

039

03-08-2019 LETTING ITEM 039

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

F.A.P. DISTRICT	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
322	D9 BRIDGE REPAIR 2019-3	PERRY	9	1
CONTRACT NO. 78646				

FOR INDEX OF SHEETS, SEE SHEET NO. 2

FOR SUMMARY OF QUANTITIES, SEE SHEET NO. 3

PROPOSED HIGHWAY PLANS

FAP ROUTE 322 (US 51)
SECTION D9 BRIDGE REPAIR 2019-3
PROJECT NHPP-7BUZ(382)
BEAM END REPAIRS AND JOINT REPLACEMENTS
PERRY COUNTY

TRAFFIC DATA

2015 ADT = 6,100 WITH 7% TRUCKS

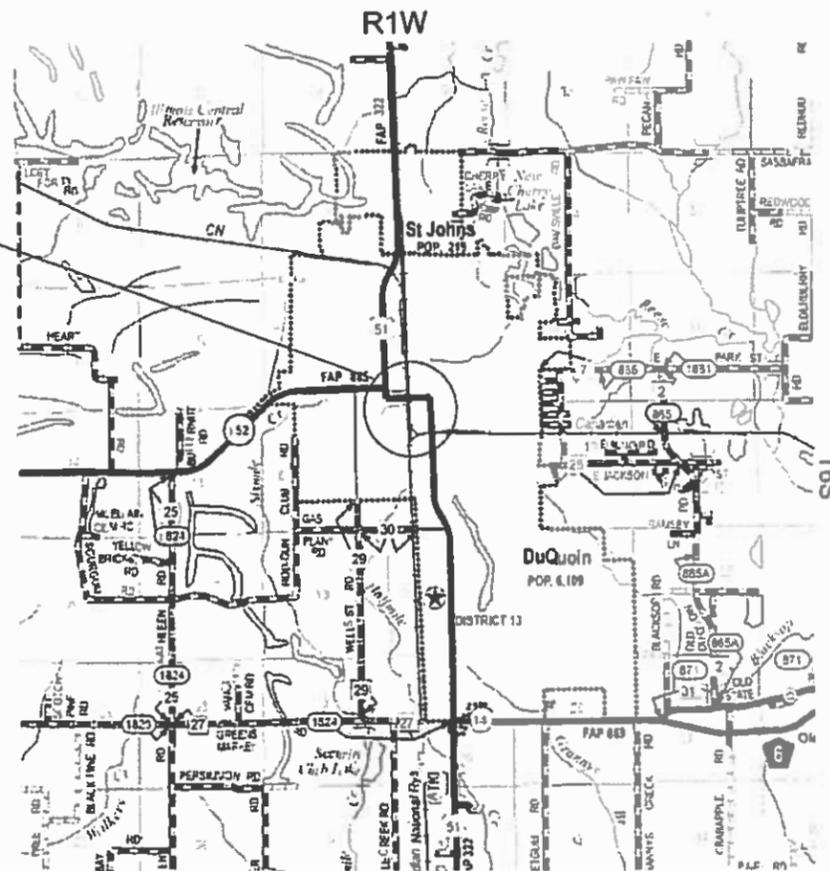
TOWNSHIP COUNTY UNIT ROAD DISTRICT 15

C-99-063-18

D-99-035-18



IMPROVEMENT LOCATION
STRUCTURE NO. 073-0033
806'-2" BK TO BK ABUTS. 0° SKEW
30'-0" CLEAR WIDTH
33'-2" OUT TO OUT



DESIGN DESIGNATION: N/A
COORDINATE SYSTEM: ILLINOIS CORDINATE SYSTEM, WEST ZONE
POSTED SPEED: 30 MPH

J.U.L.I.E.
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION
1-800-892-6123
OR 811

PROJECT DESIGNER JOHN DAHMER
PROJECT ENGINEER DAVID PICHE (618)351-5227

GROSS LENGTH = 806'-2" FT. = 0.153 MILE
NET LENGTH = 806'-2" FT. = 0.153 MILE

CONTRACT NO. 78646

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBMITTED Oct 4 20 18
Duffrey 2 Keim
REGIONAL ENGINEER

Feb 1 20 19
[Signature]
ENGINEER OF DESIGN AND ENVIRONMENT

Feb 20 19
[Signature]
DIRECTOR OF HIGHWAYS PROJECT IMPLEMENTATION

PRINTED BY THE AUTHORITY
OF THE STATE OF ILLINOIS

INDEX OF SHEETS

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- 2 INDEX OF SHEETS; GENERAL NOTES; STANDARDS
- 3 SUMMARY OF QUANTITIES
- 4 GENERAL PLAN AND ELEVATION AND BEAM END REPAIR DETAILS
- 5 BEAM END REPAIR DETAILS
- 6 JOINT REPLACEMENT DETAILS
- 7 PARAPET RAILING DETAILS
- 8 PREFORMED JOINT STRIP SEAL
- 9 DETOUR SIGNING

