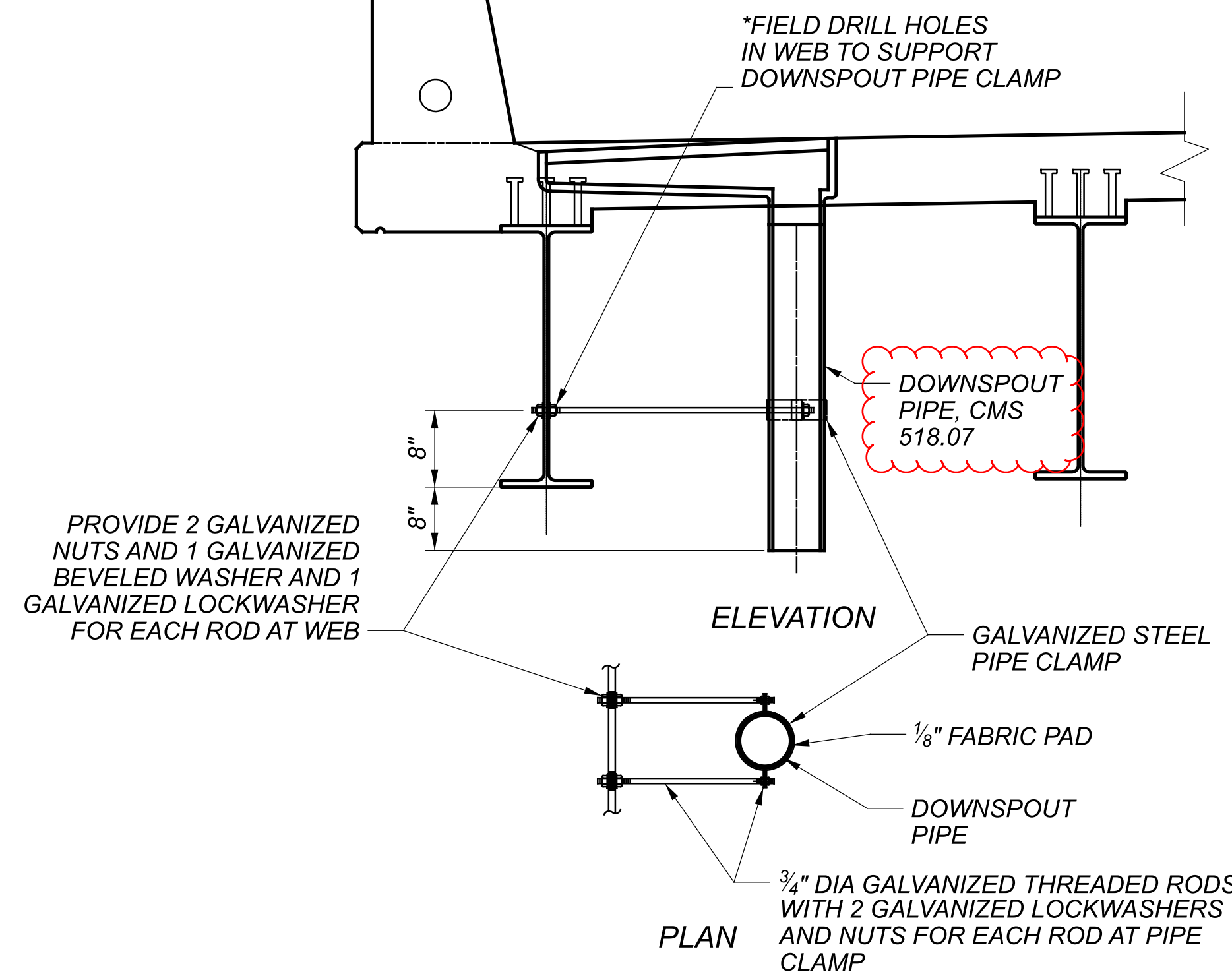


LEAN-ON BRACING & DIAPHRAGM DETAILS  
LEFT BRIDGE SHOWN, RIGHT SIMILAR



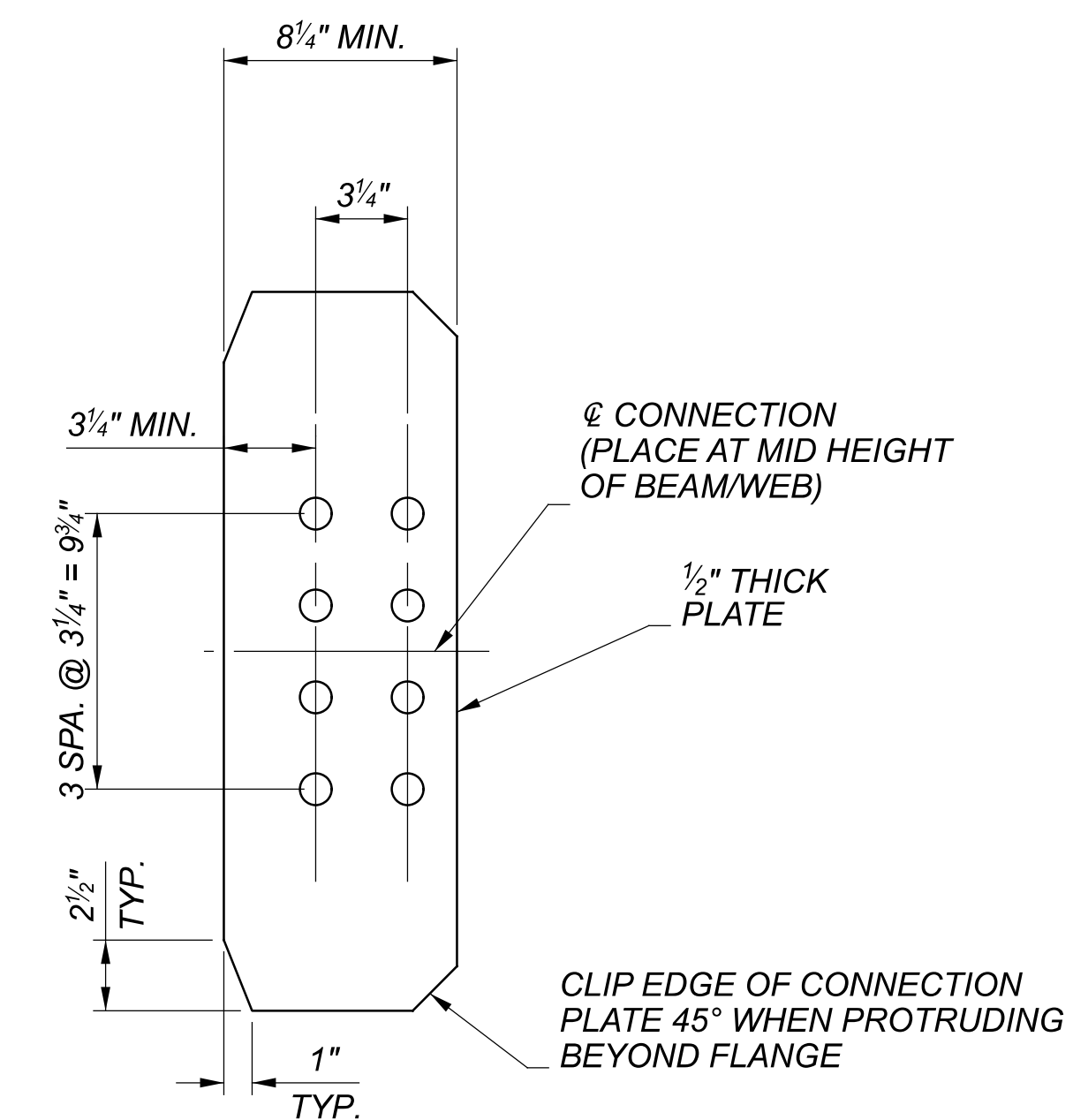
DOWNSPOUT PIPE SUPPORT DETAILS

LEGEND

\* FIELD DRILLING INTO STEEL MEMBERS SHALL BE INCLUDED IN THE COST OF ITEM 518 - SCUPPERS, INCLUDING SUPPORTS

NOTES:

- SEE SHEET [26/46] AND [27/46] FOR FRAMING PLAN DETAILS.
- FOR ADDITIONAL DIAPHRAGM AND CONNECTION PLATE DETAILS, REFER TO ODOT STD. DWG. GSD-1-19.
- TERMINATE WELDS 1/4" FROM THE END OF PLATE TO BEAM INTERFACE.
- ALL BOLT HOLES TO BE 1 5/16" DIA. IN CONNECTION PLATES AND 1 1/16" DIA. IN CROSSFRAME ANGLES FOR CROSSFRAMES IN BAY F/B1 ONLY.
- IN BAY F/B1, DO NOT WELD ANGLES TO CONNECTION PLATE UNTIL DECK POUR IS COMPLETE.
- ALL SCUPPERS, DOWNSPOUTS, AND CONNECTIONS SHALL BE INCLUDED WITH ITEM 518 - SCUPPERS, INCLUDING SUPPORTS. SEE SHEET [3/46] FOR ADDITIONAL NOTES.



