

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

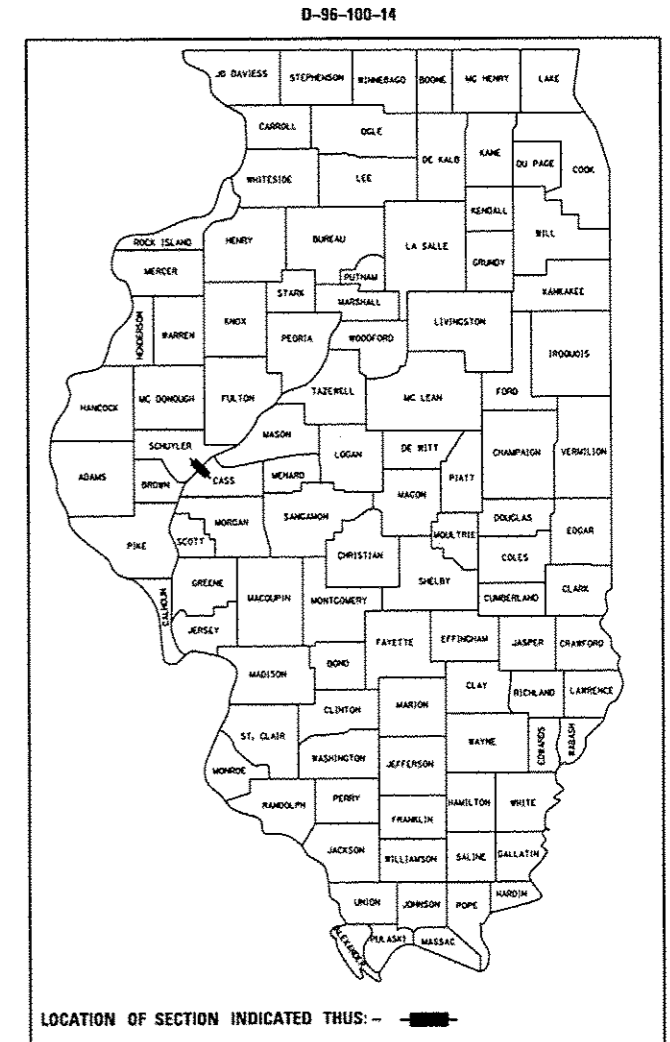
**PROPOSED
HIGHWAY PLANS**

FAP ROUTE 310 (US 67/L 100)
SECTION (86) BJR

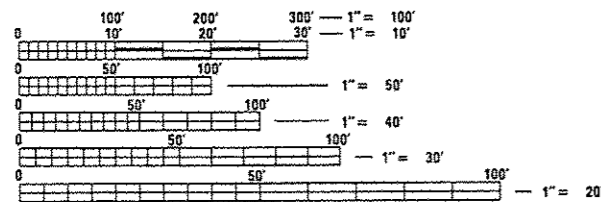
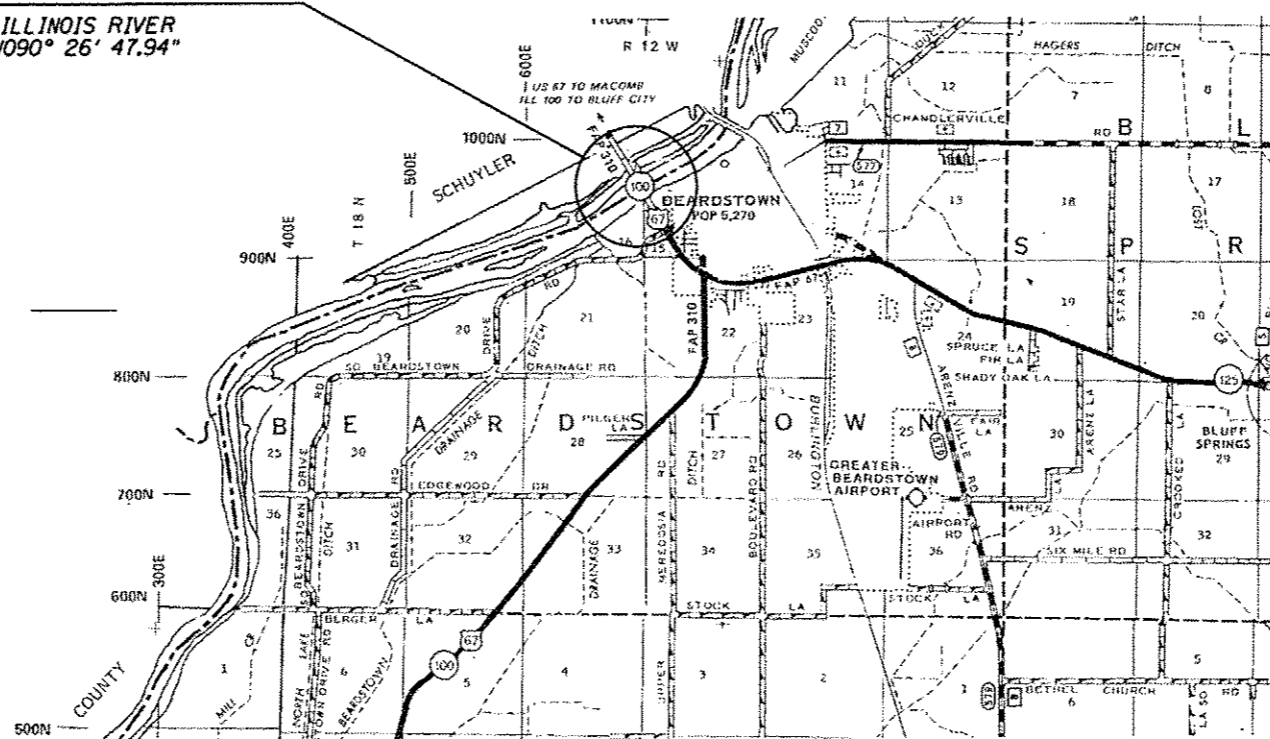
BRIDGE EXPANSION JOINT REPLACEMENT
CASS COUNTY

C-96-100-14

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	(86) BJR	CASS	19	1
		ILLINOIS	CONTRACT NO. 72H29	



PROJECT LOCATION
SN 009-0001
US 67 OVER THE ILLINOIS RIVER
N40° 00' 53.67" W090° 26' 47.94"



FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

J.U.L.I.E.
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION
1-800-892-0123
OR 811

BRIDGE MAINTENANCE ENGINEER (ACTING): BRANDON DUDLEY - (217) 785-9290
BRIDGE INSPECTION ENGINEER: DAVE COPENBARGER - (217) 785-5306

GROSS LENGTH = 3655 FT. = 0.7 MILE
NET LENGTH = 3655 FT. = 0.7 MILE

CONTRACT NO. 72H29

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED JULY 18th 2014
Regan L. Priskell
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER

AUG 15 2014
John D. Baranzelli, P.E.
ENGINEER OF DESIGN AND ENVIRONMENT

AUG 15 2014
Cher Osman, P.E.
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

**PRINTED BY THE AUTHORITY
OF THE STATE OF ILLINOIS**

INDEX OF SHEETS

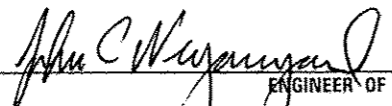


- 1 COVER SHEET
- 2 SIGNATURES & SUMMARY OF QUANTITIES
- 3 WIDTH RESTRICTION SIGNING DETAIL
- 4-5 TRAFFIC CONTROL DETAILS
- 6-19 BRIDGE PLANS

HIGHWAY STANDARDS

- 701001-02
- 701006-05
- 701301-04
- 701321-13
- 701901-03
- 704001-07

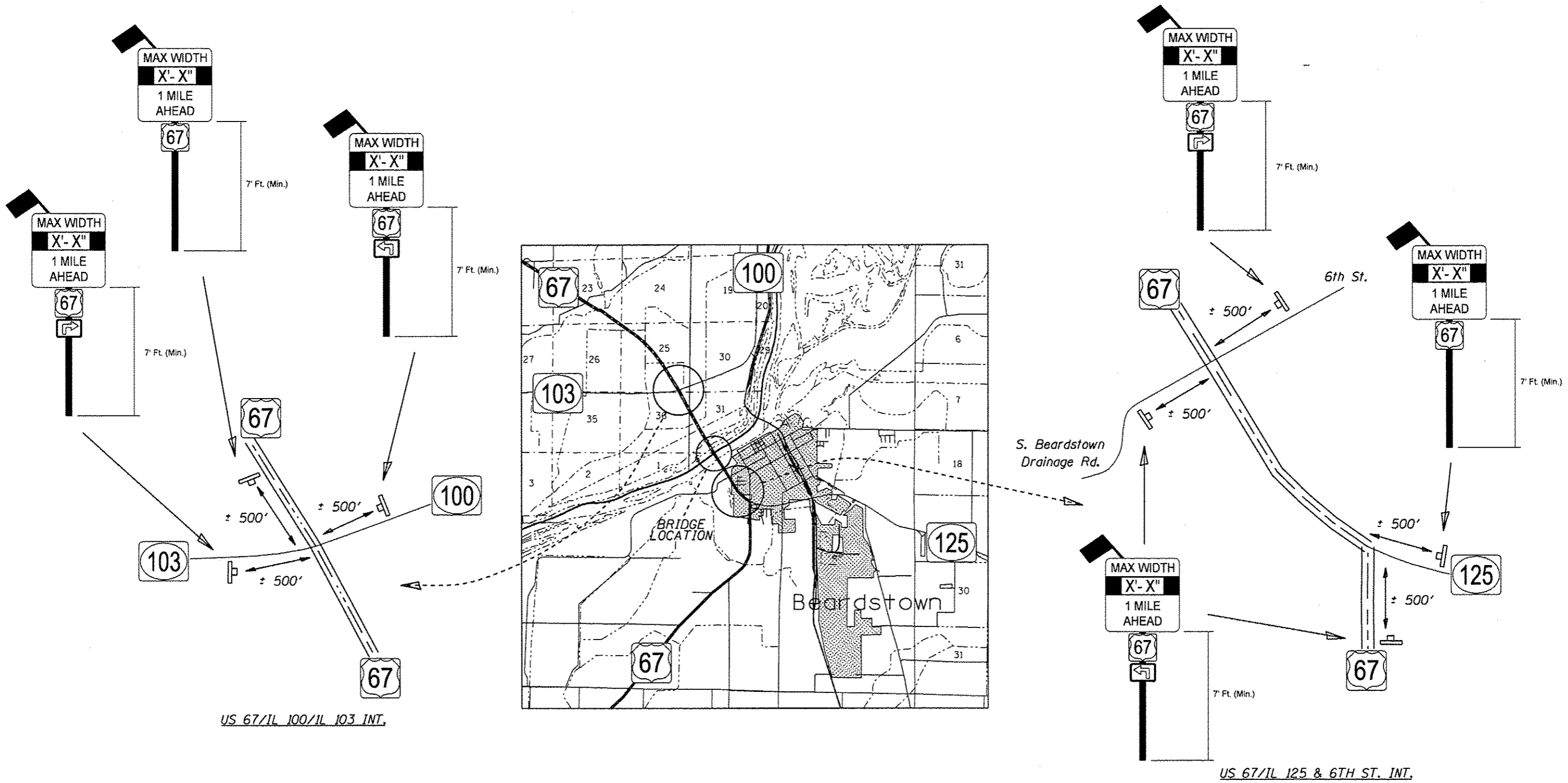
GENERAL NOTES:

- 1. PROTECTIVE SHIELD SHALL BE ERECTED UNDER JOINT REMOVAL WORK AT PIERS 8, 10, & 13, UNLESS OTHERWISE DIRECTED BY THE ENGINEER. THE LIMITS OF THE PROTECTIVE SHIELD SHALL BE AS DIRECTED BY THE ENGINEER.
- 2. IDOT OPERATIONS SHALL BE NOTIFIED 21 DAYS PRIOR TO ANY WIDTH RESTRICTIONS TAKING PLACE.

STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS DISTRICT 6	
EXAMINED	<u>JULY 16th</u> 20 <u>14</u>
	 ENGINEER OF OPERATIONS
EXAMINED	<u>July 11</u> 20 <u>14</u>
	 ENGINEER OF PROJECT IMPLEMENTATION
EXAMINED	<u>July 9</u> 20 <u>14</u>
	 ENGINEER OF PROGRAM DEVELOPMENT

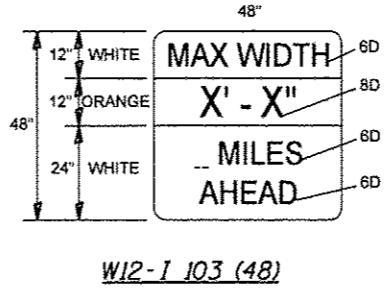
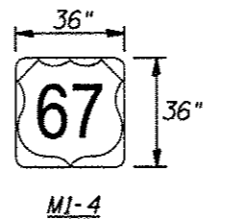
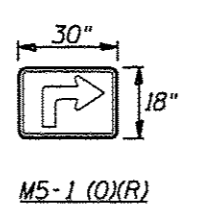
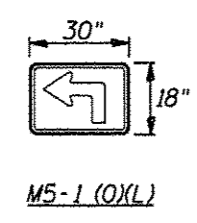
CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTR. CODE	
				0-01285-6001	0-01621-6017
				0014	0014
				S.N. 009-0001	S.N. 009-0001
50102400	CONCRETE REMOVAL	CU YD	23.7	23.7	
50157300	PROTECTIVE SHIELD	SQ YD	140	140	
50300255	CONCRETE SUPERSTRUCTURE	CU YD	24	24	
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	4300	4300	
50800515	BAR SPLICERS	EACH	80	79	1
50800530	MECHANICAL SPLICERS	EACH	392	392	
52000110	PREFORMED JOINT STRIP SEAL	FOOT	33	33	
52000228	FINGER PLATE EXPANSION JOINT, 8"	FOOT	28	28	
52000230	FINGER PLATE EXPANSION JOINT, 9"	FOOT	28	28	
52000600	FABRIC REINFORCED ELASTOMERIC TROUGH	FOOT	60	60	
67100100	MOBILIZATION	L SUM	1	1	
70100405	TRAFFIC CONTROL AND PROTECTION, STANDARD 701321	EACH	1	1	
70106500	TEMPORARY BRIDGE TRAFFIC SIGNALS	EACH	1	1	
70400100	TEMPORARY CONCRETE BARRIER	FOOT	1600	1600	
70400200	RELOCATE TEMPORARY CONCRETE BARRIER	FOOT	1600	1600	
70600240	IMPACT ATTENUATORS, TEMPORARY (NON-REDIRECTIVE), TEST LEVEL 2	EACH	4	4	
70600340	IMPACT ATTENUATORS, RELOCATE (NON-REDIRECTIVE), TEST LEVEL 2	EACH	4	4	
X7200201	WIDTH RESTRICTION SIGNING	L SUM	1	1	
Z0001903	STRUCTURAL STEEL REMOVAL	POUND	6800	6800	
Z0034500	MODULAR EXPANSION JOINT 18"	FOOT	28	28	

20

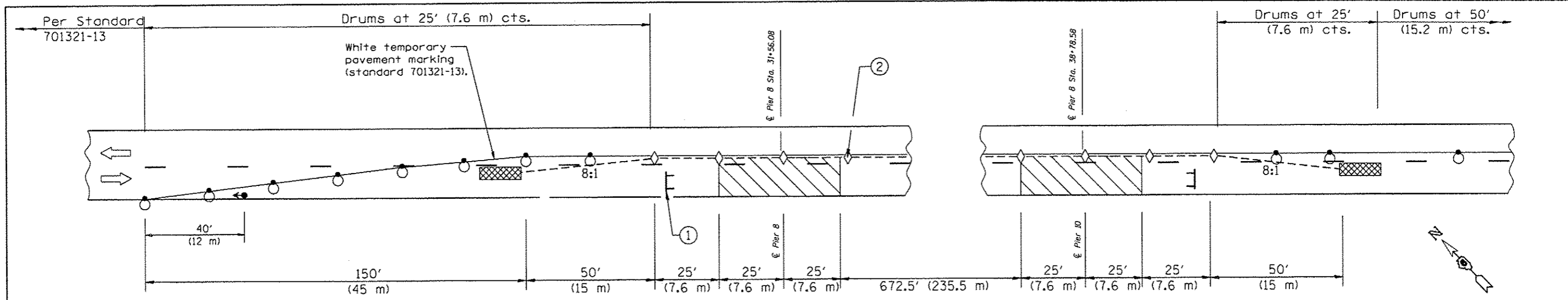


US 67/IL 100/IL 103 INT.

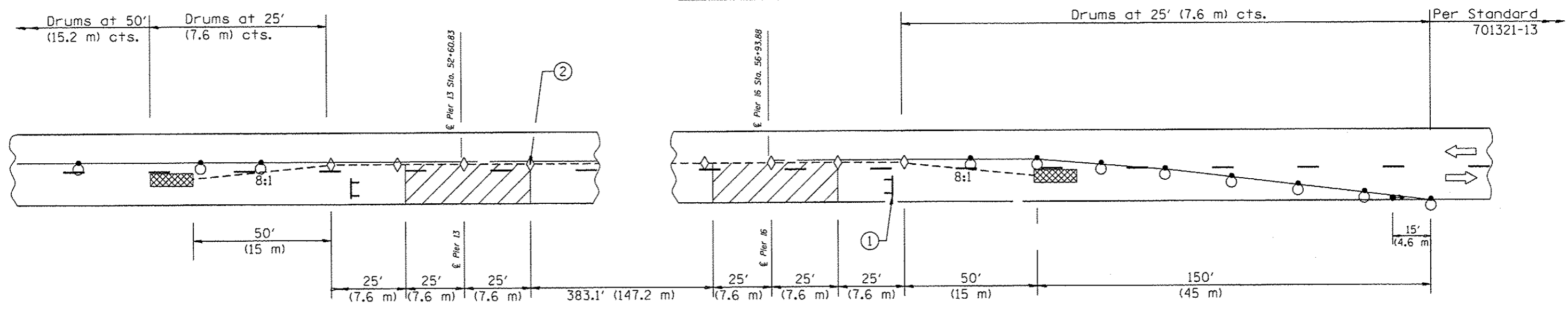
US 67/IL 125 & 6TH ST. INT.