STANDARDS

- 000001-07 STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
- 001001-02 REINFORCEMENT BARS, AREAS, WEIGHT, AND SPACING
- 701001-02 OFF-ROAD, 2L2W MORE THAN 15' FROM PAVEMENT EDGE
- 701006-05 OFF-ROAD, 2L2W 15' TO 24" FROM PAVEMENT EDGE
- 701201-05 LANE CLOSURE, 2L, 2W, DAY ONLY, FOR SPEEDS >45 MPH
- B.L.R. 21-9 TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS
- 701901-08 TRAFFIC CONTROL DEVICES

GENERAL NOTES

THERE IS SIDEWALK NORTH OF THE STRUCTURE EAST OF THE RAILROAD AND SOUTH OF THE STRUCTURE WEST OF THE RAILROAD. EXTRA CARE WILL BE TAKEN FROM THE CONTRACTOR NOT TO DAMAGE THE SIDEWALK. IF DAMAGED, IT SHALL BE REPLACED AT THE COST OF THE CONTRACTOR.

A CONTRACTOR'S RIGHT-OF-ENTRY PERMIT IS REQUIRED BEFORE ANY WORK CAN COMMENCE ON RAILROAD PROPERTY. THE COST TO OBTAIN THIS PERMIT SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT.

COMMITMENTS: NONE AS OF DECEMBER 14, 2018

Prepared By: *Charles Steen*
DISTRICT STUDIES & PLANS ENGINEER

Examined By: *Nancy Reed*
DISTRICT LAND ACQUISITION ENGINEER

Examined By: *Carrie Nelson*
DISTRICT PROGRAM DEVELOPMENT ENGINEER

Examined By: *Karl Hill*
DISTRICT OPERATIONS ENGINEER

Examined By: *[Signature]*
DISTRICT PROJECT IMPLEMENTATION ENGINEER

Examined By: *[Signature]*
DISTRICT CONSTRUCTION ENGINEER

Examined By: *[Signature]*
DISTRICT MATERIALS ENGINEER

REV. - MS

MODIFIED: Default
 FILE NAME: \\S:\DRM\BID\BID\TEC\Illinois\gov\PWEDOT\Doc\unmets\DOT\Office\2018\REC\ADT\Map\Document\978646\Map\plan.dwg

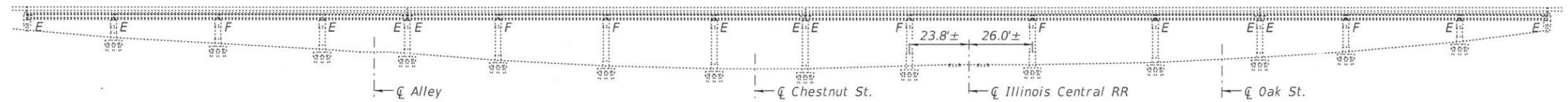
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DRAWN - _____	REVISOR - _____	
PLOT SCALE = 100.0000' / in.	CHECKED - _____	REVISED - _____
PLOT DATE = 10/2/2018	DATE - _____	REVISED - _____

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

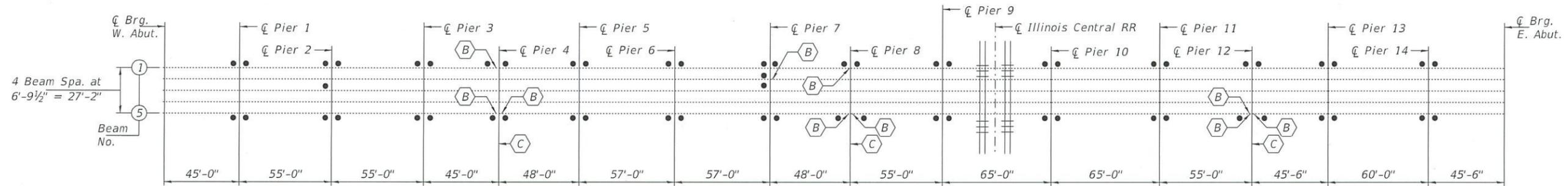
INDEX OF SHEETS, STANDARDS, GENERAL NOTES

SCALE: _____ SHEET _____ OF _____ SHEETS STA. _____ TO STA. _____

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
332	D9 BRIDGE REPAIR 2019-2	PERRY	9	2
				CONTRACT NO. 78646
ILLINOIS FED. AID PROJECT				

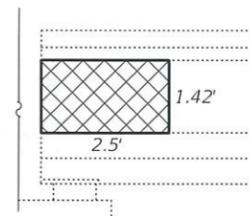


ELEVATION

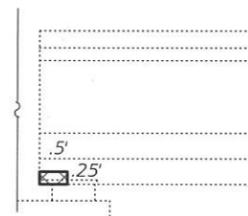


PLAN

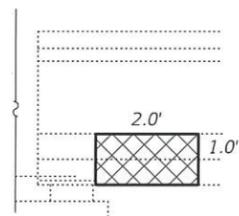
- - Repair A. See sheet 2 of 5.
- ⬡ - Beam repair. See detail this sheet.
- ⬢ - Joint replacement. See sheets 3 thru 5 of 5.



