

06-16-2017 LETTING ITEM 036

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
327	D7 BRIDGE REPAIRS 2017-1	CLAY	25	1
		ILLINOIS	CONTRACT NO. 74707	

D-97-012-15

FOR INDEX OF SHEETS, SEE SHEET NO. 2

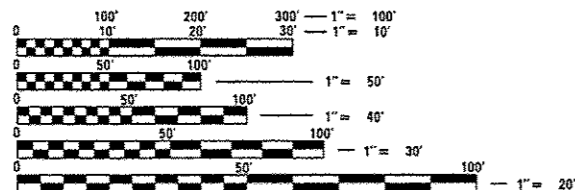
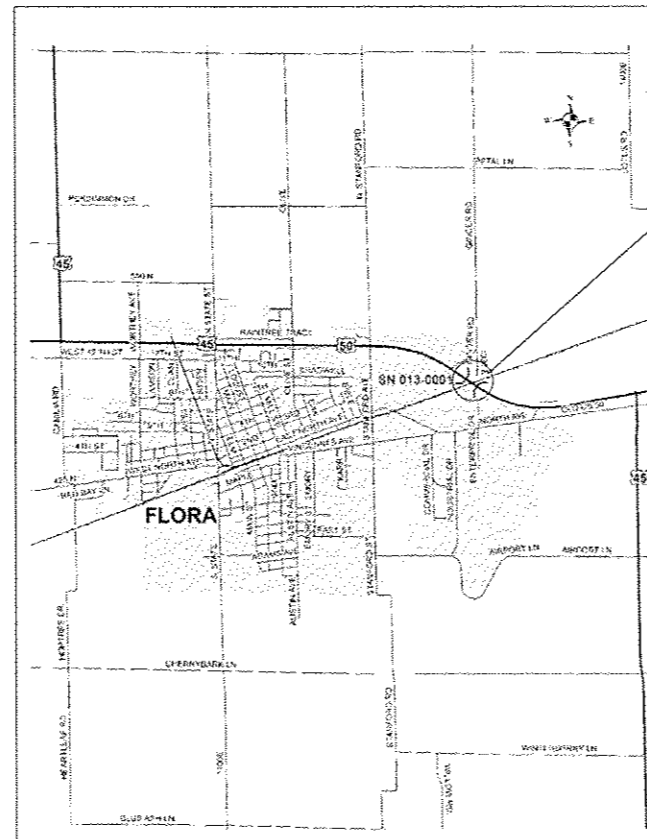
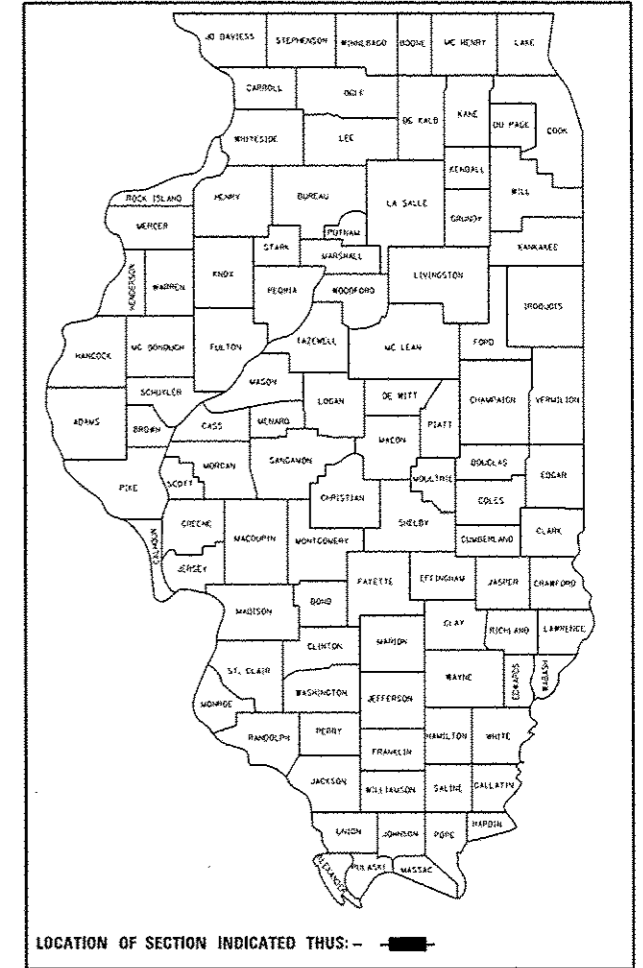
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# PROPOSED HIGHWAY PLANS

FAP ROUTE 327 (US 45 & US 50)  
SECTION D7 BRIDGE REPAIRS 2017-1

BRIDGE REPAIR  
CLAY COUNTY

C-97-018-15



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

PROJECT ENGINEER: TOM RONAN  
PROJECT MANAGER: ROSS BIERMAN

CONTRACT NO. 74707

GROSS LENGTH = 900 FT. = 0.17 MILE  
NET LENGTH = 900 FT. = 0.17 MILE

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

SUBMITTED March 15 20 17

Jeffery M. Smith  
REGIONAL ENGINEER

May 12 20 17  
Maureen M. Addison  
ENGINEER OF DESIGN AND ENVIRONMENT

May 12 20 17  
[Signature]  
DIRECTOR OF PROGRAM DEVELOPMENT

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GENERAL NOTES (CONT'D)

INDEX OF SHEETS

SHEET NO.	ITEM
1	COVER SHEET
2	INDEX OF SHEETS AND GENERAL NOTES
3-4	SUMMARY OF QUANTITIES
5	CORE INFORMATION
6	SCHEDULE OF QUANTITIES
7	TYPICAL CROSS SECTIONS
8	STAGE I TRAFFIC CONTROL
9	STAGE II TRAFFIC CONTROL
10-21	STRUCTURE REPAIR PLANS
22-25	PAVEMENT MARKING DETAILS

THE FOLLOWING STANDARDS ARE A PART OF THESE PLANS AND ARE INCLUDED AFTER SHEET NO. 49:

STD. NO.	DESCRIPTION
000001-06	STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
001001-02	AREAS OF REINFORCEMENT BARS
001006	DECIMAL OF AN INCH AND OF A FOOT
420701-03	PAVEMENT WELDED WIRE REINFORCEMENT
701001-02	OFF-ROAD OPERATIONS, 2L2W, 15' MINIMUM AWAY FROM PAVEMENT EDGE
701006-05	OFF-ROAD OPERATIONS, 2L2W, 15' AWAY TO EDGE OF PAVEMENT
701011-04	OFF-ROAD MOVING OPERATION, 2L2W, DAY ONLY
701201-04	LANE CLOSURE, 2L2W, DAY ONLY
701301-04	LANE CLOSURE, 2L2W, SHORT TIME OPERATIONS
701901-05	TRAFFIC CONTROL DEVICES
704001-08	TEMPORARY CONCRETE BARRIER
780001-05	TYPICAL PAVEMENT MARKINGS
781001-04	TYPICAL APPLICATION RAISED REFLECTIVE PAVEMENT MARKERS
701311-03	LANE CLOSURE, 2L, 2W, MOVING OPERATIONS - DAY ONLY
701321-10	LANE CLOSURE, 2L, 2W, BRIDGE REPAIR WITH BARRIER
701326-04	LANE CLOSURE, 2L, 2W, PAVEMENT WIDENING, FOR SPEEDS GREATER THAN OR EQUAL TO 45 MPH

GENERAL NOTES

THIS SECTION SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE PLANS; THE "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" ADOPTED APRIL 1, 2016; THE "SUPPLEMENTAL SPECIFICATIONS AND RECURRING SPECIAL PROVISIONS" ADOPTED APRIL 1, 2016; AND THE SPECIAL PROVISIONS INCLUDED IN THE PROPOSAL.

THE WORK INCLUDED IN SECTION D7 BRIDGE REPAIRS 2017-1 CONSISTS OF BASE COURSE WIDENING, NEW EXPANSION JOINTS, BEARING REPLACEMENT, NEW DECK DRAINS, REMOVE AND REPLACE THE WEARING SURFACE, PAVEMENT MARKING, DECK PATCHING TRAFFIC CONTROL, AND ANY OTHER WORK NECESSARY TO COMPLETE THE SECTION. THE WORK SHALL BE COMPLETED UTILIZING STAGE CONSTRUCTION WITH TEMPORARY TRAFFIC SIGNALS. THE EXISTING STRUCTURE NUMBER 013-0001, CARRIES US ROUTES 45/50 OVER THE CSXT RAILROAD AND IS LOCATED APPROXIMATELY 3 MILES EAST OF US ROUTE 45 IN CLAY COUNTY.

PLAN DIMENSIONS AND DETAILS RELATIVE TO THE EXISTING STRUCTURE HAVE BEEN TAKEN FROM EXISTING PLANS AND ARE SUBJECT TO NOMINAL CONSTRUCTION VARIATIONS. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO VERIFY DIMENSIONS AND DETAILS IN THE FIELD AND MAKE NECESSARY APPROVED ADJUSTMENTS PRIOR TO CONSTRUCTION OR ORDERING OF MATERIAL. SUCH VARIATIONS SHALL NOT BE CAUSE FOR ADDITIONAL COMPENSATION FOR A CHANGE IN THE SCOPE OF THE WORK. THE CONTRACTOR WILL BE PAID FOR THE QUANTITY FURNISHED AT THE UNIT PRICE BID FOR THE WORK.

THE EXISTING PAVEMENT MARKINGS THAT CONFLICT WITH STAGE I & II OF STANDARD 701321 SHALL BE REMOVED. THE REMOVED MARKINGS WILL BE PAID FOR AS PAVEMENT MARKING REMOVAL.

PAINT PAVEMENT MARKING LINE - 4" SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE STANDARDS, AS SHOWN IN THE PLANS, AND AS DETERMINED BY THE ENGINEER. THE TOTAL QUANTITY CALCULATED CONSISTS OF 200 FEET OF YELLOW AND 1600 FEET OF WHITE.

RAISED REFLECTIVE PAVEMENT MARKERS SHALL BE INSTALLED IN ACCORDANCE WITH SECTION 781 OF THE STANDARD SPECIFICATIONS. THE TOTAL QUANTITY OF RAISED REFLECTIVE PAVEMENT MARKERS CONSISTS OF 4 TWO-WAY AMBER MARKERS.

THE CONTRACTOR SHALL PROVIDE INTERNET ACCESSIBILITY TO THE HOT-MIX ASPHALT PLANT QUALITY CONTROL LAB SO THAT HOT-MIX ASPHALT PLANT REPORTS CAN BE E-MAILED TO THE DISTRICT HEADQUARTERS. THIS WORK SHALL BE INCLUDED IN THE COST OF ALL HOT-MIX ASPHALT ITEMS.

THE BITUMINOUS MATERIALS (TACK COAT) SHALL BE DONE IN ACCORDANCE WITH SECTION 406. THIS SHALL BE INCLUDED IN THE PRICE OF THE HMA SURFACE COURSE.

A UNIFORMLY STRAIGHT SAW CUT SHALL BE MADE AT LOCATIONS WHERE PROPOSED NEW CONSTRUCTION WILL ABUT EXISTING HOT-MIX ASPHALT SURFACES. THE SAW CUT SHALL BE MADE FULL DEPTH THROUGH THE EXISTING SURFACE. THIS WORK WILL BE CONSIDERED INCLUDED IN THE COST OF THE CONTRACT ITEMS INVOLVED AND NO EXTRA COMPENSATION WILL BE ALLOWED.

THE PAY ITEM TEMPORARY RAMP HAS BEEN INCLUDED FOR THE CONSTRUCTION OF TEMPORARY RAMPS IN ACCORDANCE WITH ARTICLE 406.08 OF THE STANDARD SPECIFICATIONS. THE COST SHALL INCLUDE BOTH THE INSTALLATION AND THE REMOVAL OF THE TEMPORARY RAMPS.

THE EXISTING PAVED SHOULDER THAT WILL BE REMOVED HAS BEEN CORED FOR THICKNESS AND THE RESULTS ARE ATTACHED ON PAGE 5.

FILTER FABRIC WILL BE USED TO COVER THE BALLAST ALONG THE RAILROAD TRACKS. THE FILTER FABRIC SHALL BE REMOVED ONCE THE CONSTRUCTION IS COMPLETE AND SHALL BE INCLUDED IN THE COST OF THE FILTER FABRIC. FILTER FABRIC IS TO PREVENT DEBRIS FROM COVERING BALLAST FROM THE BRIDGE CONSTRUCTION AND BE PLACED FROM THE TRACKS TO SLOPE WALLS AND EXTEND 25 FT NORTH AND SOUTH OF BRIDGE.

SYNTHETIC FIBERS SHALL BE ADDED TO THE BRIDGE DECK FLY ASH OR GGBF CONCRETE OVERLAY. SEE SPECIAL PROVISIONS.

THE FOLLOWING MIXTURE REQUIREMENTS ARE APPLICABLE FOR THIS PROJECT:

SURFACE COURSE (1.5")	
APPLICATION:	HOT-MIX ASPHALT SURFACE COURSE, MIX "D" N90
PG GRADE:	PG 64-22
DESIGN AIR VOIDS:	4.0% @ NOESIGN = 90
MIXTURE COMPOSITION:	1L-9.5
FRICTION AGGREGATE:	MIXTURE D

THE FOLLOWING RATES OF APPLICATION HAVE BEEN USED IN THE CALCULATING PLAN QUANTITIES:

BITUMINOUS MATERIALS (TACK COAT)	0.05 LBS./SQ. FT.
HOT-MIX ASPHALT	112 LBS./SQ. YD/INCH

\* D7 BRIDGE REPAIRS 2017-1

FILE NAME	USER NAME	DESIGNED	REVISED	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	INDEX OF SHEETS AND GENERAL NOTES	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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Default					SCALE: N/A					
										CONTRACT NO. 74707
										ILLINOIS FED. AID PROJECT

SUMMARY OF QUANTITIES			URBAN	100 % STATE	CONSTRUCTION TYPE CODE		
CODE NO	ITEM	UNIT	TOTAL QUANTITIES	014			
28200200	FILTER FABRIC	SO YD	153	153			
35400500	PORTLAND CEMENT CONCRETE BASE COURSE WIDENING 10"	SO YD	344	344			
40600990	TEMPORARY RAMP	SO YD	73	73			
40603345	HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N90	TON	10	10			
42000060	WELDED WIRE REINFORCEMENT	SO YD	344	344			
44000155	HOT-MIX ASPHALT SURFACE REMOVAL, 1 1/2"	SO YD	109	109			
44004250	PAVED SHOULDER REMOVAL	SO YD	344	344			
50102400	CONCRETE REMOVAL	CU YD	19.8	19.8			
50157300	PROTECTIVE SHIELD	SO YD	237	237			
50300100	FLOOR DRAINS	EACH	16	16			
50300255	CONCRETE SUPERSTRUCTURE	CU YD	19.8	19.8			
50300260	BRIDGE DECK GROOVING	SO YD	578	578			
50300300	PROTECTIVE COAT	SO YD	33	33			

SUMMARY OF QUANTITIES			URBAN	100 % STATE	CONSTRUCTION TYPE CODE		
CODE NO	ITEM	UNIT	TOTAL QUANTITIES	014			
50500405	FURNISHING AND ERECTING STRUCTURAL STEEL	POUND	3070	3070			
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	1950	1950			
50800515	BAR SPLICERS	EACH	24	24			
52000110	PREFORMED JOINT STRIP SEAL	FOOT	85	85			
52100010	ELASTOMERIC BEARING ASSEMBLY, TYPE I	EACH	6	6			
52100020	ELASTOMERIC BEARING ASSEMBLY, TYPE II	EACH	6	6			
52100520	ANCHOR BOLTS, 1"	EACH	24	24			
67000500	ENGINEER'S FIELD OFFICE, TYPE B	CAL MO	4	4			
67100100	MOBILIZATION	L SUM	1	1			
70100405	TRAFFIC CONTROL AND PROTECTION, STANDARD 701321	EACH	1	1			
70100450	TRAFFIC CONTROL AND PROTECTION, STANDARD 701201	L SUM	1	1			
70100500	TRAFFIC CONTROL AND PROTECTION, STANDARD 701326	L SUM	1	1			

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	PLOT DATE = 8/25/2016	DATE -	REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES

SCALE: N/A SHEET 1 OF 2 SHEETS STA. TO STA.

\* D7 BRIDGE REPAIRS 2017-1

F.A.P. RTE. 327	SECTION .	COUNTY CLAY	TOTAL SHEETS 25	SHEET NO. 3
CONTRACT NO. 74707				ILLINOIS FED. AID PROJECT

SUMMARY OF QUANTITIES			URBAN	100 % STATE	CONSTRUCTION TYPE CODE		
CODE NO	ITEM	UNIT	TOTAL QUANTITIES	014			
70103815	TRAFFIC CONTROL SURVEILLANCE	CAL DA	5	5			
70106500	TEMPORARY BRIDGE TRAFFIC SIGNALS	EACH	1	1			
70300100	SHORT TERM PAVEMENT MARKING	FOOT	80	80			
70300150	SHORT TERM PAVEMENT MARKING REMOVAL	SQ FT	53	53			
70300220	TEMPORARY PAVEMENT MARKING - LINE 4"	FOOT	1800	1800			
70400100	TEMPORARY CONCRETE BARRIER	FOOT	487.5	487.5			
70400200	RELOCATE TEMPORARY CONCRETE BARRIER	FOOT	487.5	487.5			
70600250	IMPACT ATTENUATORS, TEMPORARY (NON-REDIRECTIVE), TEST LEVEL 3	EACH	2	2			
70600350	IMPACT ATTENUATORS, RELOCATE (NON-REDIRECTIVE), TEST LEVEL 3	EACH	2	2			
* 78001110	PAINT PAVEMENT MARKING - LINE 4"	FOOT	1800	1800			
* 78100100	RAISED REFLECTIVE PAVEMENT MARKER	EACH	4	4			
X0327979	PAVEMENT MARKING REMOVAL - GRINDING	SQ FT	600	600			
X7015005	CHANGEABLE MESSAGE SIGN	CAL DA	28	28			

SUMMARY OF QUANTITIES			URBAN	100 % STATE	CONSTRUCTION TYPE CODE		
CODE NO	ITEM	UNIT	TOTAL QUANTITIES	014			
X7040125	PINNING TEMPORARY CONCRETE BARRIER	EACH	6	6			
Z0001899	JACK AND REMOVE EXISTING BEARINGS	EACH	12	12			
Z0001903	STRUCTURAL STEEL REMOVAL	POUND	1420	1420			
Z0004556	HOT-MIX ASPHALT SURFACE REMOVAL (DECK)	SQ YD	598	598			
Z0005010	HOT-MIX ASPHALT FOR PATCHING POTHOLES (COLD MIX)	TON	1	1			
Z0012113	BRIDGE DECK FLY ASH OR GGBF SLAG CONCRETE OVERLAY, 3	SQ YD	598	598			
Z0012130	BRIDGE DECK SCARIFICATION 3/4"	SQ YD	598	598			
Z0012754	STRUCTURAL REPAIR OF CONCRETE (DEPTH EQUAL TO OR LESS THAN 5 INCHES)	SQ FT	80	80			
Z0016001	DECK SLAB REPAIR (FULL DEPTH, TYPE I)	SQ YD	5	5			
Z0016002	DECK SLAB REPAIR (FULL DEPTH, TYPE II)	SQ YD	51	51			
Z0048665	RAILROAD PROTECTIVE LIABILITY INSURANCE	LSUM	1	1			

\* SPECIALTY ITEM

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	PLOT DATE = 8/25/2016		

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES  
SCALE: NA SHEET 2 OF 2 SHEETS STA. TO STA.

