

06-11-2021 LETTING ITEM 121

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
293	D7 BRIDGE REPAIRS 2022-5	FAYETTE	10*	1
CONTRACT NO. 74A30				

* 10 + 1 = 11 TOTAL SHEETS

P-97-109-20

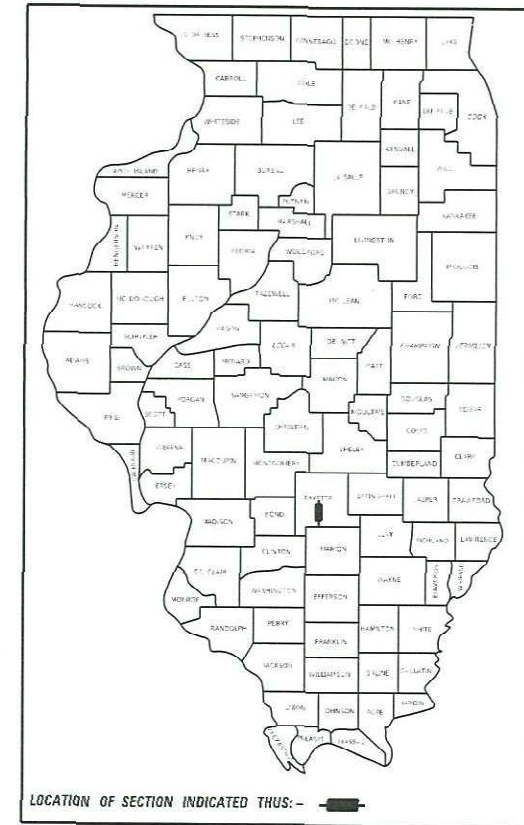
FOR INDEX OF SHEETS, SEE SHEET NO. 2

ADT = 600 (IL140 2018)

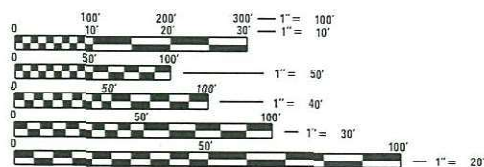
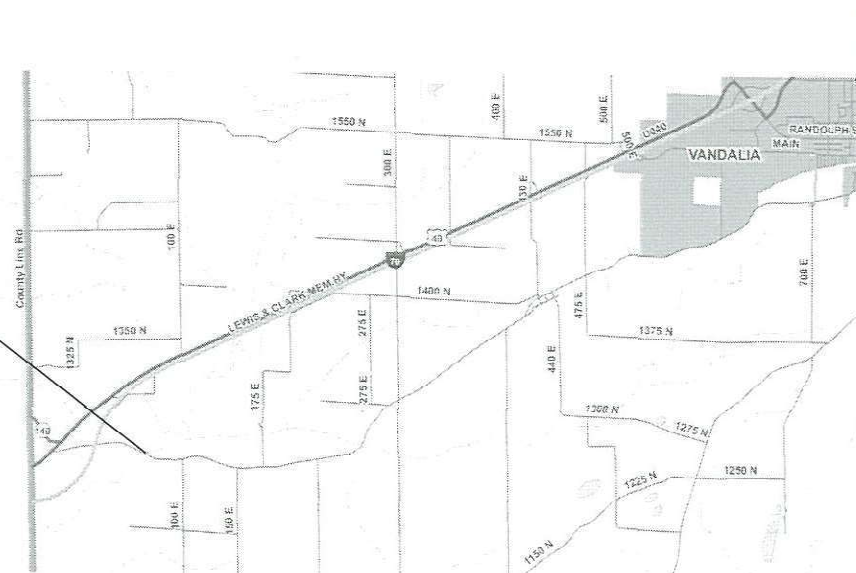
PROPOSED HIGHWAY PLANS

FAS 2793 (OLD ILL 140)
D7 BRIDGE REPAIRS 2022-5
PROJECT STP-B7G0(377)
BRIDGE REPAIR
FAYETTE COUNTY

C-97-124-20



PROJECT LOCATION
SN 026-0089
STATION 503 + 82



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 EXCAVATORS
1-800-892-0123
OR 811

PROJECT ENGINEER: DEBRA G. BARRETT
PROJECT MANAGER: AARON J. METTE

CONTRACT NO. 74A30

GROSS LENGTH = 249 FT. = 0.047 MILE
NET LENGTH = 249 FT. = 0.047 MILE

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBMITTED April 5, 2021
Jeffrey P. M... / REGIONAL ENGINEER

May 7, 2021 [Signature]
ENGINEER OF DESIGN AND ENVIRONMENT

May 7, 2021 [Signature]
DIRECTOR OF HIGHWAYS PROJECT IMPLEMENTATION

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OF THE STATE OF ILLINOIS

REV. - MS

GENERAL NOTES

THIS PROJECT IS LOCATED ON FAS 2793 (ILL-140) IN FAYETTE COUNTY, OVER HURRICANE CREEK, 0.9 MILES SOUTHEAST OF US 40

THE WORK ON THIS PROJECT CONSISTS OF BRIDGE JOINT REPAIR, BEARINGS REPLACEMENT AND ANY OTHER WORK NECESSARY TO COMPLETE THIS SECTION. THIS WORK WILL BE COMPLETED UTILIZING A ROAD CLOSURE WITH A MARKED ROUTE DETOUR.

INDEX OF SHEETS

SHEET NO.	ITEM
1	COVER SHEET
2	GENERAL NOTES, INDEX OF SHEETS & LIST OF STANDARDS
3	SUMMARY OF QUANTITIES
4	DETOUR MAP
5-10A	BRIDGE PLAN DETAILS

HIGHWAY STANDARDS

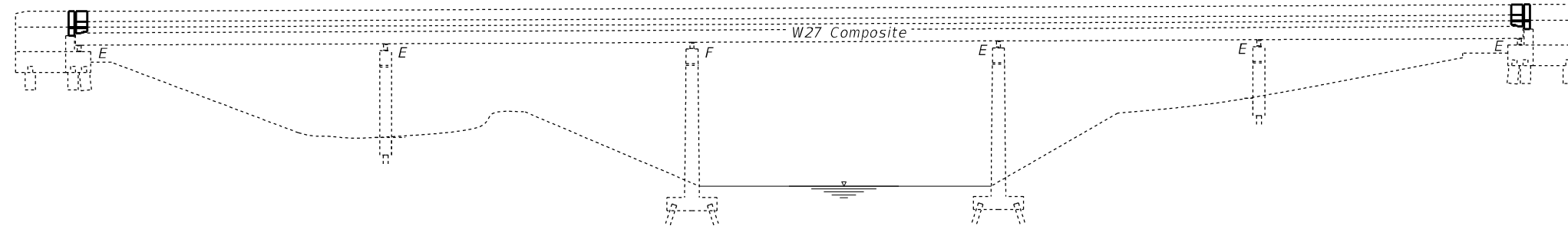
<u>STANDARD NO.</u>	<u>DESCRIPTION</u>
000001-08	STANDARD SYMBOLS, ABBREVIATIONS, AND PATTERNS
001001-02	AREAS OF REINFORCEMENT BARS
001006	DECIMAL OF INCH AND FOOT
701001-02	OFF-ROAD OPERATIONS, 2L, 2W, MORE THAN 15' (4.5 M) AWAY
701006-05	OFF-ROAD OPERATIONS, 2L, 2W, 15' TO 24" FROM PAVEMENT EDGE
701901-08	TRAFFIC CONTROL DEVICES
BLR21-9	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL HIGHWAYS