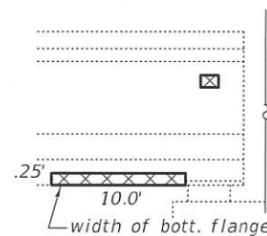
BEAM 1 - SPAN 4
(Outside face)



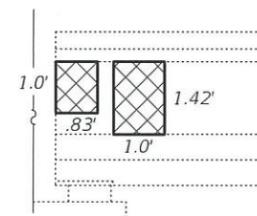
BEAM 1 - SPAN 8
(Outside face)



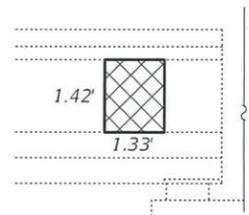
BEAM 2 - SPAN 8
(North face)



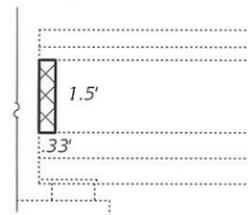
BEAM 5 - SPAN 4
(Outside face)



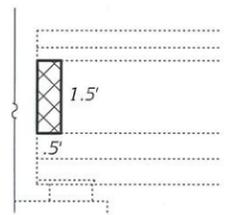
BEAM 5 - SPAN 5
(Outside face)



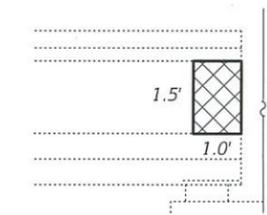
BEAM 5 - SPAN 8
(Outside face)



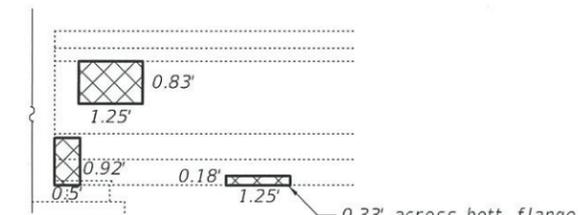
BEAM 5 - SPAN 9
(Outside face)



BEAM 5 - SPAN 12
(Inside face)



BEAM 5 - SPAN 12
(Outside face)



BEAM 5 - SPAN 13
(Outside face)

REPAIR B

⬡ - Precast Prestressed Concrete I-Beam Repair

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 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.

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 Contractor shall use extreme care during concrete removal so as not to damage the PPC I-Beam.

The existing concrete surface shall be cleaned and prepared in accordance with the Special Provisions.

See Special Provisions for "FRP Strengthening for PPC I-Beam Repairs".

See Special Provisions for "Precast Prestressed Concrete I-Beam Repair". Acrylic coating shall be placed over Fiber Wrap repairs. Two coats shall be applied.

Cost of removal and reinstallation of all utility conduit necessary to complete the work as detailed on the plans shall be included with Precast Prestressed Concrete I-Beam Repair.

Reinforcement bars designated (E) shall be epoxy coated.

TOTAL BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Concrete Removal	Cu. Yd.	4.0
Concrete Superstructure	Cu. Yd.	4.2
Reinforcement Bars, Epoxy Coated	Pound	520
Protective Coat	Sq. Yd.	20
Preformed Joint Strip Seal	Foot	96
Bar Splicers	Each	6
Precast Prestressed Concrete I-Beam Repair	Sq. Ft.	20
Epoxy Crack Injection	Foot	214
Acrylic Coating	Sq. Yd.	137
Fiber Wrap	Sq. Ft.	1236



EXPIRES 11-30-2020

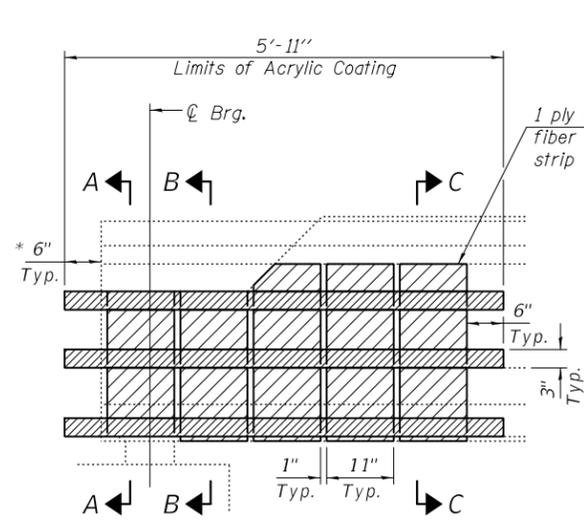
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CHECKED	PASSED	JANUARY 17, 2019
DRAWN	ENGINEER OF BRIDGES AND STRUCTURES	REVISOR
CHECKED	ENGINEER OF BRIDGES AND STRUCTURES	REVISION