* 07 BRIDGE REPAIRS 2017-1				
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
327		CLAY	25	4
CONTRACT NO. 74707				
ILLINOIS FED. AID PROJECT				

REV



PAVING SCHEDULE			HOT MIX ASPHALT SURFACE COURSE, MIX C, N70	HOT MIX ASPHALT SURFACE REMOVAL 1 1/2"	TEMPORARY RAMP
STATION	TO	STATION	TON	SO YD	SO YD
S. N. 013-0001					
STA 735+60	TO	STA 735+75	4.6	54.2	36.1
STA 737+50	TO	STA 737+65	4.6	54.2	36.1
TOTAL:			10	109	73

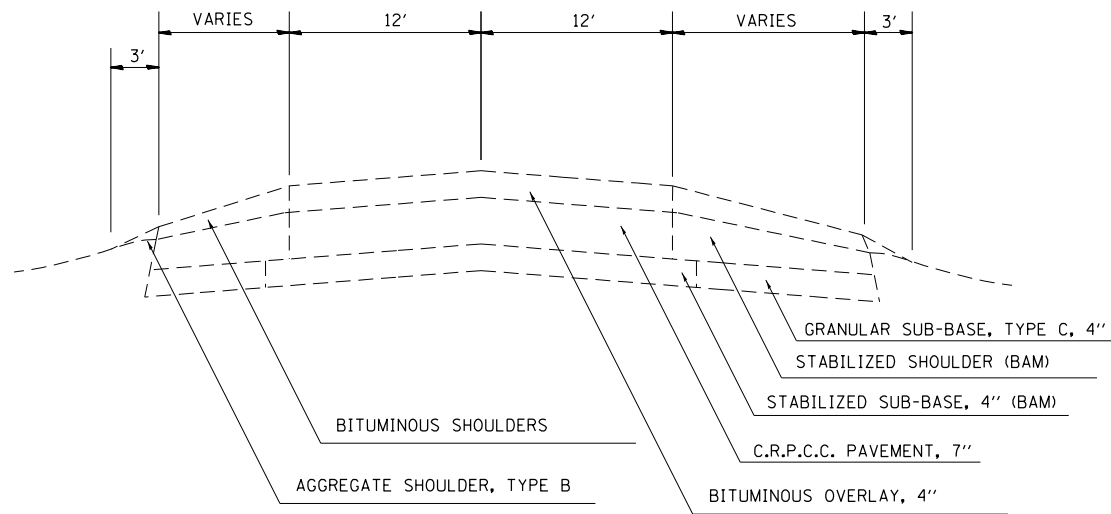
PAVEMENT MARKING SCHEDULE								
STATION	TO	STATION	FOOT	SO FT	FOOT	FOOT	SO FT	EACH
S. N. 013-0001								
733+00	TO	741+00	1800	600	1800	80	53	4

WIDENING SCHEDULE					
STATION	TO	STATION	CORNER	SO YD	SO YD
S. N. 013-0001					
737+63.00	TO	739+44.00	NE	81.3	81.3
733+81.00	TO	735+84.00	NW	90.7	90.7
737+41.00	TO	739+44.00	SE	90.7	90.7
733+81.00	TO	735+62.00	SW	81.3	81.3
TOTAL:				344	344

TRAFFIC CONTROL DEVICES				
LOCATION	FOOT	FOOT	EACH	EACH
S. N. 013-0001				
734+20 TO 739+07	487.5	487.5	2.0	2.0

## EXISTING TYPICAL CROSS SECTION

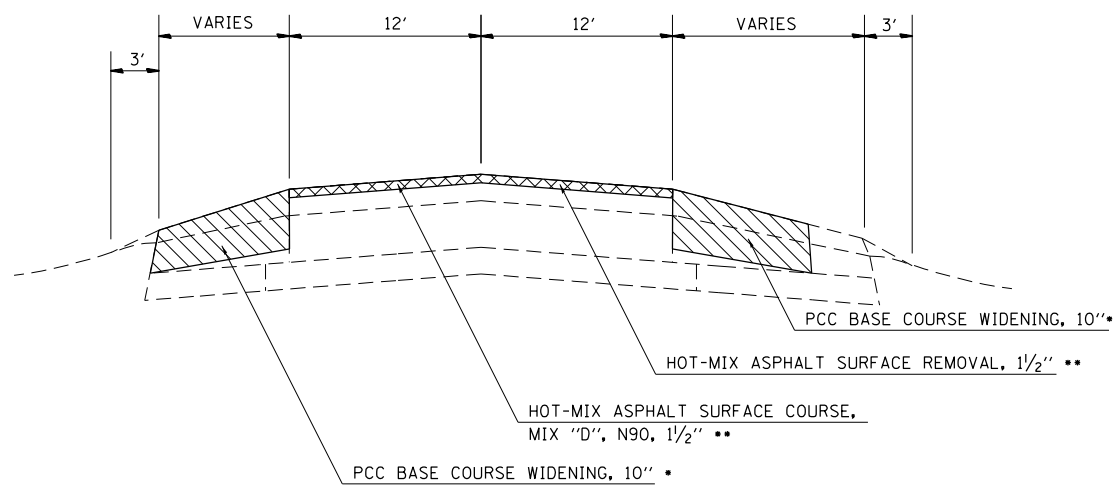
U.S. ROUTE 50  
 STA 732+00 TO STA 735+76.05  
 BRIDGE OMISSION STA. 735+76.05 TO STA 737+49.56  
 STA 737+49.56 TO STA 741+00



NOTE: NOT TO SCALE

## PROPOSED TYPICAL CROSS SECTION

U.S. ROUTE 50  
 STA 732+00 TO STA 735+76.05  
 BRIDGE OMISSION STA. 735+76.05 TO STA 737+49.56  
 STA 737+49.56 TO STA 741+00



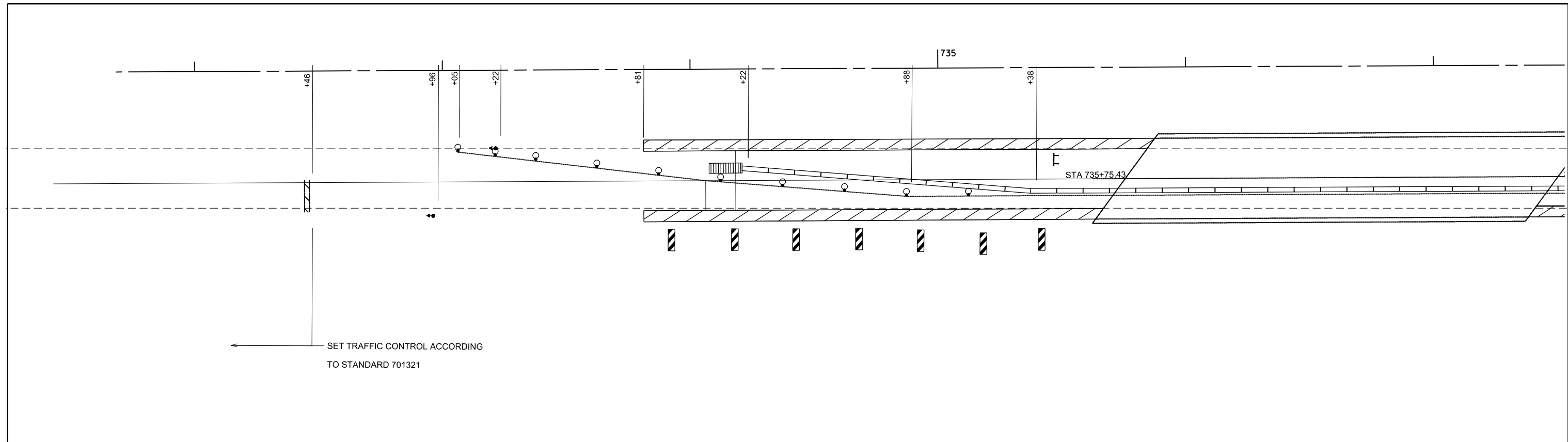
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••HOT-MIX ASPHALT SURFACE REMOVAL, 1 1/2"  
 HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N90, 1 1/2"  
 STA 735+60 TO STA 735+75  
 STA 737+50 TO STA 737+65

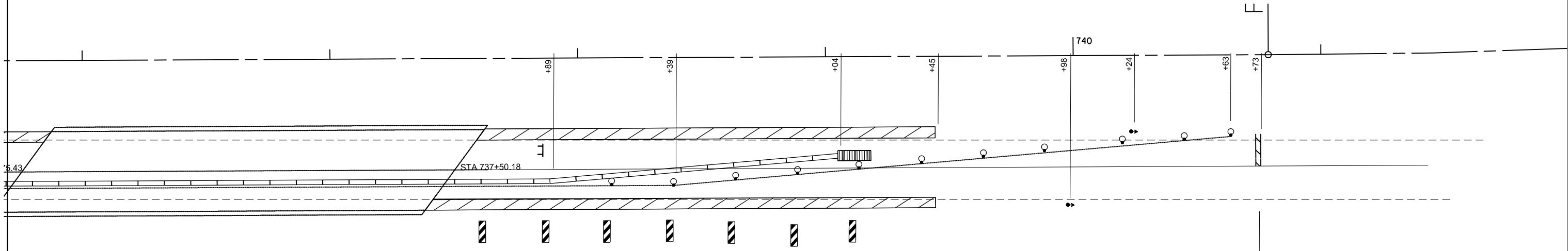
•PCC BASE COURSE WIDENING, 10"  
 STA 733+81 TO STA 735+75  
 STA 737+50 TO STA 737+45

• D7 BRIDGE REPAIRS 2017-1







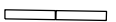
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PLOT SCALE = 100.0000' / 1".					CHECKED -	REVISED -				CONTRACT NO. 74707				
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• TEMPORARY CONCRETE BARRIER SHALL BE PINNED ON TRAFFIC SIDE AT EACH APPROACH OF BRIDGE



**SYMBOLS**

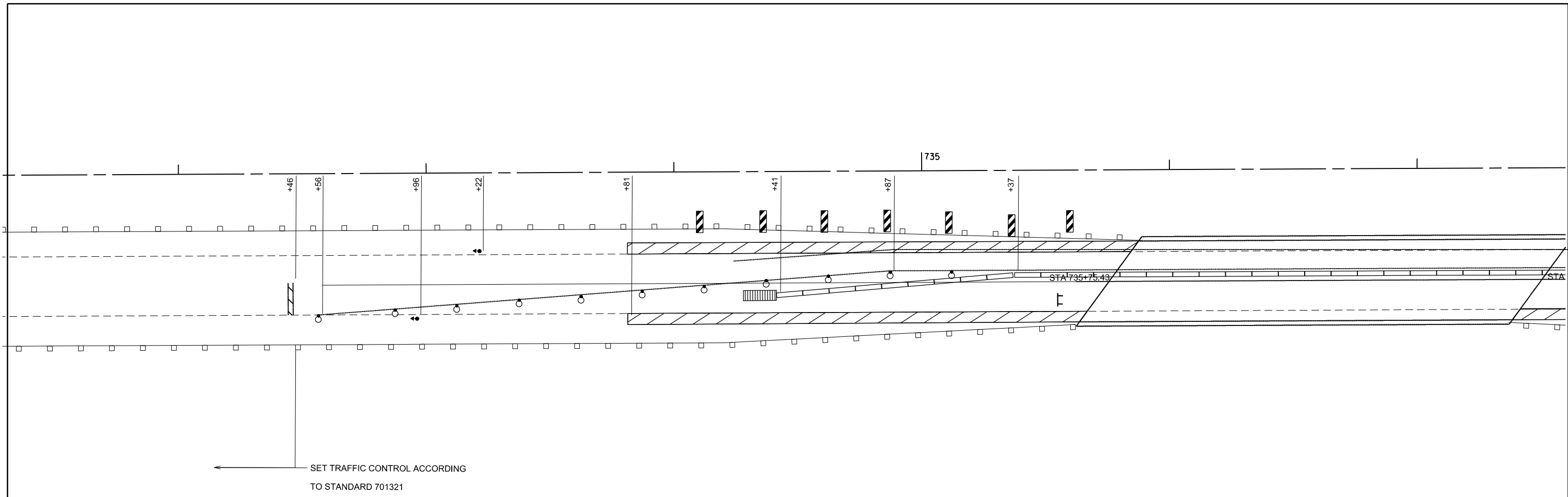
-  BASE COURSE WIDENING
-  Double vertical panel (see detail)
-  Type III barricade
-  Traffic signal
-  Drum with steady burning bi-directional light
-  Impact attenuator
-  Temporary concrete barrier

SET TRAFFIC CONTROL ACCORDING TO STANDARD 701321

• D7 BRIDGE REPAIRS 2017-1

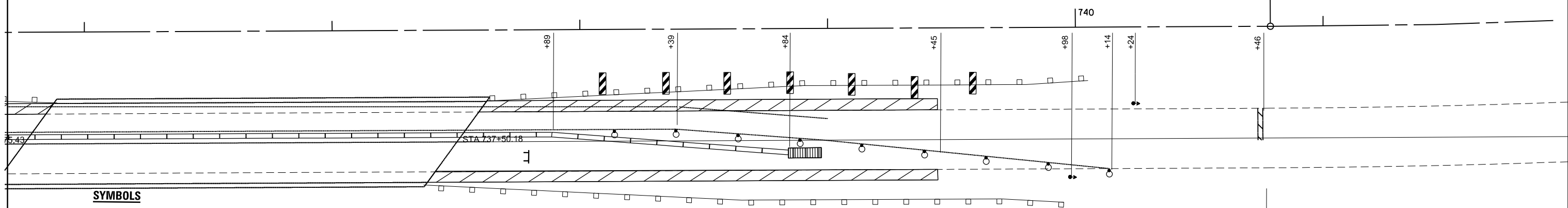
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	PLOT DATE = 8/24/2016	DATE -	REVISED -		ILLINOIS FED. AID PROJECT							





• TEMPORARY CONCRETE BARRIER WALL SHALL BE PINNED ON TRAFFIC SIDE AT EACH APPROACH OF BRIDGE

PC Sta 7



**SYMBOLS**

- BASE COURSE WIDENING
- Double vertical panel (see detail)
- Type III barricade
- Traffic signal
- Drum with steady burning bi-directional light
- Impact attenuator
- Temporary concrete barrier

SET TRAFFIC CONTROL ACCORDING TO STANDARD 701321

FILE NAME =	USER NAME = steffenmk	DESIGNED -	REVISED -
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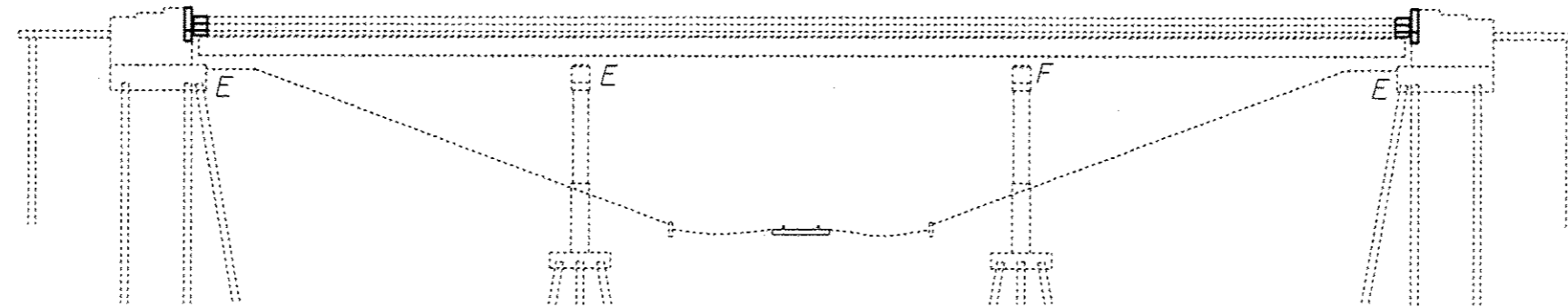
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**STAGE 2**

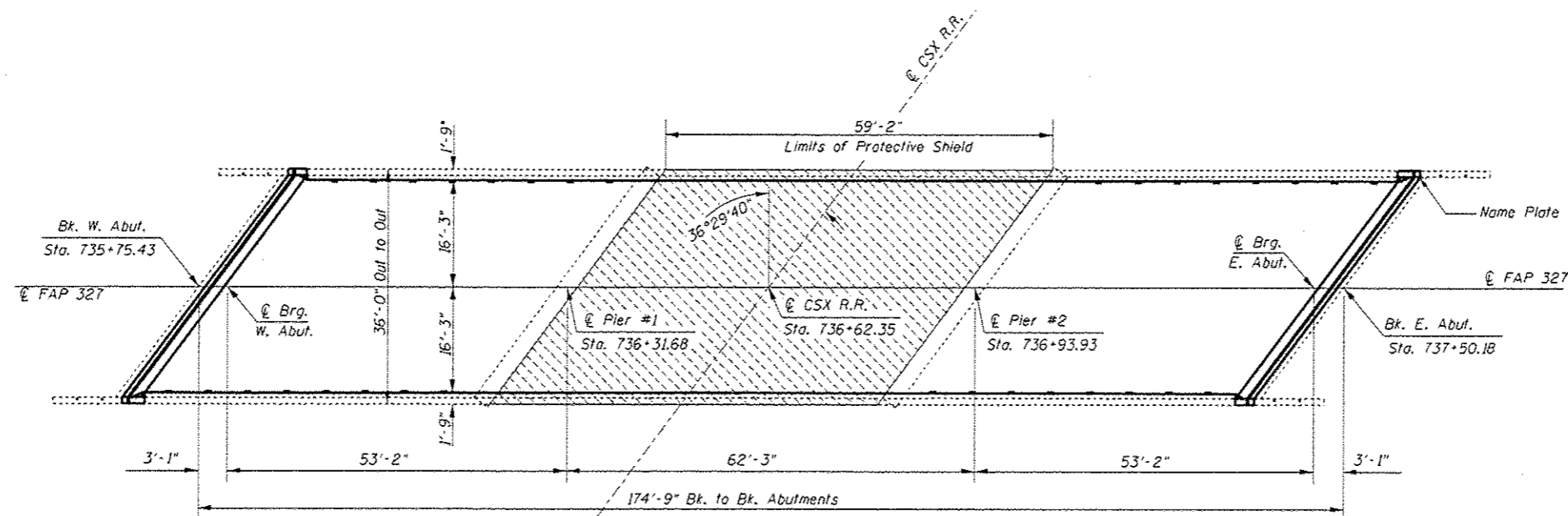
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• D7 BRIDGE REPAIRS 2017-1				
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
327	.	CLAY	25	9
			CONTRACT NO. 74707	
ILLINOIS FED. AID PROJECT				

The existing three span continuous steel multi-beam structure was constructed in 1969 as FA RTE 13 section B-2VB at Sta. 736+62.35. SN. 013-0001 carries FAP RTE 327 (US-50) over CSX Railroad. The proposed project consists of new expansion joints, full depth deck repair, deck drain replacement, new concrete wearing surface, formed concrete repair at abutments, structural steel repair at abutments and bearing replacement at abutments.



**ELEVATION**



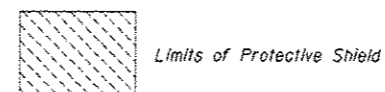
**PLAN**



For General Notes and Total Bill of Materials see Sheet 11 of 25.

**DESIGN STRESSES (EXISTING)**

- $f_c = 1400$  psi, Deck, Super.
- $f_c = 1400$  psi, Substructure
- $f_s = 20,000$  psi, Reinf.
- $f_s = 20,000$  psi, Struct. (A-36)
- $vc = 75$  psi.
- $n = 10$



EXPIRES 11-30-2018

DESIGNED <i>[Signature]</i>	CHECKED <i>[Signature]</i>	DRAWN <i>[Signature]</i>	CHECKED <i>[Signature]</i>	DATE MARCH 17, 2016	REVISED	REVISED	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PLAN & ELEVATION SN 013-0001	SHEET NO. 1 OF 12 SHEETS	F.A. RTE. 327	SECTION D-7 Bridge Repair 2017-1	COUNTY CLAY	TOTAL SHEETS 25	SHEET NO. 10
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ILLINOIS FED. AID PROJECT

**GENERAL NOTES**

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

Reinforcement bars shall conform to the requirements of ASTM A 706 Gr. 60. See Special Provisions.

Reinforcement bars designated (E) shall be epoxy coated.

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.

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.

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".

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.