REV. - MS

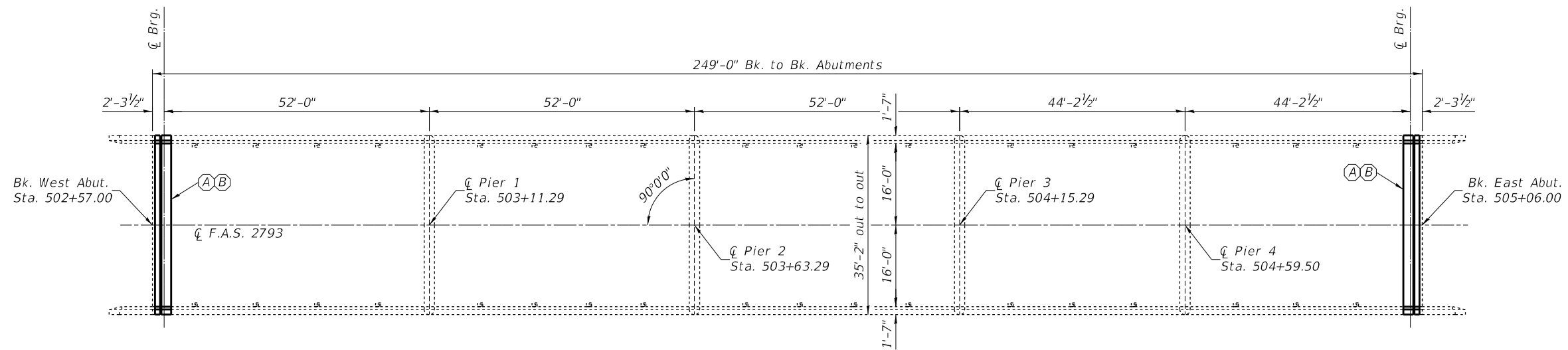
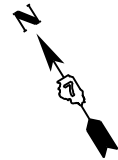
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USER NAME = steffenmk DESIGNED - DRAWN - CHECKED - DATE -	REVISED - REVISED - REVISED - REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	GENERAL NOTES, INDEX OF SHEETS LIST OF STANDARDS	F.A.S. RTE. 2793	SECTION D7 BRIDGE REPAIRS 2022-5	COUNTY FAYETTE	TOTAL SHEETS 10	SHEET NO. 2	CONTRACT NO. 74A30
SCALE:			SHEET OF SHEETS STA. TO STA.		ILLINOIS FED. AID PROJECT				

EXISTING STRUCTURE: SN 026-0089, built in 1983, is a 5 span, weathering steel multi-beam bridge carrying FAS-2793 (Old ILL-140) over Hurricane Creek. The proposed project consists of replacement of the expansion joints with new strip seals, and bearing replacement at abutments with new elastomeric bearings.



ELEVATION



PLAN

- (A) - Remove Existing Joint and Construct Strip Seal Expansion Joint
- (B) - Remove Existing Abutment Bearings and Install new Elastomeric Bearings

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	DRAWN - T. Walk	REVISED -
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PLOT DATE = 4/5/2021	DATE - July 2020	REVISED -

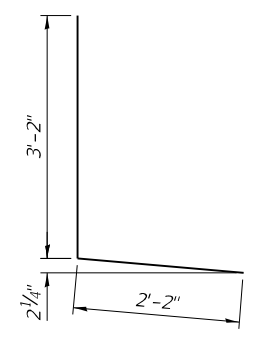
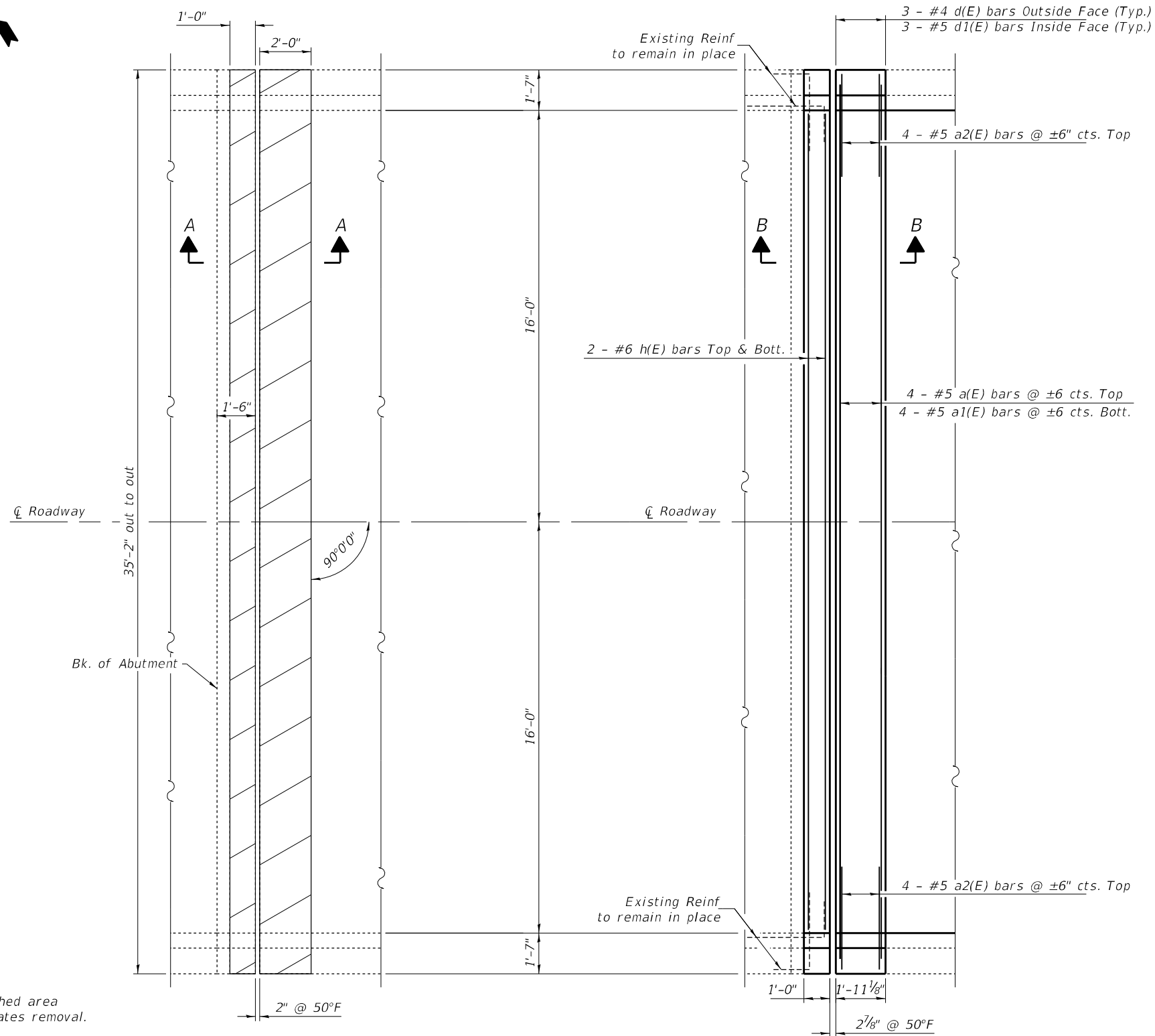
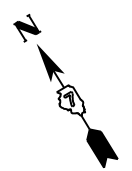
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN & ELEVATION
S.N. 026-0089

