

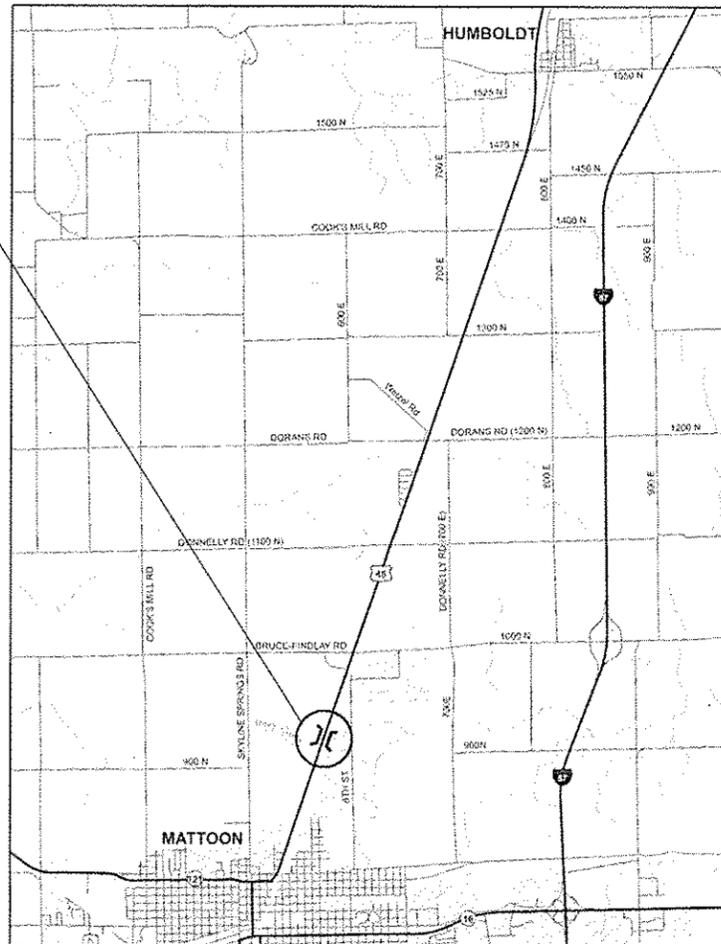
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

**PROPOSED  
HIGHWAY PLANS**

FAP ROUTE 824 (U.S. 45)  
SECTION D7 BRIDGE REPAIRS 2016-3

BRIDGE DECK REPAIR  
COLES COUNTY

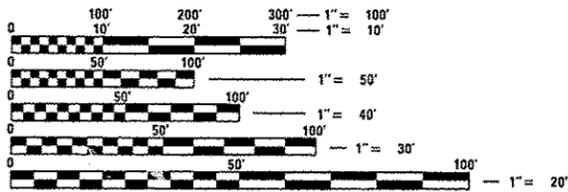
C-97-076-14



015-0024

FOR INDEX OF SHEETS, SEE SHEET NO. 2

ADT = 3800 (2013)



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: JEFF DAVISON

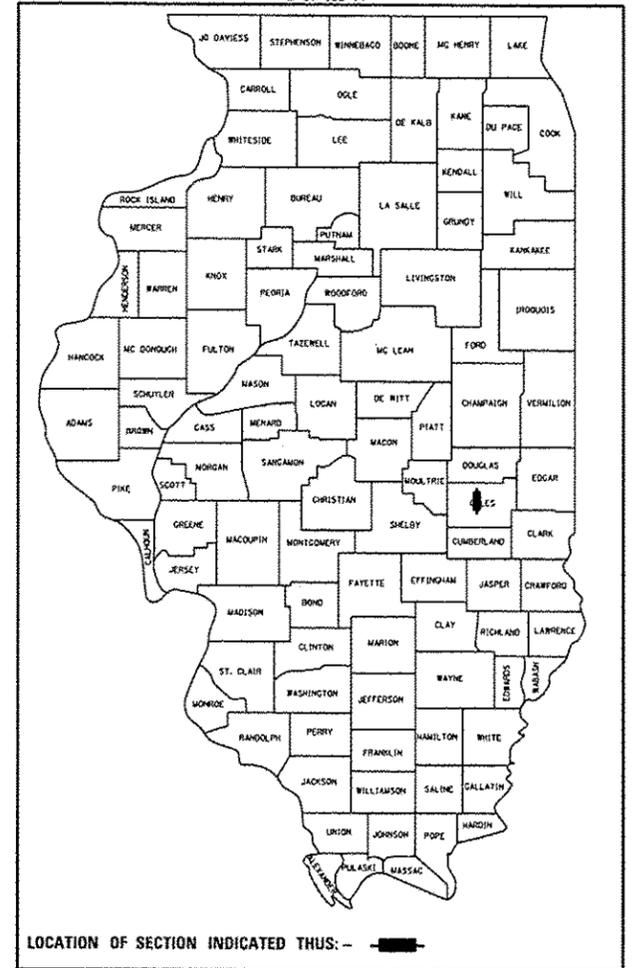
CONTRACT NO. 74673

GROSS LENGTH = 0.00 FT. = 0.00 MILE  
NET LENGTH = 0.00 FT. = 0.00 MILE

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
824		COLES	15	1
		ILLINOIS	CONTRACT NO. 74673	

\*D7 BRIDGE REPAIRS 2016-3

D-97-033-14



STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

SUBMITTED October 29 2015  
Roger D. [Signature]  
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER

Dec 4 2015  
John D. Baranzelli PE  
ENGINEER OF DESIGN AND ENVIRONMENT

Dec 4 2015  
Omer Osman PE  
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

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OF THE STATE OF ILLINOIS

INDEX OF SHEETS

SHEET NO.	ITEM
1	COVER SHEET
2	INDEX OF SHEETS AND GENERAL NOTES
3	SUMMARY OF QUANTITIES
4-5	MARKED ROUTE DETOUR SHEETS
6-15	STRUCTURE REPAIR SHEETS

THE FOLLOWING STANDARDS ARE A PART OF THESE PLANS AND ARE INCLUDED AFTER SHEET NO. 15:

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
701001-02	OFF-ROAD OPERATIONS, 2L2W, 15' MINIMUM AWAY FROM PAVEMENT EDGE
701011-04	OFF-ROAD MOVING OPERATIONS, 2L, 2W, DAY ONLY
701006-05	OFF-ROAD OPERATIONS, 2L2W, 15' AWAY TO EDGE OF PAVEMENT
701201-04	LANE CLOSURE, 2L2W, DAY ONLY
701311-03	LANE CLOSURE, 2L, 2W, DAY ONLY
701901-04	TRAFFIC CONTROL DEVICES
780001-05	TYPICAL PAVEMENT MARKINGS
BLR 21-9	TYPICAL APPLICATION OF TREFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS

GENERAL NOTES

THIS SECTION SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE PLANS; THE "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" ADOPTED JANUARY 1, 2012; AND THE SPECIAL PROVISIONS INCLUDED IN THE PROPOSAL.

THIS PROJECT IS LOCATED AT STRUCTURE NUMBER 015-0024. STRUCTURE NUMBER 015-0024 IS LOCATED 1 MILE NORTH OF MATTOON AND CARRIES US ROUTE 45 OVER RILEY CREEK IN COLES COUNTY. THE WORK INCLUDED IN SECTION 07 BRIDGE REPAIRS 2016-3 CONSISTS OF TRAFFIC CONTROL, EXPANSION JOINT REPLACEMENT, A NEW CONCRETE WEARING SURFACE, PAVEMENT MARKING, AND ANY OTHER WORK NECESSARY TO COMPLETE THE SECTION.

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 CONTRACTOR MAY NEED TO DETACH OR REMOVE BRIDGE RAIL AND/OR GUARDRAIL TERMINAL SECTIONS TO COMPLETE CONCRETE REMOVAL AND TO CONSTRUCT THE NEW EXPANSION JOINTS. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR DETACHING, REMOVING, AND REATTACHING ANY BRIDGE RAIL AND/OR GUARDRAIL TO THE STRUCTURES. THIS WORK WILL BE CONSIDERED INCLUDED IN THE PAY ITEMS INVOLVED. THE CONTRACTOR MAY NEED TO REMOVE AND REINSTALL EXISTING NAME PLATES TO COMPLETE CONCRETE REMOVAL AND TO CONSTRUCT THE NEW EXPANSION JOINTS. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR REMOVING AND REINSTALLING ANY NAME PLATES. THIS WORK WILL BE CONSIDERED INCLUDED IN THE PAY ITEMS INVOLVED.

PAVEMENT MARKING SHALL BE APPLIED IN ACCORDANCE WITH SECTION 780 OF THE STANDARD SPECIFICATIONS.

THE TOTAL QUANTITY OF PAINT PAVEMENT MARKING-LINE 4" CONSISTS OF 267 FEET OF WHITE AND 33 FEET OF YELLOW.

IN ADDITION TO THE REQUIREMENTS FOR PORTABLE CHANGEABLE MESSAGE SIGNS IN ARTICLE 701.15(I), A LAPTOP COMPUTER TO CONTROL THE MESSAGE SIGNS SHALL ALSO BE SUPPLIED BY THE CONTRACTOR.