The Inorganic Zinc Rich Primer / Acrylic / Acrylic Paint System shall be used for shop and field painting of new structural steel except where otherwise noted. The color of the final finish coat shall be Interstate Green, Munsell No. 7.55 4/8.

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

Diaphragm connection holes shall be 1 5/16" φ for 3/4" φ bolts. Two hardened washers shall be required at diaphragm connections.

If the analysis submitted to the Contractor for the jacking/temporary support system to be used shows temporary stiffeners are required to prevent web crippling or buckling, the stiffeners shall be steel and bolted to the web. If stiffeners are not required, hardwood timbers shall be installed tightly between the top and bottom flange to prevent flange rotation.

Areas of deck repairs shown are estimated. The Engineer shall show actual locations of deck repairs on as-built plans.

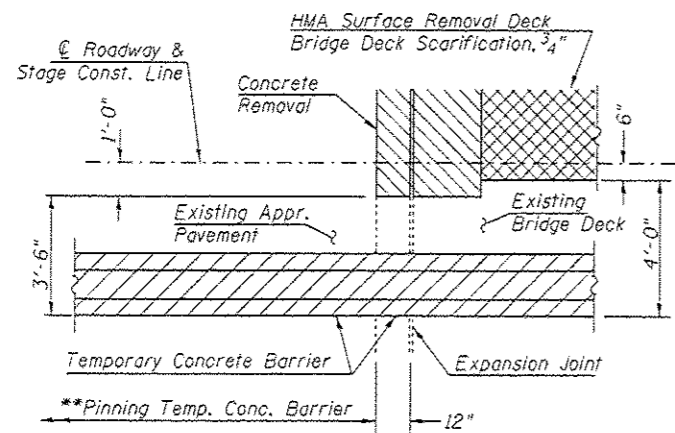
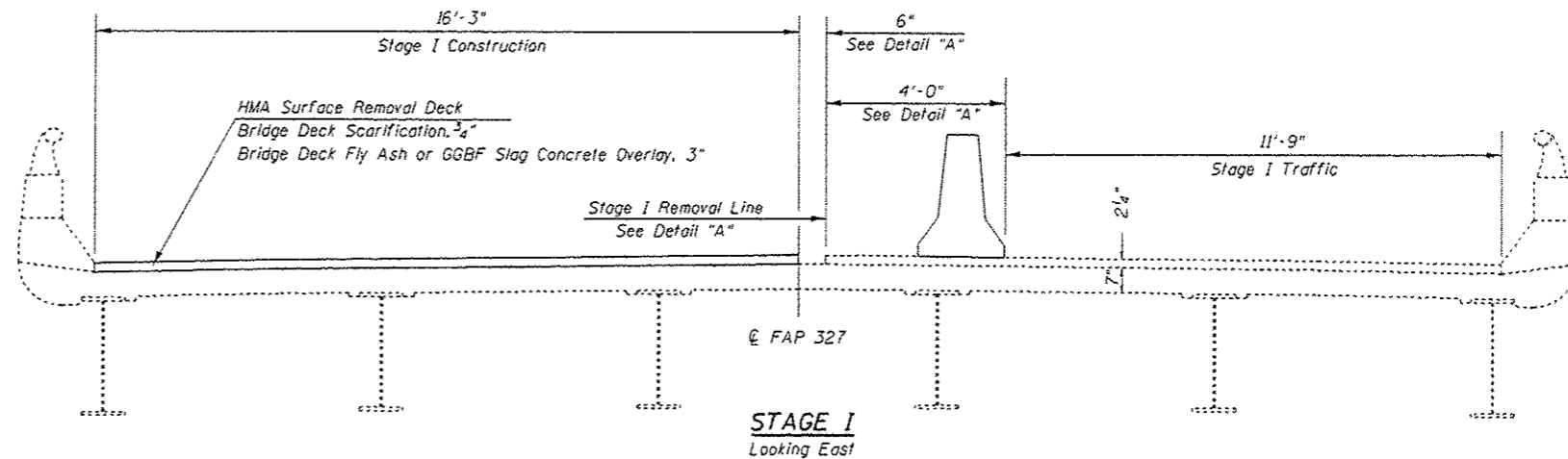
Removal and reinstallation of aluminum railing sections will be necessary for construction of the expansion joints and replacement of deck drains. This work and all materials shall be included in the contract unit price for Concrete Superstructure.

The Name Plate shall be removed from the existing wingwall and embedded into the new wingwall concrete at approximately the same location. This work and all materials shall be included in the contract unit price for Concrete Superstructure.

**TOTAL BILL OF MATERIAL**

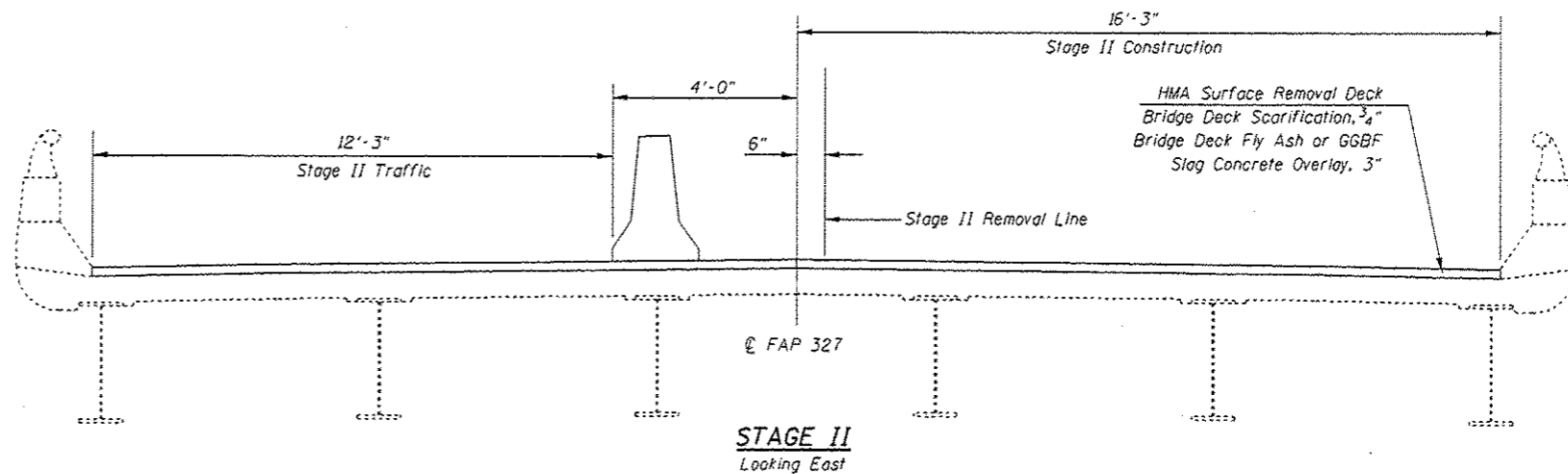
ITEM	UNIT	QUANTITY
HMA Surface Removal Deck	Sq. Yd.	598
Bridge Deck Scarification, 3/4"	Sq. Yd.	598
Bridge Deck Fly Ash or GGBF Slag Concrete Overlay, 3"	Sq. Yd.	598
Bridge Deck Grooving	Sq. Yd.	578
Protective Shield	Sq. Yd.	237
Concrete Removal	Cu. Yd.	19.8
Concrete Superstructure	Cu. Yd.	19.8
Preformed Joint Strip Seal	Foot	85
Reinforcement Bars, Epoxy Coated	Pound	1950
Bar Splicers	Each	24
* Protective Coat	Sq. Yd.	33
Elastomeric Bearing Assembly, Type I	Each	6
Elastomeric Bearing Assembly, Type II	Each	6
Anchor Bolts 1" φ	Each	24
Jack and Remove Existing Bearings	Each	12
Furnishing and Erecting Structural Steel	Pound	3070
Structural Steel Removal	Pound	1420
Structural Repair of Concrete (Depth <5")	Sq. Ft.	79.8
Deck Slab Repair (Full Depth, Type I)	Sq. Yd.	5
Deck Slab Repair (Full Depth, Type II)	Sq. Yd.	5.1
Floor Drains	Each	16

\* On new concrete superstructure only



**Detail "A"**  
Plan View Showing Stage I Removal Limits Near Abutment  
West Abutment Shown, East Abutment Similar

\*\* Temporary Concrete Barriers To Be Pinned on Approaches.  
Pinning Not Permitted On Bridge Deck.



DESIGNED *D. Macklin*  
CHECKED  
DRAWN *D. Macklin*  
CHECKED

PASSED  
ACTING ENGINEER OF BRIDGES AND STRUCTURES

DATE MARCH 18, 2016  
REVISED  
REVISED

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

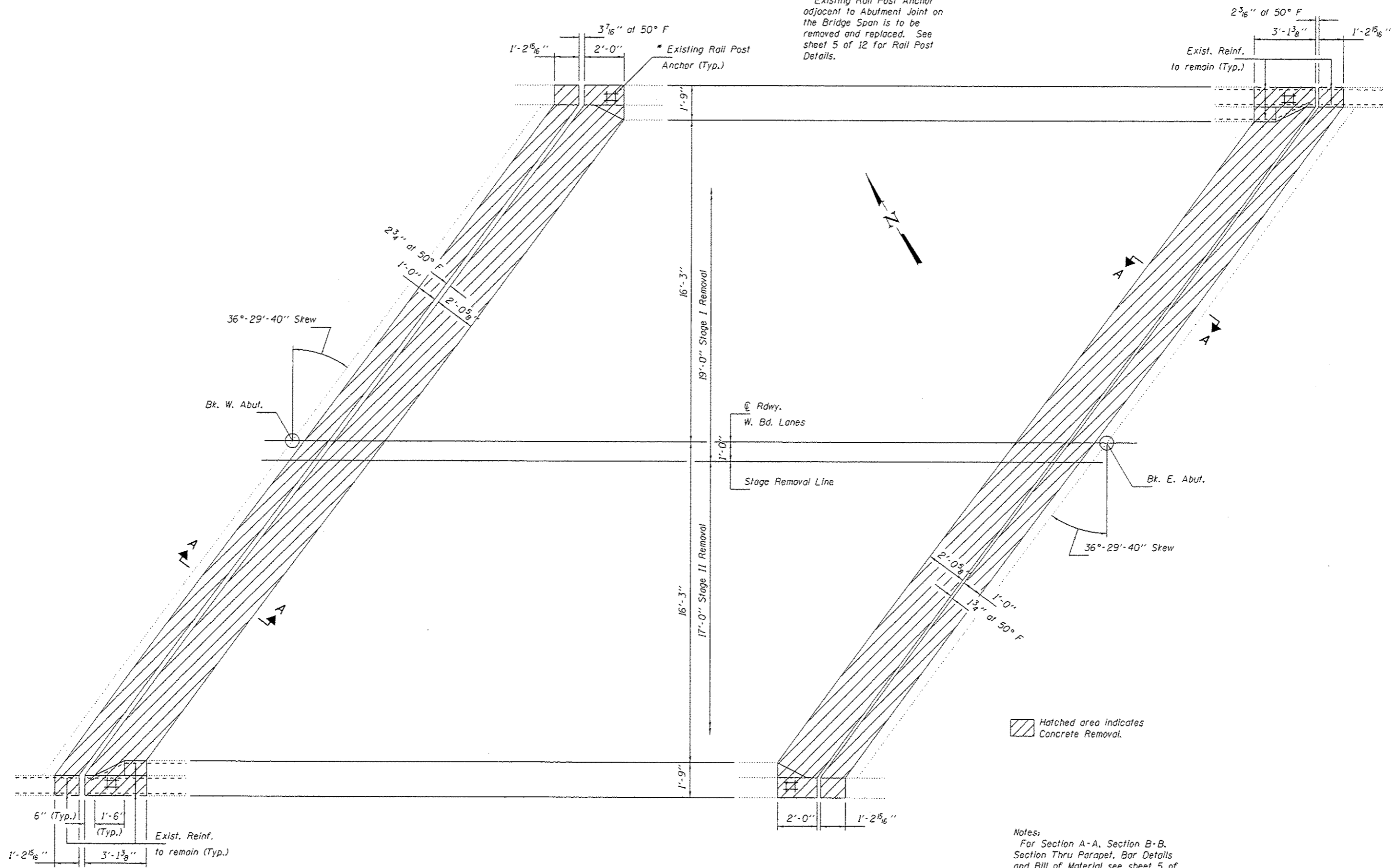
GENERAL NOTES & BILL OF MATERIALS  
SN 013-0001

SHEET NO. 2 OF 12 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
327	0-7 Bridge Repair 2017-1	CLAY	25	11

CONTRACT NO. 74707  
ILLINOIS FED. AID PROJECT

\* Existing Rail Post Anchor adjacent to Abutment Joint on the Bridge Span is to be removed and replaced. See sheet 5 of 12 for Rail Post Details.

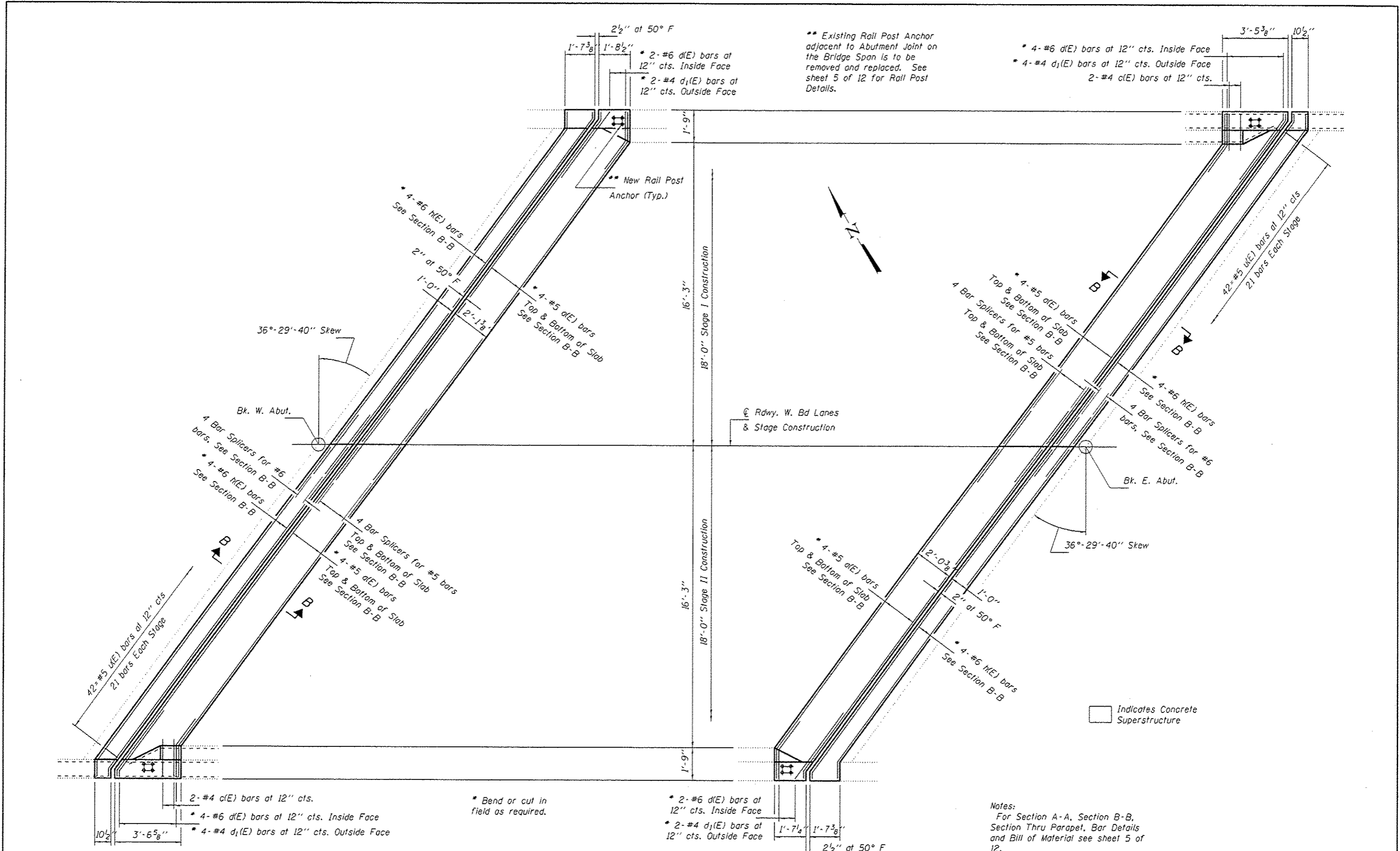


Hatched area indicates Concrete Removal.

Notes:  
For Section A-A, Section B-B, Section Thru Parapet, Bar Details and Bill of Material see sheet 5 of 12.

**JOINT REMOVAL PLAN WEST & EAST ABUTMENTS**

DESIGNED JGY	DATE SEPTEMBER 20, 2016	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	JOINT REMOVAL DETAILS SN 013-0001		F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CHECKED ATH	REVISIONS		SHEET NO. 3 OF 12 SHEETS		327	D-7 Bridge Repair 2017-1	CLAY	25	12
DRAWN J. Schneller	ACTING ENGINEER OF BRIDGES AND STRUCTURES				CONTRACT NO. 74707				
CHECKED JGY ATH					ILLINOIS FED. AID PROJECT				



\*\* Existing Rail Post Anchor adjacent to Abutment Joint on the Bridge Span is to be removed and replaced. See sheet 5 of 12 for Rail Post Details.

\* 4-#6 d(E) bars at 12" cts. Inside Face  
 \* 4-#4 d1(E) bars at 12" cts. Outside Face  
 2-#4 c(E) bars at 12" cts.

Bk. W. Abut.  
 4 Bar Splicers for #6 bars. See Section B-B  
 \* 4-#6 HE bars See Section B-B


Bk. E. Abut.  
 4 Bar Splicers for #6 bars. See Section B-B  
 \* 4-#6 HE bars See Section B-B

Indicates Concrete Superstructure

Notes:  
 For Section A-A, Section B-B, Section Thru Parapet, Bar Details and Bill of Material see sheet 5 of 12.