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

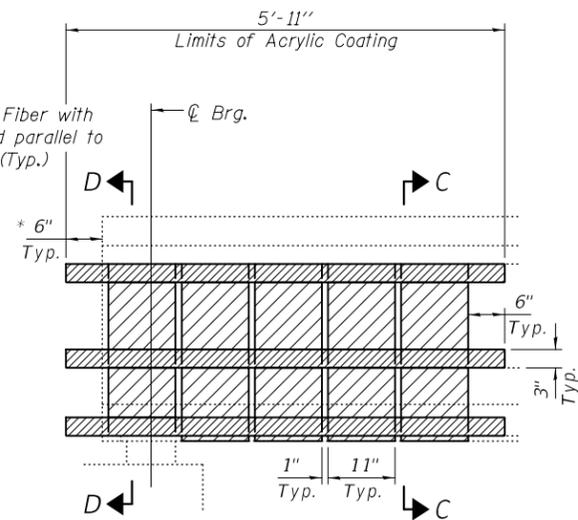
PLAN AND ELEVATION
FAP 322 (US 51) OVER IL. CENTRAL GULF RR
SN 073-0033

SHEET NO. 1 OF 5 SHEETS

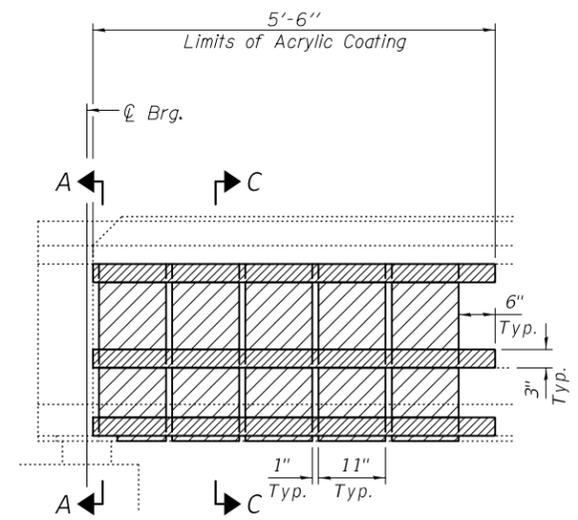
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
322	D9 BRIDGE REPAIR 2019-3	PERRY	9	4
CONTRACT NO. 78646			ILLINOIS FED. AID PROJECT	



ELEVATION
(Inside face at Piers 4, 8 & 12)

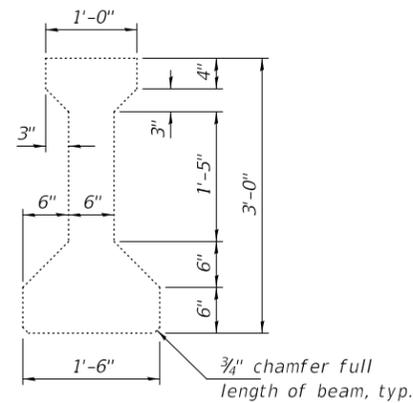


ELEVATION
(Outside face at Piers 4, 8 & 12)

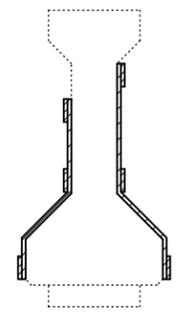


ELEVATION
(Typical at Piers 1, 2, 3, 5, 6, 7, 9, 10, 11, 13 & 14)

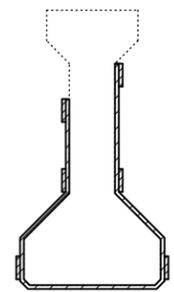
* Wrap around end of beam.



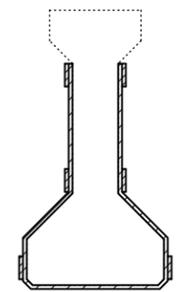
TYPICAL BEAM DIMENSIONS



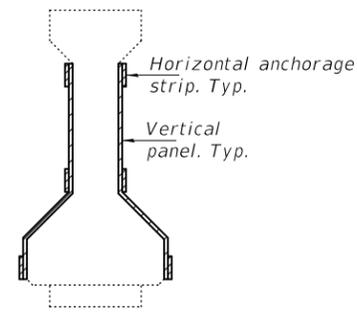
SECTION A-A



SECTION B-B



SECTION C-C



SECTION D-D

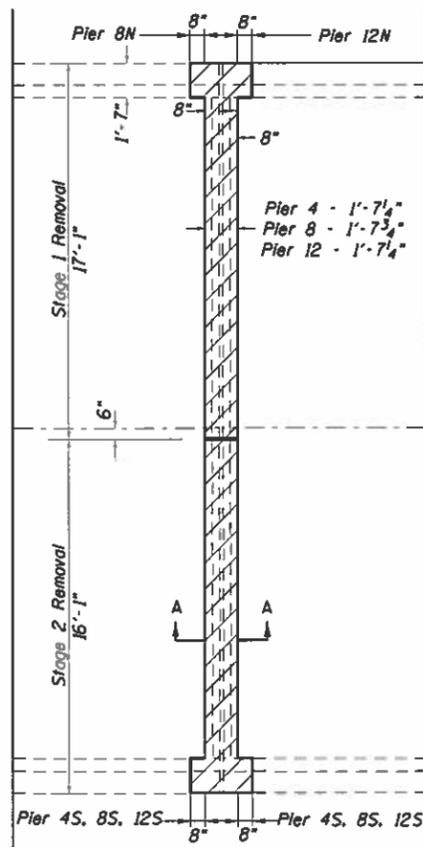
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DRAWN baliva	PASSED <i>Carl Ringer</i>	REVISED -
CHECKED JSB CDK	ENGINEER OF BRIDGES AND STRUCTURES	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