\*07 BRIDGE REPAIRS 2016-3

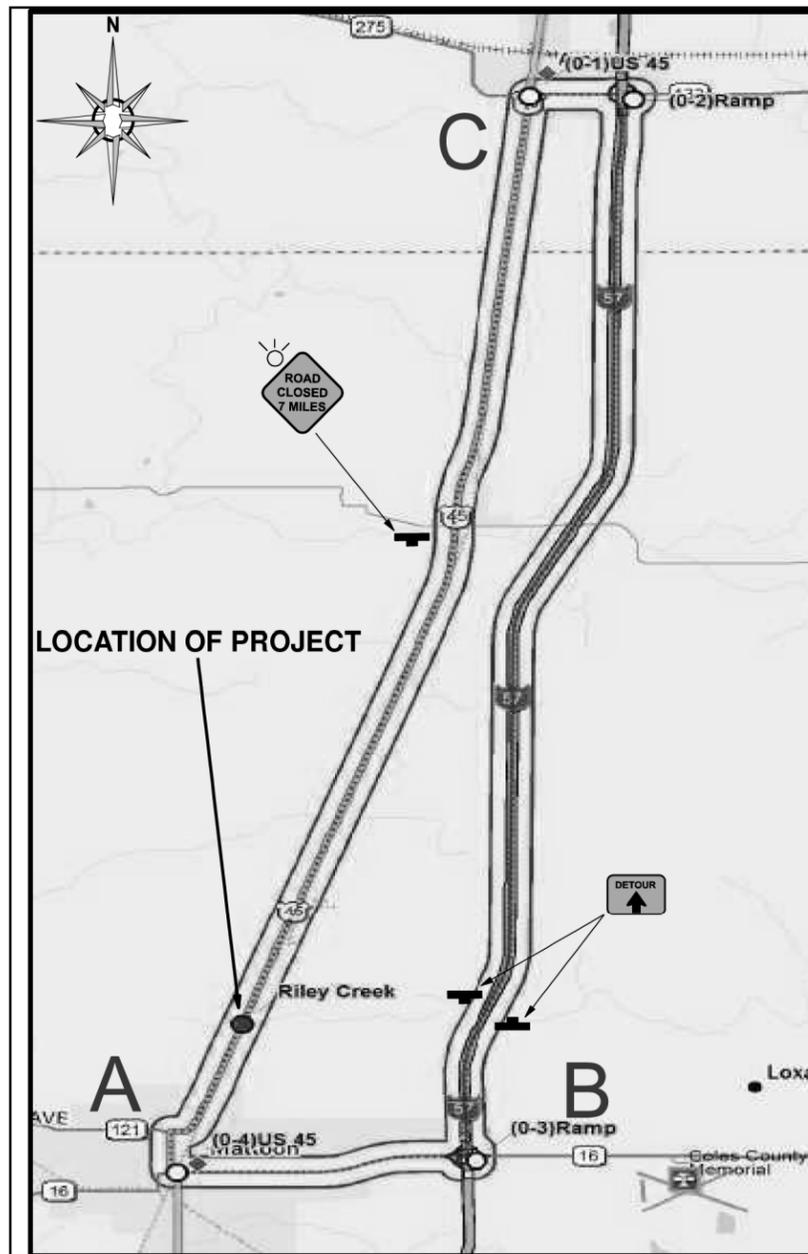
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path\\L284EBID\INTEG\Illinois.gov\PI\DOT\Documents\DOT Offices\District 7\Projects\7467\BRIDGE\CD\0774673-sht-index.dwg	DRAMA	CHECKED -	REVISED -			824	*	COLES	15	2	
Default	PLOT SCALE = 1/8" = 1' / in.	DATE -	REVISED -			CONTRACT NO. 74673		ILLINOIS FED. AID PROJECT			
	PLOT DATE = 10/30/2015	DATE -	REVISED -			SCALE: NA	SHEET 1 OF 1 SHEETS	STA.	TO STA.		

SUMMARY OF QUANTITIES			TOTAL QUANTITIES	CONSTRUCTION TYPE CODE		
CODE NO	ITEM	UNIT		SN 015-0024 100% STATE 0014		
44000160	HOT-MIX ASPHALT SURFACE REMOVAL, 2 3/4"	SO YD	195	195		
50102400	CONCRETE REMOVAL	CU YD	16.2	16.2		
50300100	FLOOR DRAINS	EACH	8	8		
50300255	CONCRETE SUPERSTRUCTURE	CU YD	21.4	21.4		
50300260	BRIDGE DECK GROOVING	SO YD	162	162		
50300300	PROTECTIVE COAT	SO YD	28	28		
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	1320	1320		
50800530	MECHANICAL SPLICERS	EACH	94	94		
67000500	ENGINEER'S FIELD OFFICE, TYPE B	CAL MO	3	3		
67100100	MOBILIZATION	L SUM	1	1		
70100450	TRAFFIC CONTROL AND PROTECTION, STANDARD 701201	L SUM	1	1		
70300220	TEMPORARY PAVEMENT MARKING - LINE 4"	FOOT	300	300		
* 78001110	PAINT PAVEMENT MARKING - LINE 4"	FOOT	300	300		

SUMMARY OF QUANTITIES			TOTAL QUANTITIES	CONSTRUCTION TYPE CODE		
CODE NO	ITEM	UNIT		SN 015-0024 100% STATE 0014		
X0327271	TRAFFIC CONTROL FOR ROAD CLOSURE	EACH	1	1		
X7015005	CHANGEABLE MESSAGE SIGN	CAL DA	28	28		
Z0012114	BRIDGE DECK FLY ASH OR GGBF SLAG CONCRETE OVERLAY, 3 1/4"	SQ YD	173	173		
Z0012130	BRIDGE DECK SCARIFICATION 3/4"	SQ YD	168	168		
<del>Z0015802</del>	<del>PLUG EXISTING DECK DRAINS</del>	<del>EACH</del>	<del>4</del>	<del>4</del>		
Z0016001	DECK SLAB REPAIR (FULL DEPTH, TYPE I)	SO YD	3	3		
Z0016002	DECK SLAB REPAIR (FULL DEPTH, TYPE II)	SO YD	8	8		
Z0016702	DETOUR SIGNING	LSUM	1	1		

\* SPECIALTY ITEMS

FILE NAME =	USER NAME = staffennk	DESIGNED -	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>SUMMARY OF QUANTITIES</b>	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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PLOT SCALE = 100.0000' / 1"	CHECKED -	REVISED -	CONTRACT NO. 74673							
PLOT DATE = 10/30/2015	DATE -	REVISED -	ILLINOIS FED. AID PROJECT							



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### SIGN LEGEND

 W20-3-48	 W20-3-48	 M6-1R(O)-3018	 M4-8a(O)-3024
 W20-3-48	 M4-8-2412	 M5-1R(O)-3018	 M1-4-36
 W20-3-48	 M6-3(O)-3018	 M6-1L(O)-3018	 M3-1-3015
 W20-2-48	 M6-3(O)-3018	 M5-1L(O)-3018	 M3-3-3015

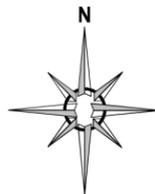
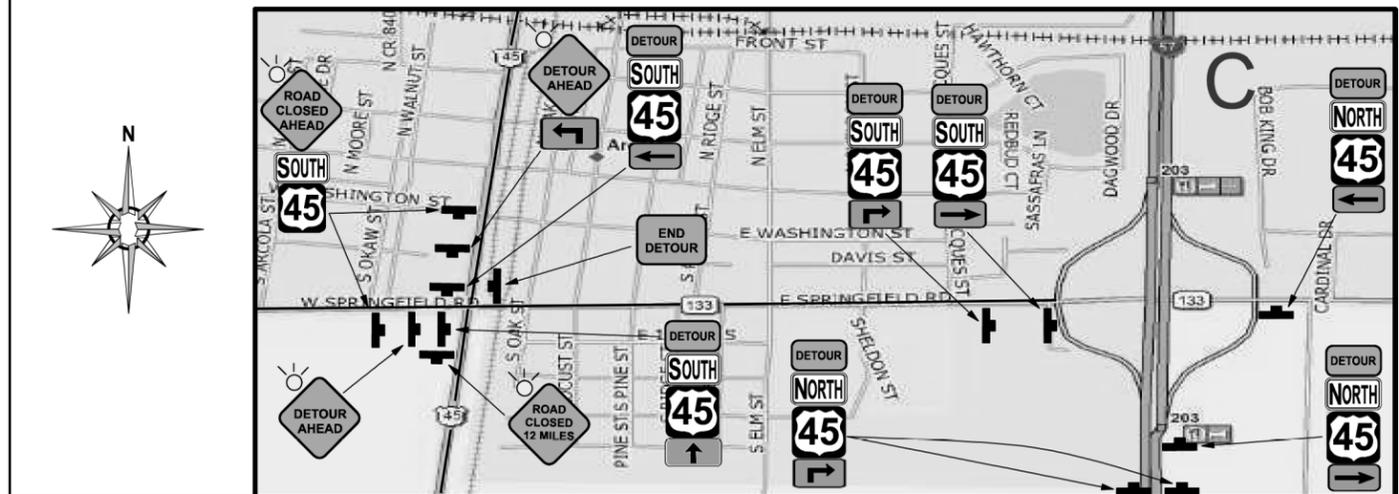
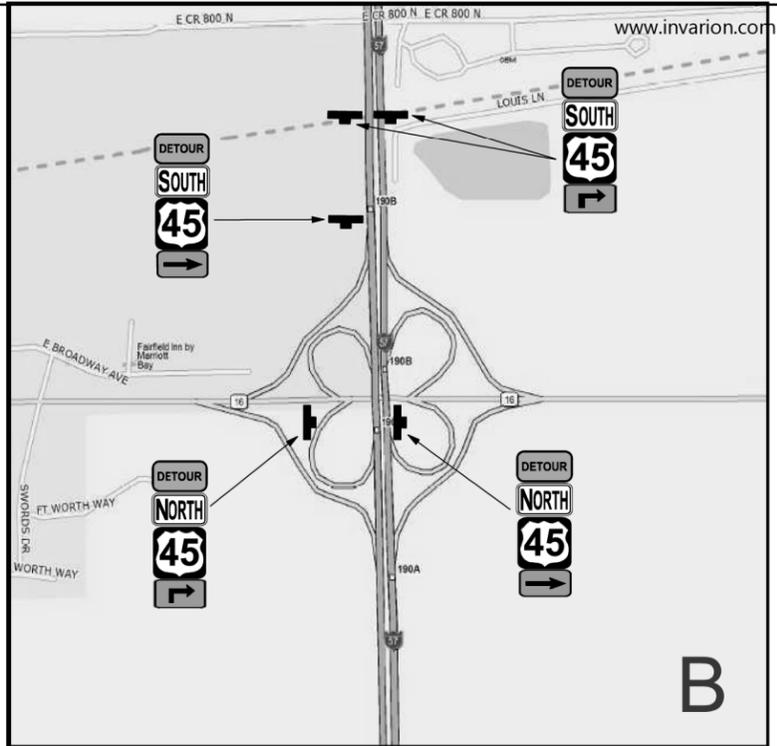
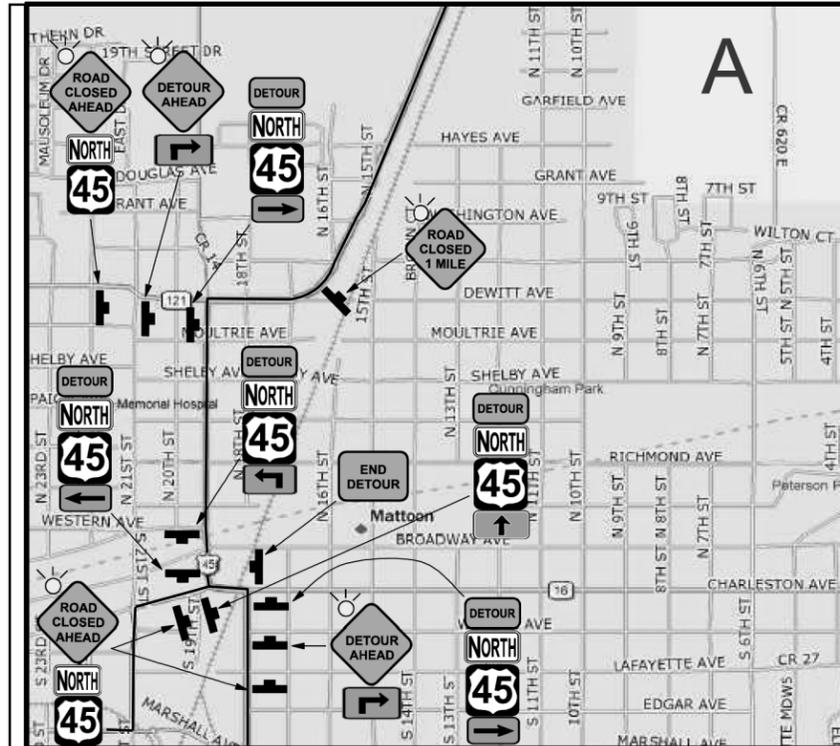
CN 74673  
SHEET 1 OF 2

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Default	PLOT SCALE = 100.0000' / in.	CHECKED -	REVISED -
	PLOT DATE = 10/30/2015	DATE -	REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

MARKED ROUTE DETOUR			
SCALE: NA	SHEET 1	OF 2 SHEETS	STA. TO STA.