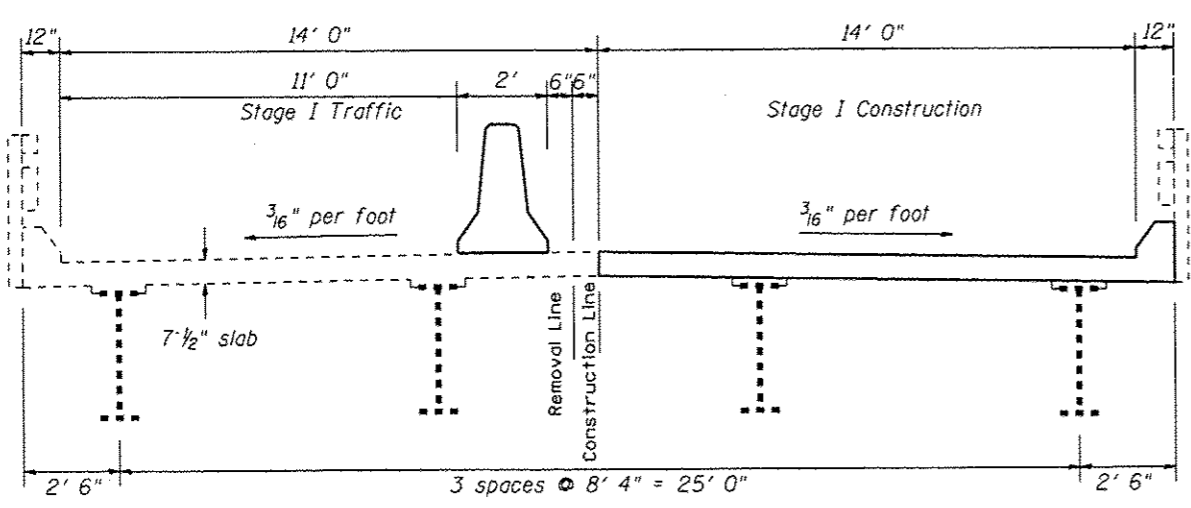
FILE NAME *	USER NAME * dudleybm	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	WIDTH RESTRICTION SIGNING DETAIL	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
D:\OPERATIONS\Bridges\plans.CAD\72H29 - 0908201 joint replacement\plansheet.dgn	DRAWN -	REVISED -	310			(66) BJR	CASS	19	3	
PLOT SCALE * 20.0000' / in.	CHECKED -	REVISED -	CONTRACT NO. 72H29							
Default	PLOT DATE * Jul-18-2014 11:29:25AM	DATE -	REVISED -			ILLINOIS FED. AID PROJECT				



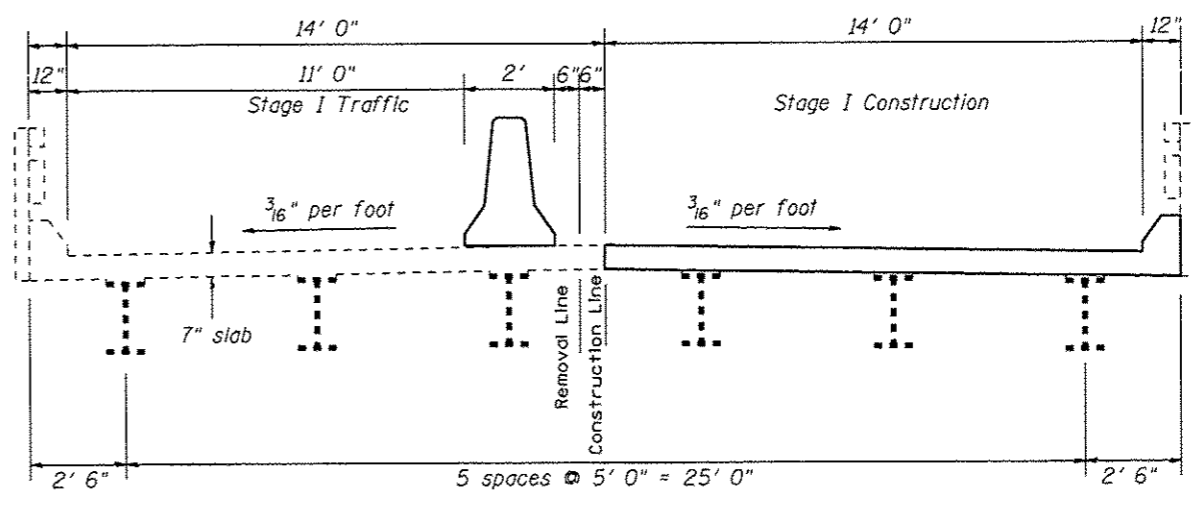
PLAN - PIER 8 AND 10



PLAN - PIER 13 AND 16



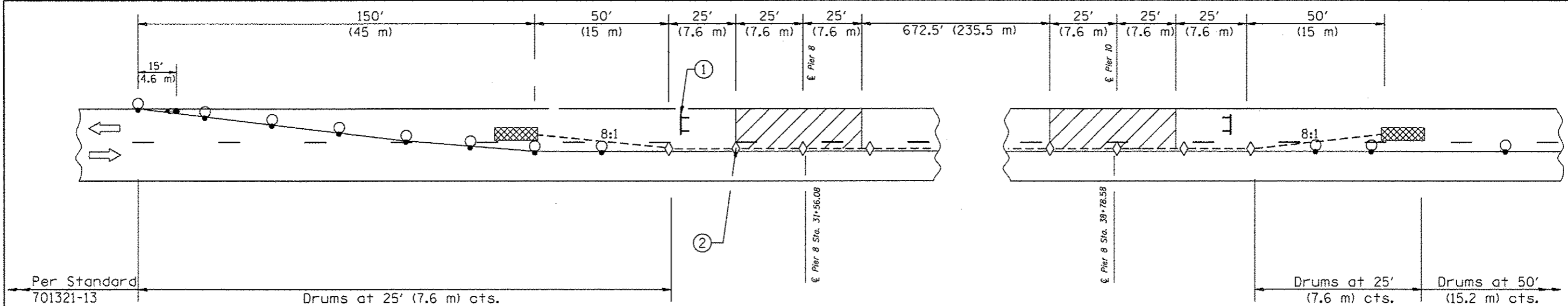
CROSS SECTION - SPANS 8 & 14 (LOOKING SOUTH)



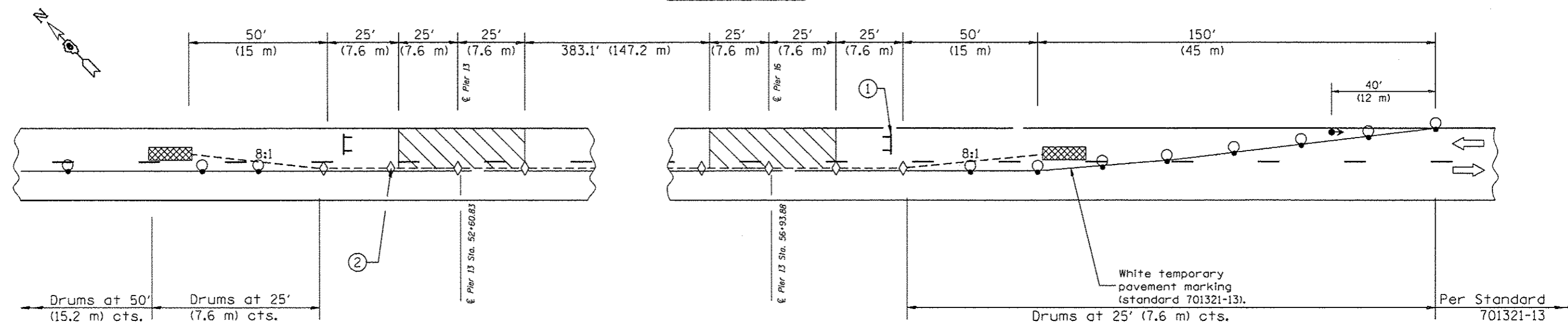
CROSS SECTION - SPANS 9 & 13 (LOOKING SOUTH)

- ① Type III barricade to be placed when no work is being performed.
 - ② Barrier wall/guardrail markers at 25' (7.6 m) cts. See Standards 704001 & 635011.
- Note: For Traffic Control symbols refer to Standard 701321-13

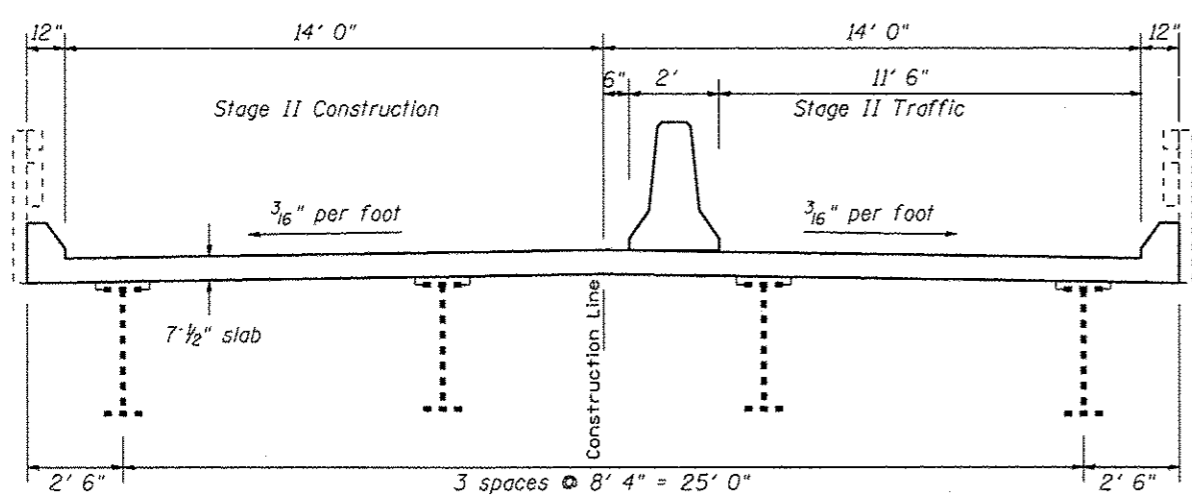
FILE NAME *	USER NAME * dudleybm	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	STAGE 1 TRAFFIC CONTROL DETAILS			F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
OPERATIONS\Bridges\plans\CAD\72H29 - 8198881 joint replacement\plansheet.dgn		DRAWN -	REVISED -		310	(86) BJR	CASS	19	4			
PLOT SCALE * 20.0000 ' / in.		CHECKED -	REVISED -		SCALE: _____ SHEET 1 OF 11 SHEETS STA. _____ TO STA. _____			CONTRACT NO. 72H29				
Default		DATE -	REVISED -		ILLINOIS FED. AID PROJECT							



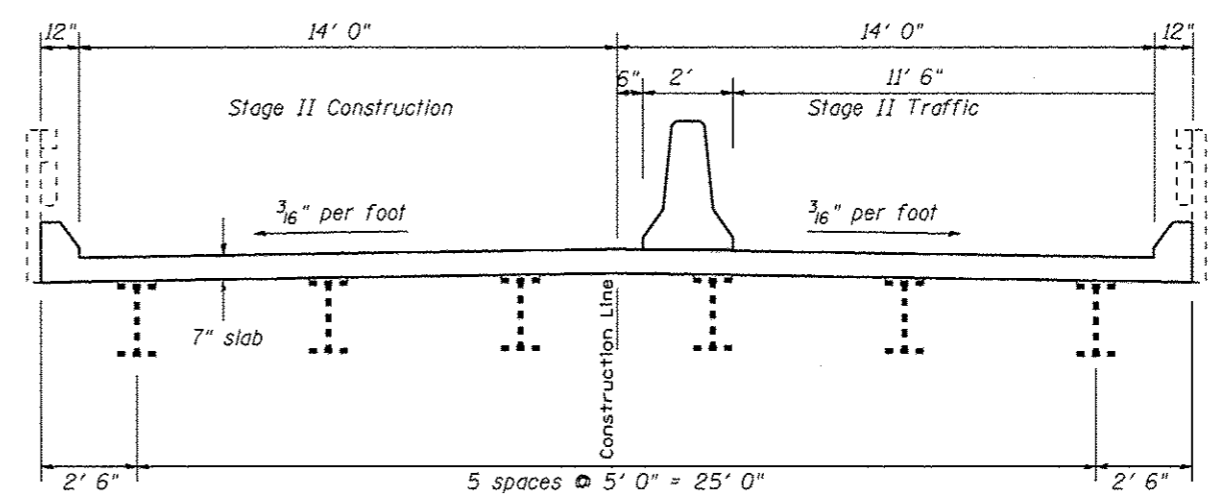
PLAN - PIER 8 AND 10



PLAN - PIER 13 AND 16



CROSS SECTION - SPANS 8 & 14 (LOOKING SOUTH)

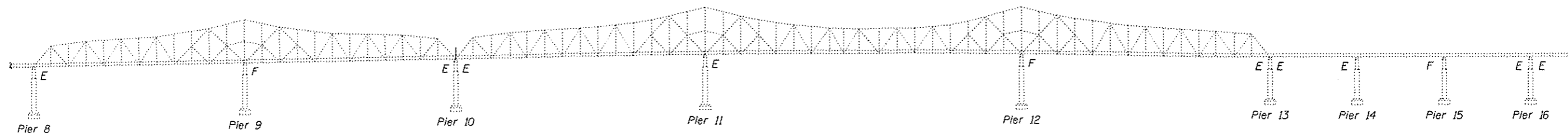


CROSS SECTION - SPANS 9 & 13 (LOOKING SOUTH)

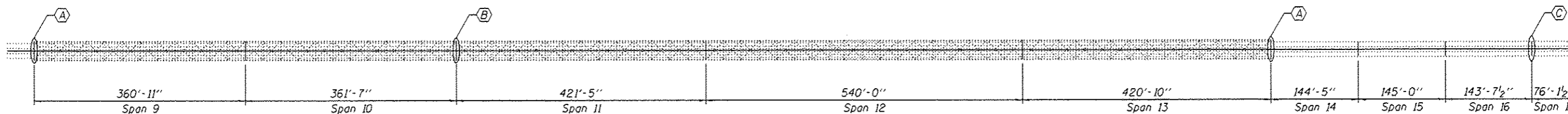
- ① Type III barricade to be placed when no work is being performed.
- ② Barrier wall/guardrail markers at 25' (7.6 m) cts. See Standards 704001 & 635011.

Note: For Traffic Control symbols refer to Standard 701321-13

FILE NAME * D:\OPERATIONS\Bridges\plans_CAO\72H29 - 890001 Joint replacement\plansheet.dgn	USER NAME * dudleybn	DESIGNED -	REVISD -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	STAGE 2 TRAFFIC CONTROL DETAILS			F.A.P. RTE. 310	SECTION (86) BUR	COUNTY CASS	TOTAL SHEETS 19	SHEET NO. 5
PLOT SCALE * 20,0000' / 1" =	PLOT DATE * Jul-18-2014 11:18:54AM	DRAWN -	REVISD -		SCALE: _____	SHEET 1 OF 11 SHEETS	STA. _____ TO STA. _____	CONTRACT NO. 72H29				
Default		CHECKED -	REVISD -		ILLINOIS FED. AID PROJECT							
		DATE -	REVISD -									



ELEVATION



PLAN

- (A) - Remove Neoprene Exp. Jt. & Install Finger P. Exp. Jt.
- (B) - Remove & Replace Existing Modular Expansion Joint
- (C) - Remove Neoprene Exp. Jt. & Install Preformed Joint Strip Seal

GENERAL NOTES

All structural steel shall conform to AASHTO Classification M-270 Gr. 36, unless otherwise noted.

Fasteners shall be high strength bolts. Flange holes shall be $1\frac{1}{16}$ " ϕ for $\frac{7}{8}$ " ϕ bolts. Web holes shall be $\frac{1}{16}$ " ϕ for $\frac{3}{4}$ " ϕ bolts. 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.

Cost of removal and re-installation of all members necessary to complete the work as detailed on the plans and as specified in the Special Provisions shall be included with Structural Steel Repair.

The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.

Existing structural steel that will be in contact with new structural steel shall be cleaned and painted prior to erection as required by the Special Provision "Cleaning and Painting Contact Surface Areas of Existing Steel Structures".

All structural steel shall be shop painted with the inorganic zinc rich primer per AASHTO M300, Type 1. Cost included with the appropriate pay item.

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 paint 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.

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.

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.

Modular Expansion & Finger Plate Joints shall be assembled in their final relative position with the ends in place for shop inspection and acceptance.

Modular Expansion & Finger Plate Joints shall be fabricated and installed according to the manufacturer's recommendations and as approved by the Engineer.

Modular Expansion & Finger Plate Joints shall be fabricated to conform to the existing cross slopes of the bridge.

No field welding is permitted except as specified in the contract documents.

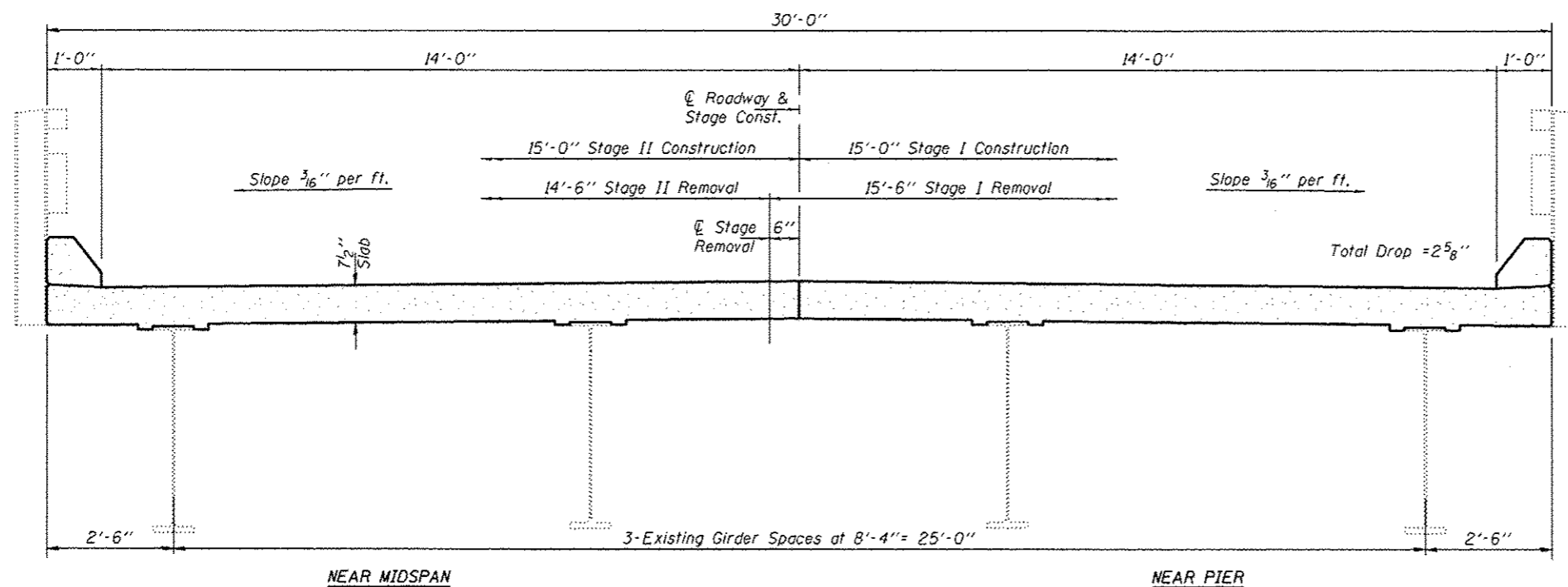
TOTAL BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Concrete Removal	Cu. Yd.	23.7
Concrete Superstructure	Cu. Yd.	24.0
Reinforcement Bars, Epoxy Coated	Pound	4300
Mechanical Splicers	Each	392
Bar Splicers	Each	80
Finger Plate Expansion Joint, 8"	Foot	28
Finger Plate Expansion Joint, 9"	Foot	28
Modular Expansion Joint, 18"	Foot	28
Preformed Joint Strip Seal	Foot	33
Fabric Reinforced Elastomeric Trough	Foot	60
Structural Steel Removal	Pound	6800

