

125

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

\* 33 + 10 = 43 TOTAL SHEETS

F.A.I. ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	2018-138-BR	WILL	33	1

CONTRACT NO. 62H68

FOR INDEX OF SHEETS, SEE SHEET NO. 2

# PROPOSED HIGHWAY PLANS

F.A.I. ROUTE 80: INTERSTATE-80  
OVER DES PLAINES RIVER  
SECTION 2018-138-BR  
PROJECT: NHPP-7W27(859)  
BRIDGE REPAIRS  
WILL COUNTY  
C-91-293-19

**TRAFFIC DATA**

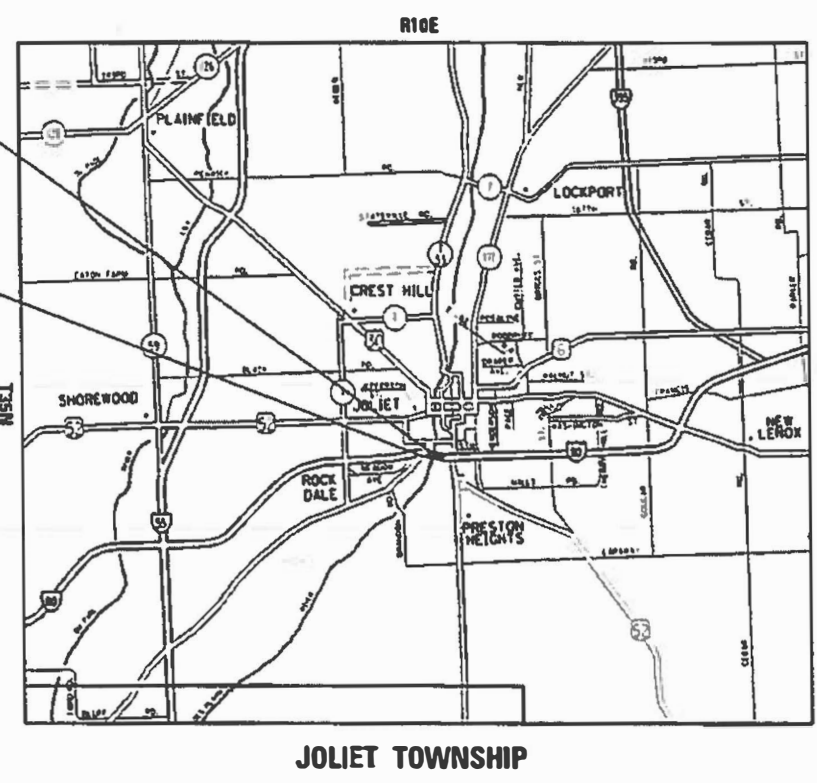
EXISTING ADT = 85400 (2017)  
POSTED SPEED LIMIT = 45-55 MPH

PROJECT IS LOCATED WITHIN  
CITY OF JOLIET



LOCATION 2  
SN 099-0057  
WB I-80 OVER DES PLAINES RIVER

LOCATION 1  
SN 099-0056 E.B.  
EB I-80 OVER DES PLAINES RIVER



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: J. ALAIN MIDY, PE (847) 221-3056  
PROJECT MANAGER: FAWAD AQUEEL, PE, PTOE (847) 705-4247

GROSS & NET LENGTH = 4662.6 FT. = .88 MILE

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

SUBMITTED December 21, 2018

*Anthony J. ...*  
REGIONAL ENGINEER

*Feb 19 2019*  
E.A. ...  
ENGINEER OF DESIGN AND ENVIRONMENT

*Feb 19 2019*  
...  
DIRECTOR OF HIGHWAYS PROJECT IMPLEMENTATION

PRINTED BY THE AUTHORITY  
OF THE STATE OF ILLINOIS

CONTRACT NO. 62H68

REV. 2-27-2019

REV. - MS

INDEX OF SHEETS

SHEET NO.   DESCRIPTION

1	COVER SHEET
2	INDEX OF SHEETS, STANDARDS, AND GENERAL NOTES
3	SUMMARY OF QUANTITIES
* 4-30	STRUCTURE PLANS (SN 099-0056 & 099-0057)
31	FREE ENTRANCE AND EXIT RAMP CLOSURE DETAILS (TC-08)
32	TRAFFIC CONTROL DETAILS FOR FREEWAY SINGLE & MULTI-LANE WEAVE (TC-09)
33	TRAFFIC CONTROL FOR FREEWAY SHOULDER CLOSURES AND PARTIAL RAMP CLOSURES (TC-17)

\* INCLUDES 30A - 30J



STANDARD NO.      DESCRIPTION

000001-07	STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
701400-09	APPROACH TO LANE CLOSURE, FREEWAY/EXPRESSWAY
701401-12	LANE CLOSURE, FREEWAY/EXPRESSWAY
701411-09	LANE CLOSURE, MULTILANE, AT ENTRANCE OR EXIT RAMP FOR SPEED > 45 MPH
701428-01	TRAFFIC CONTROL, SETUP AND REMOVAL, FREEWAY/ EXPRESSWAY
701446-09	TWO LANE CLOSURE FREEWAY/EXPRESSWAY
701901-08	TRAFFIC CONTROL DEVICES

GENERAL NOTES

BEFORE STARTING ANY EXCAVATION, THE CONTRACTOR SHALL CALL "JULIE" AT 800-892-0123 OR 811 FOR FIELD LOCATIONS OF BURIED ELECTRIC, TELEPHONE AND GAS FACILITIES. (48 HOUR NOTIFICATION IS REQUIRED).

THE CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITIES WITH UTILITY COMPANIES, WILMINGTON AND CHANNAHON TOWNSHIPS.

THE CONTRACTOR WILL NOT BE ALLOWED TO SET UP A YARD OR FIELD OFFICE ON STATE PROPERTY WITHOUT WRITTEN PERMISSION FROM THE DEPARTMENT.

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL DIMENSIONS AND CONDITIONS EXISTING IN THE FIELD PRIOR TO CONSTRUCTION AND ORDERING OF MATERIALS.

THE CONTRACTOR SHALL CONTACT THE DISTRICT ONE EXPRESSWAY TRAFFIC CONTROL SUPERVISOR AT (847)705-4151 A MINIMUM OF 72 HOURS IN ADVANCE OF BEGINNING WORK.

THE CONTRACTOR SHALL BE REQUIRED TO PROVIDE ACCESS TO ABUTTING PROPERTY AT ALL TIMES DURING THE CONSTRUCTION OF THIS PROJECT.

THE CONTRACTOR SHALL OBTAIN COAST GUARD APPROVAL FOR ANY WORK THAT MAY INTERFERE WITH NAVIGATIONAL OPERATIONS OF THE NAVIGABLE WATERS. A WORK PLAN SHALL BE PREPARED BY THE CONTRACTOR, REVIEWED AND APPROVED BY THE ENGINEER AND BE SUBMITTED BY THE ENGINEER TO THE COAST GUARD AT THE ADDRESS LISTED BELOW FOR APPROVAL.

BRIDGE ADMINISTRATOR  
 US COAST GUARD  
 NINTH COAST GUARD DISTRICT  
 1240 E. NINTH ST.  
 CLEVELAND, OH 44199-2060

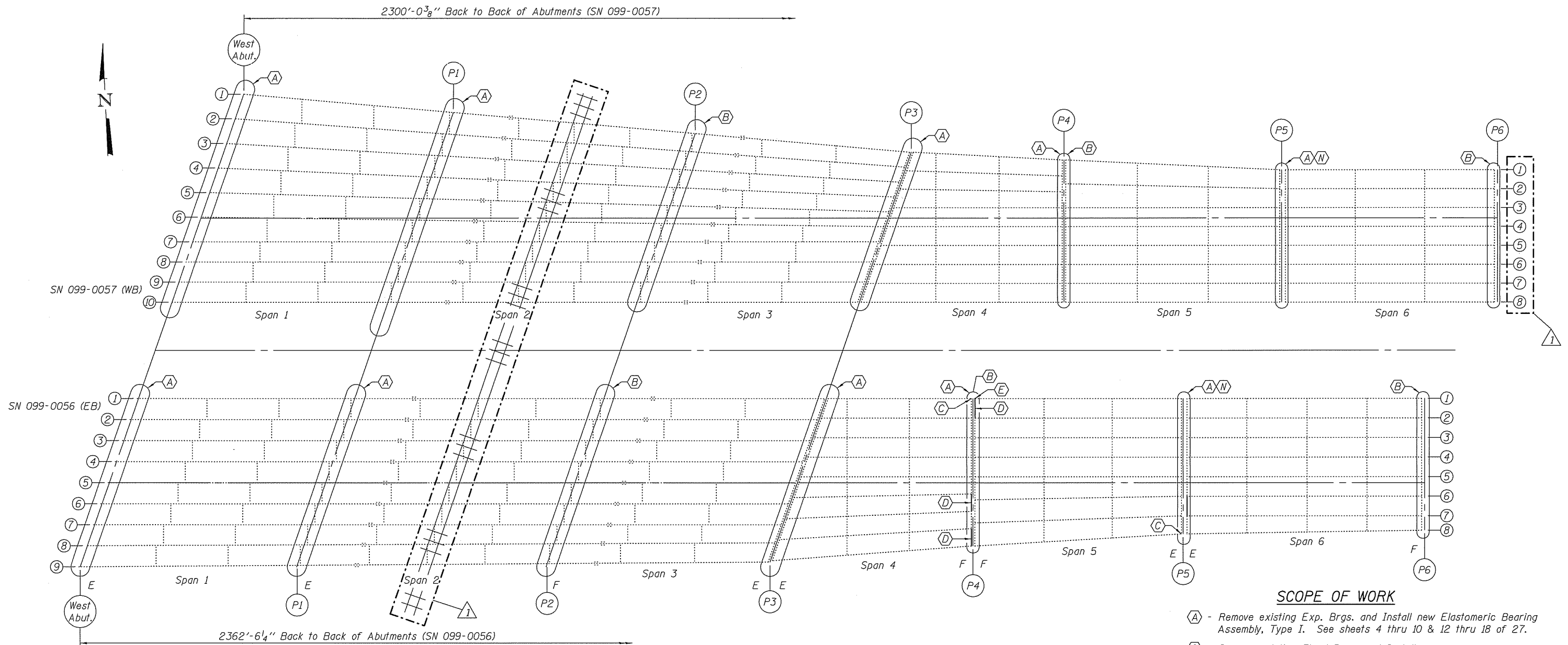
△ REV. 2-27-2019

REV. - MS

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USER NAME = abebawa	DESIGNED -	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>INDEX OF SHEETS, STATE STANDARDS AND GENERAL NOTES</b>				F.A.I. RTE.	SECTION	CO. UNTY	TOTAL SHEETS	SHEET NO.		
DRAWN -	CHECKED -	REVISED -		SCALE:	SHEET	OF	SHEETS	STA.	TO STA.	80	2018-138-BR	WILL	33	2
PLOT SCALE = 100.0000' / in.	DATE -	REVISED -		ILLINOIS FED. AID PROJECT										
PLOT DATE = 12/31/2018	DATE -	REVISED -		CONTRACT NO. 62H68										





FRAMING PLAN - WEST APPROACH SPANS 1 THRU 6

GENERAL NOTES

All structural steel shall conform to AASHTO Classification M-270 Gr. 36, unless otherwise noted.  
 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.  
 Fasteners shall be high strength bolts. Bolts 3/4"φ, open holes 13/16"φ, unless otherwise noted.  
 Diaphragm connection holes shall be 15/16"φ for 3/4"φ bolts. Two hardened washers shall be required at diaphragm connections.

All structural steel shall be hot-dip galvanized. See Special Provision for "Hot Dip Galvanizing for Structural Steel."  
 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".  
 Cost of removal and re-installation of all members necessary to complete the work as detailed on the plans and as specified in the Special Provisions shall be included with Structural Steel Repair.  
 The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.  
 No more than two shims may be used at any bearing location requiring shims.

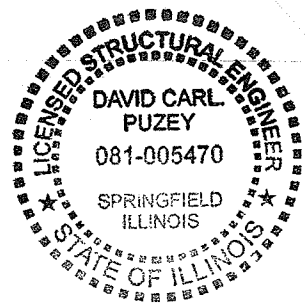
SCOPE OF WORK

- (A) - Remove existing Exp. Brgs. and Install new Elastomeric Bearing Assembly, Type I. See sheets 4 thru 10 & 12 thru 18 of 27.
- (B) - Remove existing Fixed Brgs. and Install new Fixed Bearing Assembly, See sheet 11 & 19 of 27.
- (C) - Beam End Repair. See sheet 25 of 27.
- (D) - Diaphragm replacement. See Table sheet 26 of 27.
- (E) - Beam End Repair, 2018 NBIS Insp. No. 242 & 296, Bm 1, Span 5, Pier 4, See sheet 20 of 27.
- (N) - Trough Installation

See sheet 2 of 27 for additional Scope of Work items.

TOTAL BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Jack and Remove Existing Bearings	Each	710
Elastomeric Bearing Assembly, Type I	Each	409
Furnishing & Erecting Structural Steel	Pound	162870
Anchor Bolts, 1"φ	Each	1388
Structural Steel Removal	Pound	8060
Structural Steel Repair	Pound	25940
Fabric Reinforced Elastomeric Trough	Foot	195



Expires: November 30, 2020

DESIGNED - <i>Stephan S. Puzy</i>	EXAMINED - <i>Tim A. Duda</i>	DATE - FEBRUARY 4, 2019
CHECKED - <i>Kyle M. Stoffen</i>	PASSED - <i>David Carl Puzey</i>	REVISOR - <i>VHV</i>
DRAWN - <i>Kyle M. Stoffen</i>	ENGINEER OF STRUCTURAL SERVICES	REVISION - 02/26/2019 VHV
CHECKED - <i>SWK JSB</i>	ENGINEER OF BRIDGE AND STRUCTURES	

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

FRAMING PLAN - SPANS 1 THRU 6  
I-80 OVER THE DES PLAINES RIVER  
SN 099-0056 (E.B.) & 099-0057 (W.B.)

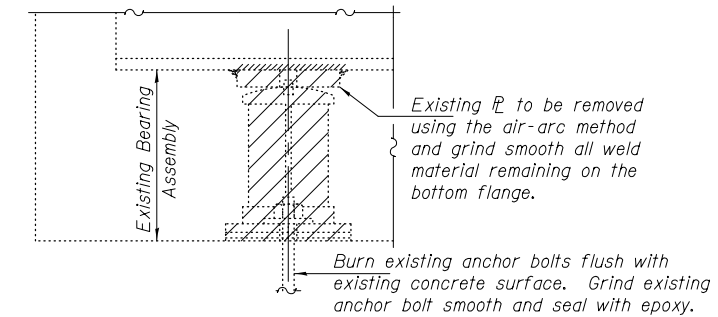
F.A.I. RTE. 80	SECTION 2018-138-BR	COUNTY WILL	TOTAL SHEETS 33	SHEET NO. 4
CONTRACT NO. 62H68			ILLINOIS FED. AID PROJECT	

SHEET NO. 1 OF 27 SHEETS

**TABLE OF LOCATIONS, DIMENSIONS & SHIM PLATES**

Pier	Span	BEARING LOCATION				BOTT. EXT. PLATE					SHIM PLATES **
		Beam	Beam Size	Qty	"A"	"B"	"C"	"D"	"E"		
2	2-3	1-9	36WF150	9	1 3/4"	1/4"	2"	1 3/4"	12 5/8"	7/8" at Bm. 3; 1/4" at Bm. 4	
4	4	1 & 9	36WF150	2					12 3/8"	-	
		2,3,4	30WF108	3	1 1/4"	1/4"	1 1/2"	1 1/4"	12 1/2"	9/16" at Bm. 5	
		5	30WF116	1						13/16" at Bm. 6	
		6,7,8	33WF130	3						1/16" at Bm. 1	
		1-4	36WF150	4	1 3/8"	1/4"	1 5/8"	1 3/8"	12 1/4"	9/16" at Bm. 5; 1/4" at Bm. 6; 3/16" at Bm. 8	
11	11	1 & 8	36WF150	2	1 1/4"	1/8"	1 3/8"	1 1/4"	12 5/8"	1/16" at Bm. 1	
		2-7	33WF130	6					12 3/8"	1/16" at Bm. 3 & 5; 15/16" at Bm. 7	
		1 & 8	36WF150	2	1 1/4"	1/8"	1 3/8"	1 1/4"	12 3/8"	1/16" at Bm. 1	
		2-7	33WF130	6					12 1/8"	7/8" at Bm. 7	
13	13	1 & 8	36WF150	2	1 1/4"	1/8"	1 3/8"	1 1/4"	12 3/4"	-	
		2-7	33WF130	6					12 1/2"	1/16" at Bm. 3 & 5; 7/8" at Bm. 7	
		1 & 8	36WF150	2	1 1/4"	1/8"	1 3/8"	1 1/4"	12 3/8"	-	
		2-7	33WF130	6					12 1/8"	7/8" at Bm. 7	
15	15	1 & 8	36WF150	2				1 1/4"	12 3/4"	7/8" at Bm. 8	
		2 & 3	30WF108	2	1 1/2"	1/4"	1 3/4"	1 1/4"	12 1/2"	5/16" at Bm. 2; 3/8" at Bm. 3	
		4 & 5	30WF116	2					1 1/4"	3/16" at Bm. 4; 1/4" at Bm. 5	
		6 & 7	33WF130	2						-	
		1 & 8	36WF150	2	1 3/8"	1/4"	1 5/8"	1 1/4"	12 3/8"	-	
17	17	2-7	30WF108	6					12 1/8"	-	
		1 & 8	36WF150	2	1 1/2"	1/4"	1 3/4"	1 3/8"	12 7/8"	-	
		2,3,4	33WF130	3	1 1/2"	1/4"	1 3/4"	1 3/8"	12"	-	
19	19	1-8	36WF150	8	1 1/4"	1/4"	1 1/2"	1 1/4"	12 13/16"	1/16" at Bm. 3, 4, 6	
		1-8	36WF150	8					12 3/8"	-	
		1-8	36WF150	8	1 1/4"	1/4"	1 1/2"	1 1/4"	12 13/16"	1/16" at Bm. 2, 4, 6	
21	21	1-8	36WF150	8	1 1/4"	1/4"	1 1/2"	1 1/4"	12 13/16"	1/16" at Bm. 8	
		1-8	36WF150	8					12 3/8"	-	
23	23	1 & 8	36WF150	2	1 1/4"	1/4"	1 1/2"	1 1/4"	12 13/16"	1/16" at Bm. 8	
		2-7	33WF130	6					12 3/8"	-	
25	25-26	1 & 8	36WF170	2				1 1/2"	12 1/8"	-	
		2-6	30WF116	5	1 3/4"	1/4"	2"	1 1/2"	11 1/2"	7/16" at Bm. 5; 13/16" at Bm. 6	
		7	30WF124	1				1 1/2"	11 1/2"	-	

\*\* Shim plate width shall match bottom flange width.



**EXISTING BEARING REMOVAL DETAIL**

Cost included with Jack and Remove Existing Bearings.

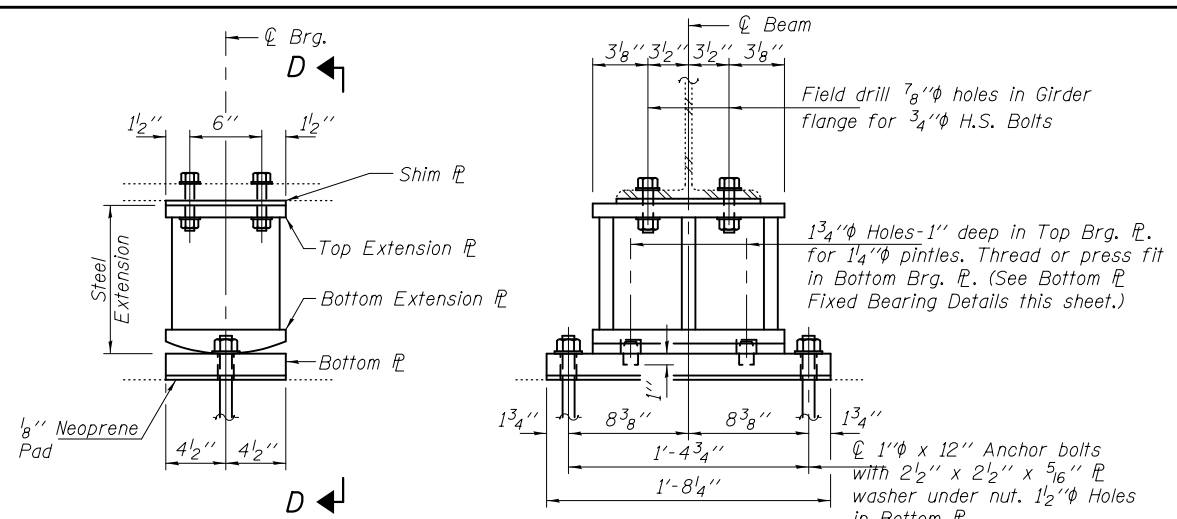
**BILL OF MATERIAL**

Item	Unit	Total
Jack and Remove Existing Bearings	Each	146
Furnishing and Erecting Structural Steel	Pound	36450
Anchor Bolts 1"φ	Each	276

**TABLE OF BEAM REACTIONS**

PIER	SPAN	R <sub>P</sub> (K)	R <sub>L</sub> (K)	Imp.(K)	R (Total)(K)
2	2-3	78.0	58.0	15.0	151.0
4	4	27.0	39.0	10.0	76.0
6	6	36.0	37.0	10.0	83.0
11	11	41.0	35.0	8.0	84.0
13	13	34.0	32.0	9.0	75.0
15	15	30.0	42.0	11.0	83.0
17	17	29.0	34.0	10.0	73.0
19	19	32.0	42.0	11.0	85.0
21	21	40.0	32.0	8.0	80.0
23	23	40.0	32.0	8.0	80.0
25	25-26	35.0	32.0	8.0	75.0
25	25-26	78.0	58.0	16.0	152.0

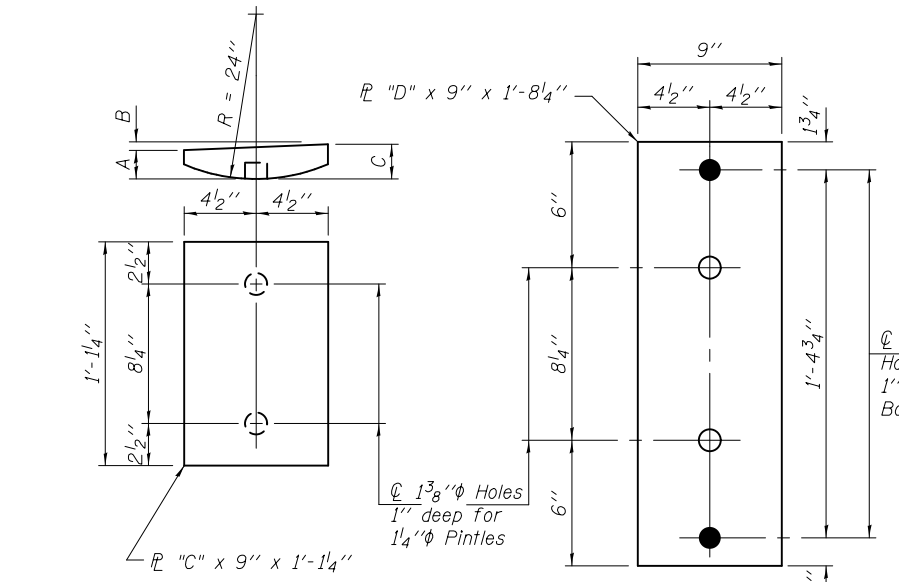
Note:  
No welding shall be allowed on floor beam.



**ELEVATION AT PIER**

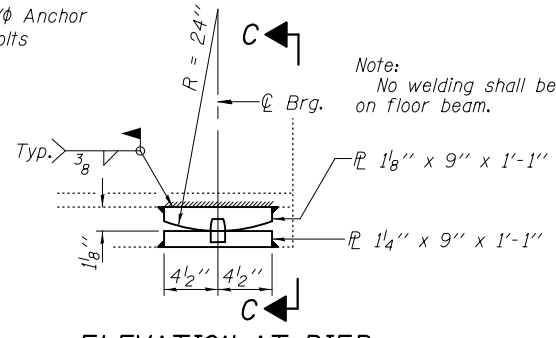
**SECTION D-D**

**FIXED BEARINGS PIER**



**PLAN - BOTTOM EXTENSION PLATE**

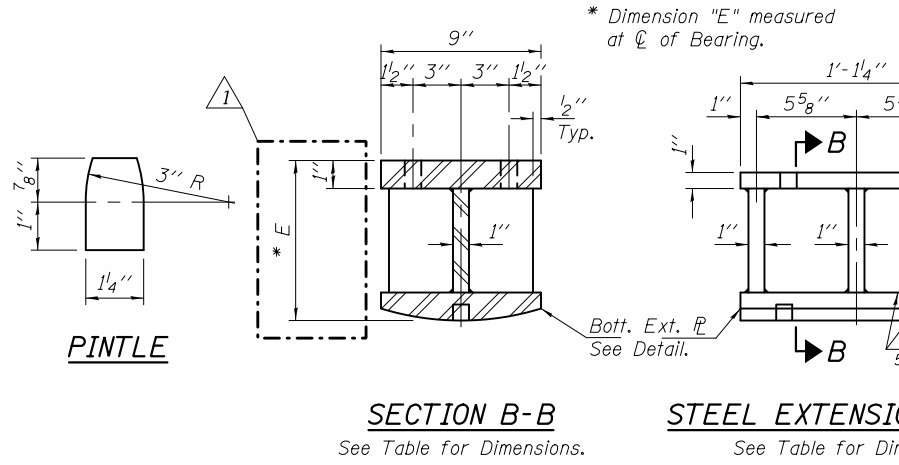
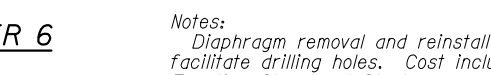
**PLAN - BOTTOM PLATE**



**ELEVATION AT PIER**

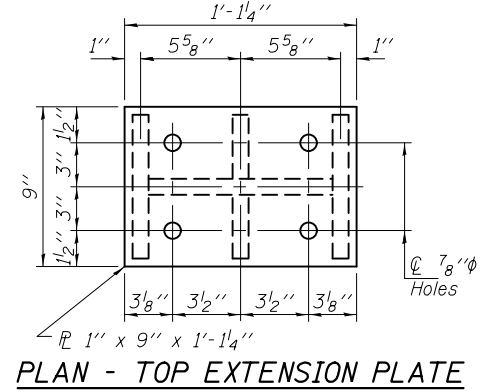
**FIXED BEARING AT PIER 6**

**SECTION C-C**



**SECTION B-B**

**STEEL EXTENSION DETAIL**



**PLAN - TOP EXTENSION PLATE**

Notes:  
Diaphragm removal and reinstallation may be required to facilitate drilling holes. Cost included with Furnishing and Erecting Structural Steel.  
New fixed bearings, 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 = 114 Tons at Pier 2; 64 Tons at Piers 4, 6, 11, 13, 15, 17, 19, 21, & 23; and 114 Tons at Pier 25.  
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.