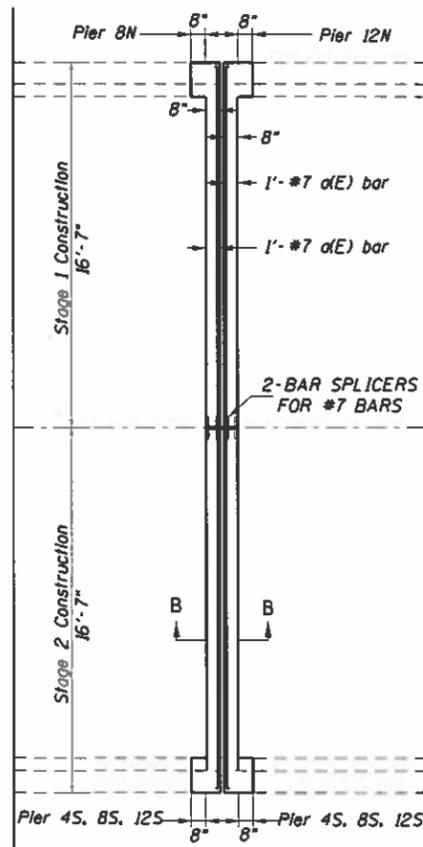
**REPAIR A DETAILS
SN 073-0033**

SHEET NO. 2 OF 5 SHEETS

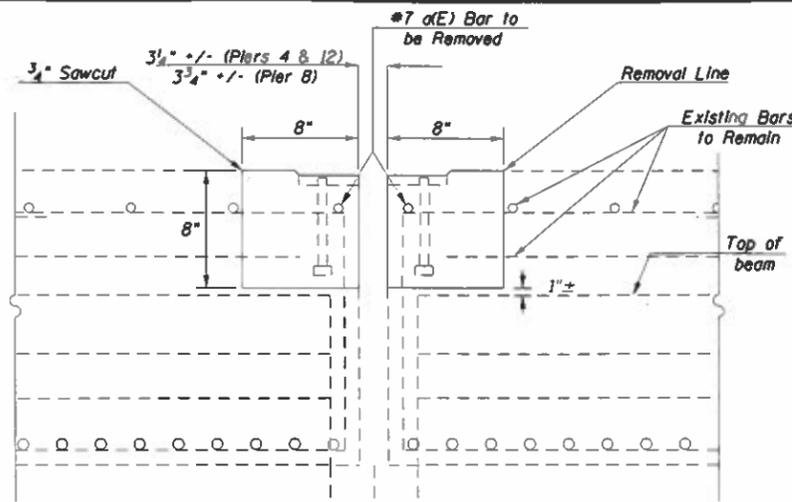
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
322	D9 BRIDGE REPAIR 2019-3	PERRY	9	5
ILLINOIS FED. AID PROJECT			CONTRACT NO. 78646	



