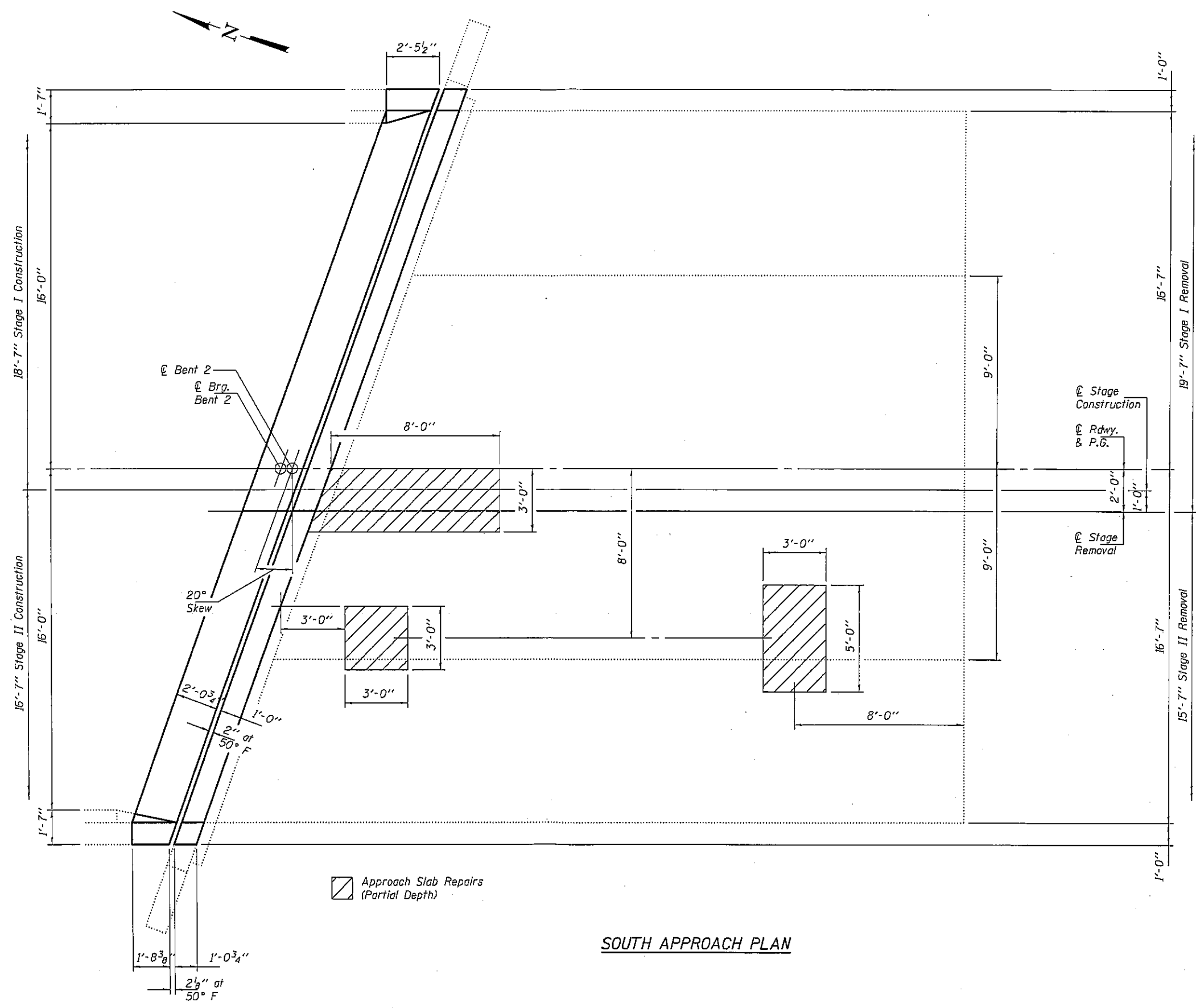
BAR d(E)



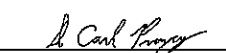
BAR d2(E) BAR d1(E)

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
d(E)	16	#5	19'-3"	—
a1(E)	16	#5	17'-3"	—
a2(E)	16	#6	4'-0"	—
d(E)	12	#4	5'-2"	J
d1(E)	8	#5	3'-11"	J
d2(E)	4	#5	4'-1"	J
h(E)	10	#6	19'-5"	—
h1(E)	10	#6	17'-5"	—
Concrete Removal			Cu. Yd.	10.3
Concrete Superstructure			Cu. Yd.	10.3
Reinforcement Bars, Epoxy Coated			Lbs.	1350



DESIGNED CCC
 CHECKED SMR
 DRAWN J. Schneller
 CHECKED CCC SMR

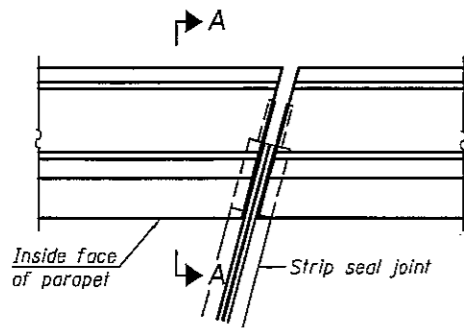
PASSED

 ACTING ENGINEER OF BRIDGES AND STRUCTURES

DATE MARCH 4, 2016
 REVISED
 REVISED

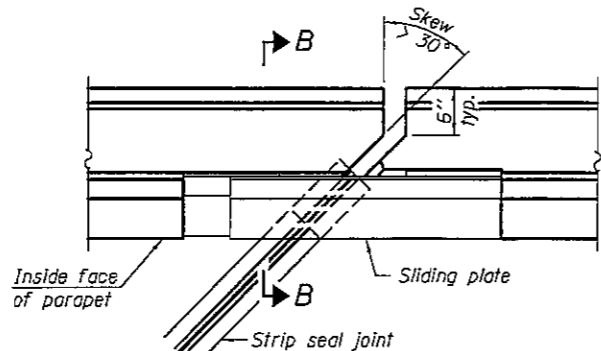
STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

SOUTH APPROACH SLAB REPAIRS
 SN 026-0091
 SHEET NO. 3 OF 6 SHEETS

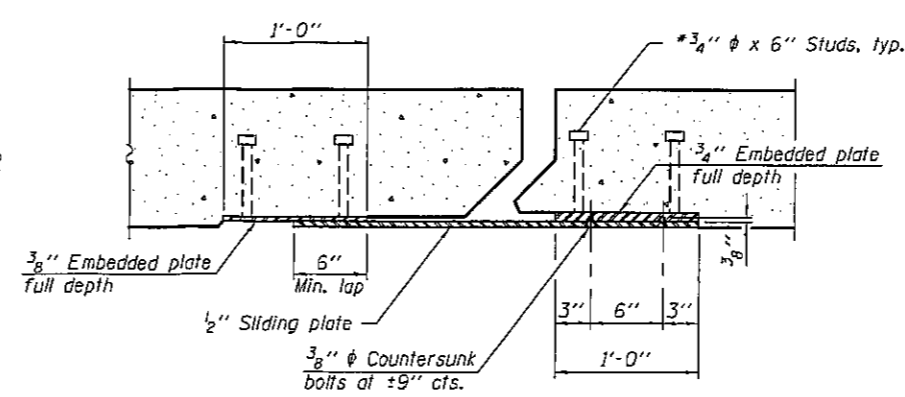
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
750	1128R	FAYETTE	-	-
CONTRACT NO.				
ILLINOIS FED. AID PROJECT				



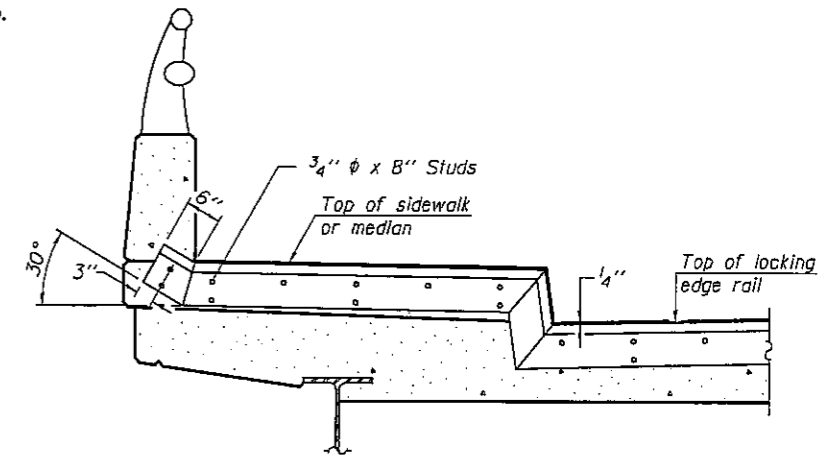
PLAN
(For skews $\leq 30^\circ$)