DESIGNED - SMR
CHECKED - JSB
DRAWN - Kyle M. Steffen
CHECKED - SMR JSB

EXAMINED	Timothy A. Andujar	DATE - FEBRUARY 4, 2019
PASSED	Carl R. Kasper	REVISION 02/26/2019 VHV

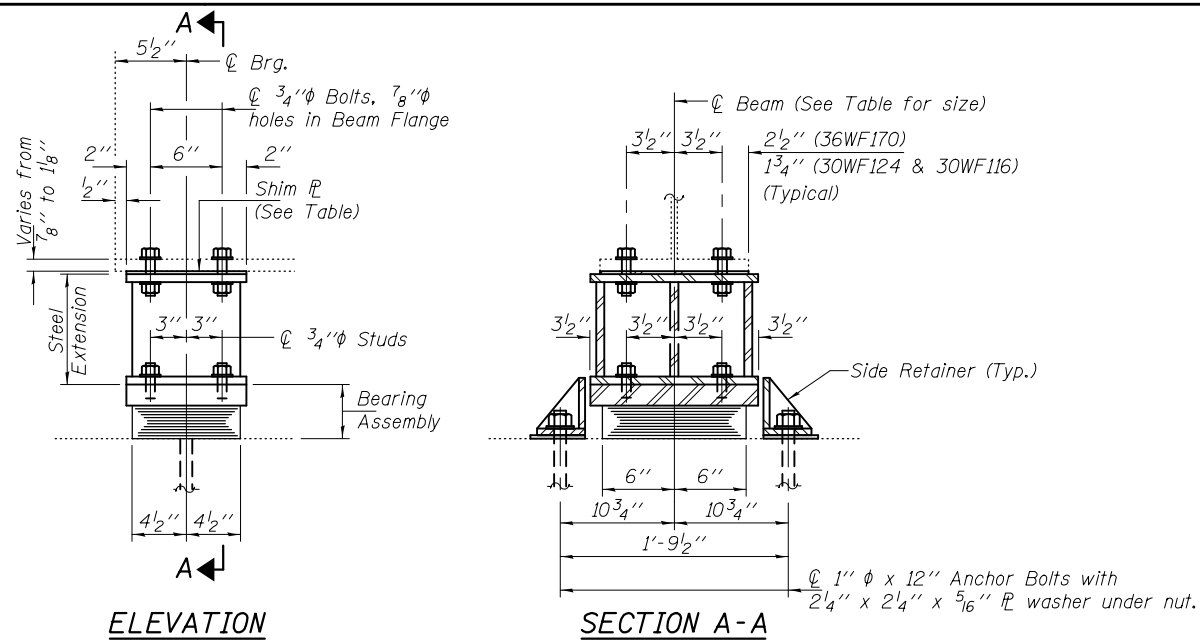
REVISION 02/26/2019 VHV
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**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**FIXED BEARING REPLACEMENT DETAILS FOR**  
**PIERS 2, 4, 6, 11, 13, 15, 17, 19, 21, 23 (SPAN 23) & 25**  
**SN 099-0056 (E.B.)**

SHEET NO. 11 OF 27 SHEETS

F.A.I. RTE. 80	SECTION 2018-138-BR	COUNTY WILL	TOTAL SHEETS 33	SHEET NO. 14
CONTRACT NO. 62H68			ILLINOIS FED. AID PROJECT	



ELEVATION

SECTION A-A

TYPE I ELASTOMERIC EXP. BRG.

TABLE OF LOCATIONS, DIMENSIONS & SHIM PLATES

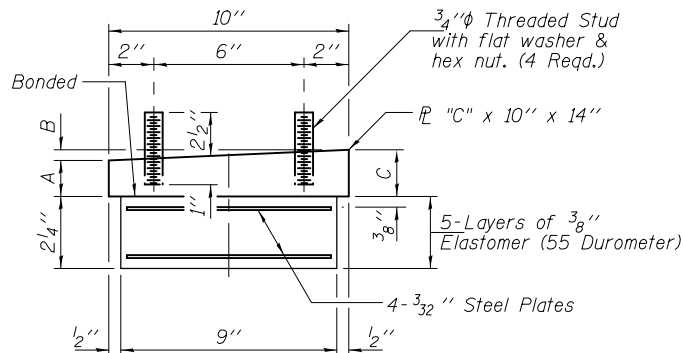
Pier	BEARING LOCATION				BEARING ASSEMBLY				EXTENSION	SHIM PLATES *****
	Span	Beam	Beam Size	Qty	"A"	"B"	"C"	"D"		
3	3	1-10	36WF150	10	1 1/2"	0"	1 1/2"	9 7/8"	9/16" at Bm. 4 & 5	
		1 & 9	36WF150	2	1 1/2"	0"	1 1/2"	9 7/8"	3/8" at Bm. 1 & 9	
	4	2	30WF108	1	1 1/2"	0"	1 1/2"	15 7/16"		
		3	30WF108	1	1 1/2"	0"	1 1/2"	16 1/16"		
		4	30WF108	1	1 1/2"	0"	1 1/2"	9 7/8"		
		5	30WF116	1	1 1/2"	0"	1 1/2"	9 7/8"		
		6 & 7	33WF130	2	1 1/2"	0"	1 1/2"	12 11/16"		
		8	33WF130	1	1 1/2"	0"	1 1/2"	9 7/8"		
5	5	1-3	36WF160	3	1 3/4"	0"	1 3/4"	9 5/8"		
		4-8	36WF150	5	1 3/4"	0"	1 3/4"	3/16" at Bm. 6		
10	11	3-5	36WF150	2	1 1/2"	0"	1 1/2"	9 7/8"		
		6-10	30WF108	6	1 1/2"	0"	1 1/2"	9 7/8"		
12	12	3 & 10	36WF150	2	1 1/2"	0"	1 1/2"	5/16" at Bm. 3; 1/4" at Bm. 10		
		4-9	30WF108	6	1 1/2"	0"	1 1/2"	5/16" at Bm. 4, 6 & 8; 3/8" at Bm. 5, 7 & 9		
12	13	3 & 10	36WF150	2	1 1/2"	0"	1 1/2"	9 7/8"		
		4-9	30WF108	6	1 1/2"	0"	1 1/2"	9 7/8"		
14	14	3 & 10	36WF150	2	1 1/2"	0"	1 1/2"	7/16" at Bm. 3; 3/8" at Bm. 10		
		4-9	30WF108	6	1 1/2"	0"	1 1/2"	*		
14	15	3 & 10	36WF150	2	1 1/2"	1/4"	1 3/4"	9 3/4"		
		4 & 5	30WF124	2	1 1/2"	1/4"	1 3/4"	9 3/4"		
		6 & 7	30WF132	2	1 1/2"	1/4"	1 3/4"	9 3/4"		
		8 & 9	30WF108	2	1 1/2"	1/4"	1 3/4"	9 3/4"		
16	16	3 & 10	36WF150	2	1 5/8"	1/4"	1 7/8"	5/8" at Bm. 3; 1/2" at Bm. 10		
		4-9	30WF108	6	1 5/8"	1/4"	1 7/8"	9 5/8"		
17	17	3-10	36WF150	8	1 1/2"	1/4"	1 3/4"	9 3/4"		
18	18	3-10	36WF150	8	1 1/2"	1/4"	1 3/4"	9 3/4"		
		3-6	36WF160	4	1 1/2"	1/4"	1 3/4"	9 3/4"		
		7-10	36WF150	4	1 1/2"	1/4"	1 3/4"	9 3/4"		
20	20	1, 3-10	36WF150	9	1 1/2"	1/4"	1 3/4"	9 3/4"		
		1, 3-5	36WF160	4	1 1/2"	1/4"	1 3/4"	9 3/4"		
		6-10	36WF150	5	1 1/2"	1/4"	1 3/4"	9 3/4"		
22	22	1-10	36WF150	10	1 1/2"	1/4"	1 3/4"	9 3/4"		
22	23	1-2	36WF160	2	1 3/4"	1/4"	2"	9 1/2"		
		3-10	36WF150	8	1 3/4"	1/4"	2"	9 1/2"		

\* 3/4" at Bm. 4 & 5; 7/8" at Bm. 6; 13/16" at Bm. 7; 7/16" at Bm. 8; 3/8" at Bm. 9  
 \*\* 1/16" at Bm. 3 & 5; 5/8" at Bm. 4 & 6; 7/16" at Bm. 7 & 10; 1/2" at Bm. 8 & 9  
 \*\*\* 1/16" at Bm. 1; 3/4" at Bm. 3; 13/16" at Bm. 4; 5/8" at Bm. 5; 7/16" at Bm. 6, 8 & 10; 1/2" at Bm. 7 & 9  
 \*\*\*\*\* 3/4" at Bm. 1; 9/16" at Bm. 2; 1/2" at Bm. 3, 5, 7 & 9; 7/16" at Bm. 4, 6, 8 & 10  
 \*\*\*\*\* Shim plate width shall match bottom flange width.

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 = 72 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.  
 Cost of Side retainers and Stainless Steel plates shall be included in the cost of Elastomeric Bearing Assembly, Type I.

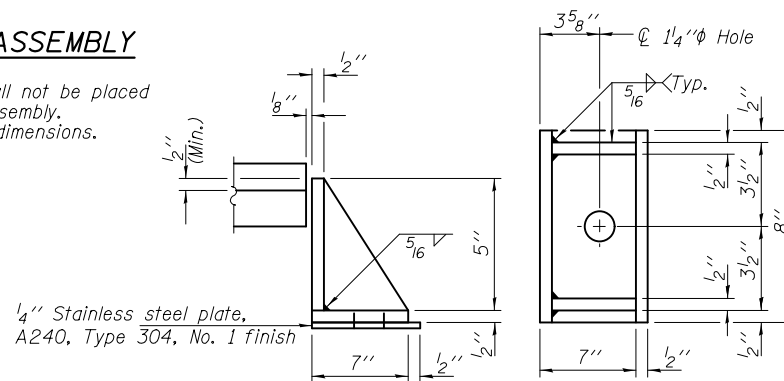
TABLE OF BEAM REACTIONS

PIER	SPAN	R <sub>L</sub> (K)	R <sub>R</sub> (K)	Imp. (K)	R (Total) (K)
3	3	23.0	27.0	7.0	57.0
	4	25.0	34.0	9.0	68.0
5	5	36.0	45.0	12.0	93.0
10	11	28.0	31.0	9.0	68.0
12	12	28.0	31.0	9.0	68.0
	13	28.0	31.0	9.0	68.0
14	14	28.0	31.0	9.0	68.0
16	16	29.0	42.0	12.0	83.0
	17	40.0	32.0	8.0	80.0
18	18	39.0	32.0	8.0	79.0
20	20	39.0	32.0	8.0	79.0
	21	39.0	32.0	8.0	79.0
22	22	38.0	32.0	8.0	78.0
	23	40.0	44.0	11.0	95.0



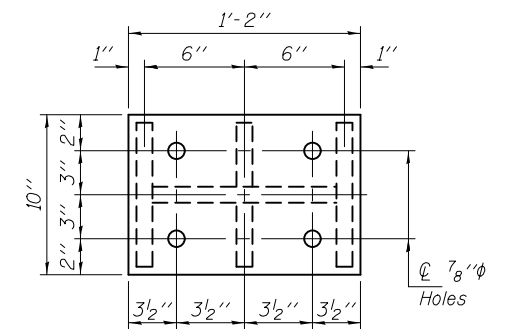
BEARING ASSEMBLY

Note:  
 Shim plates shall not be placed under Bearing Assembly. See Table for dimensions.

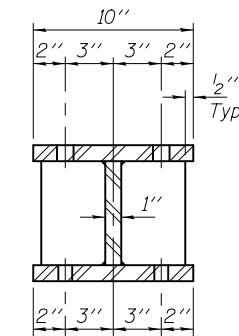


SIDE RETAINER

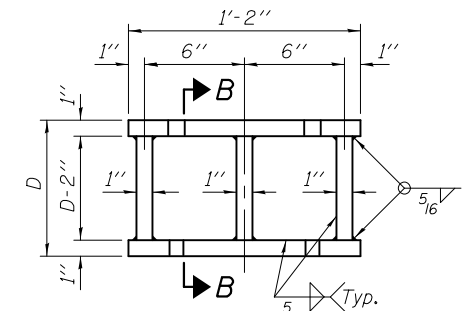
Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.



PLAN TOP AND BOTTOM PLATE

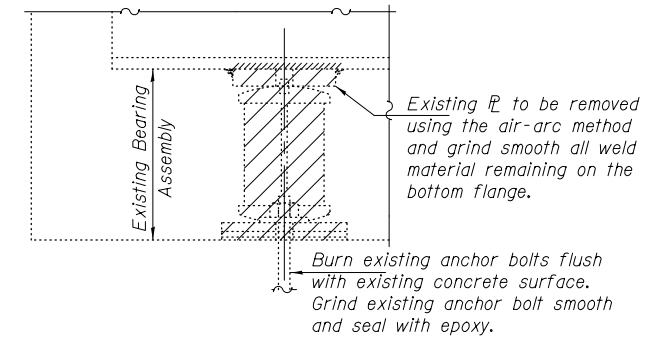


SECTION B-B



STEEL EXTENSION DETAIL

(See Table for Dim. "D")



EXISTING BEARING REMOVAL DETAIL

Cost included with Jack and Remove Existing Bearings.

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly, Type I	Each	137
Jack and Remove Existing Bearings	Each	137
Furnishing and Erecting Structural Steel	Pound	24240
Anchor Bolts 1" $\phi$	Each	274

DESIGNED - SMR  
 CHECKED - JSB  
 DRAWN - Kyle M. Steffen  
 CHECKED - SMR JSB

EXAMINED  
 PASSED  
 ENGINEER OF BRIDGES AND STRUCTURES

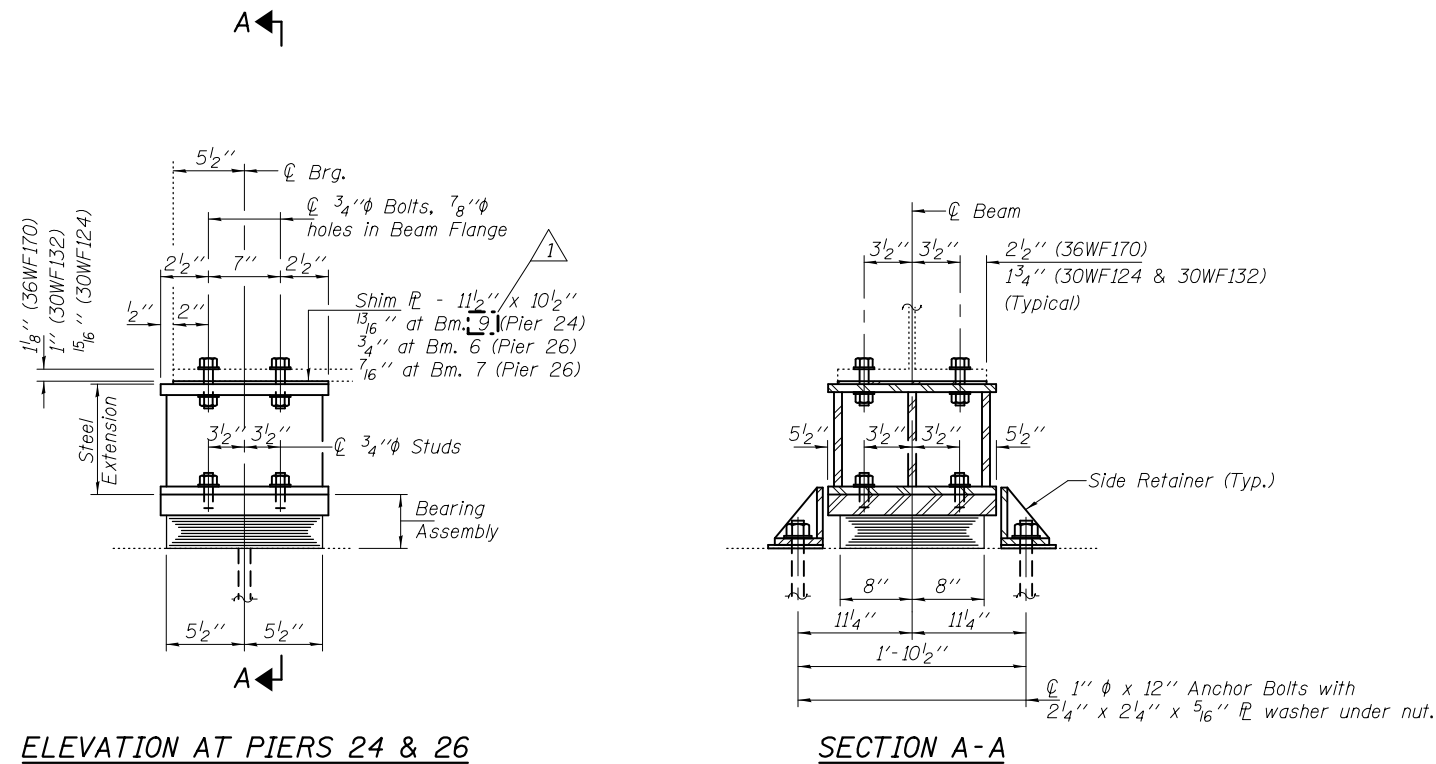
DATE - FEBRUARY 4, 2019  
 REVISED 02/26/2019 VHV  
 REVISED

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

BEARING REPLACEMENT DETAILS FOR  
 PIER 3; PIER 5, SP. 5; PIER 10, SP. 11; PIERS 12, 14, 16, 18, 29 & 22  
 SN 099-0057 (W.B.)

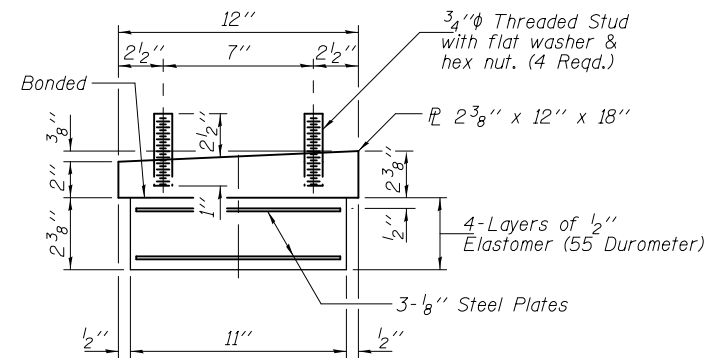
SHEET NO. 14 OF 27 SHEETS

F.A.I. R.T.E. SECTION COUNTY TOTAL SHEETS SHEET NO.  
 80 2018-138-BR WILL 33 17  
 CONTRACT NO. 62H68  
 ILLINOIS FED. AID PROJECT



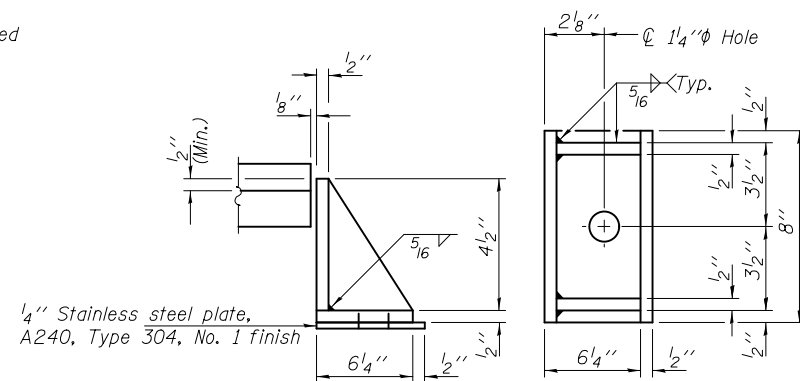
ELEVATION AT PIERS 24 & 26

TYPE I ELASTOMERIC EXP. BRG.



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.

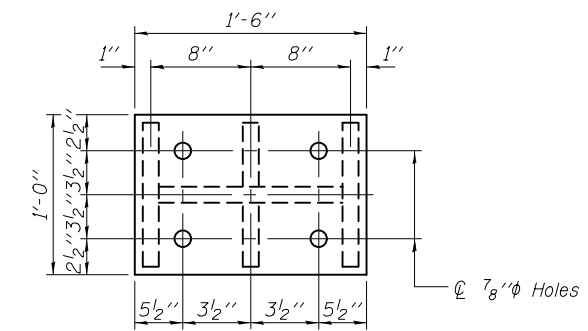
PIER 24  
BEAM REACTIONS

R $\perp$	(K)	78.0
R $\parallel$	(K)	45.0
Imp.	(K)	12.0
R (Total)	(K)	135.0

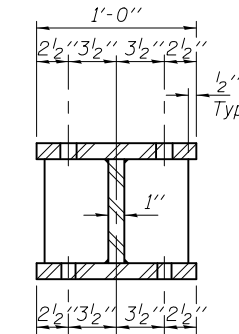
PIER 26  
BEAM REACTIONS

R $\perp$	(K)	78.0
R $\parallel$	(K)	45.0
Imp.	(K)	12.0
R (Total)	(K)	135.0

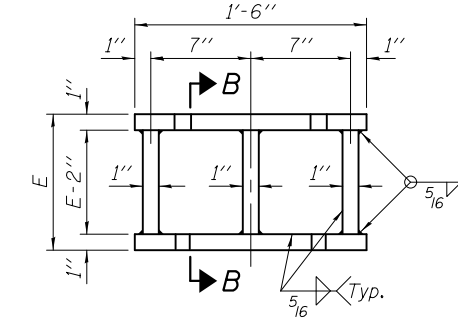
Notes:  
Diaphragm removal and reinstallation may be required to facilitate drilling holes. Cost included with Furnishing and Erecting Structural Steel.  
New steel extensions, shim plates and connection bolts are included with Furnishing and Erecting Structural Steel.  
Prior to ordering any material, the Contractor shall verify in the field all bearing height and shim thickness dimensions. Adjustment must account for deck heave due to pack rust (if present).  
Min. jack capacity = 102 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.  
Cost of Side retainers and Stainless Steel plates shall be included in the cost of Elastomeric Bearing Assembly, Type I.



PLAN TOP AND BOTTOM PLATE



SECTION B-B

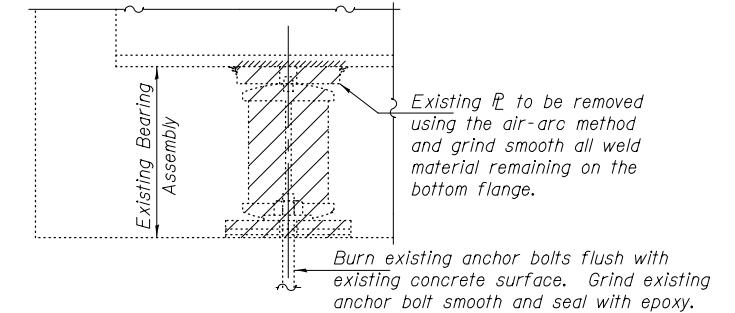


STEEL EXTENSION DETAIL

(See Table for Dim. "E")

TABLE OF LOCATIONS & DIMENSIONS

Pier	BEARING LOCATION			EXTENSION
	Beam	Beam Size	Qty	"E"
24	1 & 10	36WF170	2	9 <sup>5</sup> / <sub>16</sub> "
	2 & 3	30WF132	2	9 <sup>5</sup> / <sub>16</sub> "
	4-9	30WF124	6	9 <sup>5</sup> / <sub>16</sub> "
26	1 & 10	36WF170	2	9 <sup>5</sup> / <sub>16</sub> "
	2 & 3	30WF132	2	9 <sup>5</sup> / <sub>16</sub> "
	4-9	30WF124	6	9 <sup>5</sup> / <sub>16</sub> "



EXISTING BEARING REMOVAL DETAIL

Cost included with Jack and Remove Existing Bearings.