B2 CONNECTION PLATE DETAILS  
OTHERS SIMILAR

GENERAL STEEL DETAILS  
BRIDGE NO. SUM-77-3096 L & R  
IR-77 OVER STATE ROUTE 303

SFN 7704534 (L)

SFN 7704569 (R)

DESIGN AGENCY  
**GANNETT FLEMING**  
2500 Corporate Exchange Dr.  
Suite 230  
Columbus, OH 43231

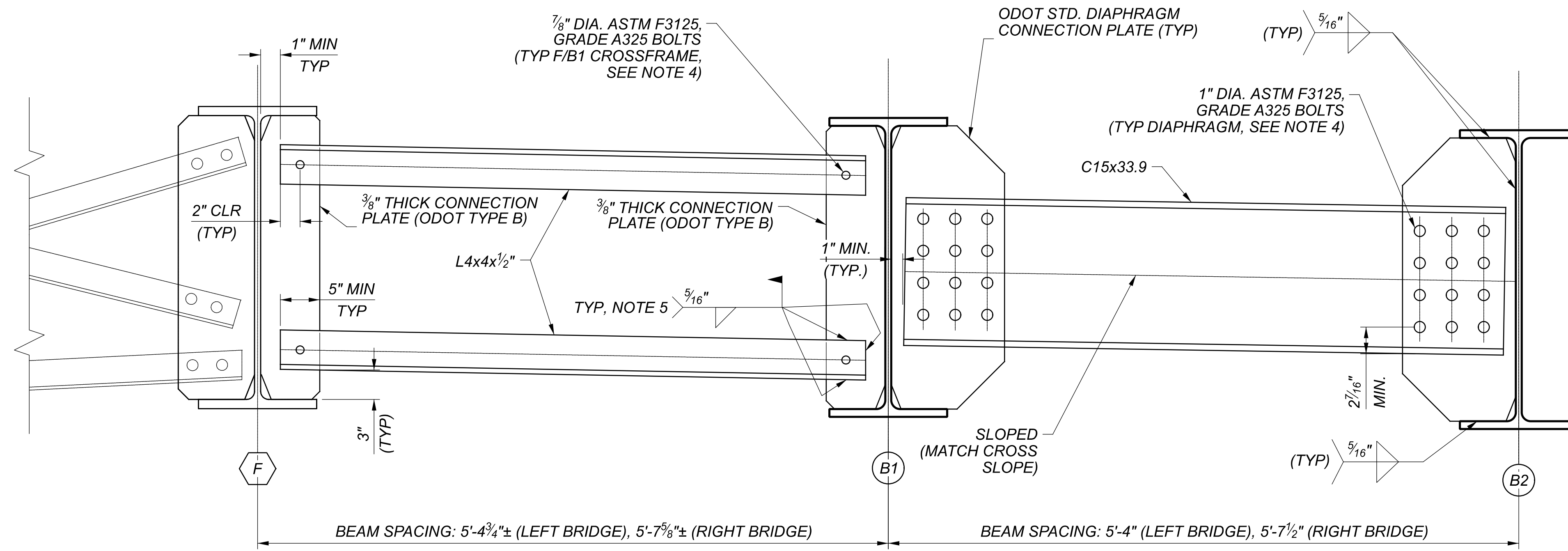
DESIGNER CHECKER  
SAT RSN

REVIEWER  
MTO

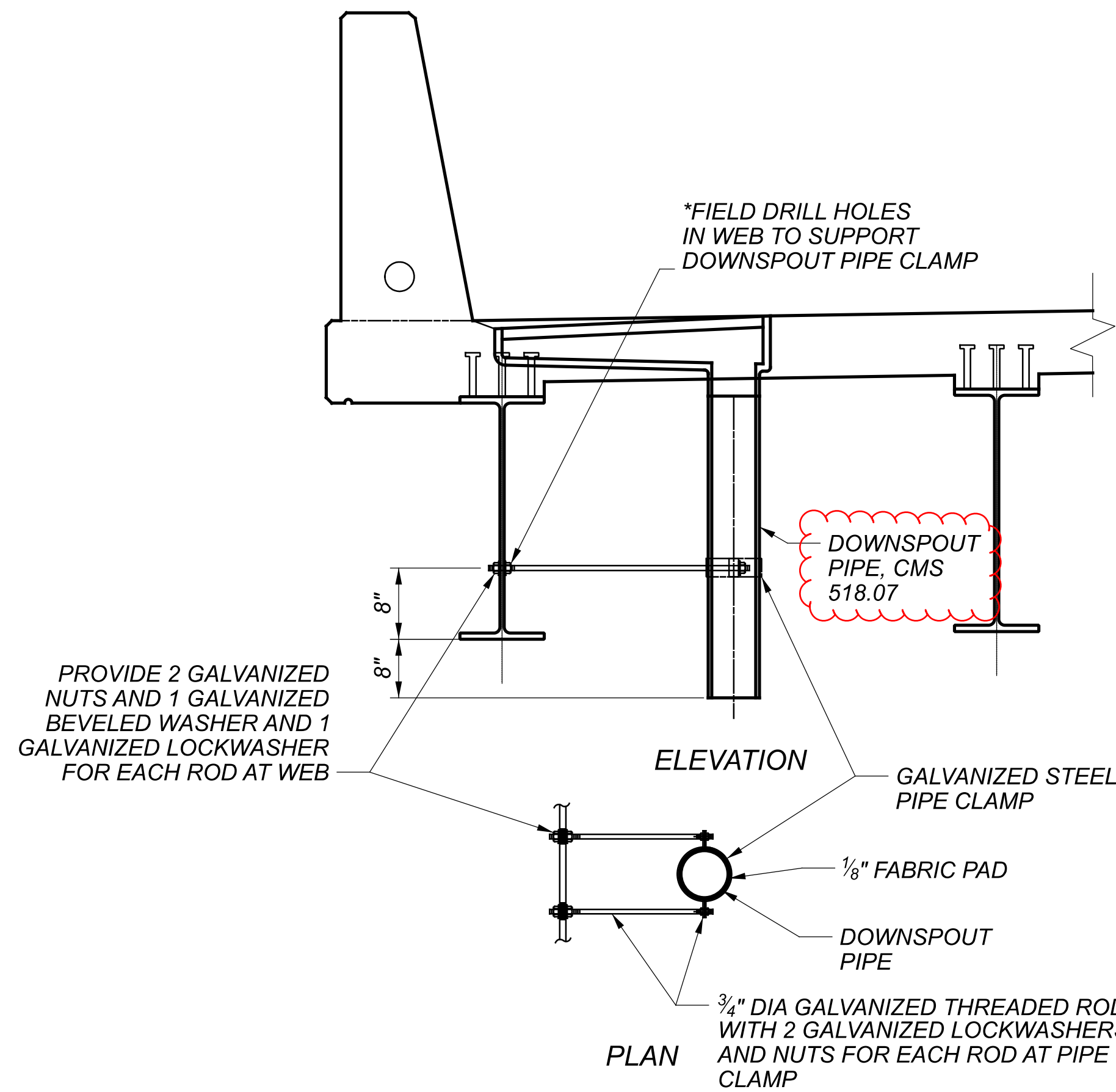
PROJECT ID  
111405

SUBSET TOTAL  
29 46

SHEET TOTAL  
701 927



**LEAN-ON BRACING & DIAPHRAGM DETAILS**  
LEFT BRIDGE SHOWN, RIGHT BRIDGE SIMILAR  
BUT MIRRORED ABOUT C/C CONST IR-77



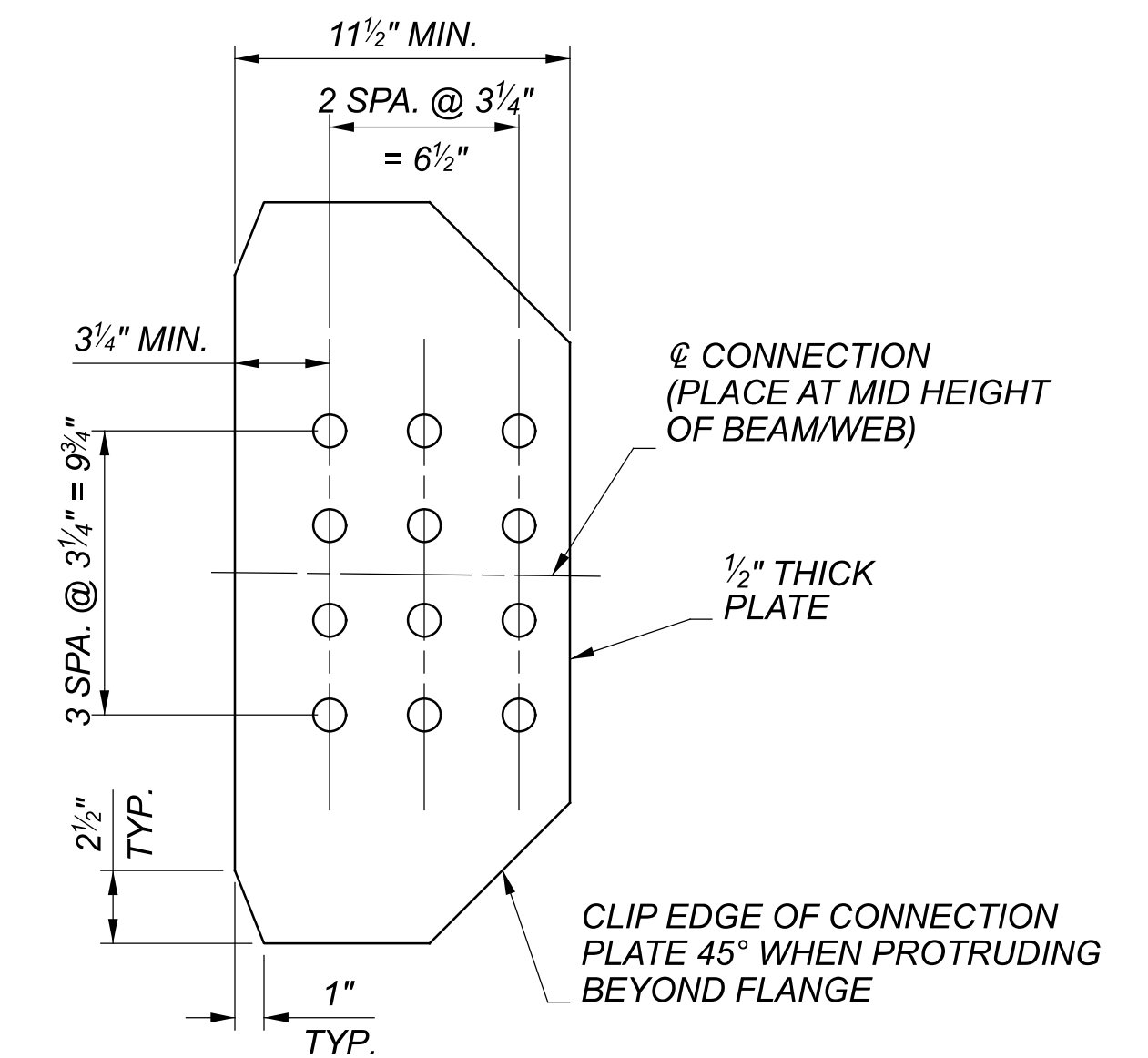