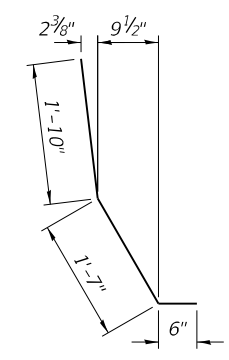
SCALE: SHEET 1 OF 6 SHEETS STA. TO STA.

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2793	D7 BRIDGE REPAIRS 2022-5	FAYETTE	10	5
CONTRACT NO. 74A30			ILLINOIS FED. AID PROJECT	

For Section A-A and B-B, See sheet 4 of 6



BAR d(E)



BAR d1(E)

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	8	#5	34'-0"	—
a1(E)	8	#5	34'-6"	—
a2(E)	16	#5	4'-0"	—
d(E)	12	#4	5'-4"	L
d1(E)	12	#5	3'-11"	L
h(E)	8	#6	31'-9"	—
ITEM		UNIT	QUANTITY	
Concrete Removal		Cu. Yd.	9.2	
Concrete Superstructure		Cu. Yd.	9.0	
Reinforcement Bars, Epoxy Coated		Pound	1,120	

Note: Hatched area indicates removal.

REMOVAL PLAN
West Abutment Shown
East Abutment Similar

REINFORCEMENT PLAN
West Abutment Shown
East Abutment Similar

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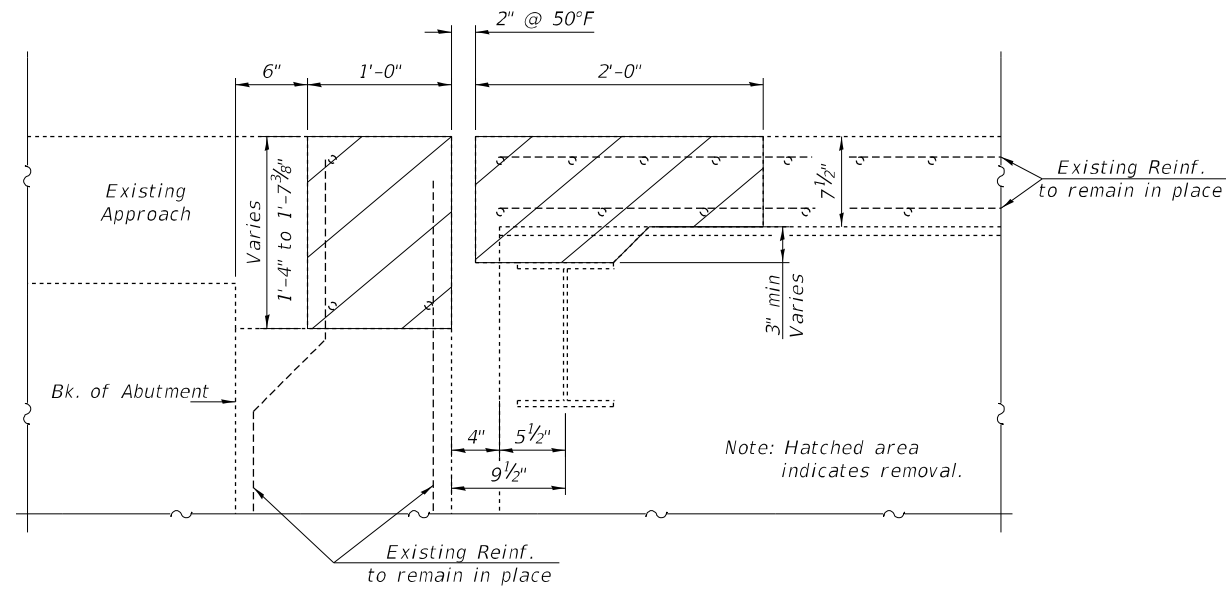
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PLOT DATE = 4/5/2021	CHECKED - D. Macklin	REVISED -
	DATE - July 2020	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

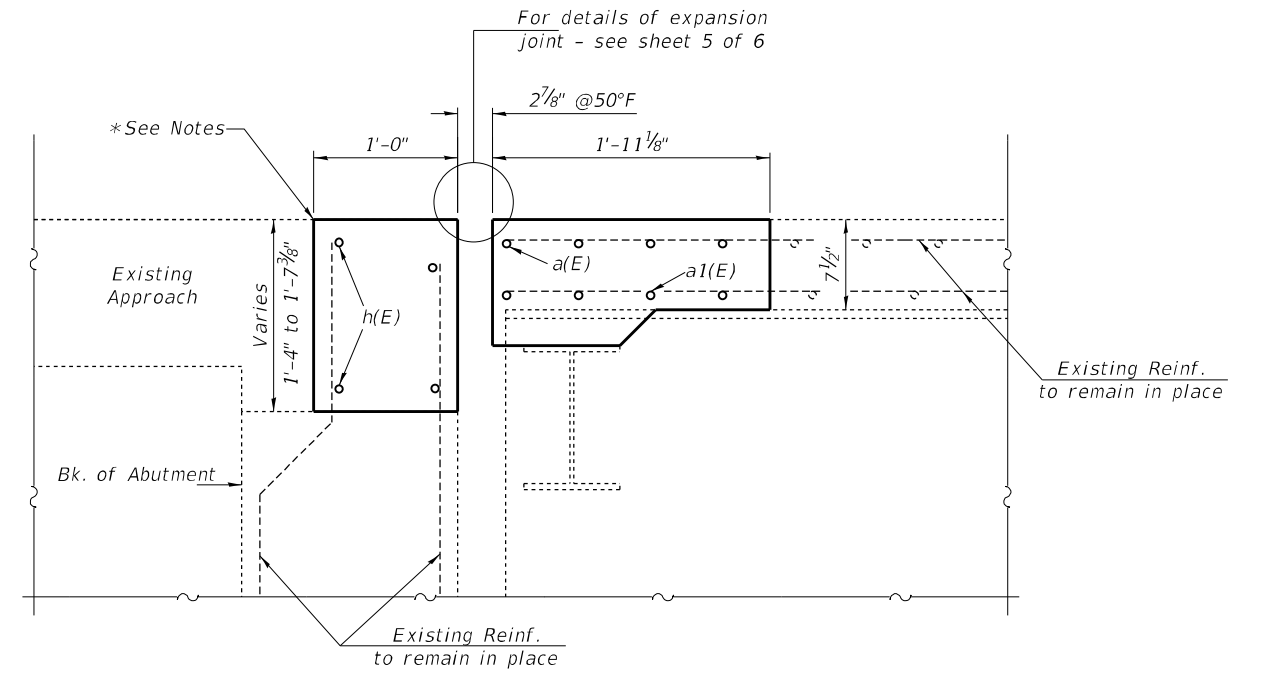
**EXPANSION JOINT REPLACEMENT DETAILS
S.N. 026-0089**

SCALE: SHEET 3 OF 6 SHEETS STA. TO STA.