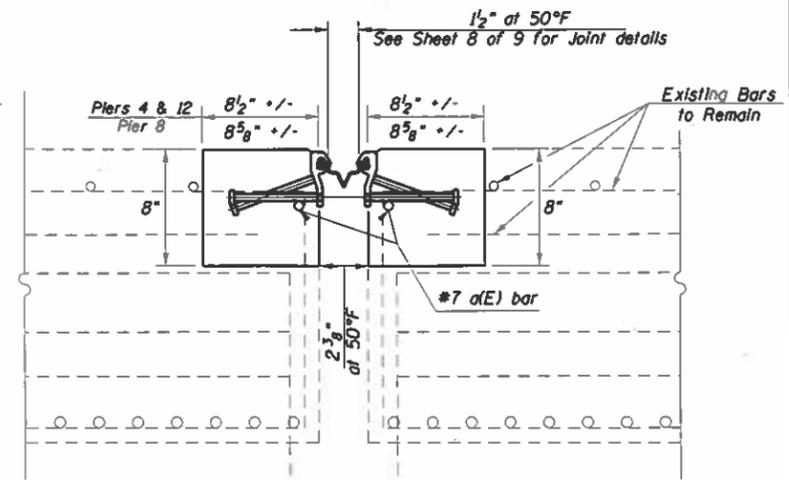
SHOWING CONCRETE REMOVAL



SHOWING NEW CONCRETE



SECTION A-A Concrete Removal



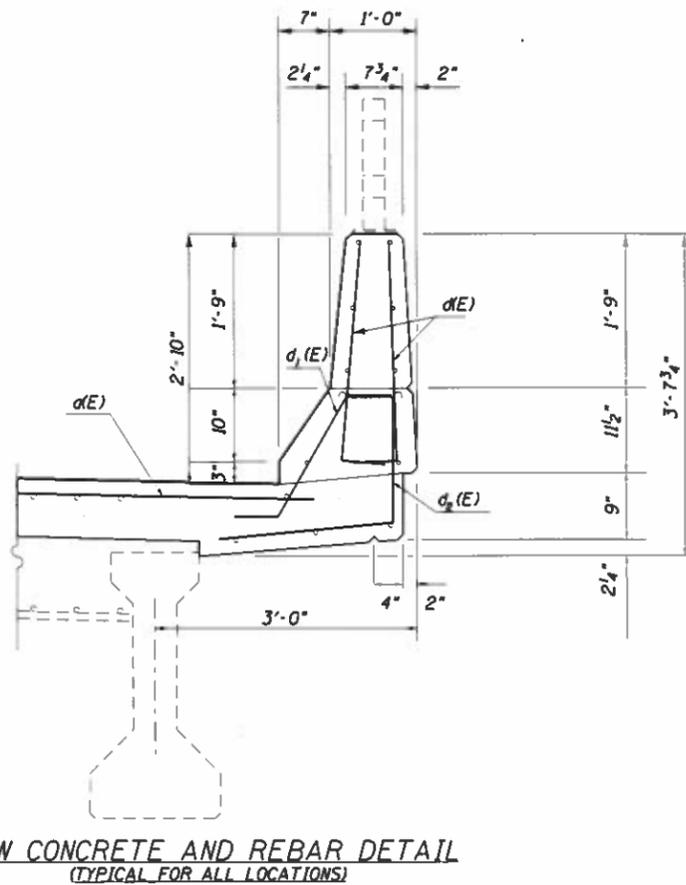
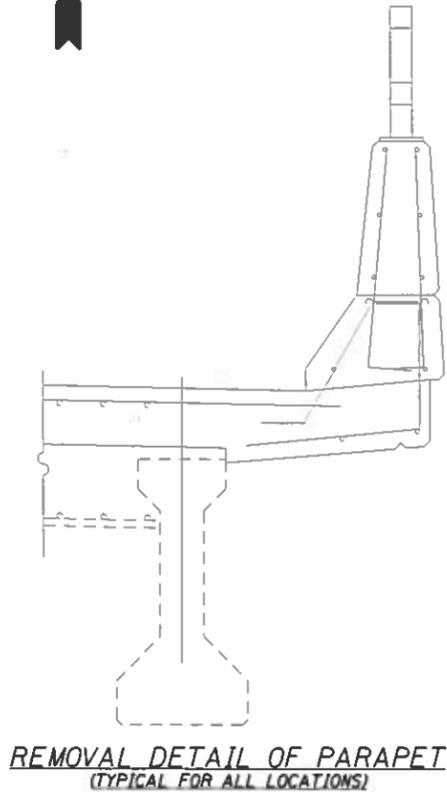
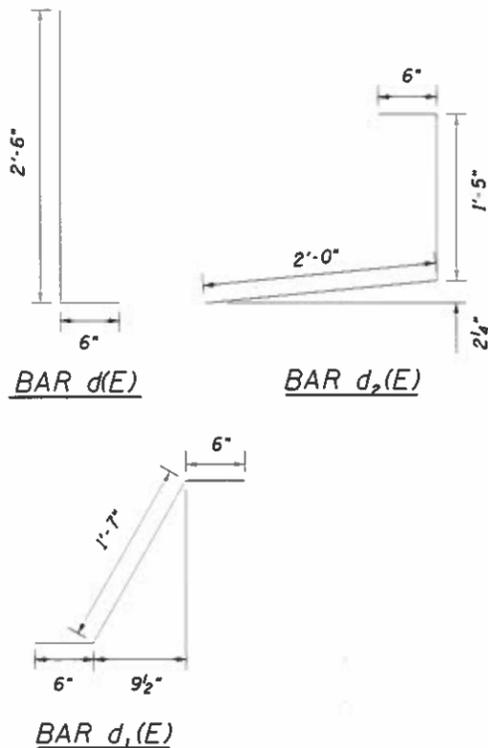
SECTION B-B Parapet Railing

Note: Contractor must exercise extreme care so not to damage PPCI - Beam during Concrete Removal. Any damage is to be repaired to the satisfaction of the Engineer at the contractor's expense.

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

CONCRETE REMOVAL DETAIL FOR PARAPET RAIL PLACEMENT (TYPICAL FOR ALL LOCATIONS THAT APPLY)

Notes: Before Jack Hammering begins, the perimeter of the determined removal area, layed out by the engineer, shall have a 3/4" saw cut around the perimeter. The cost of this shall be included with "Concrete Removal". Removal of the Existing Neoprene Joint and/or Polymer Concrete Cost shall be included with "Concrete Removal".