**DOWNSPOUT PIPE SUPPORT DETAILS**

**LEGEND**

\* FIELD DRILLING INTO STEEL MEMBERS SHALL BE INCLUDED IN THE COST OF ITEM 518 - SCUPPERS, INCLUDING SUPPORTS

**NOTES:**

- SEE SHEET [27/47] AND [28/47] FOR FRAMING PLAN DETAILS.
- FOR ADDITIONAL DIAPHRAGM AND CONNECTION PLATE DETAILS, REFER TO ODOT STD. DWG. GSD-1-19.
- TERMINATE WELDS 1/4" FROM THE END OF PLATE TO BEAM INTERFACE.
- ALL BOLT HOLES TO BE 1 5/16" DIA. IN CONNECTION PLATES AND 1 1/16" DIA. IN CROSSFRAME ANGLES FOR CROSSFRAMES IN BAY F/B1 ONLY.
- IN BAY F/B1, DO NOT WELD ANGLES TO CONNECTION PLATE UNTIL DECK POUR IS COMPLETE.
- ALL SCUPPERS, DOWNSPOUTS, AND CONNECTIONS SHALL BE INCLUDED WITH ITEM 518 - SCUPPERS, INCLUDING SUPPORTS. SEE SHEET [4/47] FOR ADDITIONAL NOTES.