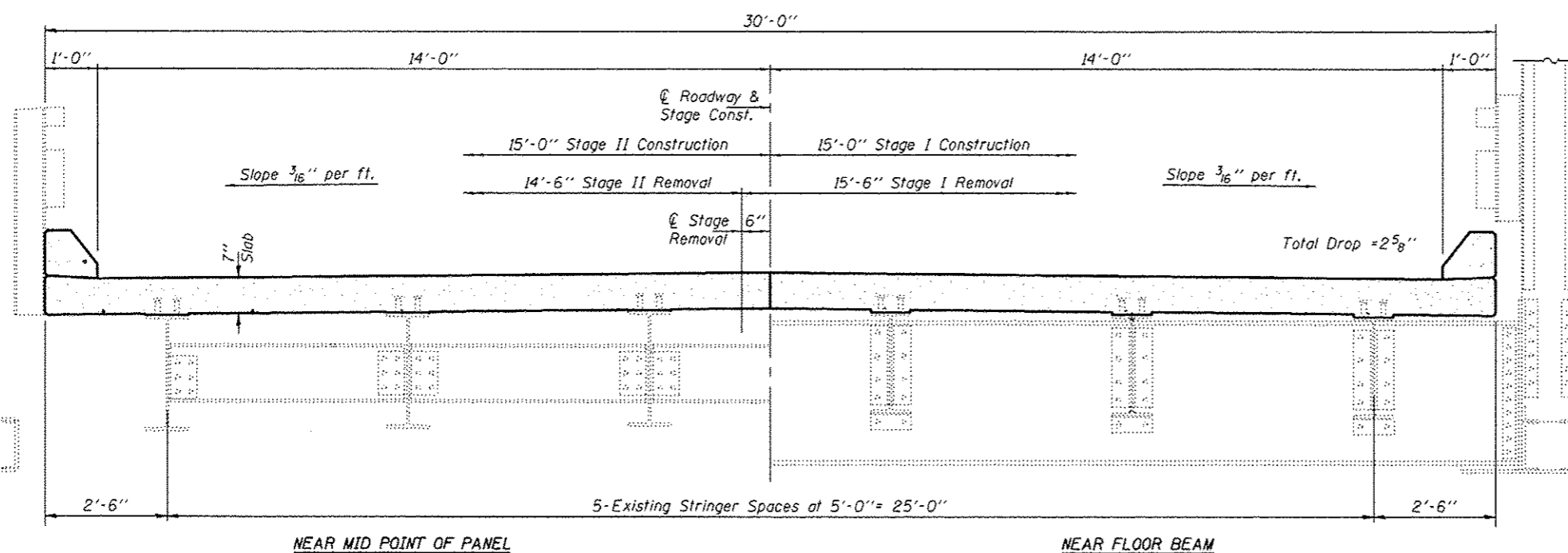


Expires: November 30, 2014

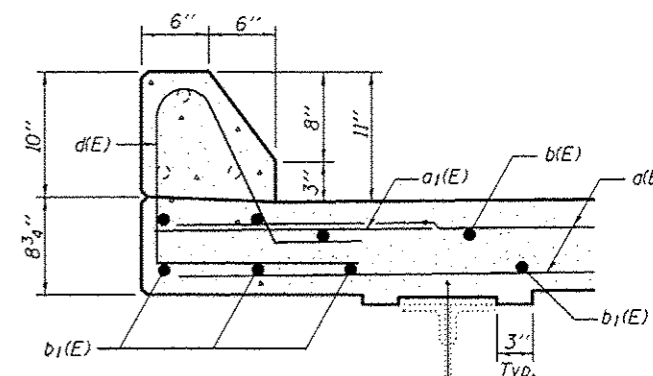
DESIGNED - [Signature]	EXAMINED - [Signature]	DATE - AUGUST 18, 2014	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	GENERAL PLAN & ELEVATION U.S. 67 / IL 100 OVER THE ILLINOIS RIVER (BEARDSTOWN BRIDGE) SN 009-0001	F.A.P. RTE. 310	SECTION 186/BJR	COUNTY CASS	TOTAL SHEETS 19	SHEET NO. 6
CHECKED - [Signature]	PASSED - [Signature]	REVISED			CONTRACT NO. 72H29				
DRAWN - Kyle M. Stoffan	ACTING ENGINEER OF BRIDGES AND STRUCTURES	REVISED			ILLINOIS FED. AID PROJECT				
CHECKED - [Signature]					SHEET NO. 1 OF 14 SHEETS				



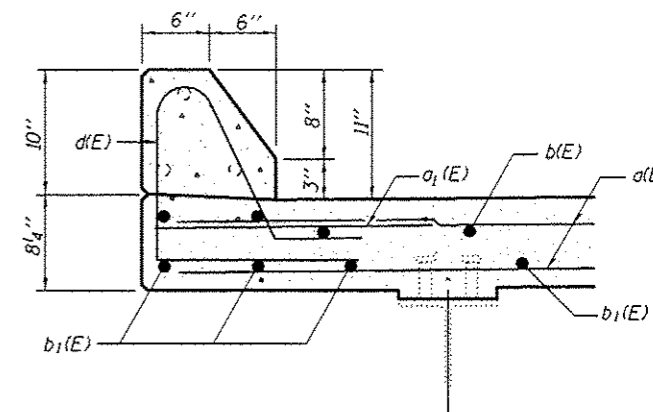
CROSS SECTION - SPANS 1-8 & 14-17
(Looking South)



CROSS SECTION - SPANS 9-13
(Looking South)



SECTION THRU CURB
SPANS 1-8 & 14-17



SECTION THRU CURB
SPANS 9-13

DESIGNED - ATH
CHECKED - VHV
DRAWN - Kyle M. Steffen
CHECKED - ATH VHV

EXAMINED *Imog A. A. A. A. A.*
ACTING ENGINEER OF STRUCTURAL SERVICES
PASSED *Carl Perry*
ACTING ENGINEER OF BRIDGES AND STRUCTURES

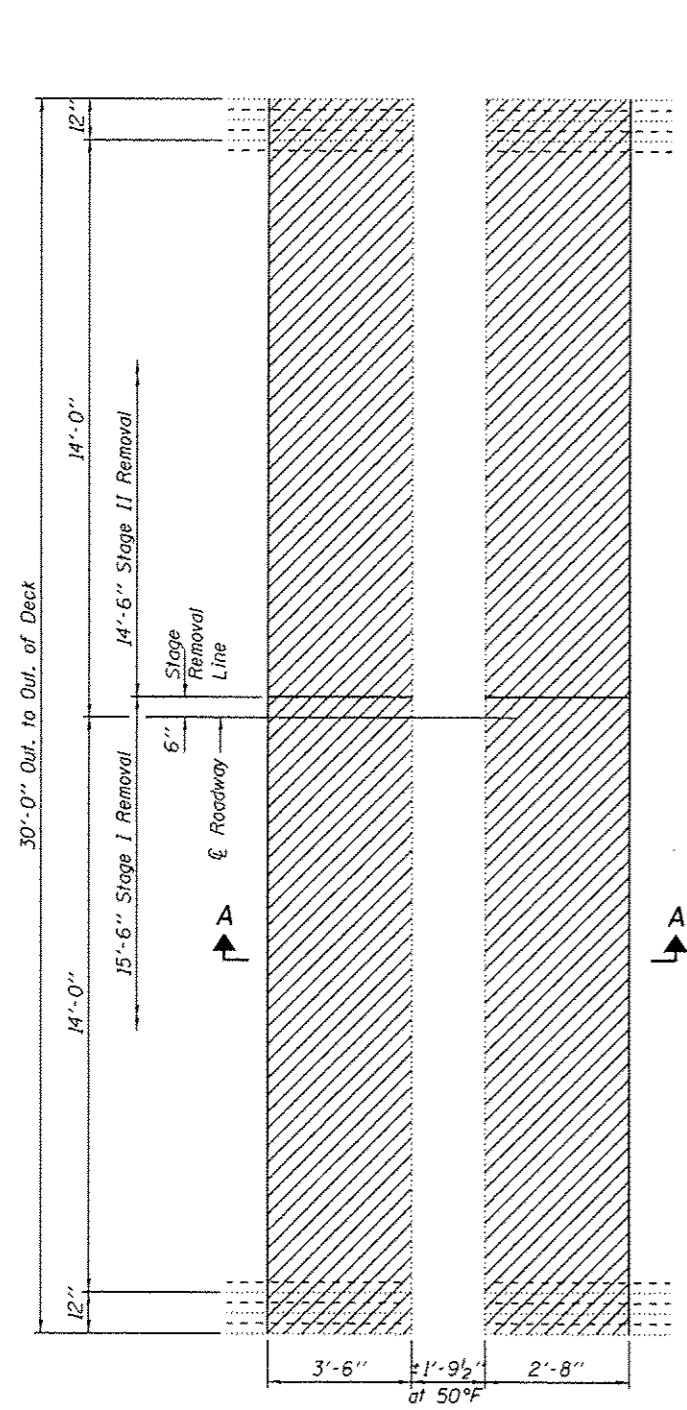
DATE - AUGUST 18, 2014
REVISED
REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

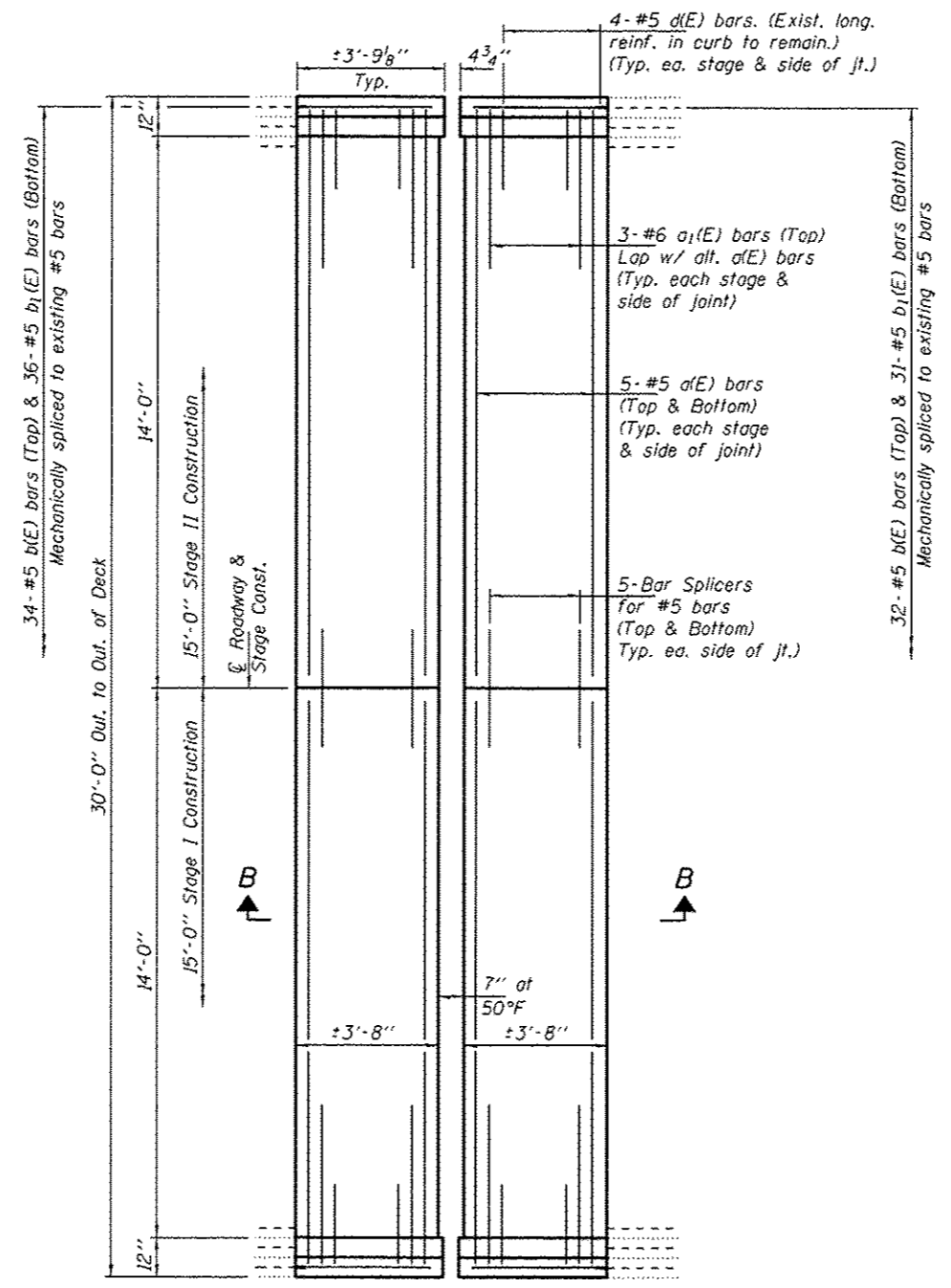
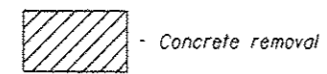
STAGING DETAILS
SN 009-0001

SHEET NO. 2 OF 14 SHEETS

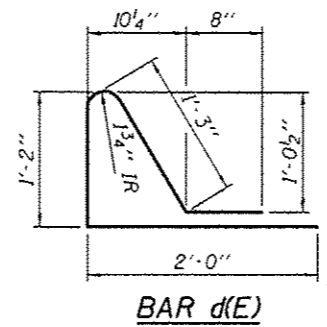
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	186BJR	CASS	19	7
CONTRACT NO. 72H29			ILLINOIS FED. AID PROJECT	



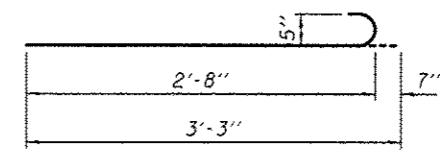
CONCRETE REMOVAL AT PIER 8



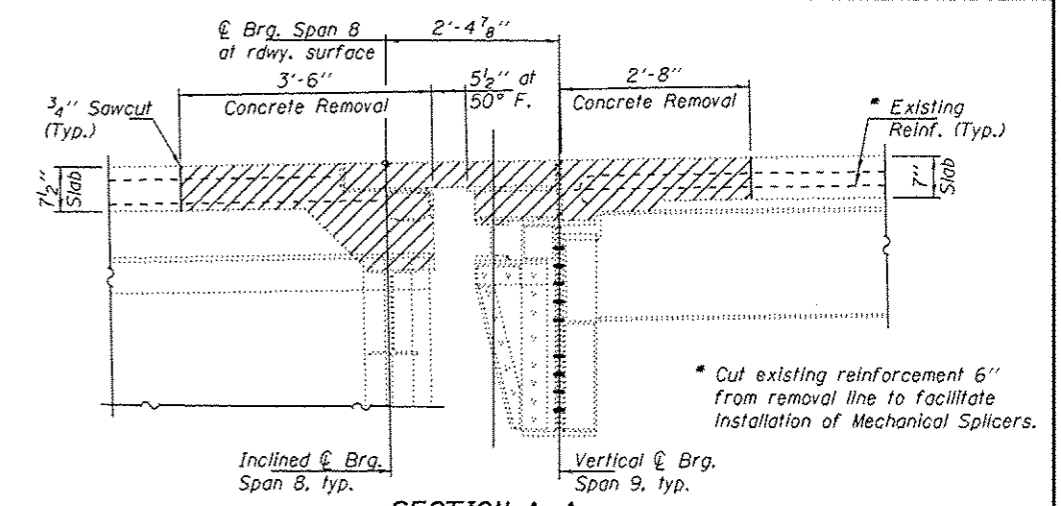
CONCRETE REPLACEMENT AT PIER 8



BAR d(E)

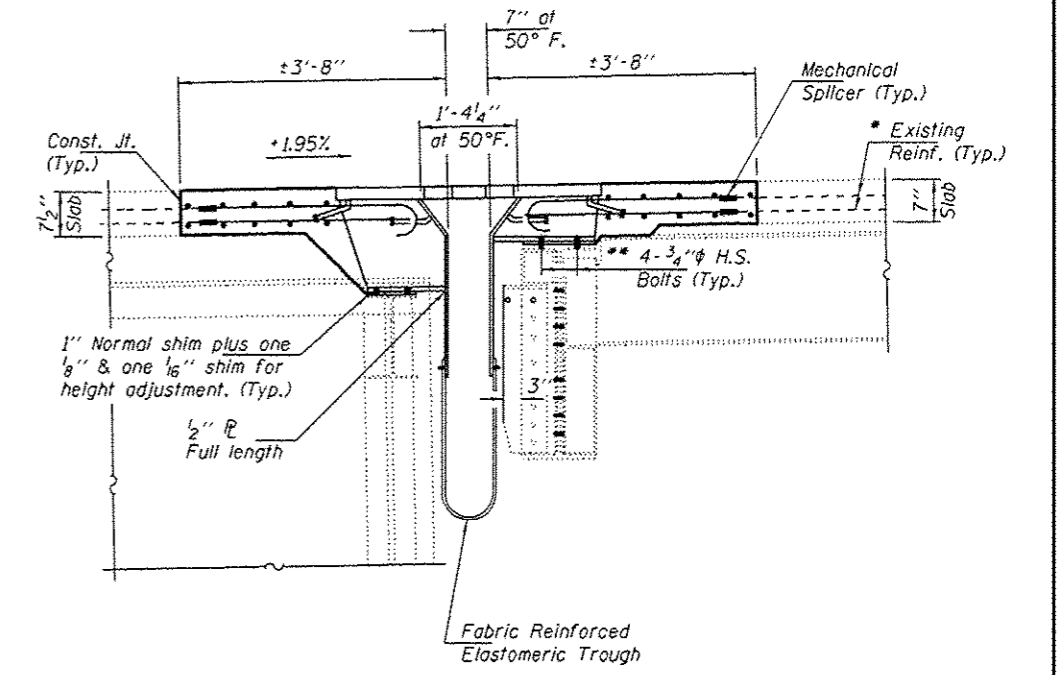


BAR b(E)



SECTION A-A

See sheet 12 of 14 for Structural steel removal.



SECTION B-B

For Trough details see sheets 4 & 9 of 14.

** With nut & 3" x 3" x 3/8" square washer at each bolt. 2" holes in stool flange. Field drill 7/8" holes in diaphragms and beam flanges.