*D7 BRIDGE REPAIRS 2016-3				
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
824	.	COLES	15	4
CONTRACT NO. 74673				
ILLINOIS FED. AID PROJECT				



CN 74673  
SHEET 2 OF 2

FILE NAME =	USER NAME = steffenmk	DESIGNED -	REVISED -
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	DATE = 10/30/2015	DATE -	REVISED -

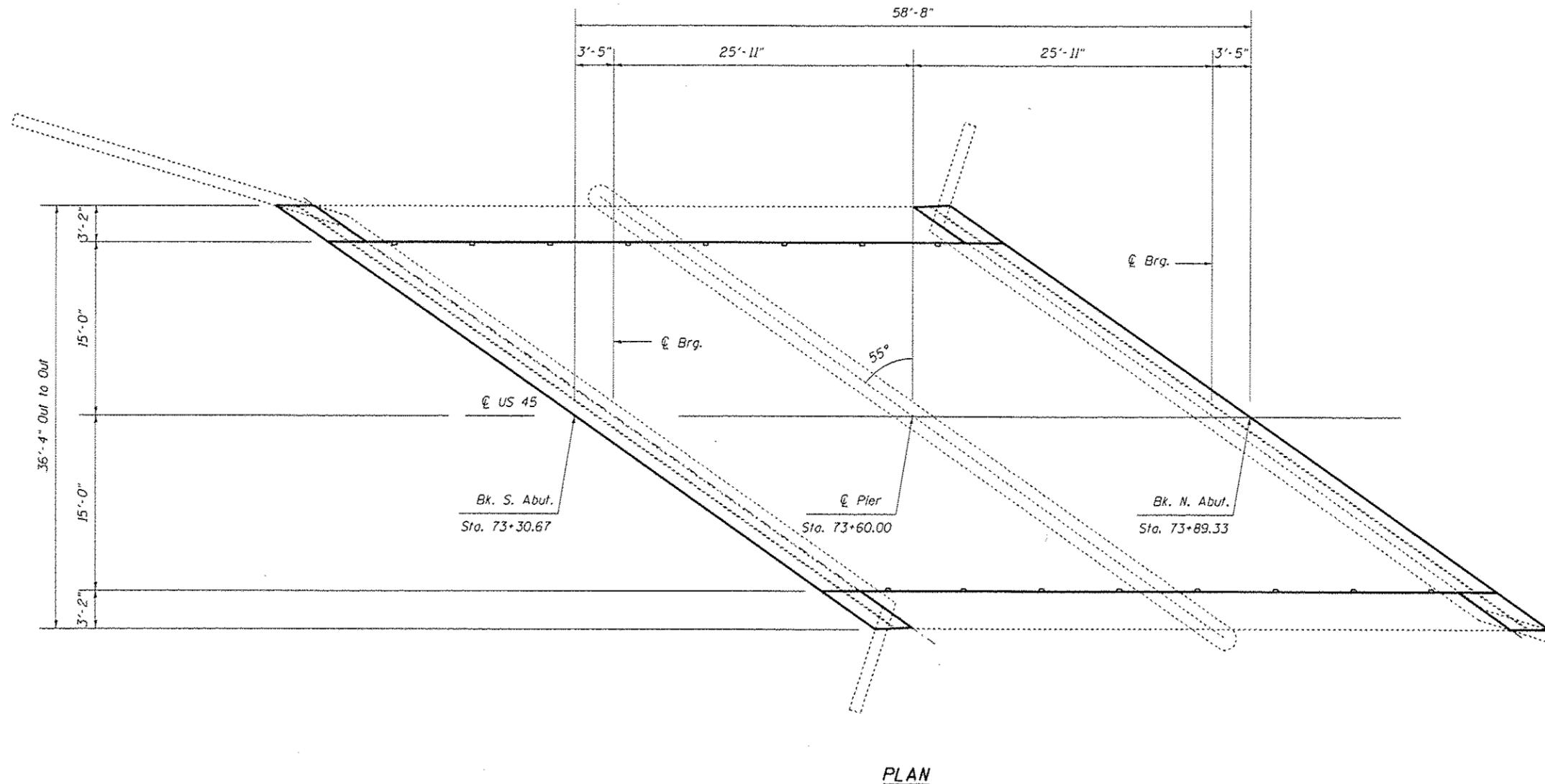
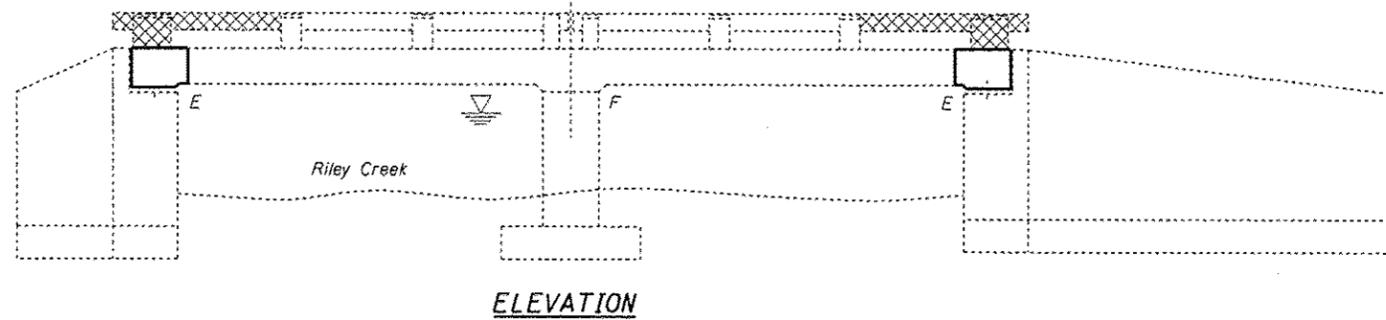
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

<b>MARKED ROUTE DETOUR</b>	
SCALE: NA	SHEET 2 OF 2 SHEETS STA. TO STA.

•D7 BRIDGE REPAIRS 2016-3

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
824	•	COLES	15	5
CONTRACT NO. 74673				
ILLINOIS FED. AID PROJECT				

The existing two span continuous reinforced concrete slab structure was constructed in 1959 as section 198R at Sta. 73+60. SN. 015-0024 carries FAP 824 (US 45) over Riley Creek. The proposed project consists of bridge deck patching, new concrete wearing surface and expansion joint elimination. The roadway will be closed to traffic during construction.



**DESIGN STRESSES (Existing)**  
 $f_c = 1400$  psi (Super.)  
 $f_c = 1000$  psi (Sub.)  
 $f_s = 20,000$  psi (Reinf.)  
 $v = 75$  psi (footings)  
 Max. Footing Pressure = 2500 psi  
 $n = 10$

**DESIGN STRESSES (Proposed)**  
 $f'_c = 4000$  psi  
 $f_y = 60,000$  psi (Reinf.)



*David Carl Puzey* 11/19/15  
 Expires 11/30/16

FILE NAME =	USER NAME =	DESIGNED -	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>GENERAL PLAN &amp; ELEVATION SN. 015-0024</b>	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
						824		COLES	15	6	
						CONTRACT NO. 74673		ILLINOIS FED. AID PROJECT			
						SCALE: NA	SHEET 1	OF 10	SHEETS	STA.	TO STA.

**GENERAL NOTES**

Plan dimensions and details relative to existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering 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.

Reinforcement Bars designated (E) shall be epoxy coated.

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 operations shall be replaced using an approved bar splicer or anchorage system. Cost included in CONCRETE REMOVAL.

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

Removal and re-erection of the steel rail may be necessary for construction of the expansion joints. The existing rail posts shall be reused. All Existing anchors that are within the concrete removal area shall be replaced with new anchors that are cast-in-place or drilled and set according to Article 509.06 of the Standard Specifications. This work and all materials shall be included Concrete Removal.

The Name Plate is currently attached to a section of the concrete railing that will be removed. The Name Plate shall be relocated to a section of the railing that will remain in place. This work and all materials shall be included in the price of Concrete Removal.

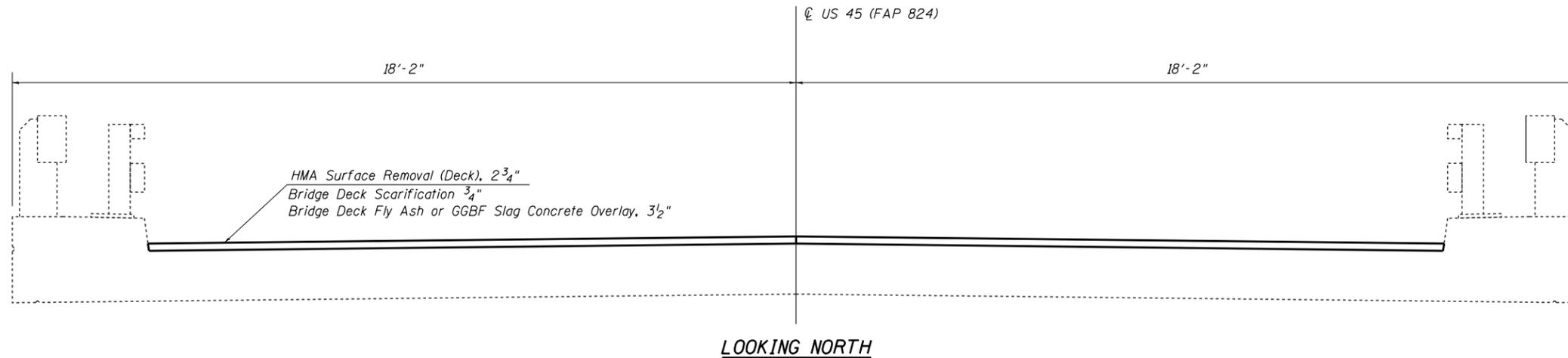
It is anticipated that a full depth deck slab repair will be necessary at every location of floor drains to be replaced. Removal and disposal of the existing floor drains shall be included in the contract unit price for Deck Slab Repair (Full Depth, Type II).

