

**GENERAL NOTES**

**STEEL**  
STEEL SHALL MEET A.A.S.H.T.O. SPECIFICATIONS.

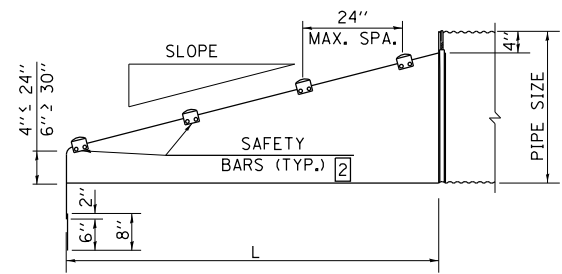
**CONNECTORS**  
SIZES THRU 24" ATTACH TO PIPE WITH TYPE #1 STRAPS. ALL OTHER SIZES ATTACH WITH TYPE #2 RODS AND LUGS.

**TOE PLATE EXTENSIONS**  
TOE PLATE EXTENSIONS ARE TO BE THE SAME GAGE AS END SECTION. DIMENSIONS SHALL BE OVERALL WIDTH LESS 6 INCHES BY 8 INCHES HIGH.

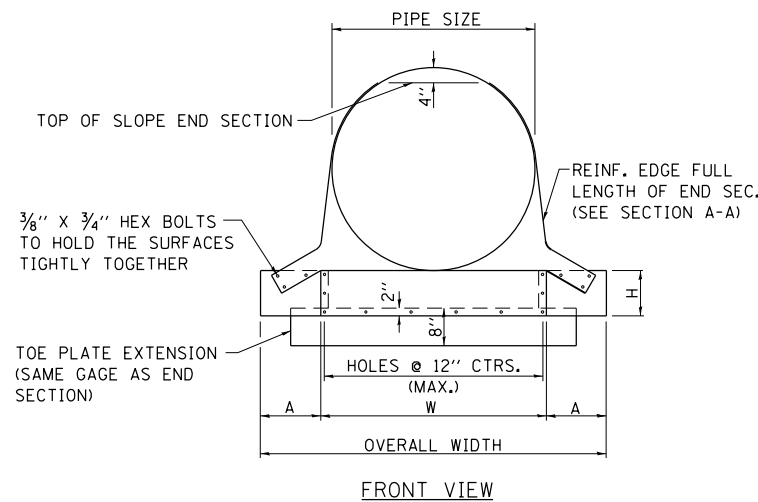
**OPTIONAL SAFETY BARS**  
SAFETY BARS SHALL BE SCHEDULE 40 GALVANIZED STEEL PIPE. PIPE TO BE GALVANIZED AFTER FORMING.

**MISCELLANEOUS DETAILS**  
SIZES OVER 24" AND 28" X 20" HAVE MULTIPLE PANELS JOINED WITH BOLTS AND NUTS.

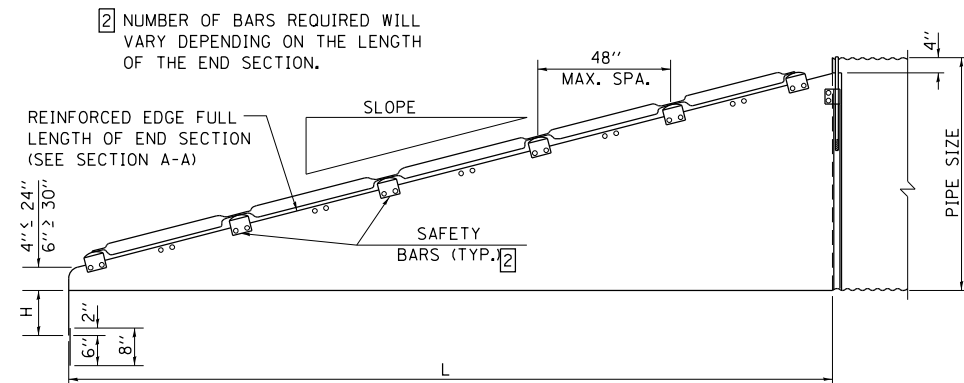
SLOTTED HOLES FOR SAFETY BAR ATTACHMENT SHALL BE PROVIDED FOR ALL END SECTIONS.