**JOINT REPLACEMENT PLAN WEST & EAST ABUTMENT**

DESIGNED JGY  
 CHECKED ATH  
 DRAWN J. Schneller  
 CHECKED JGY ATH

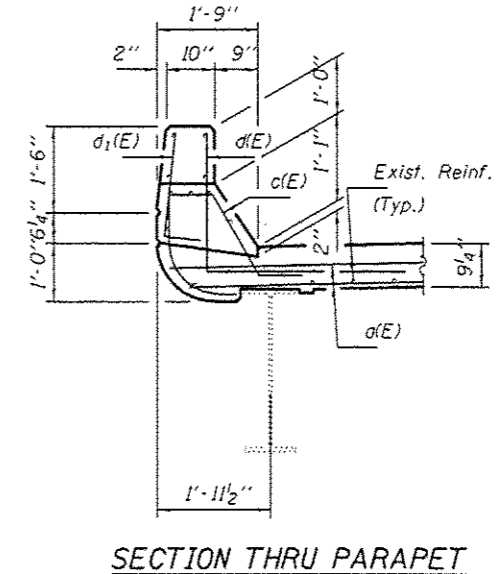
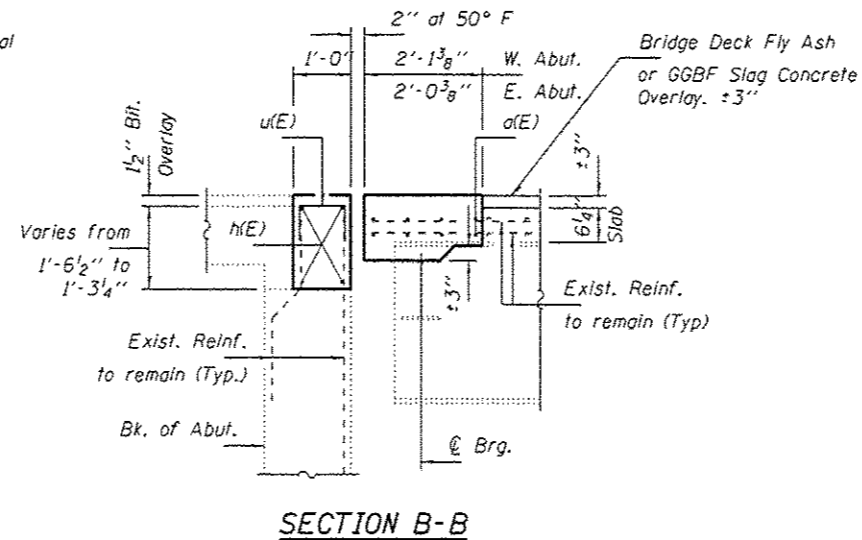
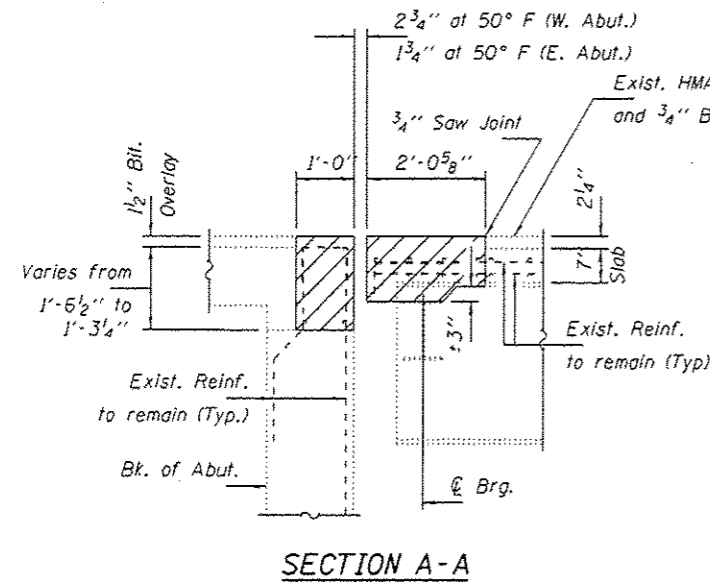
PASSED  
  
 ACTING ENGINEER OF BRIDGES AND STRUCTURES

DATE SEPTEMBER 20, 2016  
 REVISED  
 REVISED

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

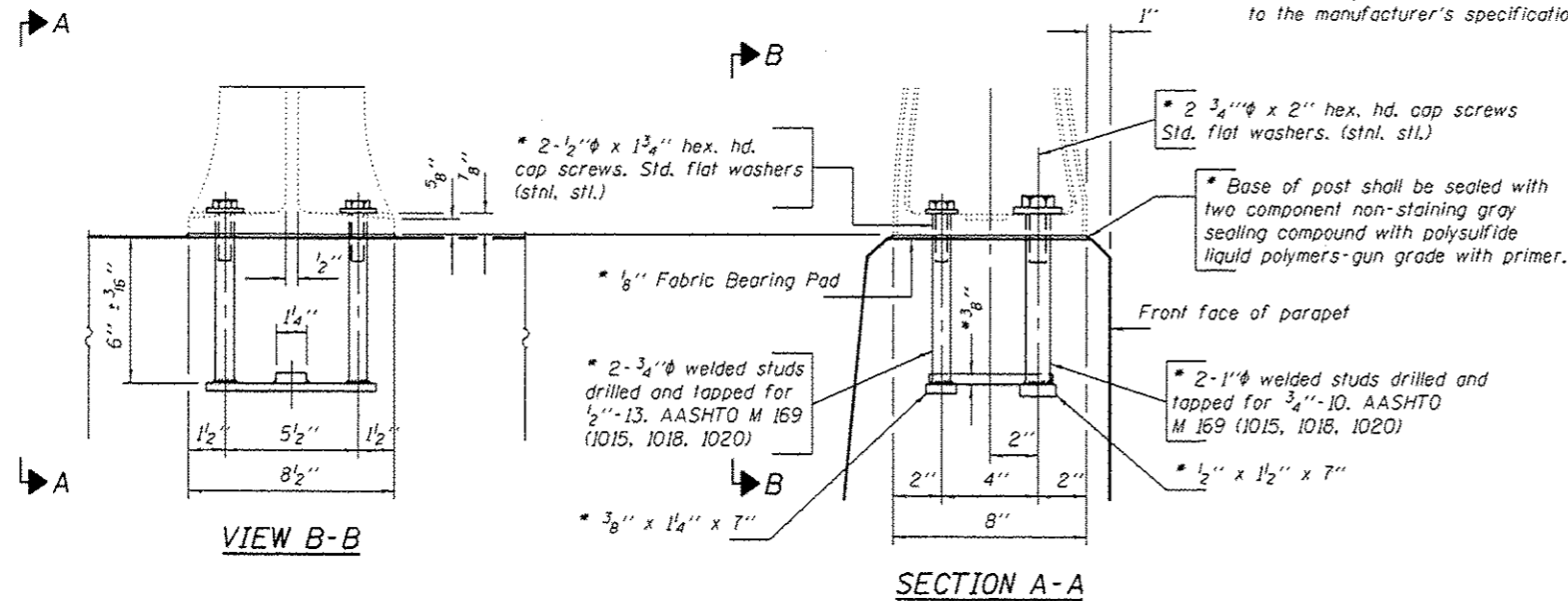
JOINT REPLACEMENT DETAILS  
 SN 013-0001  
 SHEET NO. 4 OF 12 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
327	0-7 Bridge Repair 2017-1	CLAY	25	13
CONTRACT NO. 74707			ILLINOIS FED. AID PROJECT	



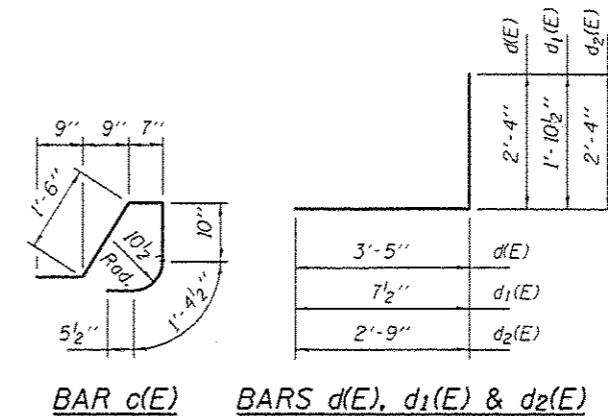
Hatched area indicates Concrete Removal.  
 Indicates Concrete Superstructure

In lieu of the cast-in-place anchor device shown, the Contractor has the option of drilling and setting stainless steel anchor rods of the same diameter and grade as the specified cap screws according to Article 509.06 of the Standard Specifications. Embedment shall be according to the manufacturer's specifications.

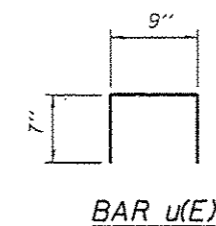


**RAIL POST DETAILS**  
(10 Locations Required)

\* New Rail Post anchorage devices will be required at each location where posts are connected to new construction. Cost shall be included with Concrete Superstructure.



BAR c(E) BARS d(E), d1(E) & d2(E)



BAR u(E)

**BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a(E)	32	#5	21'-0"	—
c(E)	4	#4	5'-5"	0
d(E)	12	#6	5'-9"	J
d1(E)	12	#4	2'-6"	J
h(E)	16	#6	22'-1"	—
u(E)	84	#5	1'-11"	Π
Concrete Removal			Cu. Yd.	12.6
Concrete Superstructure			Cu. Yd.	12.6
Reinforcement Bars, Epoxy Coated			Lbs.	1540
Bar Splicers			Each	24

DESIGNED JGY  
 CHECKED ATH  
 DRAWN J. Schneller  
 CHECKED JGY ATH

PASSED  
  
 ACTING ENGINEER OF BRIDGES AND STRUCTURES

DATE SEPTEMBER 20, 2016  
 REVISED  
 REVISED

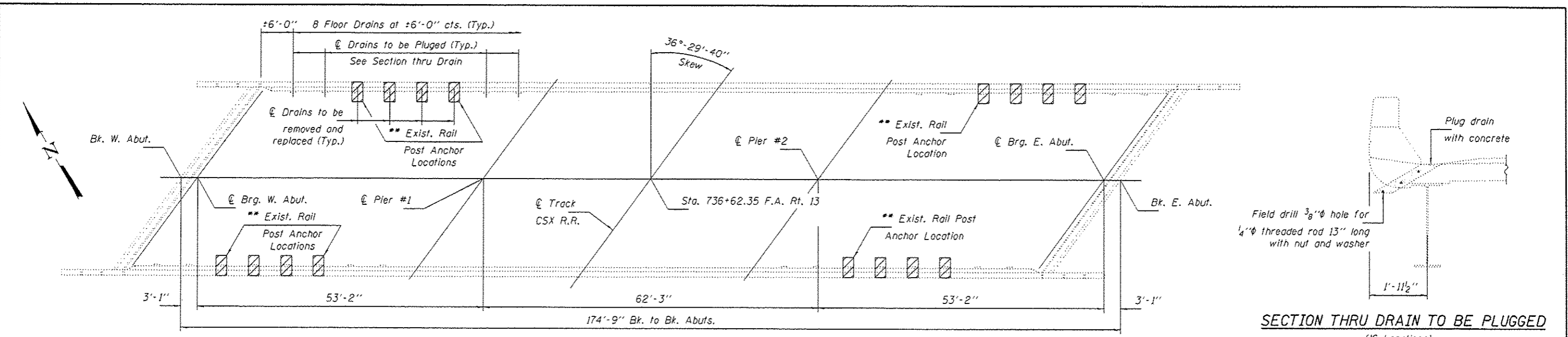
STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

JOINT REMOVAL & REPLACEMENT DETAILS  
 SN 013-0001

SHEET NO. 5 OF 12 SHEETS

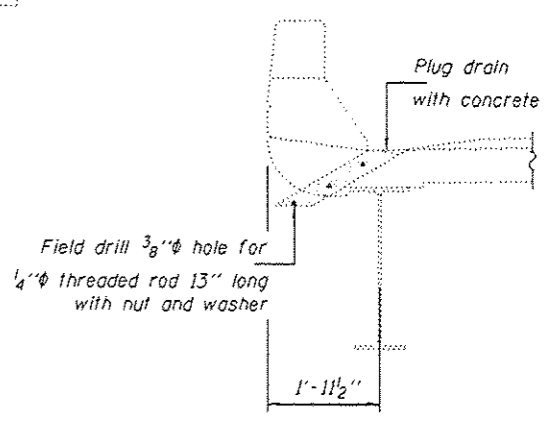
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
327	D-7 Bridge Repair 2017-1	CLAY	25	11

CONTRACT NO. 74707  
ILLINOIS FED. AID PROJECT



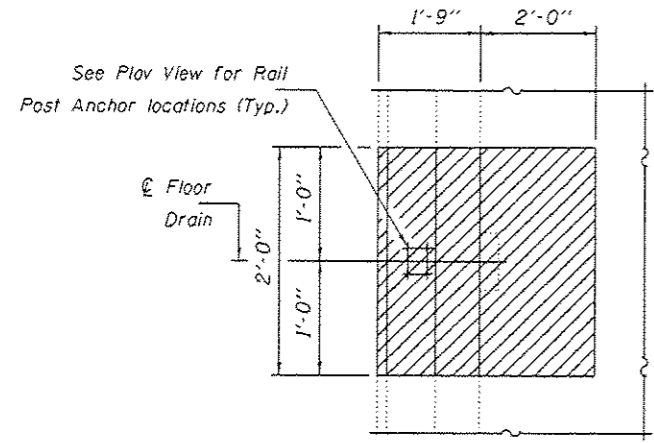
**PLAN**

\*\* Remove and replace existing rail post anchor.  
Cost included in Concrete Superstructure.

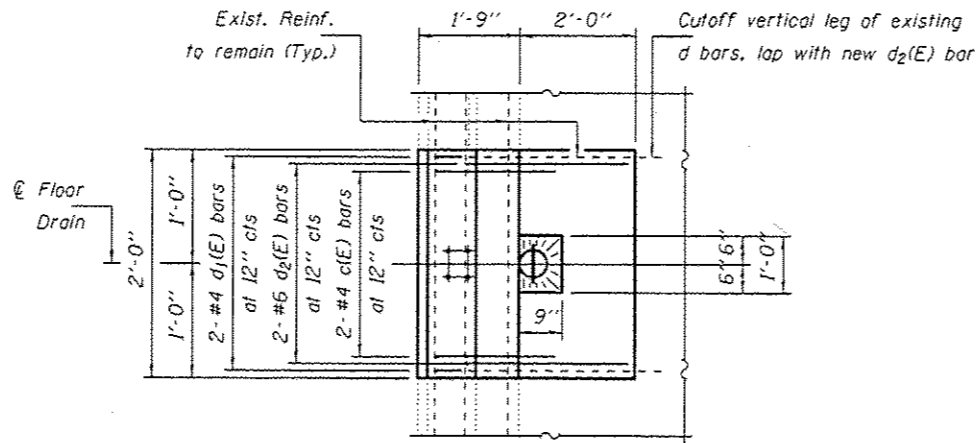


**SECTION THRU DRAIN TO BE PLUGGED**

(16 Locations)  
Cost included with Bridge Deck Fly Ash or GGBF Slag Concrete

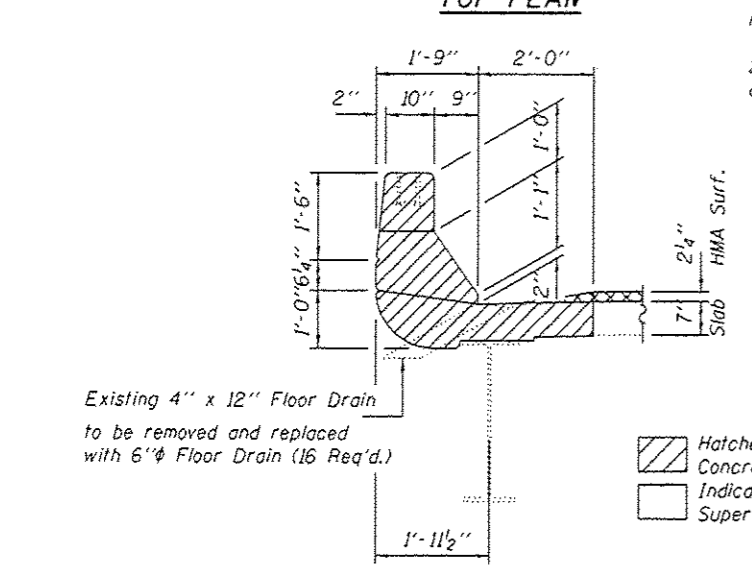


**TOP PLAN**



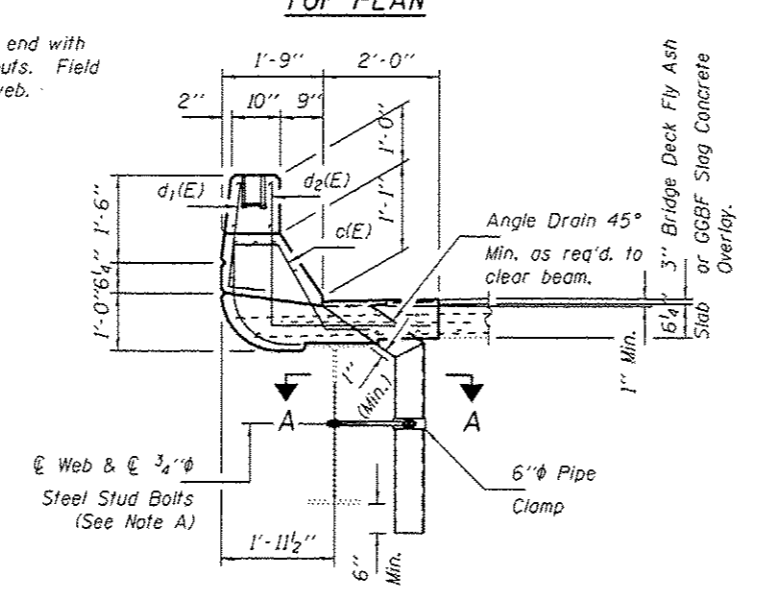
**TOP PLAN**

**Notes:**  
Drains shall be located clear of all diaphragms.  
The exterior surfaces of the floor drains shall be painted with the finish coat as specified in the special provisions for Cleaning and Painting New Metal Structures. The exterior surfaces of the drains shall be cleaned according to the Society of Protective Coatings' Spec. SSPC-SP1 prior to painting.  
Fiberglass pipe shall conform to ASTM D 2996, with short-time rupture strength hoop tensile stress of 30,000 p.s.i. minimum.  
Galvanize clamping device according to AASHTO M232. Cost of clamping device and inserts is included with Floor Drains.  
The Contractor shall use extreme care during concrete removal so as not to damage the steel I Beam at drain removal locations.  
See Sheet 5 of 12 for Bar Details and Rail Post Anchor Device Details.

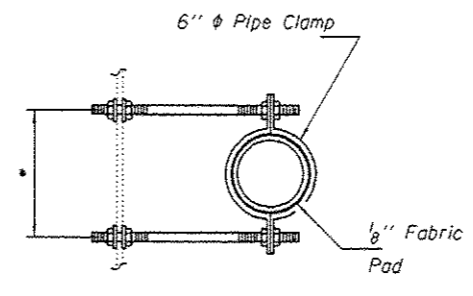


**SECTION THRU PARAPET AT EXISTING DRAIN**  
(Bridge Deck Scarification not shown.)

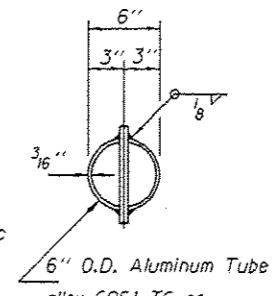
Hatched area indicates Concrete Removal.  
Indicates Concrete Superstructure



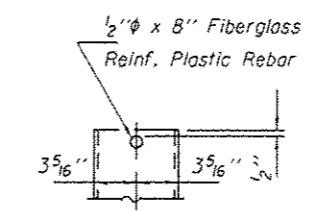
**SECTION THRU PARAPET AT EXISTING DRAIN**  
(Bridge Deck Scarification not shown.)



