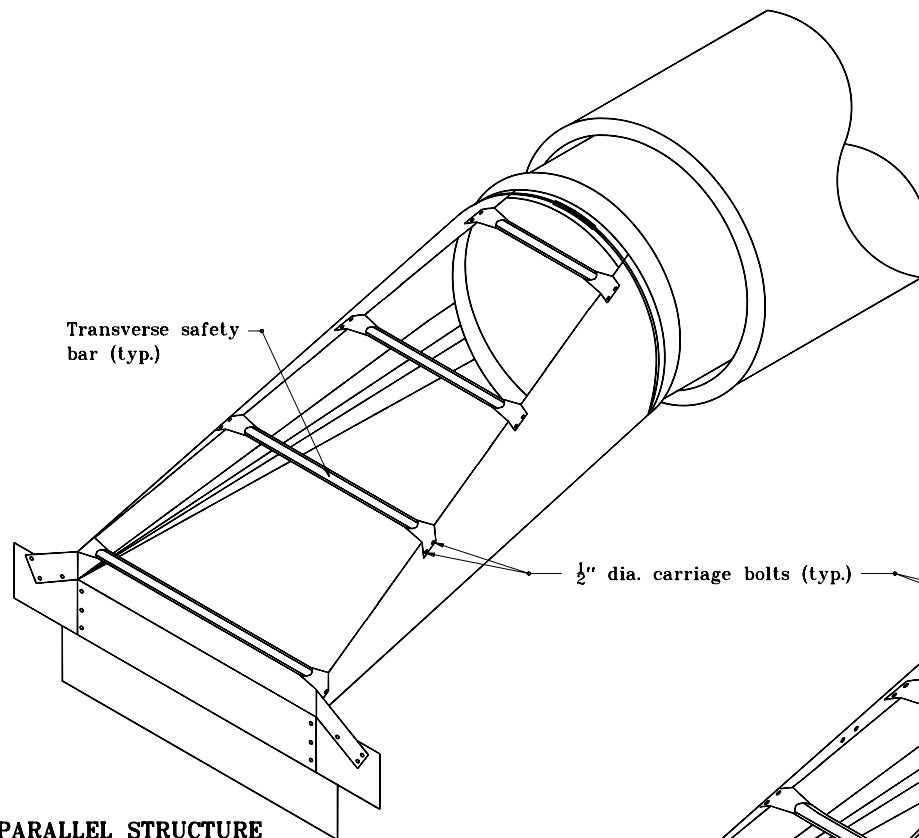
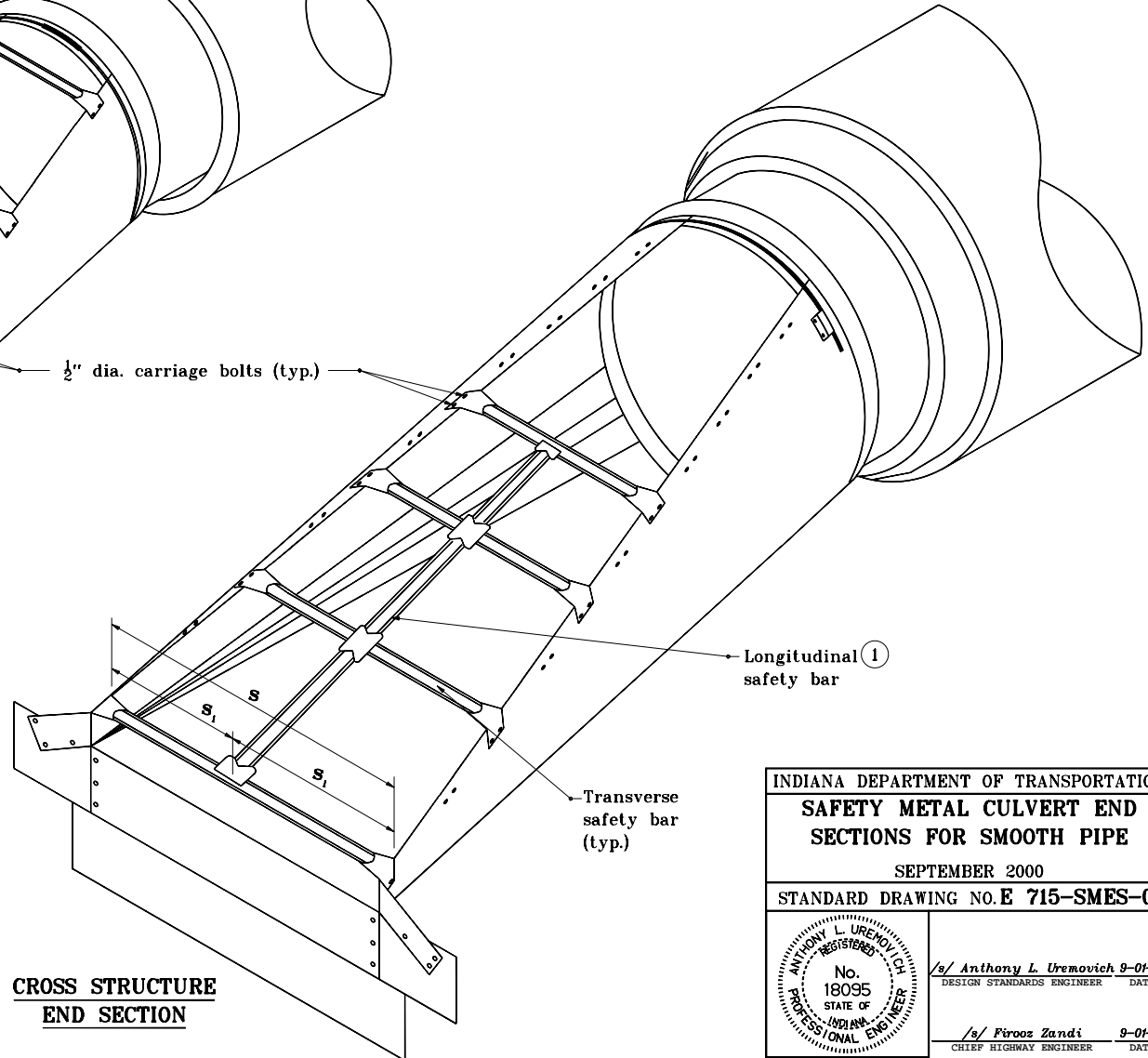


## GENERAL NOTES

- ① Longitudinal safety bar shall be welded to transverse bars. For cross structure and section, if  $S < 2'-6"$ , no longitudinal safety bar is required. If  $S > 2'-6"$ , longitudinal safety bar(s) shall be provided so  $S_1 < 2'-6"$ .
2. Bolts shall be oriented with threads to inside of end section.



**PARALLEL STRUCTURE  
END SECTION**



**CROSS STRUCTURE  
END SECTION**

## LEGEND

$s$  - Overall span

$s_1$  - Span between end section edge and longitudinal safety bar or between longitudinal safety bars.

$$s_1 = \frac{s}{n + 1}$$

where  $n$  = Number of longitudinal safety bars

INDIANA DEPARTMENT OF TRANSPORTATION	
SAFETY METAL CULVERT END SECTIONS FOR SMOOTH PIPE	
SEPTEMBER 2000	
STANDARD DRAWING NO. E 715-SMES-07	
	/s/ Anthony L. Uremovich 9-01-00 DESIGN STANDARDS ENGINEER DATE
	/s/ Firooz Zandi 9-01-00 CHIEF HIGHWAY ENGINEER DATE
DESIGN STANDARDS ENGINEER	