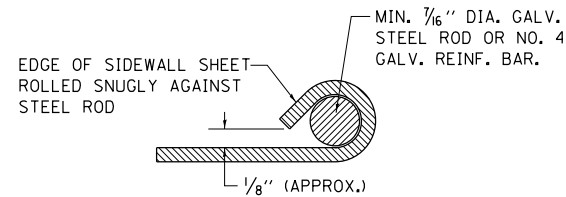
SIDE ELEVATION OF PARALLEL DRAINAGE STRUCTURE



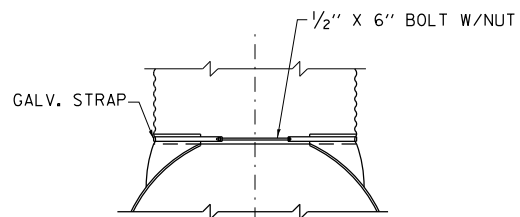
FRONT VIEW



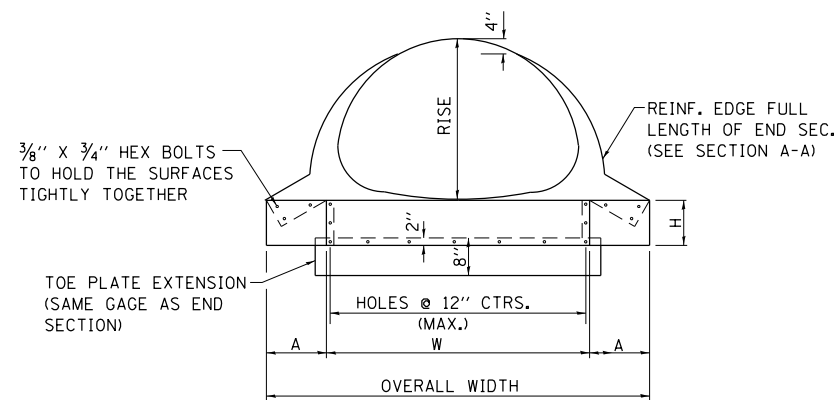
SIDE ELEVATION FOR CROSS DRAINAGE STRUCTURE



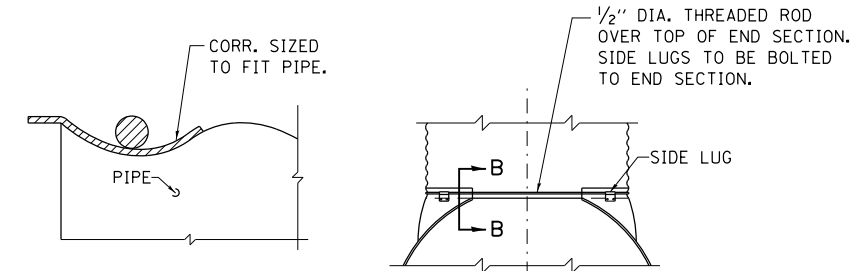
SECTION A-A



TYPE #1 CONNECTOR DETAIL  
THRU 24"