BILL OF MATERIAL

Bar	No.	Size	Length	Shape	
d (E)	12	#7	15'-7"	—	
d (E)	24	#5	3'-0"	└	
d1(E)	12	#5	2'-7"	—	
d2(E)	12	#4	3'-11"	└	
Bar Splicers				Each	6
Concrete Superstructure				Cu Yd	4.2
Concrete Removal				Cu Yd	4.0
Reinforcement Bars Epoxy Coated				Pound	520

JOINT REPLACEMENT AT PIERS

MODIFIED: 12/4/2018
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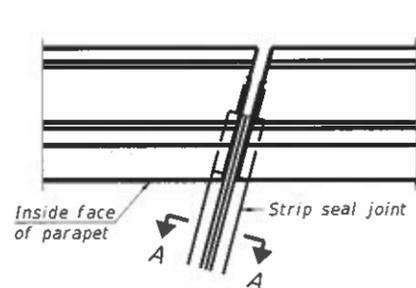
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

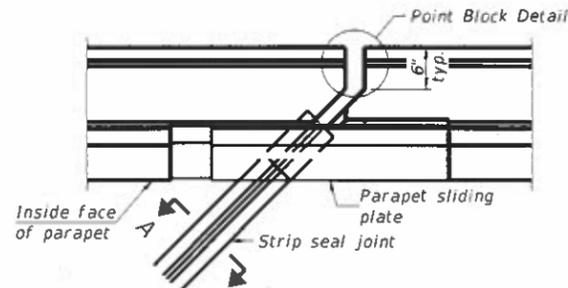
JOINT REPLACEMENT DETAILS
SN 073-0033

SCALE: _____ SHEET 3 OF 5 SHEETS STA. _____ TO STA. _____

F.A.P. RATE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
332	D9 BRIDGE REPAIR 2019-2	PERRY	9	6
				CONTRACT NO. 78646
ILLINOIS FED. AID PROJECT				

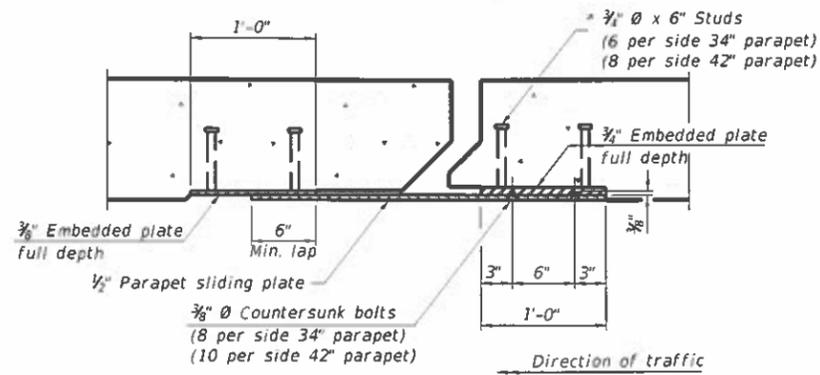


FOR SKEWS $\leq 30^\circ$



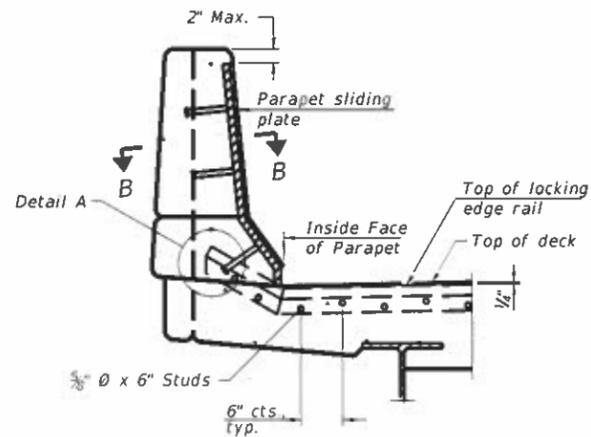
FOR SKEWS $> 30^\circ$

PLAN AT PARAPET



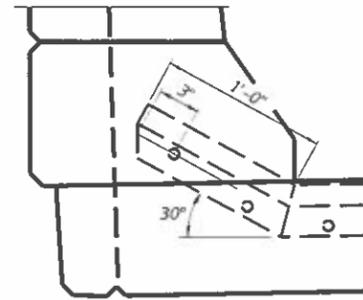
SECTION B-B

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 configured for typical applications and are conceptual only. The actual configuration of the locking edge rails and matching strip seal may vary from manufacturer to manufacturer provided they fit the application and meet the minimum anchorage shown. Flanged edge rails, however, will not be allowed. Locking edge rails may exceed the 4 1/2" maximum depth provided the anchorage system is revised according to the manufacturer's recommendation.
 The manufacturer's recommended installation methods shall be followed.
 All steel components shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications.
 The Maximum space between locking edge rail segments shall be 3/16" and sealed with a suitable sealant; however, any rail joint within 10' measured perpendicular to the face of the curb or parapet shall be welded as shown in the locking edge rail splice detail.
 Cost of parapet sliding plates, embedded plates, and anchorage studs included with Preformed Joint Strip Seal.
 34" F-shape barrier shown, 42" F-shape similar as noted.
 The concrete opening below the strip seal will vary based on the locking edge rail chosen by the Contractor. Deck and parapet lengths shown elsewhere in the plans are dimensioned to the concrete opening, not the joint opening, and are based on the rolled locking edge rail. If the Contractor elects to use a different locking edge rail, dimensional adjustments may be required. One exception to this would be the strip seal joint at the end of the precast bridge approach slab. For these cases the pavement connector length shall be adjusted, not the length of the bridge approach slab.

