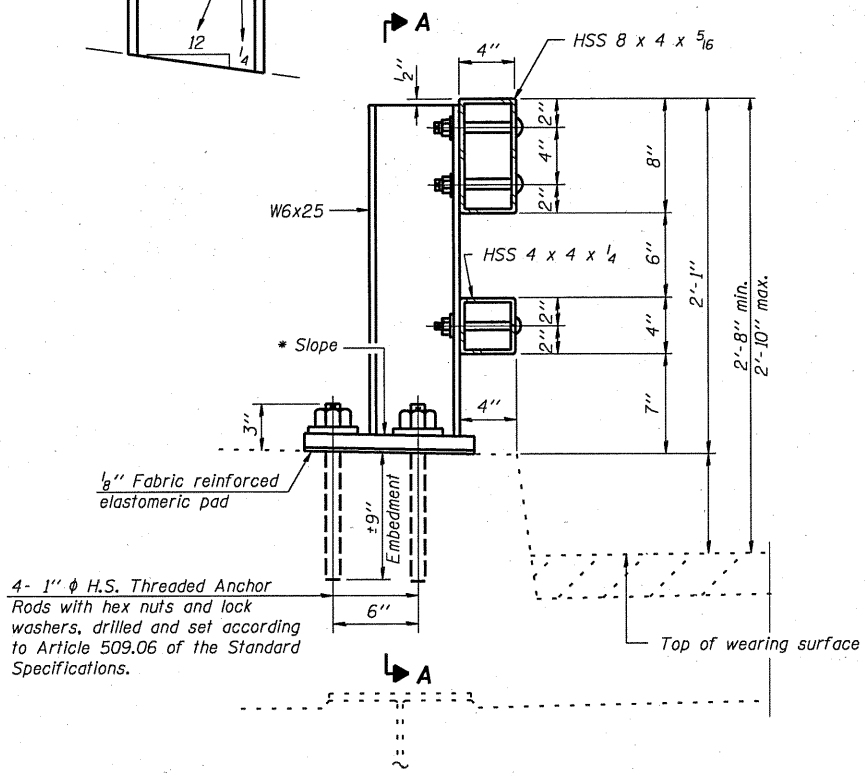
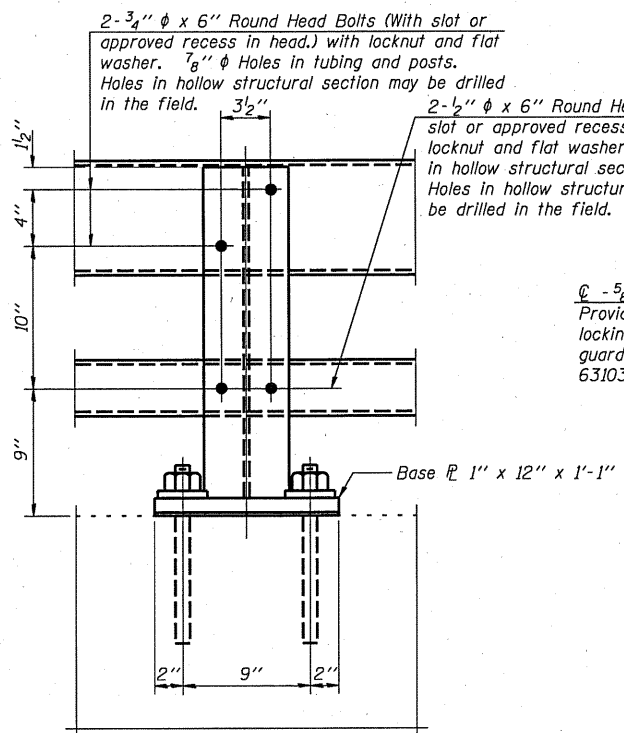


* Cut bottom end of post to curb slope.