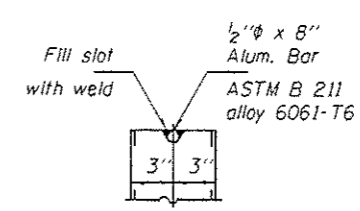
**SECTION A-A**  
Dimension as required by Pipe Clamp



**TOP PLAN**  
(Showing Aluminum Tube)



**FIBERGLASS PIPE**



**ALUMINUM TUBE**

**BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
d1(E)	32	#4	2'-6"	J
d2(E)	32	#6	5'-1"	J
c(E)	32	#4	5'-5"	D
Floor Drains		Each		16
Concrete Removal		Cu. Yd.		7.2
Concrete Superstructure		Cu. Yd.		7.2
Reinforcement Bars, Epoxy Coated		Lbs.		410

DESIGNED JGY  
CHECKED ATH  
DRAWN J. Schneller  
CHECKED JGY ATH

PASSED  
ACTING ENGINEER OF BRIDGES AND STRUCTURES

DATE SEPTEMBER 20, 2016  
REVISED

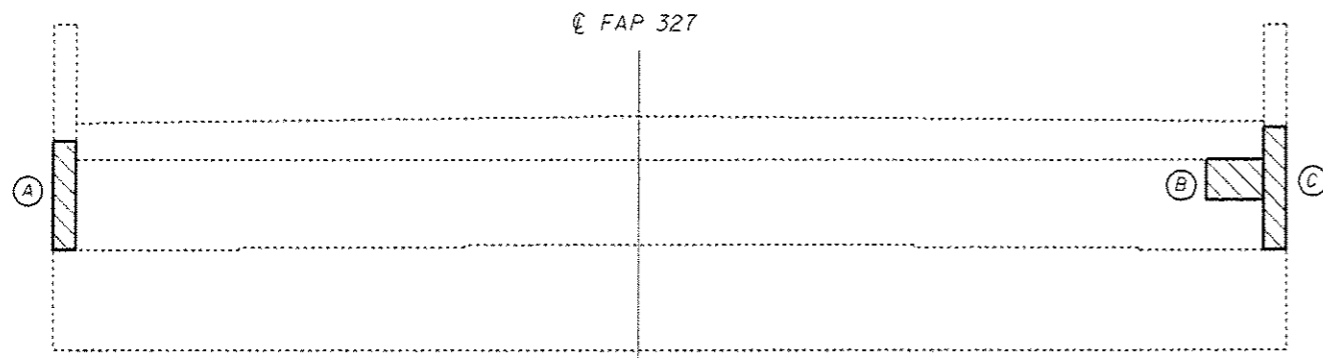
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

DRAIN DETAILS  
SN 013-0001

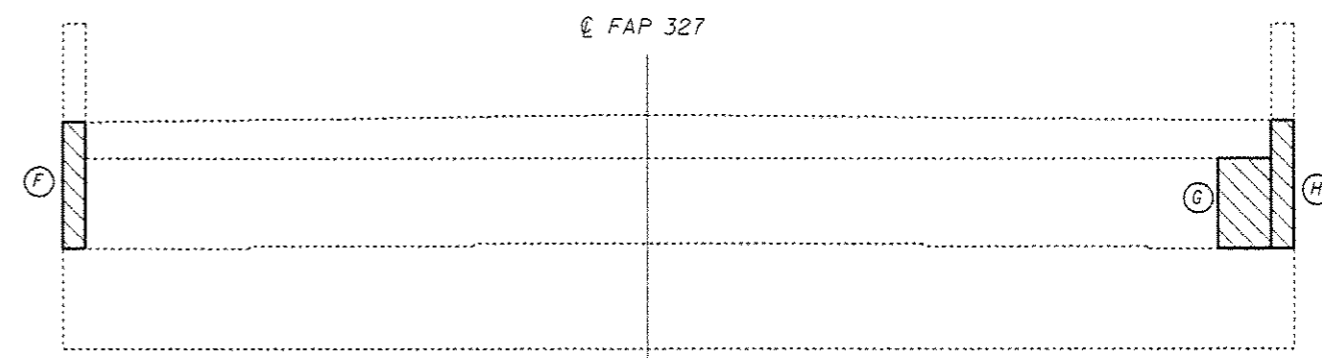
SHEET NO. 6 OF 12 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
327	D-7 Bridge Repair 2017-1	CLAY	25	15

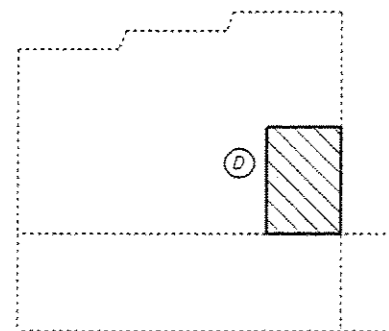
CONTRACT NO. 74707  
ILLINOIS FED. AID PROJECT



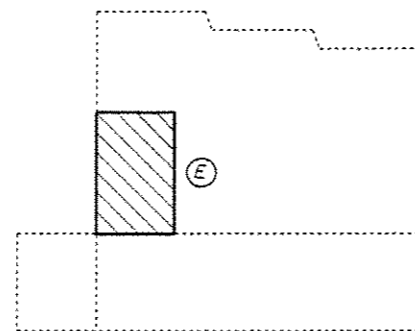
**WEST ABUTMENT**  
(Looking west)



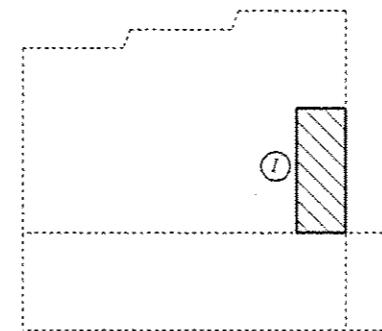
**EAST ABUTMENT**  
(Looking east)



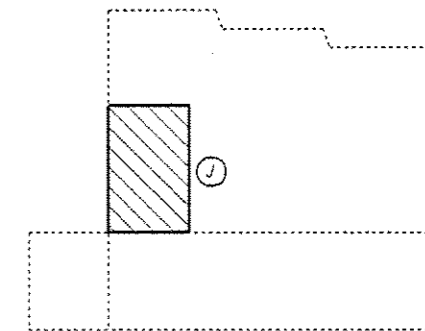
**SOUTHWEST WING**  
(Looking north)



**NORTHWEST WING**  
(Looking south)



**NORTHEAST WING**  
(Looking south)



**SOUTHEAST WING**  
(Looking north)

**STRUCTURAL REPAIR OF CONCRETE (DEPTH < 5")**  
**WEST ABUTMENT**

LOCATION	DIMENSIONS	AREA SQ FT
A	4' x 1'	4.0
B	3' x 2'	6.0
C	4.5' x 1'	4.5
D	4' x 2.5'	10.0
E	5' x 2.5'	12.5
WEST ABUTMENT TOTAL		37.0

**STRUCTURAL REPAIR OF CONCRETE (DEPTH < 5")**  
**EAST ABUTMENT**

LOCATION	DIMENSIONS	AREA SQ FT
F	4.5' x 1'	4.5
G	3.5' x 2.5'	8.8
H	4.5' x 1'	4.5
I	5' x 2'	10.0
J	5' x 3'	15.0
EAST ABUTMENT TOTAL		42.8



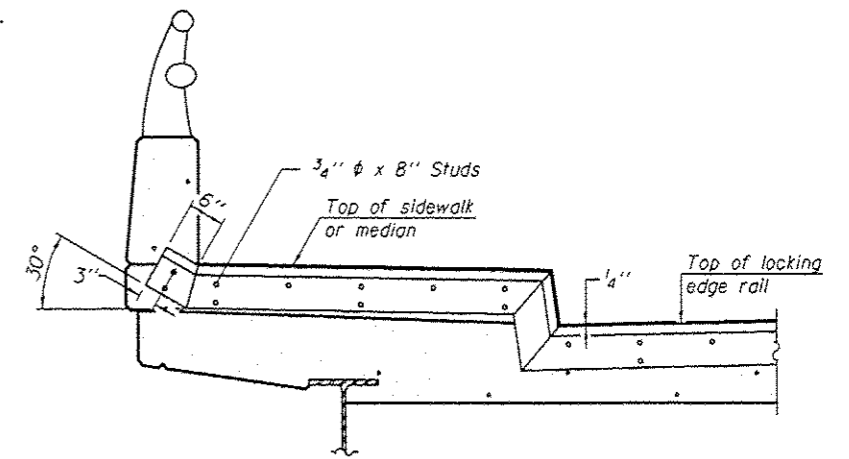
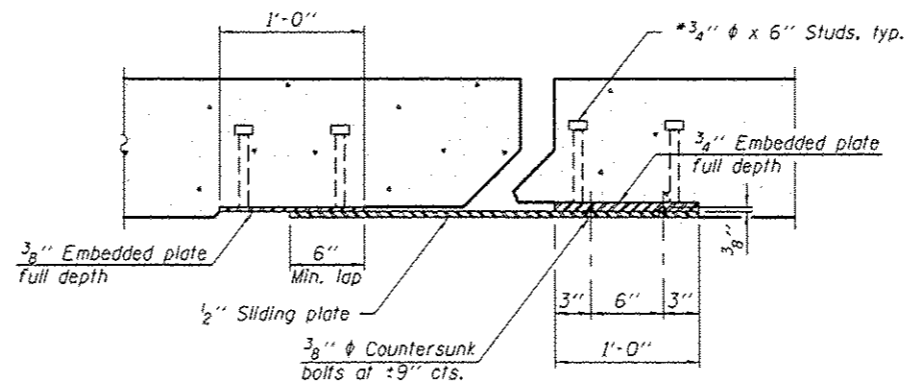
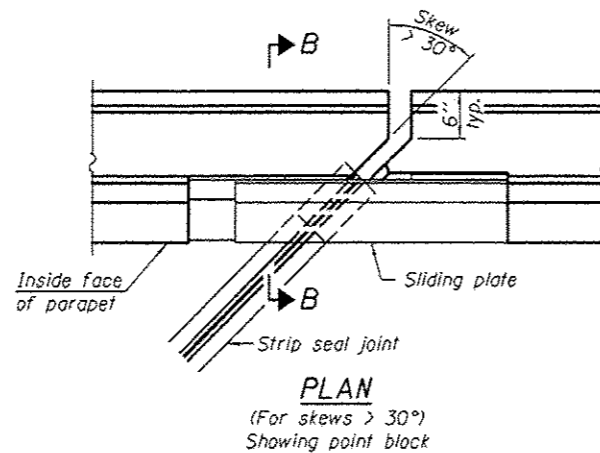
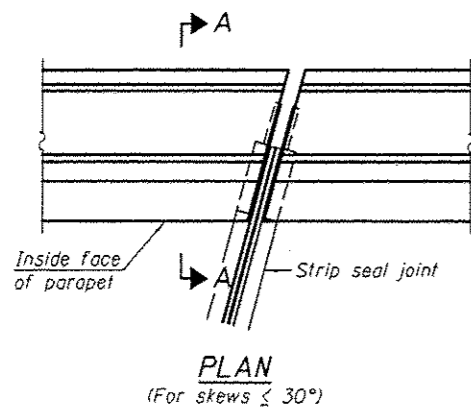
STRUCTURAL REPAIR OF CONCRETE (DEPTH < 5")

EXPIRES 11-30-2016

DESIGNED <i>D. Macklin</i>	DATE <u>MARCH 17, 2016</u>	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>STRUCTURAL REPAIR OF CONCRETE – ABUTMENTS SN 013-0001</b>		F.A. RTE. 327	SECTION D-7 Bridge Repair 2017-1	COUNTY CLAY	TOTAL SHEETS 25	SHEET NO. 16
CHECKED	REVISED		SHEET NO. 7 OF 12 SHEETS		CONTRACT NO. 74707				
DRAWN <i>D. Macklin</i>	REVISED		ILLINOIS FED. AID PROJECT						
CHECKED	ACTING ENGINEER OF BRIDGES AND STRUCTURES		ILLINOIS FED. AID PROJECT						

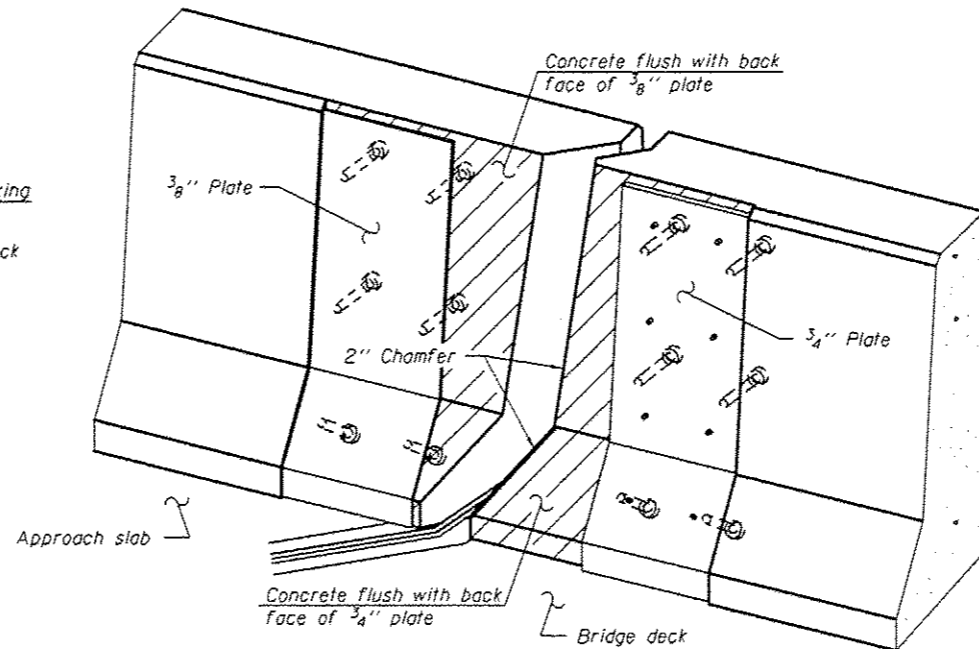
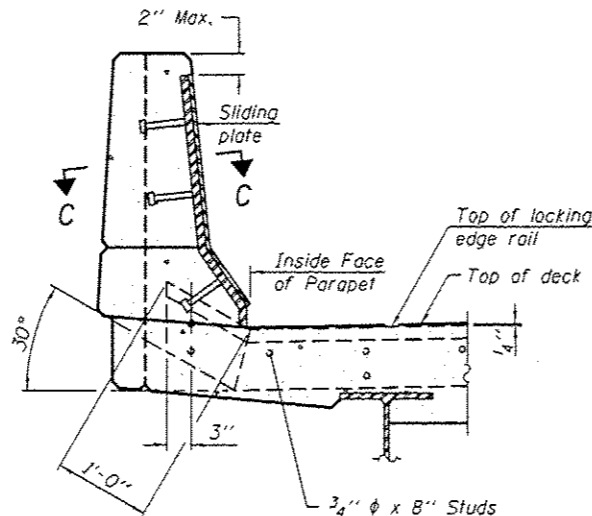
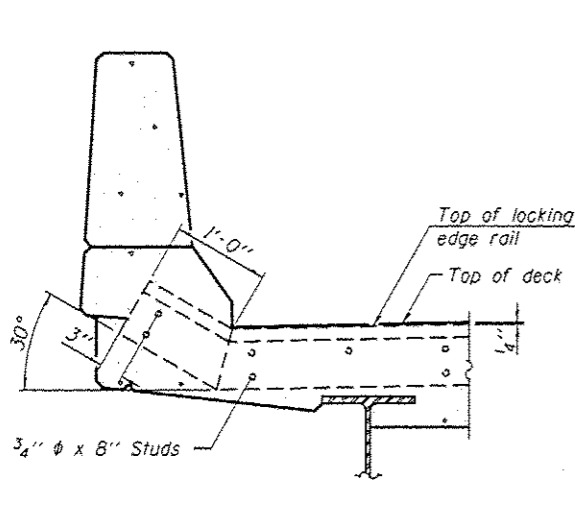






**TYPICAL END TREATMENT AT SIDEWALK OR MEDIAN**

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.



**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.

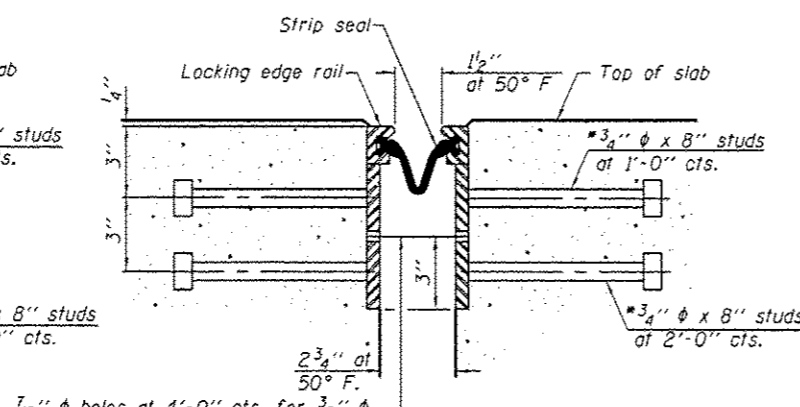
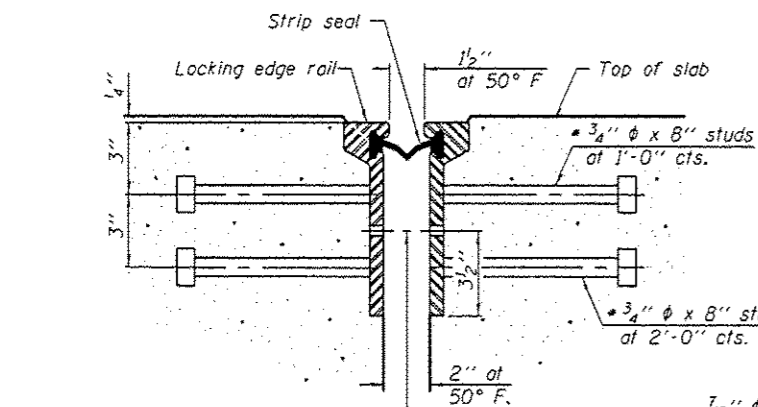
The manufacturer's recommended installation methods shall be followed.

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.

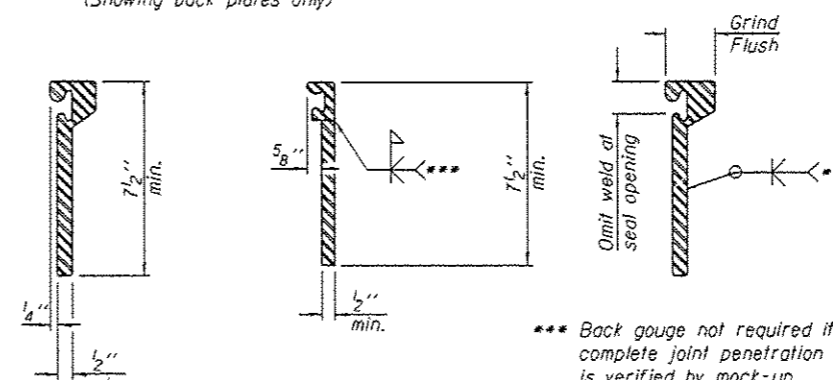
Maximum space between rail segments shall be 3/16", sealed with a suitable sealant. Joints in rails within 10 ft. of curbs shall be welded.

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



1/16" phi holes at 4'-0" cts. for 3/8" phi bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after forms are removed, typ.

1/16" phi holes at 4'-0" cts. for 3/8" phi bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after forms are removed, typ.