PLAN
(For skews $> 30^\circ$)
Showing point block

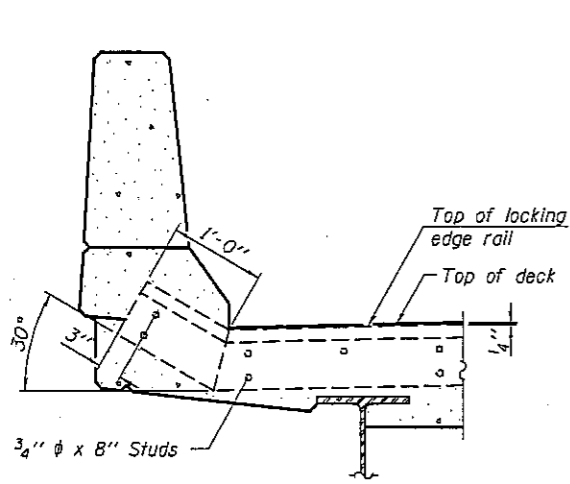


SECTION C-C

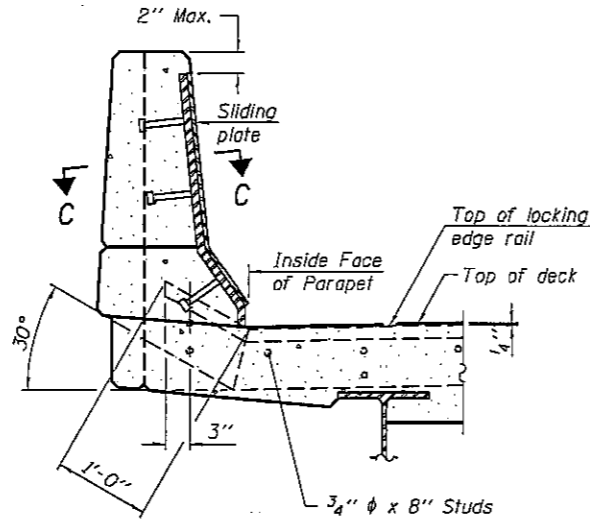


**TYPICAL END TREATMENT
AT SIDEWALK OR MEDIAN**

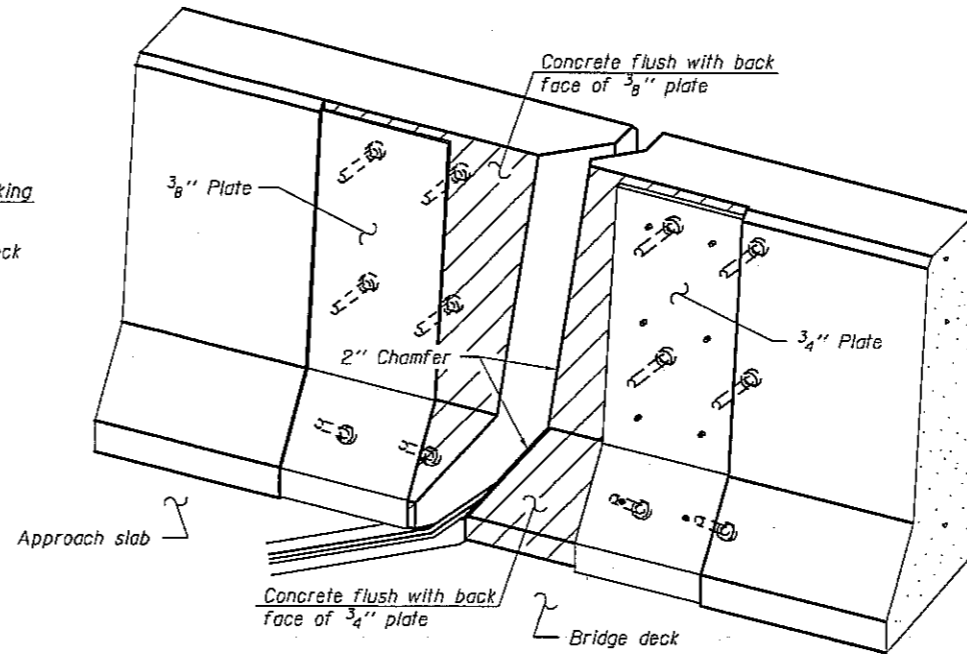
Shorter plates with a single row of studs at 12" cts. may be necessary on medians which are shallower than 9". See manufacturer's recommendation.



SECTION A-A



SECTION B-B



TRIMETRIC VIEW
(Showing back plates only)

Notes:
The strip seal shall be made continuous and shall have a minimum thickness of 1/4". The configuration of the strip seal shall match the configuration of the Locking Edge Rails. Open or "webbed" strip seal gland configurations are not permitted. The gland shall be sized for a maximum rated movement of 4 inches.

The Locking Edge Rails depicted are conceptual only, except for the minimum dimensions shown. The actual configuration of the Locking Edge Rails and matching strip seal may vary from manufacturer to manufacturer. Flanged edge rails will not be allowed. Locking Edge Rails may be spliced at slope discontinuities.

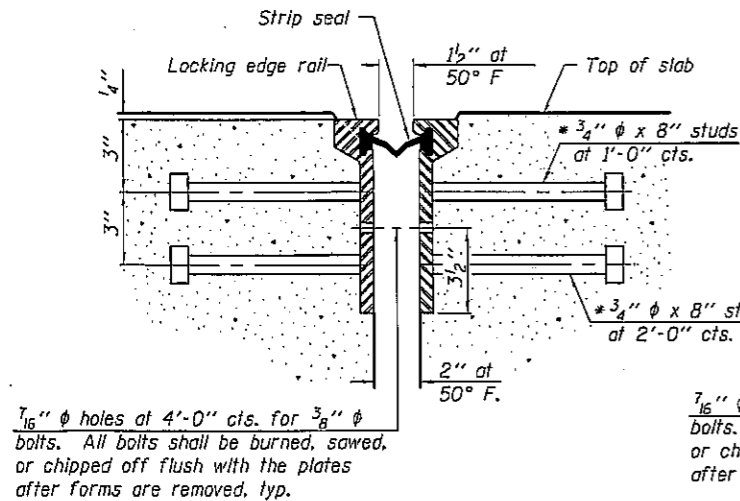
The manufacturer's recommended installation methods shall be followed.

The joint opening and deck dimensions detailed on the superstructure are based on a rolled rail expansion joint. If the Contractor elects to use the welded rail expansion joint, the opening and deck dimensions shall be modified according to the dimensions detailed on this sheet. Required modifications shall be made at no additional cost to the State.

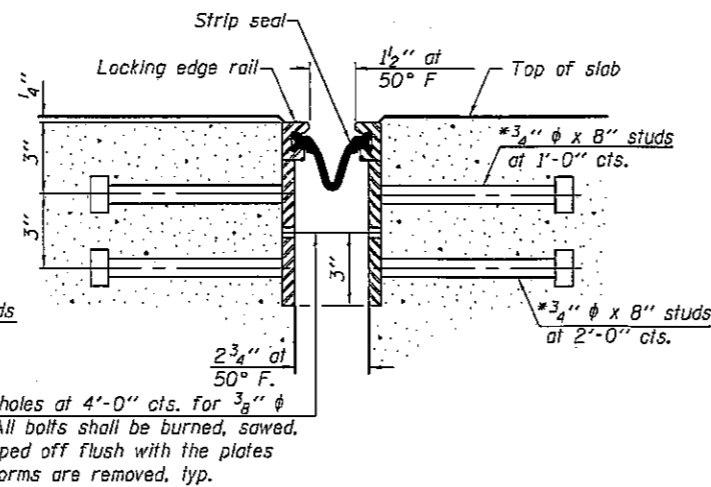
All steel components shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications.

Maximum space between rail segments shall be 3/16", sealed with a suitable sealant. Joints in rails within 10 ft. of curbs shall be welded.

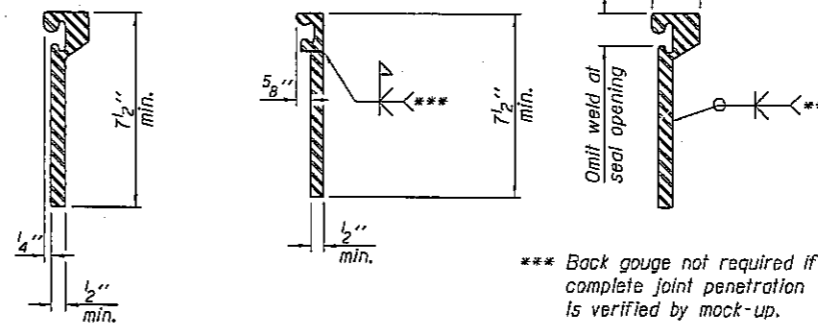
Parapet plates and anchorage studs for skews $> 30^\circ$ included in the cost of Preformed Joint Strip Seal.



**SECTION THRU
ROLLED RAIL JOINT**



**SECTION THRU
WELDED RAIL JOINT**



**ROLLLED
EXTRUDED RAIL** **WELDED RAIL**

**LOCKING EDGE
RAIL SPLICE**

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

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

LOCKING EDGE RAILS

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	73

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

EJ-SSJ

1-27-12

DESIGNED CCC
CHECKED SMR
DRAWN J. Schneller
CHECKED CCC SMR

PASSED

J. Carl Pappas
ACTING ENGINEER OF BRIDGES AND STRUCTURES

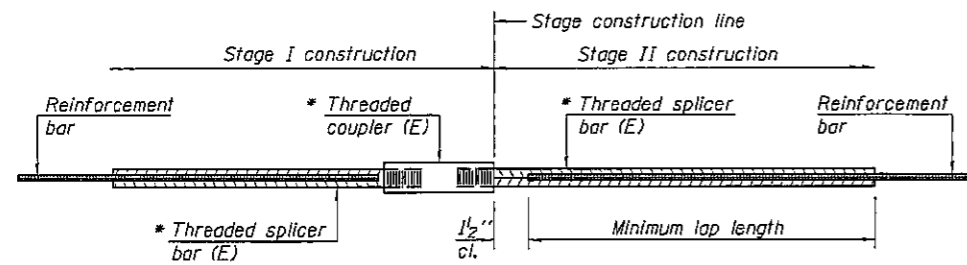
DATE MARCH 4, 2016
REVISED
REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PREFORMED JOINT STRIP SEAL
SN 026-0091

SHEET NO. 4 OF 6 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
750	1128R	FAYETTE		
CONTRACT NO.				
[ILLINOIS] FED. AID PROJECT				

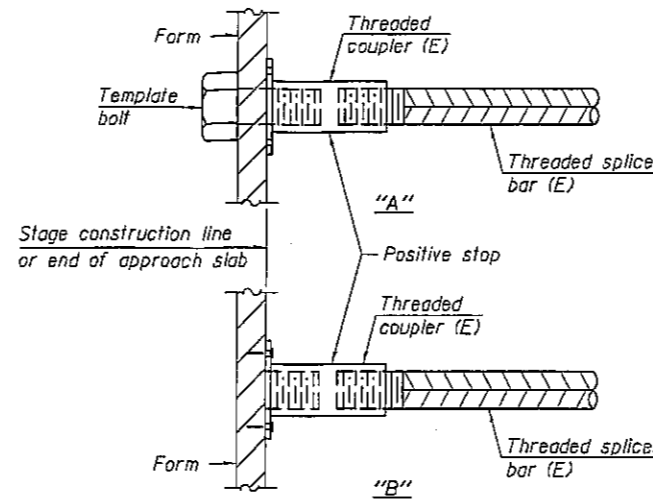


STANDARD BAR SPLICER ASSEMBLY

Threaded splicer bar length = min. lap length + 1/2" + thread length

* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Minimum lap length
Bent #1, Hatch Block	#6	5	3'-7"
Bent #1, End of Slab	#5	8	3'-0"
Bent #2, Hatch Block	#6	5	3'-7"
Bent #2, End of Slab	#5	8	3'-0"

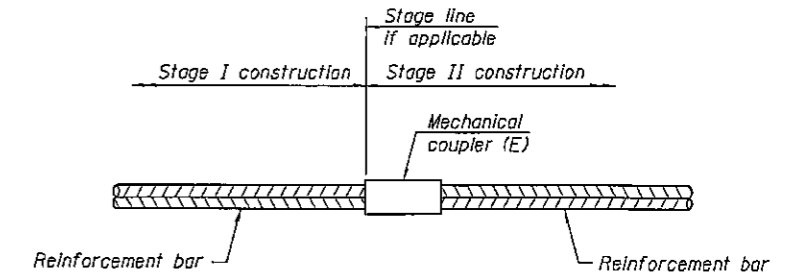


INSTALLATION AND SETTING METHODS

"A" : Set bar splicer assembly by means of a template bolt.

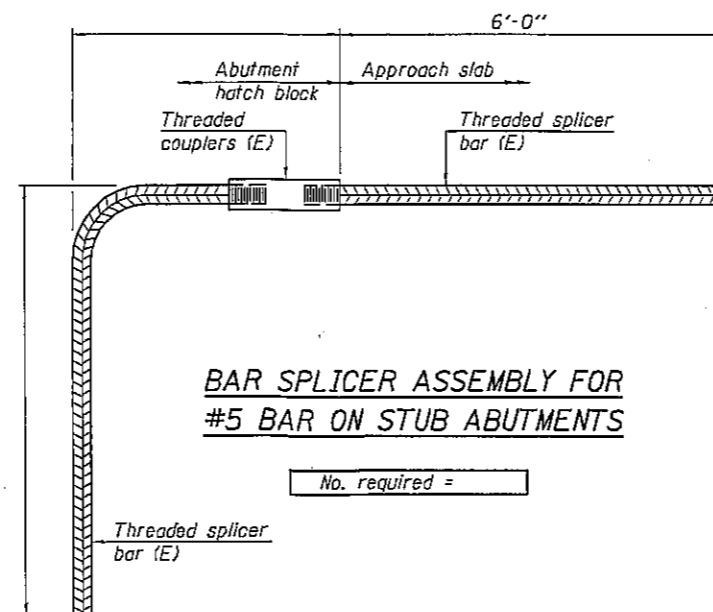
"B" : Set bar splicer assembly by nailing to wood forms or cementing to steel forms.