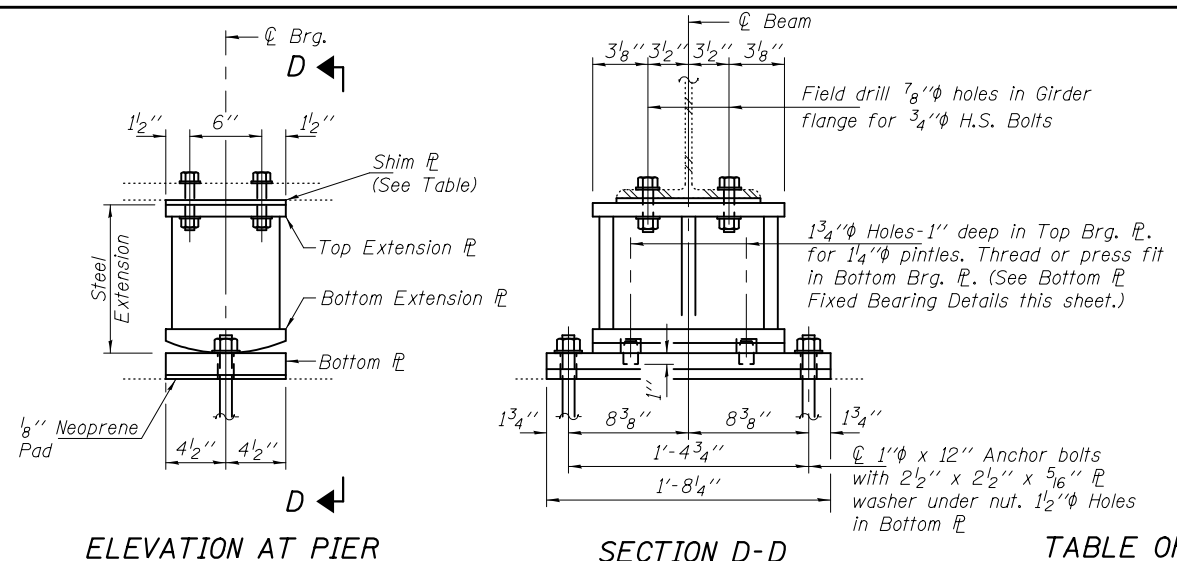
BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly, Type I	Each	20
Jack and Remove Existing Bearings	Each	20
Furnishing and Erecting Structural Steel	Pound	4640
Anchor Bolts 1" $\phi$	Each	40

**TABLE OF LOCATIONS, DIMENSIONS & SHIM PLATES**

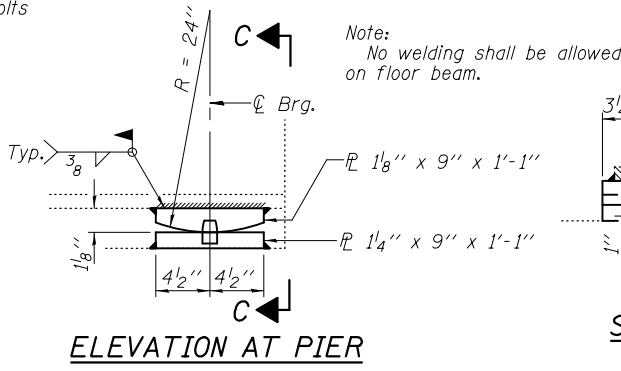
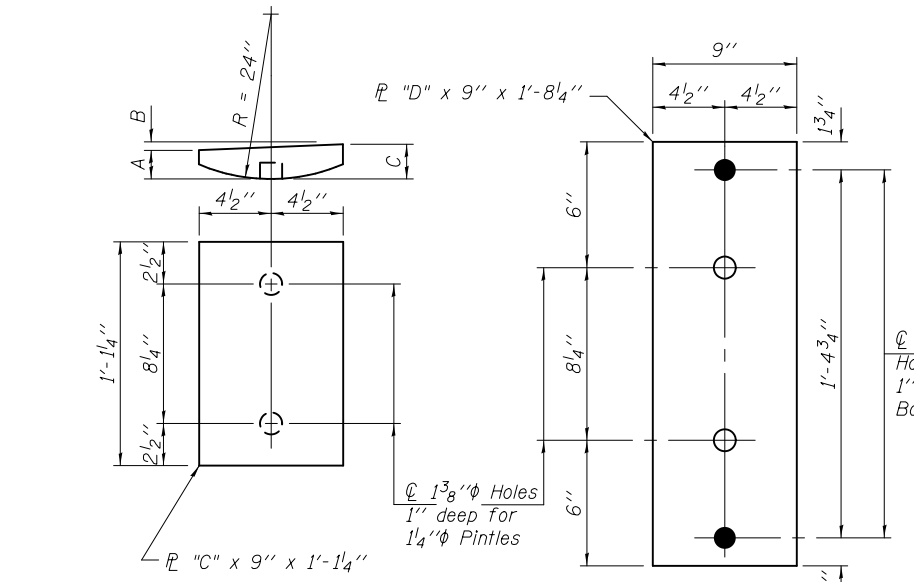
Pier	Span	BEARING LOCATION				BOTT. EXT. PL				EXTENSION	SHIM PLATES **
		Beam	Beam Size	Qty	"A"	"B"	"C"	"D"			
2	2-3	1-10	36WF150	10	1 3/4"	1/4"	2"	1 5/8"	12 3/4"	1 3/16" at Bm. 3; 5/16" at Bm. 4; 1/2" at Bm. 5	
4	4	1 & 9	36WF150	2	1 1/4"	1/8"	1 3/8"	1/8"	12 1/2"	5/8" at Bm. 4; 7/16" at Bm. 5	
		2,3,4	30WF108	3					12 1/4"		
		5	30WF116	1							
4	5	1-3	36WF160	3	1 3/8"	1/8"	1 1/2"	1 3/8"	12 1/4"	1/2" at Bm. 3	
		4-8	36WF150	5						3/16" at Bm. 8; 3/4" at Bm. 4	
11	11	3 & 10	36WF150	2	1 1/4"	1/8"	1 3/8"	1/8"	12 13/16"	1/16" at Bm. 3	
		4-9	30WF108	6					12 1/2"	1/16" at Bm. 4, 6 & 8	
11	12	3 & 10	36WF150	2	1 1/4"	1/8"	1 3/8"	1/8"	12 1/2"		
		4-9	33WF130	6					12 1/4"		
13	13	3 & 10	36WF150	2	1 1/4"	1/8"	1 3/8"	1/8"	12 13/16"	1/16" at Bm. 3	
		4-9	30WF108	6					12 9/16"	1/16" at Bm. 4, 6 & 8	
13	14	3 & 10	36WF150	2	1 1/4"	1/8"	1 3/8"	1/8"	12 1/2"		
		4-9	30WF108	6					12 1/4"		
15	15	3 & 10	36WF150	2					12 15/16"	1/16" at Bm. 10	
		4 & 5	30WF124	2	1 3/8"	1/8"	1 1/2"	1/8"			
		6 & 7	30WF132	2					12 1/4"		
15	16	3 & 10	36WF150	2	1 1/2"	1/8"	1 5/8"	1 1/4"	12 3/8"	3/8" at Bm. 8 & 9	
		4-9	30WF108	6					12 1/8"	1/8" at Bm. 6 & 7	
17	17	3-10	36WF150	8	1 1/4"	1/4"	1 1/2"	1 1/4"	12 3/8"	1/4" at Bm. 3; 7/16" at Bm. 5, 7 & 10; 1/2" at Bm. 4, 6, 8 & 9	
		3-10	36WF150	8	1 1/8"	1/4"	1 3/8"	1 1/4"	12 3/8"		
19	19	3-6	36WF160	4	1 1/4"	1/4"	1 1/2"	1 1/4"	12 3/8"	1/4" at Bm. 3; 1/16" at Bm. 4; 5/16" at Bm. 6	
		7-10	36WF150	4					12 3/8"	1/2" at Bm. 7 & 9; 7/16" at Bm. 8 & 10	
		1, 3-10	36WF150	9	1 1/8"	1/4"	1 3/8"	1 1/4"	12 3/8"	3/16" at Bm. 5	
21	21	1, 3-5	36WF160	4	1 1/4"	1/4"	1 1/2"	1 1/4"	12 3/8"	3/8" at Bm. 1 & 5; 1/16" at Bm. 3	
		6-10	36WF150	5					12 3/8"	7/16" at Bm. 6, 8 & 10; 1/2" at Bm. 7 & 9	
		1-10	36WF150	10	1 1/8"	1/4"	1 3/8"	1 1/4"	12 3/8"	1/4" at Bm. 4	
23	23	1 & 2	36WF160	2	1 3/8"	1/4"	1 5/8"	1 3/8"	12 1/4"	5/16" at Bm. 1	
		3-10	36WF150	8					12 1/4"	9/16" at Bm. 10	
25	25-26	1 & 10	36WF170	2					12"		
		2 & 3	30WF132	2	1 3/4"	1/4"	2"	1 5/8"	11 3/8"	1/16" at Bm. 6; 1/2" at Bm. 7	
25	25-26	4-9	30WF124	6							

\*\* Shim plate width shall match bottom flange width.

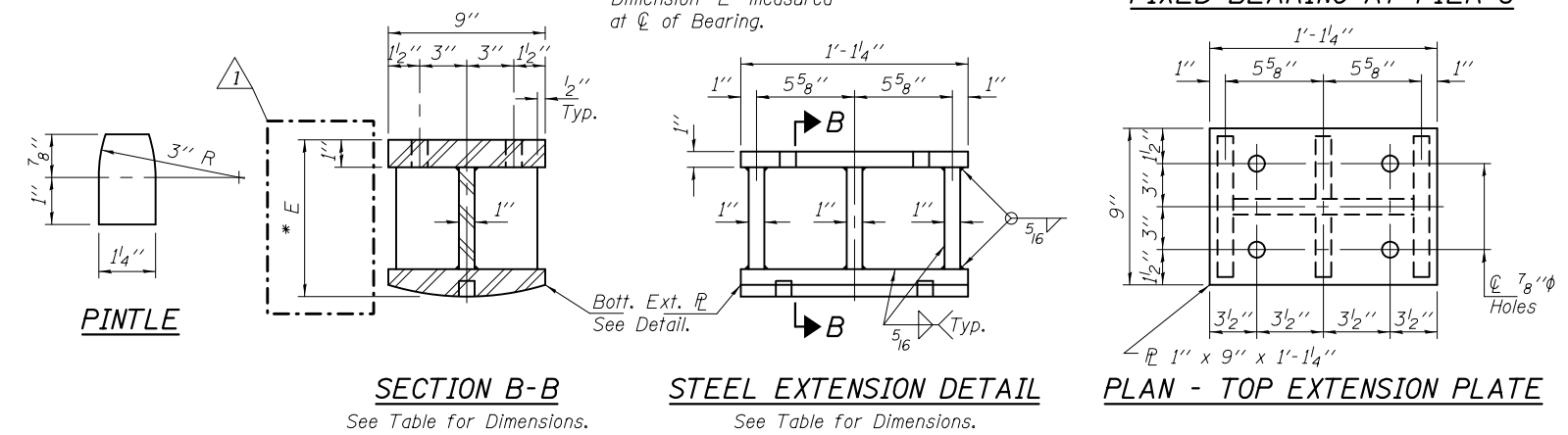


**TABLE OF BEAM REACTIONS**

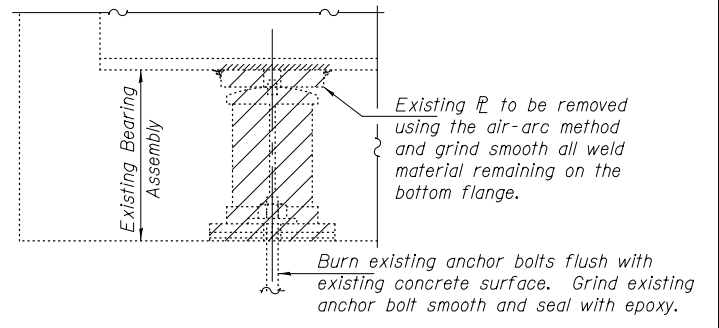
PIER	SPAN	R <sub>L</sub> (K)	R <sub>R</sub> (K)	Imp.(K)	R (Total)(K)
2	2-3	78.0	59.0	15.0	152.0
4	4	25.0	34.0	9.0	68.0
	5	38.0	45.0	12.0	95.0
6	6	34.0	42.0	11.0	87.0
11	11	28.0	31.0	9.0	68.0
	12				
13	13	28.0	31.0	9.0	68.0
	14				
15	15	28.0	31.0	9.0	68.0
	16	29.0	42.0	12.0	83.0
	17	40.0	34.0	9.0	83.0
17	18	39.0	32.0	8.0	79.0
	19	40.0	32.0	8.0	80.0
19	20	39.0	32.0	8.0	79.0
	21	39.0	32.0	8.0	79.0
21	22	38.0	32.0	8.0	78.0
	23	40.0	44.0	11.0	95.0
23	23	78.0	58.0	16.0	152.0
25	25-26				



**FIXED BEARING AT PIER 6**



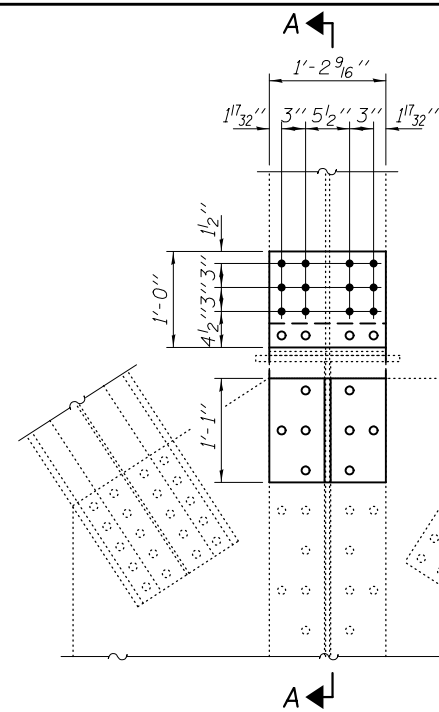
**Notes:**  
 Diaphragm removal and reinstallation may be required to facilitate drilling holes. Cost included with Furnishing and Erecting Structural Steel.  
 New fixed bearings, steel extensions, shim plates and connection bolts are included with Furnishing and Erecting Structural Steel.  
 Prior 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 = 114 Tons at Pier 2; 72 Tons at Piers 4, 6, 11, 13, 15, 17, 19, 21, & 23; and 114 Tons at Pier 25.  
 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.



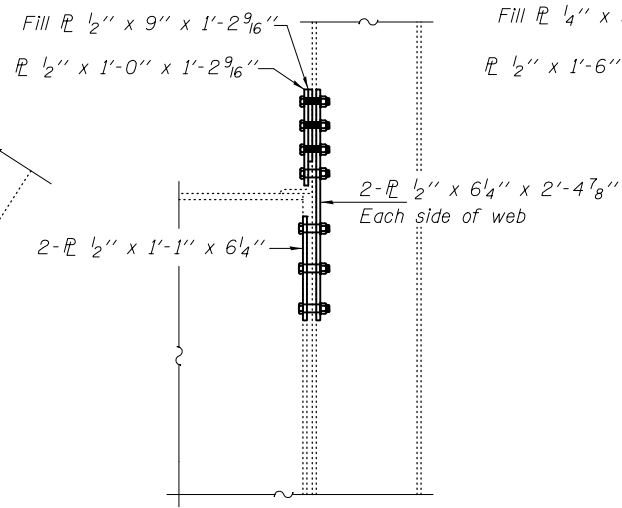
**BILL OF MATERIAL**

Item	Unit	Total
Jack and Remove Existing Bearings	Each	155
Furnishing and Erecting Structural Steel	Pound	38490
Anchor Bolts 1" PL	Each	294

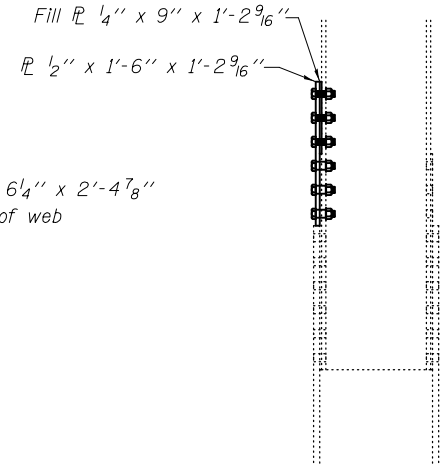




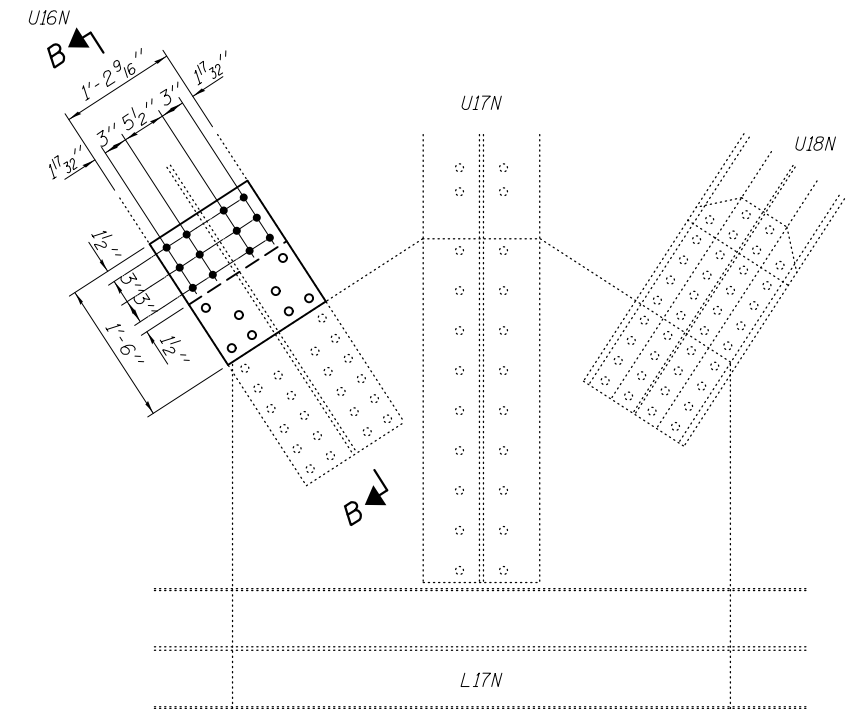
**REPAIR "J"**  
(2018 NBIS Item 249)



**SECTION A-A**

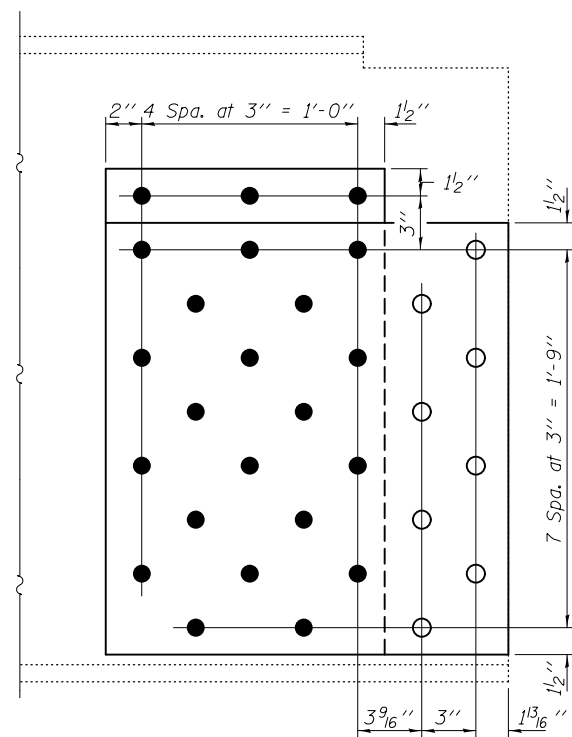


**SECTION B-B**



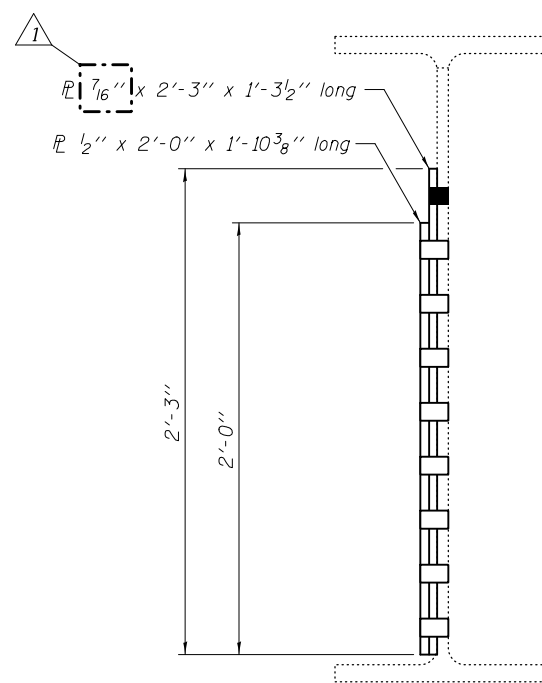
**REPAIR "I"**  
(2018 NBIS Item 252)  
(Looking North)

See Diaphragm Replacement  
Details on sheet 26 of 27.  
(2018 NBIS Item 242)

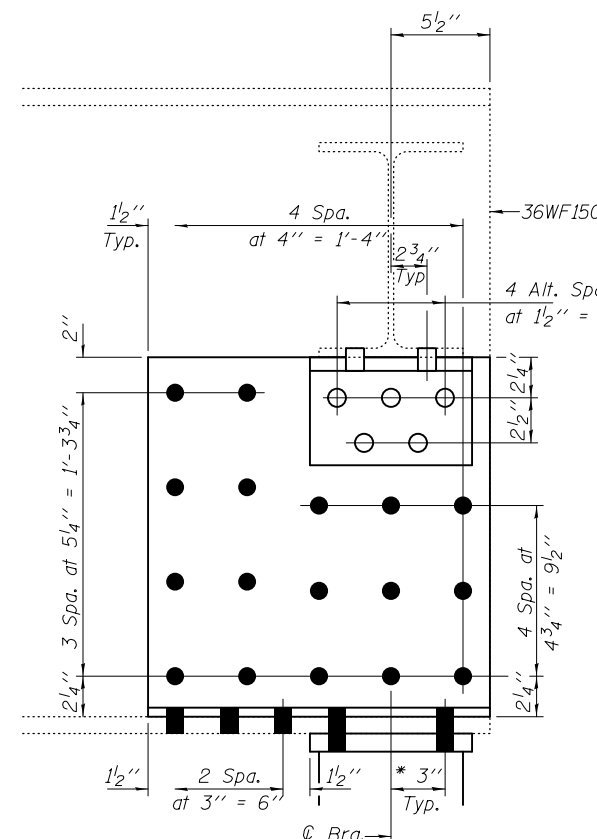


**ELEVATION**

**REPAIR "O"**  
**BEAM 1, SPAN 10**  
(2018 NBIS Items 314)

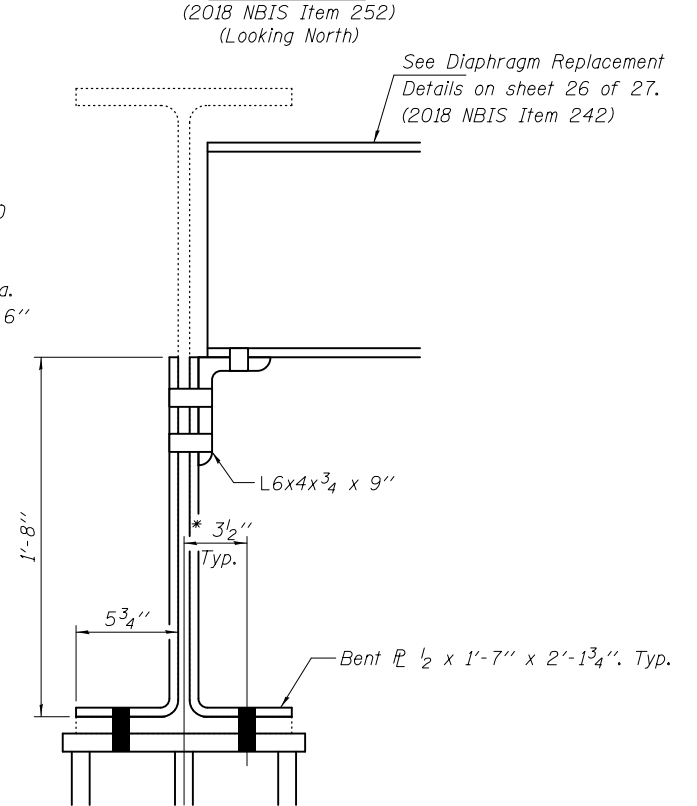


**END SECTION**



**ELEVATION**

**REPAIR "N"**  
**BEAM 1, SPAN 5**  
(2018 NBIS Items 296 & 242)



**END SECTION**

**BOLT HOLE LEGEND**

- - Use holes in new steel as template
- - Use holes in existing steel as template

**Note:**

Contact surfaces for all details on this sheet are to be cleaned and painted per the requirements of primary connections as per the special provision "Cleaning and Painting Contact Surface Area of Existing Steel Structures".

\* See sheet 11 of 27.

DESIGNED - SMR
CHECKED - JSB
DRAWN - Kyle M. Steffen
CHECKED - SMR JSB

EXAMINED	<i>Timothy A. Daulton</i> ENGINEER OF STRUCTURAL SERVICES
PASSED	<i>Carl Ringer</i> ENGINEER OF BRIDGES AND STRUCTURES

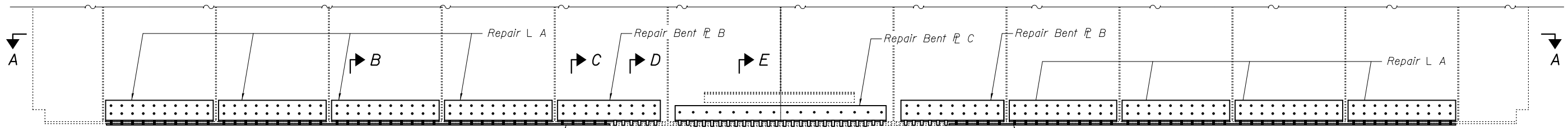
DATE - FEBRUARY 4, 2019
REVISED $\Delta$ 02/26/2019 VHV
REVISED

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**REPAIR DETAILS**  
**SN 099-0056 (E.B.)**

SHEET NO. 20 OF 27 SHEETS

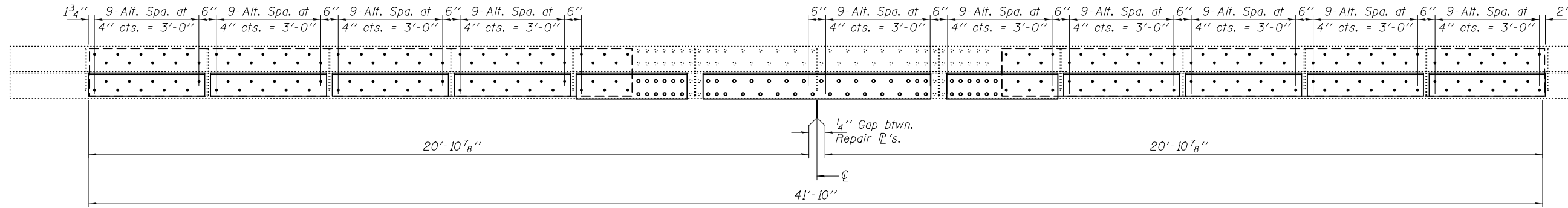
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	2018-138-BR	WILL	33	23
CONTRACT NO. 62H68			ILLINOIS FED. AID PROJECT	



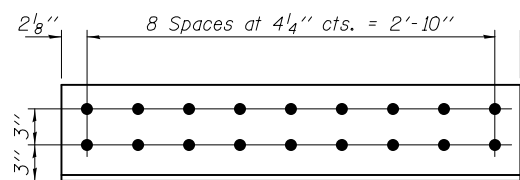
**REPAIR "L" - FLOOR BEAM 3 STRENGTHENING DETAIL**

(2018 NBIS Item 382)  
(Looking at West Face of Floor Beam 3)

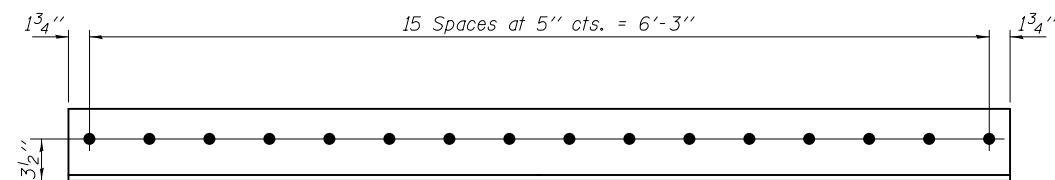
Note:  
Field drill holes in horizontal leg of Repair L A using holes in bottom flange repair R as template.



