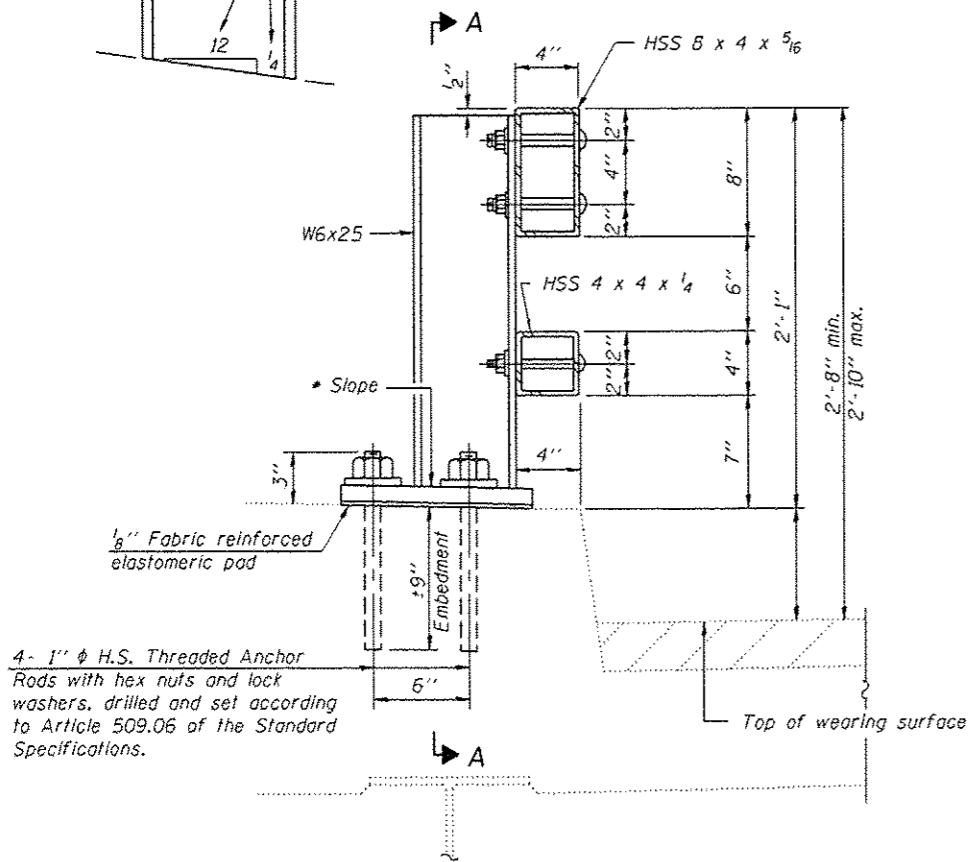
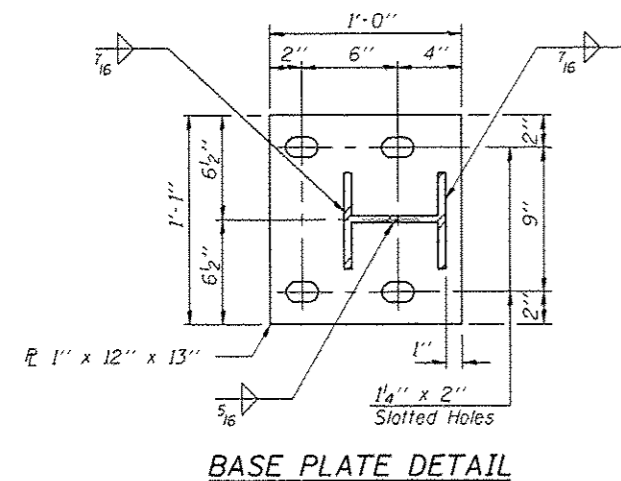


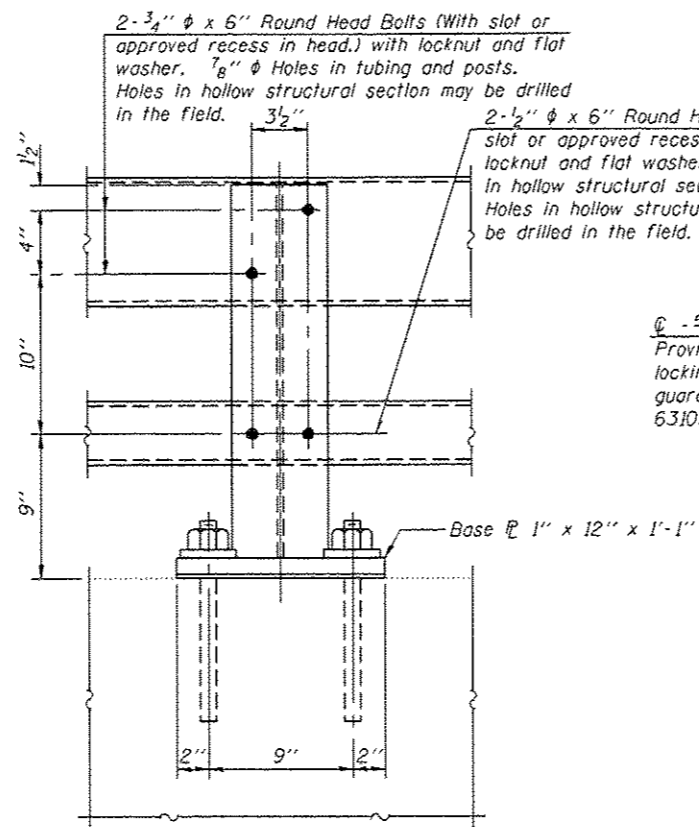
* Cut bottom end of post to curb slope.