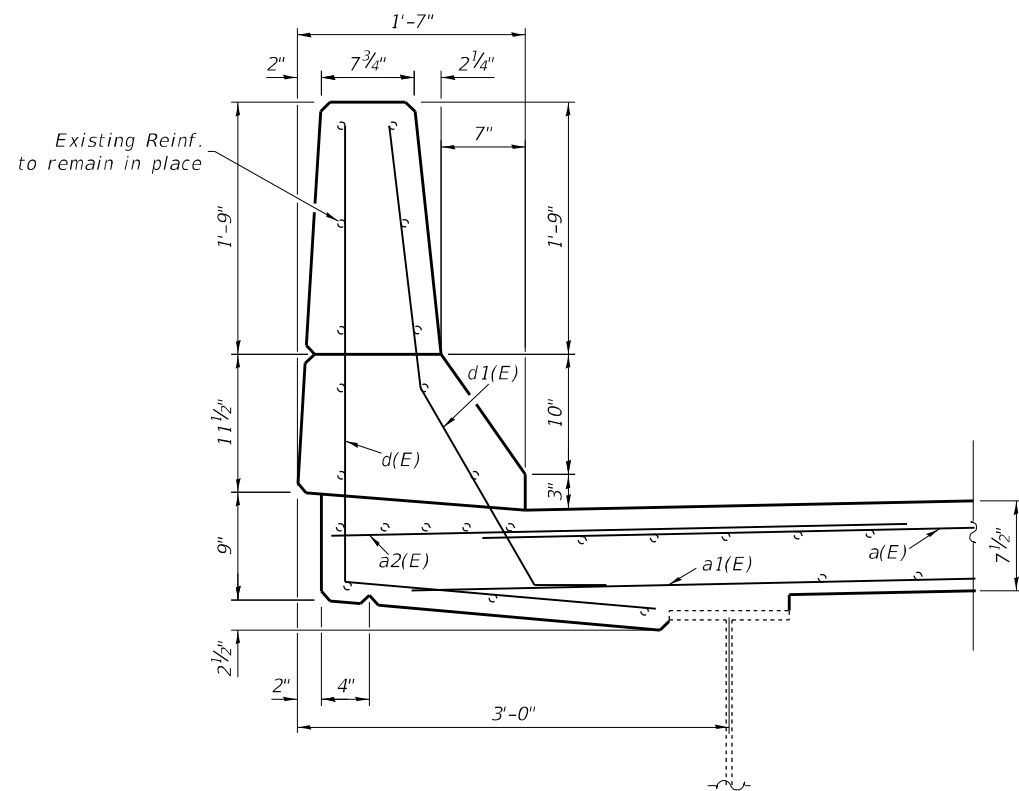
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2793	D7 BRIDGE REPAIRS 2022-5	FAYETTE	10	7
ILLINOIS FED. AID PROJECT			CONTRACT NO. 74A30	



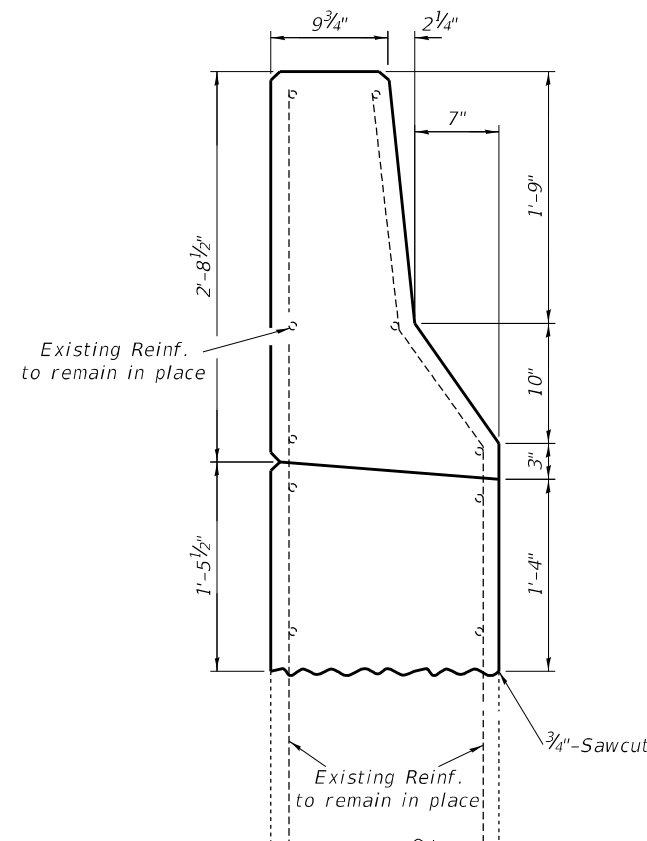
SECTION A-A



SECTION B-B



SECTION THRU PARAPET



SECTION THRU WING WALL

*Notes: Deteriorated or damaged areas in ends of bridge approach pavement may be repaired along with the removal and replacement of the abutment block. This work should be paid for at the contract unit prices for CONCRETE REMOVAL and CONCRETE SUPERSTRUCTURE.

If approach pavement repairs are poured with the abutment block, the contractor shall saw cut the surface in line with the back of the abutment block. The saw cut shall have a minimum depth of 1" and shall be sealed with bridge relief joint sealer. Cost for this work shall be included in the contract unit price for CONCRETE SUPERSTRUCTURE.

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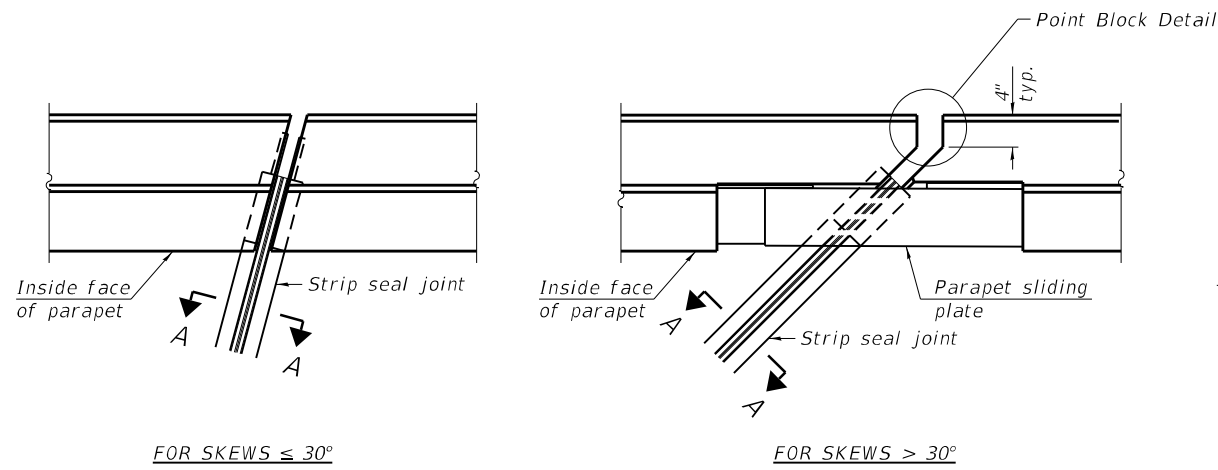
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DRAWN - T. Walk	REVISED -	
PLOT SCALE = 100,0000' / in.	CHECKED - D. Macklin	REVISED -
PLOT DATE = 4/5/2021	DATE - July 2020	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