(E) : Indicates epoxy coating.



STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required



BAR SPLICER ASSEMBLY FOR #5 BAR ON STUB ABUTMENTS

No. required =

NOTES

Splicer bars shall be deformed with threaded ends and have a minimum 60 ksi yield strength.

All reinforcement shall be lapped and tied to the splicer bars. Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars. See Section 508 of the Standard Specifications.

See approved list of bar splicer assemblies and mechanical splicers for alternatives.

BSD-1 6-8-15

DESIGNED CCC
 CHECKED SMR
 DRAWN J. Schneller
 CHECKED CCC SMR

PASSED
 ACTING ENGINEER OF BRIDGES AND STRUCTURES

DATE MARCH 4, 2016
 REVISED
 REVISED

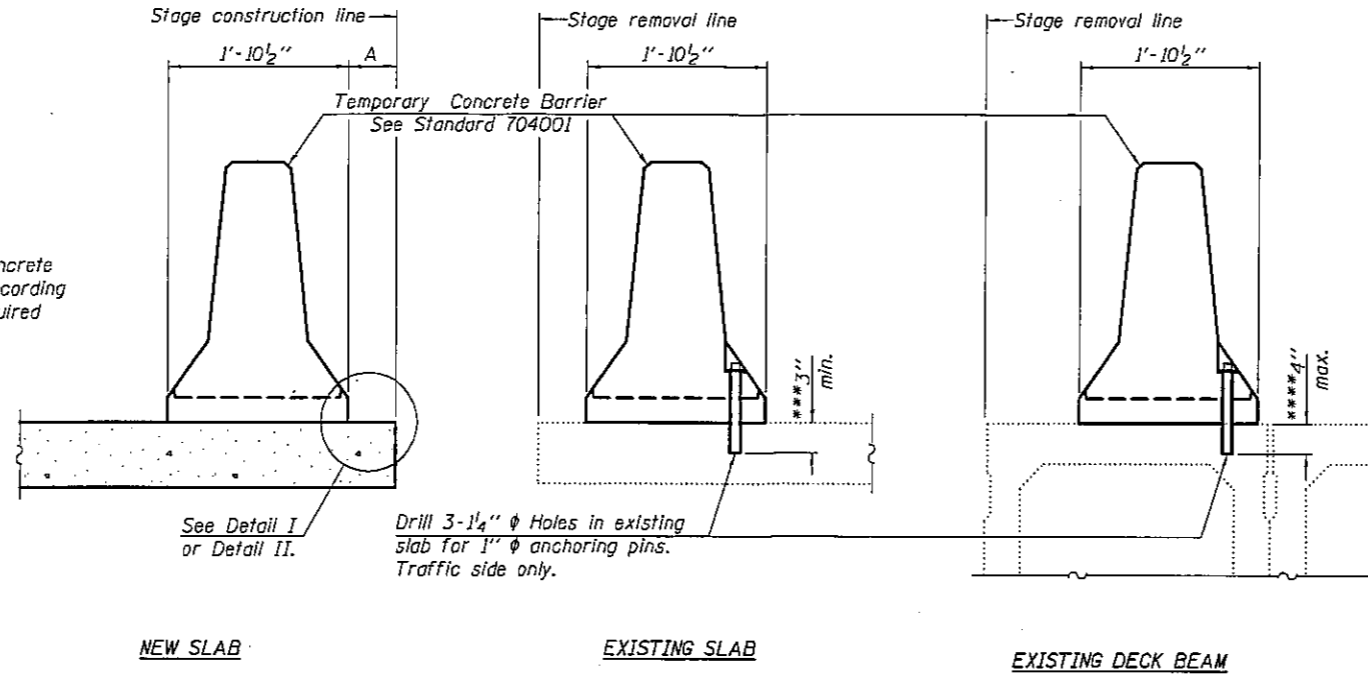
STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS
 SN 026-0091

SHEET NO. 5 OF 6 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
750	1129R	FAYETTE	-	-
CONTRACT NO.				
ILLINOIS FED. AID PROJECT				

When "A" is 3'-1" or less, the temporary concrete barrier shall be anchored to the new slab according to Detail I or Detail II. No anchorage is required when "A" is greater than 3'-1".



SECTIONS THRU SLAB OR DECK BEAM

NOTES

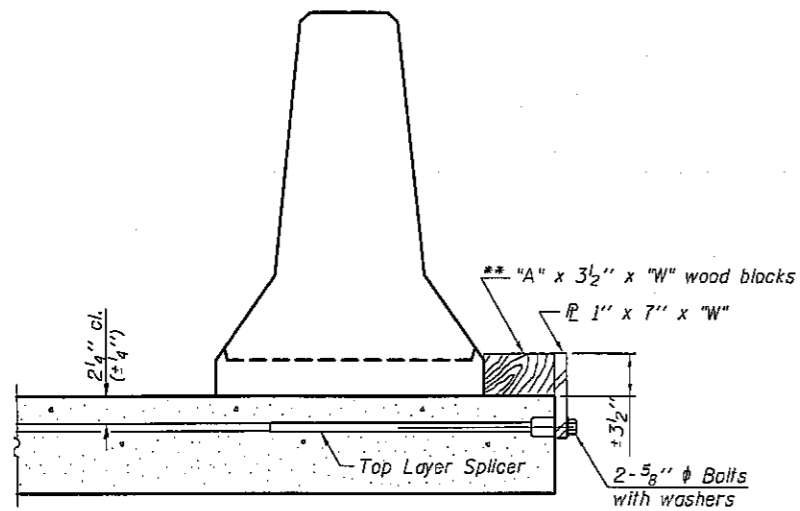
Detail I - With Bar Splicer or Couplers:
Connect one (1) 1" x 7" x "W" steel \bar{L} to the top layer of couplers with 2-5/8" ϕ bolts screwed to coupler at approximate \bar{C} of each barrier panel.

Detail II - With Extended Reinforcement Bars:
Connect one (1) 1" x 7" x "W" steel \bar{L} to the concrete slab or concrete wearing surface with 2-5/8" ϕ Expansion Anchors or cast in place inserts spaced between the top layer of reinforcement at approximate \bar{C} of each barrier panel.

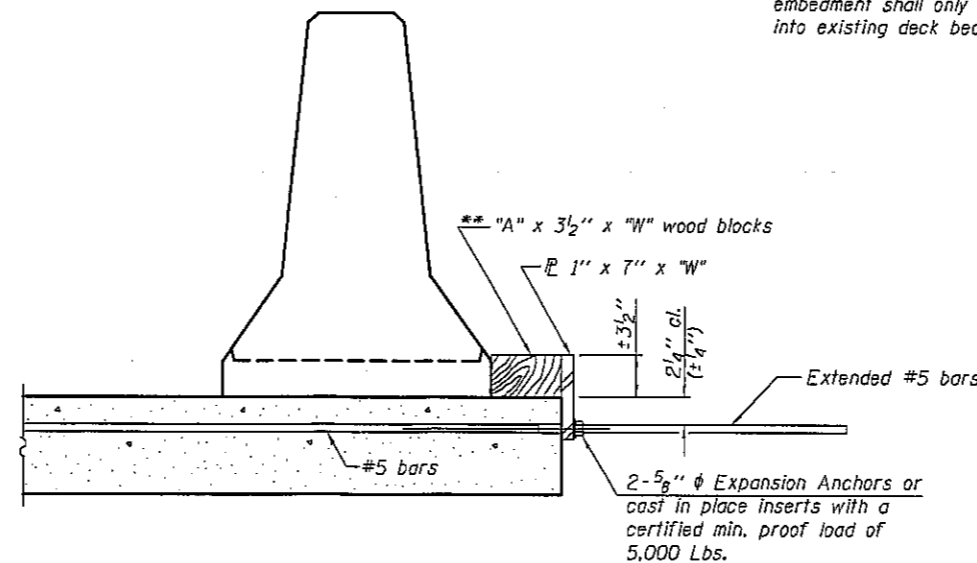
Cost of retainer assembly is included with Temporary Concrete Barrier. The 1" x 7" x "W" plate shall not be removed until stage II construction forms and all reinforcement bars are in place and the concrete is ready to be placed.

*** Dimension shown is minimum required embedment into concrete. If hot-mix asphalt wearing surface is present, minimum embedment shall be in addition to wearing surface depth.

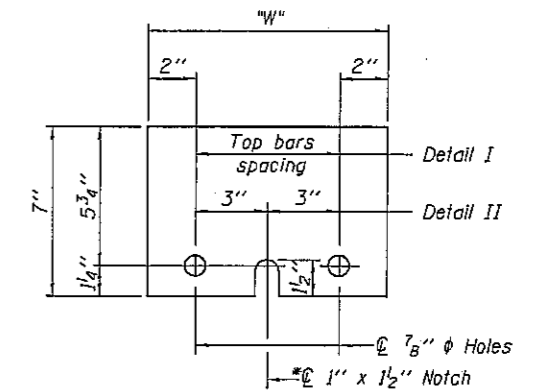
**** If existing deck beam is to remain in place after stage construction, embedment shall only be into wearing surface and not into existing deck beam concrete.



DETAIL I



DETAIL II



STEEL RETAINER \bar{L} 1" x 7" x "W"

* Required only with Detail II

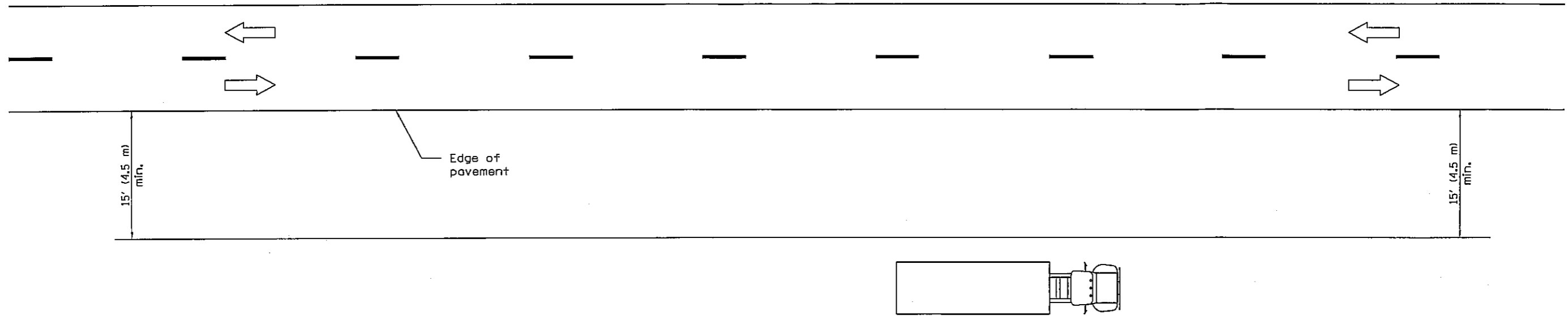
RETAINER ASSEMBLY

** Wood blocks may be omitted when required to provide minimum stage traffic lane width. When the wood blocks are omitted, the concrete barrier shall be in direct contact with the steel retainer plate.