\*\*\* 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**

**BILL OF MATERIAL**

Item	Unit	Total
Preformed Joint Strip Seal	Foot	85

EJ-SSJ 1-27-12

DESIGNED JGY	DATE SEPTEMBER 20, 2016
CHECKED ATH	
DRAWN J. Schneller	
CHECKED JGY ATH	

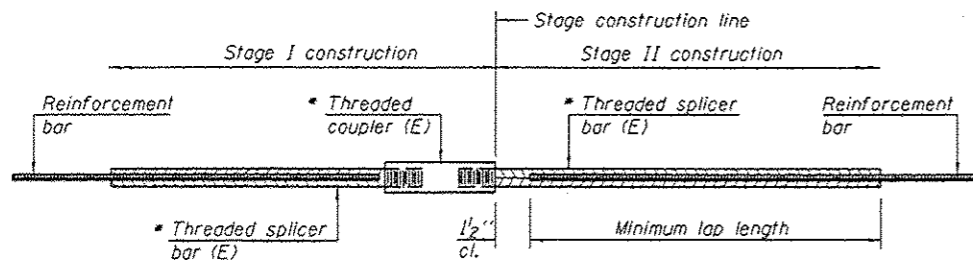
PASSED	ACTING ENGINEER OF BRIDGES AND STRUCTURES
REVISED	
REVISED	

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

PREFORMED JOINT STRIP SEAL  
SN 013-0001

SHEET NO. 9 OF 12 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
327	D-7 Bridge Repair 2017-1	CLAY	25	18
			CONTRACT NO. 74707	
ILLINOIS FED. AID PROJECT				

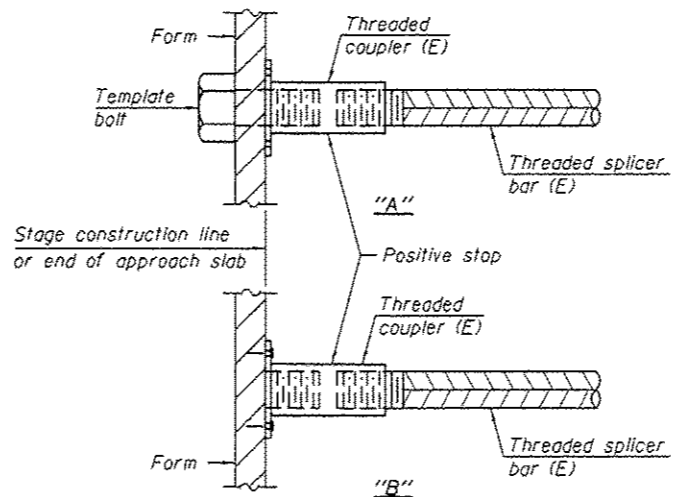


**STANDARD BAR SPLICER ASSEMBLY**

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

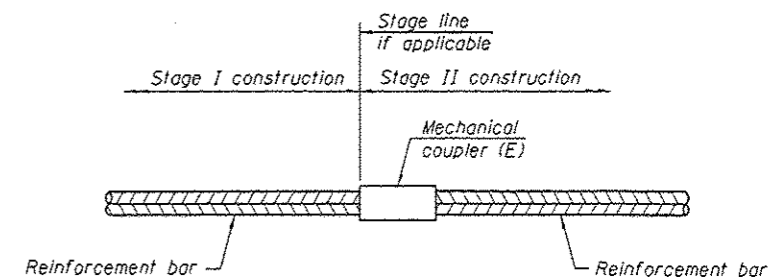
\* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Minimum lap length
W. Abut. Hatched Block	#6	4	4'-0"
W. End of Deck	#5	8	3'-6"
E. Abut. Hatched Block	#6	4	4'-0"
E. End of Deck	#5	8	3'-6"



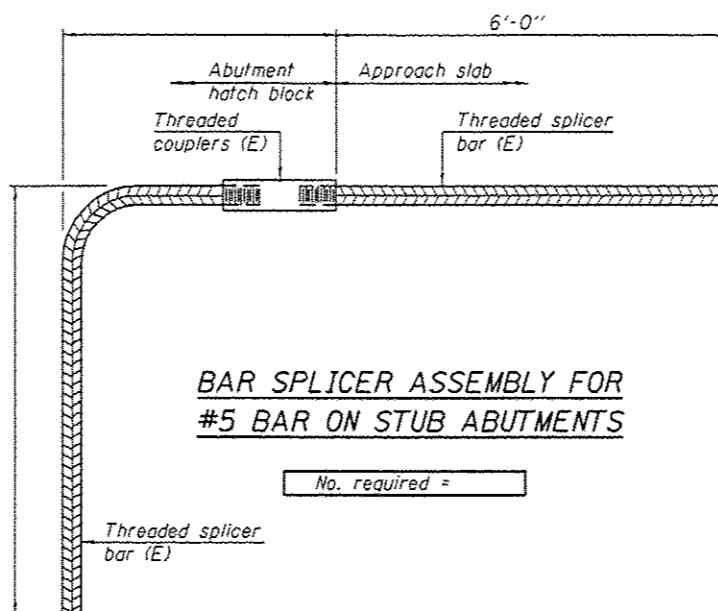
**INSTALLATION AND SETTING METHODS**

"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 JGY  
 CHECKED ATH  
 DRAWN J. Schneller  
 CHECKED JGY ATH

PASSED  
 ACTING ENGINEER OF BRIDGES AND STRUCTURES

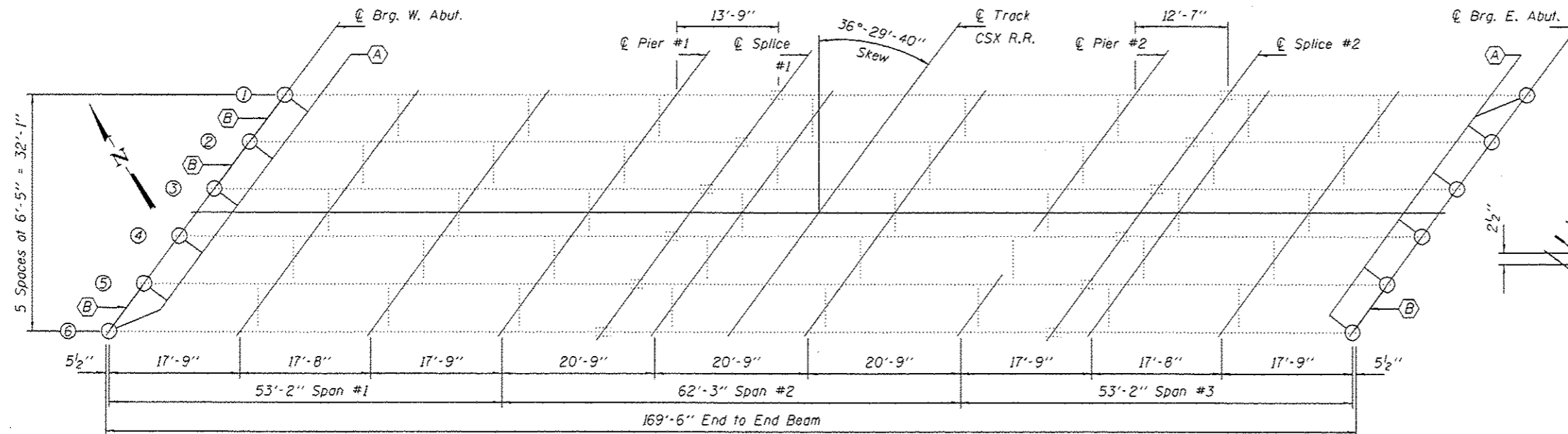
DATE SEPTEMBER 20, 2016  
 REVISED  
 REVISED

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS  
 SN 013-0001  
 SHEET NO. 10 OF 12 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
327	0-7 Bridge Repair 2017-1	CLAY	25	19

CONTRACT NO. 74707  
 ILLINOIS FED. AID PROJECT



**PLAN**

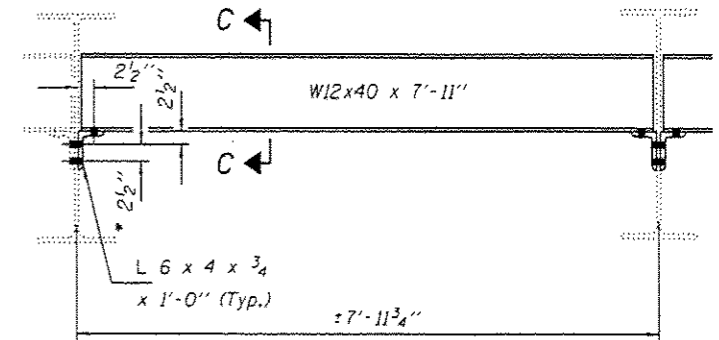
- (A) Remove and Replace Bearings
- (B) Remove and Replace Diaphragm

**Notes:**

Diaphragm removal and reinstallation may be required to facilitate drilling holes. Cost included with Furnishing and Erecting Structural Steel.  
 New steel extensions, shim plates and connection bolts are included with Furnishing and Erecting Structural Steel. Prior to ordering any material, the Contractor shall verify in the field all bearing height and shim thickness dimensions. Min. jack capacity = 35 Tons.  
 Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. ASTM A307 Grade C anchor bolts may be used in lieu of ASTM F1554 Grade 36 (Fy=36ksi). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.  
 Anchor bolts at fixed bearings may be either cast in place or installed in holes drilled after the supported member is in place.  
 Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.  
 Side retainers shall be included in the cost of Elastomeric Bearing Assembly, Type I.

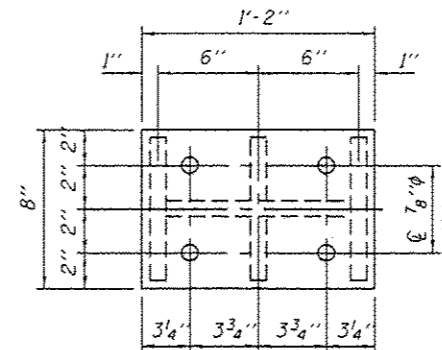
**BEAM REACTIONS**

R <sub>1</sub>	(K)	21.4
R <sub>2</sub>	(K)	33.3
Imp.	(K)	9.3
R (Total)	(K)	64.0

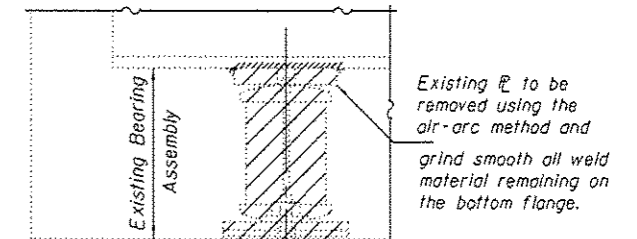


**DIAPHRAGM REPLACEMENT DETAIL**

- (4 Required)
- \* Field drill holes in new angle using holes in existing beams as template.



**PLAN TOP AND BOTTOM PLATE**



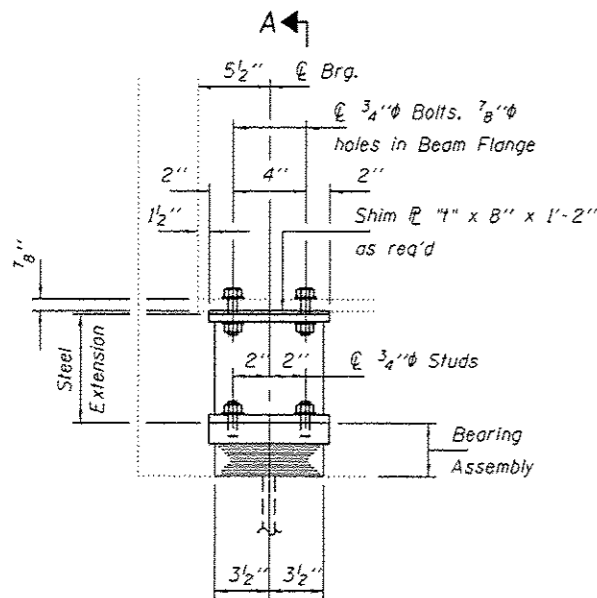
**EXISTING BEARING REMOVAL DETAIL**

Cost included with Jack and Remove Existing Bearings.

**BILL OF MATERIAL**

Item	Unit	Total
Elastomeric Bearing Assembly, Type I	Each	6
Jack and Remove Existing Bearings	Each	6
Furnishing and Erecting Structural Steel	Pound	2270
Structural Steel Removal	Pound	1420
Anchor Bolts 1"φ	Each	12

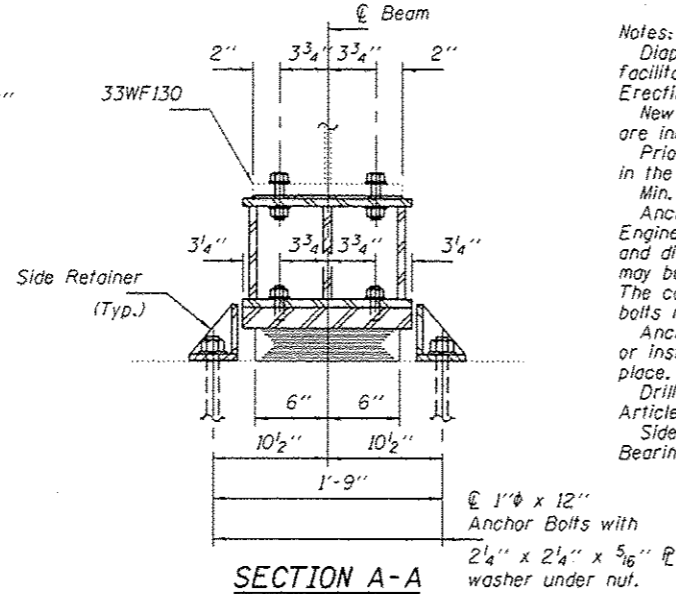
\*\* Includes Diaphragms.



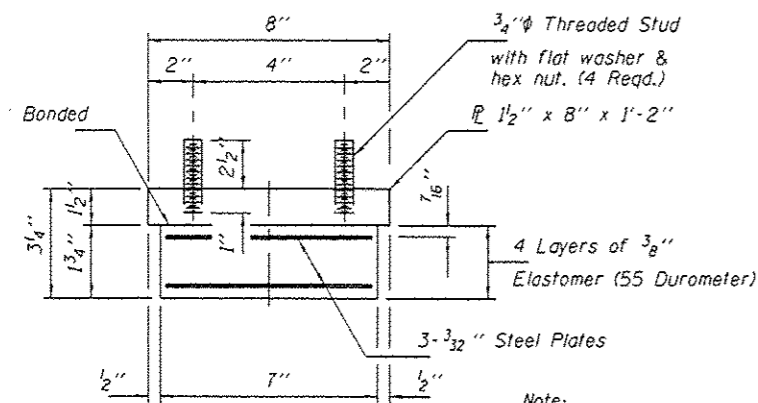
**ELEVATION AT EAST ABUTMENT**

(1" = 1/4" at Beam I)

**TYPE I ELASTOMERIC EXP. BRG.**

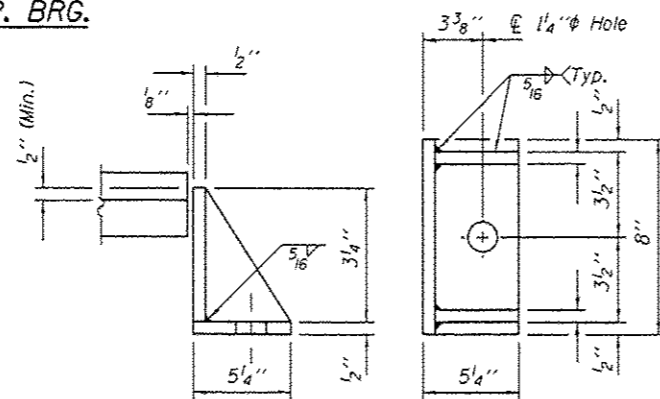


**SECTION A-A**



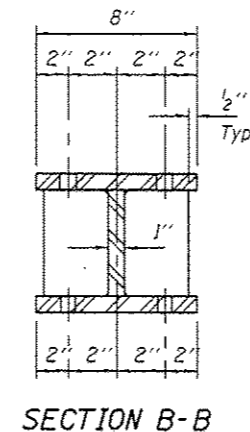
**BEARING ASSEMBLY**

Note: Shim plates shall not be placed under Bearing Assembly.

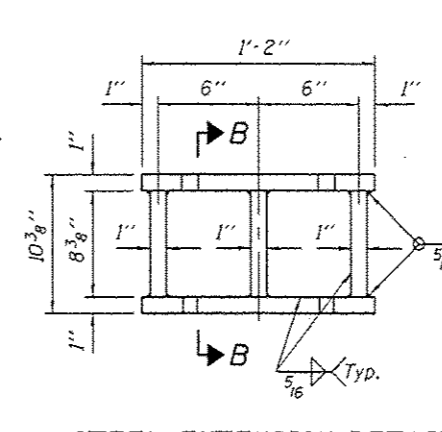


**SIDE RETAINER**

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.



**SECTION B-B**



**STEEL EXTENSION DETAIL**

DESIGNED JGY  
 CHECKED ATH  
 DRAWN J. Schneller  
 CHECKED JGY ATH

PASSED  
 ACTING ENGINEER OF BRIDGES AND STRUCTURES

DATE SEPTEMBER 20, 2016  
 REVISED  
 REVISED

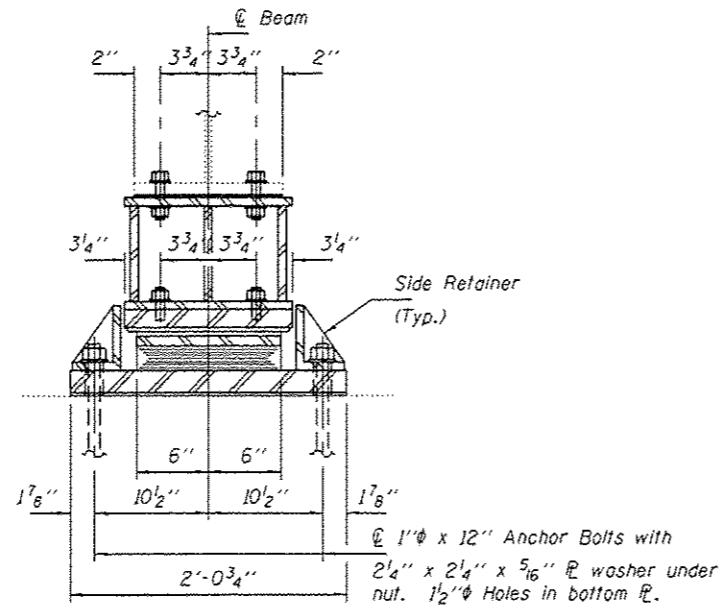
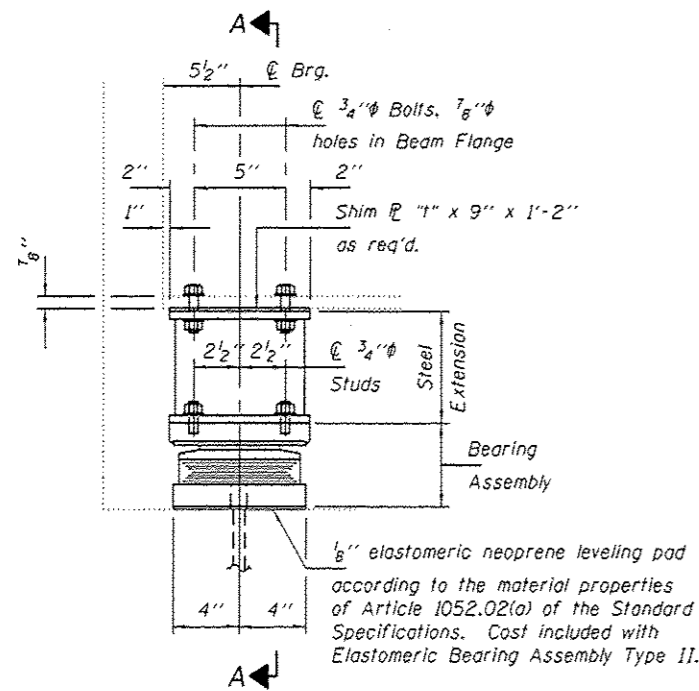
STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

ELASTOMERIC BEARING DETAILS EAST ABUTMENT  
 & DIAPHRAGM REPLACEMENT DETAILS  
 SN 013-0001  
 SHEET NO. 11 OF 12 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
327	D-7 Bridge Repair 2017-1	CLAY	25	20

CONTRACT NO. 74707  
 ILLINOIS FED. AID PROJECT

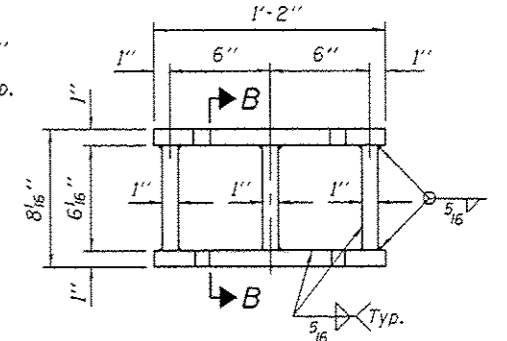
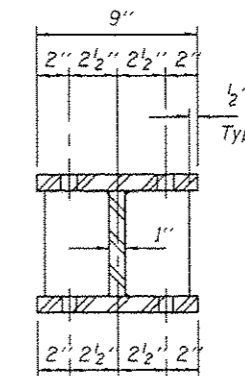
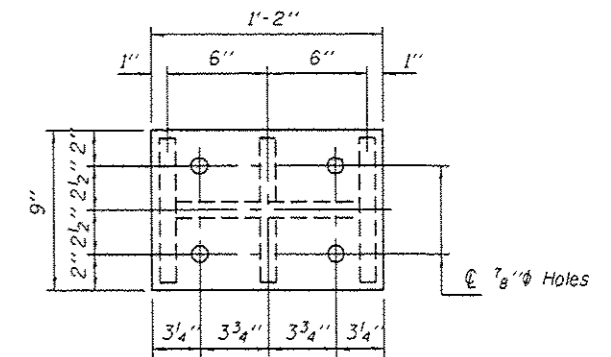