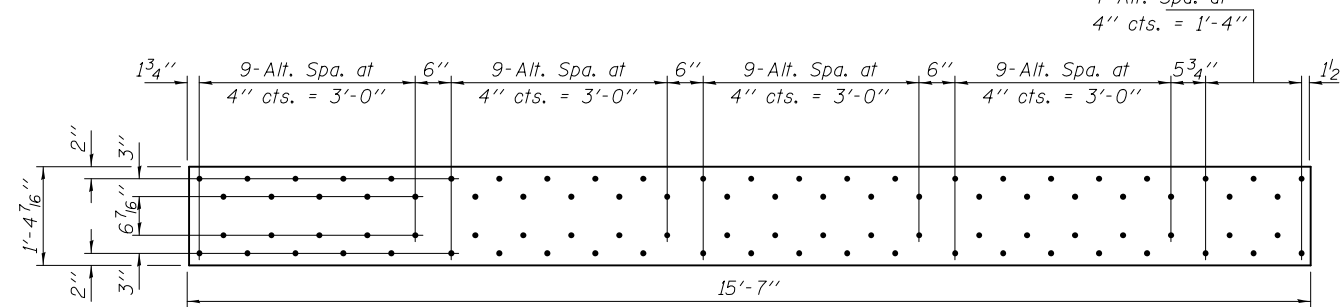
**SECTION A-A**



**ELEVATION**

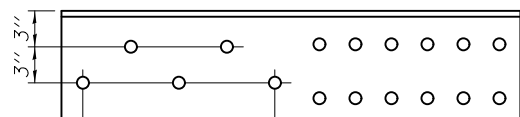


**ELEVATION**



**BOTTOM FLANGE REPAIR R**

R 1/2" x 1'-4 7/16" x 15'-7"  
(2 Req'd.)



**PLAN**

**REPAIR BENT R B**

Bent R 1'-5" x 1/2" x 3'-2 1/4" (2 Req'd.)

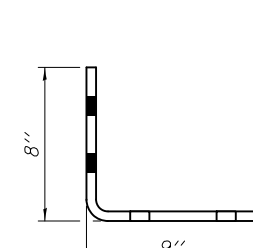
\* Field drill using bottom flange R as template

**PLAN**

**REPAIR BENT R C**

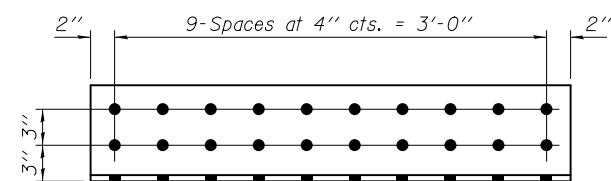
Bent R 1'-3" x 1/2" x 6'-6 1/2" (1 Req'd.)

Note:  
Contact surfaces for all details on this sheet are to be cleaned and painted per the requirements of primary connections as per the special provision "Cleaning and Painting Contact Surface Area of Existing Steel Structures".



**ELEVATION**

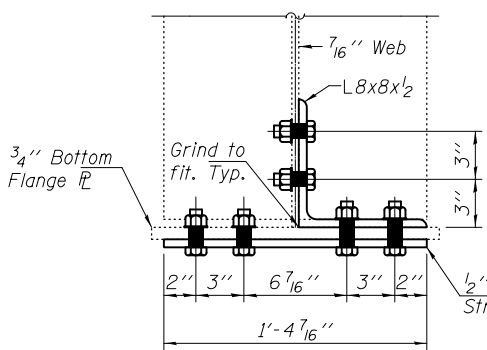
**1/2" BENT R B**



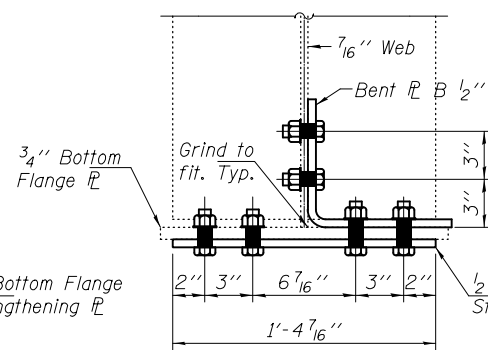
**PLAN**

**REPAIR L A**

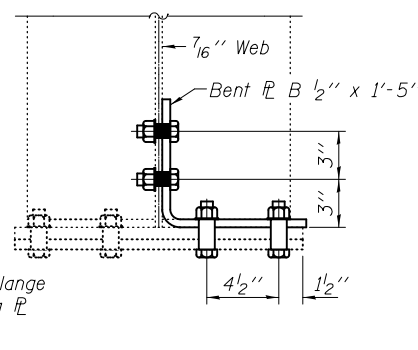
L 8x8x1/2 x 3'-4" (8 Req'd.)



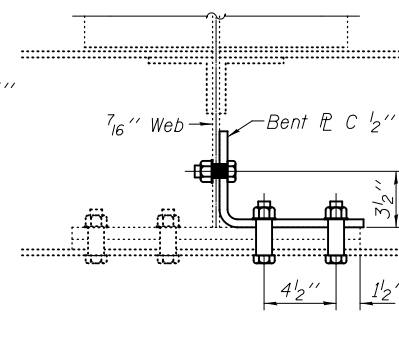
**SECTION B-B**



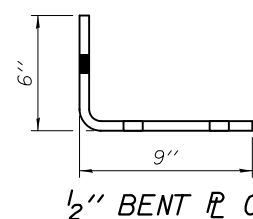
**SECTION C-C**



**SECTION D-D**



**SECTION E-E**



**1/2" BENT R C**

DESIGNED - SMR  
CHECKED - JSB  
DRAWN - Kyle M. Steffen  
CHECKED - SMR JSB

EXAMINED  
PASSED  
Timothy A. [Signature]  
ENGINEER OF STRUCTURAL SERVICES  
[Signature]  
ENGINEER OF BRIDGES AND STRUCTURES

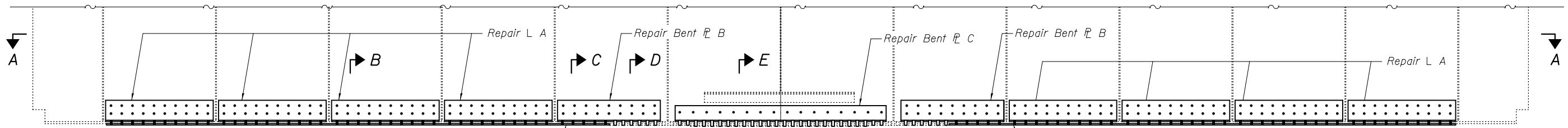
DATE - FEBRUARY 4, 2019  
REVISED 02/26/2019 VHV  
REVISED

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

FLOORBEAM 3 REPAIR DETAILS  
SN 099-0057 (W.B.)

SHEET NO. 23 OF 27 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	2018-138-BR	WILL	33	26
ILLINOIS FED. AID PROJECT			CONTRACT NO. 62H68	

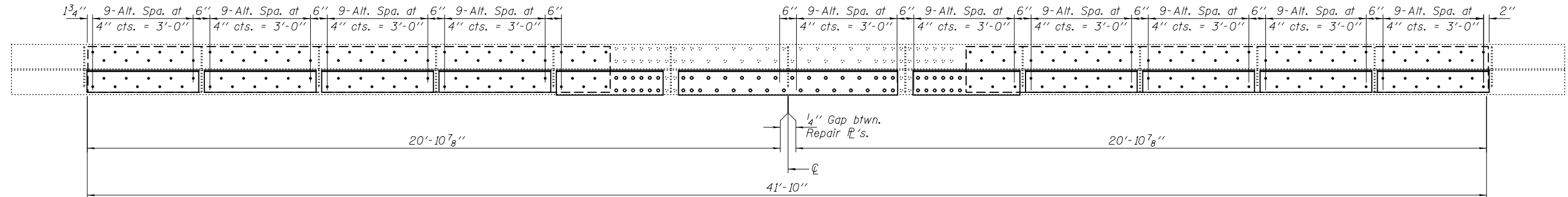


Bottom Flange Repair R  
 $\frac{1}{2}$ " x 1'-4 $\frac{7}{16}$ " x 15'-7"

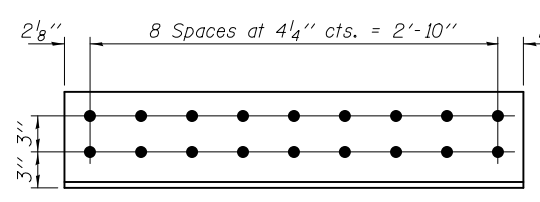
**REPAIR "M" - FLOOR BEAM 7 STRENGTHENING DETAIL**

(2018 NBIS Item 224)  
 (Looking at West Face of Floor Beam 7)

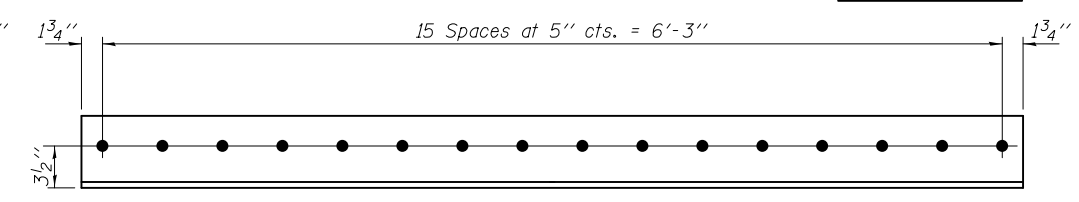
Note:  
 Field drill holes in horizontal leg of Repair L A using holes in bottom flange repair R as template.



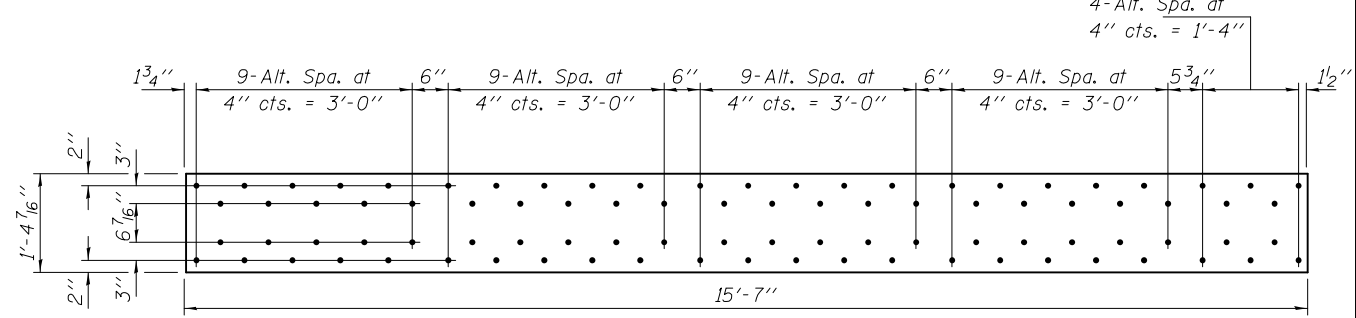
**SECTION A-A**



**ELEVATION**

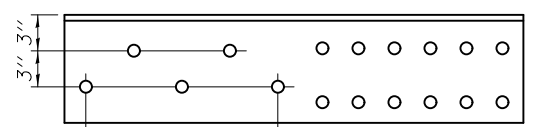


**ELEVATION**



**BOTTOM FLANGE REPAIR R**

R  $\frac{1}{2}$ " x 1'-4 $\frac{7}{16}$ " x 15'-7"  
 (2 Req'd.)



**PLAN**

**REPAIR BENT R B**

Bent R 1'-5" x  $\frac{1}{2}$ " x 3'-2 $\frac{1}{4}$ " (2 Req'd.)

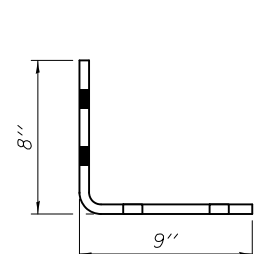
\* Field drill using bottom flange R as template

**PLAN**

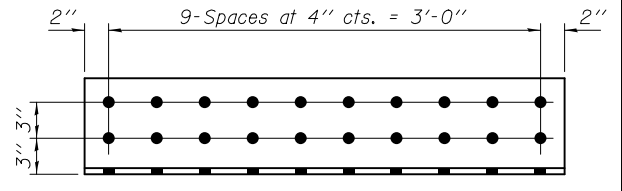
**REPAIR BENT R C**

Bent R 1'-3" x  $\frac{1}{2}$ " x 6'-6 $\frac{1}{2}$ " (1 Req'd.)

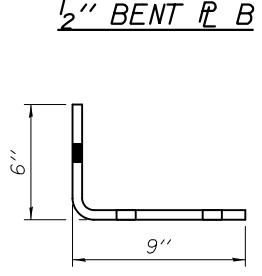
Note:  
 Contact surfaces for all details on this sheet are to be cleaned and painted per the requirements of primary connections as per the special provision "Cleaning and Painting Contact Surface Area of Existing Steel Structures".



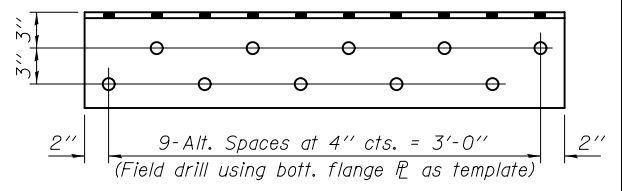
**1/2" BENT R B**



**ELEVATION**



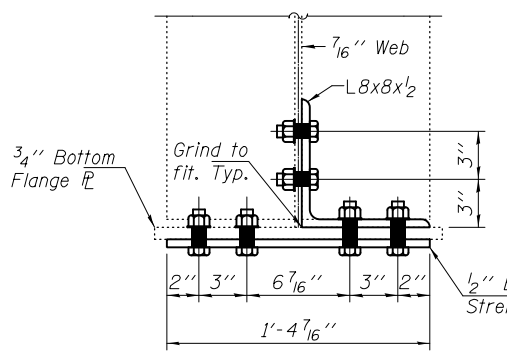
**1/2" BENT R C**



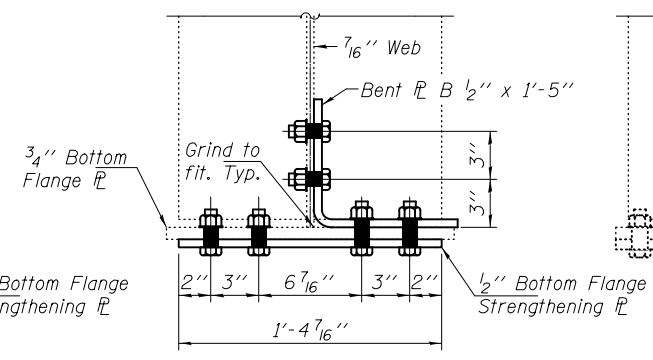
**PLAN**

**REPAIR L A**

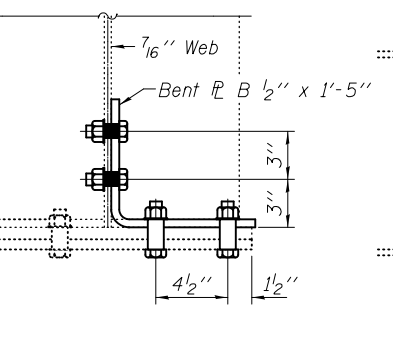
L 8x8 $\frac{1}{2}$  x 3'-4" (8 Req'd.)



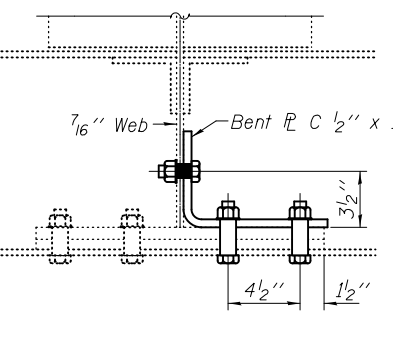
**SECTION B-B**



**SECTION C-C**

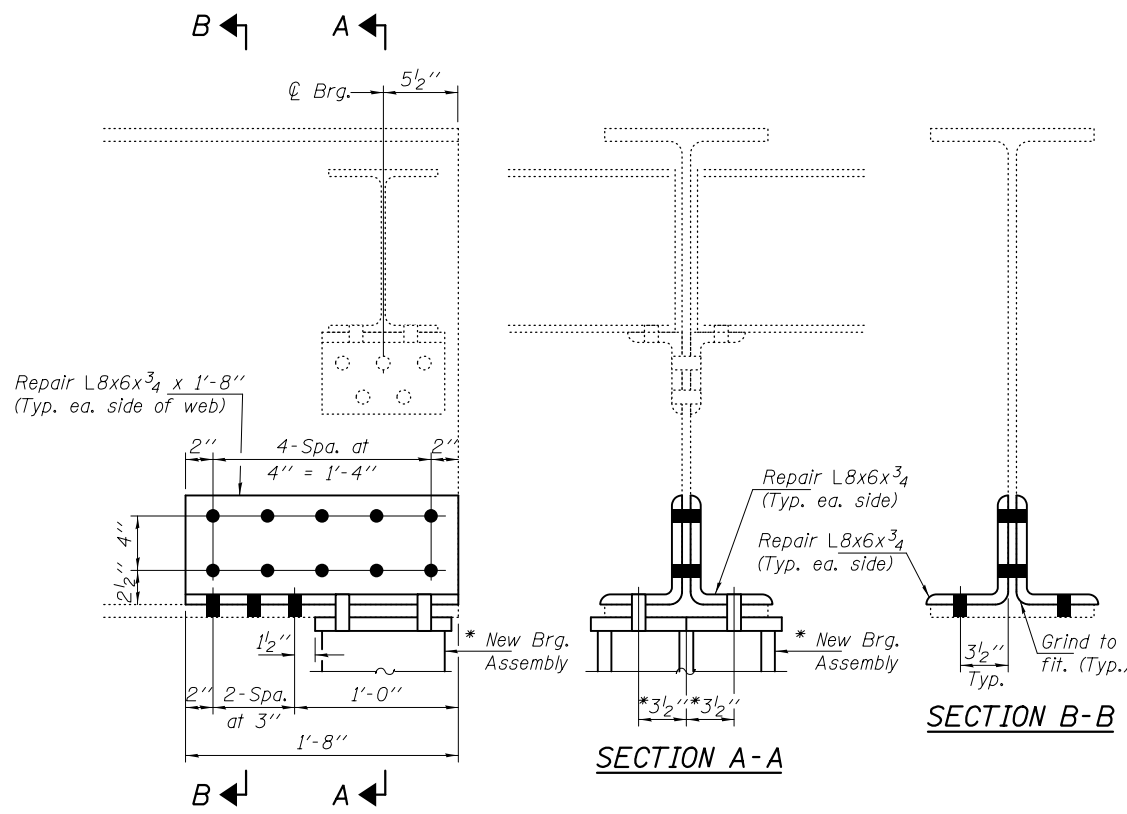


**SECTION D-D**

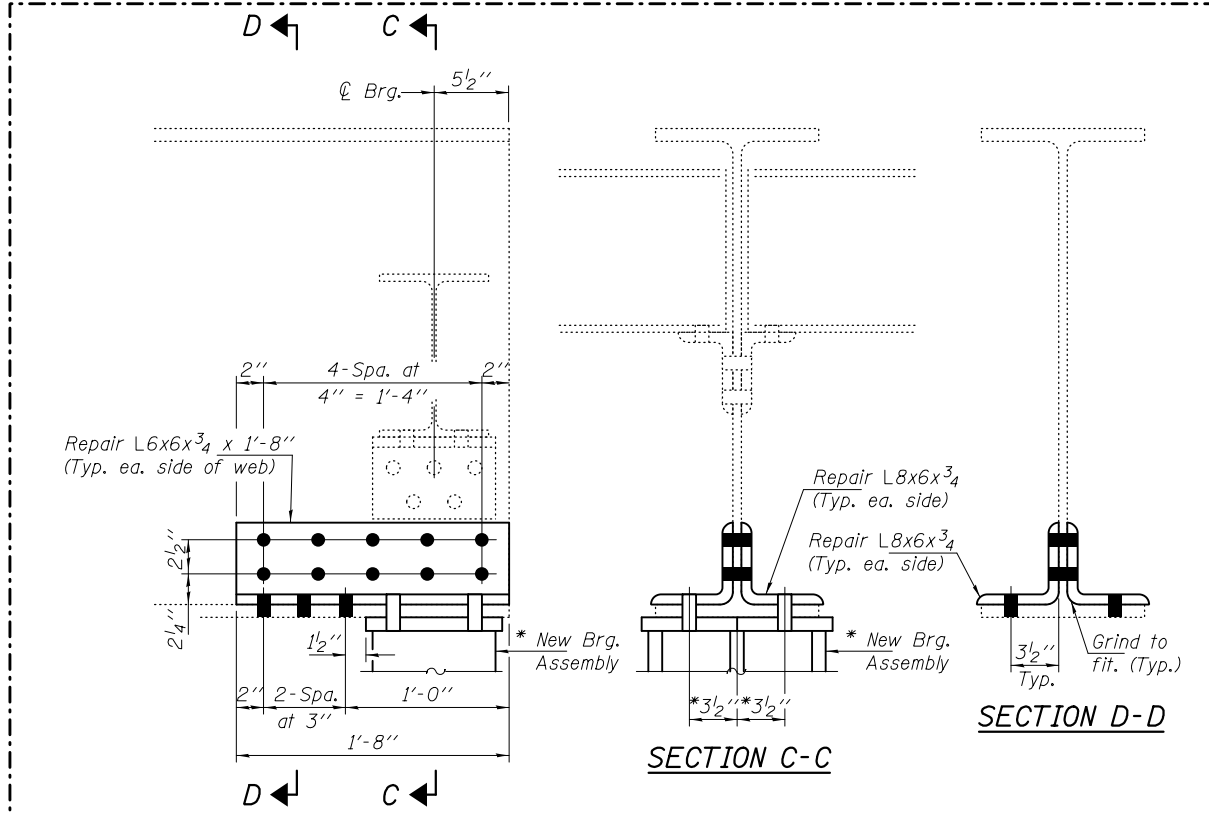


**SECTION E-E**

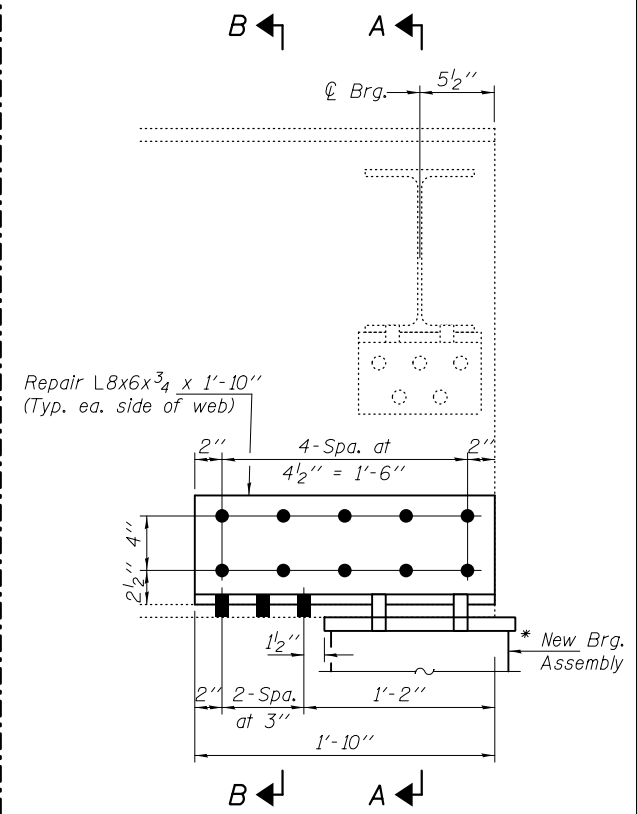
DESIGNED - SMR	EXAMINED	DATE - FEBRUARY 4, 2019	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	FLOORBEAM 7 REPAIR DETAILS SN 099-0057 (W.B.)	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CHECKED - JSB	PASSED	REVISOR			80	2018-138-BR	WILL	33	27
DRAWN - Kyle M. Steffen		REVISION			CONTRACT NO. 62H68				
CHECKED - SMR JSB					ILLINOIS FED. AID PROJECT				



**BEAM END REPAIR "C"**  
(See Table for Locations)



**BEAM END REPAIR "C"**  
(2018 NBIS Item Numbers 348 & 346; SN 099-0056 EB)  
(2018 NBIS Item Numbers 434, 435, 439, 430, 438; SN 099-0057 WB)



**BEAM END REPAIR "C" AT  
PIER 10, SPAN 10, BEAMS 3, 4 & 8**  
(2018 NBIS Item Numbers 316, 317 & 318)  
SN 099-0056 (E.B.)

Note:  
All new bolts and beam end repairs to be paid for as Structural Steel Repair.

**REPAIR "C" 099-0056 (E.B.)**

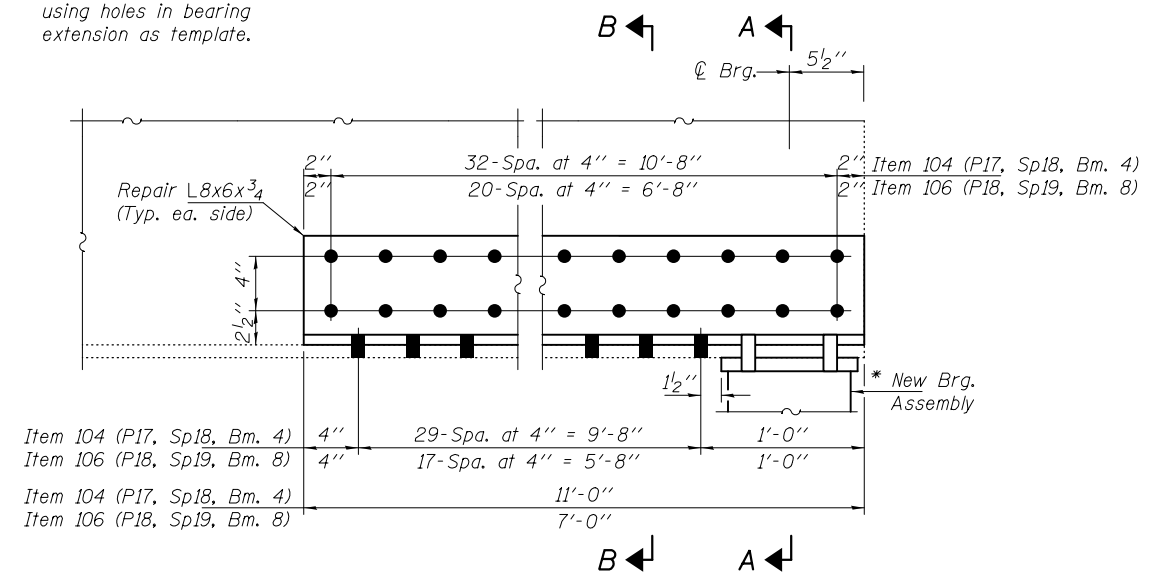
2018 NBIS Item No.	PIER	SPAN	BEAM	2018 NBIS Item No.	PIER	SPAN	BEAM
294	4	4	1	335	13	14	1
297	5	5	8	336			2
320	10	11	8	337			2
322			2	338	14	14	3
323			3	339			4
324	11	12	4	340	14	15	2
325			8	342			8
326			1	345		15	1
327			2	347		16	1
328	12	12	3	349	16	16	4
329			5	350		17	4
330			8	351		17	1
331			1	352	17	17	4
332	13	13	2	353		18	1
333			3	355		18	8
334			8	356	19	19	1
				357		20	1

**REPAIR "C" 099-0057 (W.B.)**

2018 NBIS Item No.	PIER	SPAN	BEAM	2018 NBIS Item No.	PIER	SPAN	BEAM	2018 NBIS Item No.	PIER	SPAN	BEAM	2018 NBIS Item No.	PIER	SPAN	BEAM
394			4	429			15	468	20	20	1	502			1
395			5	433			16	472			1	503			1
396	10	11	7	440			3	473	20	21	5	504			2
397			9	441			7	478			1	505			3
400	11	11	3	442			8	480	21	21	1				
401			3	443			9	483			2				
402			3	444			3	485	21	22	3				
403			8	445			7	488			5				
405	12		3	448			9	490			7				
406			5	449			10	491	22	22	8				
407			6	450			3	494			1				
413	13	13	3	451			3	501	23	23	10				
414			10	452			7	502			1				
416			3	453			10	503	23	24	1				
419			3	454			3	504			2				
420			4	455			7	505			3				
421			8	457			1								
422	14		3	458			3								
423			5	461			5								
425			8	463			6								
427			10	466			8								
				467			9								

Note:  
Contact surfaces for all details on this sheet are to be cleaned and painted per the requirements of primary connections as per the special provision "Cleaning and Painting Contact Surface Area of Existing Steel Structures".