R-27

1-12-15

DESIGNED CCC	DATE MARCH 4, 2016	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	TEMPORARY CONCRETE BARRIER FOR STAGE CONSTRUCTION SN 026-0091	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CHECKED SMR	REVISED			750	112BR	FAYETTE	-	-
DRAWN J. Schneller	REVISED	SHEET NO. 6 OF 6 SHEETS		CONTRACT NO.				
CHECKED CCC SMR	ACTING ENGINEER OF BRIDGES AND STRUCTURES			ILLINOIS FED. AID PROJECT				



TYPICAL APPLICATIONS

- Landscaping work
- Utility work
- Fencing contracts and maintenance
- Cleaning culverts

GENERAL NOTES

This Standard is used where at all times all vehicles, equipment, workers or their activities are more than 15' (4.5 m) from the edge of pavement.

When the work operation requires that two or more work vehicles cross the 15' (4.5 m) clear zone in any one hour, traffic control shall be according to Standard 701006.

All dimensions are in Inches (millimeters) unless otherwise shown.

DATE	REVISIONS
1-1-09	Switched units to English (metric).
1-1-05	Revised title and notes.

**OFF-RD OPERATIONS,
2L, 2W, MORE THAN
15' (4.5 m) AWAY**

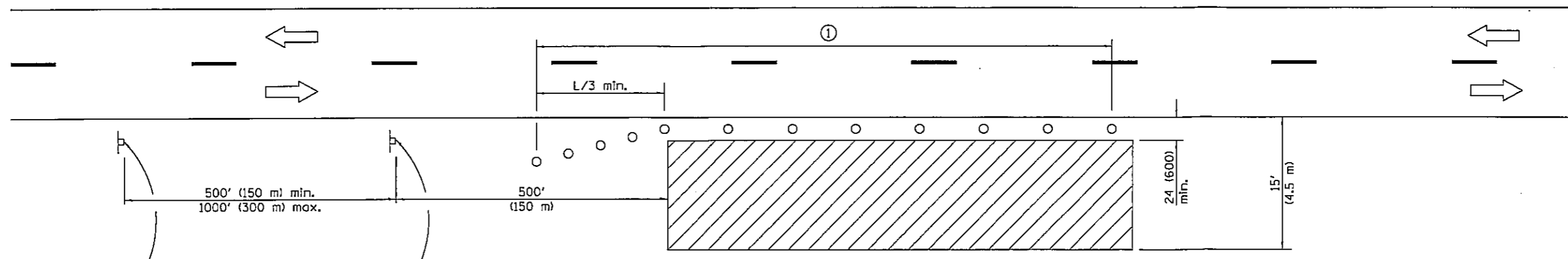
STANDARD 701001-02

Illinois Department of Transportation

APPROVED January 1, 2009
ENGINEER OF OPERATIONS

APPROVED January 1, 2009
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97



For contract construction projects

ROAD CONSTRUCTION AHEAD

W20-1103(O)-48

ROAD WORK AHEAD

W21-1(O)-48

For maintenance and utility projects

ROAD WORK AHEAD

W20-1(O)-48

TYPICAL APPLICATIONS

- Utility operations
- Culvert extensions
- Side slope changes
- Guardrail installation and maintenance
- delineator installation
- Landscaping operations
- Shoulder repair
- Sign installation and maintenance

SYMBOLS

- Work area
- Sign
- Cone, drum or barricade

① When the work operation exceeds one hour, cones, drums or barricades shall be placed at 25' (8 m) centers for L/3 distance, and at 50' (15 m) centers through the remainder of the work area.

GENERAL NOTES

This Standard is used where any vehicles, equipment, workers or their activities will encroach in the area 15' (4.5 m) to 24' (600) from the edge of pavement.

Calculate L as follows:

SPEED LIMIT	FORMULAS	
	English	(Metric)
40 mph (70 km/h) or less:	$L = \frac{WS^2}{60}$	$L = \frac{WS^2}{150}$
45 mph (80 km/h) or greater:	$L = (W)(S)$	$L = 0.65(W)(S)$

W = Width of offset in feet (meters).

S = Normal posted speed mph (km/h).

All dimensions are in inches (millimeters) unless otherwise shown.

Illinois Department of Transportation

APPROVED January 1, 2014
ENGINEER OF SAFETY ENGINEERING

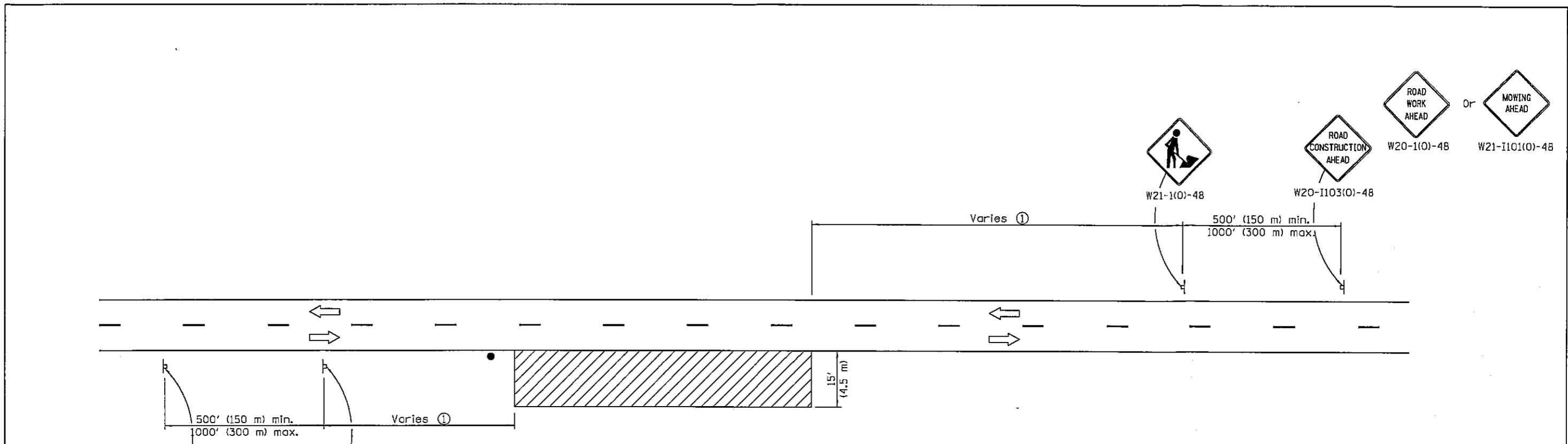
APPROVED January 1, 2014
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97

DATE	REVISIONS
1-1-14	Revised workers sign number to agree with current MUTCD.
1-1-13	Omitted text 'WORKERS' sign.

OFF-RD OPERATIONS, 2L, 2W, 15' (4.5 m) TO 24" (600 mm) FROM PAVEMENT EDGE

STANDARD 701006-05



For contract construction projects



W20-I103(O)-48



W21-1(O)-48

For maintenance and utility projects



W20-1(O)-48



W21-I101(O)-48

TYPICAL APPLICATIONS

Shoulder work
Utility operations

SYMBOLS



Work area



Sign



Flagger with traffic control sign when required

① Minimum distance is 200' (60 m). Maximum distance to be determined by the Engineer but should not exceed 1/2 the length required for one normal working day's operation, or 4 miles (6.4 km) whichever is less.

GENERAL NOTES

This Standard is used where at any time, any vehicle, equipment, workers or their activities require an intermittent or continuous moving operation on the shoulder, where the average speed is 1 mph (2 km/h) or less.

When the work operation does not exceed 60 minutes, traffic control may be according to Standard 701301.

All dimensions are in inches (millimeters) unless otherwise shown.

Illinois Department of Transportation

APPROVED January 1, 2014
ENGINEER OF SAFETY ENGINEERING

APPROVED January 1, 2014
ENGINEER OF DESIGN AND ENVIRONMENT

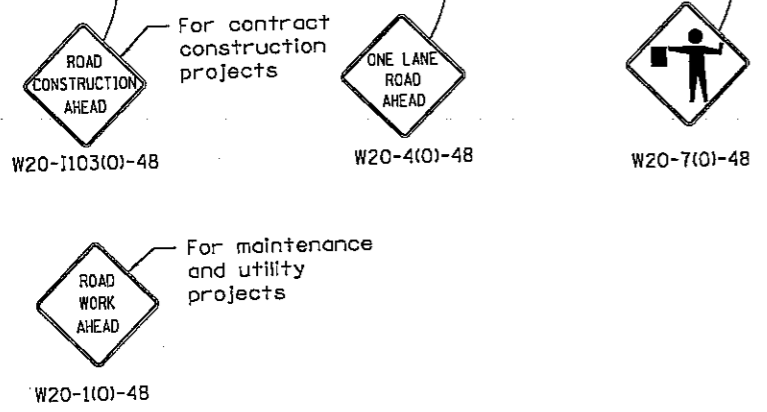
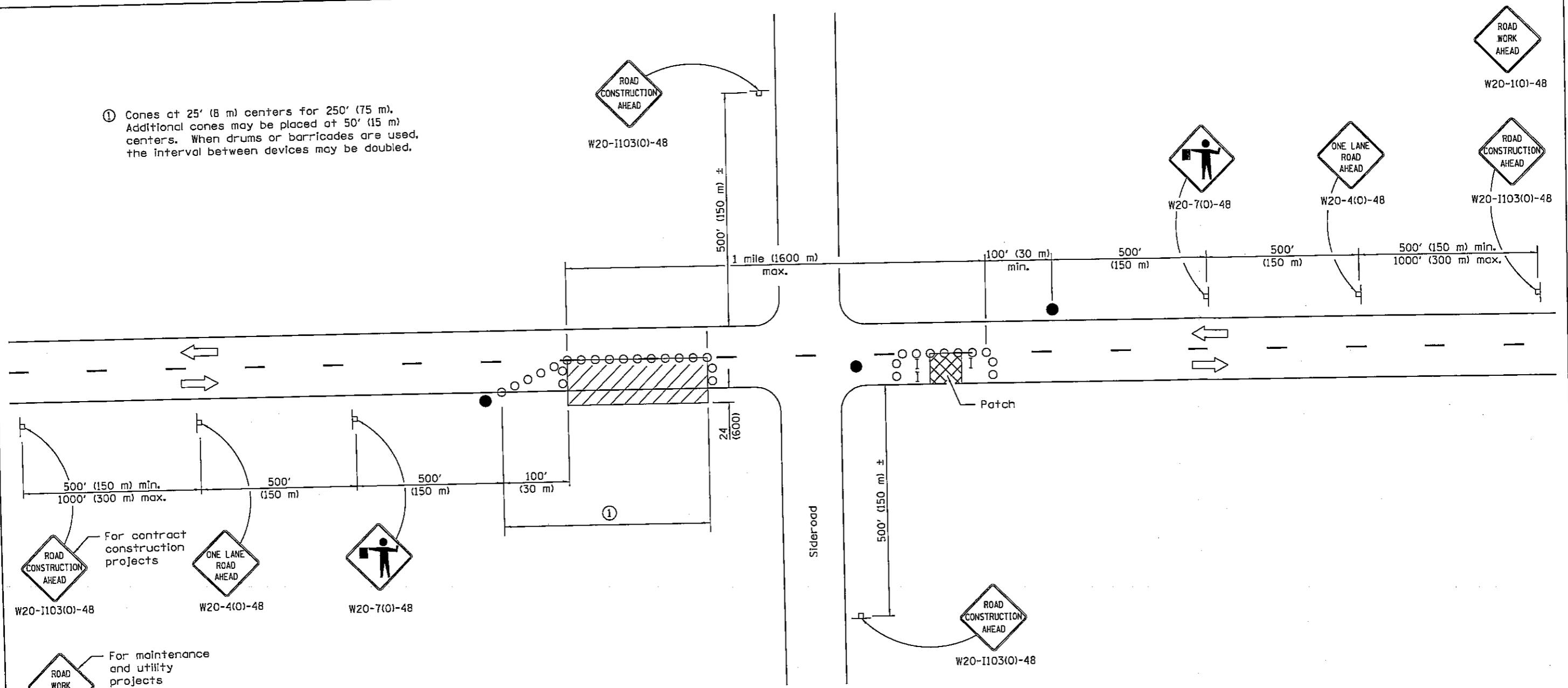
ISSUED 1-1-97

DATE	REVISIONS
1-1-14	Revised workers sign number to agree with current MUTCD.
1-1-13	Omitted text 'WORKERS' sign.