BILL OF MATERIAL (PIER 8)

Bar	No.	Size	Length	Shape
d(E)	40	#5	14'-8"	
a1(E)	12	#6	4'-0"	
b(E)	66	#5	3'-3"	
b1(E)	67	#5	2'-9"	
d(E)	16	#5	5'-2"	
Concrete Removal		Cu. Yd.	5.6	
Concrete Superstructure		Cu. Yd.	5.8	
Bar Splicers		Each	20	
Mechanical Splicers		Each	133	
Reinforcement Bars, Epoxy Coated		Pounds	1190	

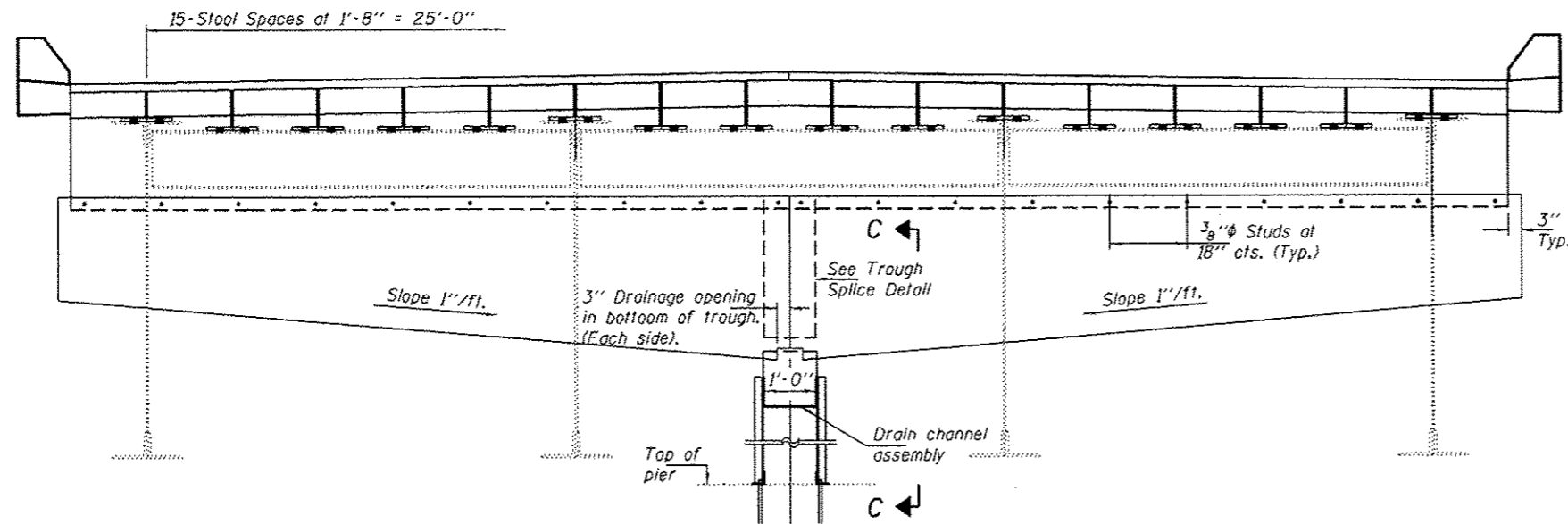
DESIGNED - ATH	EXAMINED - <i>[Signature]</i>	DATE - AUGUST 18, 2014
CHECKED - VHV	ACTING ENGINEER OF STRUCTURAL SERVICES	
DRAWN - Kyle M. Stoffan	PASSED - <i>[Signature]</i>	REVISED
CHECKED - ATH VHV	ACTING ENGINEER OF BRIDGES AND STRUCTURES	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

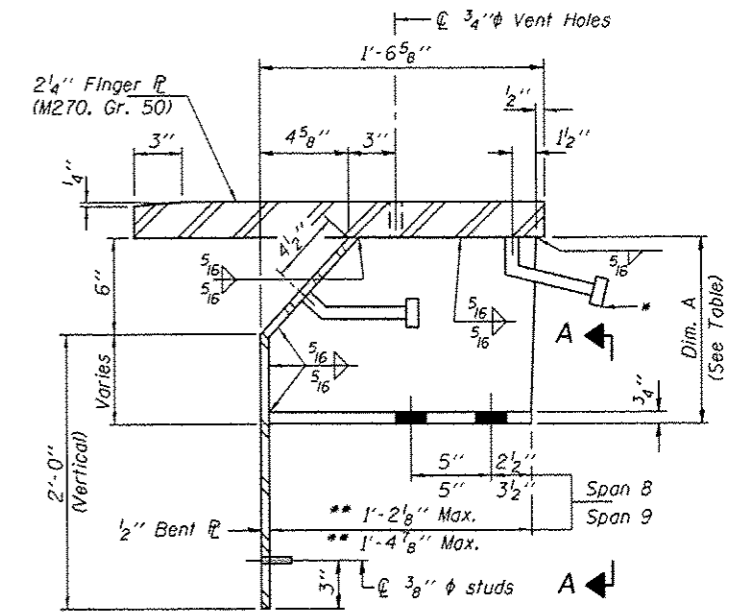
PIER 8 FINGER PLATE JOINT
SN 009-0001

SHEET NO. 3 OF 14 SHEETS

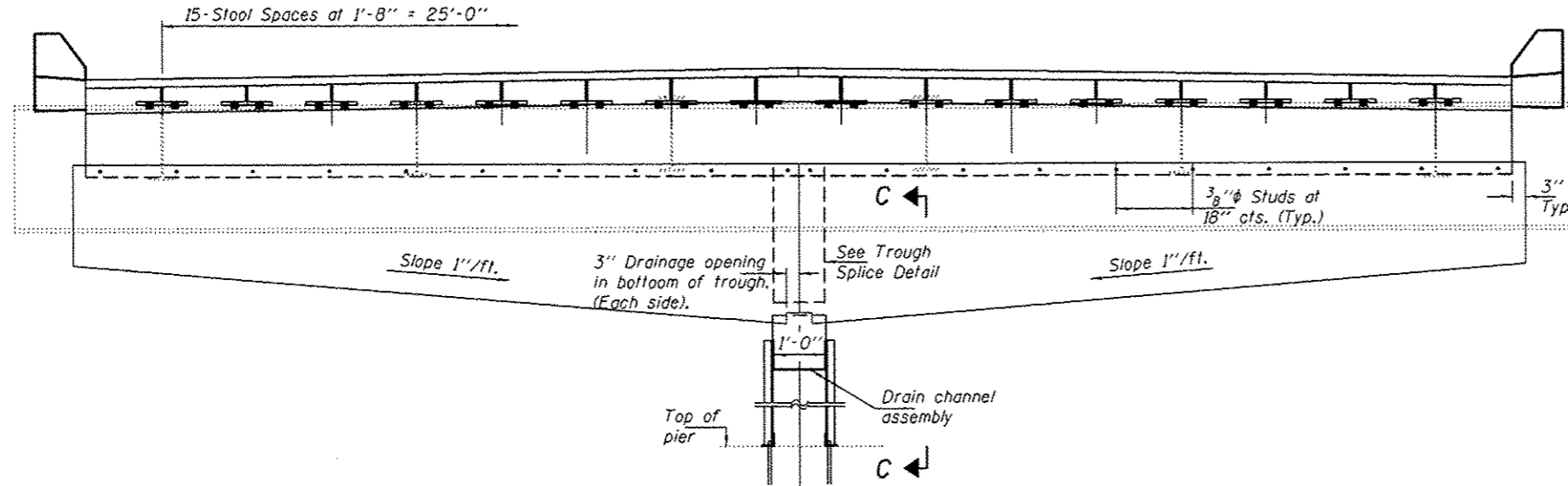
F.A.P. RTE. 310	SECTION 106)BJR	COUNTY CASS	TOTAL SHEETS 19	SHEET NO. 8
			CONTRACT NO. 72H29	
ILLINOIS FED. AID PROJECT				



CROSS SECTION THRU SPAN 8



STOOL "A" DETAILS AT PIER 8

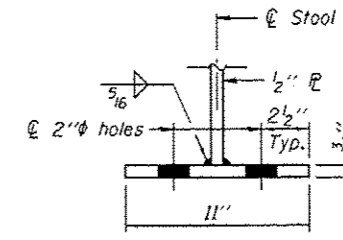


CROSS SECTION THRU SPAN 9

DIMENSION "A" AT PIER 8

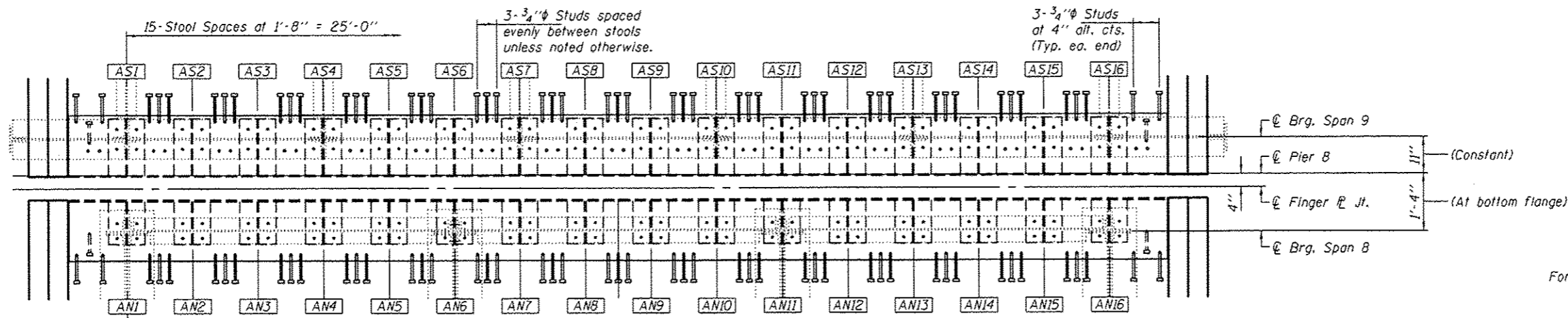
* 3/4" x 8" granular or solid flux filled headed studs conforming to Art. 1006.32 of the Std. Specs. automatically end welded.
 ** Dimension varies at stool heights < 6"

Stool No.	Dim. A	Stool No.	Dim. A
AN1	7"	AS1	4 3/16"
AN2	9 7/16"	AS2	4 1/2"
AN3	9 3/4"	AS3	4 13/16"
AN4	10 1/16"	AS4	5 1/8"
AN5	10 3/8"	AS5	5 7/16"
AN6	8 9/16"	AS6	5 3/4"
AN7	11"	AS7	6 1/16"
AN8	11 5/16"	AS8	6 3/8"
AN9	11 5/16"	AS9	6 3/8"
AN10	11"	AS10	6 1/16"
AN11	8 9/16"	AS11	5 3/4"
AN12	10 3/8"	AS12	5 7/16"
AN13	10 1/16"	AS13	5 1/8"
AN14	9 3/4"	AS14	4 13/16"
AN15	9 7/16"	AS15	4 1/2"
AN16	7"	AS16	4 3/16"



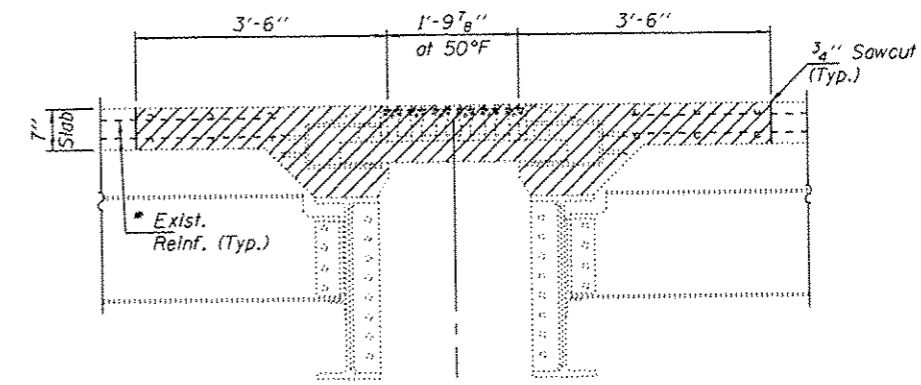
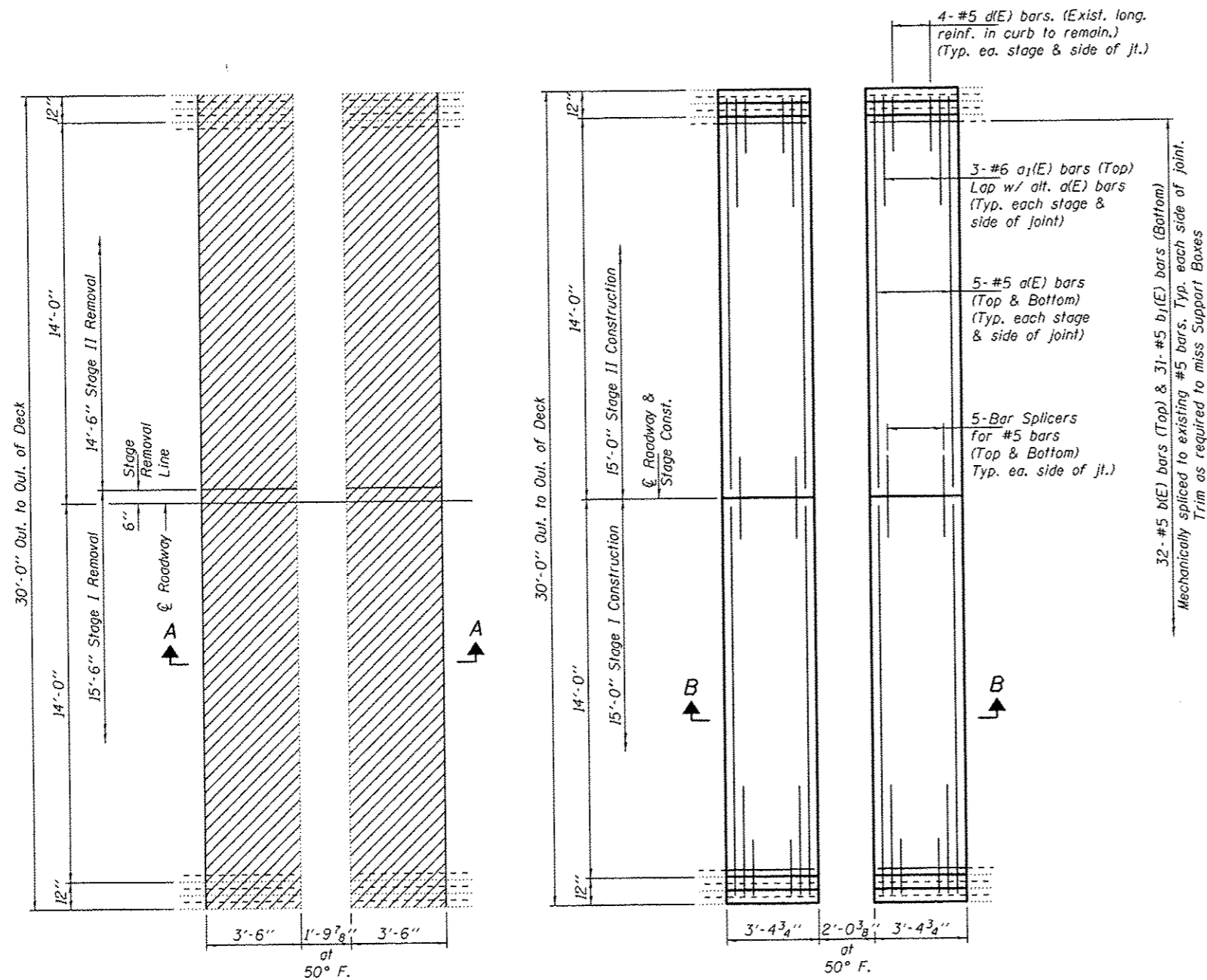
VIEW A-A

Dimensions are at center bearing.
 See Section B-B on sheet 3 of 14 for longitudinal slope.

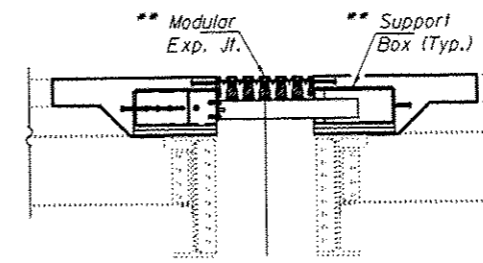


PLAN VIEW AT PIER 8

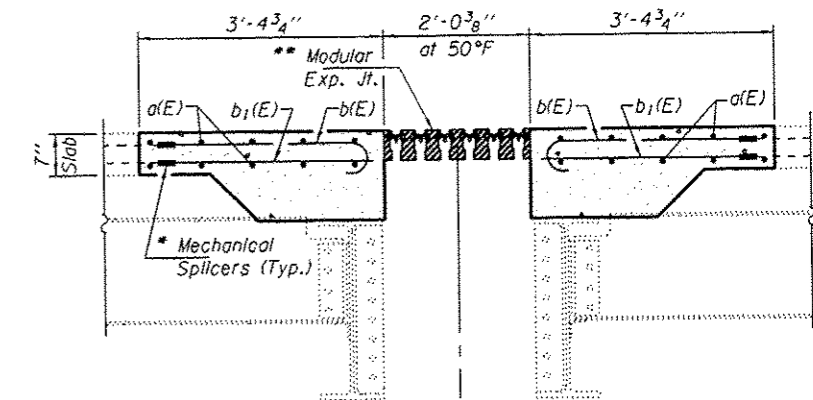
For Sec. C-C. see sheet 9 of 14.



* Cut existing reinforcement 6" from removal line to facilitate installation of Mechanical Splicers.



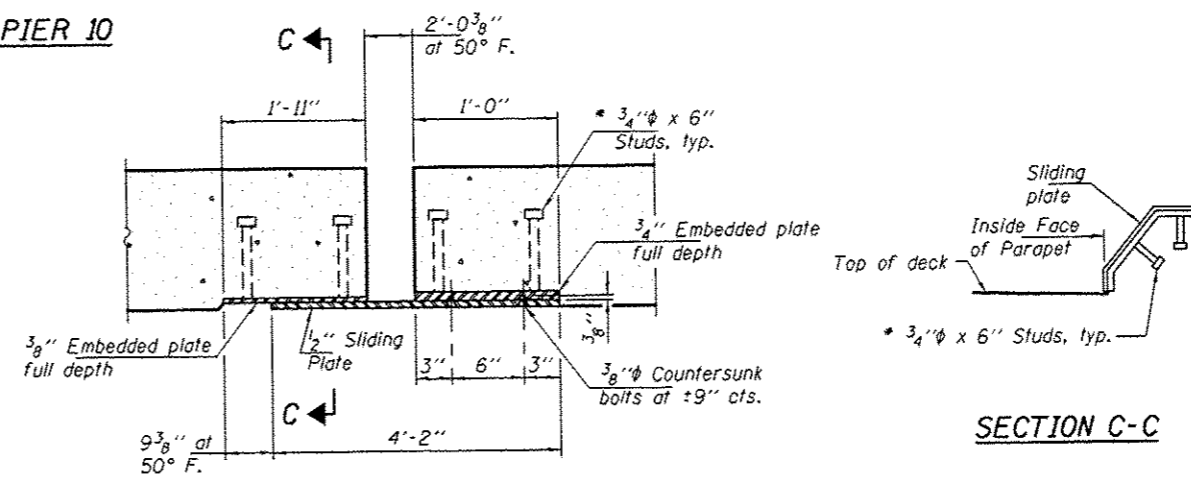
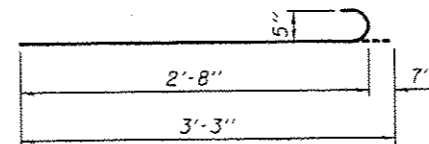
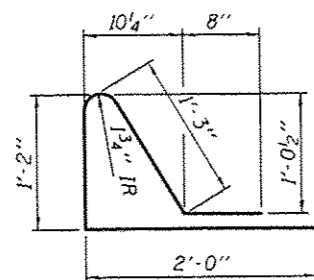
SECTION B-B (Showing Support Boxes)



SECTION B-B (Showing Reinforcement)

** Number of rails determined by manufacturer. Support Boxes to be rigidly attached to Stringers & Floor Beams by adjustable brackets, stools, or shims as determined by manufacturer. Reuse existing mounting bracket holes. See sheet 6 of 14 for locations.