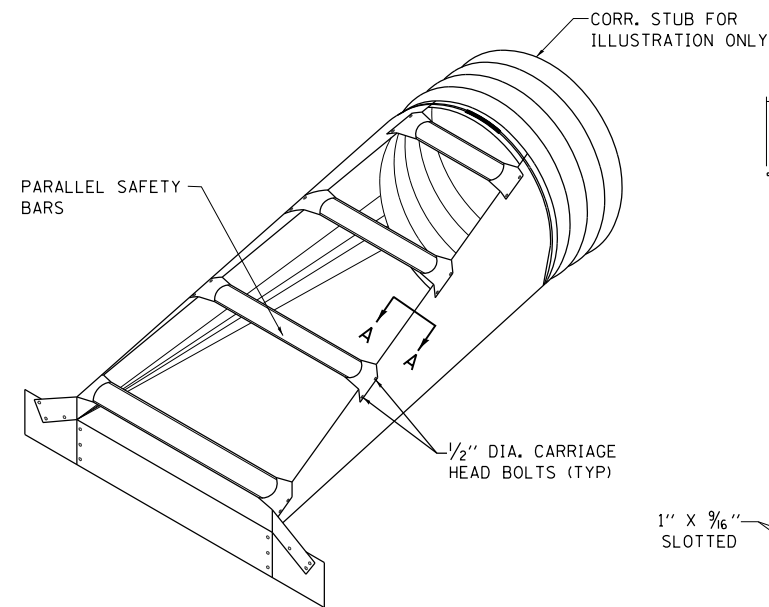
FRONT VIEW



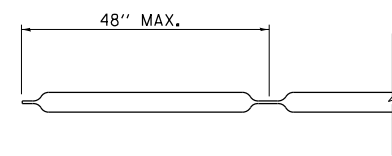
SECTION B-B

TYPE #2 CONNECTOR DETAILS  
FOR 30" AND LARGER  
21" X 15" AND LARGER

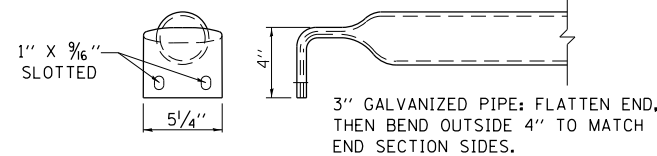
PIPE DIA. (IN.)	MIN. THICK. (IN.)	DIM. + OR - 2"			L DIM. + OR - 2"							
		A	H	W	OVERALL WIDTH	SLOPE	LENGTH (IN.)	SLOPE	LENGTH (IN.)	SLOPE	LENGTH (IN.)	
12	.064	16	8	4	18	34	1:4	20	1:6	27	1:10	70
15	.064	16	8	6	21	37	1:4	20	1:6	30	1:10	70
18	.064	16	8	6	24	40	1:4	32	1:6	48	1:10	100
21	.064	16	8	6	27	43	1:4	44	1:6	66	1:10	130
24	.064	16	8	6	30	46	1:4	56	1:6	84	1:10	160
30	.109	12	12	9	36	60	1:4	80	1:6	120	1:10	220
36	.109	12	12	9	42	66	1:4	104	1:6	156	1:10	280
42	.109	12	16	12	48	80	1:4	128	1:6	192	-	-
48	.109	12	16	12	54	86	1:4	152	1:6	228	-	-
54	.109	12	16	12	60	92	1:4	176	1:6	264	-	-
60	.109	12	16	12	66	98	1:4	200	1:6	300	-	-