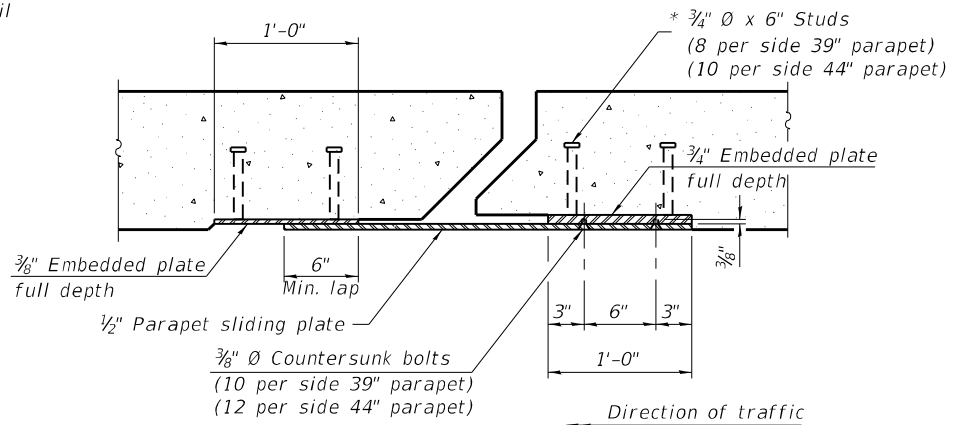
EXPANSION JOINT REPLACEMENT DETAILS
S.N. 026-0089

SCALE: SHEET 4 OF 6 SHEETS STA. TO STA.

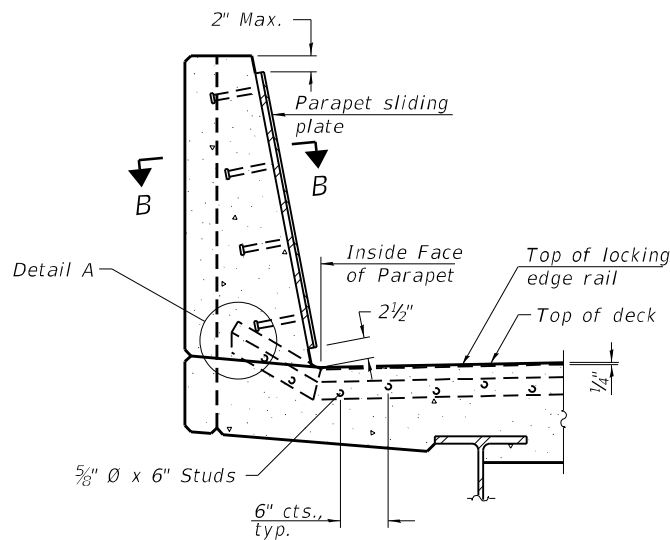
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2793	D7 BRIDGE REPAIRS 2022-5	FAYETTE	10	8
ILLINOIS FED. AID PROJECT			CONTRACT NO. 74A30	



PLAN AT PARAPET

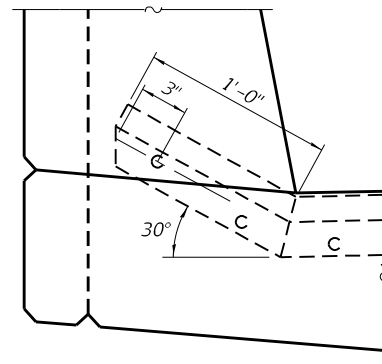


SECTION B-B

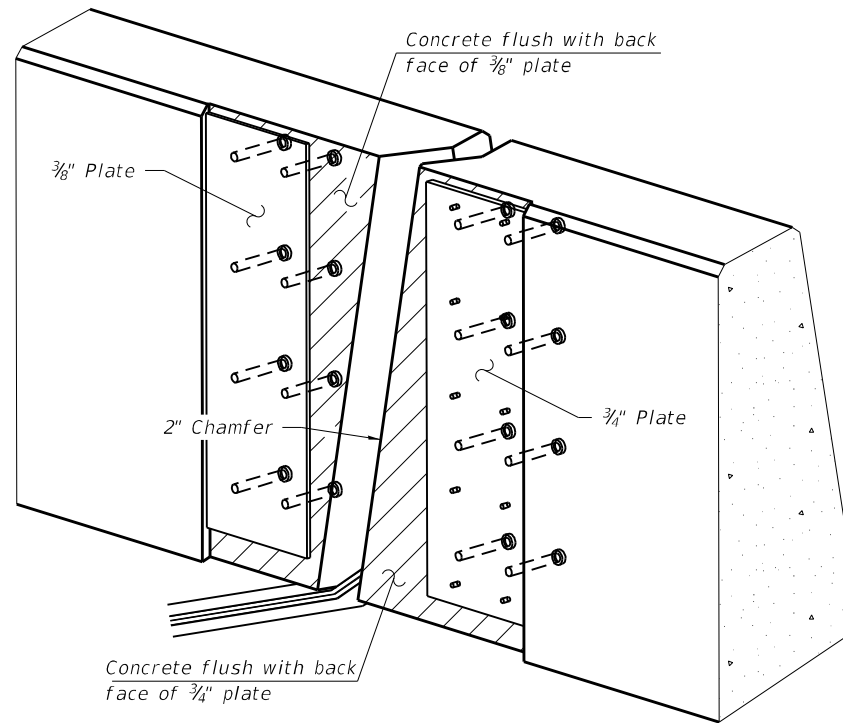


SECTION A-A

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

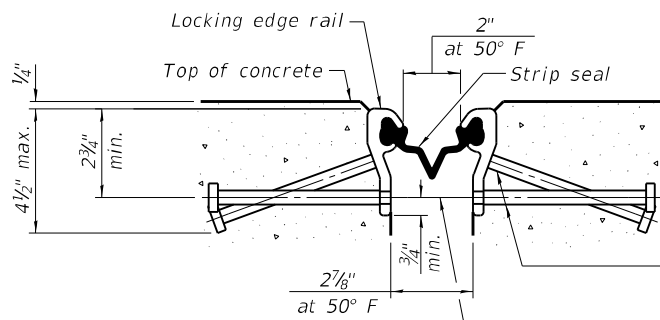


DETAIL A



TRIMETRIC VIEW

(Showing embedded plates only)