\* Field Drill holes in angles using holes in bearing extension as template.



**BEAM END REPAIR "C" AT  
PIER 17, SP. 18, BEAM 4 &  
PIER 18, SP. 19, BEAM 8**  
(2018 NBIS Item Numbers 104 & 106)  
SN 099-0056 (E.B.)

**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
Structural Steel Repair	Pound	14140

DESIGNED - SMR  
CHECKED - JSB  
DRAWN - Kyle M. Steffen  
CHECKED - SMR JSB

EXAMINED  
PASSED  
ENGINEER OF STRUCTURAL SERVICES  
ENGINEER OF BRIDGES AND STRUCTURES

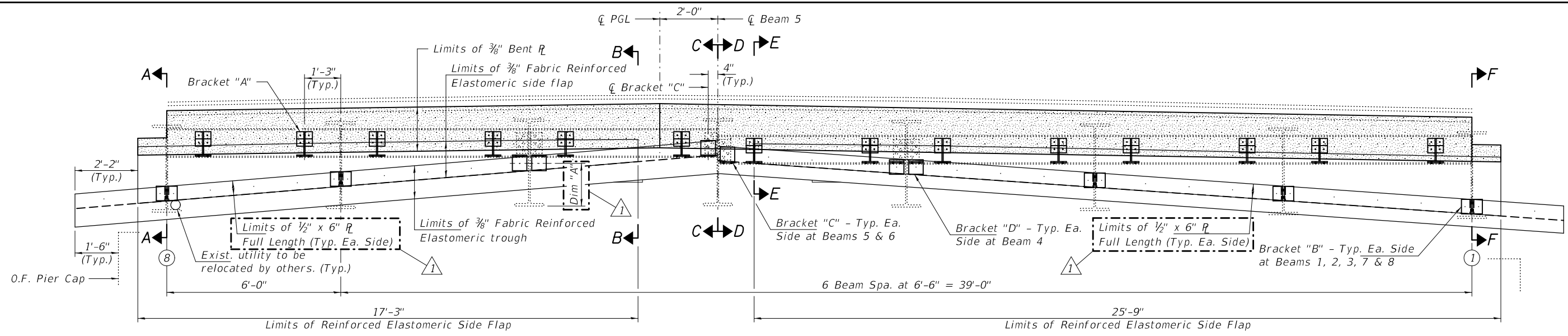
DATE - FEBRUARY 4, 2019  
REVISED 02/26/2019 VHV

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

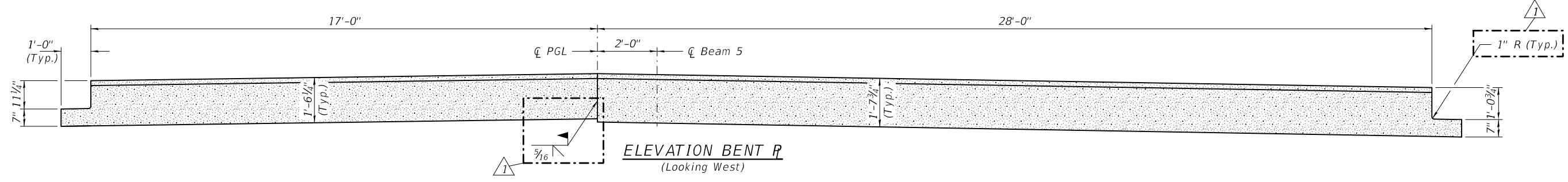
**BEAM END REPAIR "C" DETAILS  
SN 099-0056 (E.B.) & -0057 (W.B.)**

SHEET NO. 25 OF 27 SHEETS

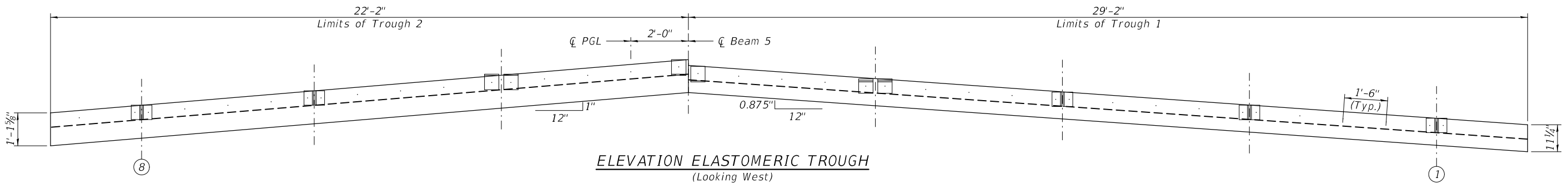
F.A.I. RTE. SECTION COUNTY TOTAL SHEETS SHEET NO.  
80 2018-138-BR WILL 33 28  
CONTRACT NO. 62H68  
ILLINOIS FED. AID PROJECT



**PIER 5**  
(Looking West)



**ELEVATION BENT R**  
(Looking West)



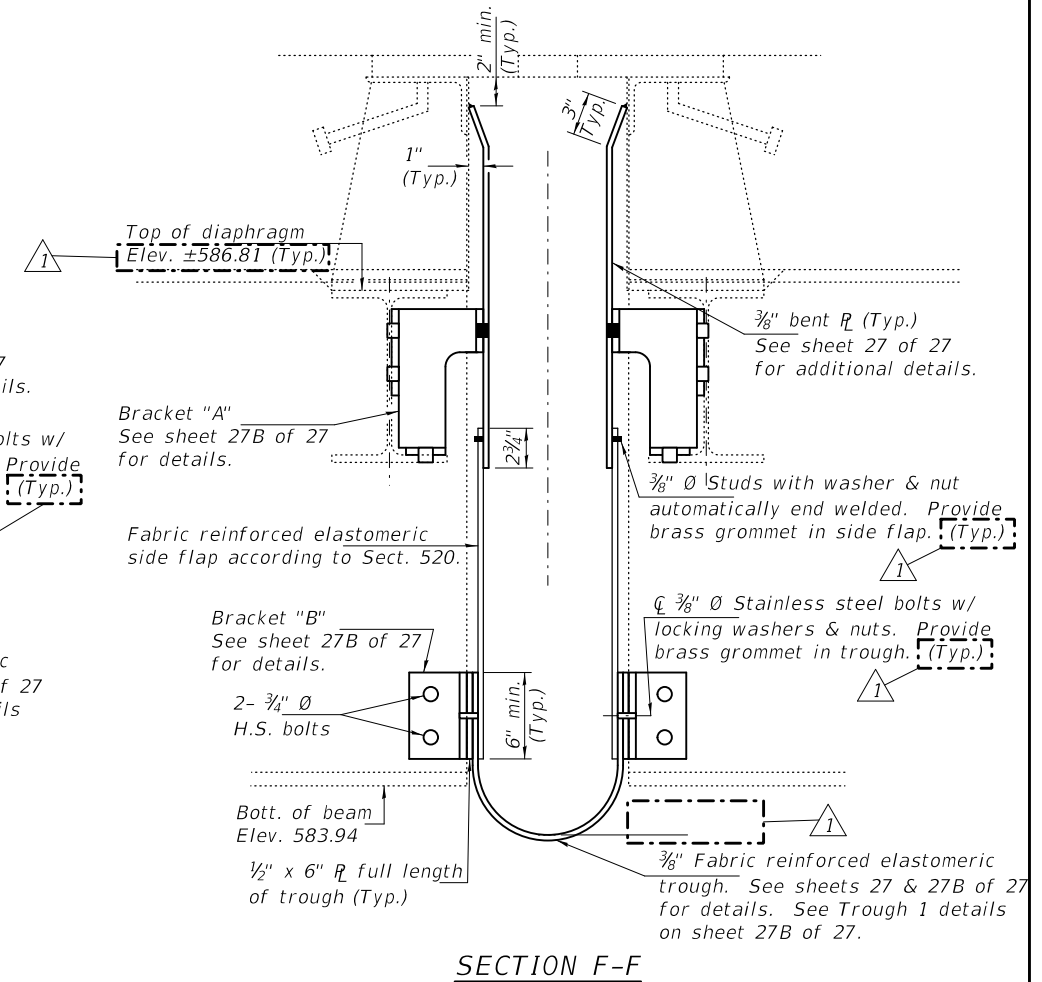
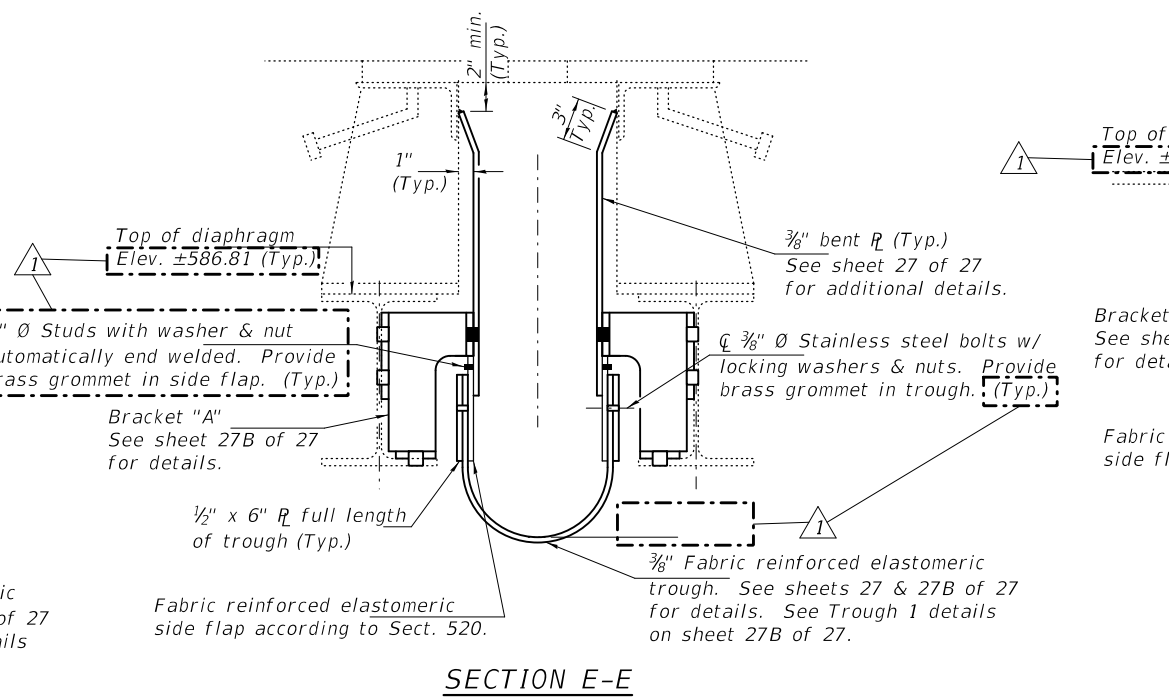
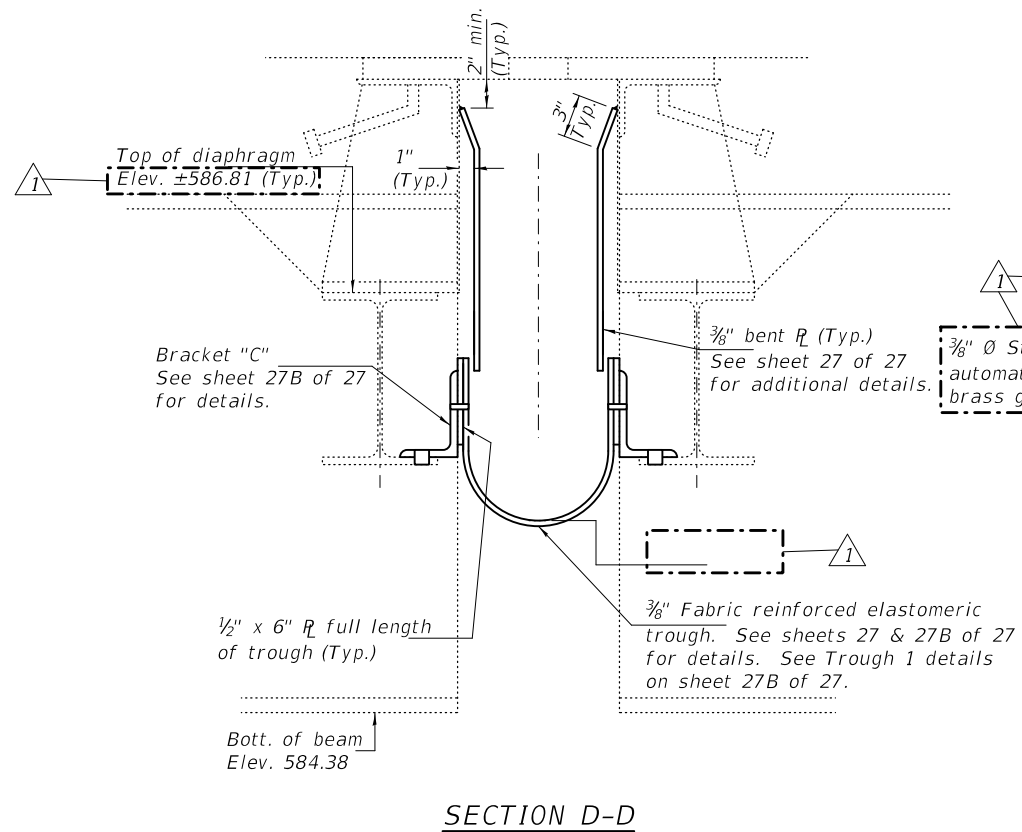
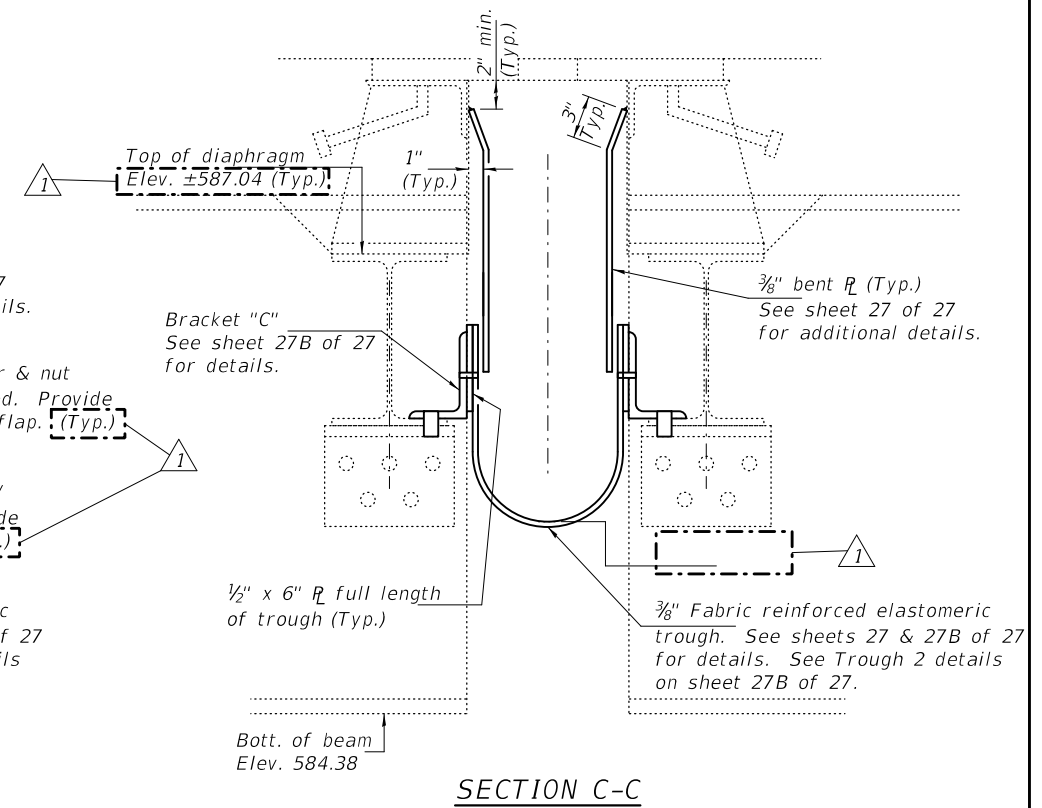
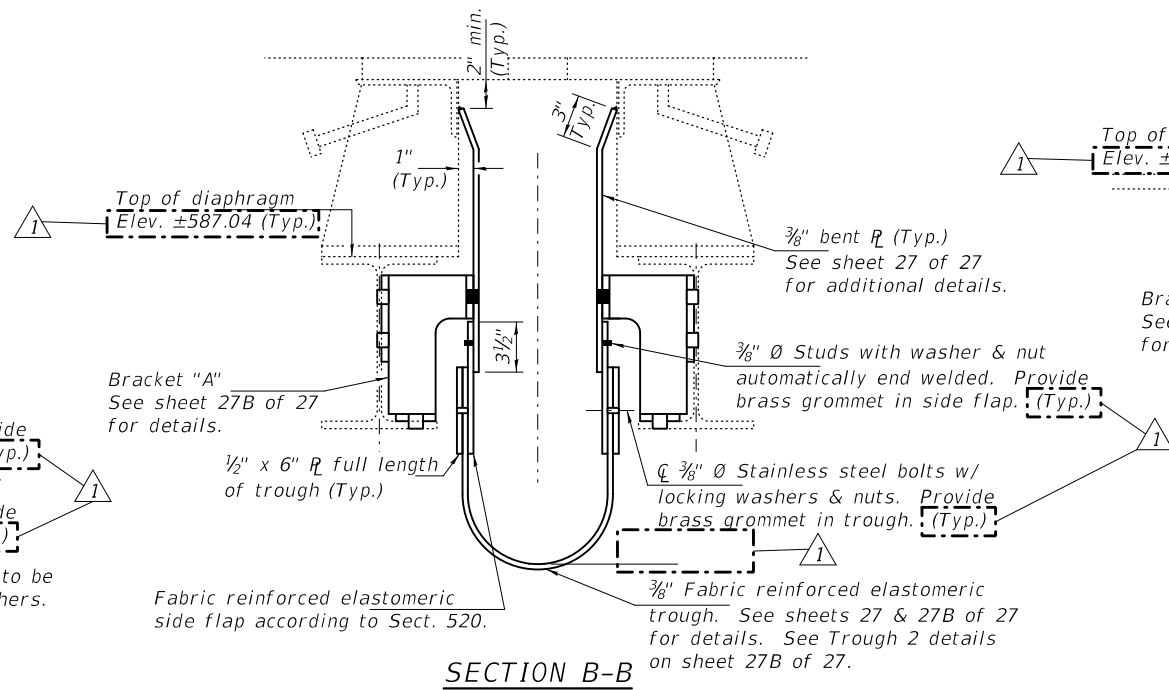
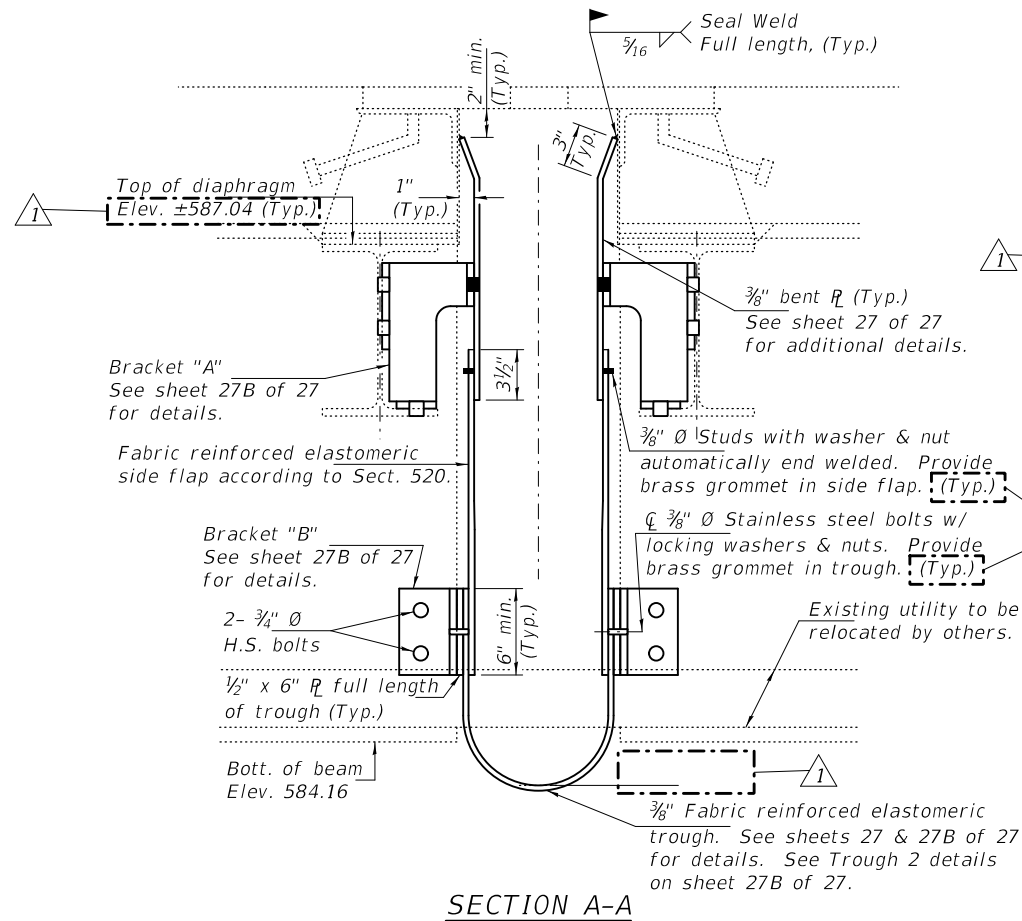
**ELEVATION ELASTOMERIC TROUGH**  
(Looking West)

Notes:  
For Bracket details, see sheet 27B of 27.  
For Sections A-A thru F-F, see sheet 27A of 27.

**DIM "A"**

Beam	Dimension
1	±4 <sup>7</sup> / <sub>8</sub> "
2	±8 <sup>3</sup> / <sub>4</sub> "
3	±1'-0 <sup>1</sup> / <sub>2</sub> "
4	±1'-4 <sup>1</sup> / <sub>2</sub> "
5S	±2'-0"
5N	±1'-9 <sup>1</sup> / <sub>4</sub> "
6	±1'-5 <sup>3</sup> / <sub>8</sub> "
7	±11 <sup>1</sup> / <sub>8</sub> "
8	±7 <sup>3</sup> / <sub>4</sub> "

DIM "A" is from bottom of beam to  $\zeta$  of bracket holes.



DESIGNED - SMR  
 CHECKED - JSB  
 DRAWN - Kyle M. Steffen  
 CHECKED - SMR JSB

EXAMINED  
 PASSED  
 ENGINEER OF STRUCTURAL SERVICES  
 ENGINEER OF BRIDGES AND STRUCTURES

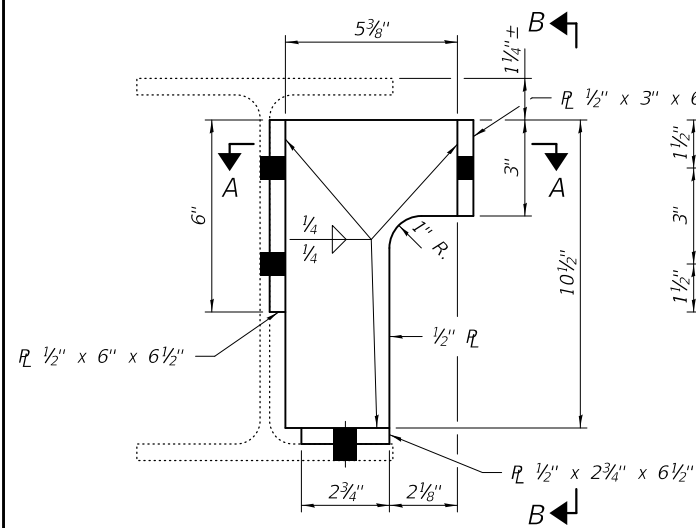
DATE - FEBRUARY 4, 2019  
 REVISED 02/26/2019 VHV  
 REVISED

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

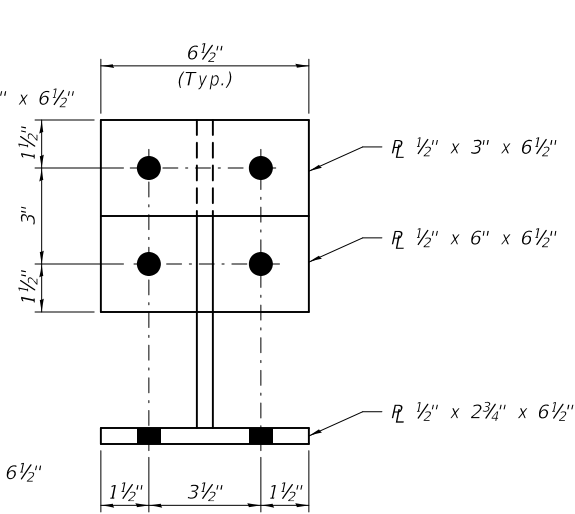
ELASTOMERIC TROUGH DETAILS - PIER 5  
 SN 099-0056 (E.B.)

