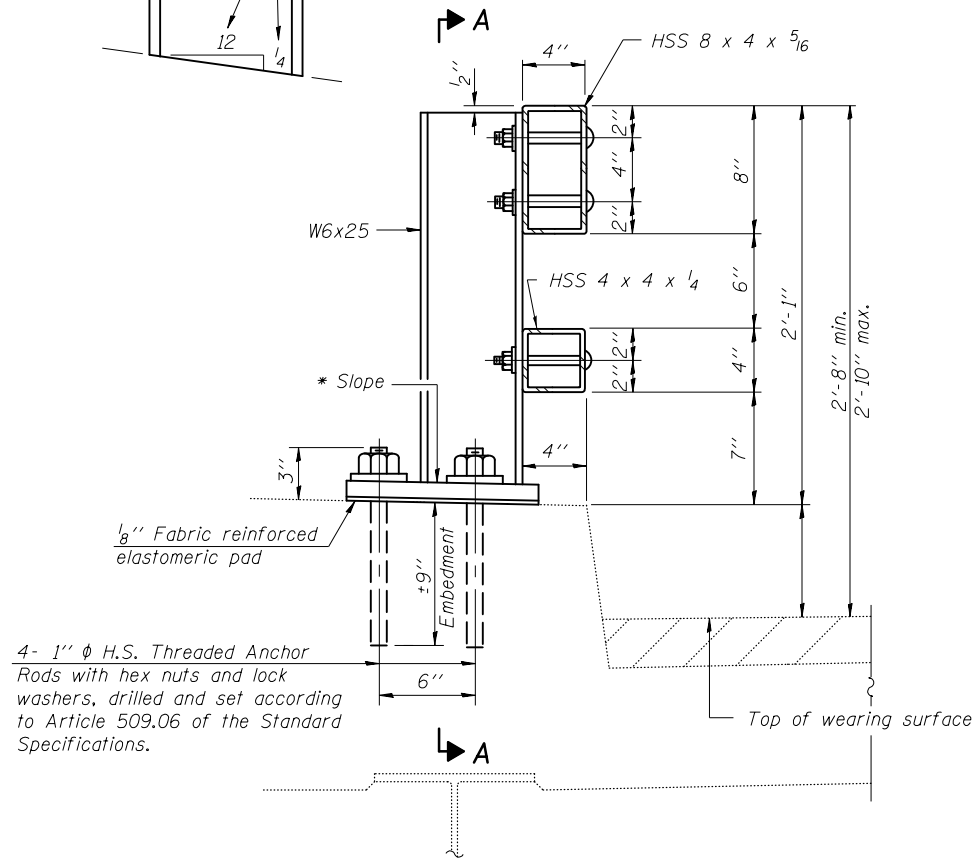
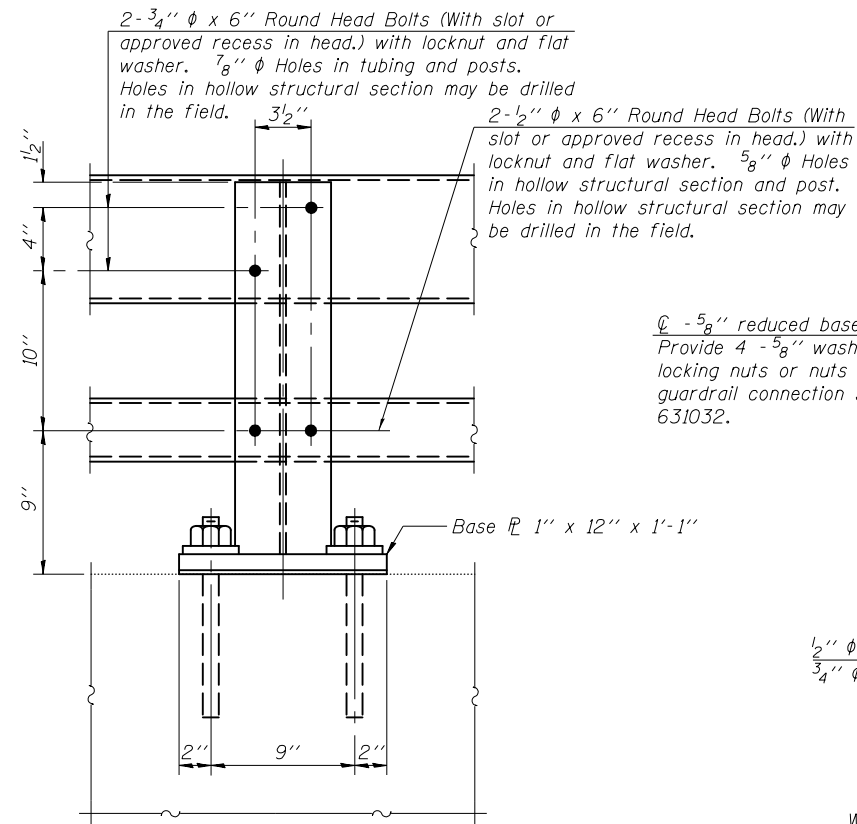