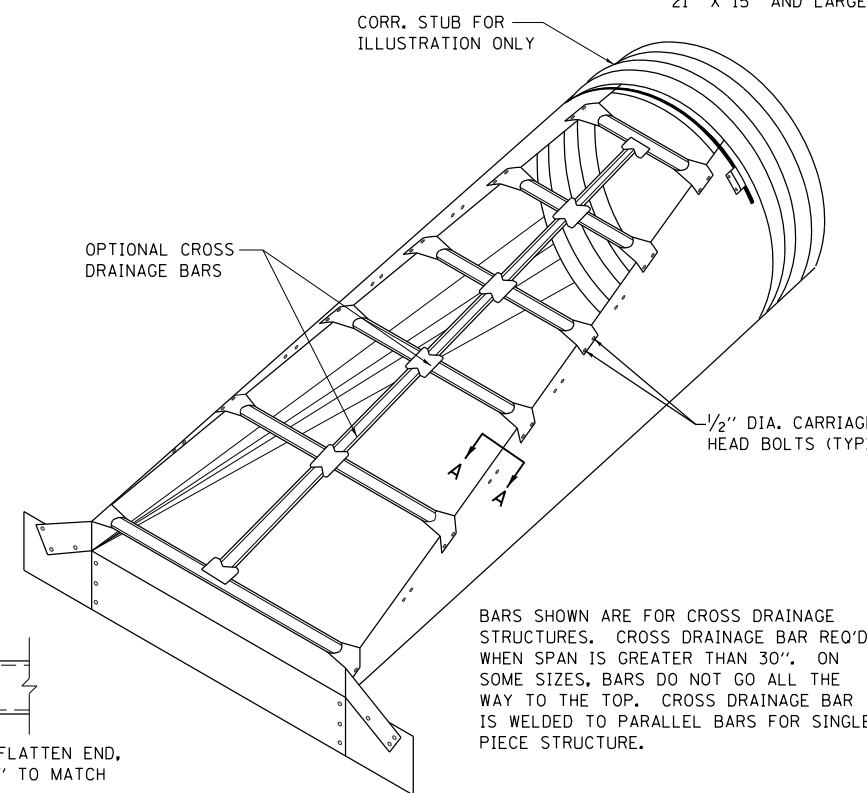
24" PARALLEL DRAINAGE STRUCTURE 1:6 SLOPE



CROSS DRAINAGE STRUCTURE  
DETAIL OF SAFETY BARS



PARALLEL DRAINAGE STRUCTURE  
DETAIL OF SAFETY BARS



48" CROSS DRAINAGE STRUCTURE 1:6 SLOPE

BARS SHOWN ARE FOR CROSS DRAINAGE STRUCTURES. CROSS DRAINAGE BAR REQ'D WHEN SPAN IS GREATER THAN 30". ON SOME SIZES, BARS DO NOT GO ALL THE WAY TO THE TOP. CROSS DRAINAGE BAR IS WELDED TO PARALLEL BARS FOR SINGLE PIECE STRUCTURE.

EQUIV. DIA. (IN.)	(INCHES) SPAN	RISE	MIN. THICK.		DIM. + OR - 2"			L DIM. + OR - 2"						
			IN.	GAGE	A	H	W	OVERALL WIDTH	SLOPE	LENGTH (IN.)	SLOPE	LENGTH (IN.)	SLOPE	LENGTH (IN.)
15	17	13	.064	16	7	6	30	44	1:4	19	1:6	30	1:10	70
18	21	15	.064	16	8	6	27	43	1:4	20	1:6	30	1:10	70
21	24	18	.064	16	8	6	30	46	1:4	32	1:6	48	1:10	100
24	28	20	.064	16	8	6	34	50	1:4	40	1:6	60	1:10	120
30	35	24	.079	14	12	9	41	65	1:4	56	1:6	84	1:10	160
36	42	29	.109	12	12	9	48	72	1:4	76	1:6	114	1:10	210
42	49	33	.109	12	16	12	55	87	1:4	92	1:6	138	-	-
48	57	38	.109	12	16	12	63	95	1:4	112	1:6	168	-	-
54	64	43	.109	12	16	12	70	102	1:4	132	1:6	198	-	-
60	71	47	.109	12	16	12	77	109	1:4	148	1:6	222	-	-
72	83	57	.109	12	16	12	89	121	1:4	188	1:6	282	-	-

MINIMUM THICKNESS OF ALL 1:10 SLOPE END SECTIONS IS .109" - 12 GAGE

FILE NAME = D366998-sht-detail slope.dgn	USER NAME = brianheil	DESIGNED -	REVISED -
		DRAWN -	REVISED -
	PLOT SCALE = 100.0000' / in.	CHECKED -	REVISED -
	PLOT DATE = 7/30/2013	DATE -	REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

SLOPED METAL END  
SECTION DETAIL

SCALE: NO SCALE SHEET NO. 1 OF 1 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	(06-2) BR-3,4	BUREAU	133	97
CONTRACT NO. 66998				
ILLINOIS FED. AID PROJECT				