SHEET NO. 27A OF 27 SHEETS

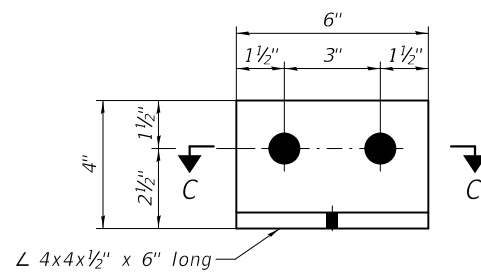
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	2018-138-BR	WILL	33	30A
				CONTRACT NO. 62H68
ILLINOIS FED. AID PROJECT				



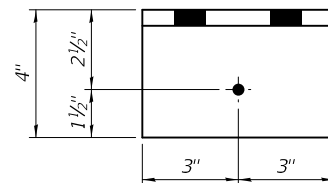
**BRACKET "A"**  
(56 - Req'd.)



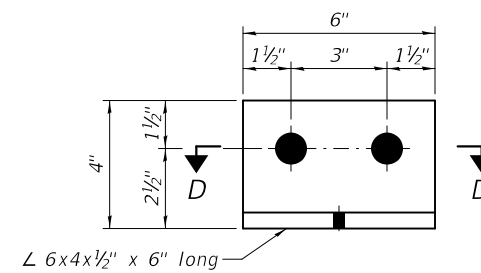
**VIEW B-B**



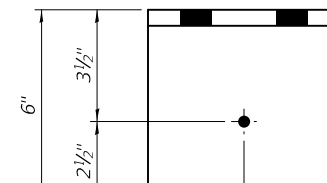
**BRACKET "B"**  
(44 - Req'd.)



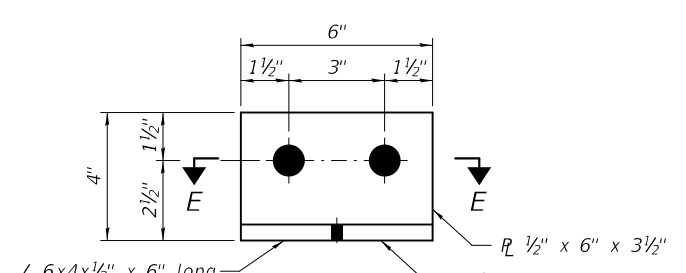
**SECTION C-C**



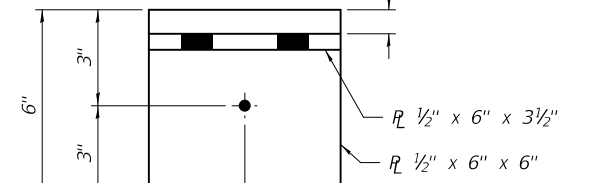
**BRACKET "C"**  
(5 - Req'd.)



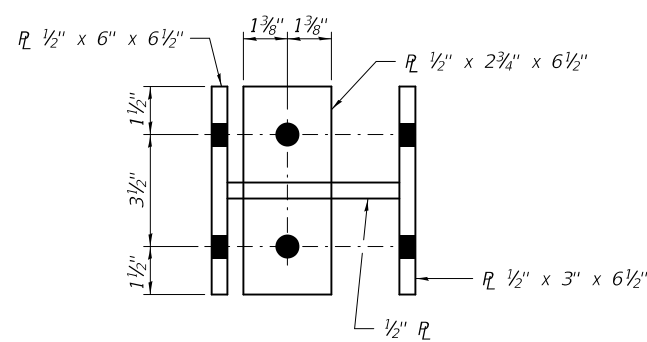
**SECTION D-D**



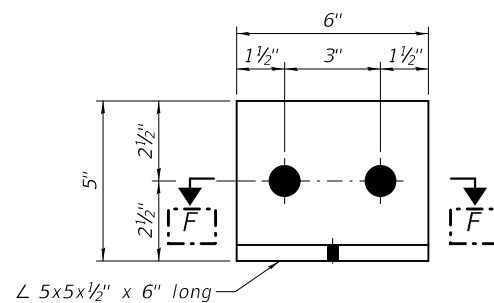
**BRACKET "D"**  
(4 - Req'd.)



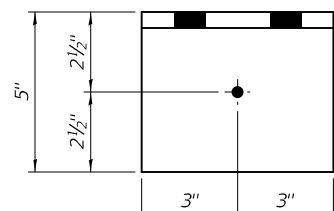
**SECTION E-E**



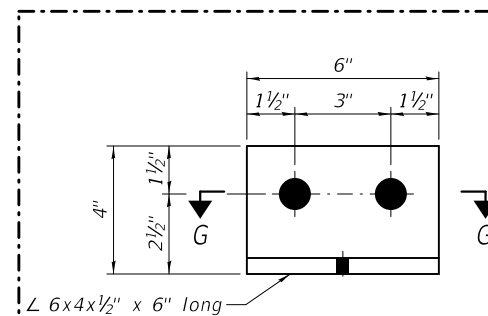
**SECTION A-A**



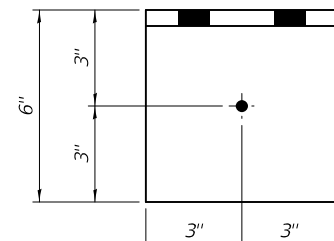
**BRACKET "E"**  
(6 - Req'd.)



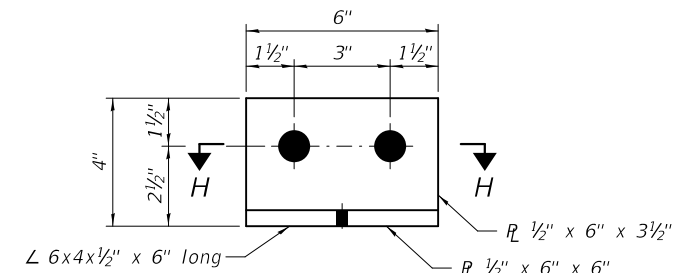
**SECTION F-F**



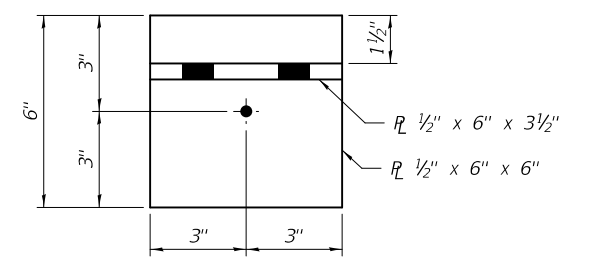
**BRACKET "F"**  
(5 - Req'd.)



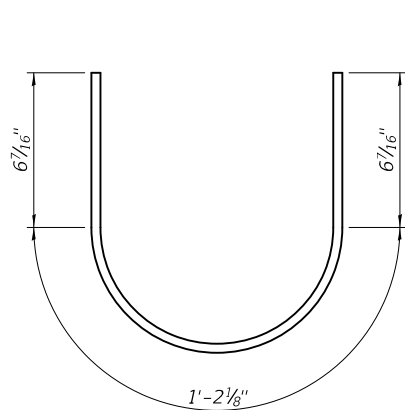
**SECTION G-G**



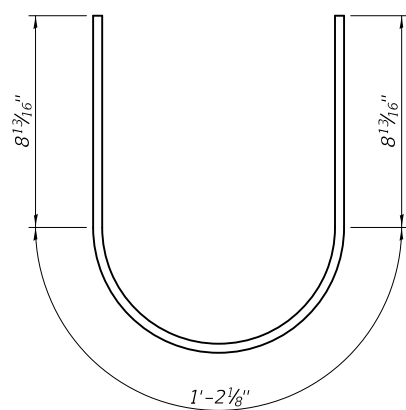
**BRACKET "G"**  
(2 - Req'd.)



**SECTION H-H**



**TROUGH 1**



**TROUGH 2**

Note:  
For Bracket locations, see sheet 27, 27D, 27E & 27H of 27.

DESIGNED - SMR  
CHECKED - JSB  
DRAWN - Kyle M. Steffen  
CHECKED - SMR JSB

EXAMINED  
PASSED  
ENGINEER OF STRUCTURAL SERVICES  
ENGINEER OF BRIDGES AND STRUCTURES

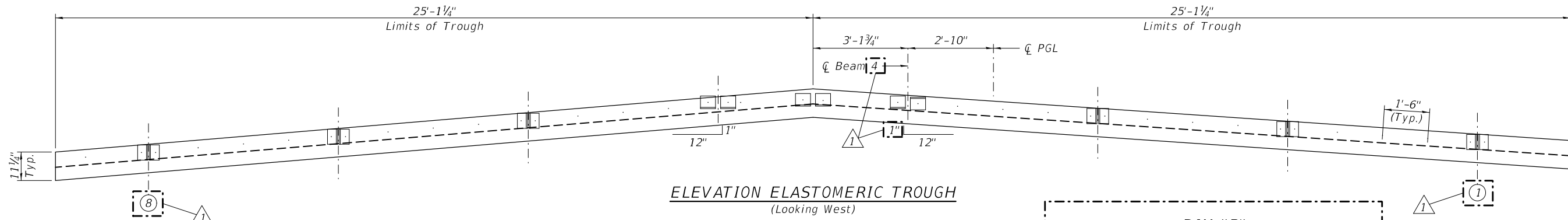
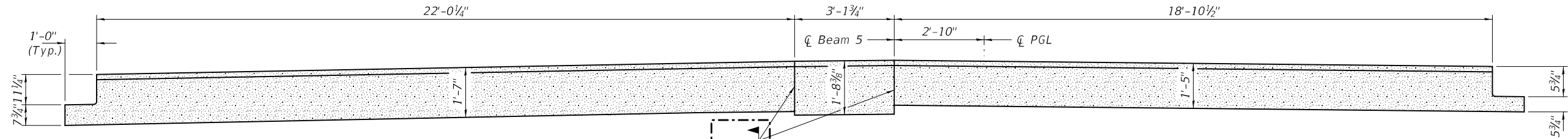
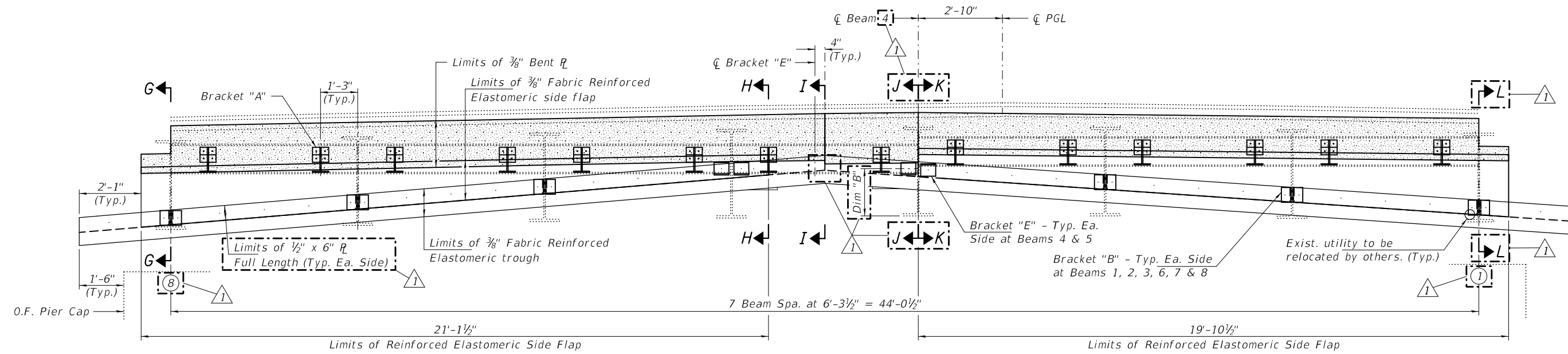
DATE - FEBRUARY 4, 2019  
REVISED 02/26/2019 VHV  
REVISED

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ELASTOMERIC TROUGH DETAILS - PIER 5  
SN 099-0056 (E.B.)

SHEET NO. 27B OF 27 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	2018-138-BR	WILL	33	30B
CONTRACT NO. 62H68			ILLINOIS FED. AID PROJECT	



**DIM "B"**

Beam	Dimension
1	±5 3/4"
2	±9 1/2"
3	±1'-1 5/8"
4N	±1'-6 3/8"
4S	±1'-7 1/8"
5	±1'-7 7/8"
6	±1'-2"
7	±9 1/4"
8	±4 1/2"

DIM "B" is from bottom of beam to  $\phi$  of bracket holes.

Notes:  
For Bracket details, see sheet 27E of 27.  
For Sections G-G thru L-L, see sheet 27D of 27.

DESIGNED - SMR  
CHECKED - JSB  
DRAWN - Kyle M. Steffen  
CHECKED - SMR JSB

EXAMINED  
PASSED  
Timothy A. [Signature]  
ENGINEER OF STRUCTURAL SERVICES  
C. Carl [Signature]  
ENGINEER OF BRIDGES AND STRUCTURES

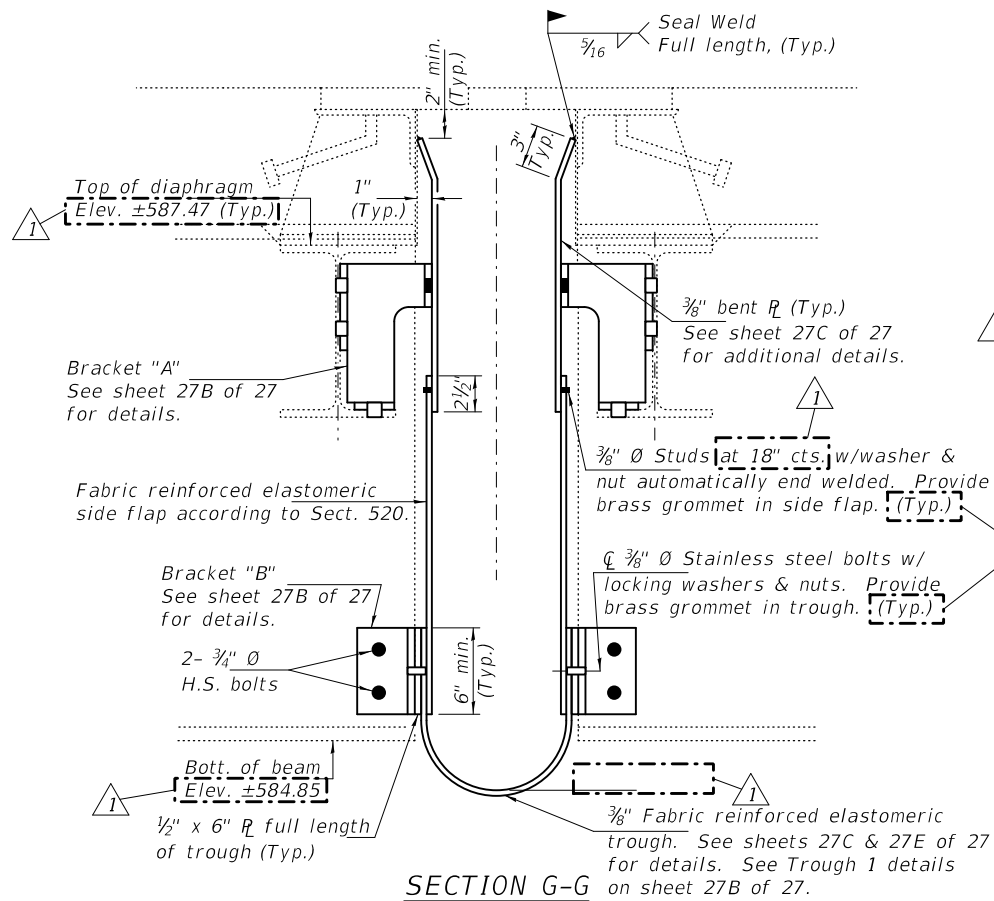
DATE - FEBRUARY 4, 2019  
REVISED 02/26/2019 VHV  
REVISED

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

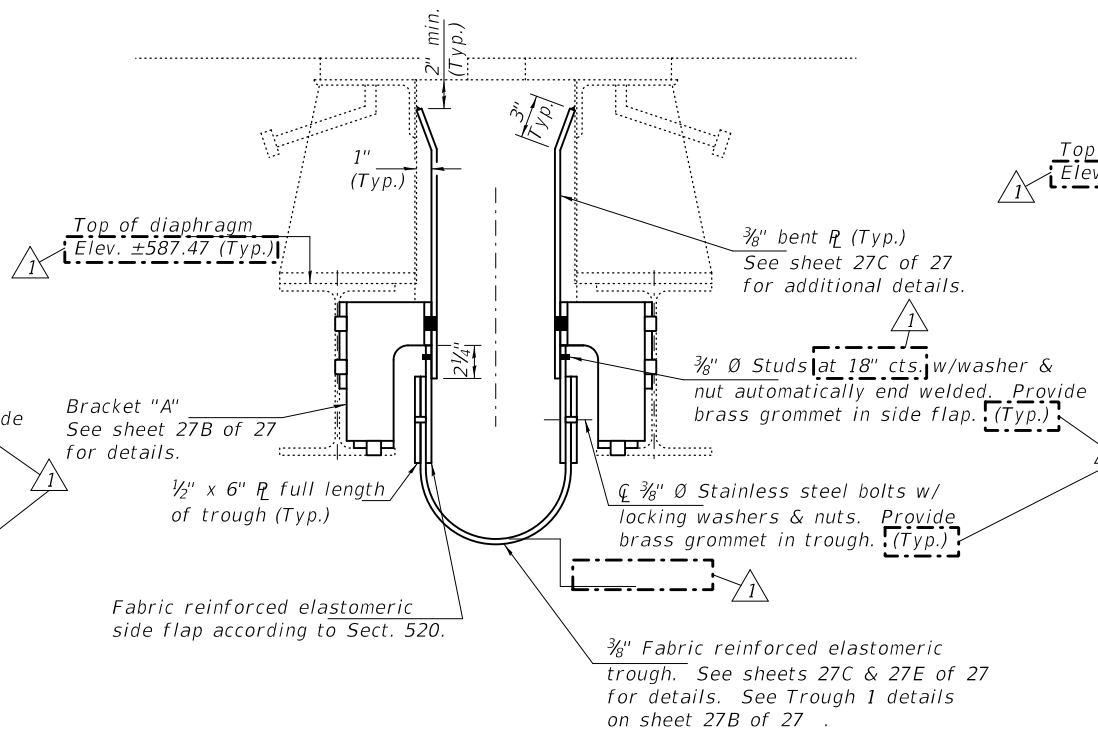
ELASTOMERIC TROUGH DETAILS - PIER 5  
SN 099-0057 (W.B.)  
SHEET NO. 27C OF 27 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	2018-138-BR	WILL	33	30C
CONTRACT NO. 62H68				
ILLINOIS FED. AID PROJECT				