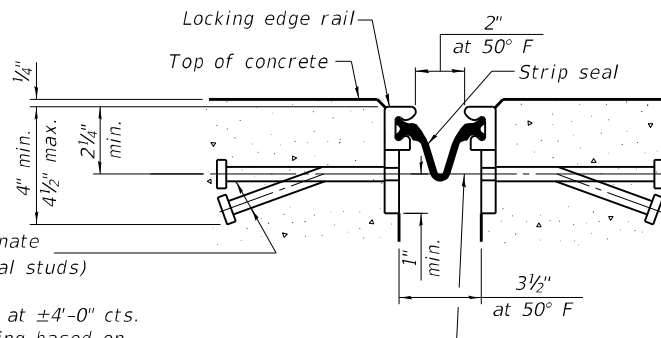
SHOWING ROLLED RAIL JOINT

* $\frac{5}{8}$ " \emptyset x 6" studs @ 6" cts. (alternate angled/bent studs with horizontal studs)

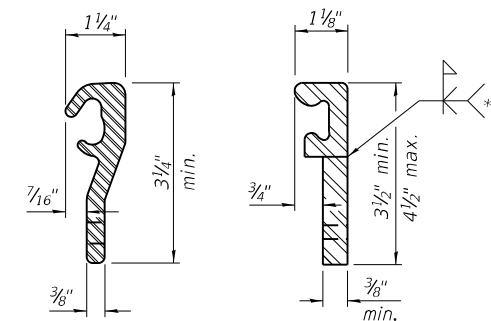
$\frac{3}{8}$ " ϕ threaded rods in $\frac{7}{16}$ " ϕ holes at ± 4 "-0" cts. for holding the proper joint opening based on the temperature during the deck pour. Place to miss studs. All rods shall be burned, or sawed off flush with the plates after concrete is set.

SECTION A-A

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

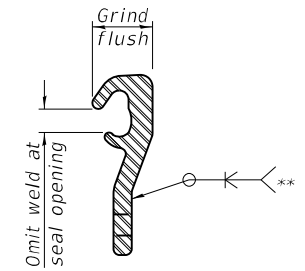


SHOWING WELDED RAIL JOINT



LOCKING EDGE RAILS

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



LOCKING EDGE RAIL SPLICE

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

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	68

EJ-SS

1-1-2020

USER NAME = stefenmk	DESIGNED - T. Walk	REVISED -
PLOT SCALE = 100,0000' / in.	DRAWN - T. Walk	REVISED -
PLOT DATE = 4/5/2021	CHECKED - D. Macklin	REVISED -
	DATE - July 2020	REVISED -

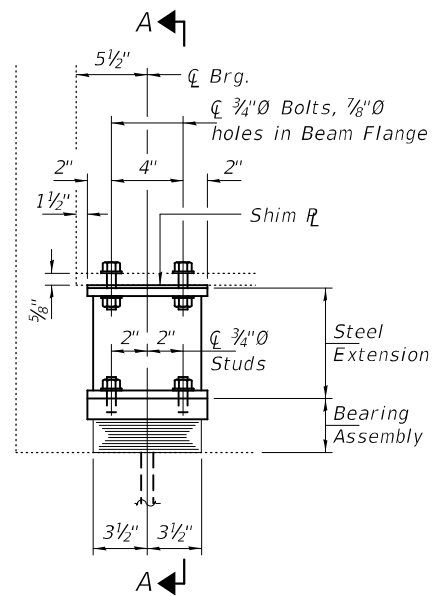
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PREFORMED JOINT STRIP SEAL
S.N. 026-0089

SCALE: SHEET 5 OF 6 SHEETS STA. TO STA.

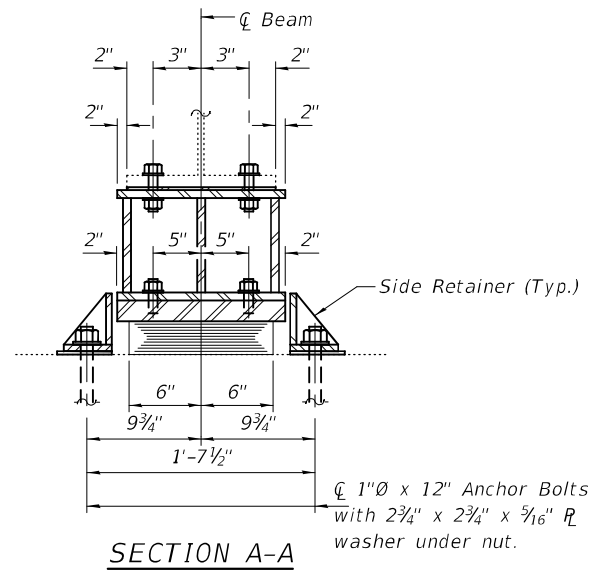
F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2793	D7 BRIDGE REPAIRS 2022-5	FAYETTE	10	9
				CONTRACT NO. 74A30
ILLINOIS FED. AID PROJECT				

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 PLOT SCALE: 100,0000' / in.
 PLOT DATE: 4/5/2021



ELEVATION AT ABUTMENT

TYPE I ELASTOMERIC EXP. BRG.



SECTION A-A

BEAM REACTIONS

R _l	(K)	23.5
R _r	(K)	37.7
Imp.	(K)	10.2
R (Total)	(K)	71.4

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.

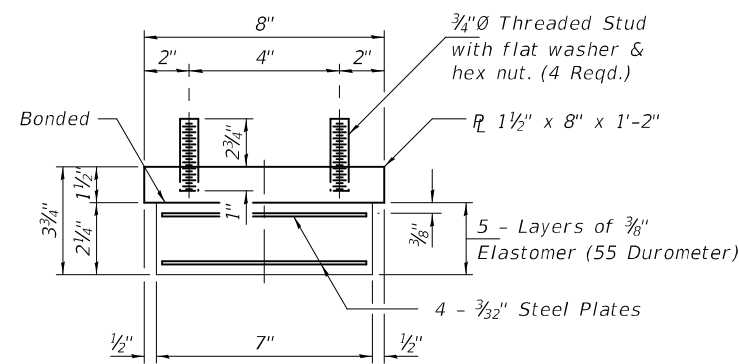
Prior to ordering any material, the Contractor shall verify in the field all bearing height and shim thickness dimensions. Adjustment must account for deck heave due to pack rust (if present).

Min. jack capacity = 36 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_y=36ksi). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.

Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.

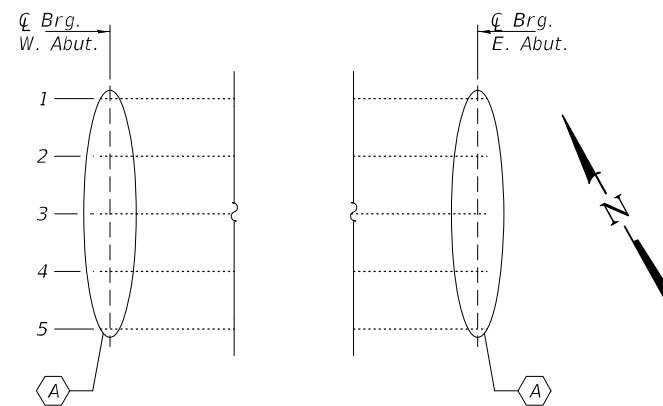
Cost of Side retainers and Stainless Steel plates shall be included in the cost of Elastomeric Bearing Assembly, Type I.