Concrete removal



CURB SLIDING PLATE DETAIL
Cost included with the cost of the modular joint.

BILL OF MATERIAL (PIER 10)

Bar	No.	Size	Length	Shape		
a(E)	40	#5	14'-8"	—		
a ₁ (E)	12	#6	4'-0"	—		
b(E)	64	#5	3'-3"	—		
b ₁ (E)	62	#5	2'-9"	—		
d(E)	16	#5	5'-2"	⊓		
Concrete Removal					Cu. Yd.	7.7
Concrete Superstructure					Cu. Yd.	7.5
Bar Splicers					Each	20
Mechanical Splicers					Each	126
Reinforcement Bars, Epoxy Coated					Pounds	1170

DESIGNED - ATH
CHECKED - VHV
DRAWN - Kyle M. Steffen
CHECKED - ATH VHV

EXAMINED - *Timothy A. Dault*
ACTING ENGINEER OF STRUCTURAL SERVICES

PASSED - *Carl Perry*
ACTING ENGINEER OF BRIDGES AND STRUCTURES

DATE - AUGUST 18, 2014

REVISED

REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

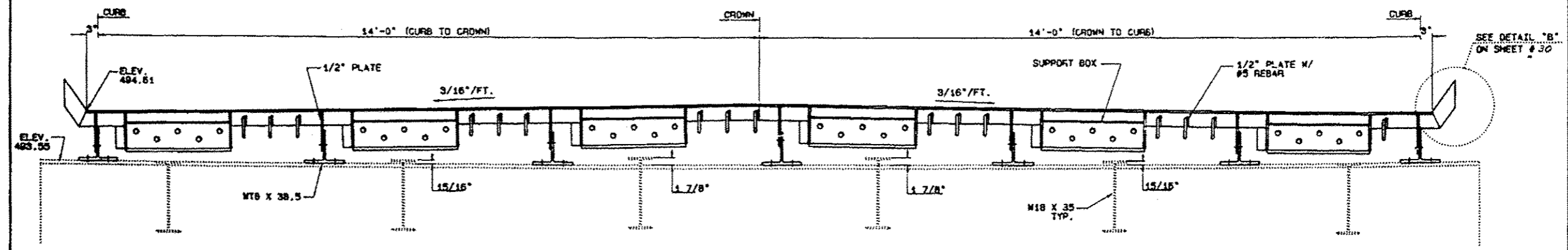
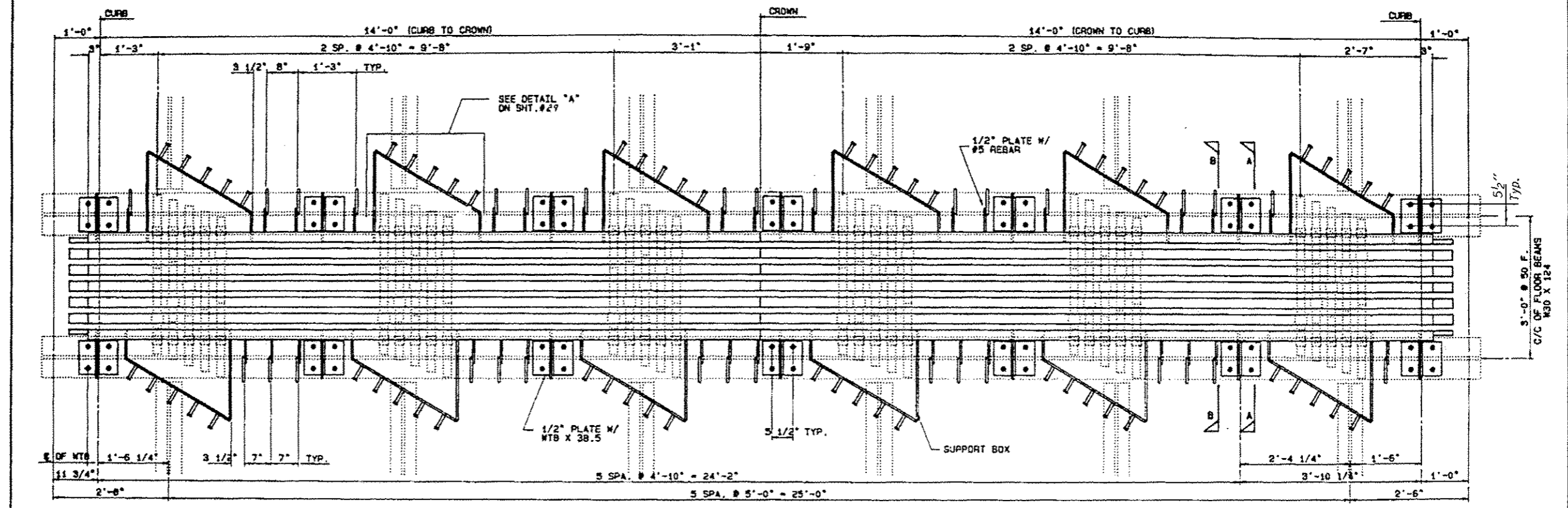
PIER 10 JOINT REPLACEMENT DETAILS
SN 009-0001

SHEET NO. 5 OF 14 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	186/BJR	CASS	19	10
CONTRACT NO. 72H29			ILLINOIS FED. AID PROJECT	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET NO 28	
32	115 SHEETS



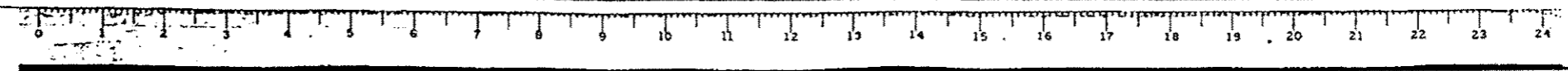
DESIGNED *David P. Shaw*
CHECKED *Ludwig Hohl*
DRAWN *TEA*
CHECKED

May 22, 2014
EXAMINED *James J. Rayburn*
PASSED *Carl E. Morrison*
APPROVED

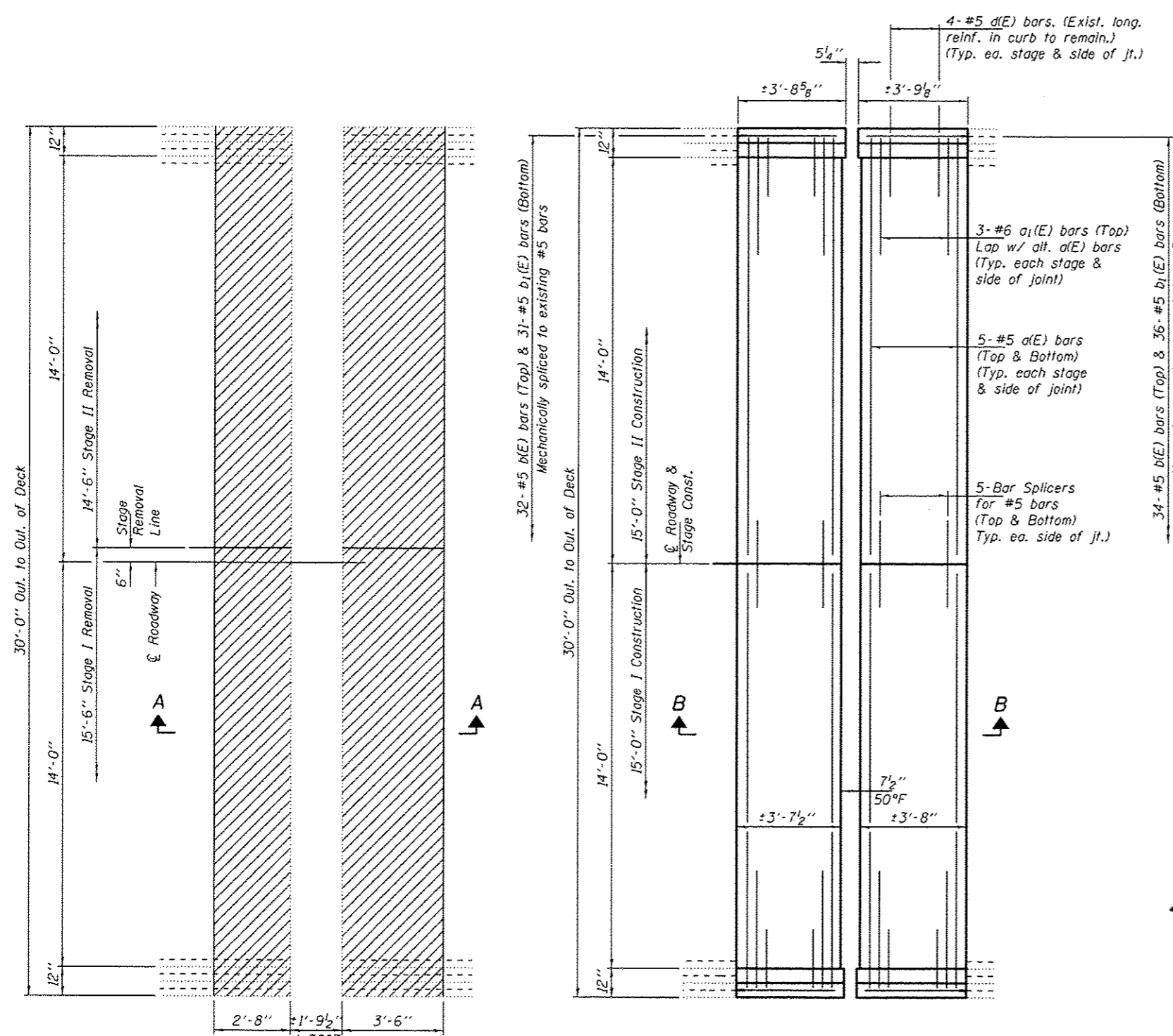
FOR
INFORMATION
ONLY

NOTE:
SECTIONS A-A & B-B ARE ON SHEET #30

MODULAR EXPANSION JOINT (16')
FD RT 10 SEC 66 BR
CASS-SCHUYLER COUNTIES
STA. 39+58.00

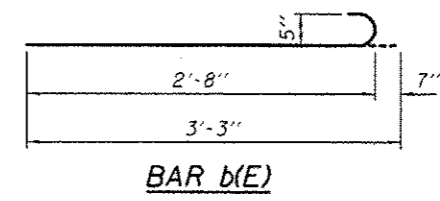
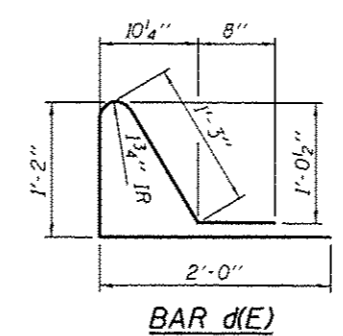
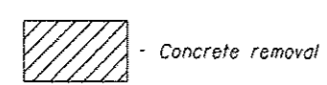


DESIGNED - ATH	EXAMINED - <i>James J. Rayburn</i>	DATE - AUGUST 18, 2014	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION		PIER 10 JOINT DETAILS SN 009-0001		F.A.P. RTE. 310	SECTION 1861BJR	COUNTY CASS	TOTAL SHEETS 19	SHEET NO. 11
CHECKED - VHV	PASSED - <i>Carl E. Morrison</i>	REVISED	SHEET NO. 6 OF 14 SHEETS		ILLINOIS FED. AID PROJECT		CONTRACT NO. 72H29				
DRAWN - Kyle M. Steffen	ACTING ENGINEER OF BRIDGES AND STRUCTURES	REVISOR									
CHECKED - ATH VHV	ACTING ENGINEER OF STRUCTURAL SERVICES	REVISOR									



CONCRETE REMOVAL AT PIER 13

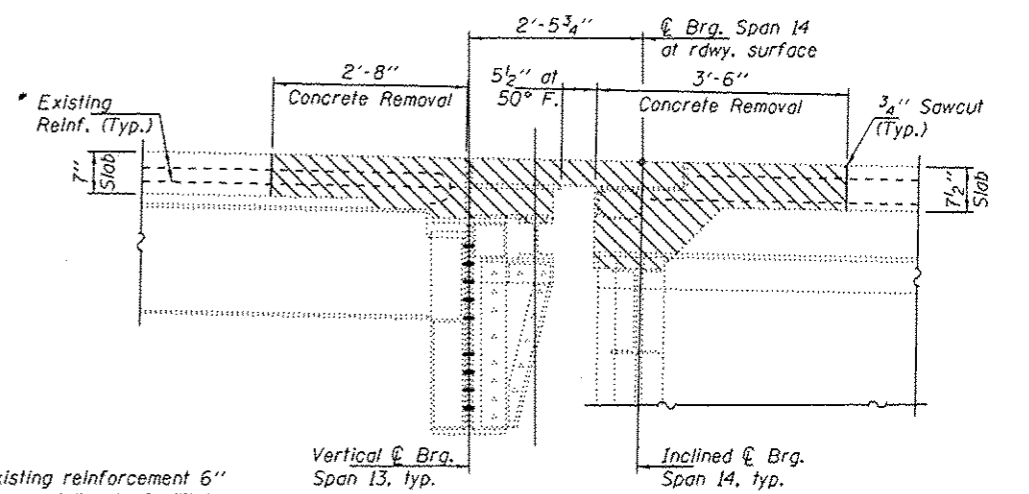
CONCRETE REPLACEMENT AT PIER 13



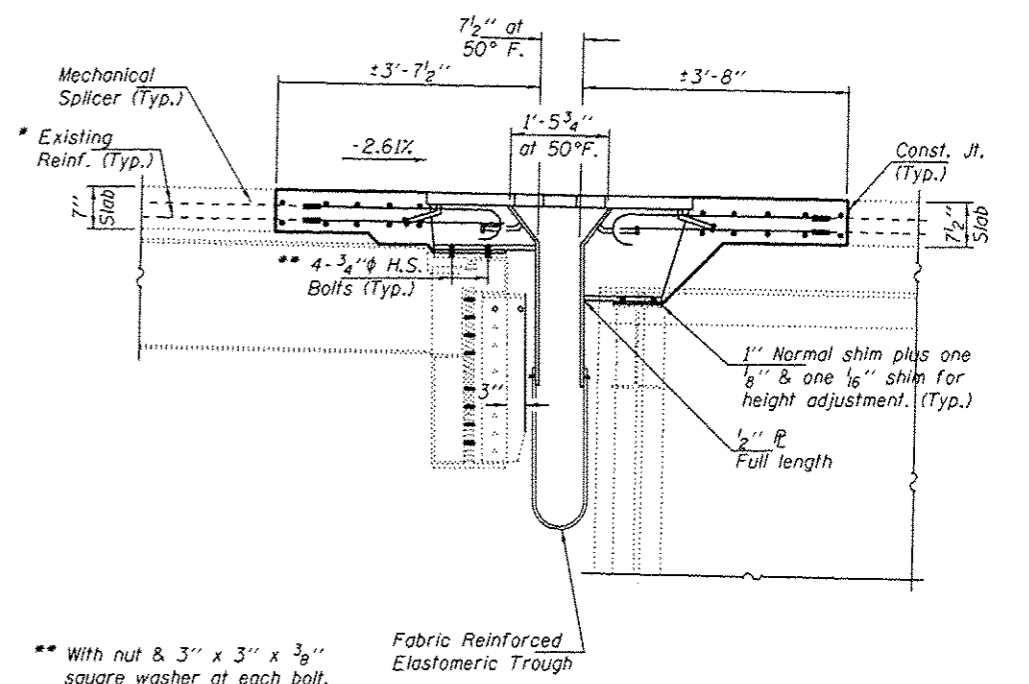
* Cut existing reinforcement 6" from removal line to facilitate installation of Mechanical Splicers.

* 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.

** With nut & 3" x 3" x 3/8" square washer at each bolt. 2" diameter holes in stool flange. Field drill 7/8" diameter holes in diaphragms and beam flanges.



SECTION A-A
See sheet 12 of 14 for Structural steel removal.



SECTION B-B
For Trough details, see sheets 8 & 9 of 14.