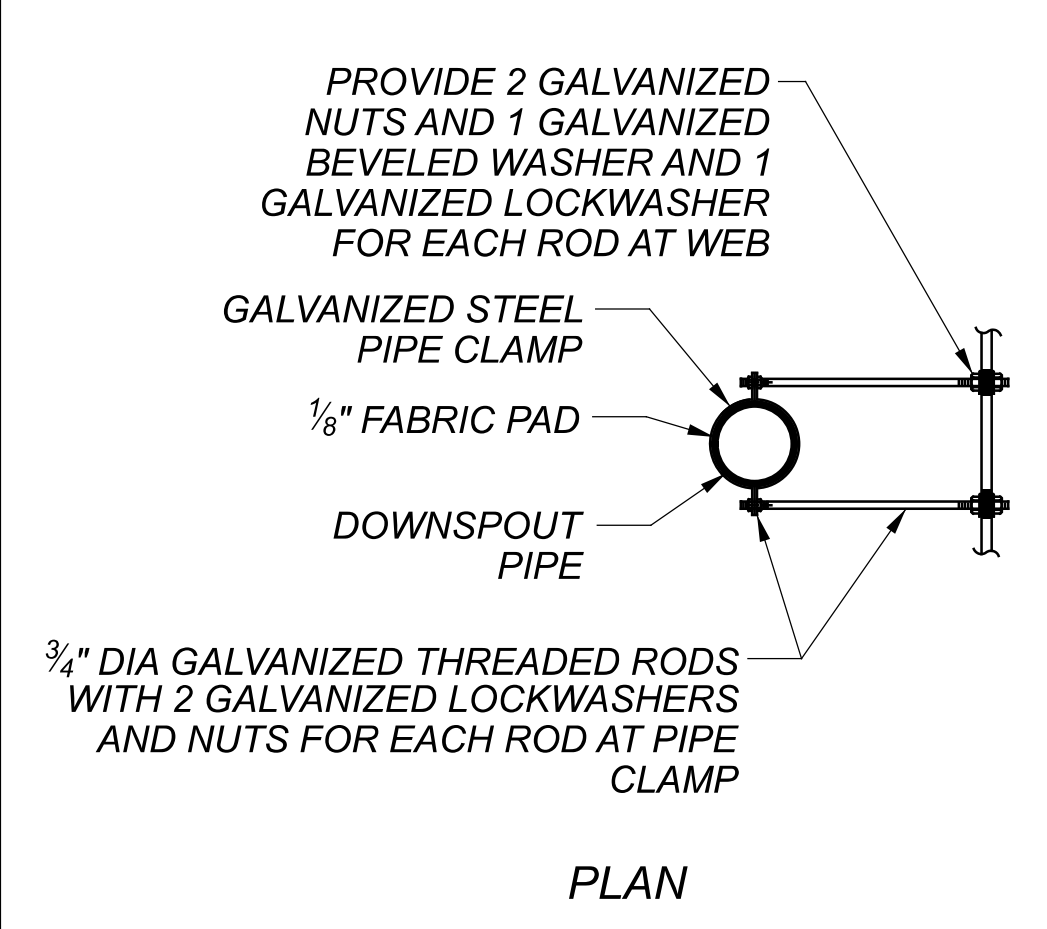
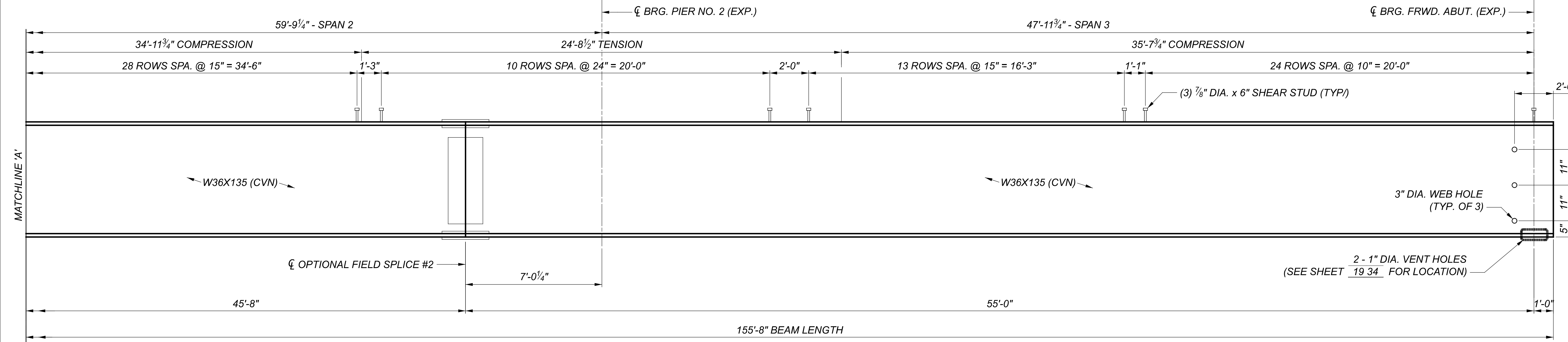
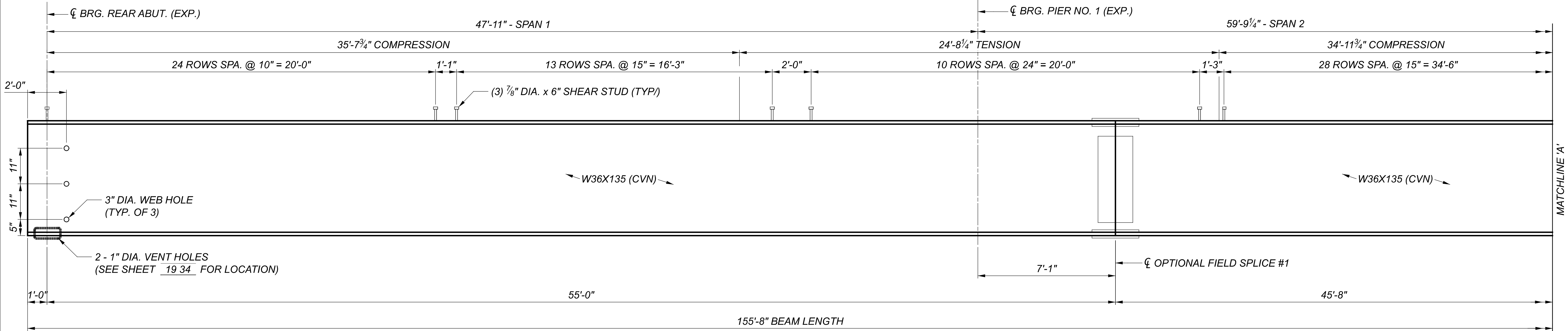