Synthetic Fibers shall be added to the Bridge Deck Fly Ash or GGBF Slag Concrete Overlay. See special provisions.

Protective Coat shall not be applied to the Bridge Deck Fly Ash or GGBF Slag Concrete Overlay.

**TOTAL BILL OF MATERIALS**

ITEM	UNIT	QUANTITY
Concrete Removal	Cu. Yd.	16.2
Concrete Superstructure	Cu. Yd.	21.4
Reinforcement Bars, Epoxy Coated	Pound	1320
Floor Drains	Each	8
Protective Coat	Sq Yd	28
HMA Surface Removal, 2 3/4"	Sq Yd	195
Bridge Deck Scarification, 3/4"	Sq Yd	168
Bridge Deck Fly Ash or GGBF Slag Concrete Overlay, 3 1/4"	Sq Yd	173
Bridge Deck Grooving	Sq Yd	162
Mechanical Splicers	Each	94
Deck Slab Repair (Full Depth, Type I)	Sq Yd	3
Deck Slab Repair (Full Depth, Type II)	Sq Yd	8



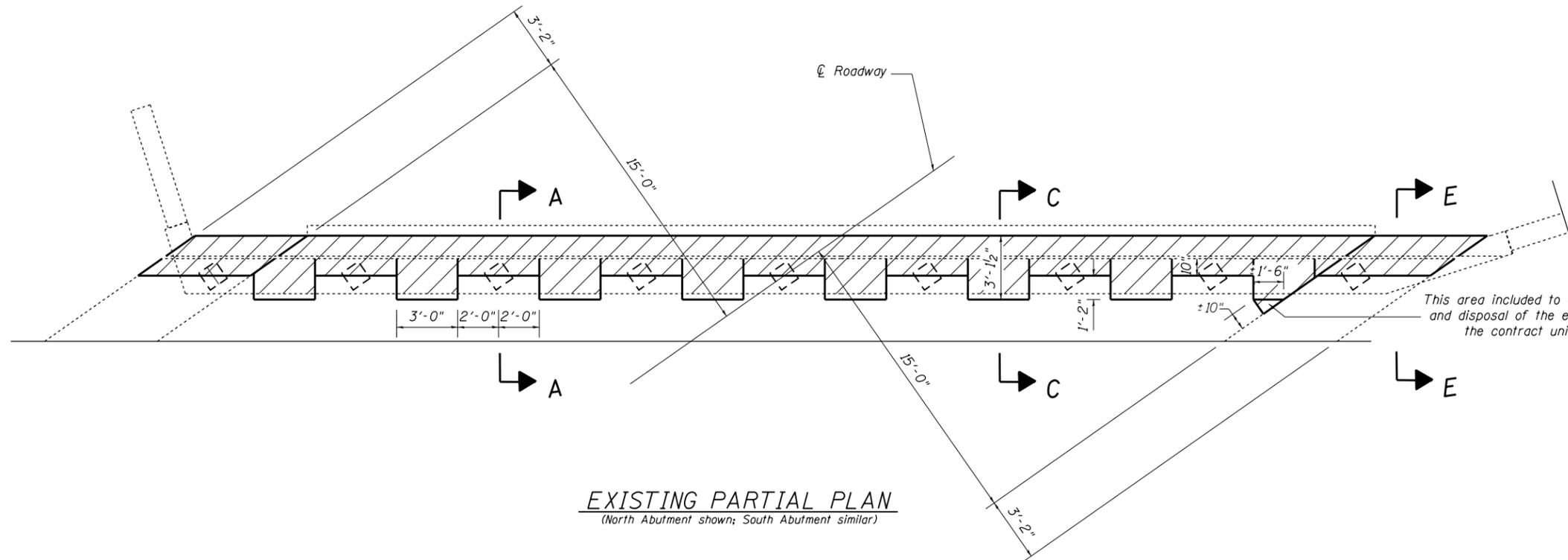
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	PLOT DATE = 10/30/2015	DATE -	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**GENERAL NOTES & BILL OF MATERIAL  
SN. 015-0024**

SCALE: NA SHEET 2 OF 10 SHEETS STA. TO STA.

• D7 BRIDGE REPAIRS 2016-3				
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
824	•	COLES	15	7
			CONTRACT NO. 74673	
ILLINOIS FED. AID PROJECT				



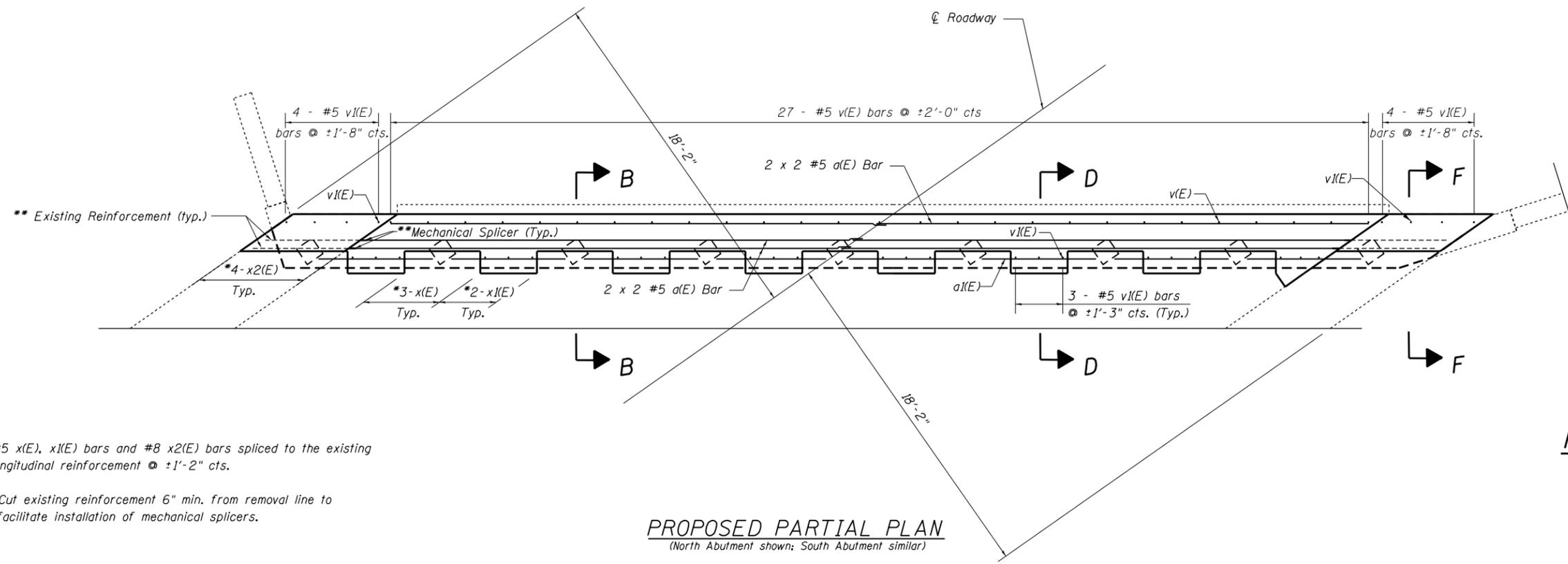
**EXISTING PARTIAL PLAN**  
(North Abutment shown; South Abutment similar)

This area included to eliminate existing floor Drain. Removal and disposal of the existing floor drain shall be included in the contract unit price for CONCRETE REMOVAL

Hatching indicates removal.

For section A-A and B-B see sheet 4 of 10.  
For section C-C, D-D, E-E and F-F see sheet 5 of 10.

- Existing Reinforcement
- Proposed Reinforcement



**PROPOSED PARTIAL PLAN**  
(North Abutment shown; South Abutment similar)

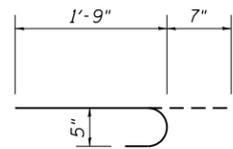
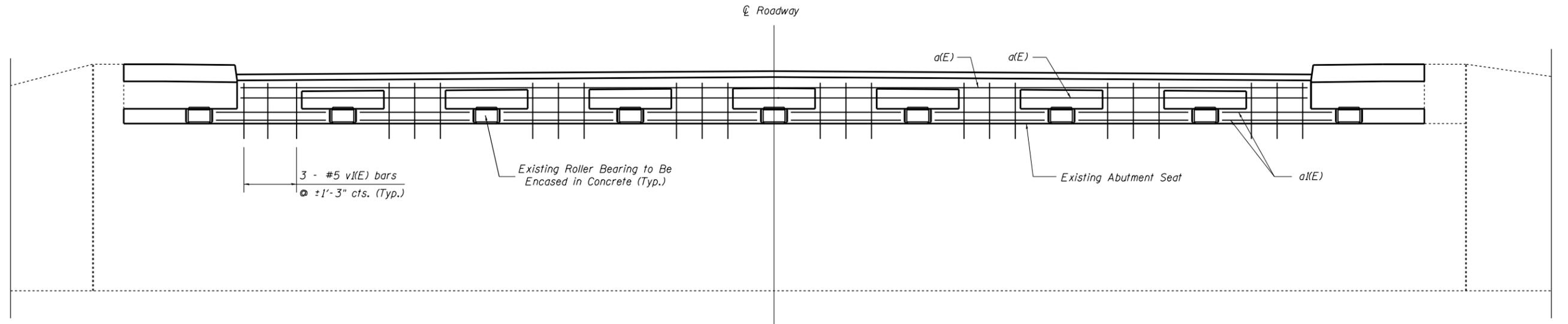
\* #5 x(E), x(E) bars and #8 x2(E) bars spliced to the existing longitudinal reinforcement @ ±1'-2" cts.

\*\* Cut existing reinforcement 6" min. from removal line to facilitate installation of mechanical splicers.