BILL OF MATERIAL (PIER 13)

Bar	No.	Size	Length	Shape
a(E)	40	#5	14'-8"	—
a1(E)	12	#6	4'-0"	—
b(E)	66	#5	3'-3"	—
b1(E)	67	#5	2'-9"	—
d(E)	17	#5	5'-2"	△
Concrete Removal		Cu. Yd.	5.7	
Concrete Superstructure		Cu. Yd.	5.7	
Bar Splicers		Each	20	
Mechanical Splicers		Each	133	
Reinforcement Bars, Epoxy Coated		Pounds	1190	

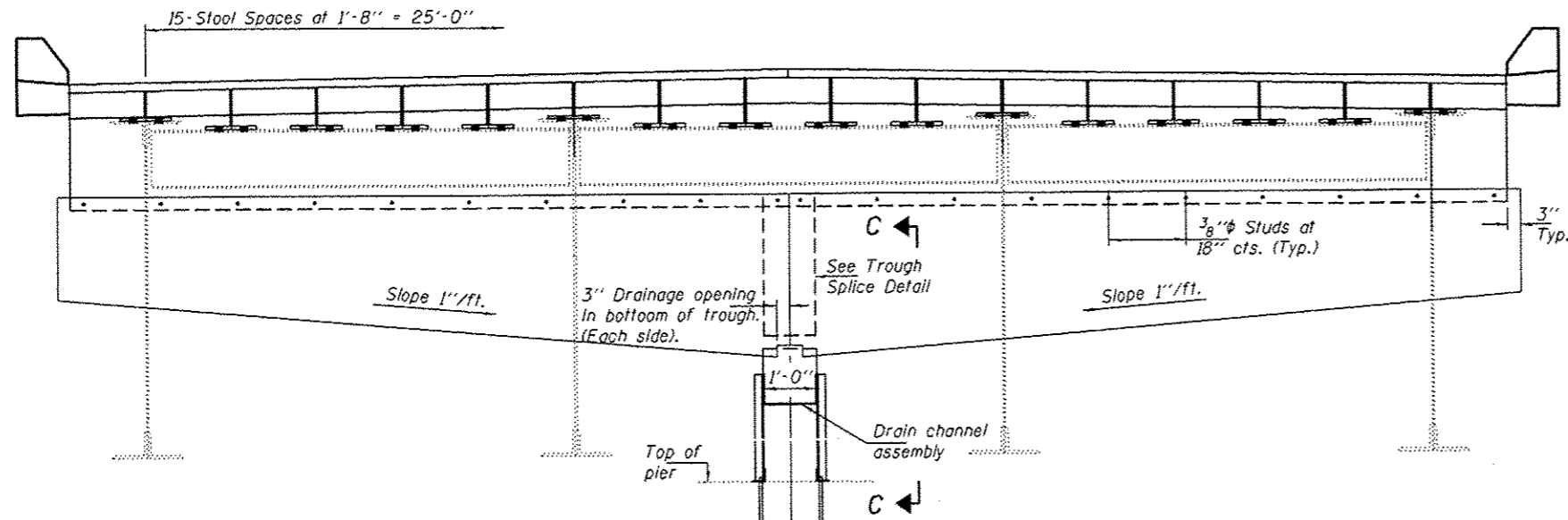
DESIGNED - ATH	EXAMINED - <i>Timothy A. Bault</i>	DATE - AUGUST 18, 2014
CHECKED - VHV	ACTING ENGINEER OF STRUCTURAL SERVICES	
DRAWN - Kyle M. Steffen	PASSED - <i>Kyle M. Steffen</i>	REVISED
CHECKED - ATH VHV	ACTING ENGINEER OF BRIDGES AND STRUCTURES	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

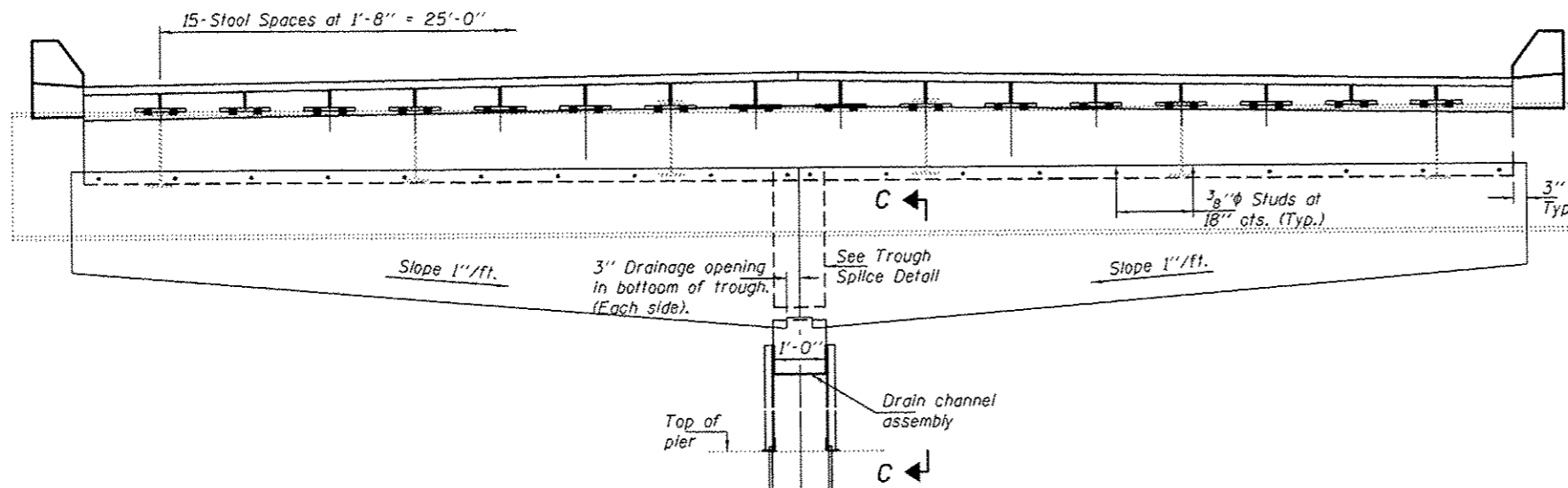
PIER 13 FINGER PLATE JOINT
SN 009-0001

SHEET NO. 7 OF 14 SHEETS

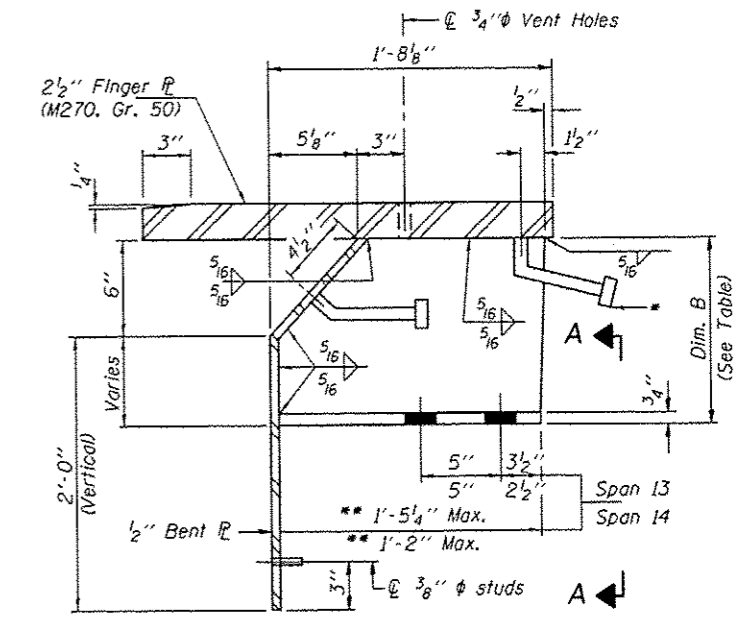
F.A.P. RTE. 310	SECTION 186)BJR	COUNTY CASS	TOTAL SHEETS 19	SHEET NO. 12
CONTRACT NO. 72H29			ILLINOIS FED. AID PROJECT	



CROSS SECTION THRU SPAN 14



CROSS SECTION THRU SPAN 13



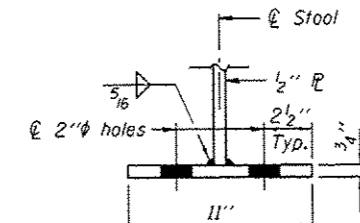
STOOL "B" DETAILS AT PIER 13

DIMENSION "B" AT PIER 13

Stool No.	Dim. B	Stool No.	Dim. B
BN1	3 ¹⁵ / ₁₆ "	BS1	6 ¹⁵ / ₁₆ "
BN2	4 ¹ / ₄ "	BS2	9 ³ / ₈ "
BN3	4 ⁹ / ₁₆ "	BS3	9 ¹¹ / ₁₆ "
BN4	4 ⁷ / ₈ "	BS4	10"
BN5	5 ³ / ₁₆ "	BS5	10 ⁵ / ₁₆ "
BN6	5 ¹ / ₂ "	BS6	8 ¹ / ₂ "
BN7	5 ¹³ / ₁₆ "	BS7	10 ¹⁵ / ₁₆ "
BN8	6 ¹ / ₈ "	BS8	11 ¹ / ₄ "
BN9	6 ¹ / ₈ "	BS9	11 ¹ / ₄ "
BN10	5 ¹³ / ₁₆ "	BS10	10 ¹⁵ / ₁₆ "
BN11	5 ¹ / ₂ "	BS11	8 ¹ / ₂ "
BN12	5 ³ / ₁₆ "	BS12	10 ⁵ / ₁₆ "
BN13	4 ⁷ / ₈ "	BS13	10"
BN14	4 ⁹ / ₁₆ "	BS14	9 ¹¹ / ₁₆ "
BN15	4 ¹ / ₄ "	BS15	9 ³ / ₈ "
BN16	3 ¹⁵ / ₁₆ "	BS16	6 ¹⁵ / ₁₆ "

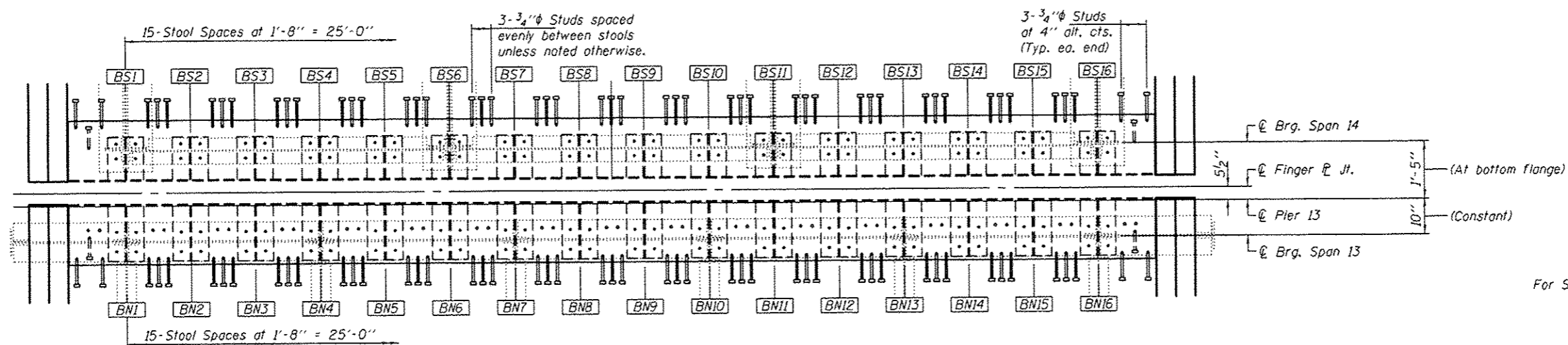
* 3/4" φ x 8" granular or solid flux filled headed studs conforming to Art. 1006.32 of the Std. Specs. automatically end welded.

** Dimension varies at stool heights < 6"



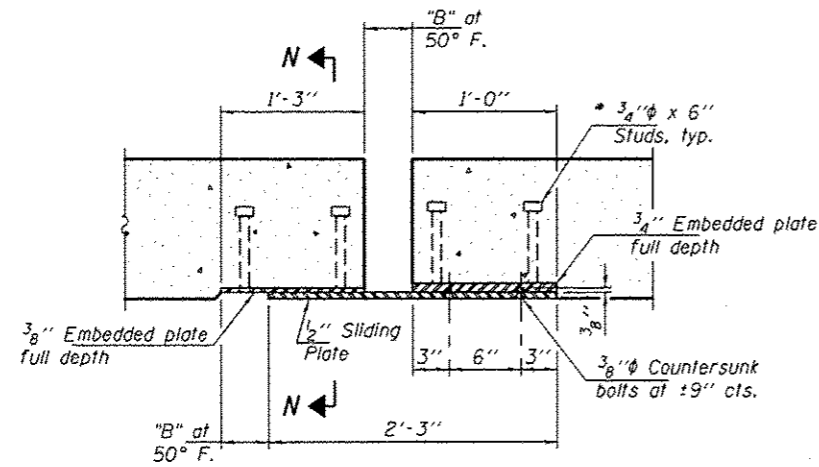
VIEW A-A

Dimensions are at bearing. See Section B-B on sheet 7 of 14 for longitudinal slope.



PLAN VIEW AT PIER 13

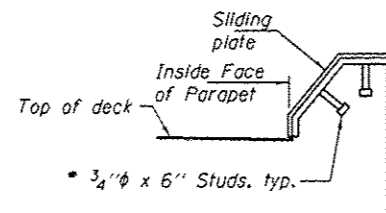
For Sec. C-C, see sheet 9 of 14.



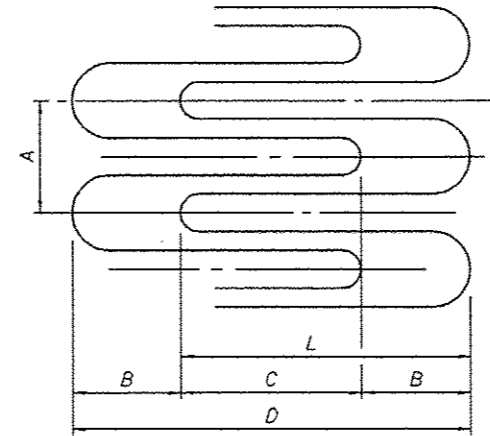
CURB SLIDING PLATE DETAIL

(Piers 8 & 13)

Cost included with the cost of the modular joint.



SECTION N-N

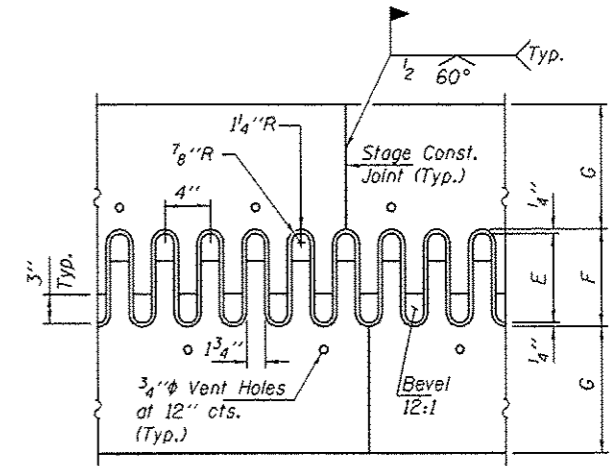


JOINT OPENING GEOMETRY

(See Table for Dimensions)

TABLE OF DIMENSIONS

Location	"A"	"B"	"C"	"D"	"L"
Pier 8	4"	4 3/4"	5 1/2"	1'-3"	10 1/4"
Pier 13	4"	5 1/4"	6"	1'-4 1/2"	11 1/4"



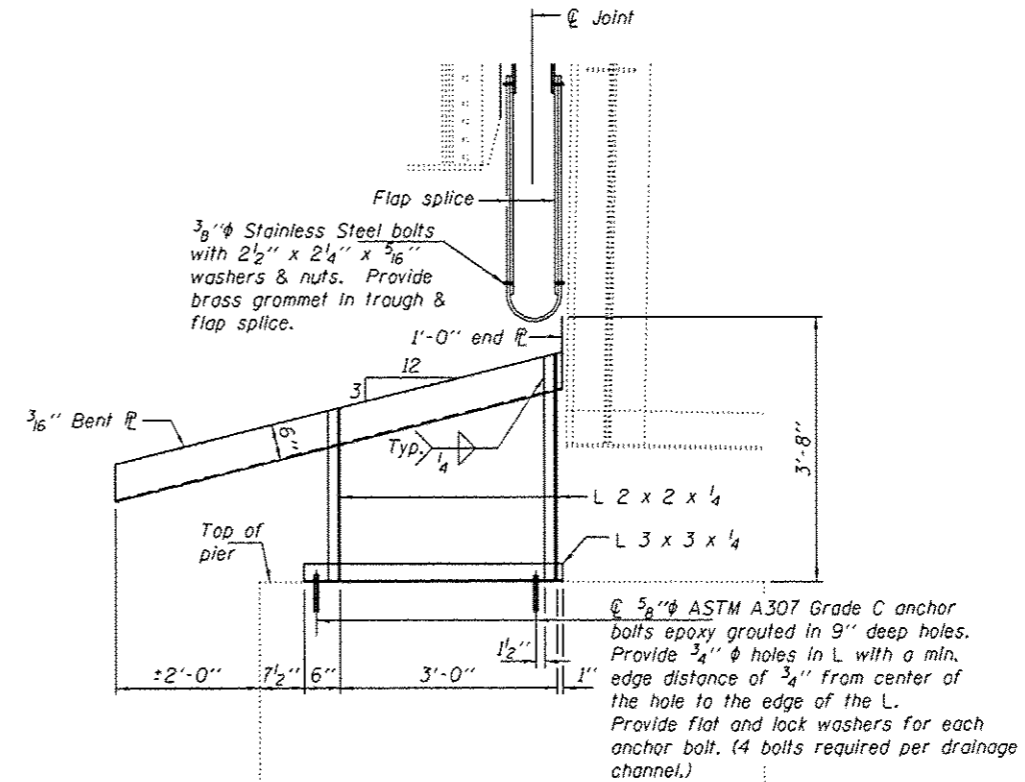
FLAME CUTTING DIAGRAM

Cut From

Pier 8 @ 2 1/4" x 3'-3 3/4"
 Pier 13 @ 2 1/2" x 3'-6 3/4"

TABLE OF DIMENSIONS

Location	"E"	"F"	"G"
Pier 8	10"	10 1/2"	14 5/8"
Pier 13	11"	11 1/2"	15 5/8"



SECTION C-C

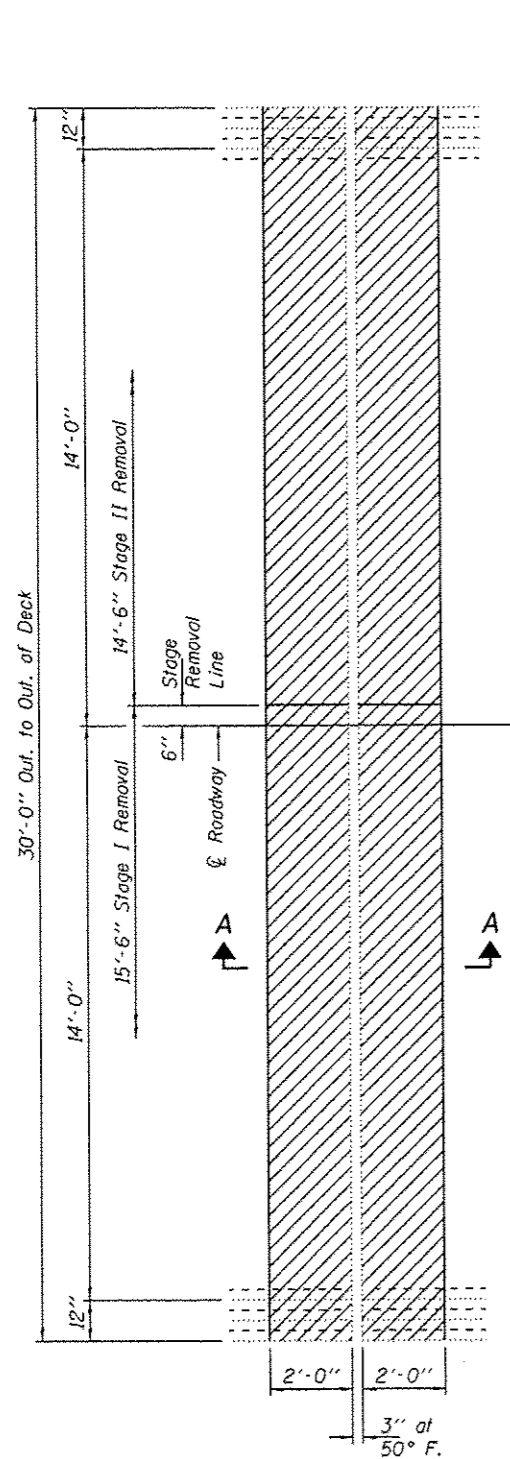
DESIGNED - ATH	EXAMINED - <i>Timothy A. Anhalt</i>	DATE - AUGUST 18, 2014
CHECKED - VHV	ACTING ENGINEER OF STRUCTURAL SERVICES	
DRAWN - Kyle M. Stoffen	PASSED - <i>Carl Boyer</i>	REVISED
CHECKED - ATH VHV	ACTING ENGINEER OF BRIDGES AND STRUCTURES	REVISED