**OFF-RD MOVING OPERATIONS,
2L, 2W, DAY ONLY**

STANDARD 701011-04

① Cones at 25' (8 m) centers for 250' (75 m). Additional cones may be placed at 50' (15 m) centers. When drums or barricades are used, the interval between devices may be doubled.



TYPICAL APPLICATIONS
 Isolated patching
 Utility operations
 Storm sewer
 Culverts
 Cable placement

- SYMBOLS**
- Work area
 - Sign
 - Barricade or drum
 - Cone, drum or barricade
 - Flagger with traffic control sign

GENERAL NOTES

This Standard is used where at any time, any vehicles, equipment, workers or their activities will encroach in the area between the center line and a line 24 (600) outside the edge of pavement for daylight operation.

When the distance between successive work areas exceeds 2000' (600 m), additional warning signs, flaggers, and taper shall be placed as shown.

All dimensions are in inches (millimeters) unless otherwise shown.

DATE	REVISIONS
1-1-11	Revised flagger sign.
1-1-09	Switched units to English (metric).
	Corrected sign No.'s.

**LANE CLOSURE, 2L, 2W,
 DAY ONLY,
 FOR SPEEDS ≥ 45 MPH**

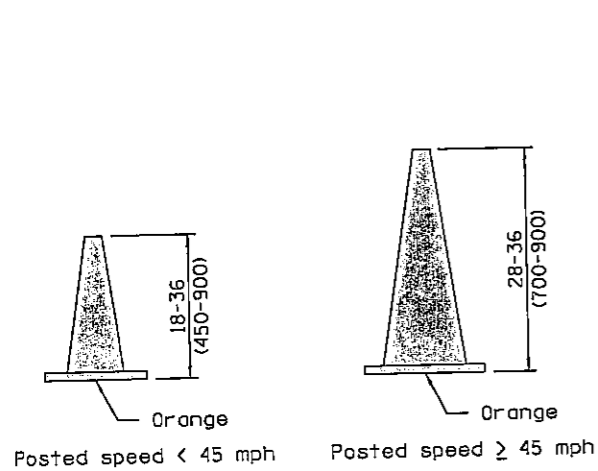
STANDARD 701201-04

Illinois Department of Transportation

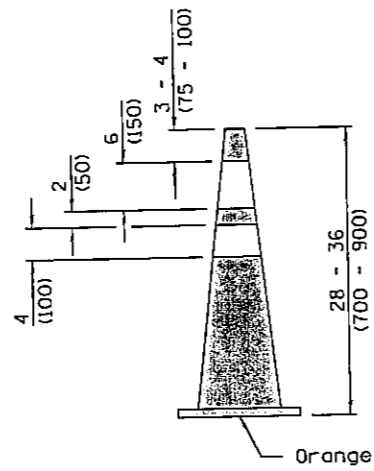
APPROVED January 1, 2011
 ENGINEER OF SAFETY ENGINEERING

APPROVED January 1, 2011
 ENGINEER OF DESIGN AND ENVIRONMENT

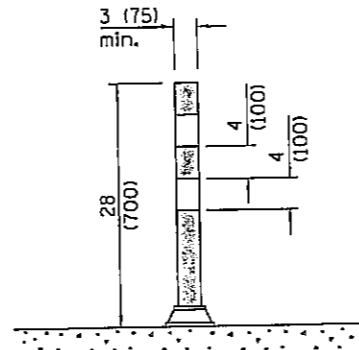
ISSUED 1-1-97



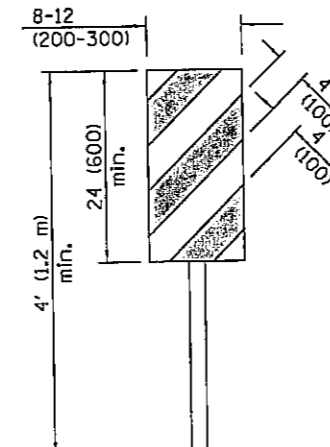
CONE FOR DAYTIME



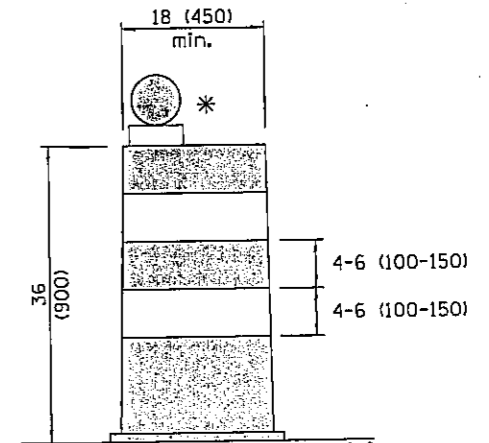
REFLECTORIZED CONE FOR NIGHTTIME



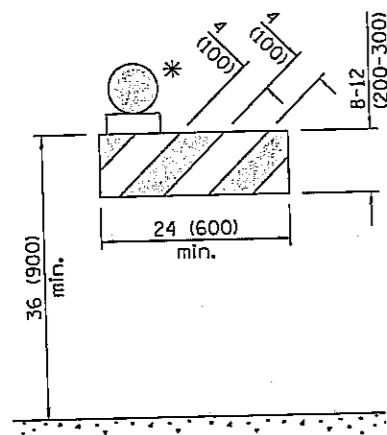
FLEXIBLE DELINEATOR



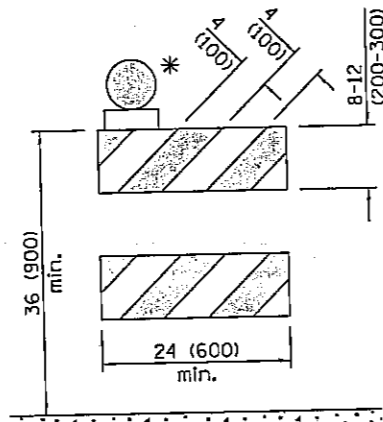
VERTICAL PANEL POST MOUNTED



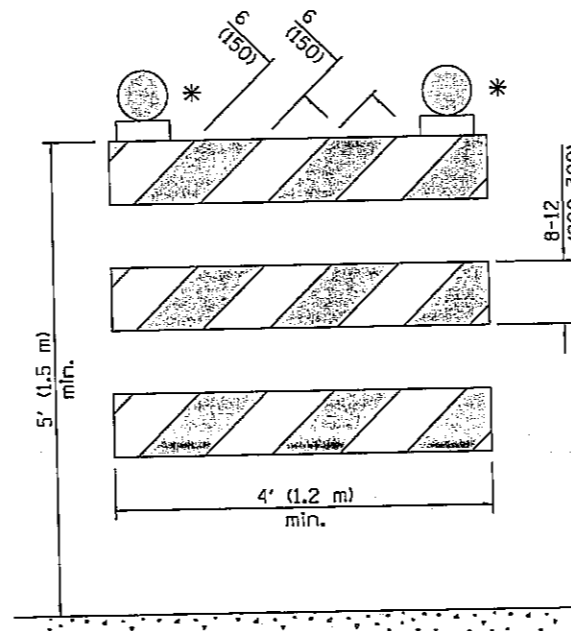
DRUM



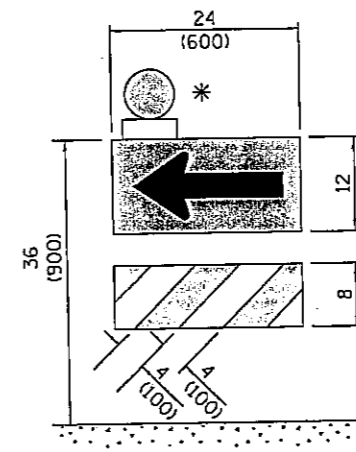
TYPE I BARRICADE



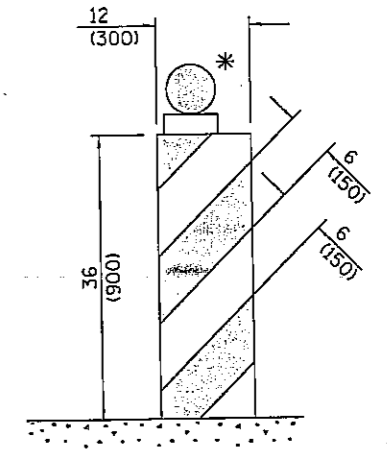
TYPE II BARRICADE



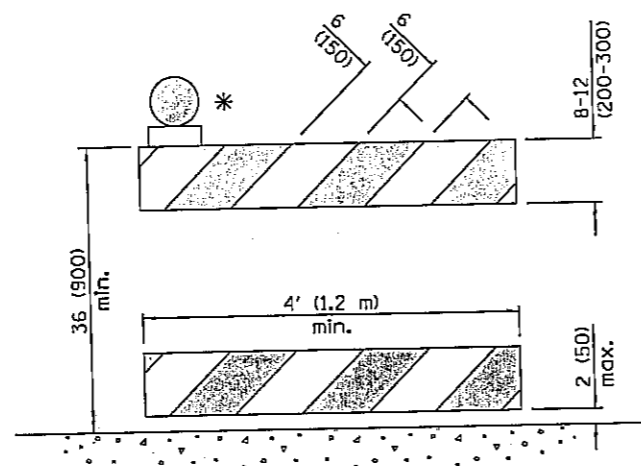
TYPE III BARRICADE



DIRECTION INDICATOR BARRICADE



VERTICAL BARRICADE



DETECTABLE PEDESTRIAN CHANNELIZING BARRICADE

* Warning lights (if required)

GENERAL NOTES

All heights shown shall be measured above the pavement surface.

All dimensions are in inches (millimeters) unless otherwise shown.

DATE	REVISIONS
4-1-16	Add dim's to barricades. Rev. note for post mnt. signs.
	Rev. cone dtls. Add W12-I103.
1-1-15	Revised two sign numbers on sheet 2. Added note reg. PHOTO ENFORCED plaque.