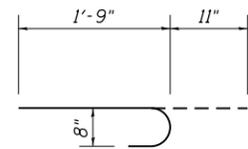
**Minimum Bar Lap**

- #4 Bar = 2'-5"
- #5 Bar = 3'-0"

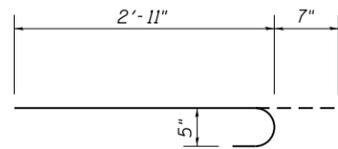
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Default	PLOT SCALE = 40.0000' / in.	CHECKED - JLD	REVISED -					824	.	COLES	15	8
	PLOT DATE = 10/30/2015	DATE - 6/15/15	REVISED -		SCALE: NA SHEET 3 OF 10 SHEETS STA. TO STA.			CONTRACT NO. 74673		ILLINOIS FED. AID PROJECT		
• D7 BRIDGE REPAIRS 2016-3												



**Bar x(E)**



**Bar x2(E)**



**Bar x1(E)**

**SECTION THRU END OF SLAB**  
(West Abutment shown; East Abutment similar)

○ Existing Reinforcement  
● Proposed Reinforcement

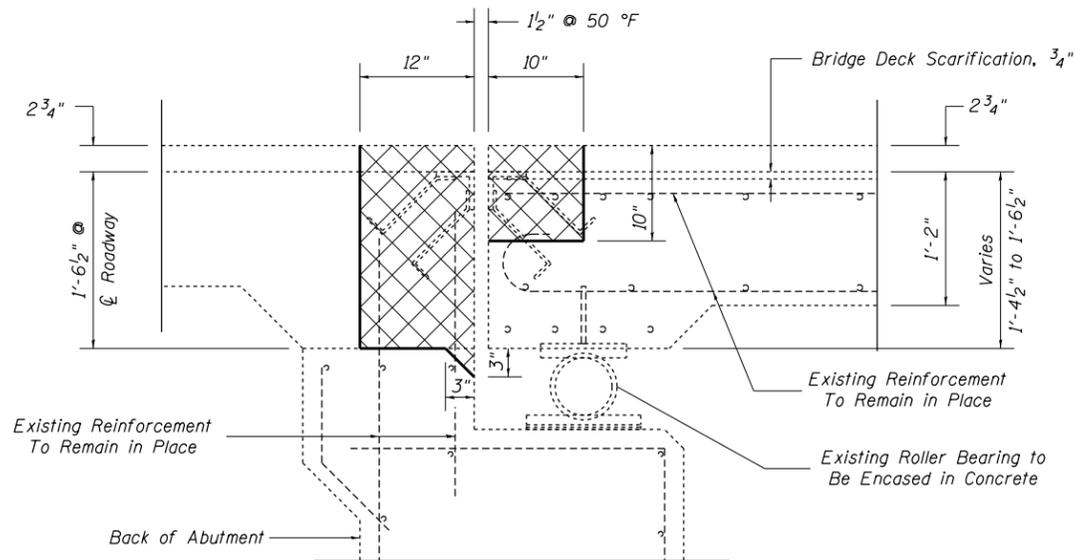
Epoxy Grout

Concrete Removal

**BILL OF MATERIAL**

PER ABUTMENT

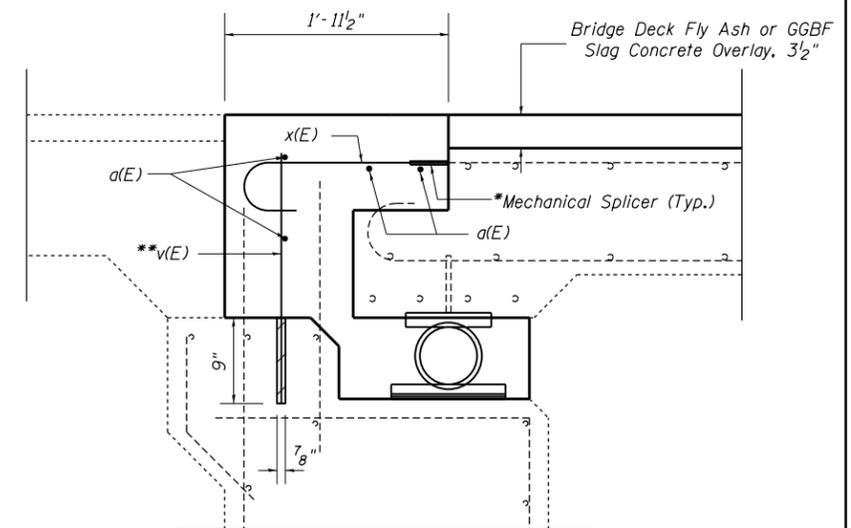
BAR	NUMBER OF BARS	TOTAL	SIZE	LENGTH	SHAPE
a(E)	8	8	#5	28'-9"	—
a1(E)	16	16	#5	6'-0"	—
v(E)	27	27	#5	2'-2"	—
v1(E)	32	32	#5	2'-9"	—
x(E)	21	21	#5	2'-4"	⌋
x1(E)	14	14	#5	3'-6"	⌋
x2(E)	8	8	#8	2'-8"	⌋
REINFORCEMENT BARS (EPOXY COATED)				POUND	660
CONCRETE REMOVAL				CU YD	8.1
CONCRETE SUPERSTRUCTURE				CU YD	10.7



**SECTION A-A**  
(Dimensions at Rt. L's to end of deck)

**Minimum Bar Lap**

#4 Bar = 2'-5"  
#5 Bar = 3'-0"



**SECTION B-B**  
(Dimensions at Rt. L's to end of deck)

\* Cut existing reinforcement 6" min. from removal line to facilitate installation of mechanical splicers.

\*\* Epoxy grout #5 v(E) and v1(E) bars per Article 584 of the Standard Specifications. Cost included with the cost of REINFORCEMENT BARS, EPOXY COATED.

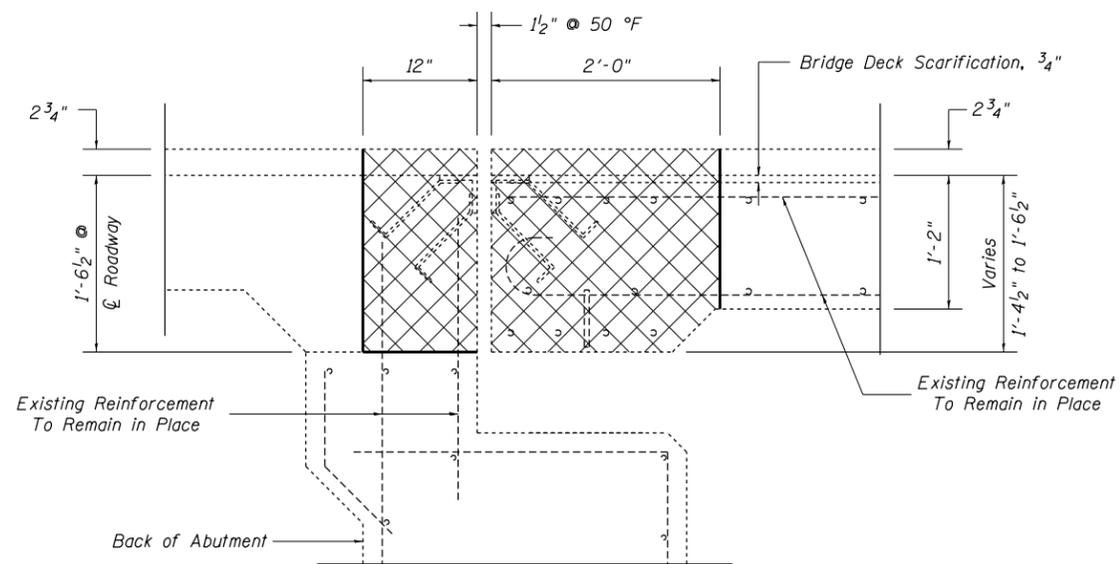
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Default	PLOT DATE = 10/30/2015	DATE - 6/15/15	REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

EXPANSION JOINT ELIMINATION DETAILS  
SN. 015-0024

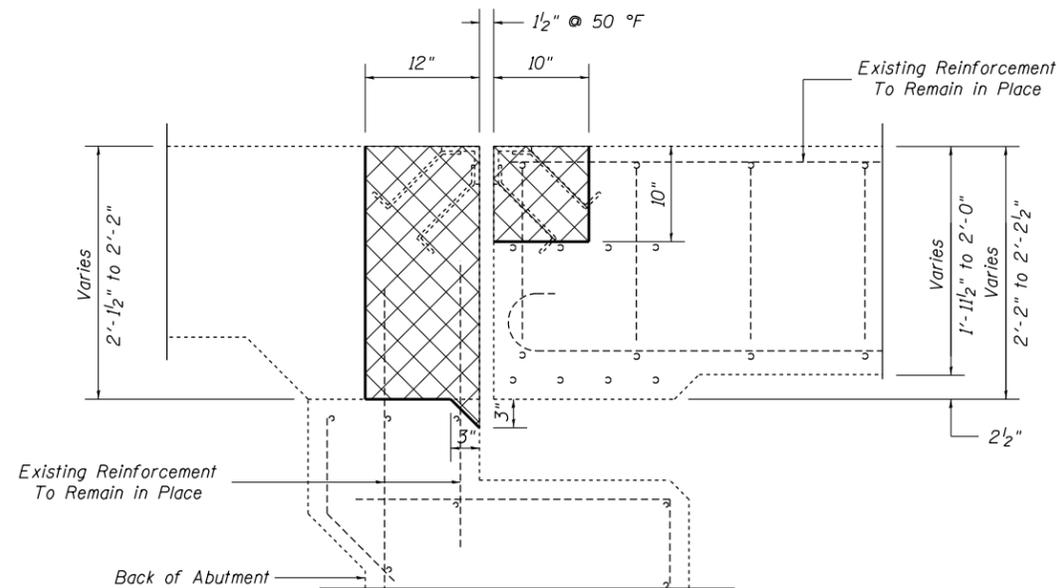
SCALE: NA SHEET 4 OF 10 SHEETS STA. TO STA.

• D7 BRIDGE REPAIRS 2016-3			
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS SHEET NO.
824	*	COLES	15 9
			CONTRACT NO. 74673
ILLINOIS FED. AID PROJECT			



**SECTION C-C**

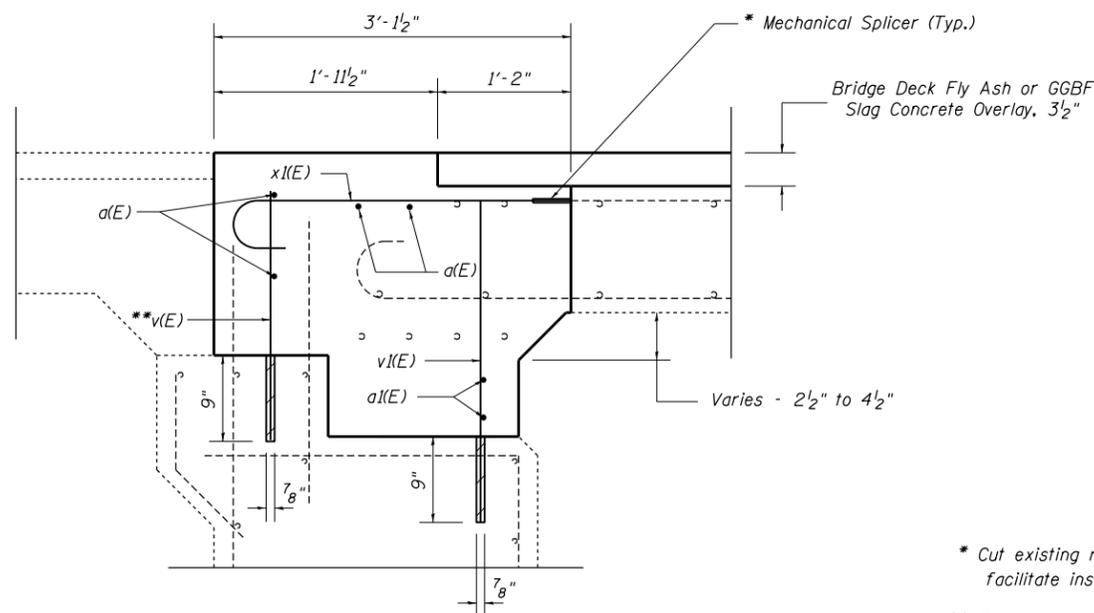
(Dimensions at Rt. L's to end of deck)