**BEAM REACTIONS**

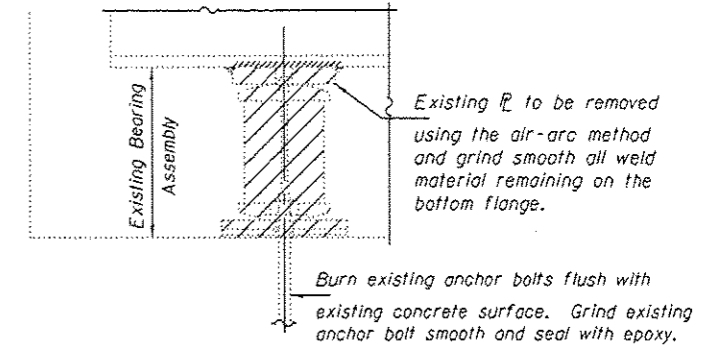
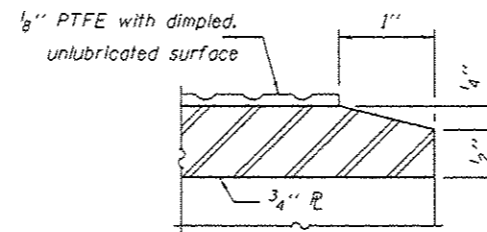
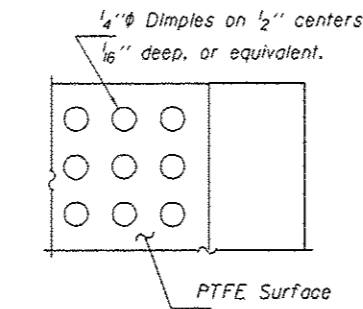
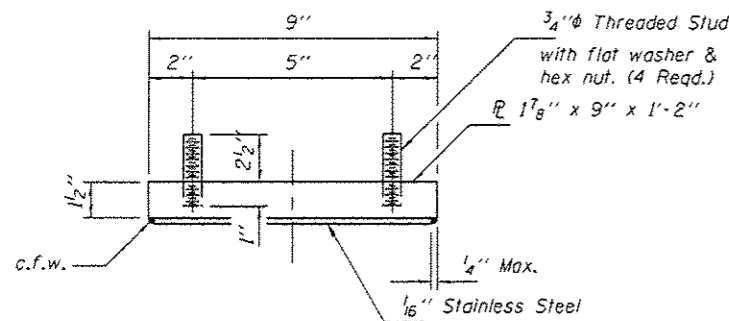
R <sub>P</sub>	(K)	21.4
R <sub>L</sub>	(K)	33.3
Imp.	(K)	9.3
R (Total)	(K)	64.0

Notes:  
 Diaphragm removal and reinstallation may be required to facilitate drilling holes. Cost included with Furnishing and Erecting Structural Steel.  
 New steel extensions, shim plates and connection bolts are included with Furnishing and Erecting Structural Steel.  
 Prior to ordering any material, the Contractor shall verify in the field all bearing height and shim thickness dimensions. Min. jack capacity = 35 Tons.  
 Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. ASTM A307 Grade C anchor bolts may be used in lieu of ASTM F1554 Grade 36 (F<sub>y</sub>=36ksi). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.  
 Anchor bolts of fixed bearings may be either cast in place or installed in holes drilled after the supported member is in place.  
 Anchor bolts for Type II bearings shall be placed in holes drilled through the bottom bearing plate after members are in place. Side retainers shall be placed after bolts are installed.  
 Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.  
 Side retainers shall be included in the cost of Elastomeric Bearing Assembly, Type II.  
 The 1/8" PTFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces.  
 Bonding of 1/8" PTFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.



**ELEVATION AT WEST ABUTMENT**  
 ("1" = 1/4" at Beam 1)

**TYPE II TFE ELASTOMERIC EXP. BRG.**

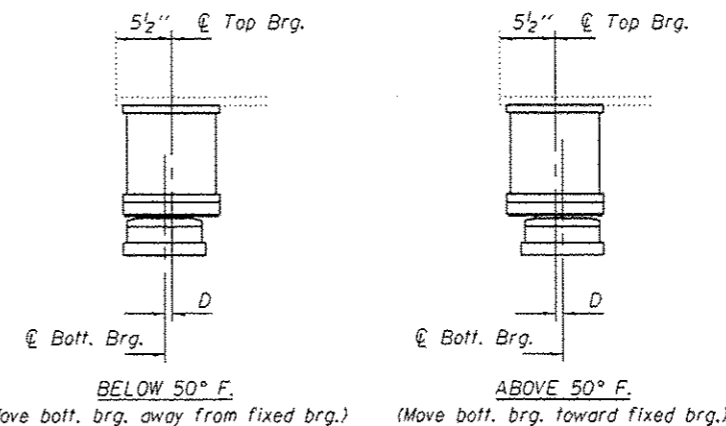
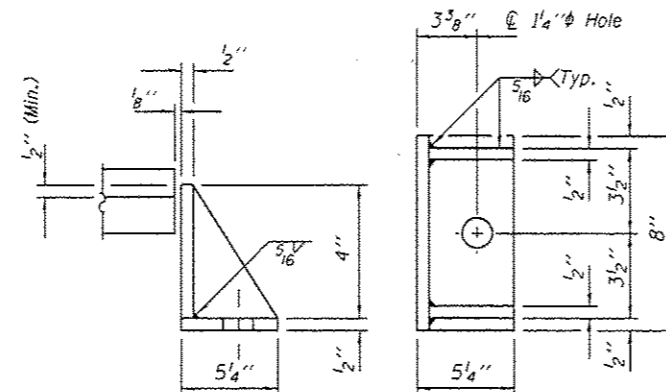
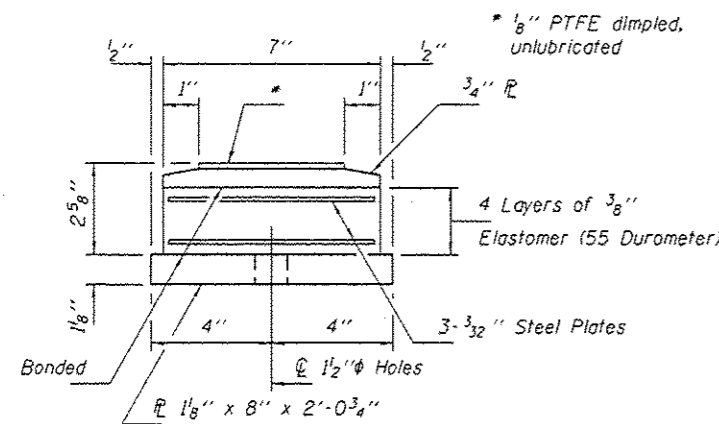


**TOP BEARING ASSEMBLY**

**PLAN-PTFE SURFACE**

**SECTION THRU PTFE**

**EXISTING BEARING REMOVAL DETAIL**  
 Cost included with Jack and Remove Existing Bearings.



**BOTTOM BEARING ASSEMBLY**

**SIDE RETAINER**

**SETTING ANCHOR BOLTS AT EXP. BRG.**  
 D = 1/8" per each 100' of expansion for every 15° temp. change from the normal temp. of 50°F.

**BILL OF MATERIAL**

Item	Unit	Total
Elastomeric Bearing Assembly, Type II	Each	6
Jack and Remove Existing Bearings	Each	6
Furnishing and Erecting Structural Steel	Pound	800
Anchor Bolts 1" @	Each	12

TYII/REPS 12-03-2008

DESIGNED JGY	DATE SEPTEMBER 20, 2016
CHECKED ATH	REVISED
DRAWN J. Schneller	REVISED
CHECKED JGY ATH	

PASSED  
 ACTING ENGINEER OF BRIDGES AND STRUCTURES

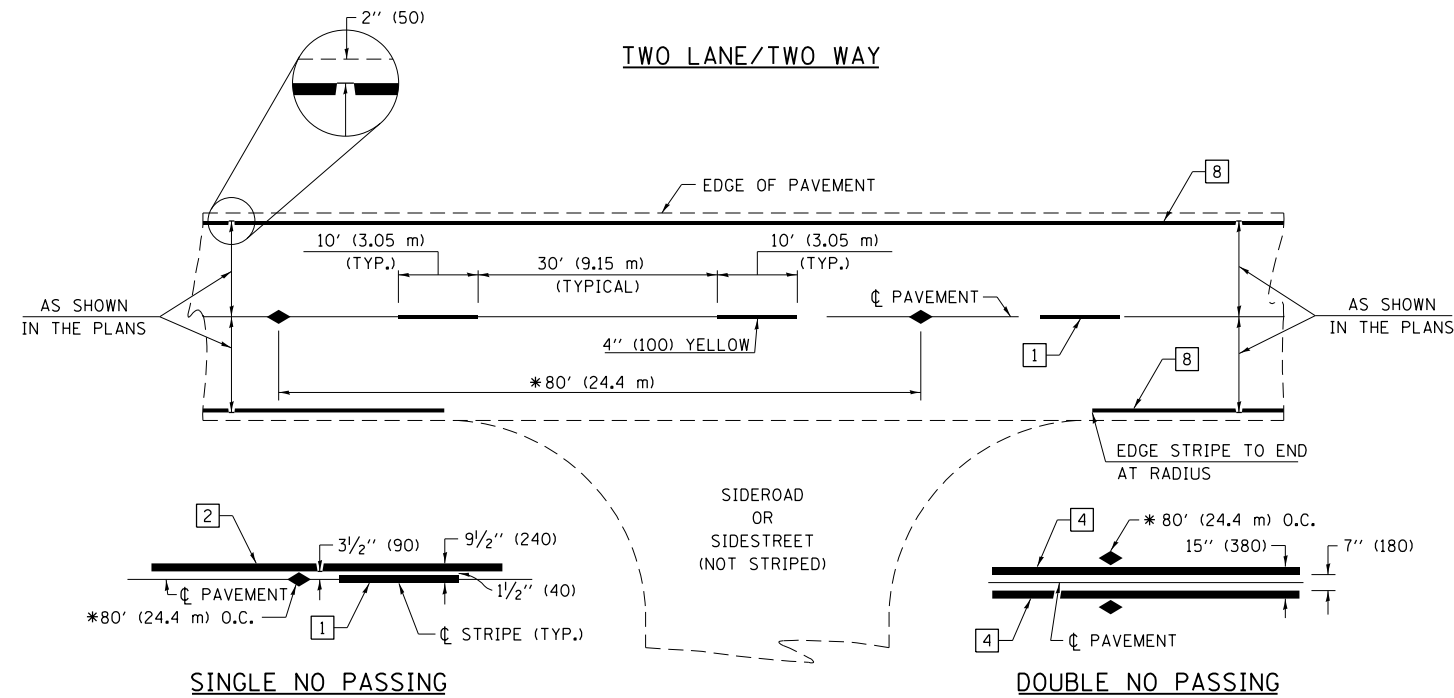
DATE SEPTEMBER 20, 2016
REVISED
REVISED

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

ELASTOMERIC BEARING DETAILS WEST ABUTMENTS  
 SN 013-0001

SHEET NO. 12 OF 12 SHEETS

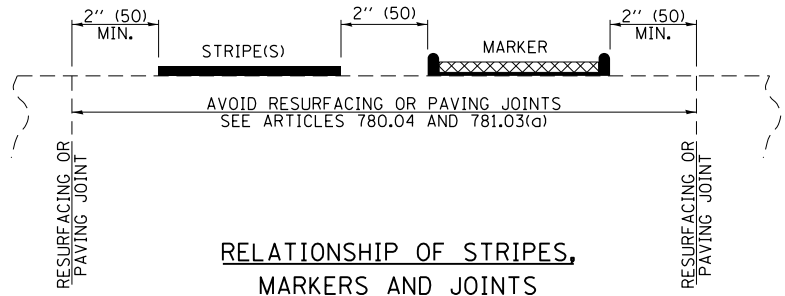
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
327	D-7 Bridge Repair 2017-1	CLAY	25	21
CONTRACT NO. 74707			ILLINOIS FED. AID PROJECT	



\* REDUCE TO 40' (12.2 m) O.C. ON CURVES WITH POSTED OR ADVISORY SPEEDS OF 45 mph (70 km/h) OR LESS.

PAVEMENT MARKING LEGEND

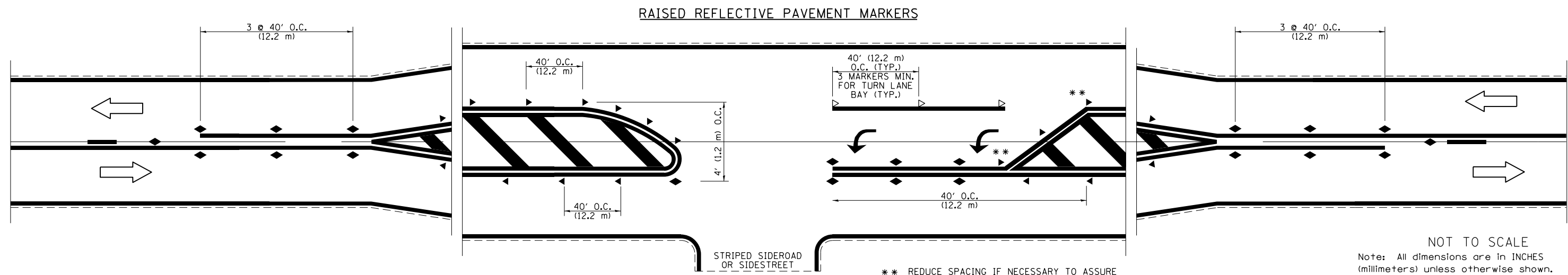
- 1 4" (100) SKIP-DASH (YELLOW)
- 2 4" (100) SOLID (YELLOW)
- 3 12" (300) DIAGONAL (YELLOW)
- 4 4" (100) DOUBLE YELLOW (NARROW)
- 5 12" (300) SOLID WHITE
- 6 RESERVED
- 7 6" (150) SKIP-DASH (WHITE)
- 8 4" (100) SOLID (WHITE)
- 9 12" (300) DIAGONAL (WHITE)
- 10 6" (150) SOLID (WHITE)
- 11 24" (600) STOP BAR (WHITE)
- 12 8" (200) SOLID (WHITE)
- 13 4" (100) PARKING WHITE



RELATIONSHIP OF STRIPES, MARKERS AND JOINTS

TYPICAL PAVEMENT MARKERS LEGEND

- ◆ TWO-WAY AMBER MARKER
- ▶ ONE-WAY AMBER MARKER
- ▷ ONE-WAY CRYSTAL MARKER



\*\* REDUCE SPACING IF NECESSARY TO ASSURE MARKERS AT CORNER POINTS.

NOT TO SCALE  
Note: All dimensions are in INCHES (millimeters) unless otherwise shown.

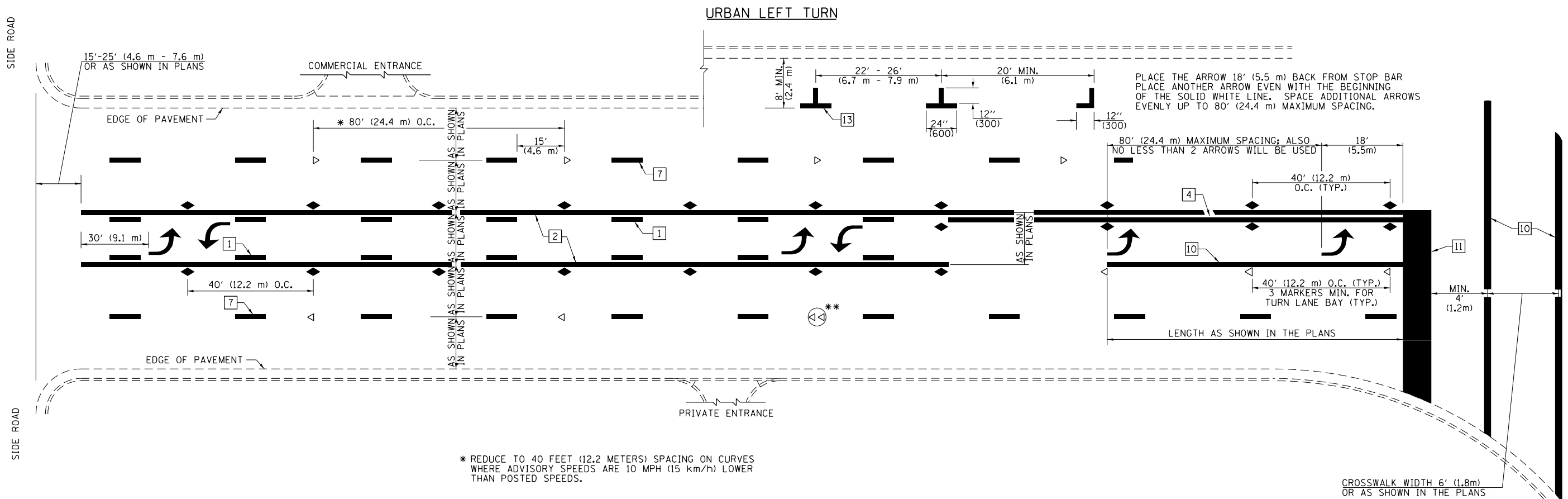
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		DATE -	REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKING AND RAISED REFLECTIVE PAVEMENT MARKERS  
(RURAL & URBAN APPLICATIONS)  
SCALE: N/A SHEET NO. 1 OF 4 SHEETS STA. TO STA.

DISTRICT 7 DETAIL NO. 78000001				
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
327	.	CLAY	25	22
			CONTRACT NO. 74707	
ILLINOIS FED. AID PROJECT				

• D7 BRIDGE REPAIRS 2017-1



\* REDUCE TO 40 FEET (12.2 METERS) SPACING ON CURVES WHERE ADVISORY SPEEDS ARE 10 MPH (15 km/h) LOWER THAN POSTED SPEEDS.

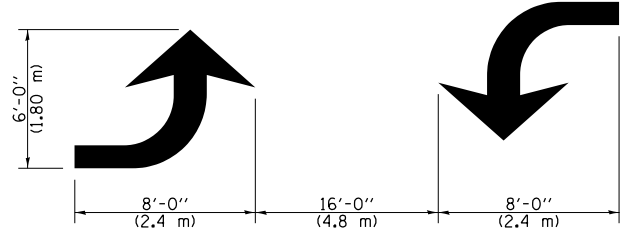
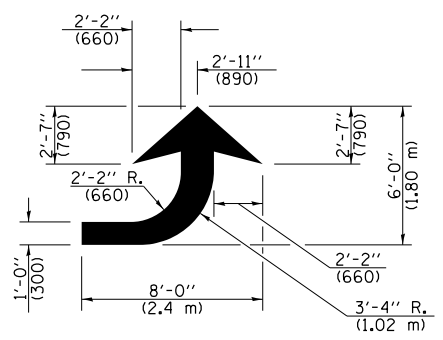
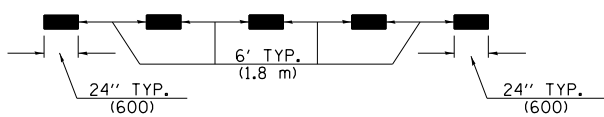
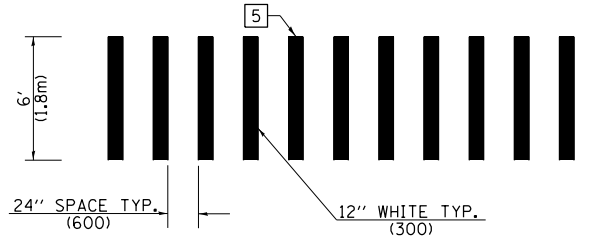
\*\* DOUBLE LANE LINE MARKERS SHALL BE SPECIFIED AND SPACED AS SHOWN IN HIGHWAY STANDARD 781001 FOR MULTI-LANE DIVIDED AND UNDIVIDED HIGHWAYS.