SECTION AT RAIL POST

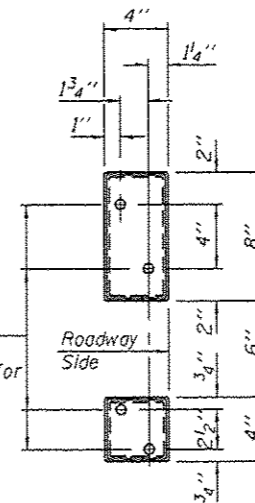


BASE PLATE DETAIL

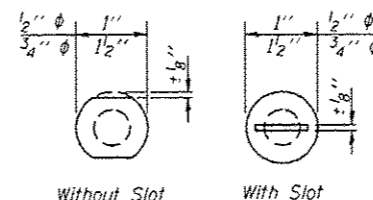


SECTION A-A

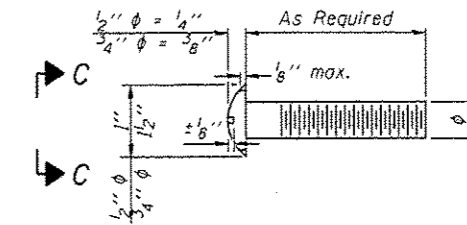
2-5/8" reduced base welded studs. Provide 4-5/8" washers and self-locking nuts or nuts and jam nuts for guardrail connection shown on Std. 631032.



VIEW B-B



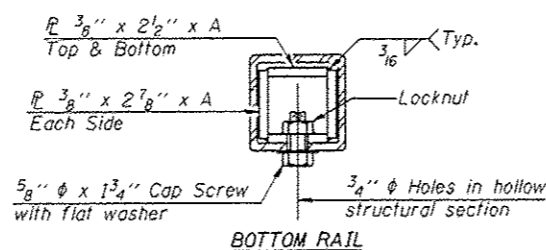
VIEW C-C



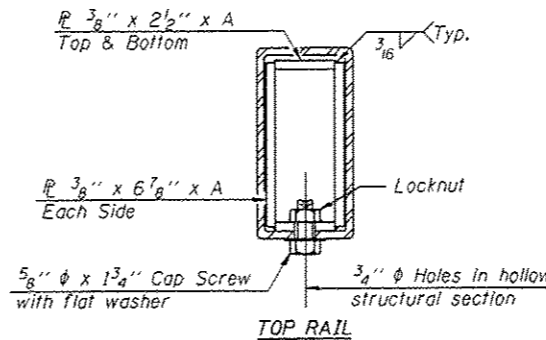
DETAIL OF 1/2" & 3/4" ROUND HEAD BOLTS

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.

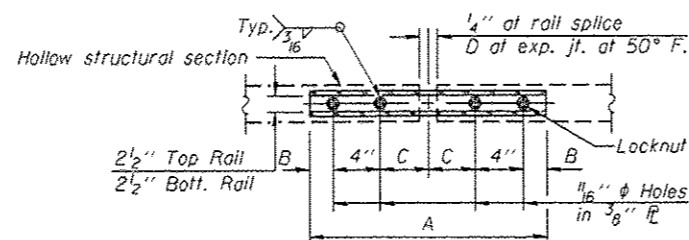


BOTTOM RAIL

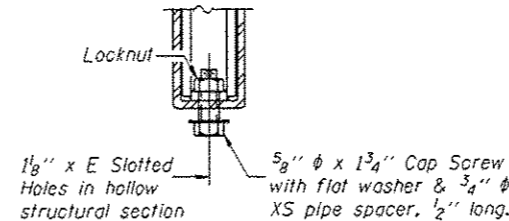


TOP RAIL

SECTIONS AT RAIL SPLICE



PLAN-BOTT. SPLICE TYPICAL



RAIL SPLICE CONNECTION AT EXPANSION JT.

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	292

R-31

7-1-10

(6'-3" Maximum Post Spacing)

DESIGNED - SMR
 CHECKED - TLC
 DRAWN - Kyla M. Stoffon
 CHECKED - SMR TLC

EXAMINED
 ACTING ENGINEER OF STRUCTURAL SERVICES
 PASSED
 ACTING ENGINEER OF BRIDGES AND STRUCTURES

DATE - AUGUST 18, 2014

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

STEEL RAILING, TYPE 2399
 STRUCTURE NO.

SHEET NO. 4 OF 9 SHEETS

F.A.I. RTE. SECTION COUNTY TOTAL SHEETS SHEET NO.
 70 60-(11,12)RS-3 MADISON 242 207
 CONTRACT NO. 76F13
 ILLINOIS FED. AID PROJECT