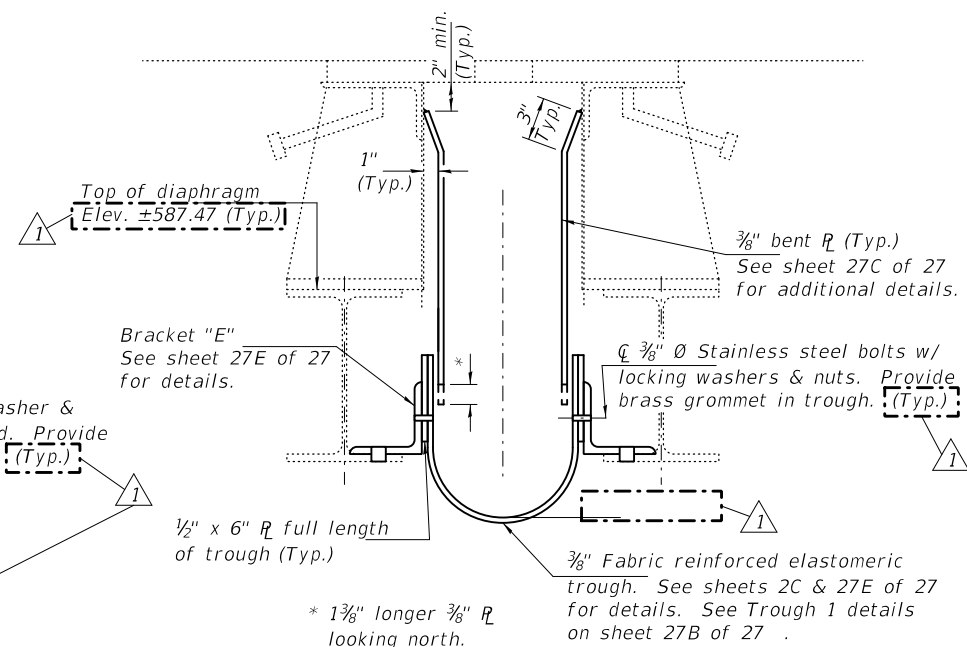




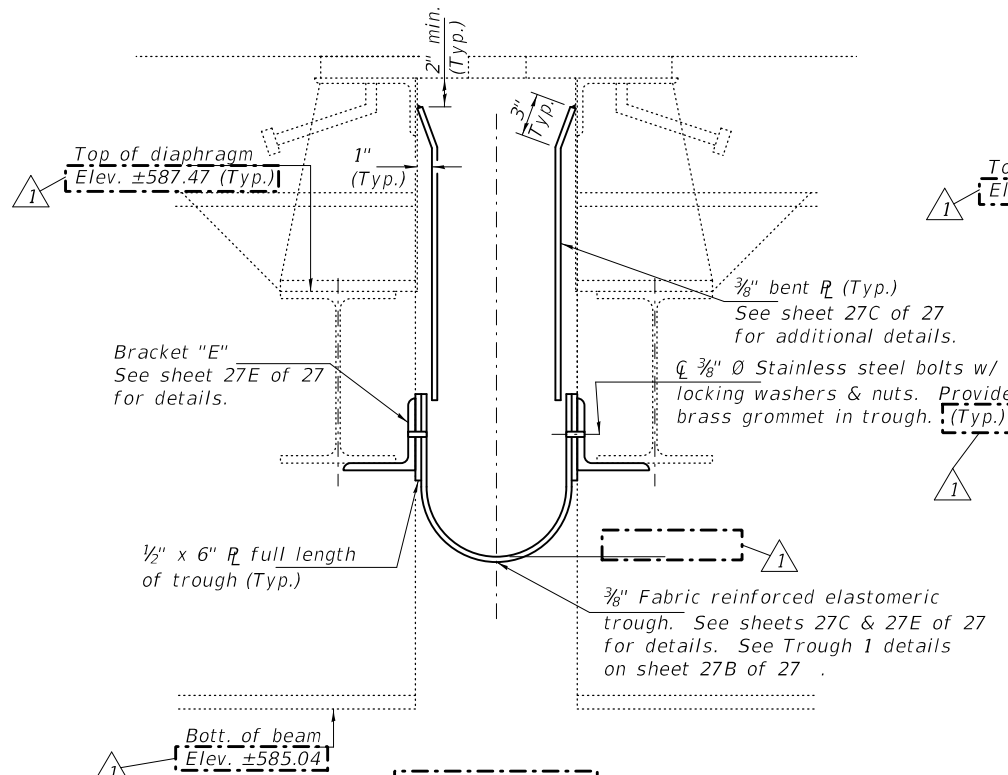
SECTION G-G



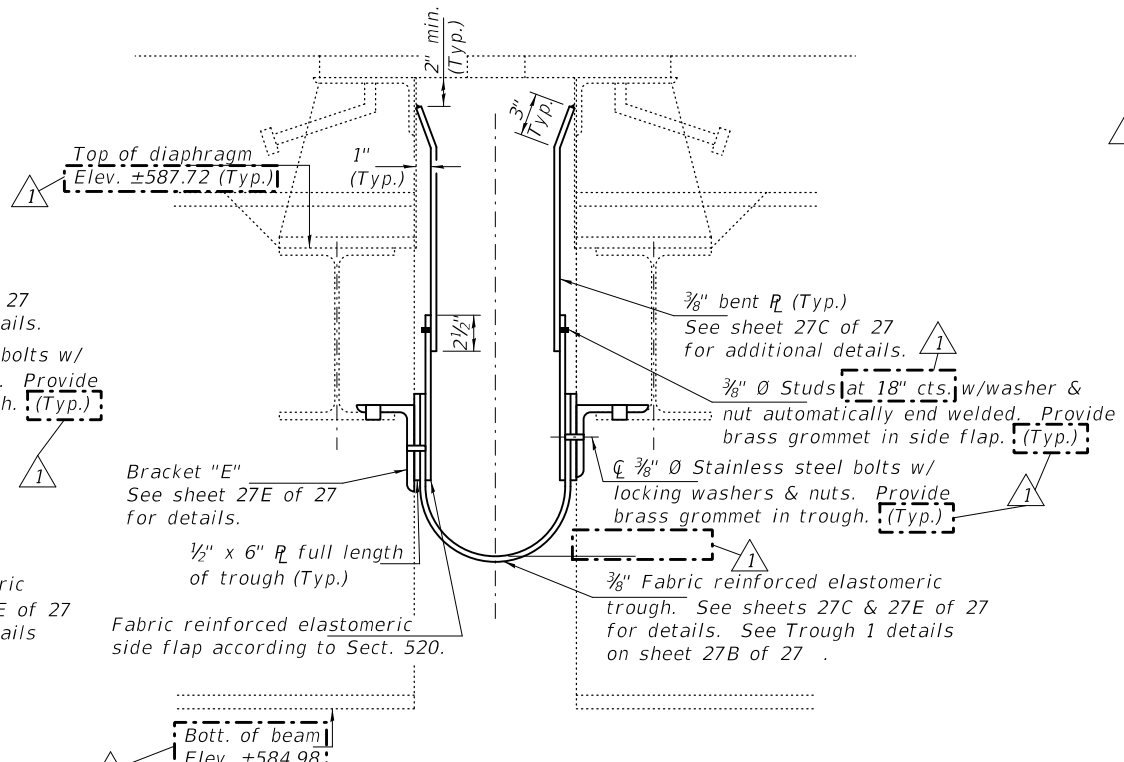
SECTION H-H



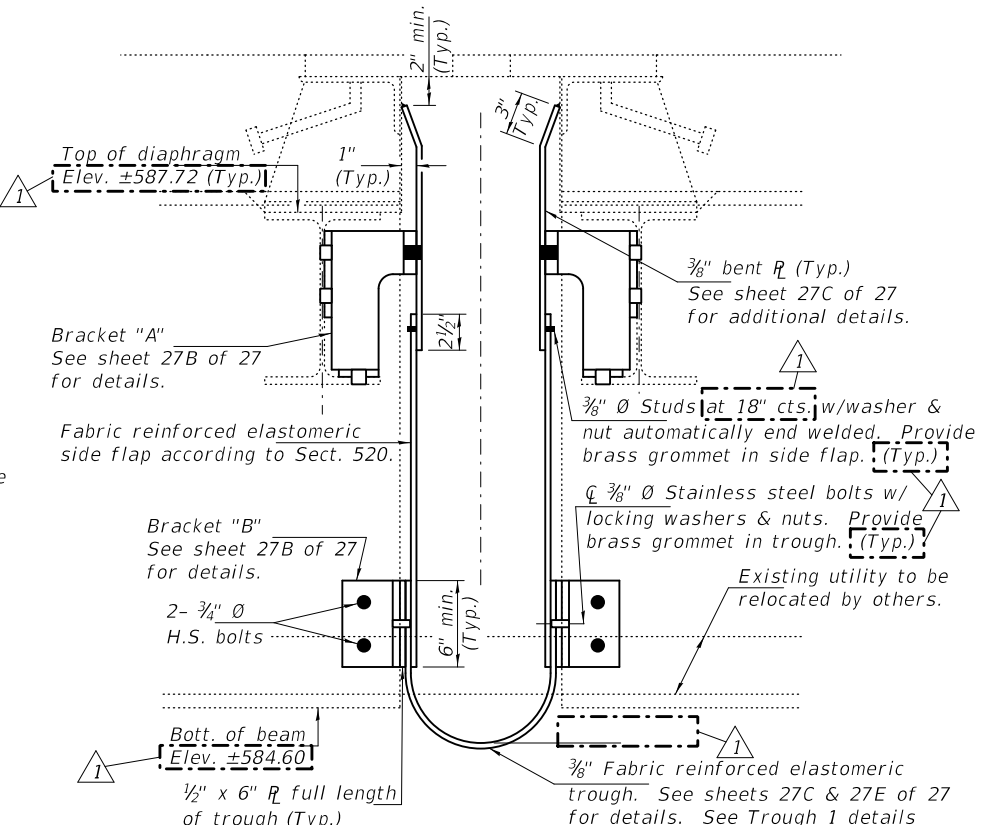
SECTION I-I



SECTION J-J



SECTION K-K



SECTION L-L

DESIGNED - SMR  
 CHECKED - JSB  
 DRAWN - Kyle M. Steffen  
 CHECKED - SMR JSB

EXAMINED  
 PASSED  
 ENGINEER OF STRUCTURAL SERVICES  
 ENGINEER OF BRIDGES AND STRUCTURES

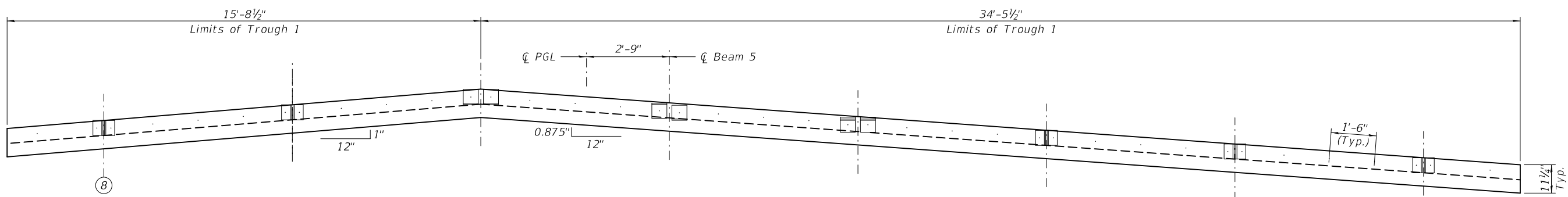
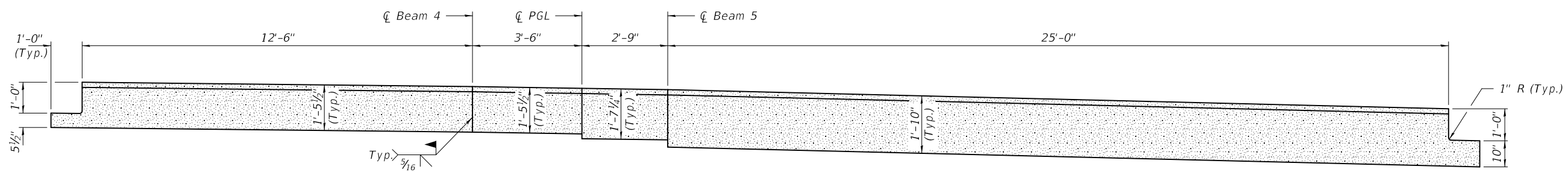
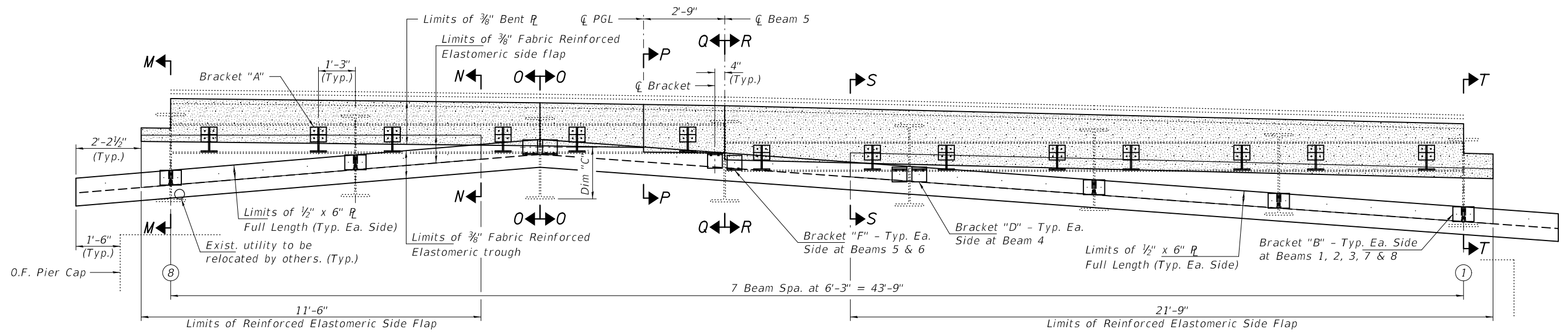
DATE - FEBRUARY 4, 2019  
 REVISED 02/26/2019 VHV  
 REVISED

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

ELASTOMERIC TROUGH DETAILS - PIER 5  
 SN 099-0057 (W.B.)

SHEET NO. 27D OF 27 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	2018-138-BR	WILL	33	30D
				CONTRACT NO. 62H68
ILLINOIS FED. AID PROJECT				



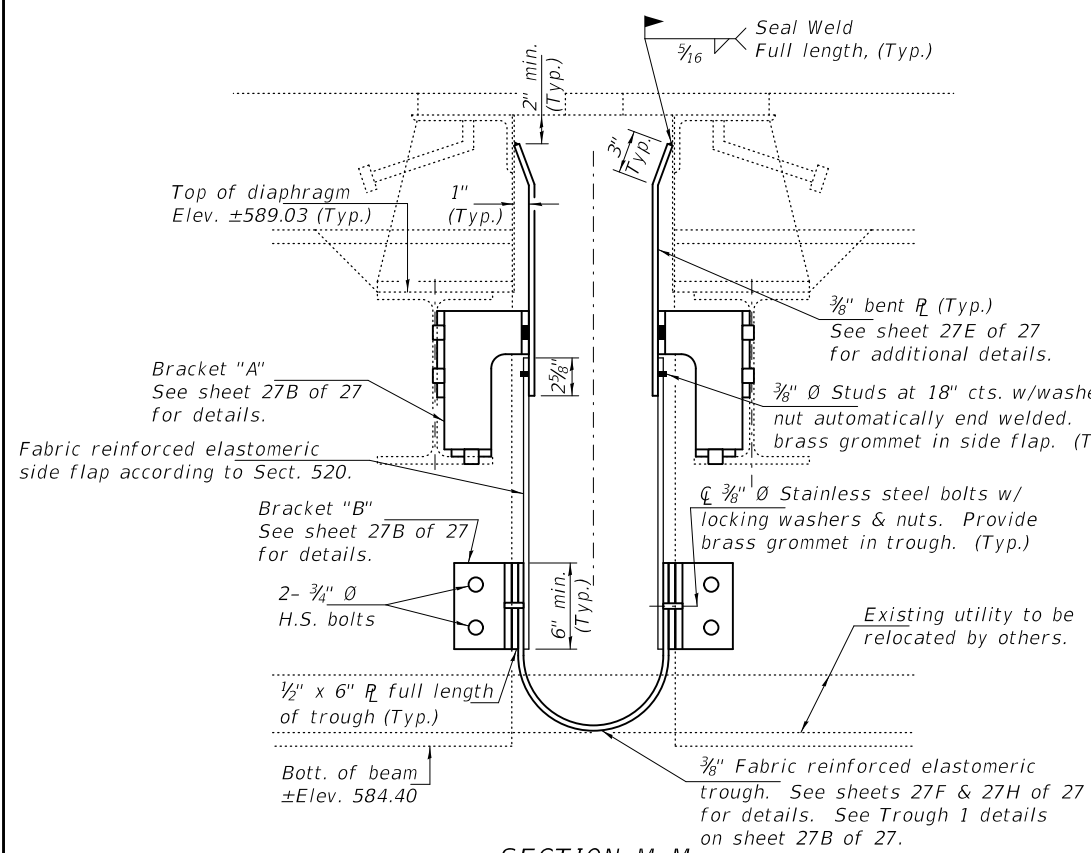
DIM "C"

Beam	Dimension
1	±5/8"
2	±5/8"
3	±9/8"
4	±1'-0 7/8"
5N	±1'-3 7/8"
5S	±1'-4 3/4"
6	±1'-9"
7	±1'-1 7/8"
8	±9 3/4"

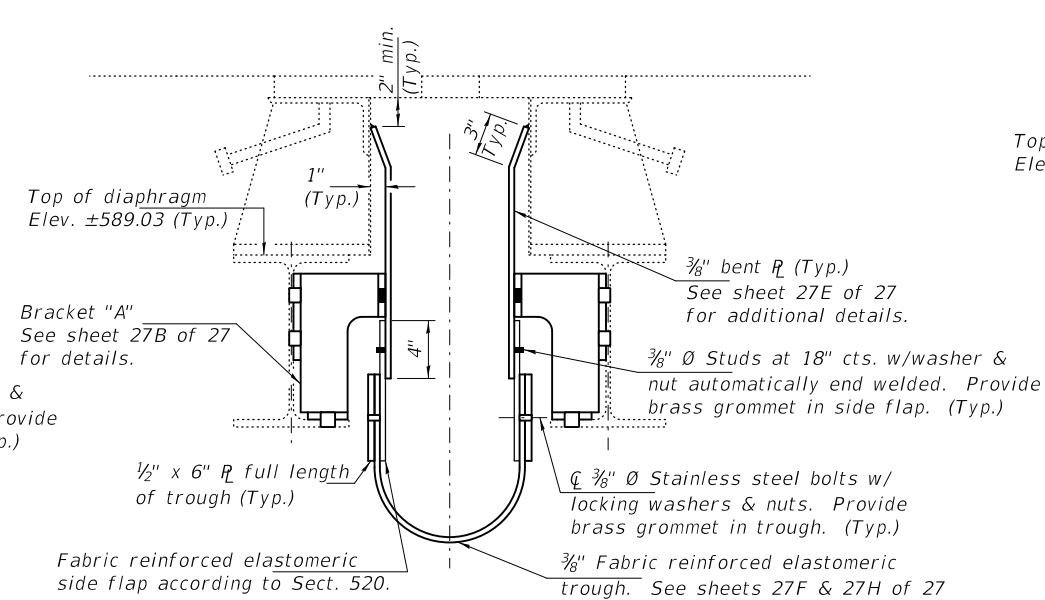
All of Sheet 27E of 27. Sheet 27E was eliminated and the brackets previously shown are now detailed on sheet 27B of 27.

Notes:  
For Bracket details, see sheet 27B of 27.  
For Sections M-M thru T-T, see sheets 27F & 27G of 27.

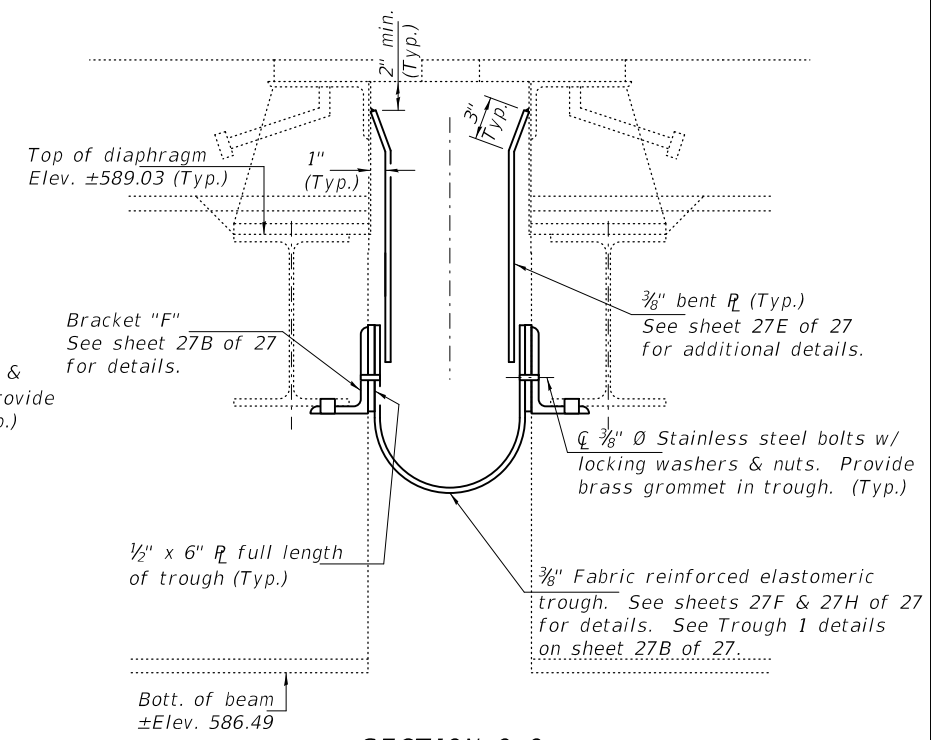
DIM "C" is from bottom of beam to  $\zeta$  of bracket holes.



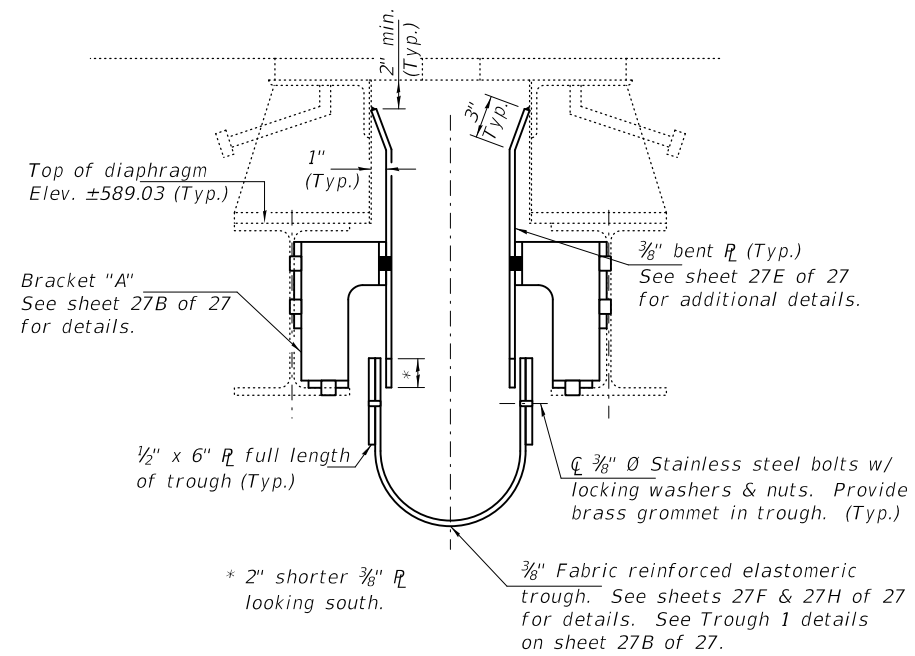
SECTION M-M



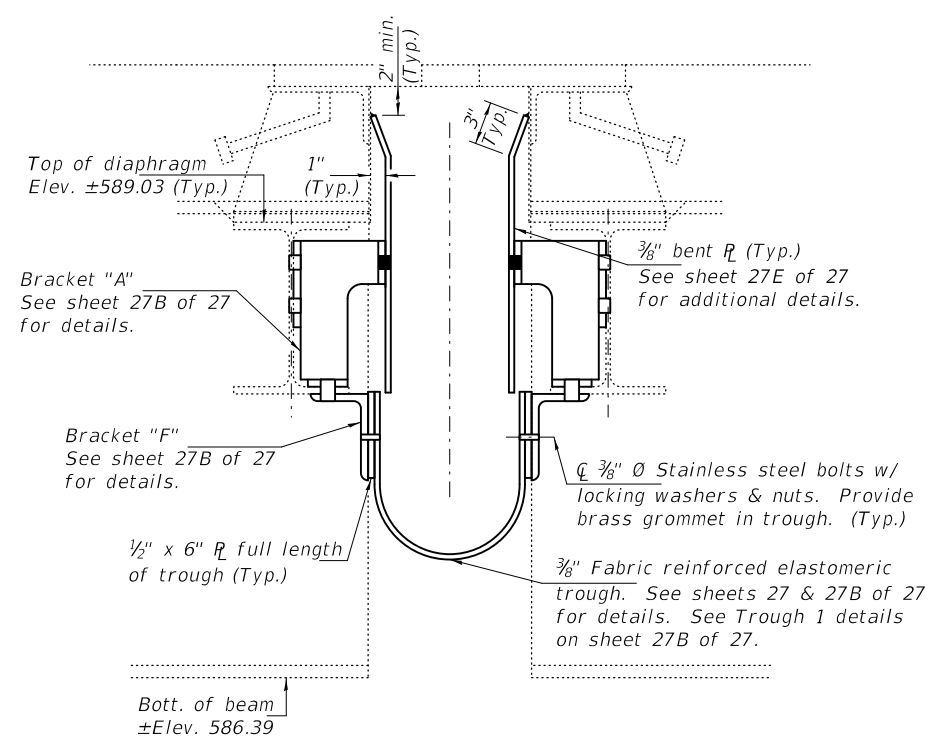
SECTION N-N



SECTION O-O



SECTION P-P



SECTION Q-Q

All of Sheet 27F of 27

DESIGNED - SMR
CHECKED - JSB
DRAWN - Kyle M. Steffen
CHECKED - SMR JSB

EXAMINED	<i>Timothy A. Daulton</i> ENGINEER OF STRUCTURAL SERVICES
PASSED	<i>Carl R. Rupp</i> ENGINEER OF BRIDGES AND STRUCTURES

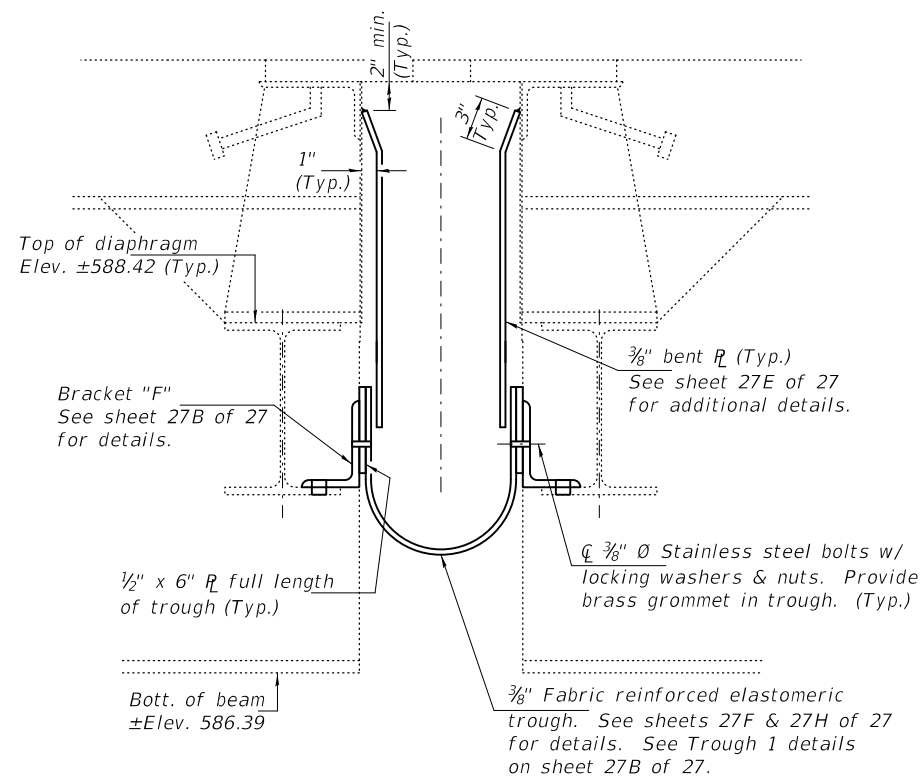
DATE - FEBRUARY 4, 2019
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REVISED

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

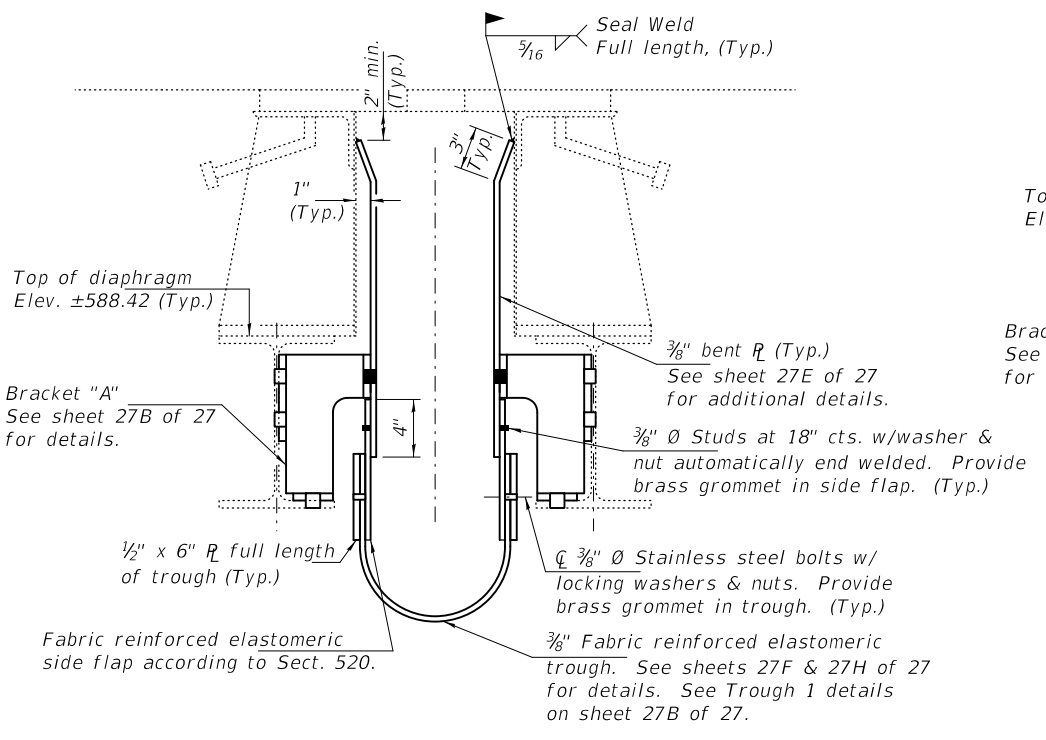
ELASTOMERIC TROUGH DETAILS - PIER 10  
SN 099-0056 (E.B.)