TRAFFIC CONTROL DEVICES

(Sheet 1 of 3)

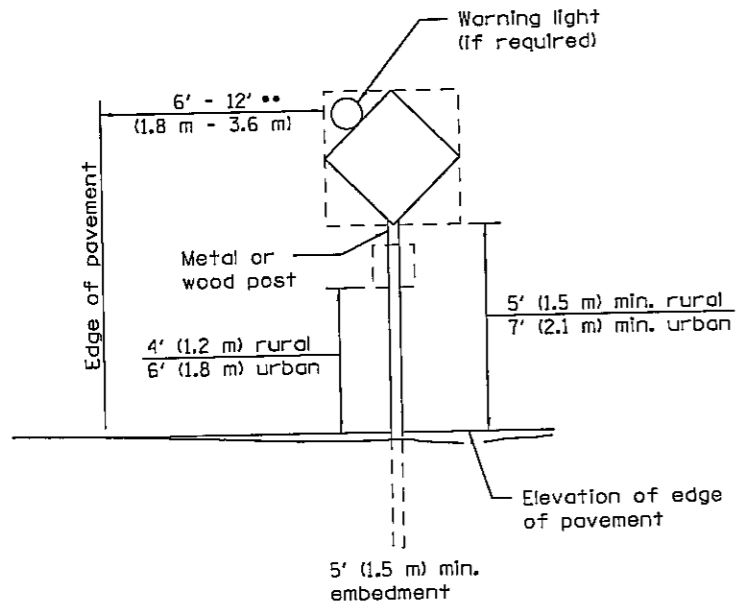
STANDARD 701901-05

Illinois Department of Transportation

APPROVED *[Signature]* April 1, 2016
ENGINEER OF OPERATIONS

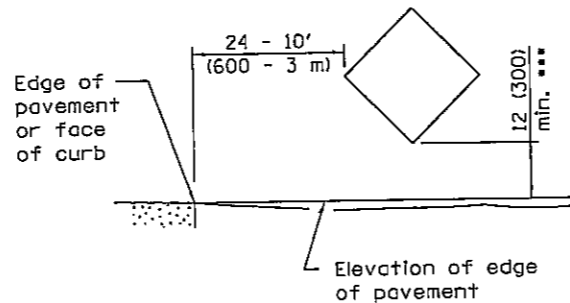
APPROVED *[Signature]* April 1, 2016
ENGINEER OF DESIGN AND ENVIRONMENT

26-1-1 03/15/11



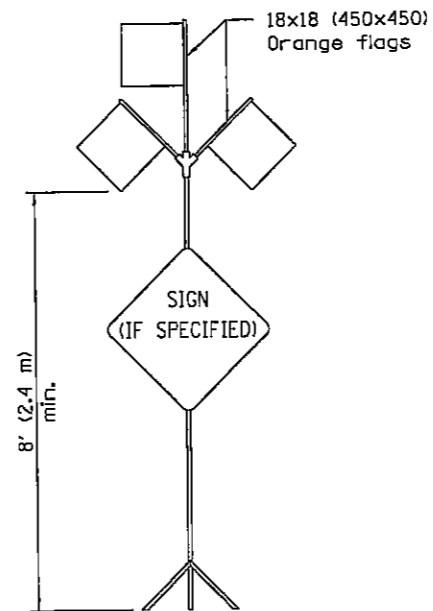
POST MOUNTED SIGNS

** When curb or paved shoulder are present this dimension shall be 24 (600) to the face of curb or 6' (1.8 m) to the outside edge of the paved shoulder.



SIGNS ON TEMPORARY SUPPORTS

*** When work operations exceed four days, this dimension shall be 5' (1.5 m) min. If located behind other devices, the height shall be sufficient to be seen completely above the devices.



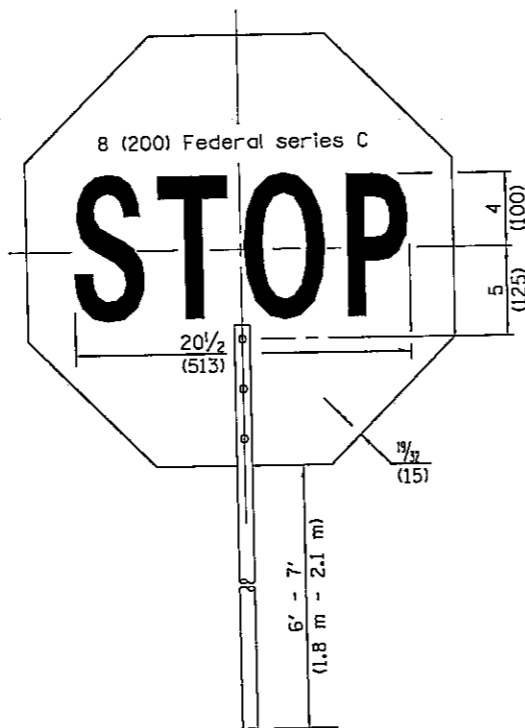
HIGH LEVEL WARNING DEVICE



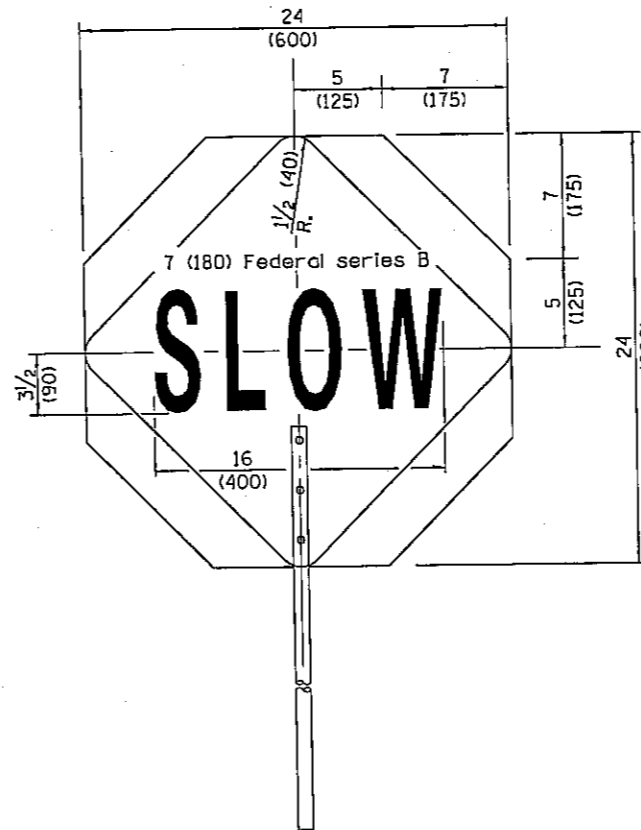
W12-I103-4848

WIDTH RESTRICTION SIGN

XX'-XX" width and X miles are variable.

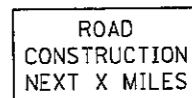


FRONT SIDE

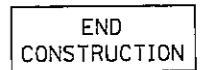


REVERSE SIDE

FLAGGER TRAFFIC CONTROL SIGN



G20-I104(0)-6036



G20-I105(0)-6024

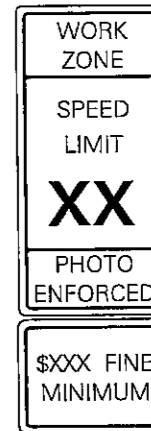
This signing is required for all projects 2 miles (3200 m) or more in length.

ROAD CONSTRUCTION NEXT X MILES sign shall be placed 500' (150 m) in advance of project limits.

END CONSTRUCTION sign shall be erected at the end of the job unless another job is within 2 miles (3200 m).

Dual sign displays shall be utilized on multi-lane highways.

WORK LIMIT SIGNING



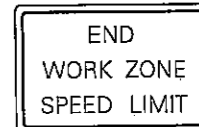
W21-I115(0)-3618

R2-1-3648

R10-I108p-3618 ****

R2-I106p-3618

Sign assembly as shown on Standards or as allowed by District Operations.



G20-I103(0)-6036

This sign shall be used when the above sign assembly is used.

HIGHWAY CONSTRUCTION SPEED ZONE SIGNS

**** R10-I108p shall only be used along roadways under the jurisdiction of the State.

TRAFFIC CONTROL DEVICES

(Sheet 2 of 3)

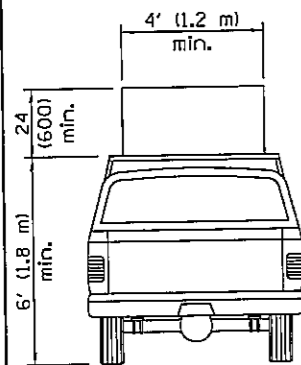
STANDARD 701901-05

Illinois Department of Transportation

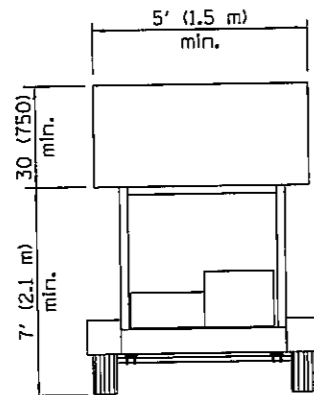
APPROVED April 1, 2016
John Allen
 ENGINEER OF OPERATIONS