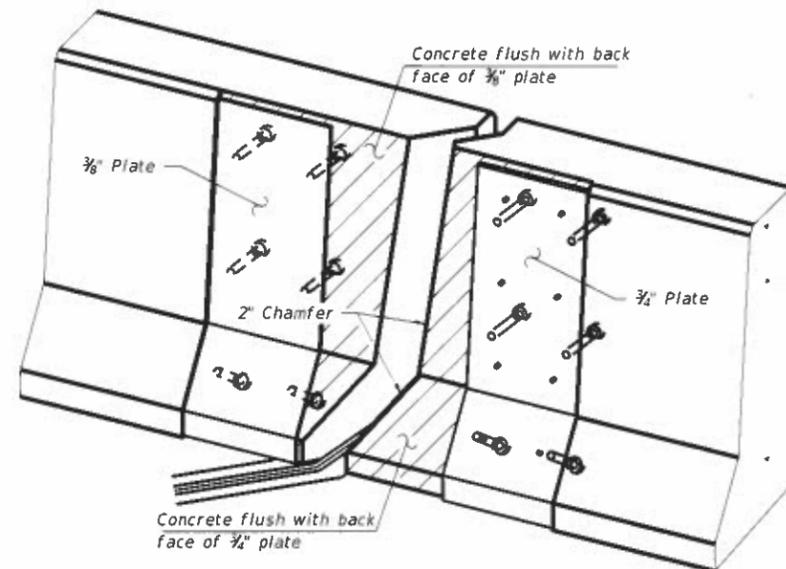


ELEVATION AT PARAPET

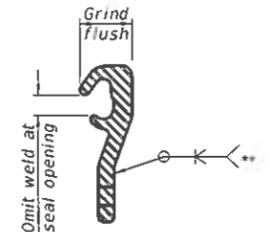
(Skews $> 30^\circ$ shown. Skews $\leq 30^\circ$ similar except as shown in plan view.)



DETAIL A

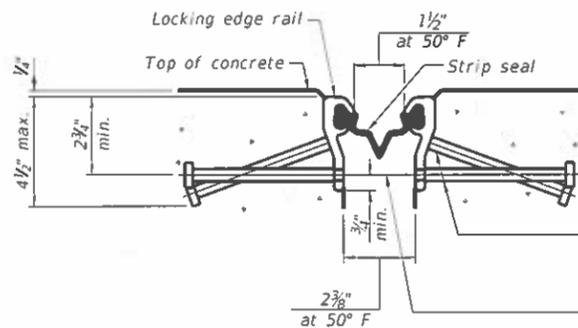


TRIMETRIC VIEW
(Showing embedded plates only)



LOCKING EDGE RAIL SPLICE

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

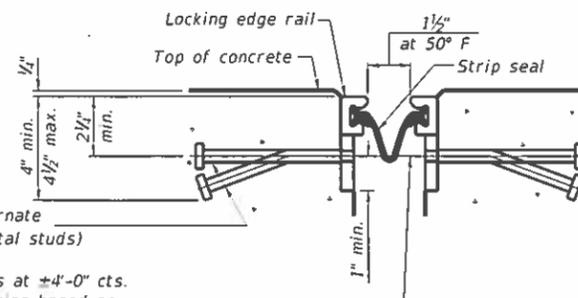


SHOWING ROLLED RAIL JOINT

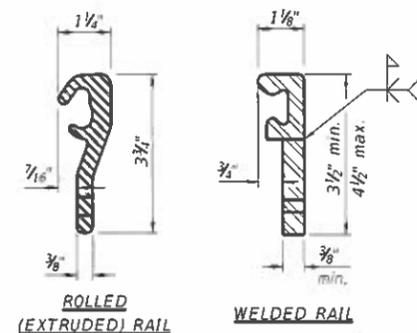
* 3/8" ϕ x 6" studs @ 6" cts. (alternate angled/bent studs with horizontal studs)
 3/8" ϕ threaded rods in 7/16" ϕ holes at ± 4 -0" cts. for holding the proper joint opening based on the temperature during the deck pour. Place to miss studs. All rods shall be burned, or sawed off flush with the plates after concrete is set.

SECTION A-A

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



SHOWING WELDED RAIL JOINT



LOCKING EDGE RAILS

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

LOCATION	JOINT LENGTH
PIER 4	32'
PIER 8	32'
PIER 12	32'

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	96

EJ-SS

6-15-18

USER NAME = WILSONDA	DESIGNED -	REVISED -
PLOT SCALE = 100.0000 / in	DRAWN -	REVISED -
PLOT DATE = 11/16/2018	CHECKED -	REVISED -
	DATE -	REVISED -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

PREFORMED JOINT STRIP SEAL
 SN 073-0033

SCALE: _____ SHEET 5 OF 5 SHEETS STA. _____ TO STA. _____

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
332	D9 BRIDGE REPAIR 2019 2	PERRY	9	8
ILLINOIS FED. AID PROJECT			CONTRACT NO. 78646	