**B2 CONNECTION PLATE DETAILS**  
OTHERS SIMILAR

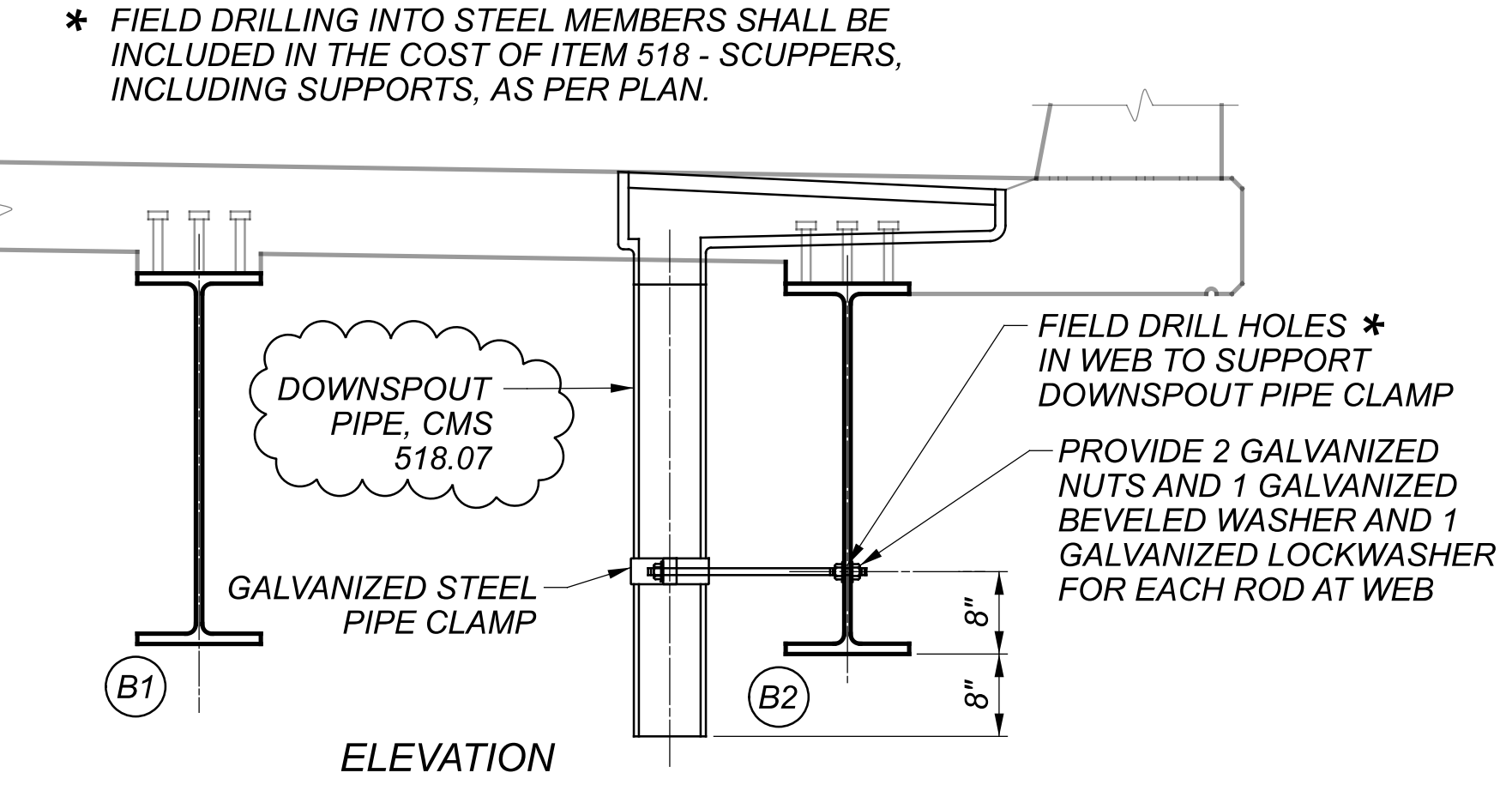
SUM-77-3197L BRIDGE SUMMARY											CALC: EKZ 5/21/22	CHECK: RJB 1/10/23
ITEM	ITEM EXT.	03/IMS/14 RECONST.	04/IMS/13 WIDENING	GRAND TOTAL	UNIT	DESCRIPTION	ABUT.	PIERS	SUPER	GENERAL	APP/REF SHEET NO.	
202	11203		LS	LS	LS	PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN				LS	3	
202	22900	230		230	SY	APPROACH SLAB REMOVED				230		
503	11100		LS	LS	LS	COFFERDAMS AND EXCAVATION BRACING				LS		
503	21100		140	140	CY	UNCLASSIFIED EXCAVATION	140					
505	11100		LS	LS	LS	PILE DRIVING EQUIPMENT MOBILIZATION				LS		
507	00500		780	780	FT	12" CAST-IN-PLACE REINFORCED CONCRETE PILES, DRIVEN	780					
507	00551		840	840	FT	12" CAST-IN-PLACE REINFORCED CONCRETE PILES, FURNISHED, AS PER PLAN	840				4	
509	10001		33,438	33,438	LB	EPOXY COATED STEEL REINFORCEMENT, AS PER PLAN	4,248	5,136	23,218	836	4	
509	20001		300	300	LB	CONCRETE REINFORCEMENT, REPLACEMENT OF EXISTING CONCRETE REINFORCEMENT, AS PER PLAN				300	4	
509	30020		3238	3238	FT	NO. 4 DEFORMED GFRP REINFORCEMENT			2482	756		
510	10001		22	22	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT, AS PER PLAN	22				4	
511	34446		72	72	CY	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK			72			
511	34451		33	33	CY	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET), AS PER PLAN			33		4	
511	42012		22	22	CY	CLASS QC1 CONCRETE WITH QC/QA, PIER ABOVE FOOTINGS		22				
511	44112		30	30	CY	CLASS QC1 CONCRETE WITH QC/QA, ABUTMENT NOT INCLUDING FOOTING	30					
511	46512		31	31	CY	CLASS QC1 CONCRETE WITH QC/QA, FOOTING	31					
512	33000		8	8	SY	TYPE 2 WATERPROOFING	8					
SPECIAL	51275500		317	317	SY	SEALING OF CONCRETE SURFACES	34	70	169	44		
513	10260		47770	47770	LB	STRUCTURAL STEEL MEMBERS, LEVEL 3			47770			
513	20000		762	762	EACH	WELDED STUD SHEAR CONNECTORS			762			
514	00050		769	769	SF	SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL			769			
514	00056		769	769	SF	FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT			769			
514	00060		3223	3223	SF	FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT			3223			
514	00066		3223	3223	SF	FIELD PAINTING STRUCTURAL STEEL, FINISH COAT			3223			
514	00504		1	1	MNHR	GRINDING FINES, TEARS, SLIVERS ON EXISTING STRUCTURAL STEEL			1			
514	10000		3	3	EACH	FINAL INSPECTION REPAIR			3			
516	10010	97	25	122	FT	ARMORLESS PREFORMED JOINT SEAL				122		
516	13600		17	17	SF	1" PREFORMED EXPANSION JOINT FILLER				17		
516	13900		47	47	SF	2" PREFORMED EXPANSION JOINT FILLER	47					
516	14020		34	34	FT	SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL	34					
516	44100		4	4	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE) (17"x11"x2.53" BEARING WITH 18"x12" BEVELED LOAD PLATE)		4				
516	44101		4	4	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN (13"x10"x2.27" BEARING WITH 14"x10" LOAD PLATE AND BEVELED HP10x42 PEDESTAL)	4				19	
518	12201		4	4	EACH	SCUPPERS, INCLUDING SUPPORTS, AS PER PLAN			4		4	
518	21200		25	25	CY	POROUS BACKFILL WITH GEOTEXTILE FABRIC	25					
518	40000		58	58	FT	6" PERFORATED CORRUGATED PLASTIC PIPE	58					
518	40010		58	58	FT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS	58					
523	20001		2	2	EACH	DYNAMIC LOAD TESTING, AS PER PLAN	2				4	
523	20501		1	1	EACH	RESTRIKE, AS PER PLAN	1				4	
524	94946		114	114	FT	DRILLED SHAFTS, 72" DIAMETER, ABOVE BEDROCK		114				
526	25011	239	68	307	SY	REINFORCED CONCRETE APPROACH SLABS WITH QC/QA (T=15"), AS PER PLAN				307	30 , 31	
526	90030	97	25	122	FT	TYPE C INSTALLATION				122		
601	20000		478	478	SY	CRUSHED AGGREGATE SLOPE PROTECTION	478					
625	33000		1	1	EACH	STRUCTURE GROUNDING SYSTEM				1		
894	10000		2	2	EACH	THERMAL INTEGRITY PROFILER (TIP) TEST		2				

ESTIMATED QUANTITIES  
 BRIDGE NO. SUM-77-3197L  
 I-77 OVER FURNACE RUN

SFN  
 7704658 (L)  
 DESIGN AGENCY  
**ARCADIS**  
 222 SOUTH MAIN STREET, SUITE 200  
 HANCOCK, MA 01930  
 (508) 434-6965  
 www.arcadis.com  
 DESIGNER: RJB  
 CHECKER: CMD  
 REVIEWER: RBB  
 01-13-23  
 PROJECT ID: 111405  
 SUBSET: 5 TOTAL: 34  
 SHEET: 770 TOTAL: 927

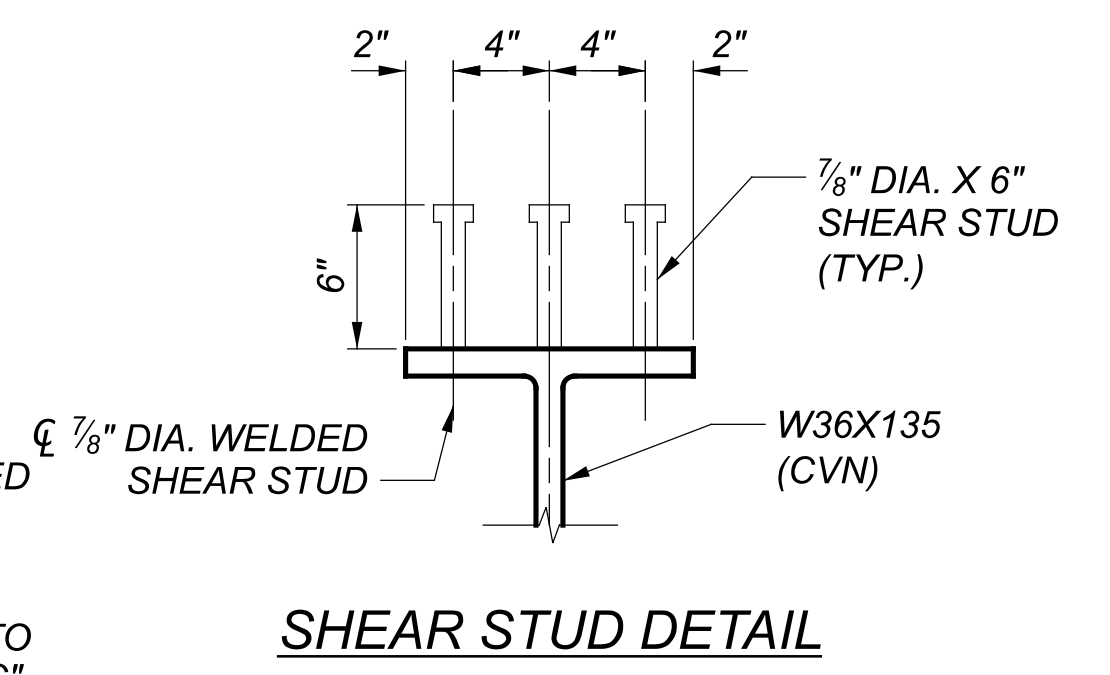


DOWNSPOUT PIPE SUPPORT DETAILS



NOTES:

