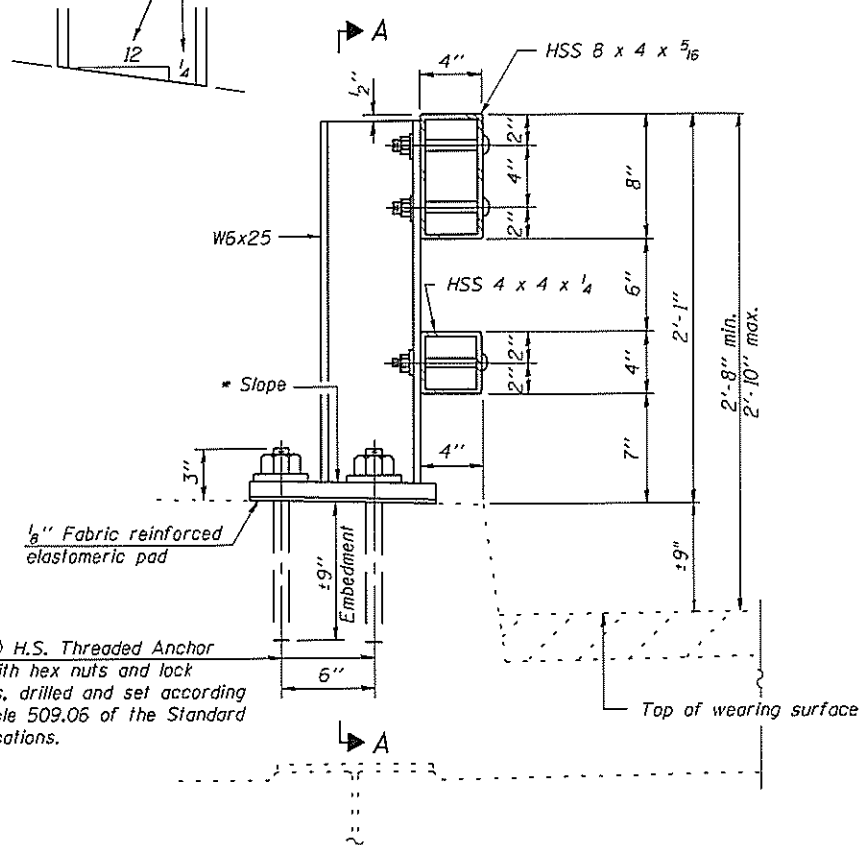


\* Cut bottom end of post to curb slope.



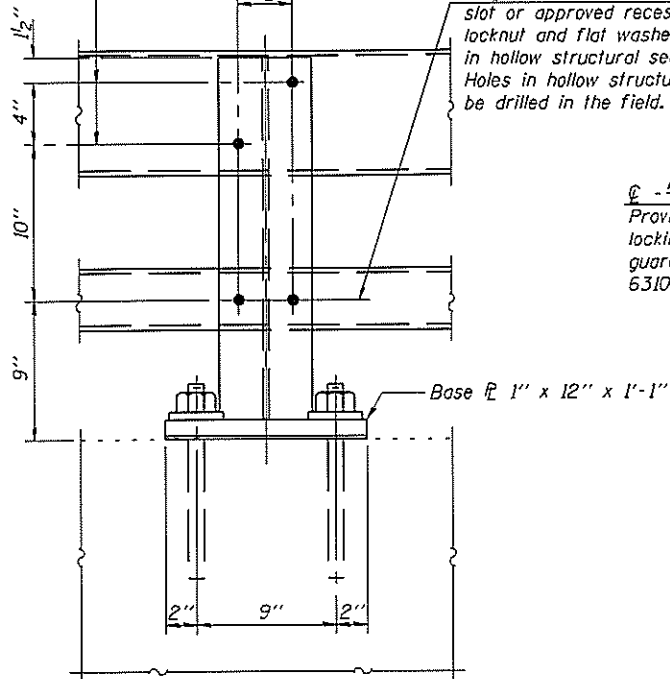
SECTION AT RAIL POST

4- 1"  $\phi$  H.S. Threaded Anchor Rods with hex nuts and lock washers, drilled and set according to Article 509.06 of the Standard Specifications.