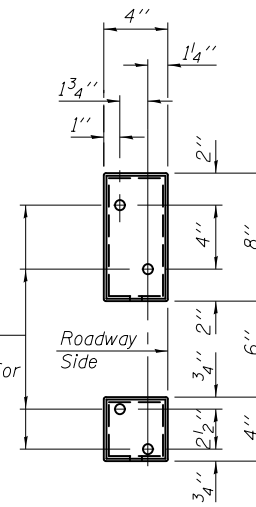
\* Cut bottom end of post to curb slope.



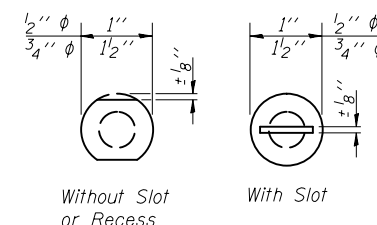
**SECTION AT RAIL POST**



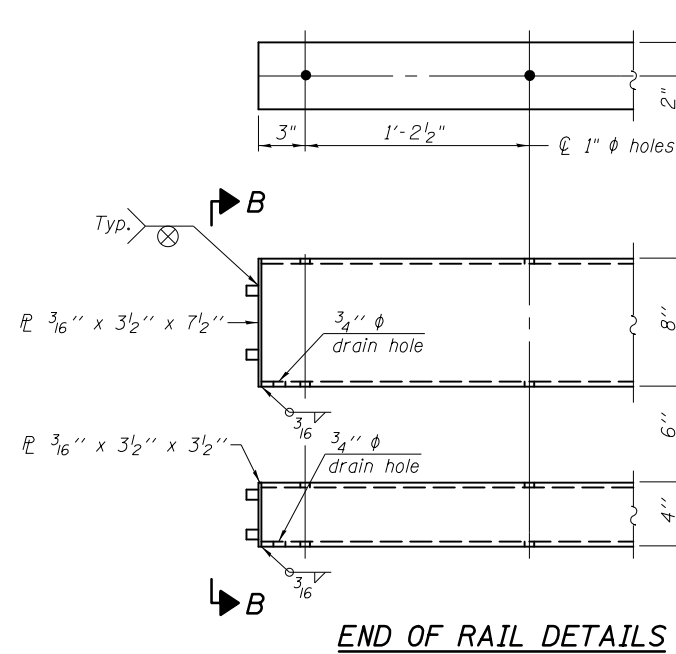
**SECTION A-A**



**VIEW B-B**



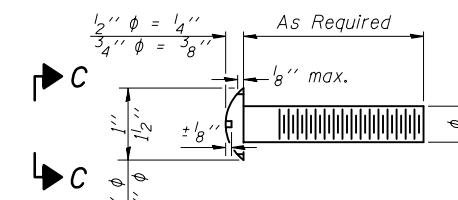
**VIEW C-C**



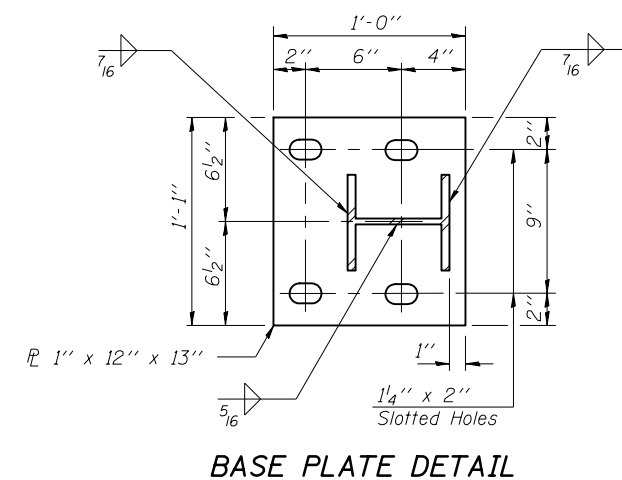
**END OF RAIL DETAILS**

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.

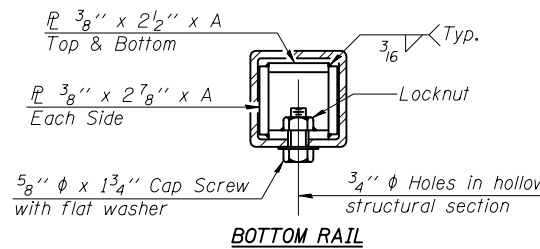
$\phi$  - 5/8" reduced base welded studs. Provide 4 - 5/8" washers and self-locking nuts or nuts and jam nuts for guardrail connection shown on Std. 631032.



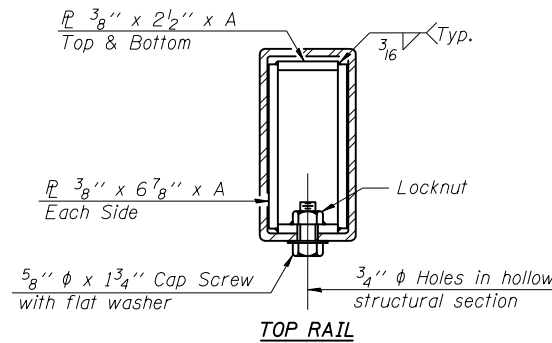
**DETAIL OF 1/2"  $\phi$  & 3/4"  $\phi$  ROUND HEAD BOLTS**



**BASE PLATE DETAIL**

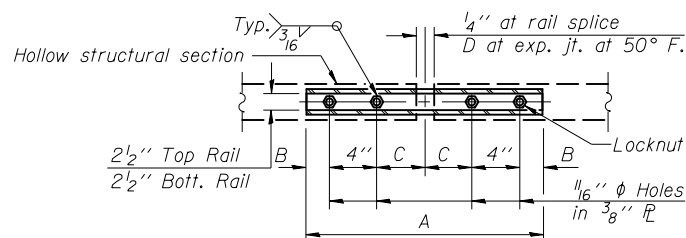


**BOTTOM RAIL**

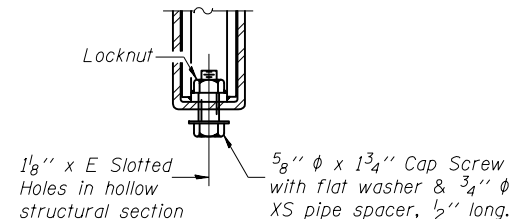


**TOP RAIL**

**SECTIONS AT RAIL SPLICE**



**PLAN-BOTT. SPLICE R 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'-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	435.0

R-31

7-1-10

(6'-3" Maximum Post Spacing)

FILE NAME =	USER NAME = bucklesjj	DESIGNED -	REVISED -
ei:\pwwork\pwwork\backlesjj\d0265817\0570924-sht-Details.dgn		DRAWN -	REVISED -
PLOT SCALE = 48.0000' / in.		CHECKED -	REVISED -
PLOT DATE = 10/5/2011		DATE -	REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

STEEL RAILING, TYPE 2399  
STRUCTURE NO. 010-0103

SCALE: SHEET NO. OF SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	(10-33HB)BDR	Champaign	27	14
			CONTRACT NO.	70924
ILLINOIS FED. AID PROJECT				