- SEE SHEET 20/34 FOR FRAMING PLAN.
- SEE SHEET 22/34 FOR SPLICE DETAILS INCLUDING SHEAR STUD SPACING.
- SEE SHEET 24/34 FOR TRANSVERSE SECTION.
- ALL STEEL SHALL BE ASTM A709 GRADE 50, AND SHALL HAVE A THREE COAT PAINT SYSTEM APPLIED PER CMS 514. WHERE A SHAPE OR PLATE IS DESIGNATED (CVN) FURNISH MATERIAL THAT MEETS THE MINIMUM NOTCH TOUGHNESS REQUIREMENTS AS SPECIFIED IN CMS 711.01.
- WELD ATTACHMENT OF SUPPORTS FOR CONCRETE DECK FINISHING MACHINE TO AREAS OF THE FASCIA STRINGER FLANGES DESIGNATED "COMPRESSION" OR "C". DO NOT WELD ATTACHMENTS TO AREAS DESIGNATED "TENSION" OR "T". FILLET WELDS TO COMPRESSION FLANGES SHALL BE AT LEAST 1" FROM EDGE OF FLANGE, BE NO MORE THAN 2" LONG, AND AT LEAST 5/16" THICK.
- ALL SCUPPER AND DOWNSPOUT DETAILS SHOWN ON THIS SHEET, SHALL BE INCLUDED WITH ITEM 518 - SCUPPERS, INCLUDING SUPPORTS, AS PER PLAN. SEE SHEET 4/34 FOR ADDITIONAL NOTES.



SHEAR STUD DETAIL

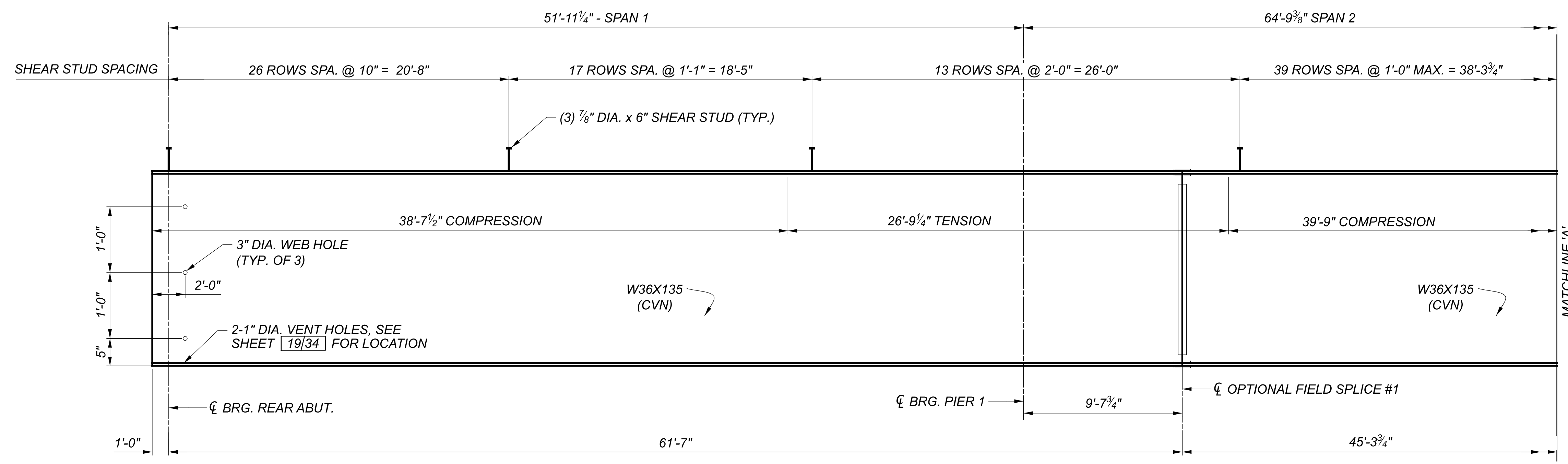
BEAM ELEVATION  
 BRIDGE NO. SUM-77-3197L  
 I-77 OVER FURNACE RUN

SFN 7704658 (L)	
DESIGN AGENCY	
ARCADIS	
222 SOUTH MAIN STREET, SUITE 200 HARRISON, OH 43030 (614) 434-6965 www.arcadis.com	
DESIGNER	CHECKER
RJB	CMD
REVIEWER	
RBB 01-13-23	
PROJECT ID	
111405	
SUBSET	TOTAL
21	34
SHEET	TOTAL
786	927