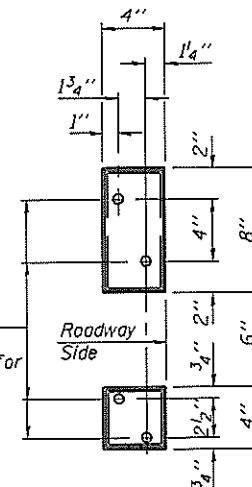
2- 3/4"  $\phi$  x 6" Round Head Bolts (With slot or approved recess in head.) with locknut and flat washer. 7/8"  $\phi$  Holes in tubing and posts. Holes in hollow structural section may be drilled in the field.

2- 1/2"  $\phi$  x 6" Round Head Bolts (With slot or approved recess in head.) with locknut and flat washer. 5/8"  $\phi$  Holes in hollow structural section and post. Holes in hollow structural section may be drilled in the field.

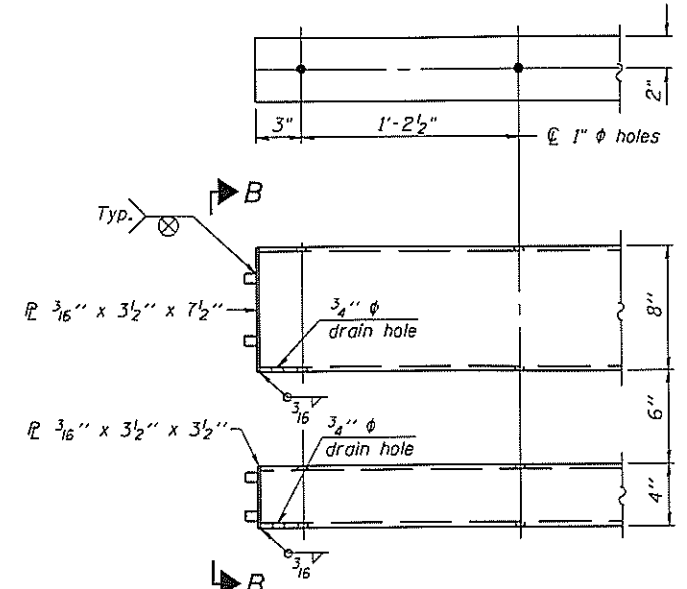
4- 5/8" reduced base welded studs. Provide 4- 5/8" washers and self-locking nuts or nuts and jam nuts for guardrail connection shown on Std. 631032 (See Roadway Plans).