**SECTION E-E**

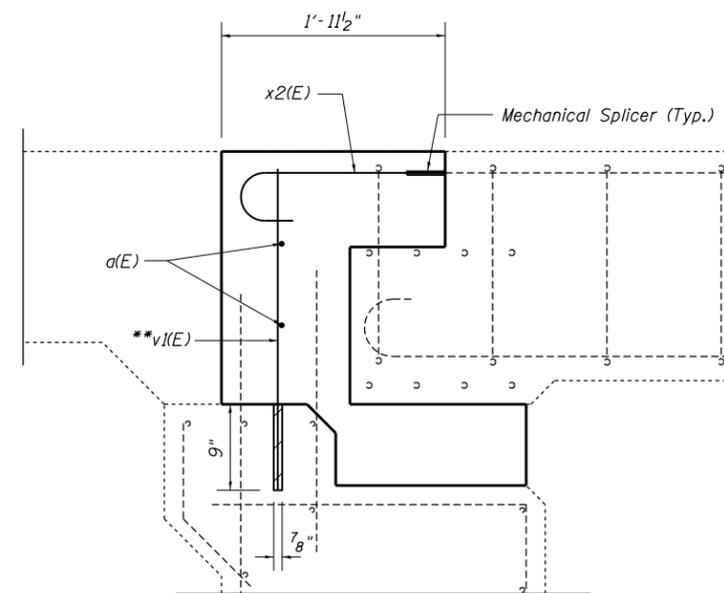
(Dimensions at Rt. L's to end of deck)

- Existing Reinforcement
- Proposed Reinforcement



**SECTION D-D**

(Dimensions at Rt. L's to end of deck)



**SECTION F-F**

(Dimensions at Rt. L's to end of deck)

\* Cut existing reinforcement 6" min. from removal line to facilitate installation of mechanical splicers.

\*\* Epoxy grout #5 v(E) and v(E) bars per Article 584 of the Standard Specifications. Cost included with the cost of REINFORCEMENT BARS, EPOXY COATED.

FILE NAME =	USER NAME = steffennk	DESIGNED - DFZ	REVISED -
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Default	PLOT DATE = 10/30/2015	DATE - 6/15/15	REVISED -

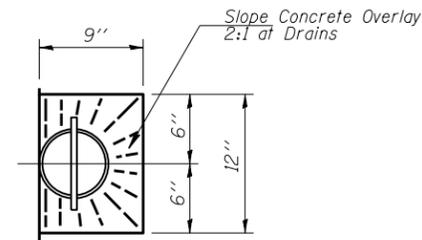
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**EXPANSION JOINT ELIMINATION DETAILS  
SN. 015-0024**

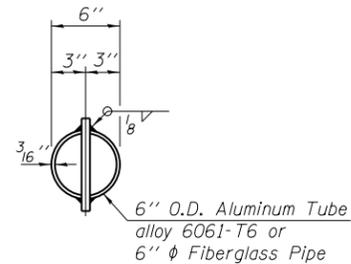
SCALE: NA SHEET 5 OF 10 SHEETS STA. TO STA.

• D7 BRIDGE REPAIRS 2016-3			
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS SHEET NO.
824	•	COLES	15 10
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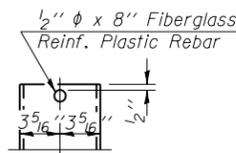




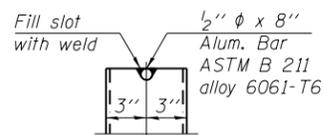
**TOP PLAN**



**TOP PLAN**  
(Showing Aluminum Tube)

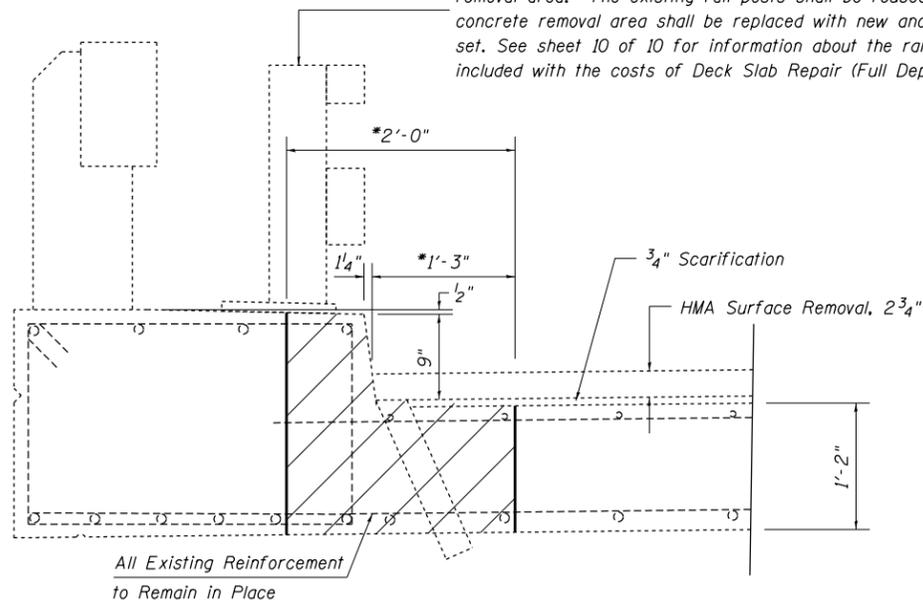


**FIBERGLASS PIPE**

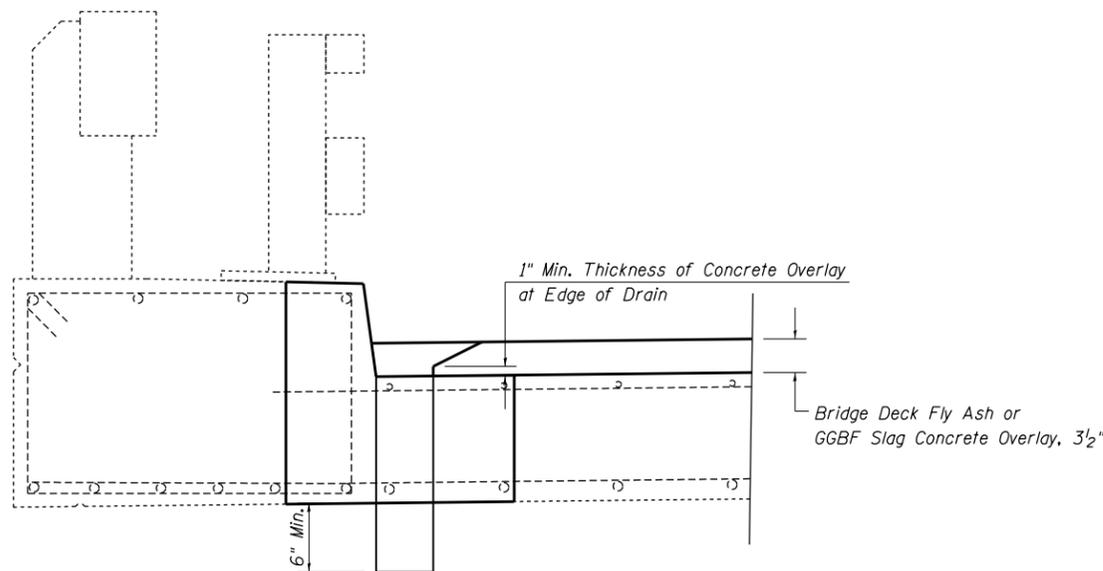


**ALUMINUM TUBE**

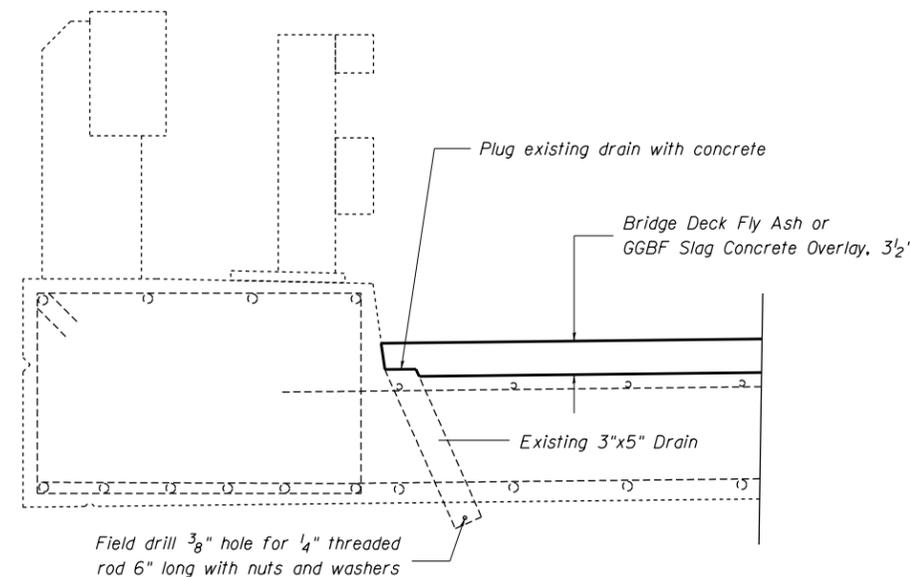
Removal and replacement of rail posts may be necessary depending on location of concrete removal area. The existing rail posts shall be reused. The existing anchors that are within the concrete removal area shall be replaced with new anchors that are cast-in-place or drilled and set. See sheet 10 of 10 for information about the railing. This work and all materials shall be included with the costs of Deck Slab Repair (Full Depth, Type II).



**SECTION THRU EXISTING FLOOR DRAINS**



**SECTION THRU PROPOSED FLOOR DRAINS**



**SECTION THRU PLUGGED FLOOR DRAINS**

Note: See "Total Bill of Materials" for structure quantities.

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 Society of Protective Coatings' Spec. SSPC-SPI prior to painting.