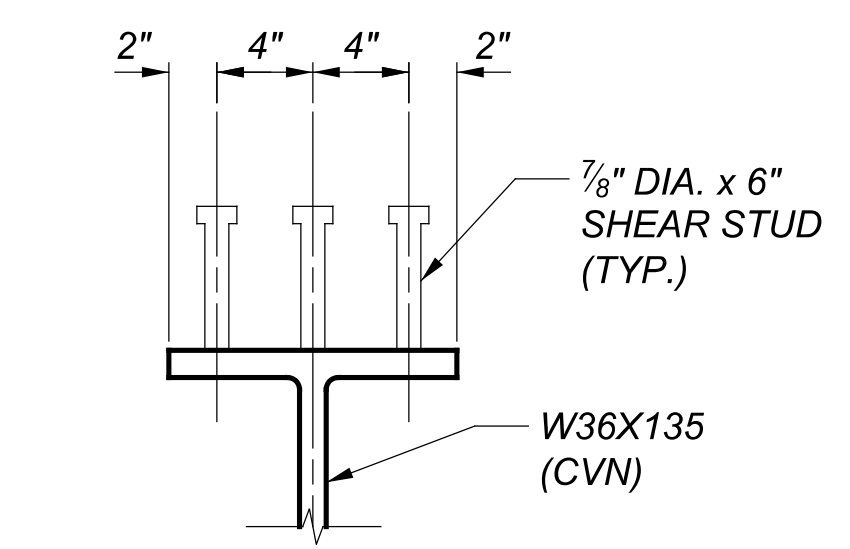
SUM-77-3197R BRIDGE SUMMARY										CALC: ARO 6/1/22	CHECK: RJB 1/10/23
ITEM	ITEM EXT.	03/IMS/14 RECONST.	04/IMS/13 WIDENING	GRAND TOTAL	UNIT	DESCRIPTION	ABUT.	PIERS	SUPER	GENERAL	APP/REF SHEET NO.
202	11203		LS	LS	LS	PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN				LS	3
202	22900	274		274	SY	APPROACH SLAB REMOVED				274	
503	11000		LS	LS	LS	COFFERDAMS AND EXCAVATION BRACING				LS	
503	21100		142	142	CY	UNCLASSIFIED EXCAVATION	142				
505	11100		LS	LS	LS	PILE DRIVING EQUIPMENT MOBILIZATION				LS	
507	00500		810	810	FT	12" CAST-IN-PLACE REINFORCED CONCRETE PILES, DRIVEN	810				
507	00551		870	870	FT	12" CAST-IN-PLACE REINFORCED CONCRETE PILES, FURNISHED, AS PER PLAN	870				3
509	10001		37,285	37,285	LB	EPOXY COATED STEEL REINFORCEMENT, AS PER PLAN	4,715	5,684	26,050	836	4
509	20001		300	300	LB	CONCRETE REINFORCEMENT, REPLACEMENT OF EXISTING CONCRETE REINFORCEMENT, AS PER PLAN				300	4
509	30020		3,407	3,407	FT	NO. 4 DEFORMED GFRP REINFORCEMENT			2,651	756	
510	10001		22	22	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT, AS PER PLAN	22				4
511	34447		81	81	CY	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK, AS PER PLAN			81		20
511	34451		36	36	CY	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET), AS PER PLAN			36		4
511	42012		25	25	CY	CLASS QC1 CONCRETE WITH QC/QA, PIER ABOVE FOOTINGS		25			
511	44112		37	37	CY	CLASS QC1 CONCRETE WITH QC/QA, ABUTMENT NOT INCLUDING FOOTING	37				
511	46512		32	32	CY	CLASS QC1 CONCRETE WITH QC/QA, FOOTING	32				
512	33000		8	8	SY	TYPE 2 WATERPROOFING	8				
SPECIAL	51275500		353	353	SY	SEALING OF CONCRETE SURFACES	46	81	182	44	
513	10260		51,445	51,445	LB	STRUCTURAL STEEL MEMBERS, LEVEL 3			51,445		
513	20000		906	906	EACH	WELDED STUD SHEAR CONNECTORS			906		
514	00050		834	834	SF	SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL			834		
514	00056		834	834	SF	FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT			834		
514	00060		3,500	3,500	SF	FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT			3,500		
514	00066		3,500	3,500	SF	FIELD PAINTING STRUCTURAL STEEL, FINISH COAT			3,500		
514	00504		1	1	MNHR	GRINDING FINNS, TEARS, SLIVERS ON EXISTING STRUCTURAL STEEL			1		
514	10000		3	3	EACH	FINAL INSPECTION REPAIR			3		
516	10010	115	26	141	FT	ARMORLESS PREFORMED JOINT SEAL				141	
516	13600		17	17	SF	1" PREFORMED EXPANSION JOINT FILLER				17	
516	13900		47	47	SF	2" PREFORMED EXPANSION JOINT FILLER	47				
516	14020		38	38	FT	SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL	38				
516	44100		4	4	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE) (17"x11"x2.53" BEARING WITH 18"x12" LOAD PLATE AND BEVELED HP10x42 PEDESTAL)		4			
516	44101		4	4	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE) (13"x10"x2.27" BEARING WITH 14"x11" LOAD PLATE AND BEVELED HP10x42 PEDESTAL), AS PER PLAN	4				19
518	12201		3	3	EACH	SCUPPERS, INCLUDING SUPPORTS, AS PER PLAN			3		4
518	21200		24	24	CY	POROUS BACKFILL WITH GEOTEXTILE FABRIC	24				
518	40000		55	55	FT	6" PERFORATED CORRUGATED PLASTIC PIPE	55				
518	40010		59	59	FT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS	59				
523	20001		2	2	EACH	DYNAMIC LOAD TESTING, AS PER PLAN	2				4
523	20501		1	1	EACH	RESTRIKE, AS PER PLAN	1				4
524	94946		114	114	FT	DRILLED SHAFTS, 72" DIAMETER, ABOVE BEDROCK		114			
526	25011	283	68	351	SY	REINFORCED CONCRETE APPROACH SLABS WITH QC/QA (T=15"), AS PER PLAN				351	30 , 31
526	90030	115	25	140	FT	TYPE C INSTALLATION				140	
601	20000		587	587	SY	CRUSHED AGGREGATE SLOPE PROTECTION	587				
625	33000		1	1	EACH	STRUCTURE GROUNDING SYSTEM				1	
894	10000		2	2	EACH	THERMAL INTEGRITY PROFILER (TIP) TEST		2			

ESTIMATED QUANTITIES  
 BRIDGE NO. SUM-77-3197R  
 I-77 OVER FURNACE RUN

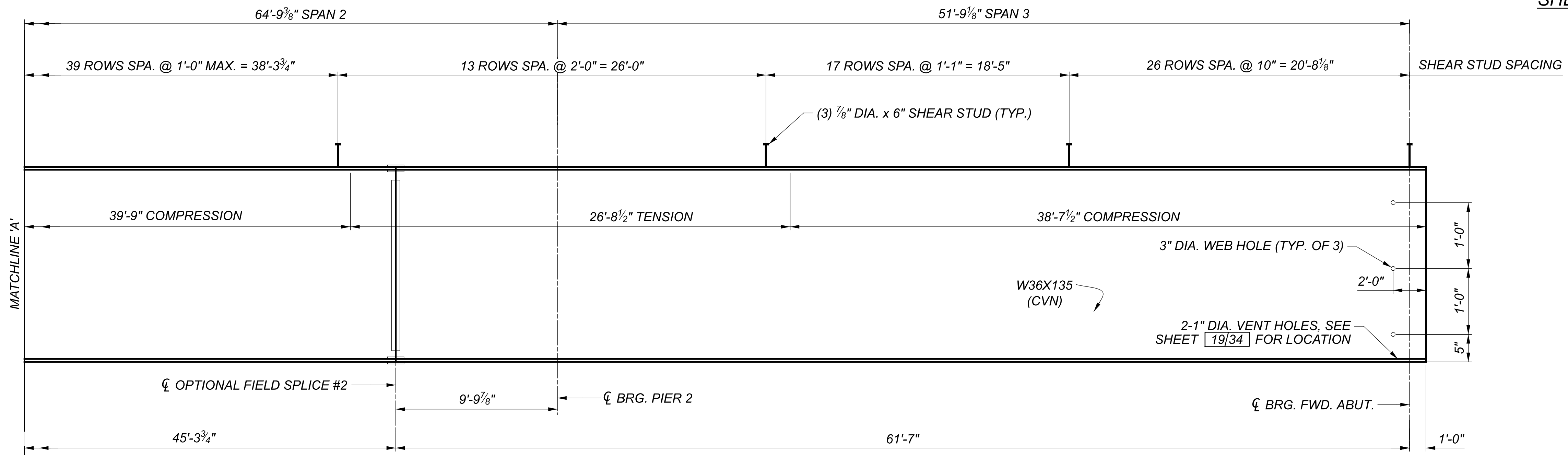
SFN  
7704682 (R)  
 DESIGN AGENCY  
**ARCADIS**  
 222 SOUTH MAIN STREET, SUITE 200  
 FAYETTEVILLE, AR 72701  
 (501) 434-6965  
 www.arcadis.com  
 DESIGNER: RJB  
 CHECKER: FJG  
 REVIEWER: RBB  
 PROJECT ID: 111405  
 SUBSET: 5 TOTAL: 34  
 SHEET: 804 TOTAL: 927