APPROVED April 1, 2016
[Signature]
 ENGINEER OF DESIGN AND ENVIRONMENT

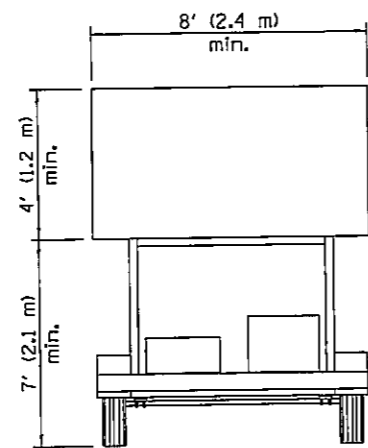
ISSUED 76-1-1



**TYPE A
ROOF
MOUNTED**

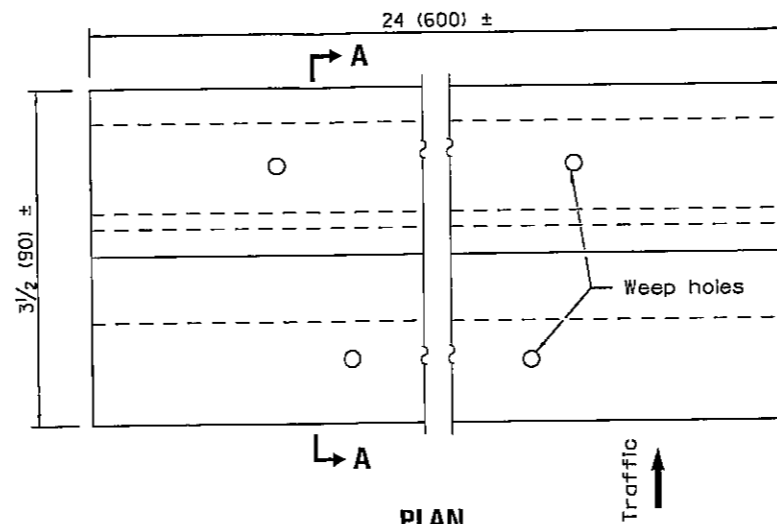


**TYPE B
ROOF OR TRAILER
MOUNTED**

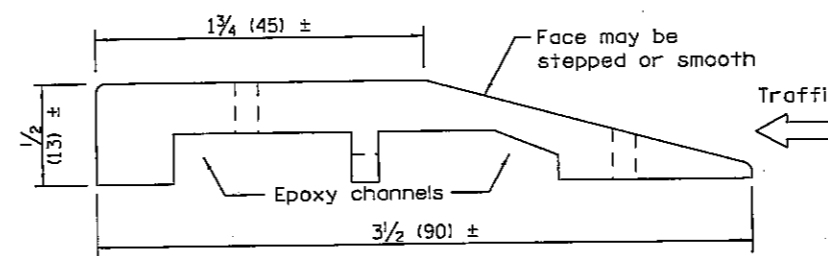


**TYPE C
TRAILER
MOUNTED**

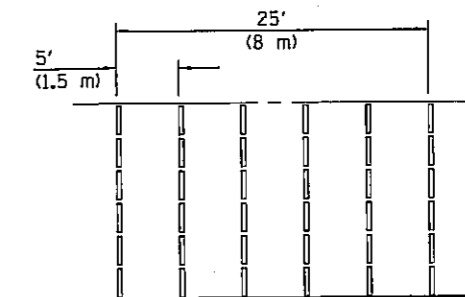
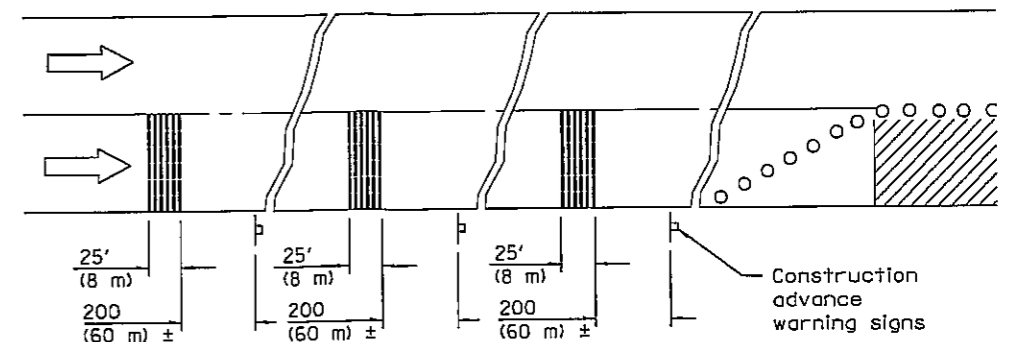
ARROW BOARDS



PLAN

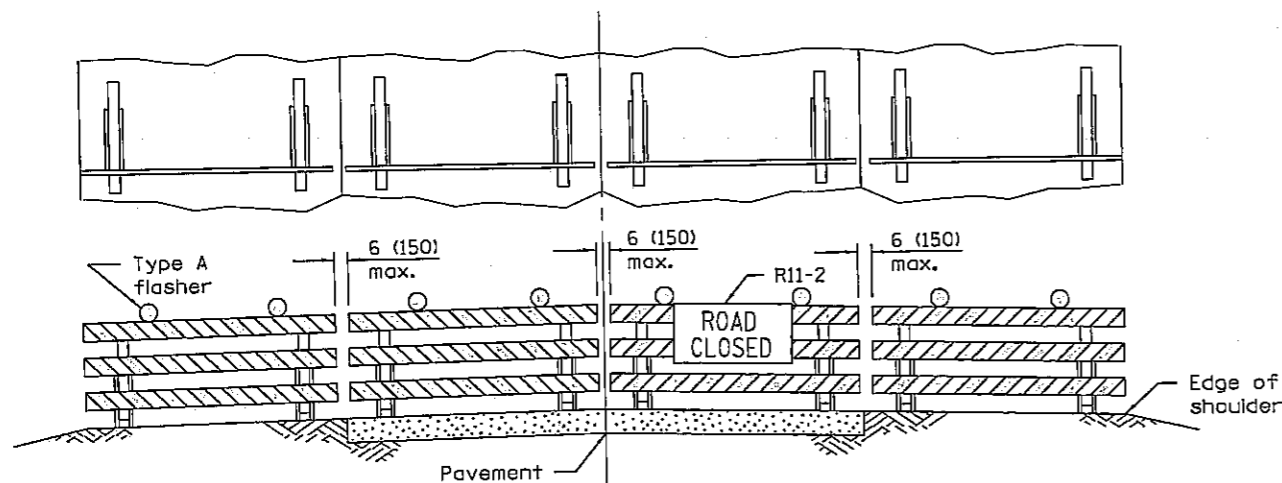


SECTION A-A



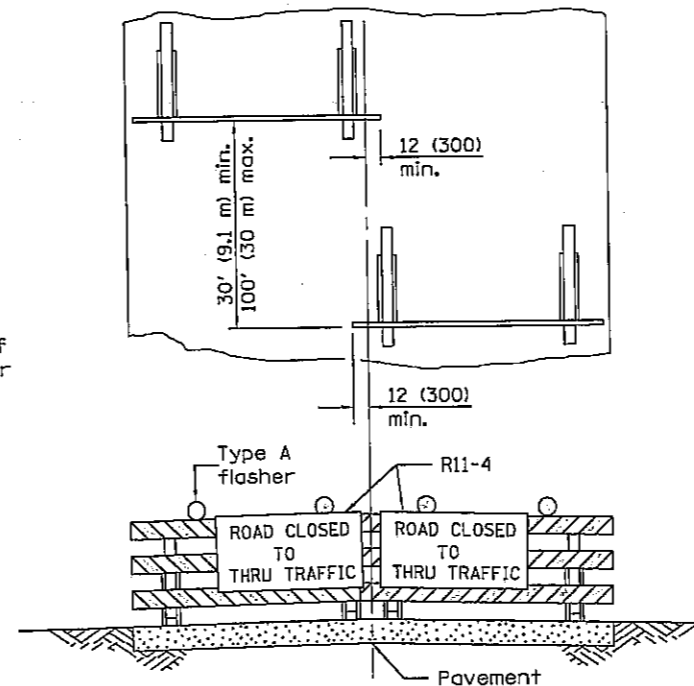
TYPICAL INSTALLATION

TEMPORARY RUMBLE STRIPS



ROAD CLOSED TO ALL TRAFFIC

Reflectorized striping may be omitted on the back side of the barricades. If a Type III barricade with an attached sign panel which meets NCHRP 350 is not available, the sign may be mounted on an NCHRP 350 temporary sign support directly in front of the barricade.



ROAD CLOSED TO THRU TRAFFIC

Reflectorized striping shall appear on both sides of the barricades. If a Type III barricade with an attached sign panel which meets NCHRP 350 is not available, the signs may be mounted on NCHRP 350 temporary sign supports directly in front of the barricade.

**TYPICAL APPLICATIONS OF
TYPE III BARRICADES CLOSING A ROAD**

Illinois Department of Transportation

APPROVED April 1, 2016
ENGINEER OF OPERATIONS

APPROVED April 1, 2016
ENGINEER OF DESIGN AND ENVIRONMENT

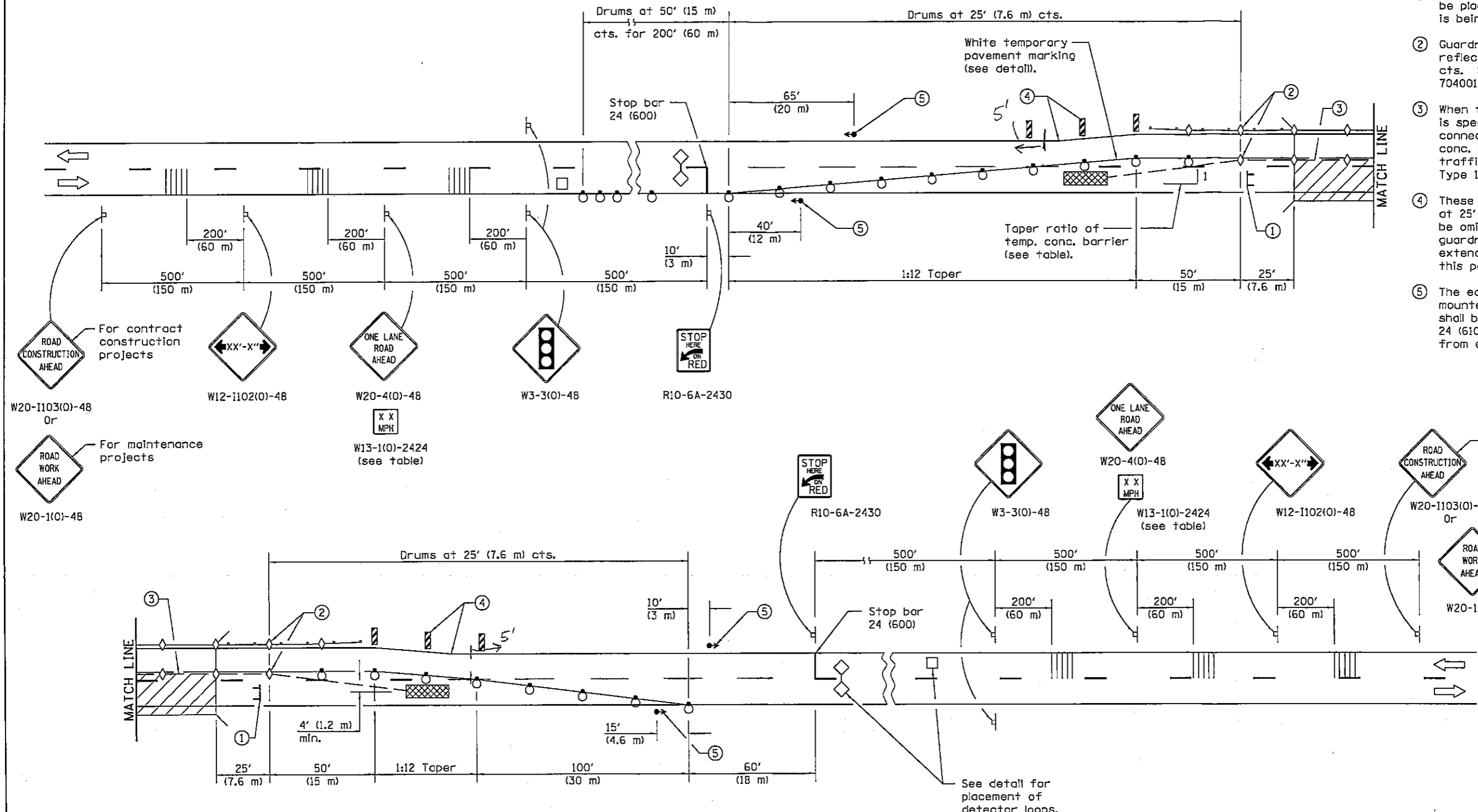
ISSUED 1-1-97

**TRAFFIC CONTROL
DEVICES**

(Sheet 3 of 3)

STANDARD 701901-05

- ① Type III barricade to be placed when no work is being performed.
- ② Guardrail/barrier wall reflectors at 25' (7.6 m) cts. See Standards 704001 & 782006.
- ③ When temp. bridge rail is specified, it shall be connected to the temp. conc. barrier using a traffic barrier terminal Type 11.
- ④ These vertical panels at 25' (7.6 m) cts. may be omitted when the guardrail, w/markers, extends to at least this point on the taper.
- ⑤ The edge of the post mounted signal head shall be between 24 (610) and 6' (1.8 m) from edge of shoulder.