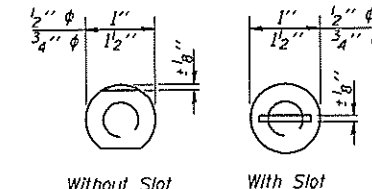
SECTION A-A



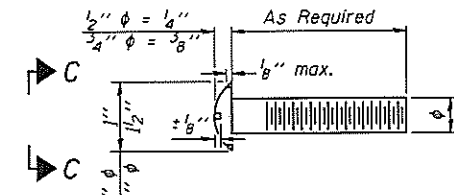
VIEW B-B



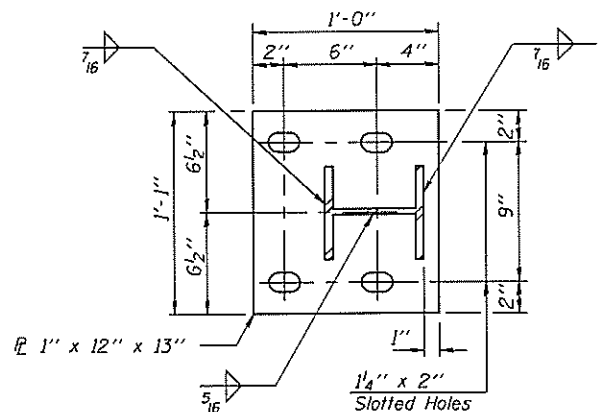
END OF RAIL DETAILS



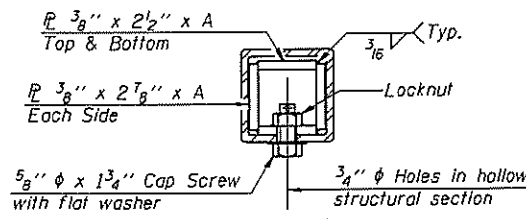
VIEW C-C



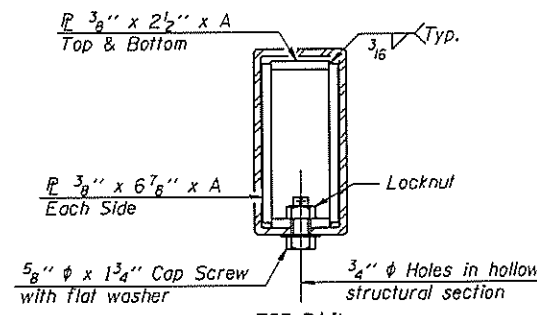
DETAIL OF 1/2"  $\phi$  & 3/4"  $\phi$  ROUND HEAD BOLTS



BASE PLATE DETAIL

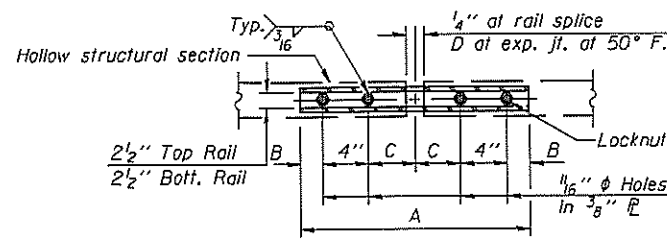


BOTTOM RAIL

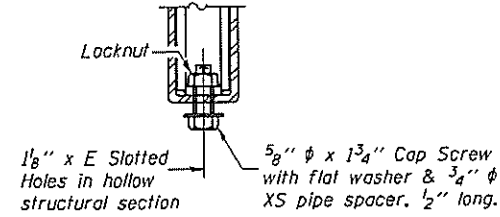


TOP RAIL

SECTIONS AT RAIL SPLICE



PLAN-BOTT. SPLICE TYPICAL



RAIL SPLICE CONNECTION AT EXPANSION JT.

Notes:

- All field drilled holes shall be coated with an approved zinc rich paint before erection.
- Posts shall not be located closer than 1'-3" to an existing bridge expansion joint or end of bridge.
- Steel Bridge Rail expansion joint shall be provided between any two (2) posts which span a bridge expansion joint. Bolts located at expansion joint shall be provided with locknuts and shall be tightened only to a point that will allow railing movement.
- Provide one 1/8" and two 1/16" steel shims for 25% of the posts. Shims shall be similar to base plates in size and holes.
- All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.

SPLICE DIMENSIONS

T	D	A	B	C	E
≤ 4"	2 1/2"	1'-8"	2"	4"	2 1/2"
> 4" ≤ 6 1/2"	3 3/4"	2'-0"	2 1/2"	5 1/2"	3 1/2"
> 6 1/2" ≤ 9"	5"	2'-4"	3 1/2"	6 1/2"	9"
> 9" ≤ 13"	7"	2'-10"	4 1/2"	8 1/2"	11"
Rail Splice	1 1/4"	1'-8"	2"	4"	—

T = Total movement at expansion joint as shown on the design plans.

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type 2399	Foot	2664

R-31

7-1-10

(6'-3" Maximum Post Spacing)

EFK Moen, LLC  
Civil Engineering Design  
303 Fountain Parkway, Suite 240  
Fairview Heights, IL 62208  
Phone 618-266-4150

USER NAME	DESIGNED	CHECKED	DATE
cdl	CTW	CDL	5/9/2014
		DP	

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

STEEL RAILING, TYPE 2399  
STRUCTURE NO. 079-0019

SHEET NO. 12 OF 13 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
B58	12VB-11	RANDOLPH	T2	45

(ILLINOIS) FED. AID PROJECT CONTRACT NO. 76409

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