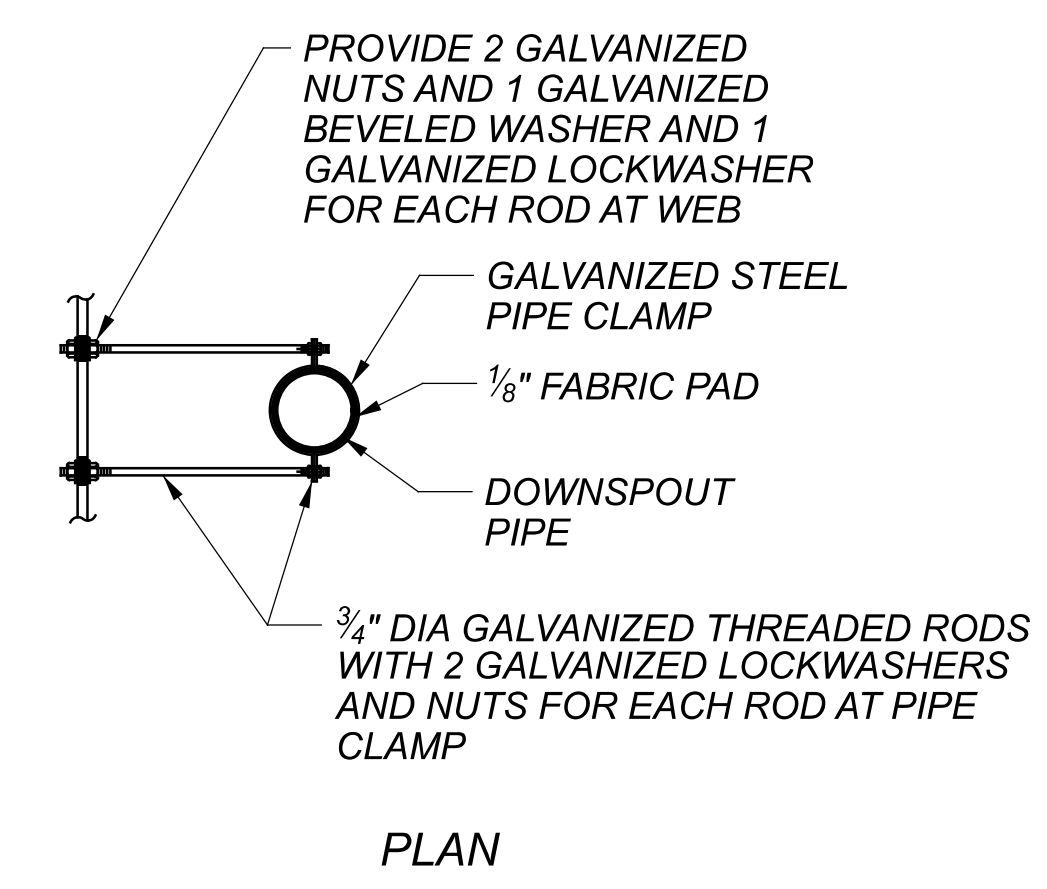
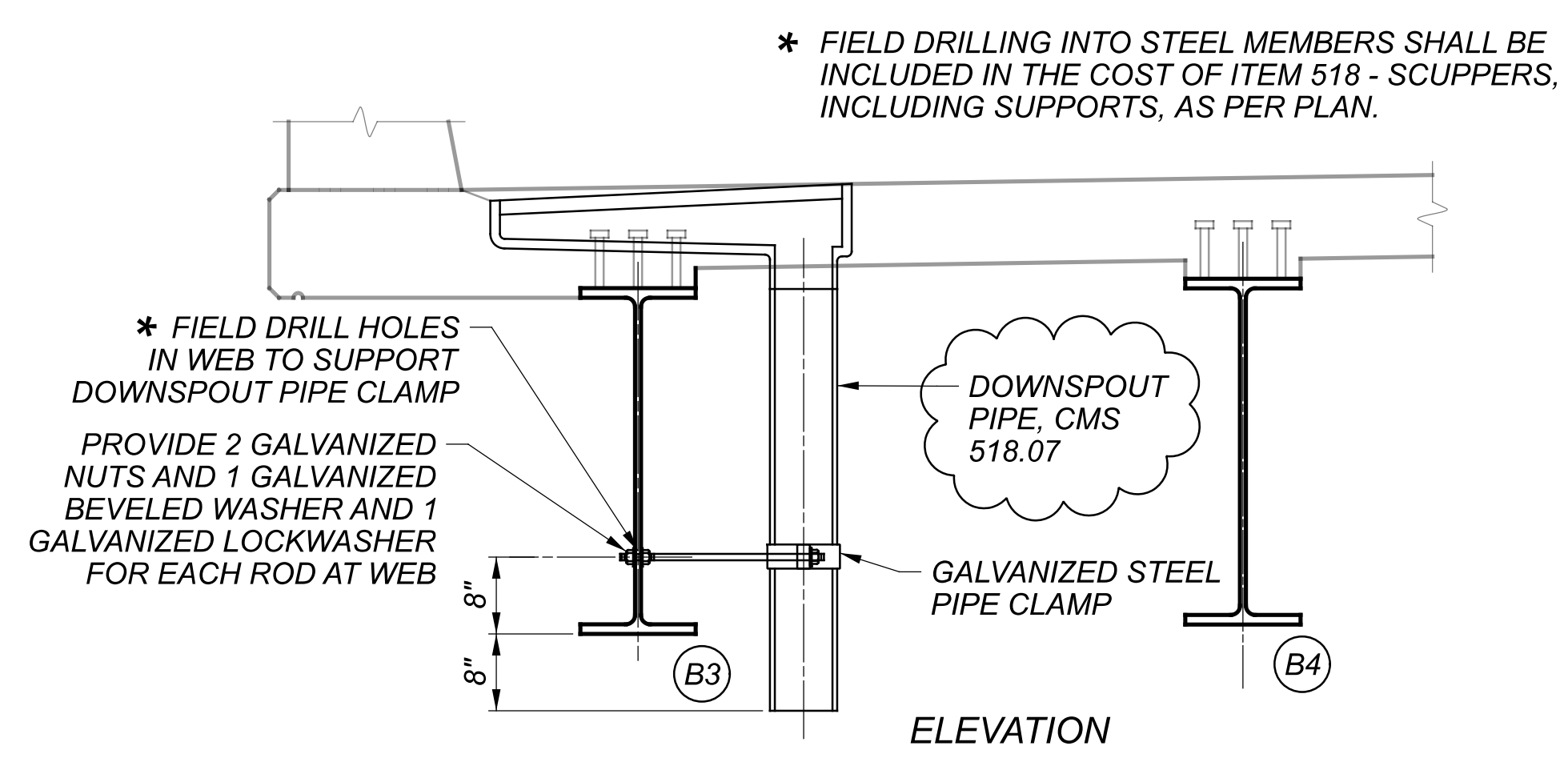
**BEAM ELEVATION**  
 (TYP. ALL PROPOSED BEAMS)



**SHEAR STUD DETAIL**



**BEAM ELEVATION**  
 (TYP. ALL PROPOSED BEAMS)



**DOWNSPOUT PIPE SUPPORT DETAILS**

**NOTES:**

- SEE SHEET [20/34] FOR FRAMING PLAN.
- SEE SHEET [22/34] FOR SPLICE DETAILS INCLUDING SHEAR STUD SPACING.
- SEE SHEET [24/34] FOR TRANSVERSE SECTION.
- ALL STEEL SHALL BE ASTM A709 GRADE 50, AND SHALL HAVE A THREE COAT PAINT SYSTEM APPLIED PER CMS 514. WHERE A SHAPE OR PLATE IS DESIGNATED (CVN) FURNISH MATERIAL THAT MEETS THE MINIMUM NOTCH TOUGHNESS REQUIREMENTS AS SPECIFIED IN CMS 711.01.
- WELD ATTACHMENT OF SUPPORTS FOR CONCRETE DECK FINISHING MACHINE TO AREAS OF THE FASCIA STRINGER FLANGES DESIGNATED "COMPRESSION" OR "C". DO NOT WELD ATTACHMENTS TO AREAS DESIGNATED "TENSION" OR "T". FILLET WELDS TO COMPRESSION FLANGES SHALL BE AT LEAST 1" FROM EDGE OF FLANGE, BE NO MORE THAN 2" LONG, AND AT LEAST 3/16" THICK.
- ALL SCUPPER AND DOWNSPOUT DETAILS SHOWN ON THIS SHEET, SHALL BE INCLUDED WITH ITEM 518 - SCUPPERS, INCLUDING SUPPORTS, AS PER PLAN. SEE SHEET [4/34] FOR ADDITIONAL NOTES.

BEAM ELEVATION  
 BRIDGE NO. SUM-77-3197R  
 I-77 OVER FURNACE RUN

SFN 7704682 (R)	
DESIGN AGENCY	
ARCADIS	222 SOUTH MAIN STREET, SUITE 200 HARTON, CA 94026 (925) 434-6955 www.arcadis.com
DESIGNER	CHECKER
RJB	FJG
REVIEWER	
RBB 01-13-23	
PROJECT ID	
111405	
SUBSET	TOTAL
21	34
SHEET	TOTAL
820	927