For contract construction projects
 ROAD CONSTRUCTION AHEAD
 W20-1103(O)-48
 Or
 ROAD WORK AHEAD
 W20-1(O)-48

XX'-X''
 W12-1102(O)-48

ONE LANE ROAD AHEAD
 W20-4(O)-48
 X X MPH
 W13-1(O)-2424 (see table)

W3-3(O)-48

STOP HERE ON RED
 R10-6A-2430

STOP HERE ON RED
 R10-6A-2430

W3-3(O)-48

ONE LANE ROAD AHEAD
 W20-4(O)-48
 X X MPH
 W13-1(O)-2424 (see table)

XX'-X''
 W12-1102(O)-48

For contract construction projects
 ROAD CONSTRUCTION AHEAD
 W20-1103(O)-48
 Or
 For maintenance projects
 ROAD WORK AHEAD
 W20-1(O)-48

SYMBOLS

- Work area
- Sign
- Type III barricade
- Traffic signal
- Detector loops
- Impact attenuator
- Drum with steady burning bi-directional light
- Temporary concrete barrier
- Temporary rumble strip (when specified)
- Double vertical panel (see detail)
- Crystal, bidirectional guardrail/barrier wall reflector

See Sheet 2 for GENERAL NOTES

Illinois Department of Transportation

APPROVED April 1, 2016
 ENGINEER OF SAFETY ENGINEERING

APPROVED April 1, 2016
 ENGINEER OF DESIGN AND ENVIRONMENT

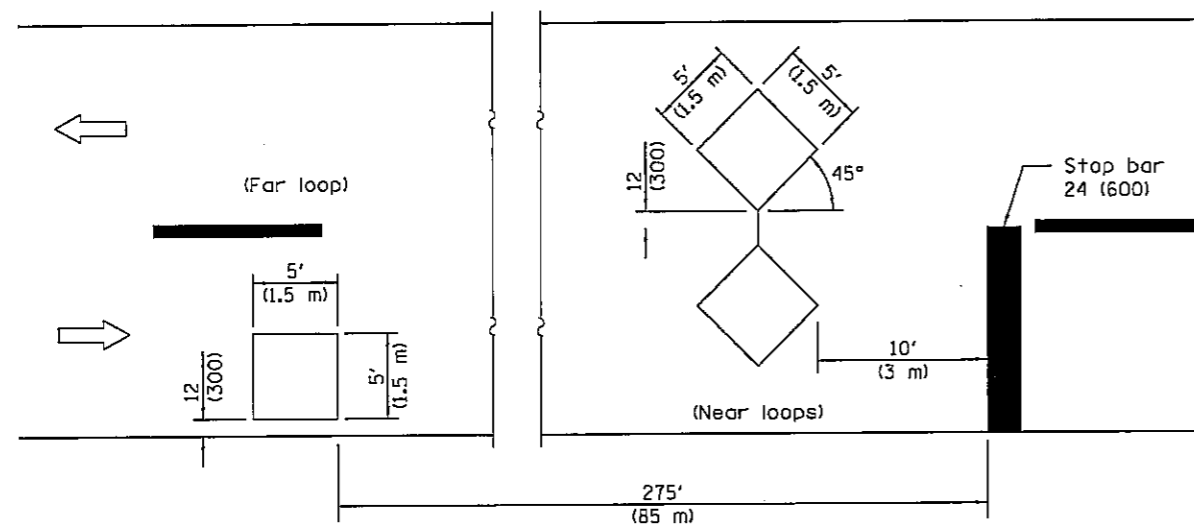
ISSUED 1-1-97

DATE	REVISIONS
4-1-16	Changed Standard reference from 635011 to 782006 in note ②.
1-1-15	Added note ⑤.

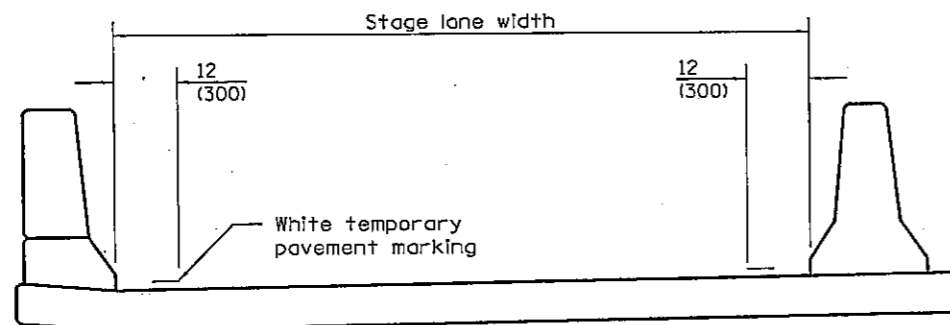
**LANE CLOSURE, 2L, 2W,
BRIDGE REPAIR WITH BARRIER**

(Sheet 1 of 2)

STANDARD 701321-15



DETECTOR LOOPS

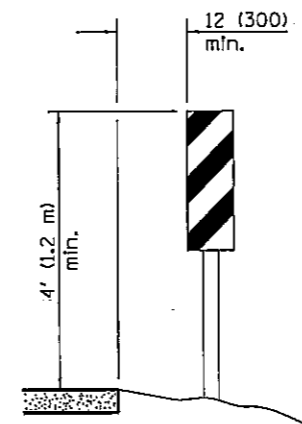


TEMPORARY PAVEMENT MARKING

TRAFFIC SIGNAL SEQUENCE						
PHASE	A			B		
INTERVAL	1	2	3	4	5	6
NORTHBOUND OR EASTBOUND	G	Y	R	R	R	R
SOUTHBOUND OR WESTBOUND	R	R	R	G	Y	R

TEMPORARY CONCRETE BARRIER	
NORMAL POSTED SPEED	TAPER RATIO
40 mph AND ABOVE	12:1
BELOW 40 mph	8:1

ADVISORY SPEED LIMIT	
NORMAL POSTED SPEED	ADVISORY SPEED
55 - 45 mph	40 mph
40 mph	35 mph
35 - 30 mph	30 mph



VERTICAL PANELS
(Post mounted, one each side)

GENERAL NOTES

This Standard is used where, at any time, any vehicle, equipment, workers, or their activities will encroach on one lane of a bridge. Traffic signals and a positive barrier are required.

Traffic signals shall be operational only when all traffic controls are in place. When traffic signals are not in operation, flaggers shall be used and traffic control shall conform to Standard 701201 or 701206.

Temporary concrete barrier shall be according to Standard 704001.

Existing or temporary pavement markings shall be on both sides of open lane from stop bar to stop bar.

All dimensions are in inches (millimeters) unless otherwise shown.

**LANE CLOSURE, 2L, 2W,
BRIDGE REPAIR WITH BARRIER**

(Sheet 2 of 2)

STANDARD 701321-15

Illinois Department of Transportation

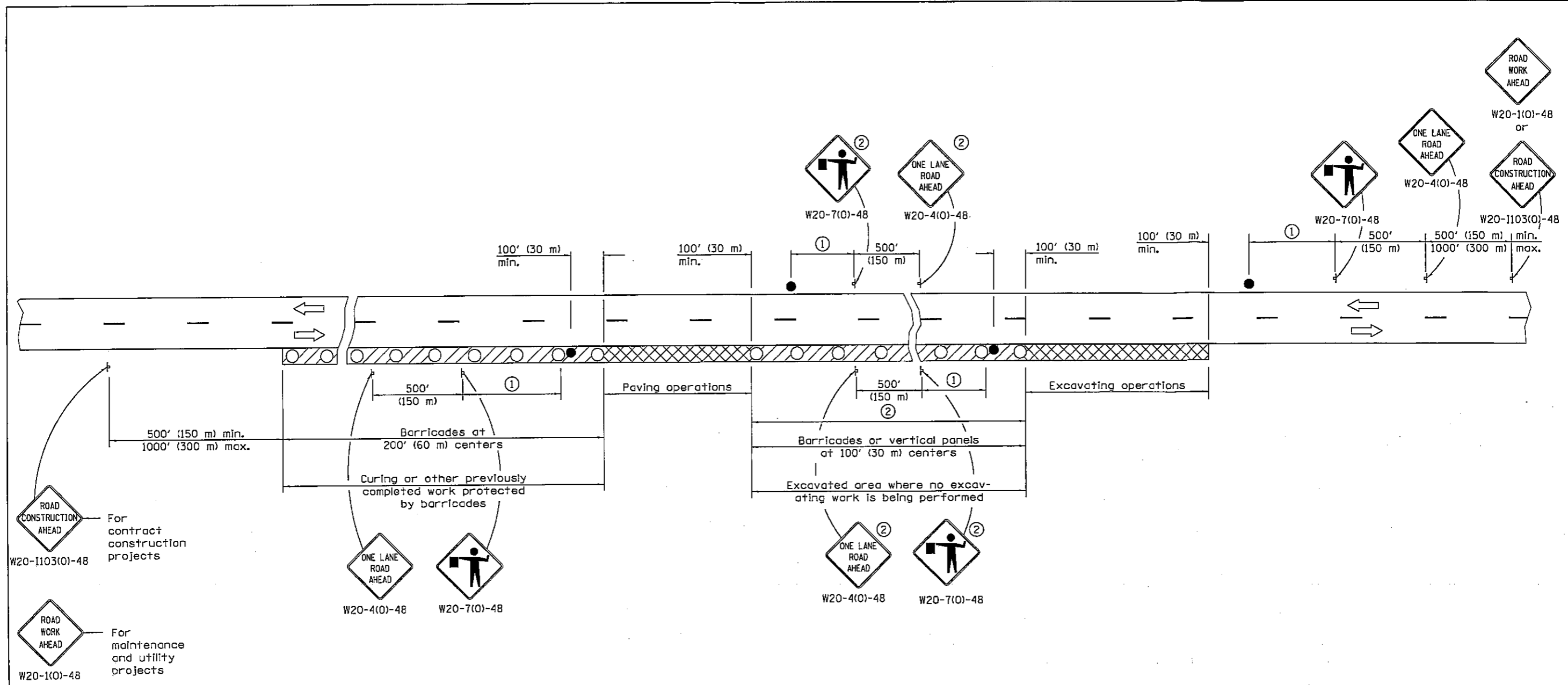
APPROVED April 1, 2016

 ENGINEER OF SAFETY ENGINEERING

APPROVED April 1, 2016

 ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97



ROAD CONSTRUCTION AHEAD
W20-1103(O)-48
For contract construction projects

ROAD WORK AHEAD
W20-1(O)-48
For maintenance and utility projects

SYMBOLS

- Work area
- Active Work area
- Sign
- Barricade, drum, or vertical panels
- Flagger with traffic control sign

- ① Minimum distance is 200' (60 m). Maximum distance to be determined by the Engineer but in no case to exceed the length of 1/2 day's normal operation or 2 miles (3200 m) whichever is less.
- ② Signs are not required if distance between work operations is less than 2000' (600 m) unless restricted sight distance exists.

GENERAL NOTES

This Standard is used where at any time, any vehicle, equipment, workers or their activities will encroach on the pavement during widening operations.

Two flaggers are required for each separate operation.

All dimensions are in inches (millimeters) unless otherwise shown.

DATE	REVISIONS
1-1-11	Revised flagger sign.
1-1-09	Switched units to English (metric). Corrected sign No.'s.

**LANE CLOSURE, 2L, 2W,
PAVEMENT WIDENING,
FOR SPEEDS ≥ 45 MPH**

STANDARD 701326-04

Illinois Department of Transportation

APPROVED January 1, 2011
ENGINEER OF SAFETY ENGINEERING

APPROVED January 1, 2011
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97