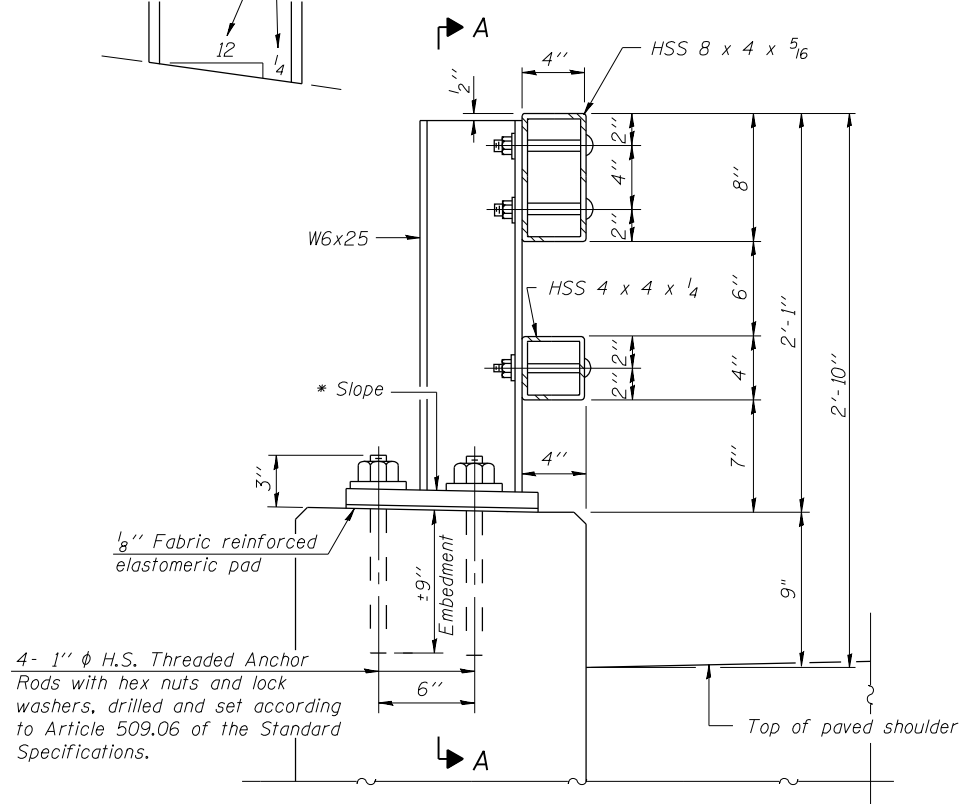
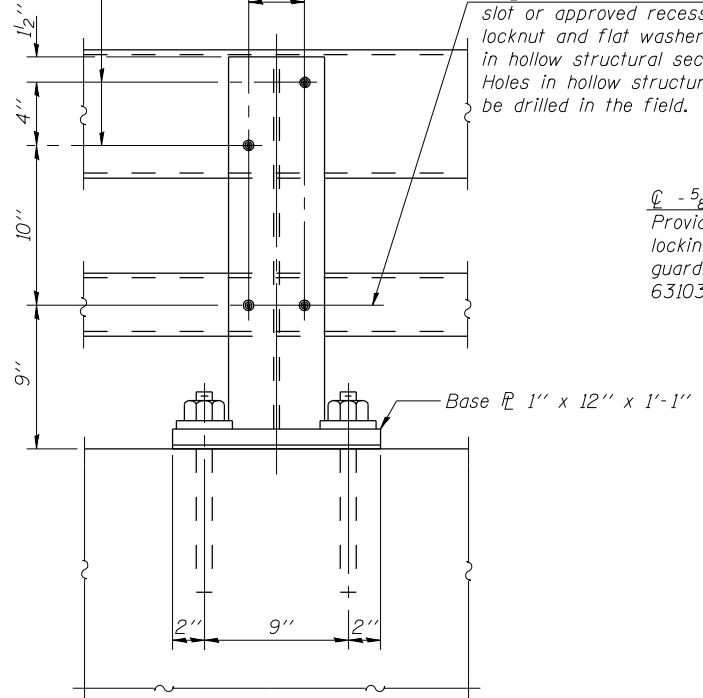


* Cut bottom end of post to curb slope.