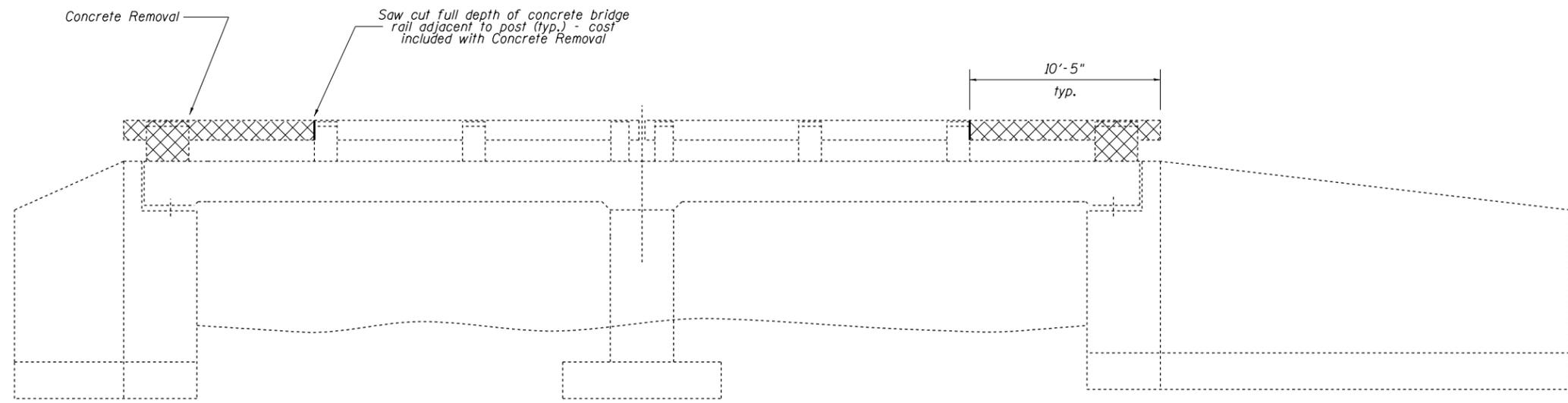
Fiberglass pipe shall conform to ASTM D 2996, with short-time rupture strength hoop tensile stress of 30,000 p.s.i. minimum. Galvanize clamping device according to AASHTO M 232. Cost of clamping device and galvanizing included with Floor Drains.

Hatching indicates removal. Cost included with Deck Slab Repair (Full Depth, Type II).

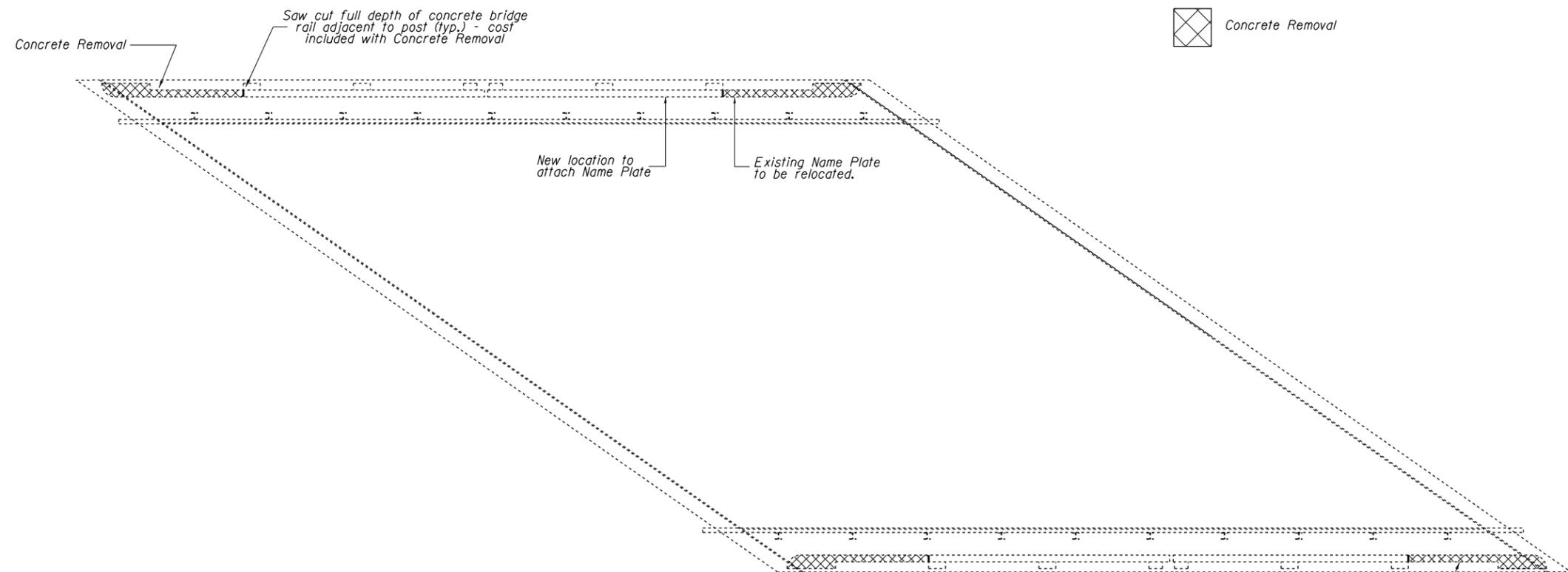
\* Concrete removal and replacement dimensions shall be determined by the Engineer based on the extent of deck deterioration at each drain.

For locations of drain replacements and deck drains to be plugged, see Sheets 6 of 10.

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Default	PLOT DATE = 10/30/2015	DATE - 6/15/15	REVISED -		ILLINOIS FED. AID PROJECT				
					CONTRACT NO. 74673				



**ELEVATION**



**PLAN**

Note: Existing concrete bridge rail to be saw cut and permanently removed to the edge of the second post from the end at each corner of the structure. Concrete Removal quantity for this work included with Concrete Removal for each abutment.

Removal and replacement of portions of steel bridge rail may be necessary. The existing rail posts shall be reused. See sheet 10 of 10 for information about the railing. This work shall be included with the costs of Concrete Removal.

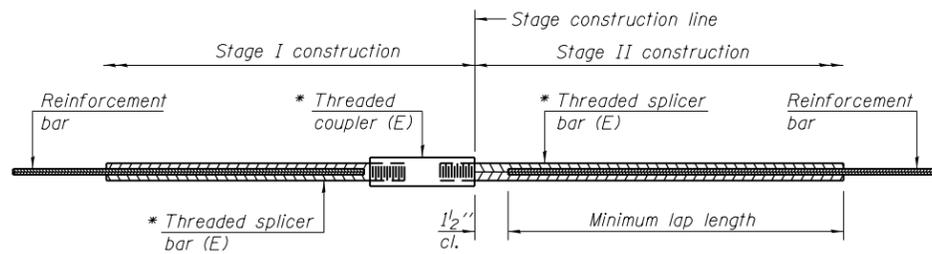
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**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**PERMANENT REMOVAL OF OLD CONCRETE BRIDGE RAIL  
SN. 015-0024**

SCALE: NA SHEET 8 OF 10 SHEETS STA. TO STA.

• D7 BRIDGE REPAIRS 2016-3			
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS
824	•	COLES	15
			SHEET NO. 13
			CONTRACT NO. 74673
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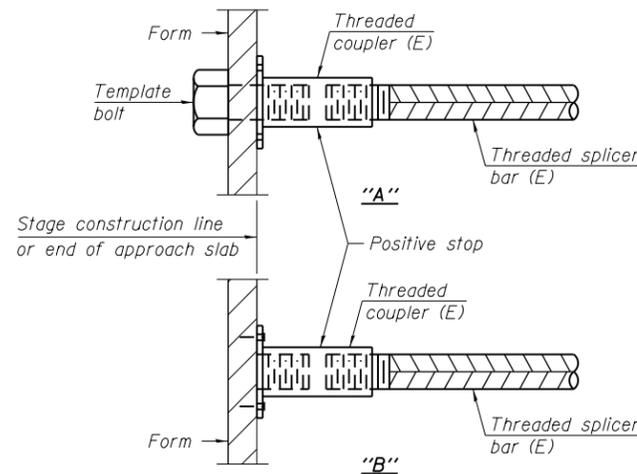


**STANDARD BAR SPLICER ASSEMBLY**

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

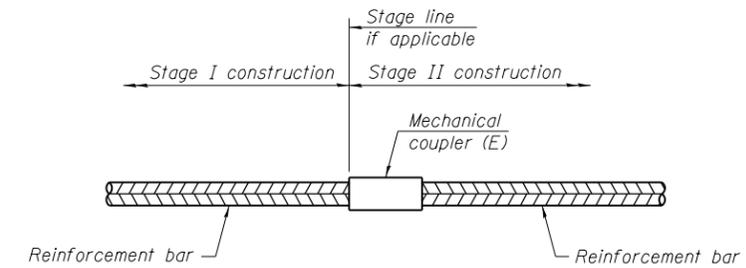
\* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Minimum lap length



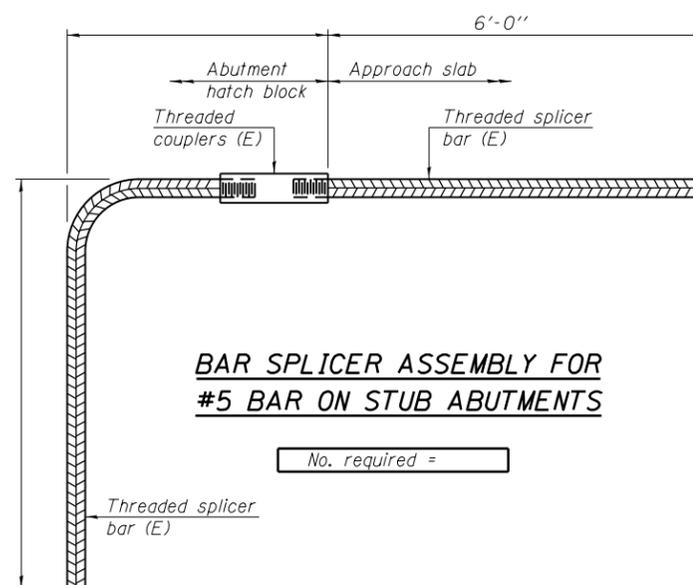
**INSTALLATION AND SETTING METHODS**

"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
Abutments	#5	78
Abutments	#8	16



**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

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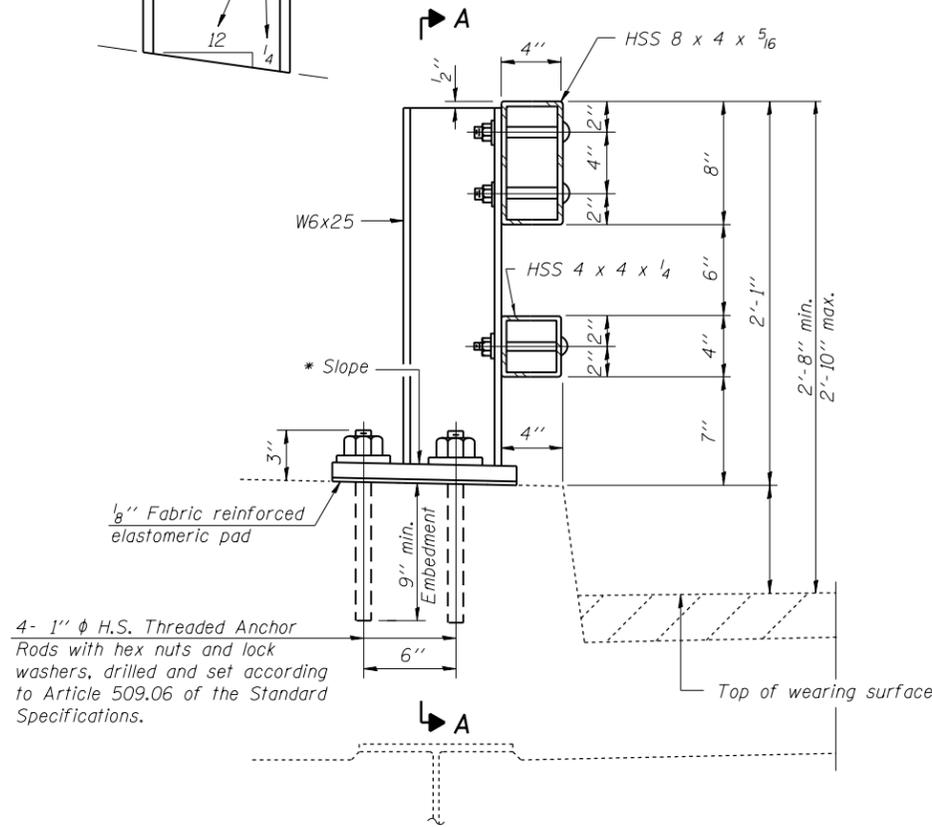
BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS  
 STRUCTURE NO.