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

FINGER PLATE DETAILS
 SN 009-0001

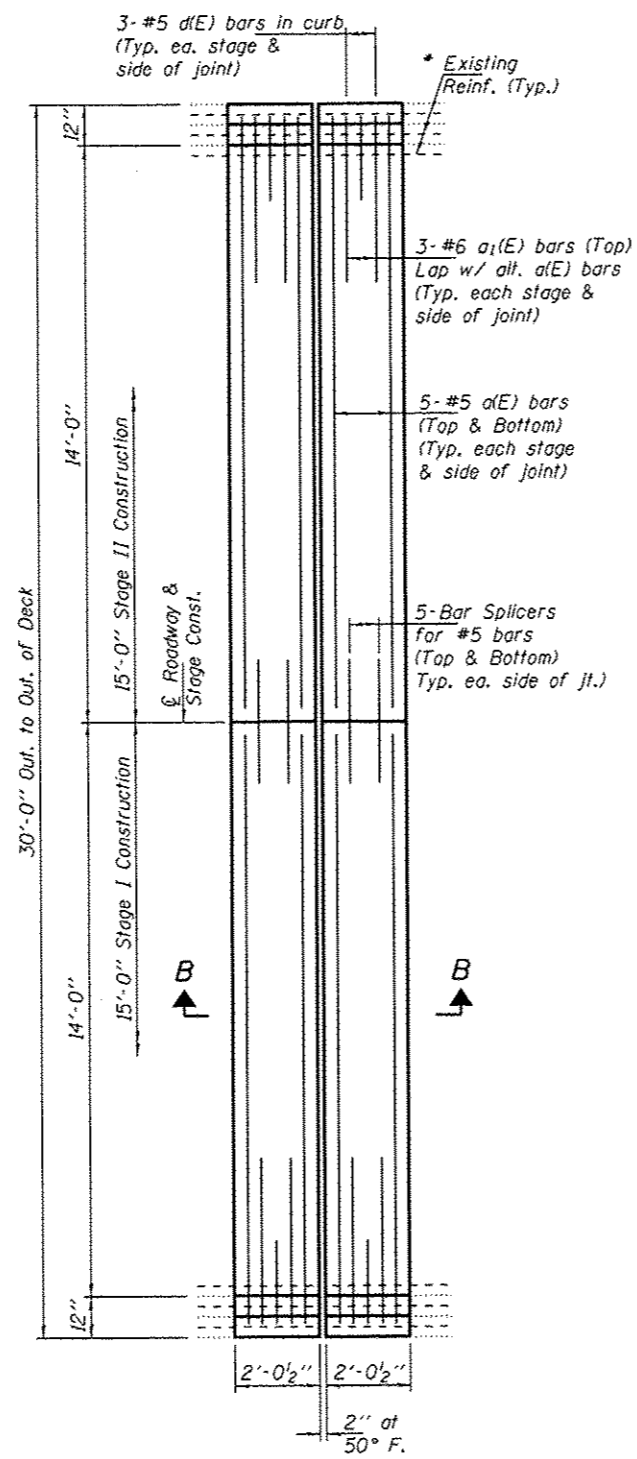
SHEET NO. 9 OF 14 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	(B6)BJR	CASS	19	14
CONTRACT NO. 72H29			ILLINOIS FED. AID PROJECT	

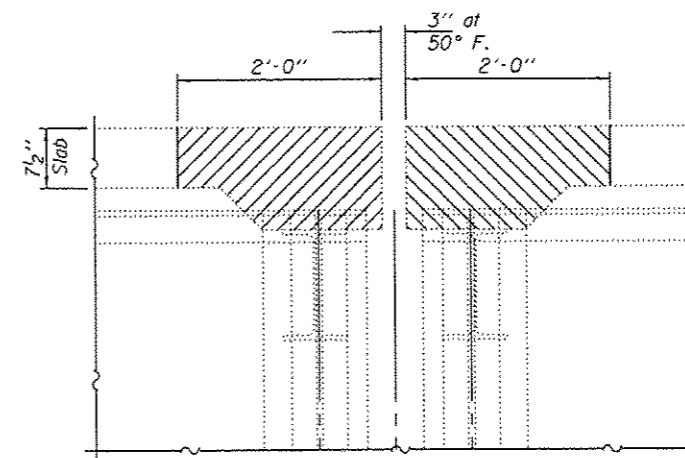


CONCRETE REMOVAL AT PIER 16

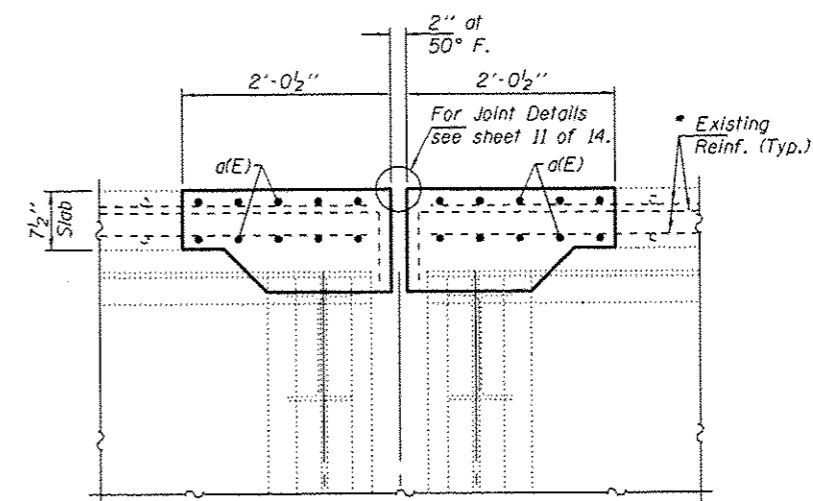
- Concrete removal



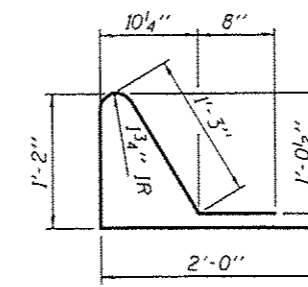
CONCRETE REPLACEMENT AT PIER 16



SECTION A-A



SECTION B-B



BAR d(E)

BILL OF MATERIAL (PIER 16)

Bar	No.	Size	Length	Shape	
d(E)	40	#5	14'-8"	—	
a1(E)	2	#6	4'-0"	—	
d(E)	12	#5	5'-2"	⤴	
Concrete Removal				Cu. Yd.	4.7
Concrete Superstructure				Cu. Yd.	5.0
Bar Splicers				Each	20
Reinforcement Bars, Epoxy Coated				Pounds	750

* 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.

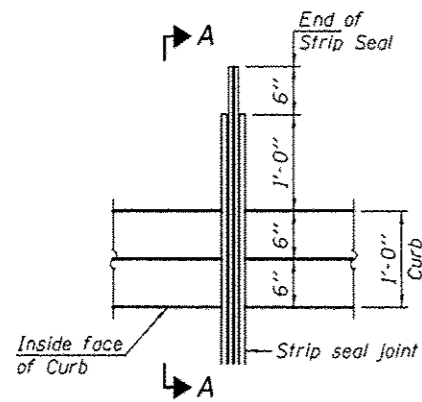
DESIGNED - ATH	EXAMINED - <i>Timothy A. Dault</i>	DATE - AUGUST 18, 2014
CHECKED - VHV	ACTING ENGINEER OF STRUCTURAL SERVICES	
DRAWN - Kyle M. Stoffon	PASSED - <i>Carl [Signature]</i>	REVISED
CHECKED - ATH VHV	ACTING ENGINEER OF BRIDGES AND STRUCTURES	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 16 JOINT REPLACEMENT DETAILS
SN 009-0001

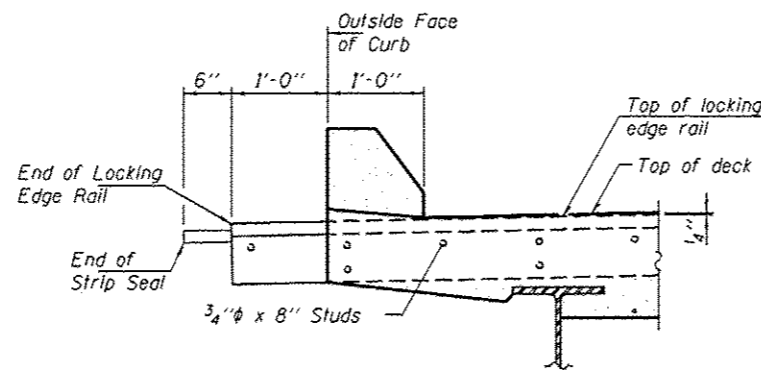
SHEET NO. 10 OF 14 SHEETS

F.A.P. RTE. 310	SECTION (B6)BJR	COUNTY CASS	TOTAL SHEETS 19	SHEET NO. 15
CONTRACT NO. 72H29			ILLINOIS FED. AID PROJECT	

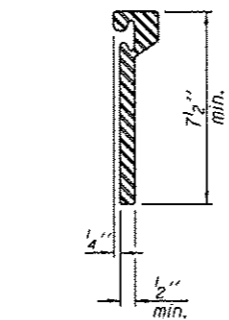


PLAN

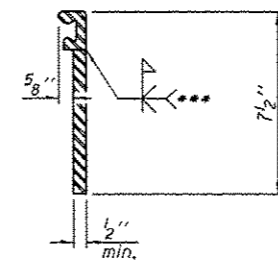
The pay items for Preformed Joint Strip Seal shall be to the end of the steel plate. The 6" of rubber extending past the end of the steel shall be considered incidental and shall not be measured for payment.



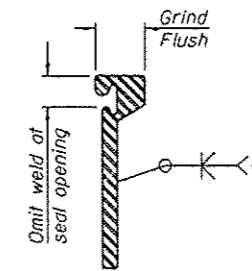
SECTION A-A



ROLLED EXTRUDED RAIL



WELDED RAIL

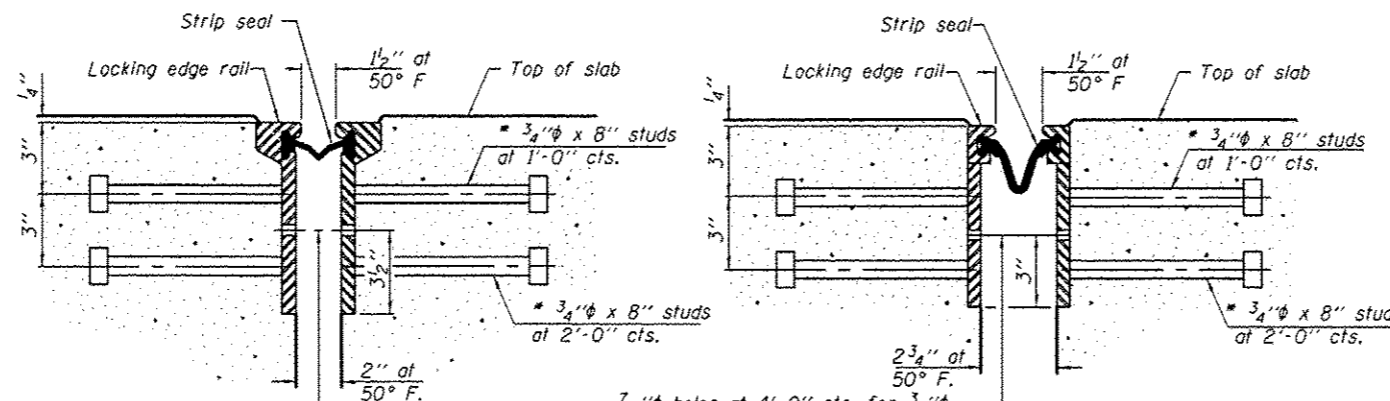


** Back gouge not required if complete joint penetration is verified by mock-up.

LOCKING EDGE RAIL SPLICE

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

LOCKING EDGE RAILS



SECTION THRU ROLLED RAIL JOINT

SECTION THRU WELDED RAIL JOINT

7/16" ϕ holes at 4'-0" cts. for 3/8" ϕ bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after forms are removed, typ.

7/16" ϕ holes at 4'-0" cts. for 3/8" ϕ bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after forms are removed, typ.

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

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.

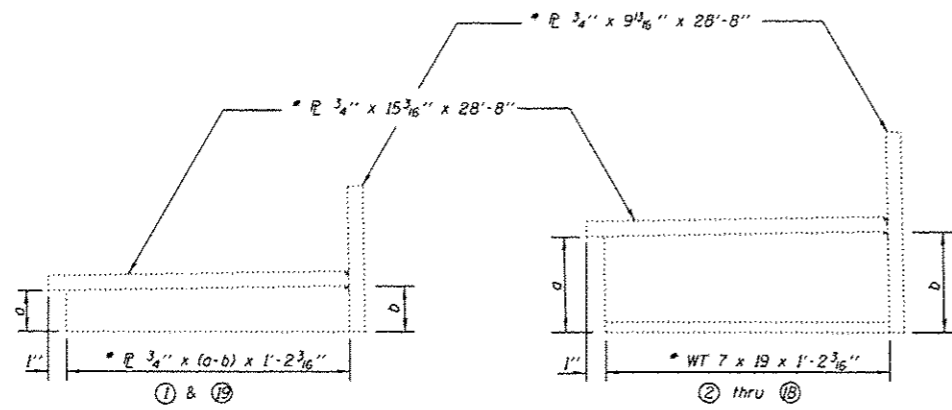
All steel components shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications.

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° included in the cost of Preformed Joint Strip Seal.

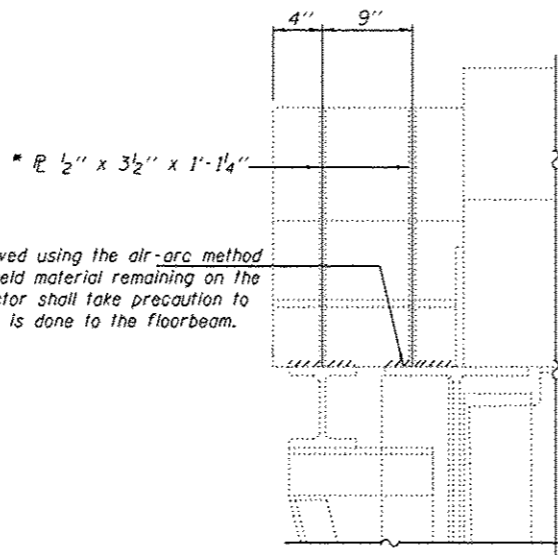
BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	33



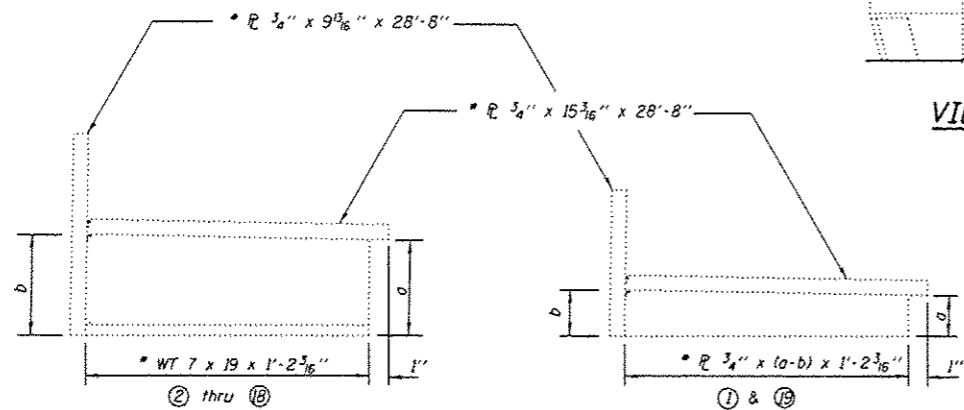
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
a	2 1/8"	2 5/16"	2 5/8"	2 5/8"	3 1/4"	3 9/16"	3 7/8"	4 1/16"	4 5/16"	4 3/8"	4 3/8"	3 7/8"	3 9/16"	3 4"	2 5/8"	2 5/8"	2 5/8"	2 5/8"	2 5/8"
b	2 3/8"	2 9/16"	2 7/8"	3 3/16"	3 1/2"	3 5/16"	4 1/8"	4 1/16"	4 3/4"	5 1/16"	4 3/4"	4 7/16"	4 1/8"	3 3/8"	3 1/2"	3 3/16"	2 7/8"	2 9/16"	2 3/8"

UPPER SUPPORT BRACKET
AT PIER 8



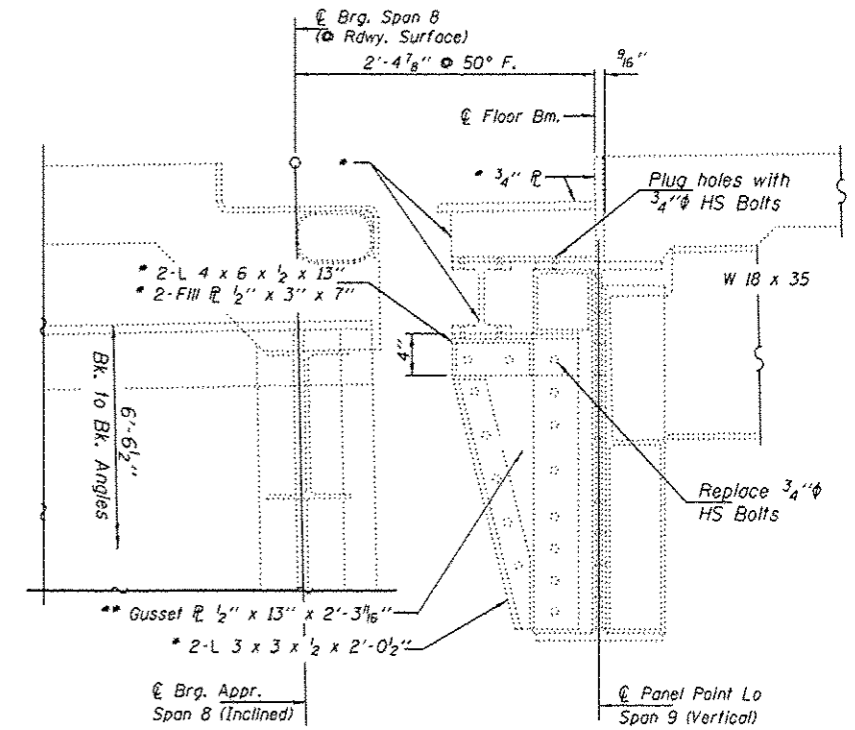
Existing R to be removed using the air-arc method and grind smooth all weld material remaining on the floorbeam. The contractor shall take precaution to ensure that no damage is done to the floorbeam.

