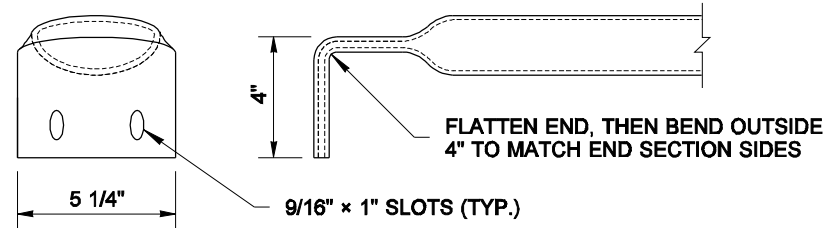
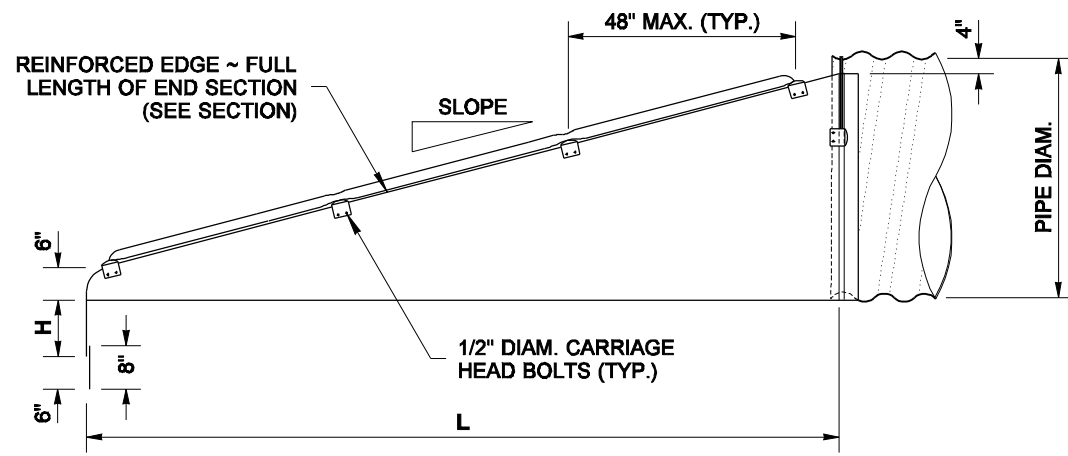