BEARING ASSEMBLY

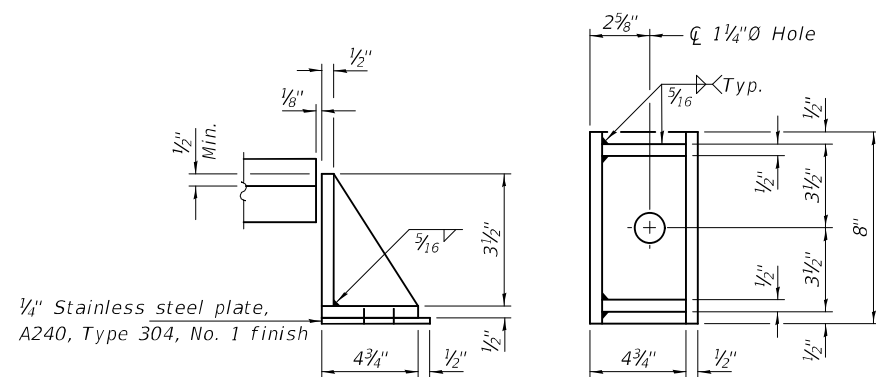
Note:

Shim plates shall not be placed under Bearing Assembly.



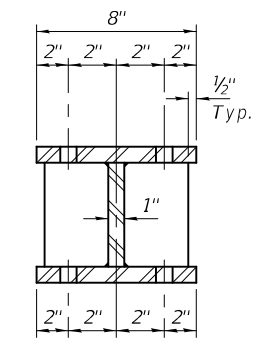
PARTIAL FRAMING PLAN

(A) - Bearing Replacement

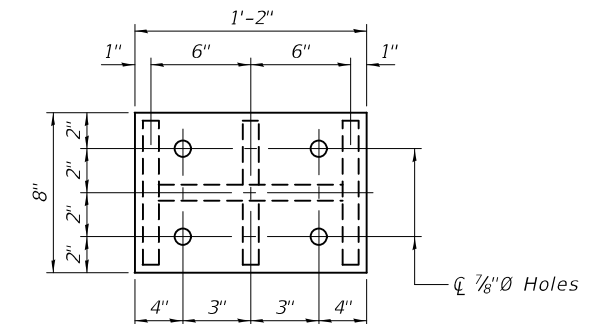


SIDE RETAINER

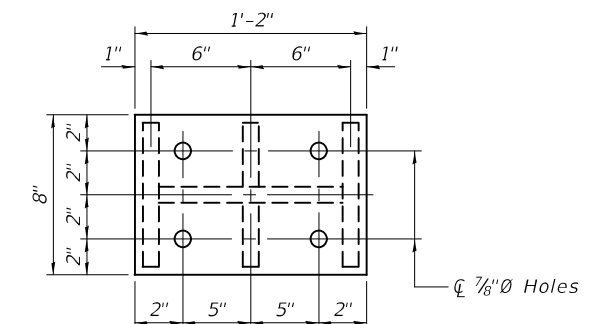
Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.



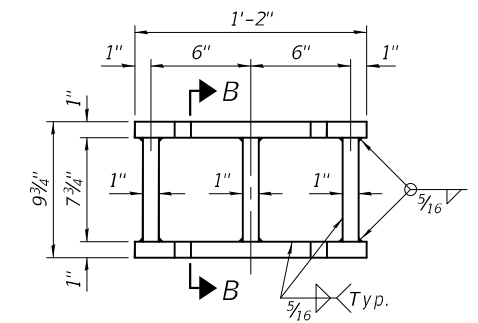
SECTION B-B



PLAN TOP PLATE



PLAN BOTTOM PLATE



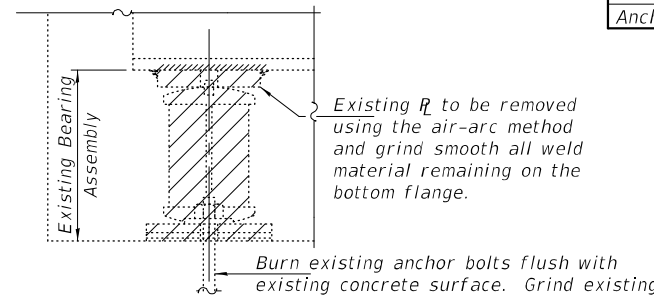
STEEL EXTENSION DETAIL

TOTAL BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Elastomeric Bearing Assembly, Type I	Each	10
Jack and Remove Existing Bearings	Each	10
Furnishing and Erecting Structural Steel	Pound	1440
Anchor Bolts, 1"Ø	Each	20

BILL OF MATERIAL - W. ABUT.

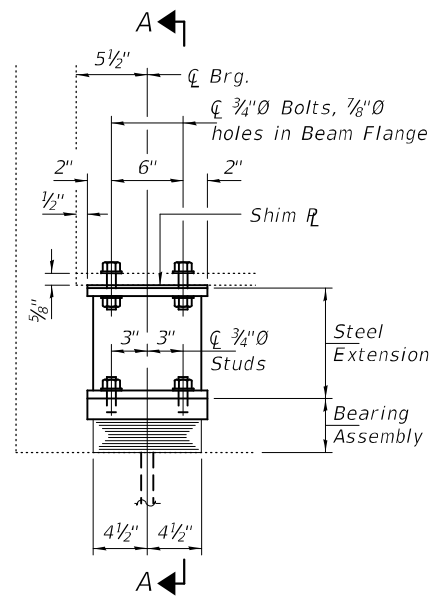
Item	Unit	Total
Elastomeric Bearing Assembly, Type I	Each	5
Jack and Remove Existing Bearings	Each	5
Furnishing and Erecting Structural Steel	Pound	670
Anchor Bolts, 1"Ø	Each	10



EXISTING BEARING REMOVAL DETAIL

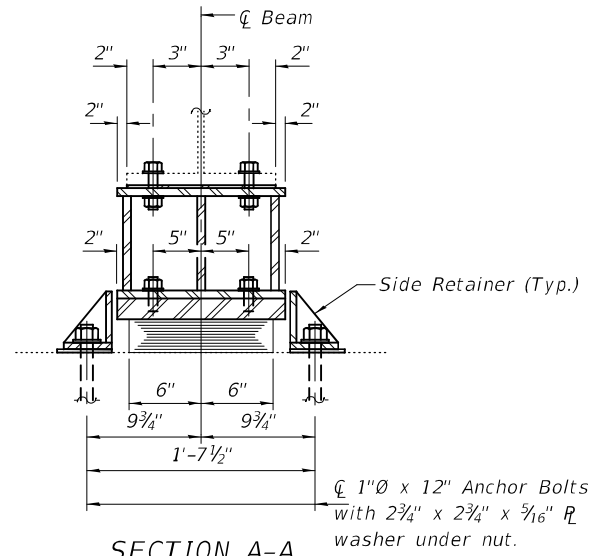
Cost included with Jack and Remove Existing Bearings.