VIEW A-A

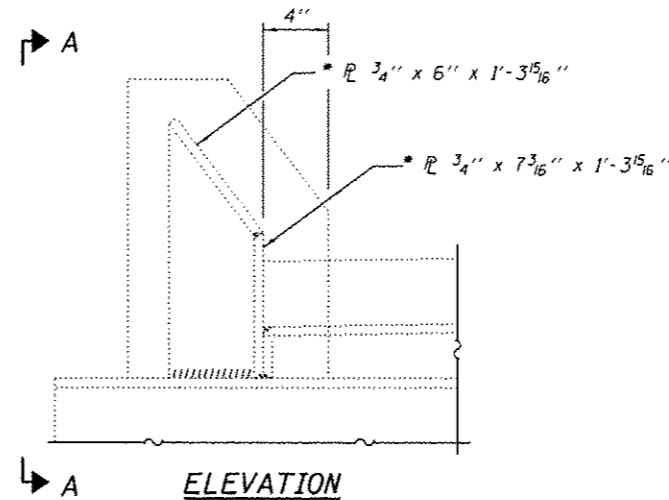


	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
a	2 1/8"	2 1/8"	2 9/16"	2 7/8"	3 1/16"	3 1/2"	3 3/8"	4 1/8"	4 1/16"	4 3/8"	4 1/16"	4 1/8"	3 3/8"	3 1/2"	3 3/16"	2 7/8"	2 9/16"	2 1/4"	2 1/8"
b	2 7/16"	2 5/8"	2 5/8"	3 1/4"	3 9/16"	3 7/8"	4 3/16"	4 1/2"	4 1/16"	5 1/8"	4 1/16"	4 1/2"	4 3/16"	3 7/8"	3 3/16"	3 1/4"	2 9/16"	2 5/8"	2 1/8"

UPPER SUPPORT BRACKET
AT PIER 13

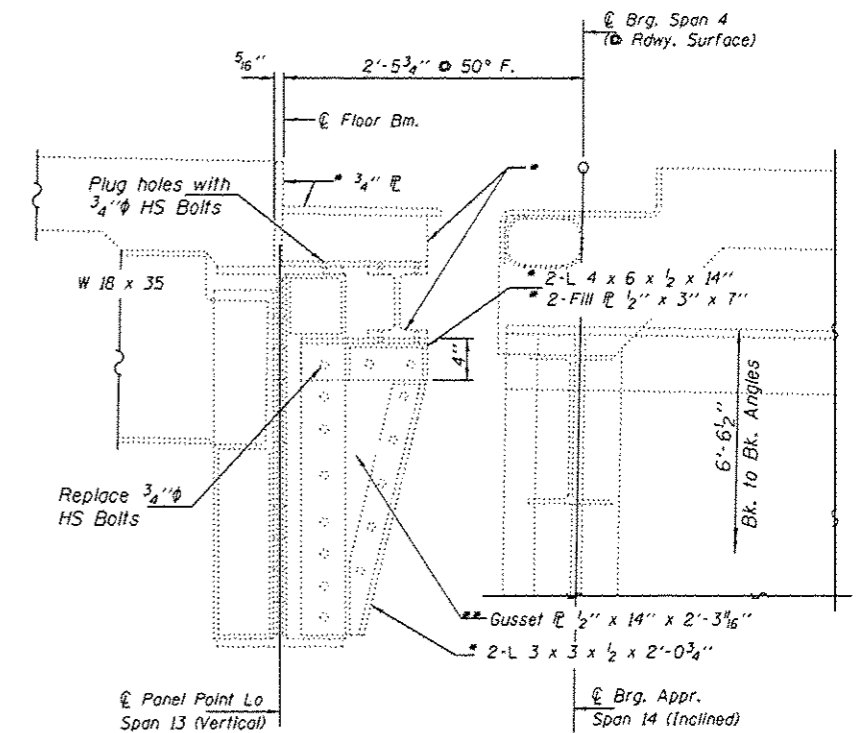


TYPICAL STEEL REMOVAL DETAILS
AT PIER 8



ELEVATION

CURB REMOVAL DETAILS



TYPICAL STEEL REMOVAL DETAILS
AT PIER 13

* Structural Steel Removal.

** Cut/trim vertically, 3" from Brg. R/L 6x4x1/2 or as shown on Section B-B, on sheets 3 & 7 of 14.

DESIGNED - ATH
CHECKED - VHV
DRAWN - Kyle M. Steffen
CHECKED - ATH VHV

EXAMINED
PASSED
ACTING ENGINEER OF STRUCTURAL SERVICES
ACTING ENGINEER OF BRIDGES AND STRUCTURES

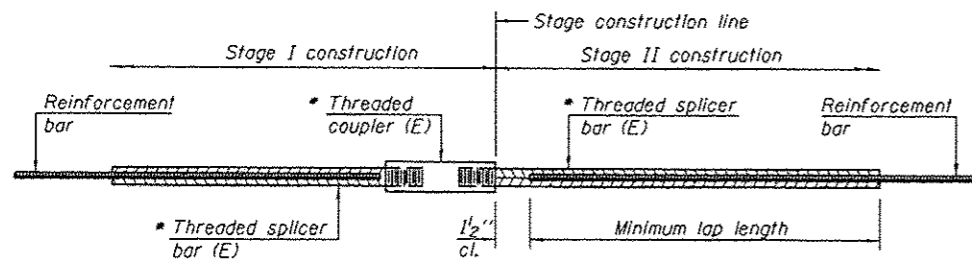
DATE - AUGUST 18, 2014
REVISED
REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STEEL REMOVAL DETAILS
SN 009-0001

SHEET NO. 12 OF 14 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	(B6)BJR	CASS	19	17
CONTRACT NO. 72H29				
ILLINOIS FED. AID PROJECT				



STANDARD BAR SPLICER ASSEMBLY

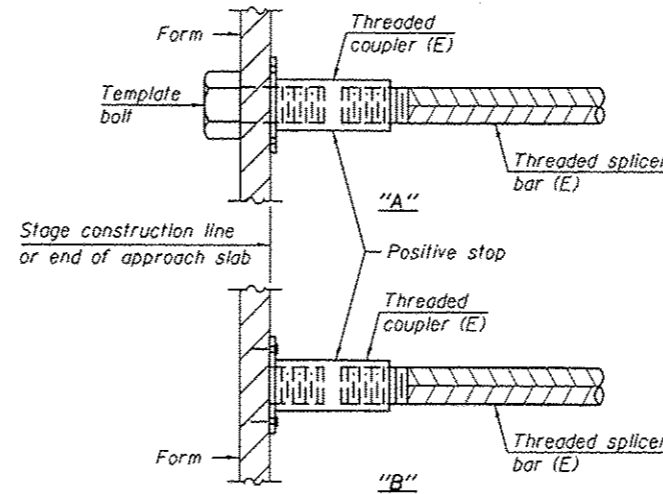
Bar size to be spliced	Minimum Lap Lengths					
	Table 1	Table 2	Table 3	Table 4	Table 5	Table 6
3, 4	1'-5"	1'-11"	2'-1"	2'-4"	2'-7"	2'-11"
5	1'-9"	2'-5"	2'-7"	2'-11"	3'-3"	3'-8"
6	2'-1"	2'-11"	3'-1"	3'-6"	3'-10"	4'-5"
7	2'-9"	3'-10"	4'-2"	4'-8"	5'-2"	5'-10"
8	3'-8"	5'-1"	5'-5"	6'-2"	6'-9"	7'-8"
9	4'-7"	6'-5"	6'-10"	7'-9"	8'-7"	9'-8"

- Table 1: Black bar, 0.8 Class C
- Table 2: Black bar, Top bar lap, 0.8 Class C
- Table 3: Epoxy bar, 0.8 Class C
- Table 4: Epoxy bar, Top bar lap, 0.8 Class C
- Table 5: Epoxy bar, Class C
- Table 6: Epoxy bar, Top bar top, Class C

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

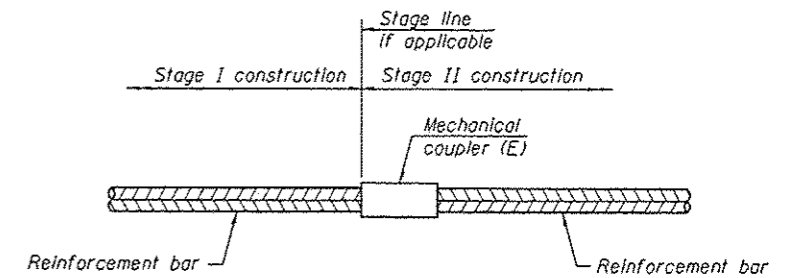
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Table for minimum lap length
Deck Slab	#5	80	3



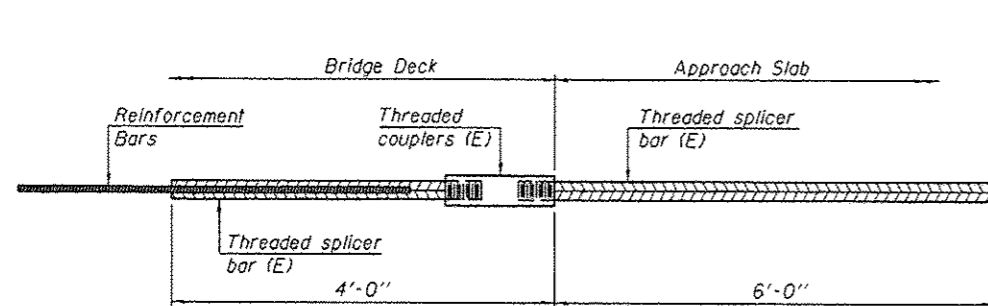
INSTALLATION AND SETTING METHODS

"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.



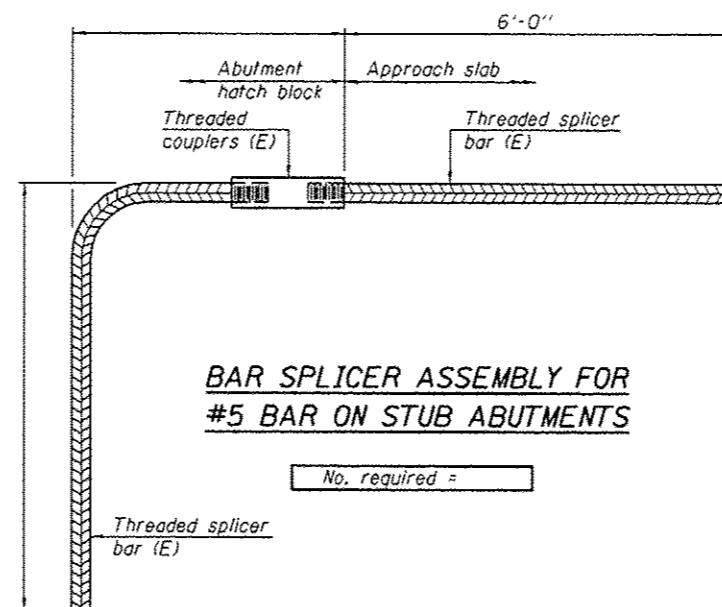
STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required
Deck Slab	#5	392



BAR SPLICER ASSEMBLY FOR #5 BAR ON INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

No. required =



BAR SPLICER ASSEMBLY FOR #5 BAR ON STUB ABUTMENTS

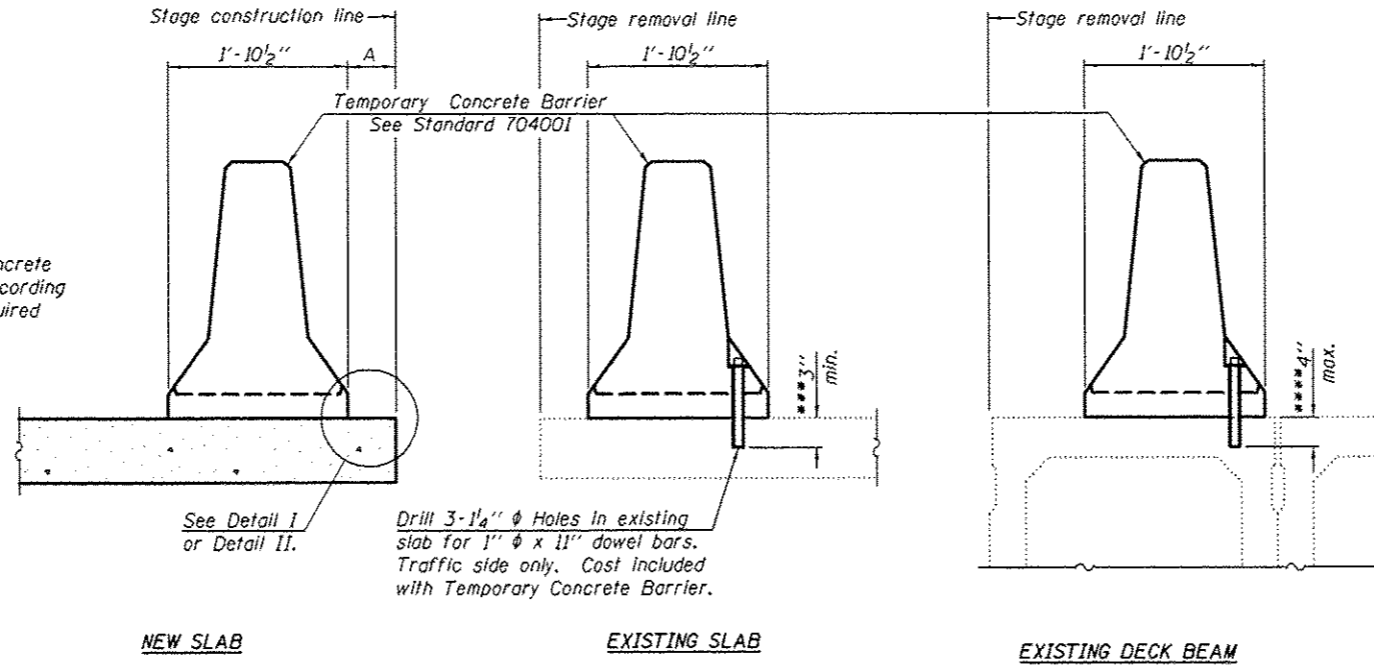
No. required =

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 1-27-12

When "A" is 3'-6" 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'-6".



SECTIONS THRU SLAB OR DECK BEAM

NOTES

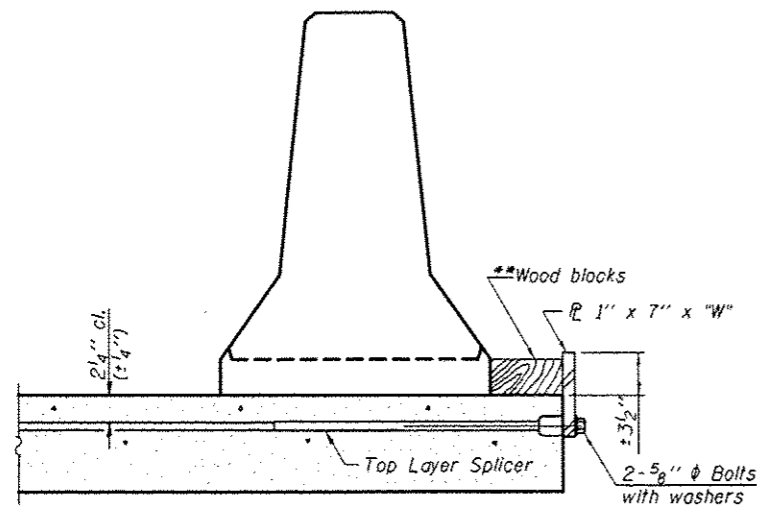
Detail I - With Bar Splicer or Couplers:
Connect one (1) 1" x 7" x "W" steel \bar{P} to the top layer of couplers with 2-5/8" ϕ bolts screwed to coupler at approximate \bar{C} of each barrier panel.

Detail II - With Extended Reinforcement Bars:
Connect one (1) 1" x 7" x "W" steel \bar{P} 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.

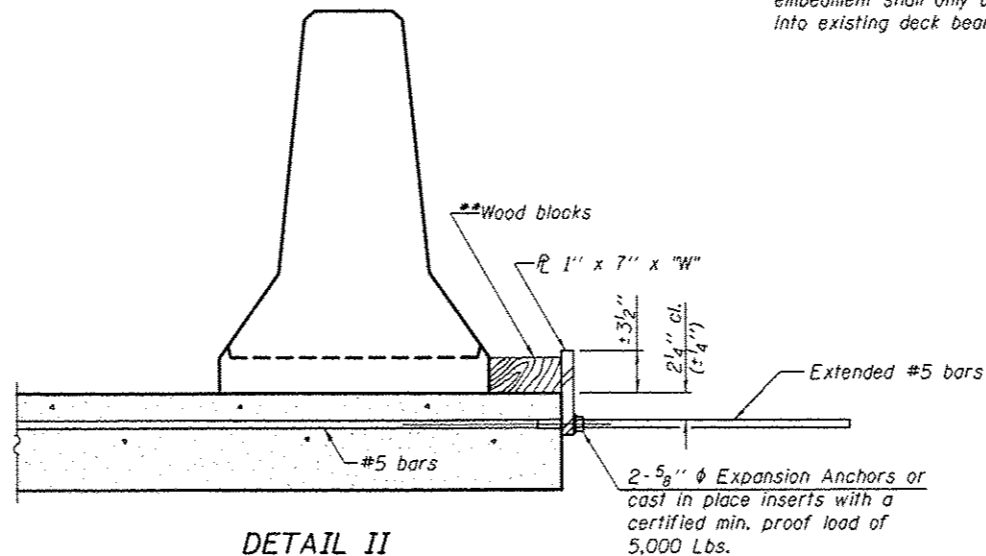
Cost of anchorage is included with Temporary Concrete Barrier. The 1" x 7" x "W" plate shall not be removed until stage II construction forms and all reinforcement bars are in place and the concrete is ready to be placed.

*** 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.

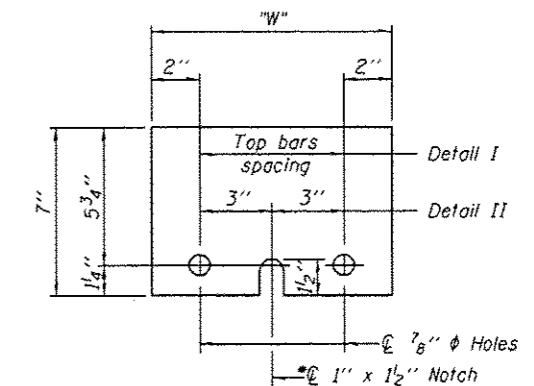
**** If existing deck beam is to remain in place after stage construction, embedment shall only be into wearing surface and not into existing deck beam concrete.



DETAIL I



DETAIL II



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

* Required only with Detail II

** 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.

"W" = Top bars spacing + 4"

R-27

7-1-10

DESIGNED - ATH	EXAMINED - <i>Timothy A. Anich</i>	DATE - AUGUST 18, 2014	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	TEMPORARY CONCRETE BARRIER FOR STAGE CONSTRUCTION SN 009-0001	F.A.P. RTE. 310	SECTION 186/BJR	COUNTY CASS	TOTAL SHEETS 19	SHEET NO. 19	
CHECKED - VHV	PASSED - <i>Carl Perry</i>	REVISED			CONTRACT NO. 72H29		ILLINOIS FED. AID PROJECT			
DRAWN - Kyle M. Steffen	ACTING ENGINEER OF BRIDGES AND STRUCTURES	REVISED			SHEET NO. 14 OF 14 SHEETS					
CHECKED - ATH VHV	ACTING ENGINEER OF STRUCTURAL SERVICES	REVISED								