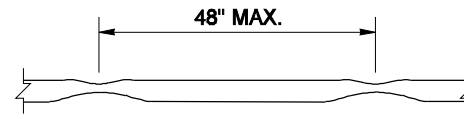
**REINFORCED EDGE SECTION**



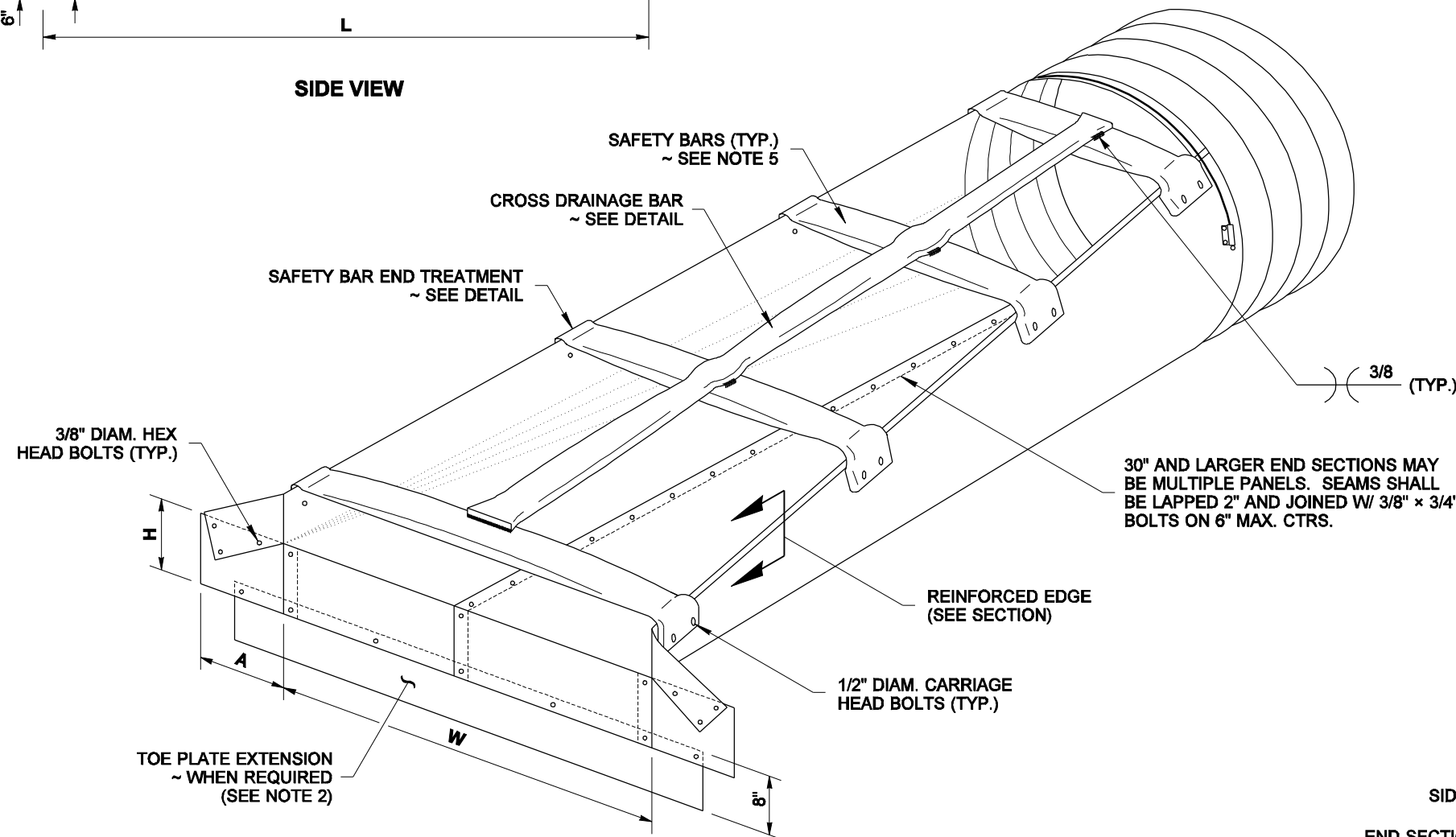
**SAFETY BAR END TREATMENT DETAIL**



**SIDE VIEW**

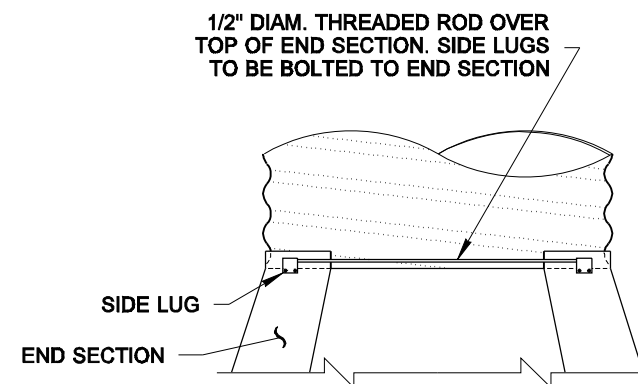


**CROSS DRAINAGE BAR DETAIL**



**ISOMETRIC VIEW**

**CROSS DRAINAGE STRUCTURE**



**TOP VIEW  
CONNECTOR DETAIL**

**NOTES**

1. All pipes or pipe arches shall be attached as shown in **CONNECTOR DETAIL**.
2. When a Toe Plate Extension is required, it shall be the same gage as the End Section. The dimensions shall be 8" high, and 6" less than the overall width. Install centered, and lapped 2"; fasten with 3/8" x 3/4" galvanized bolts on 12" maximum centers.
3. Cross Drainage Bar and Safety Bars shall be 3" Schedule 40 galvanized steel pipe. Cross Drainage Bars shall be placed a maximum 30" apart.
4. Slotted holes for safety bar attachment shall be provided on end sections.
5. Number of Safety Bars required will vary depending upon the length of the end section.

METAL END SECTIONS FOR CIRCULAR PIPES								
PIPE DIAM. (INCHES)	MINIMUM THICKNESS		DIMENSIONS (INCHES)					
	INCHES	GAGE	A	H	W	OVERALL WIDTH	L SLOPE 4:1	L SLOPE 6:1
36	0.109	12	12	9	42	66	104	156
42	0.109	12	16	12	48	80	128	192
48	0.109	12	16	12	54	86	152	228
54	0.109	12	16	12	60	92	176	264
60	0.109	12	16	12	66	98	200	300

METAL END SECTIONS FOR ARCHED PIPES										
EQUIV. DIAM. (INCHES)	PIPE ARCH DIMENSIONS		MINIMUM THICKNESS		DIMENSIONS (INCHES)					
	SPAN (IN.)	RISE (IN.)	INCHES	GAGE	A	H	W	OVERALL WIDTH	L SLOPE 4:1	L SLOPE 6:1
30	* 35	24	0.079	14	12	9	* 41	65	56	84
36	42	29	0.109	12	12	9	48	72	76	114
42	49	33	0.109	12	16	12	55	87	92	138
48	57	38	0.109	12	16	12	63	95	112	168
54	64	43	0.109	12	16	12	70	102	132	198
60	71	47	0.109	12	16	12	77	109	148	222
72	83	57	0.109	12	16	12	89	121	188	282

\* SAFETY BARS ARE INSTALLED ON END SECTION WHEN SPAN IS GREATER THAN 36"



EXPIRES JULY 1, 2007

NOTE: THIS PLAN IS NOT A LEGAL ENGINEERING DOCUMENT UNLESS IT IS SIGNED BY THE ENGINEER AND APPROVED FOR PUBLICATION IS KEPT ON FILE AT THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION. A COPY MAY BE OBTAINED UPON REQUEST.

**TAPERED END SECTION WITH TYPE 3 SAFETY BARS**  
**STANDARD PLAN B-80.20-00**

SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION

**Harold J. Peterfeso** 06-08-06

STATE DESIGN ENGINEER DATE