SHEET NO. 27F OF 27 SHEETS

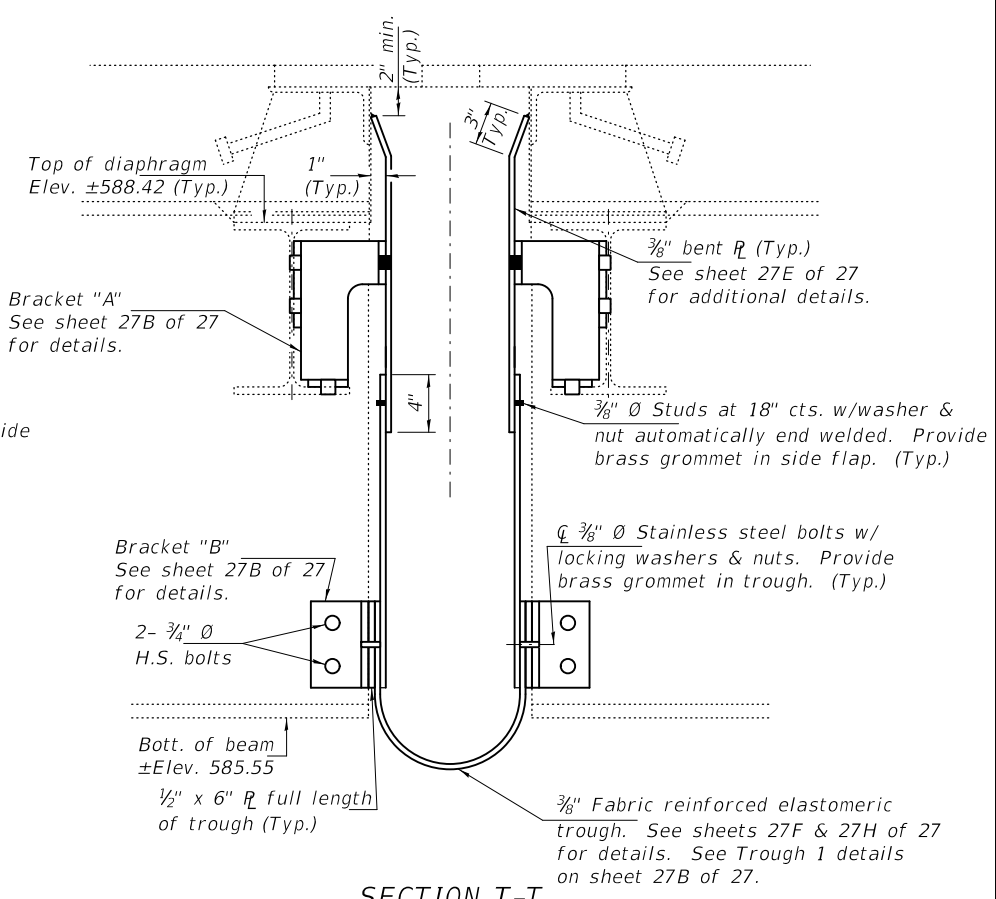
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	2018-138-BR	WILL	33	30F
CONTRACT NO. 62H68			ILLINOIS FED. AID PROJECT	



**SECTION R-R**



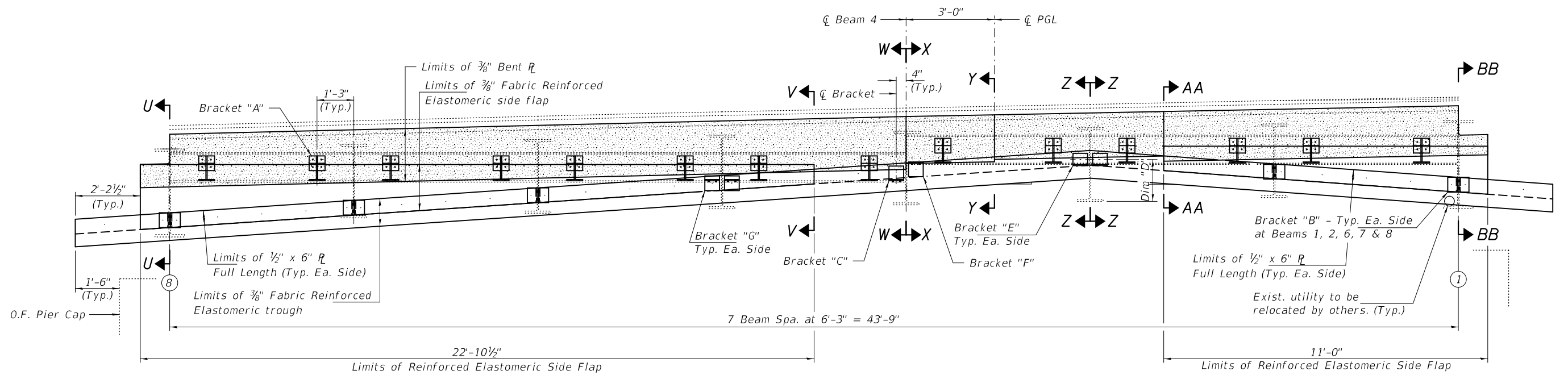
**SECTION S-S**



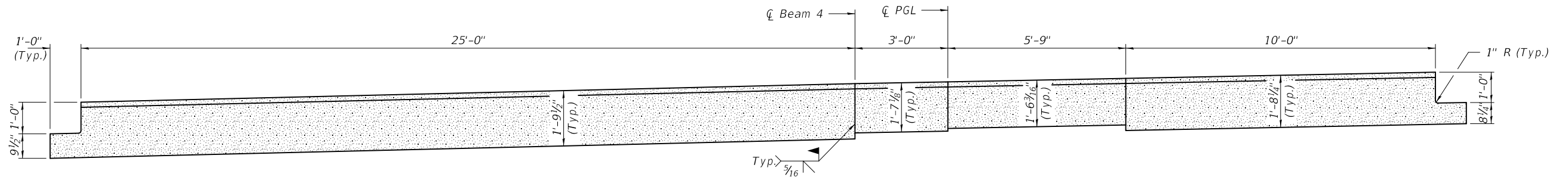
**SECTION T-T**

1 All of Sheet 27G of 27

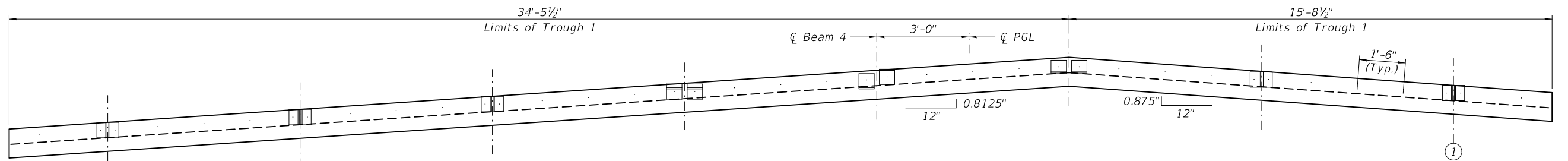
DESIGNED - SMR	EXAMINED	DATE - FEBRUARY 4, 2019	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>ELASTOMERIC TROUGH DETAILS - PIER 10 SN 099-0056 (E.B.)</b>	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CHECKED - JSB	PASSED	REVISED $\Delta$ 02/26/2019 VHV			80	2018-138-BR	WILL	33	30G
DRAWN - Kyle M. Steffen		REVISED			CONTRACT NO. 62H68				
CHECKED - SMR JSB					ILLINOIS FED. AID PROJECT				



**PIER 10**  
(Looking West)



**ELEVATION BENT R**  
(Looking West)



**ELEVATION ELASTOMERIC TROUGH**  
(Looking West)

**DIM "D"**

Beam	Dimension
1	±9 <sup>3</sup> / <sub>8</sub> "
2	±10 <sup>1</sup> / <sub>2</sub> "
3	±1'-5 <sup>1</sup> / <sub>16</sub> "
4N	±1'-2 <sup>1</sup> / <sub>2</sub> "
4S	±1'-1 <sup>1</sup> / <sub>16</sub> "
5	±10 <sup>3</sup> / <sub>8</sub> "
6	±7 <sup>3</sup> / <sub>16</sub> "
7	±4 <sup>1</sup> / <sub>8</sub> "
8	±6 <sup>1</sup> / <sub>16</sub> "

DIM "D" is from bottom of beam to  $\bar{c}$  of bracket holes.

All of Sheet 27H of 27J

Notes:  
For Bracket details, see sheet 27B of 27.  
For Sections U-U thru BB-BB, see sheets 27I & 27J of 27.

DESIGNED - SMR  
CHECKED - JSB  
DRAWN - Kyle M. Steffen  
CHECKED - SMR JSB

EXAMINED  
PASSED  
Timothy A. [Signature]  
ENGINEER OF STRUCTURAL SERVICES  
[Signature]  
ENGINEER OF BRIDGES AND STRUCTURES

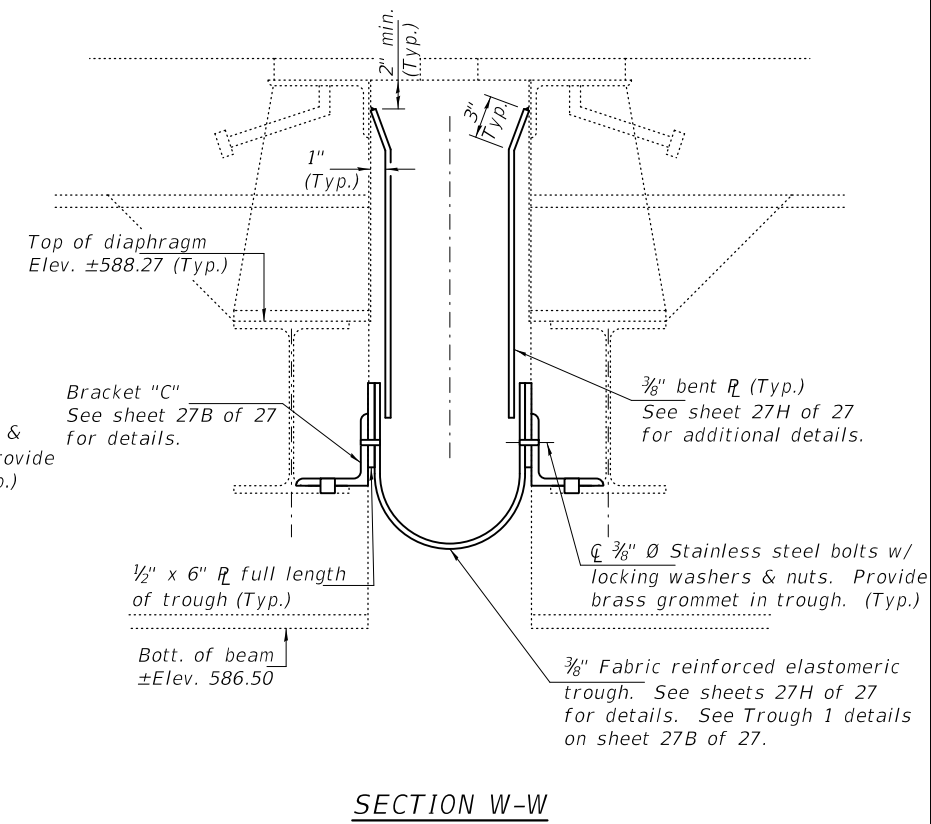
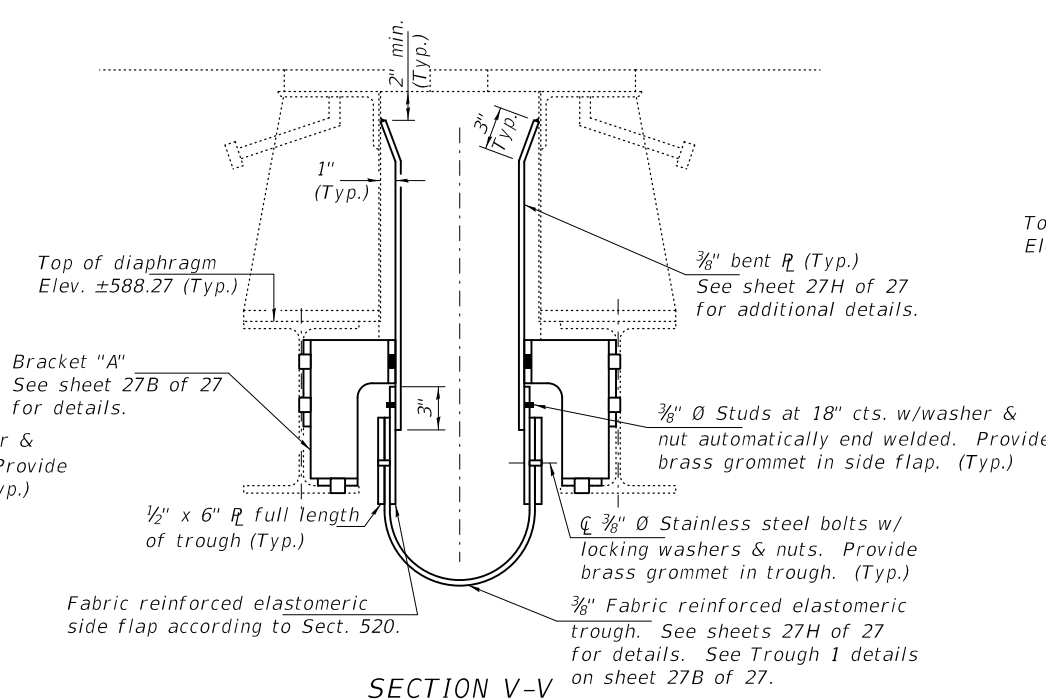
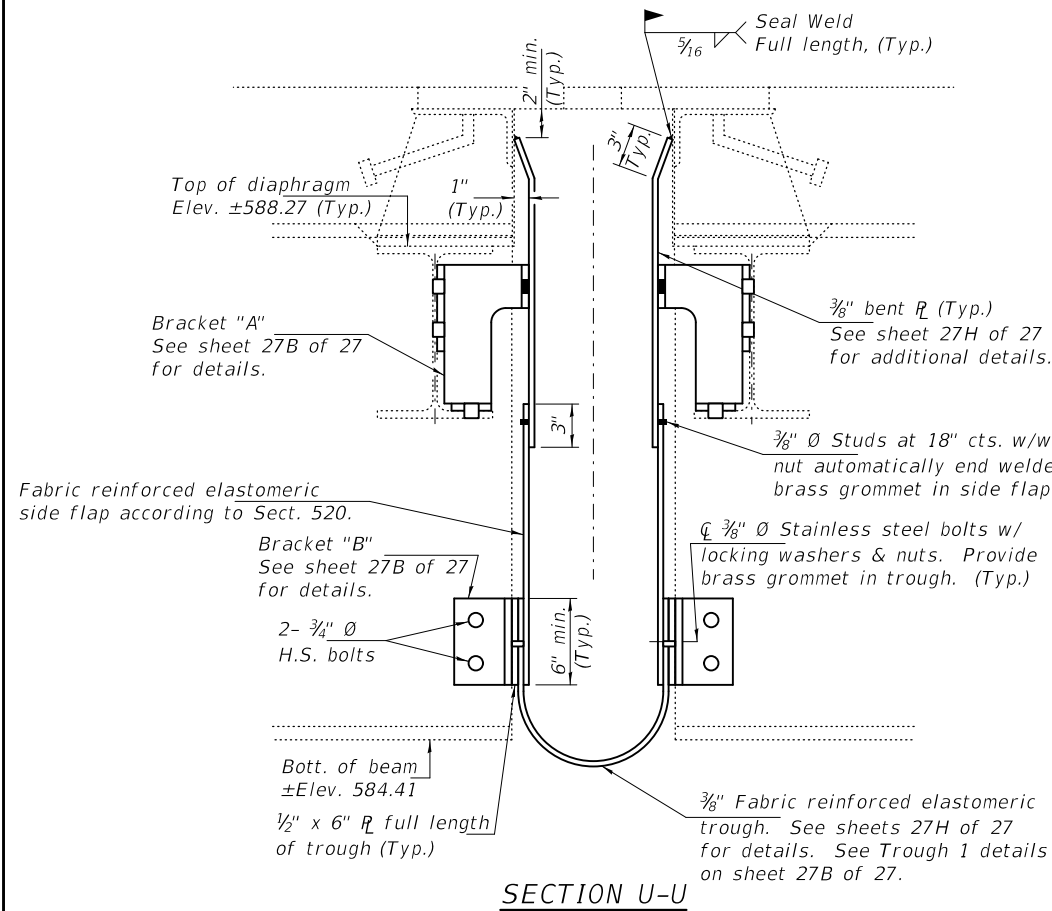
DATE - FEBRUARY 4, 2019  
REVISED  $\Delta$  02/26/2019 VHV  
REVISED

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ELASTOMERIC TROUGH DETAILS - PIER 10  
SN 099-0056 (E.B.)

SHEET NO. 27H OF 27 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	2018-138-BR	WILL	33	30H
CONTRACT NO. 62H68			ILLINOIS FED. AID PROJECT	



1 All of Sheet 27I of 27.

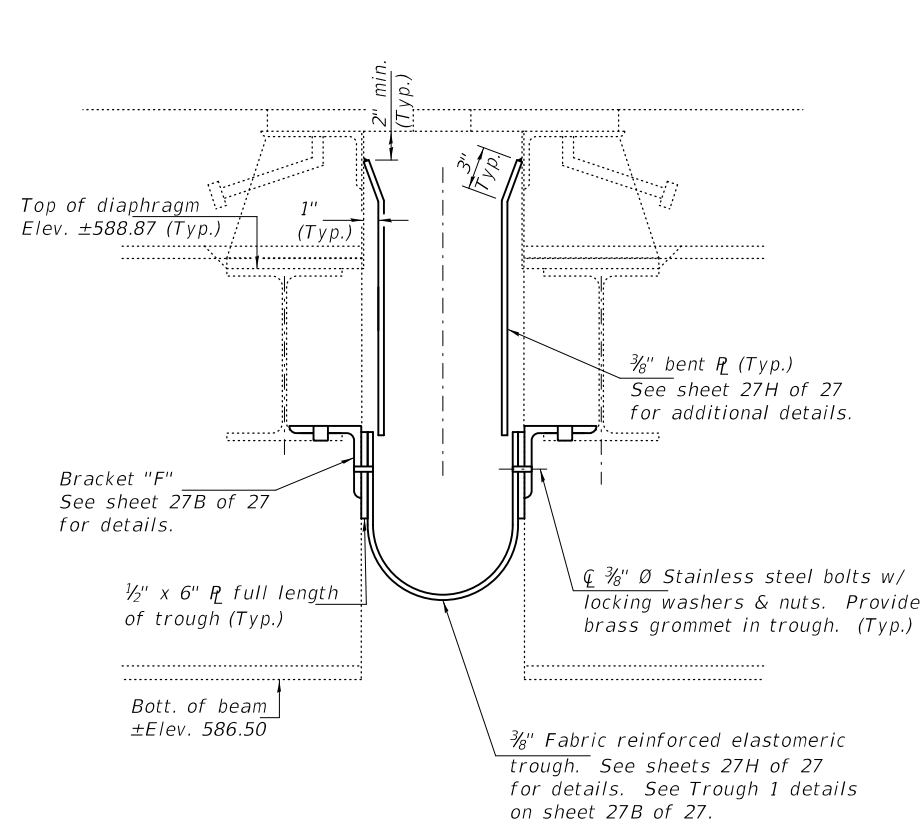
DESIGNED - SMR	EXAMINED	DATE - FEBRUARY 4, 2019
CHECKED - JSB	<i>Timothy A. Daulton</i> ENGINEER OF STRUCTURAL SERVICES	
DRAWN - Kyle M. Steffen	PASSED	REVISED $\Delta$ 02/26/2019 VHV
CHECKED - SMR JSB	<i>Carl Ruyter</i> ENGINEER OF BRIDGES AND STRUCTURES	REVISED

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

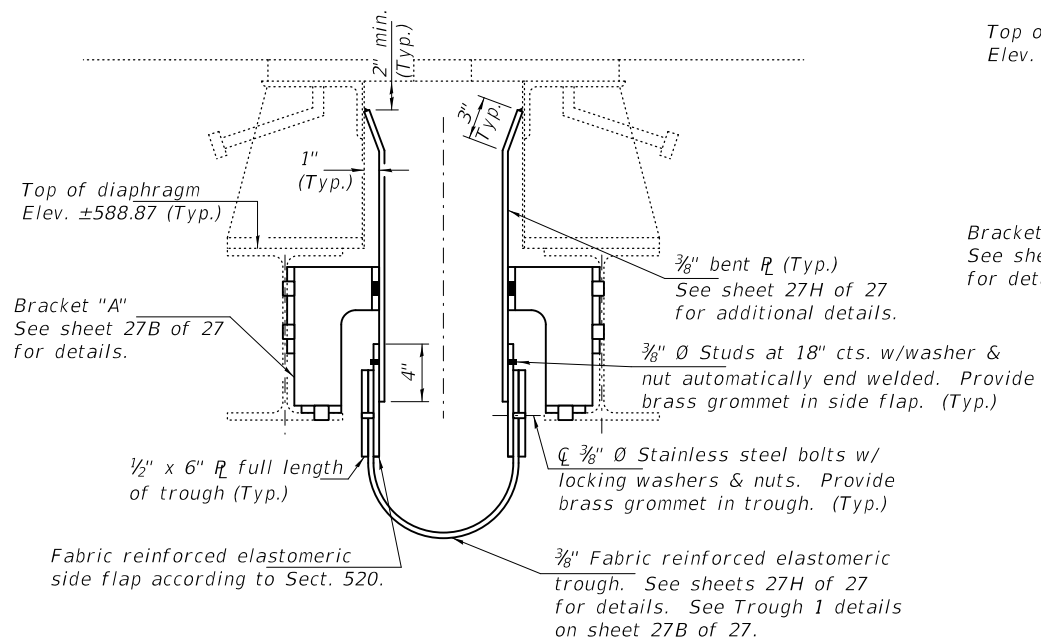
ELASTOMERIC TROUGH DETAILS - PIER 10  
SN 099-0056 (E.B.)

SHEET NO. 27I OF 27 SHEETS

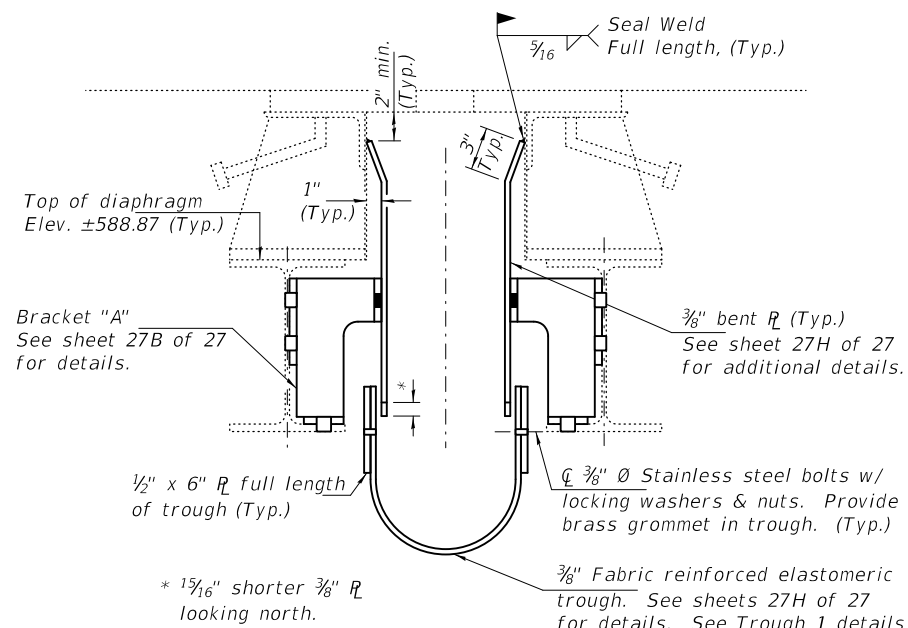
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	2018-138-BR	WILL	33	30I
CONTRACT NO. 62H68			ILLINOIS FED. AID PROJECT	



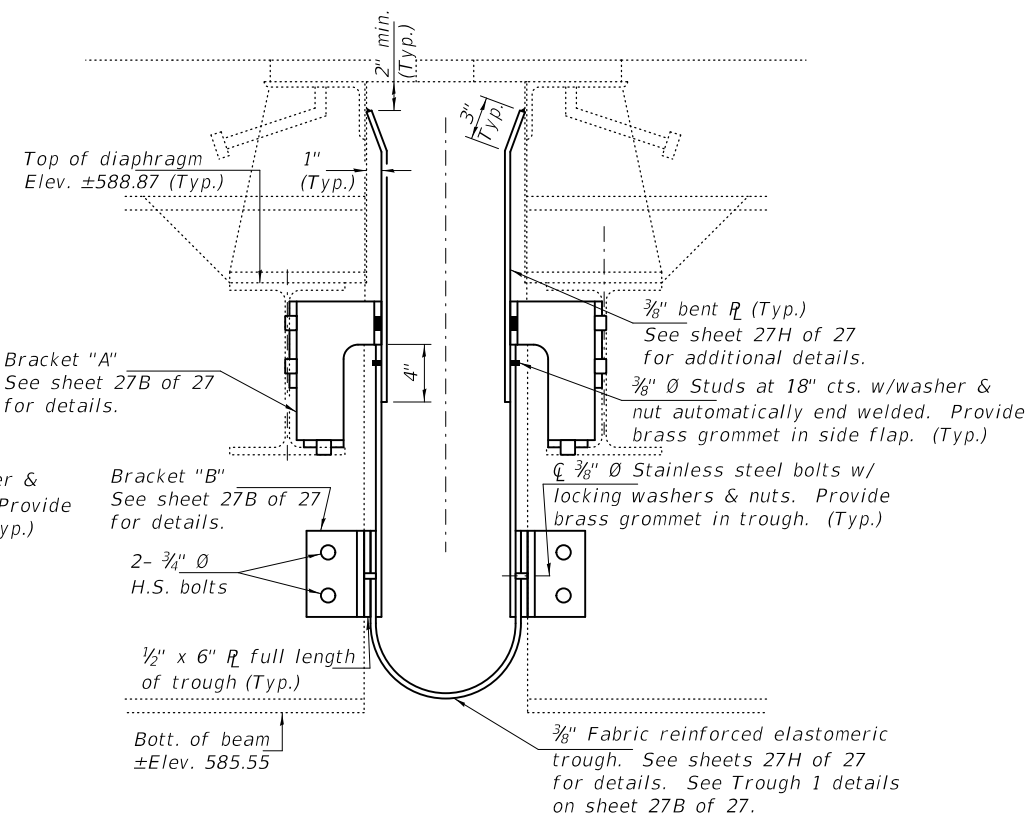
SECTION X-X



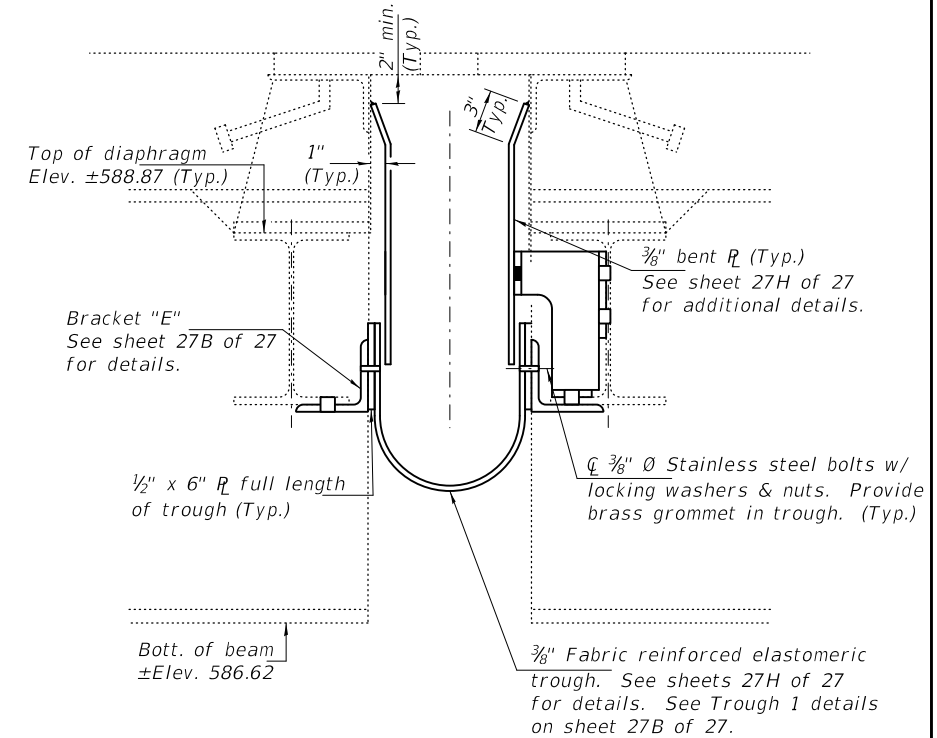
SECTION AA-AA



SECTION Y-Y



SECTION BB-BB



SECTION Z-Z

All of Sheet 27J of 27

DESIGNED - SMR  
 CHECKED - JSB  
 DRAWN - Kyle M. Steffen  
 CHECKED - SMR JSB

EXAMINED  
 PASSED  
 ENGINEER OF STRUCTURAL SERVICES  
 ENGINEER OF BRIDGES AND STRUCTURES

DATE - FEBRUARY 4, 2019  
 REVISED 02/26/2019 VHV  
 REVISED

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

ELASTOMERIC TROUGH DETAILS - PIER 10  
 SN 099-0056 (E.B.)

SHEET NO. 27J OF 27 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	2018-138-BR	WILL	33	30J
CONTRACT NO. 62H68			ILLINOIS FED. AID PROJECT	