EXPIRES 11-30-2022
TYI/REPS 5-17-2018



ELEVATION AT ABUTMENT

TYPE I ELASTOMERIC EXP. BRG.



SECTION A-A

BEAM REACTIONS

R _l	(K)	22.0
R _r	(K)	36.0
Imp.	(K)	10.6
R (Total)	(K)	68.6

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.

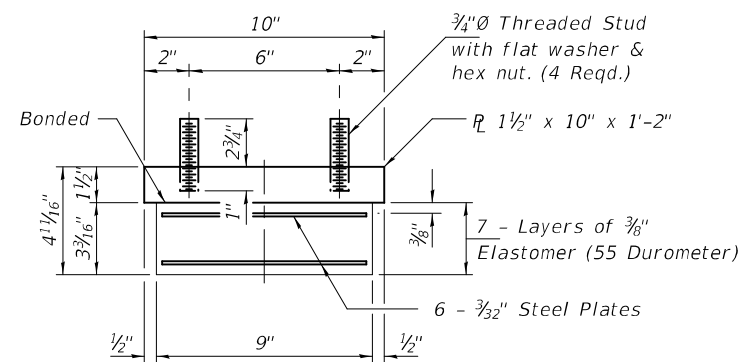
Prior to ordering any material, the Contractor shall verify in the field all bearing height and shim thickness dimensions. Adjustment must account for deck heave due to pack rust (if present).

Min. jack capacity = 34 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_y=36ksi). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.

Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.

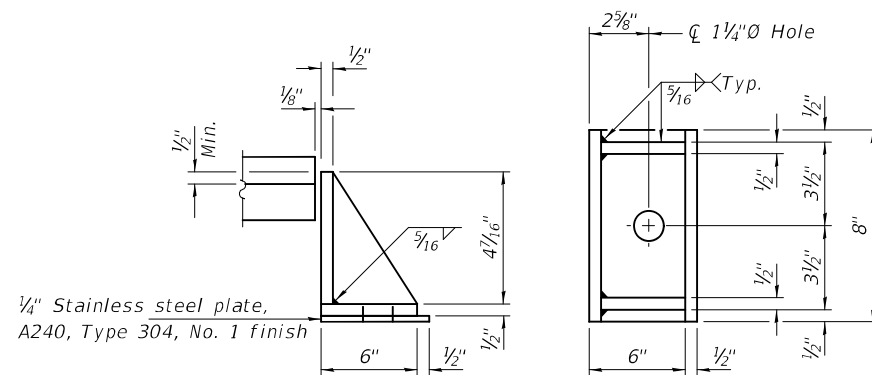
Cost of Side retainers and Stainless Steel plates shall be included in the cost of Elastomeric Bearing Assembly, Type I.



BEARING ASSEMBLY

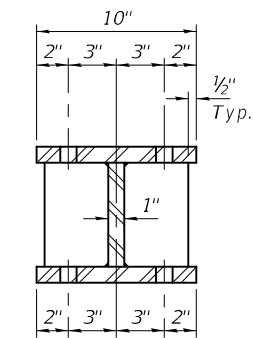
Note:

Shim plates shall not be placed under Bearing Assembly.

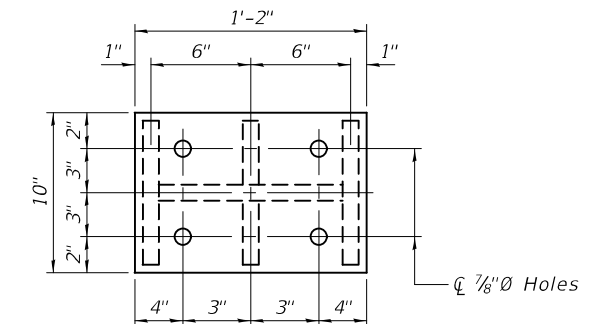


SIDE RETAINER

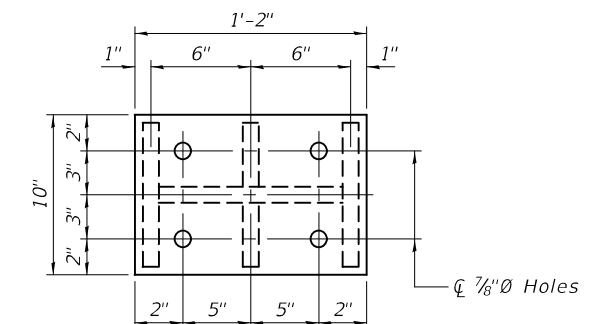
Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.



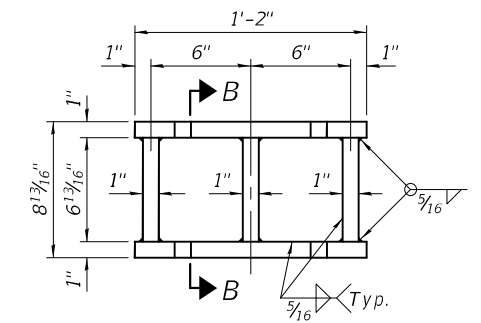
SECTION B-B



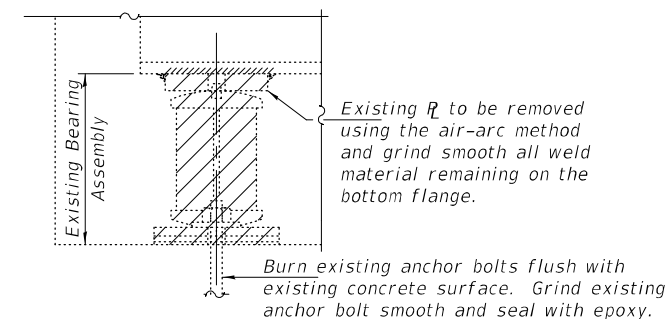
PLAN TOP PLATE



PLAN BOTTOM PLATE



STEEL EXTENSION DETAIL



EXISTING BEARING REMOVAL DETAIL

Cost included with Jack and Remove Existing Bearings.

BILL OF MATERIAL - E. ABUT.

Item	Unit	Total
Elastomeric Bearing Assembly, Type I	Each	5
Jack and Remove Existing Bearings	Each	5
Furnishing and Erecting Structural Steel	Pound	770
Anchor Bolts, 1"Ø	Each	10

TYI/REPS 5-17-2018

DESIGNED - SMR	EXAMINED - <i>Timothy A. Doolittle</i> ENGINEER OF STRUCTURAL SERVICES	DATE - MAY 6, 2021	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	BEARING REPLACEMENT - EAST ABUTMENT SN 026-0089	F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
CHECKED - ATH	PASSED - <i>Carl R. Roper</i> ENGINEER OF BRIDGES AND STRUCTURES	REVISED -			2793	D7 BRIDGE REPAIRS 2022-5	FAYETTE	10	10A	
DRAWN - daburdell		REVISED -			CONTRACT NO. 74A30					
CHECKED - SMR ATH					ILLINOIS FED. AID PROJECT					