SCALE: NA SHEET 9 OF 10 SHEETS STA. TO STA.

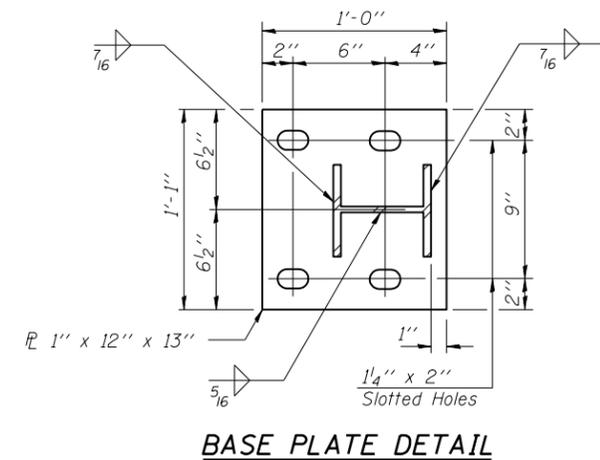
*D7 BRIDGE REPAIRS 2016-3			
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS
824	•	COLES	15 14
CONTRACT NO. 74673			
ILLINOIS FED. AID PROJECT			

# FOR INFORMATION ONLY

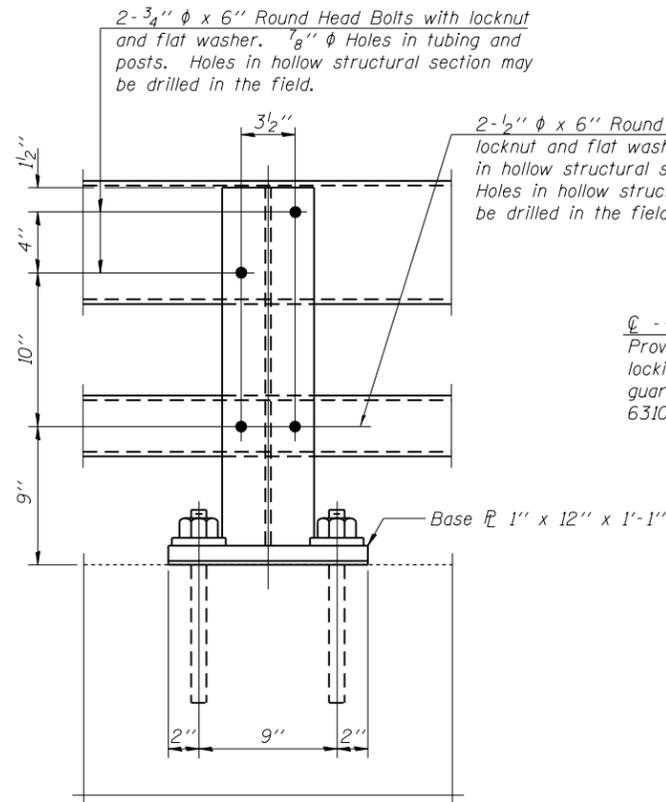
\* Cut bottom end of post to curb slope.



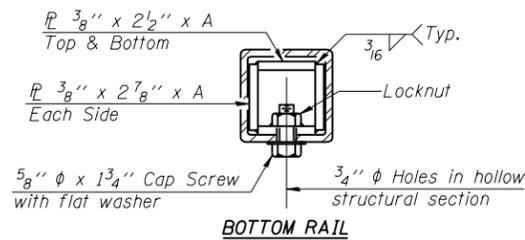
**SECTION AT RAIL POST**



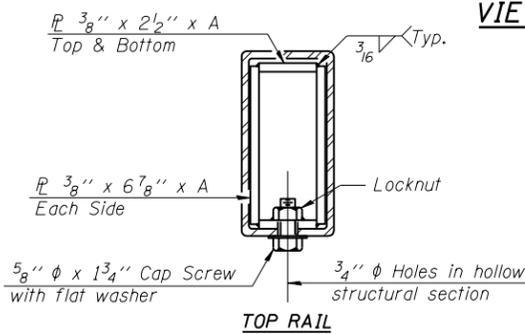
**BASE PLATE DETAIL**



**SECTION A-A**

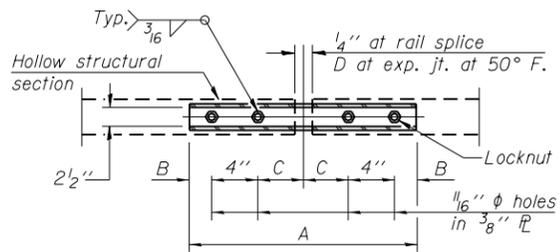


**BOTTOM RAIL**

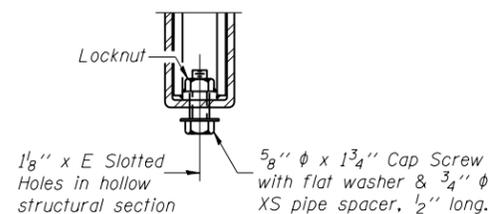


**TOP RAIL**

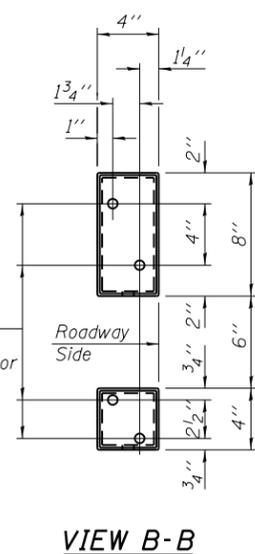
**SECTIONS AT RAIL SPLICE**



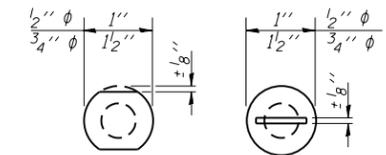
**PLAN-BOTT. SPLICE TYPICAL**



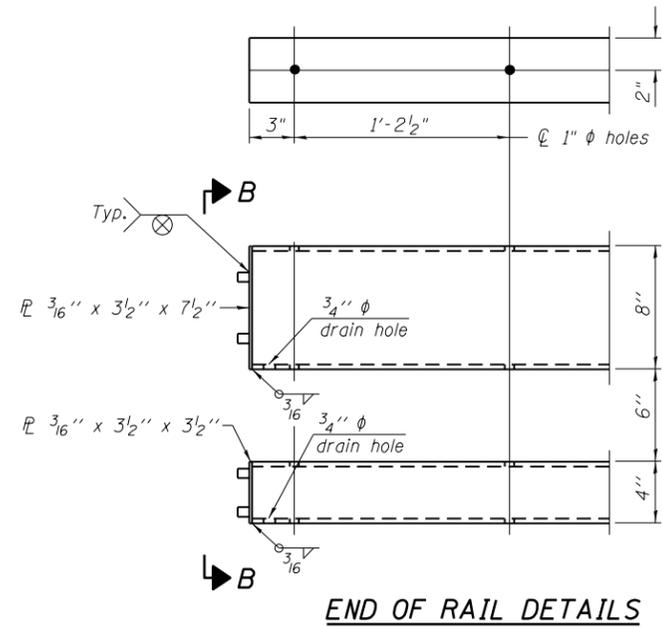
**RAIL SPLICE CONNECTION AT EXPANSION JT.**



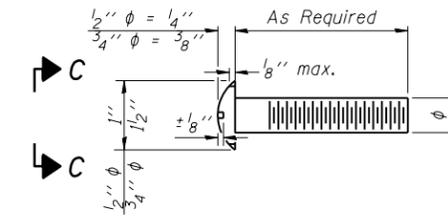
**VIEW B-B**



**VIEW C-C**



**END OF RAIL DETAILS**



**DETAIL OF 1/2" & 3/4" ROUND HEAD BOLTS**

Notes:  
 Posts shall not be located closer than 1'-3" to an existing bridge expansion joint or end of bridge.  
 Steel Bridge Rail expansion joint shall be provided between any two (2) posts which span a bridge expansion joint. Bolts located at expansion joint shall be provided with locknuts and shall be tightened only to a point that will allow railing movement.  
 Provide one 1/8" and two 1/16" steel shims for 25% of the posts. Shims shall be similar to base plates in size and holes.  
 All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.

**SPLICE DIMENSIONS**

T	D	A	B	C	E
≤ 4"	2 1/2"	1'-8"	2"	4"	2 1/2"
> 4" ≤ 6 1/2"	3 3/4"	2'-0"	2 1/2"	5 1/2"	3 1/2"
> 6 1/2" ≤ 9"	5"	2'-4"	3 1/2"	6 1/2"	9"
> 9" ≤ 13"	7"	2'-10"	4 1/2"	8 1/2"	11"
Rail Splice	1/4"	1'-8"	2"	4"	—

T = Total movement at expansion joint as shown on the design plans.

**BILL OF MATERIAL**

Item	Unit	Quantity
Steel Railing, Type 2399	Foot	

1-12-15

(6'-3" Maximum Post Spacing)

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	PLOT DATE = 10/30/2015		

**STATE OF ILLINOIS  
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**STEEL RAILING, TYPE 2399  
 STRUCTURE 015-0024**

SCALE: NA SHEET 10 OF 10 SHEETS STA. TO STA.

•07 BRIDGE REPAIRS 2016-3

F.A.P R.T.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
824	•	COLES	15	15

CONTRACT NO. 74673  
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