**PAVEMENT MARKING LEGEND**

- 1 4" (100) SKIP-DASH (YELLOW)
- 2 4" (100) SOLID (YELLOW)
- 3 12" (300) DIAGONAL (YELLOW)
- 4 4" (100) DOUBLE YELLOW (NARROW)
- 5 12" (300) SOLID WHITE
- 6 RESERVED
- 7 6" (150) SKIP-DASH (WHITE)
- 8 4" (100) SOLID (WHITE)
- 9 12" (300) DIAGONAL (WHITE)
- 10 6" (150) SOLID (WHITE)
- 11 24" (600) STOP BAR (WHITE)
- 12 8" (200) SOLID (WHITE)
- 13 4" (100) PARKING WHITE

**GENERAL NOTES**

1. TURN ARROW PAIRS SHALL BE PLACED AT 250' (75 m) INTERVALS AND SHALL BE EVENLY SPACED BETWEEN BOTH ENDS OF THE BIDIRECTIONAL LEFT TURN LANE. USE A MINIMUM OF TWO PAIRS PER BLOCK.
2. THE SOLID YELLOW PAVEMENT MARKINGS [2] SHOULD GENERALLY START OR END NEAR THE RADIUS POINT OF EACH STREET RETURN EXCEPT WHERE ONE OR BOTH ENDS WOULD INCLUDE STOP BARS.
3. THE SKIP-DASH PAVEMENT MARKINGS [1] OR [7] SHOULD BE CENTERED BETWEEN BOTH ENDS OF EACH CITY BLOCK AND SHALL BE PLACED SO THEY LINE UP ACROSS FROM EACH OTHER.
4. USE LARGE ARROW SIZE FOR BOTH RURAL AND URBAN LOCATIONS. (SEE LAST PAGE OF SECTION 780x FOR SYMBOLS TABLE)
5. LANE LINE EXTENSIONS SHALL BE THE SAME COLOR AND WIDTH AS THE LANE LINE BEING EXTENDED.



TYPICAL DOUBLE TURN ARROWS (WHITE)

NOT TO SCALE

Note: All dimensions are in INCHES (millimeters) unless otherwise shown.

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		DATE -	REVISED -

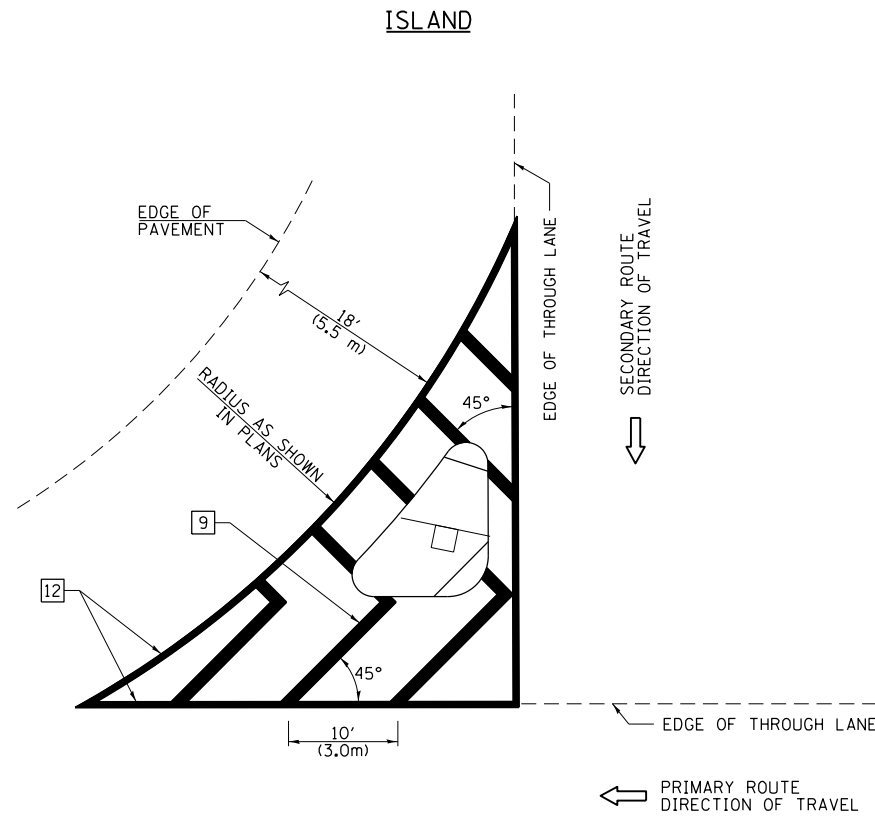
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKING AND RAISED REFLECTIVE PAVEMENT MARKERS  
(RURAL & URBAN APPLICATIONS)

SCALE: N/A SHEET NO. 2 OF 4 SHEETS STA. TO STA.

DISTRICT 7 DETAIL NO. 7800001				
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
327	.	CLAY	25	23
			CONTRACT NO. 74707	
ILLINOIS FED. AID PROJECT				

• D7 BRIDGE REPAIRS 2017-1



**GENERAL NOTES**

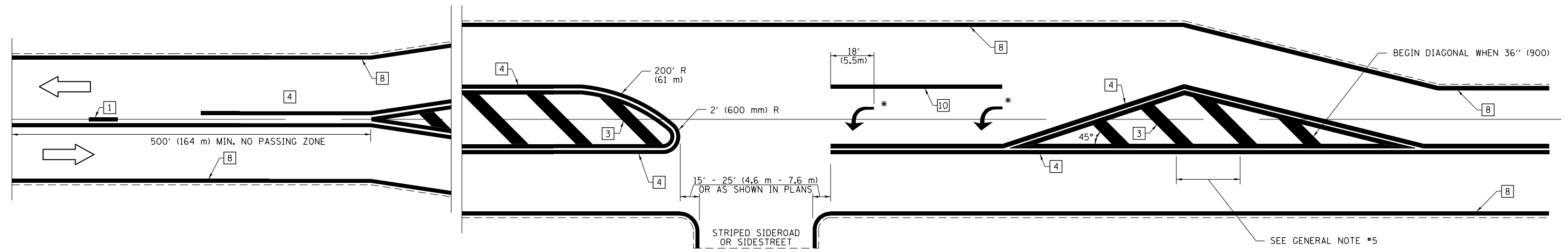
1. RAISED AND CORRUGATED MEDIANS SHALL BE OUTLINED WITH [2] IF PRESENT.
2. SOME OF THE INFORMATION INCLUDED WITH THIS DETAIL MAY NOT BE APPLICABLE TO THIS IMPROVEMENT.
3. PAVEMENT MARKINGS ARE TO BE EXTENDED THROUGH OMISSIONS WHEN APPLICABLE.
4. FINAL PAVEMENT MARKINGS SHALL BE IN PLACE PRIOR TO PLACING ANY RAISED REFLECTIVE PAVEMENT MARKERS.
5. THE FOLLOWING CRITERIA SHALL BE USED FOR SELECTING THE DIAGONAL PAVEMENT MARKING SPACING:

< 30 MPH (< 50 km/h)	15' (4.5 m)
30-45 MPH (50-75 km/h)	20' (6.0 m)
> 45 MPH (> 75 km/h)	30' (9.0 m)

**PAVEMENT MARKING LEGEND**

- [1] 4" (100) SKIP-DASH (YELLOW)
- [2] 4" (100) SOLID (YELLOW)
- [3] 12" (300) DIAGONAL (YELLOW)
- [4] 4" (100) DOUBLE YELLOW (NARROW)
- [5] 12" (300) SOLID WHITE
- [6] RESERVED
- [7] 6" (150) SKIP-DASH (WHITE)
- [8] 4" (100) SOLID (WHITE)
- [9] 12" (300) DIAGONAL (WHITE)
- [10] 6" (150) SOLID (WHITE)
- [11] 24" (600) STOP BAR (WHITE)
- [12] 8" (200) SOLID (WHITE)
- [13] 4" (100) PARKING WHITE

**RURAL LEFT TURN STRIPING**



\* PLACE AN ARROW 18' (5.5 m) BACK FROM STOP BAR. PLACE ANOTHER ARROW EVEN WITH THE BEGINNING OF THE SOLID WHITE LINE. SPACE ADDITIONAL ARROWS EVENLY UP TO 80' (24.4 m) MAXIMUM SPACING. USE MINIMUM OF 2 ARROWS.

NOT TO SCALE  
 Note: All dimensions are in INCHES (millimeters) unless otherwise shown.

• D7 BRIDGE REPAIRS 2017-1

**DISTRICT 7 DETAIL NO. 7800001**

FILE NAME =	USER NAME = steffenmk	DESIGNED -	REVISED -
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	PLOT DATE = 8/24/2016	DATE -	REVISED -

**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

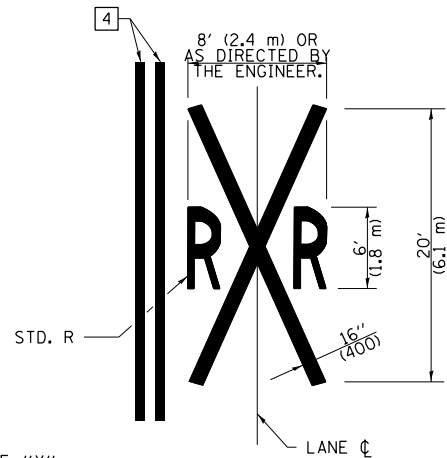
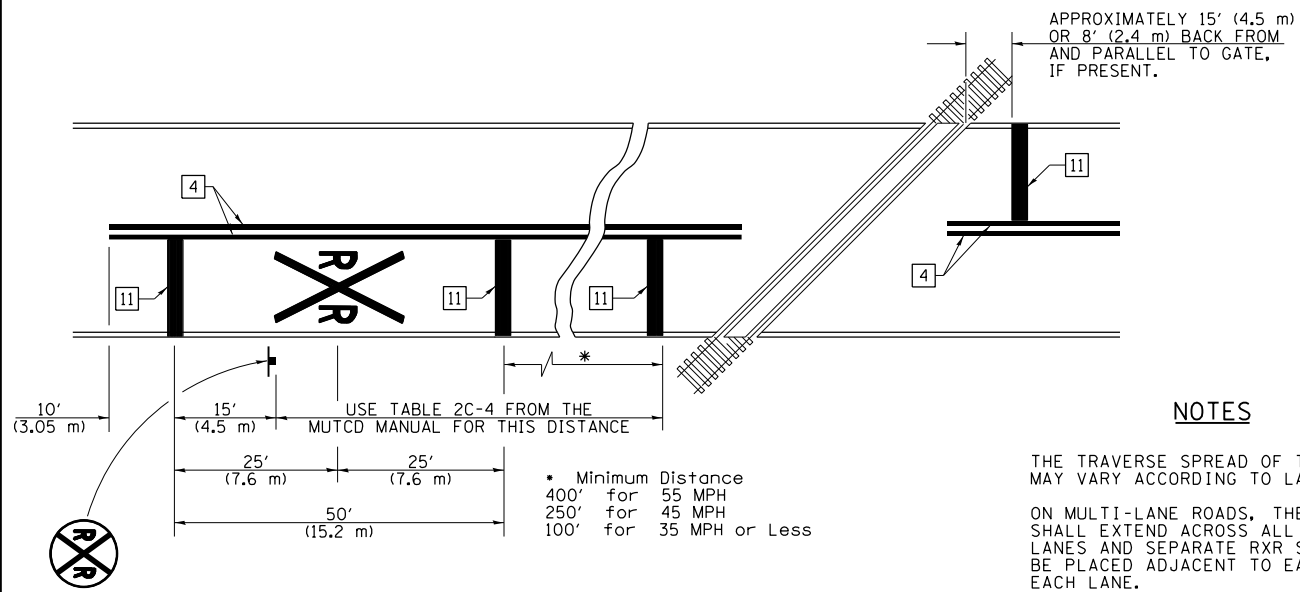
**PAVEMENT MARKING AND RAISED REFLECTIVE PAVEMENT MARKERS  
 (RURAL & URBAN APPLICATIONS)**

SCALE: N/A SHEET NO. 3 OF 4 SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
327	•	CLAY	25	24
CONTRACT NO. 74707				
ILLINOIS FED. AID PROJECT				



PAVEMENT MARKINGS AT RAILROAD-HIGHWAY GRADE CROSSING



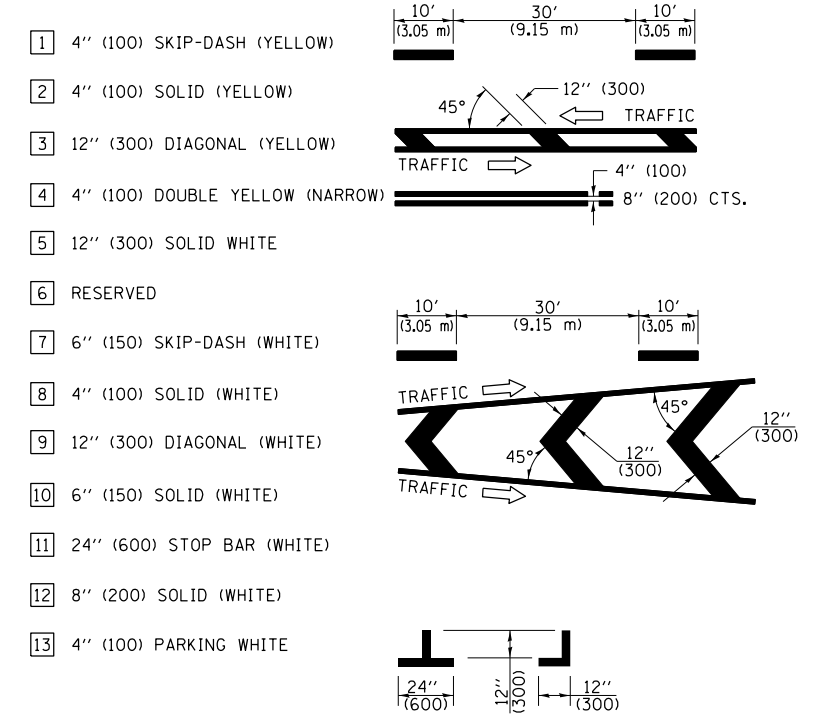
NOTES

THE TRAVERSE SPREAD OF THE "X" MAY VARY ACCORDING TO LANE WIDTH.

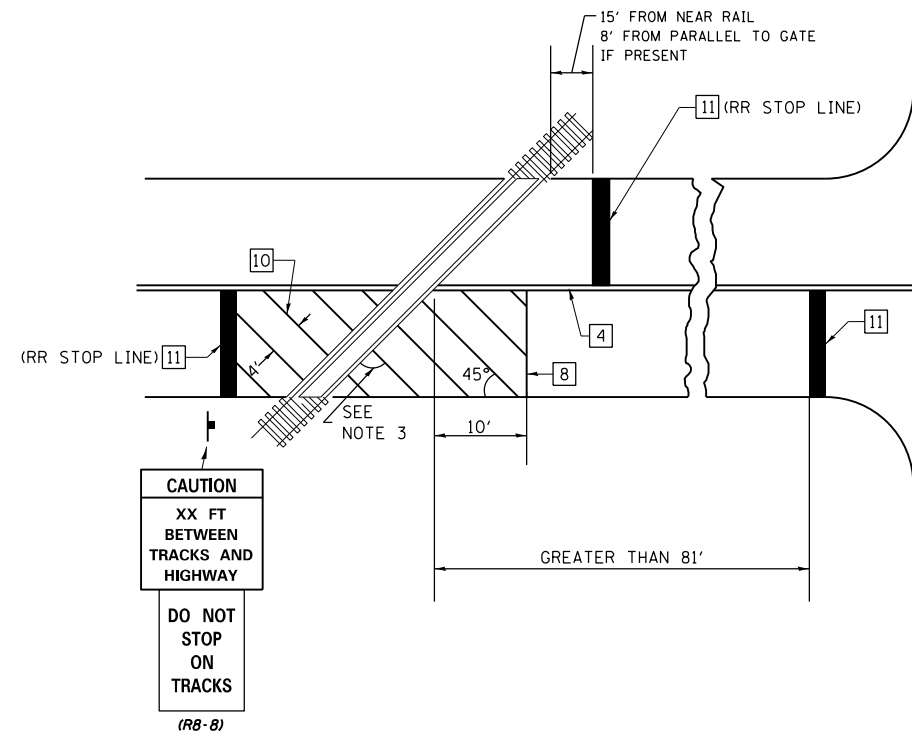
ON MULTI-LANE ROADS, THE STOP LINES SHALL EXTEND ACROSS ALL APPROACH LANES AND SEPARATE RXR SYMBOLS SHALL BE PLACED ADJACENT TO EACH OTHER IN EACH LANE.

WHEN THE PAVEMENT MARKING SYMBOL IS USED, A PORTION OF THE SYMBOL SHOULD BE LOCATED DIRECTLY ADJACENT TO THE ADVANCE WARNING SIGN (W10-1) AS PLACED BY TABLE II-1, CONDITION B OF THE MUTCD.

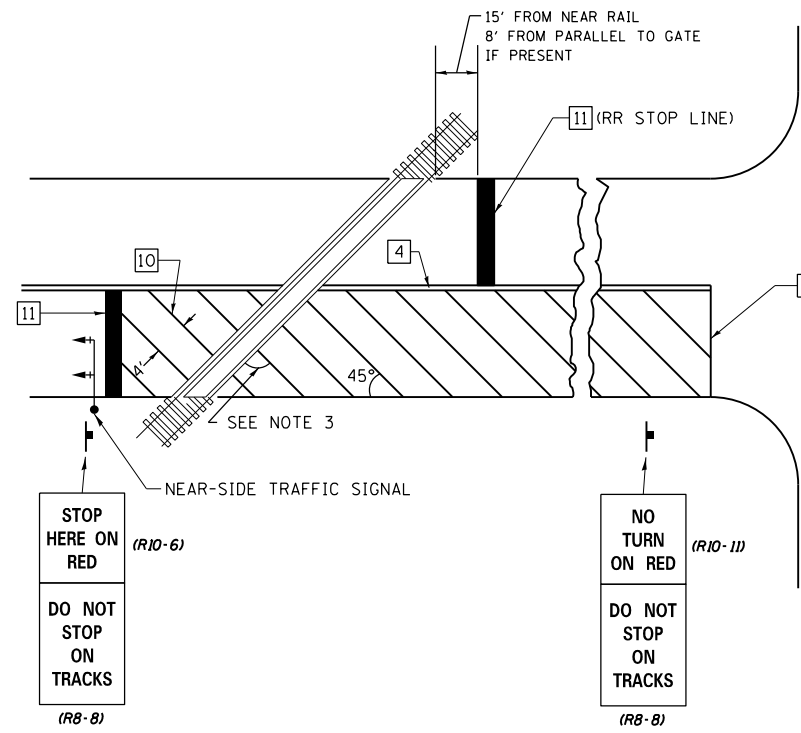
PAVEMENT MARKING LEGEND



RAILROAD CROSSING WITH INTERCONNECT ONLY



RAILROAD CROSSING WITH INTERCONNECT AND PRE-SIGNALS



GENERAL NOTES

- SUPPLEMENTAL PAVEMENT MARKINGS TO BE INSTALLED ONLY ON APPROACHES TO INTERSECTIONS CONTROLLED BY TRAFFIC SIGNALS WHICH ARE INTERCONNECTED WITH THE RAILROAD WARNING SIGNALS.
- EXTEND PAVEMENT MARKINGS TO THE INTERSECTION ONLY WHERE NEAR-SIDE TRAFFIC SIGNALS ARE USED.
- WHERE THE ANGLE BETWEEN THE DIAGONAL PAVEMENT MARKINGS AND THE TRACK WOULD BE LESS THAN 20°, THE PAVEMENT MARKINGS SHOULD BE PLACED IN THE OPPOSITE DIRECTION FROM THAT SHOWN.

SUPPLEMENTAL PAVEMENT MARKING TREATMENT FOR RAILROAD-HIGHWAY GRADE CROSSING

NOT TO SCALE

Note: All dimensions are in INCHES (millimeters) unless otherwise shown.

FILE NAME =	USER NAME = steffennk	DESIGNED -	REVISED -
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		DATE -	REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKING AND RAISED REFLECTIVE PAVEMENT MARKERS  
(RURAL & URBAN APPLICATIONS)

SCALE: N/A SHEET NO. 4 OF 4 SHEETS STA. TO STA.

• D7 BRIDGE REPAIRS 2017-1

DISTRICT 7 DETAIL NO. 7800001

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
327	•	CLAY	25	25
CONTRACT NO. 74707			ILLINOIS FED. AID PROJECT	