SECTION AT RAIL POST

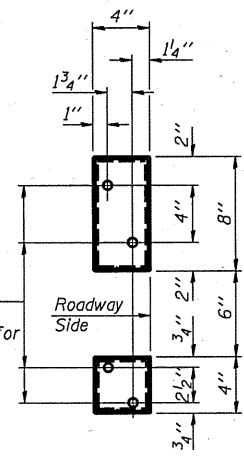


SECTION A-A

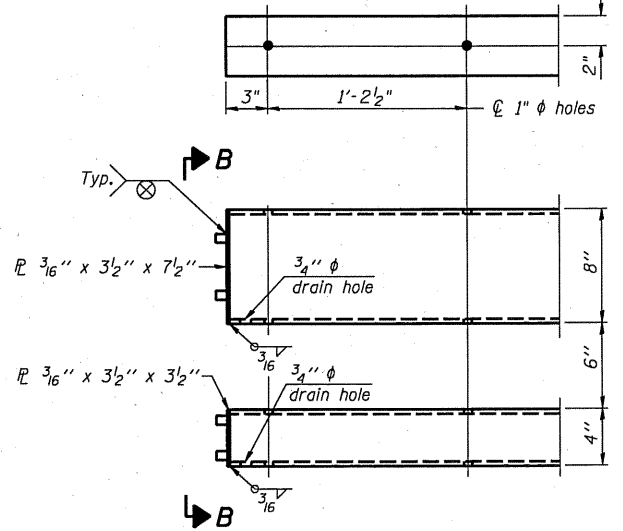
2-3/4" ϕ x 6" Round Head Bolts (With slot or approved recess in head.) with locknut and flat washer. 7/8" ϕ Holes in tubing and posts. Holes in hollow structural section may be drilled in the field.

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

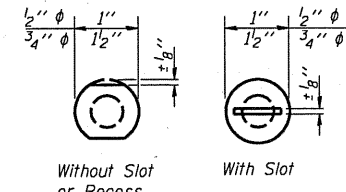
4-5/8" reduced base welded studs. Provide 4-5/8" washers and self-locking nuts or nuts and jam nuts for guardrail connection shown on Std. 631032.



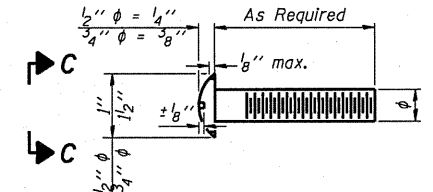
VIEW B-B



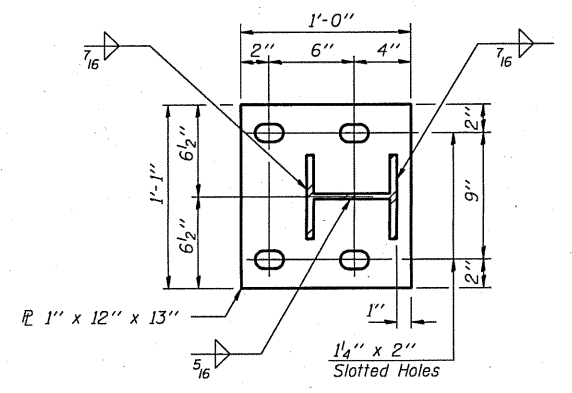
END OF RAIL DETAILS



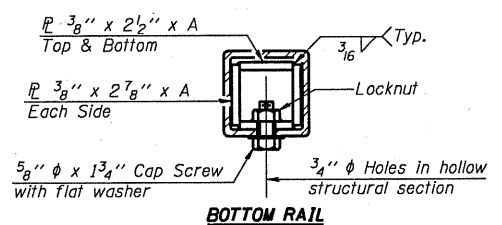
VIEW C-C



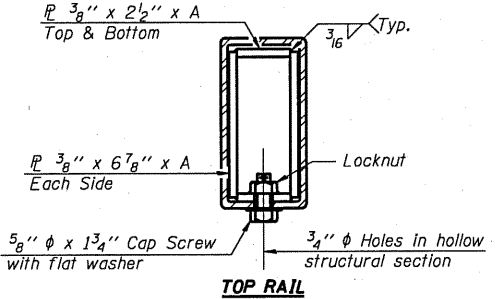
DETAIL OF 1/2" ϕ & 3/4" ϕ ROUND HEAD BOLTS



BASE PLATE DETAIL

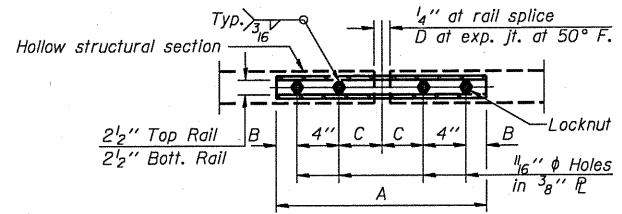


BOTTOM RAIL

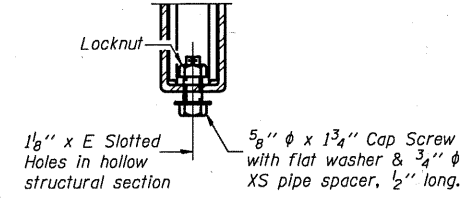


TOP RAIL

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 ralling 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	1/4"	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	

R-31

7-1-10

(6'-3" Maximum Post Spacing)

**STEEL RAILING, TYPE 2399
 STRUCTURE NO.**