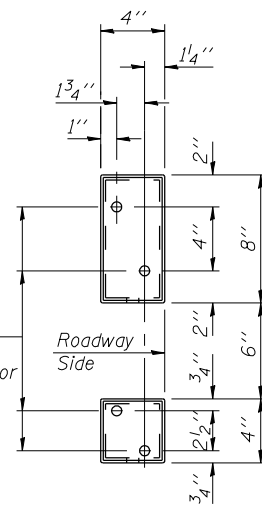


SECTION AT RAIL POST

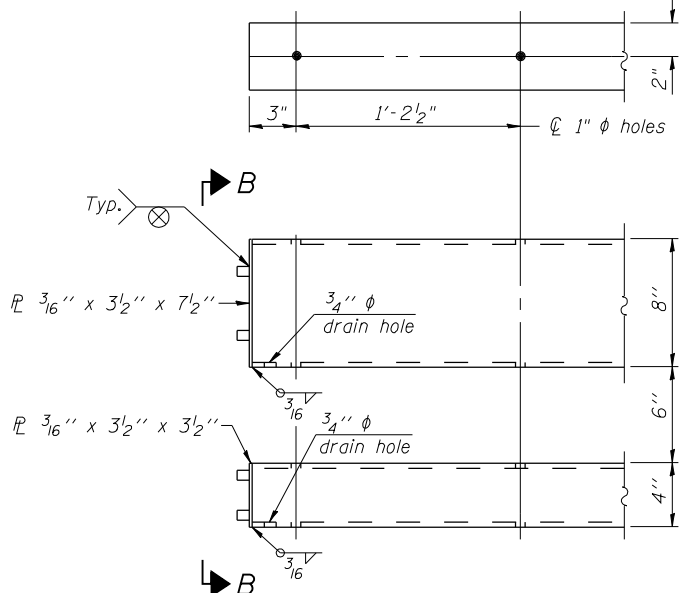
2-3/4" φ x 6" Round Head Bolts (With slot or approved recess in head.) with locknut and flat washer. 7/8" φ Holes in tubing and posts. Holes in hollow structural section may be drilled in the field.



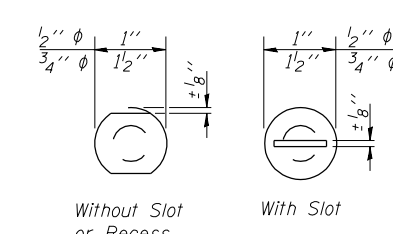
SECTION A-A



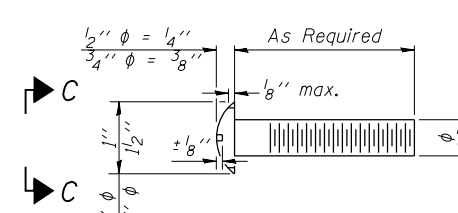
VIEW B-B



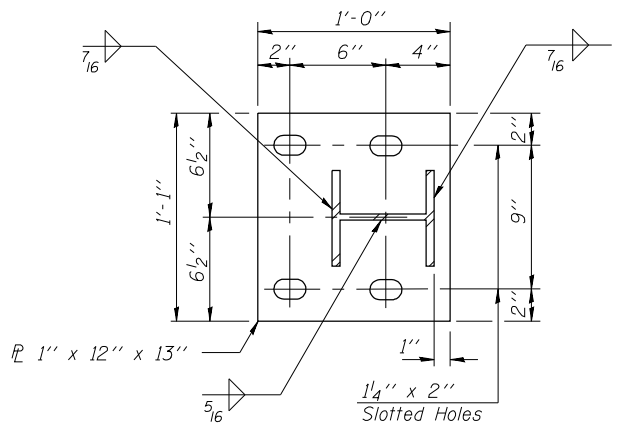
END OF RAIL DETAILS



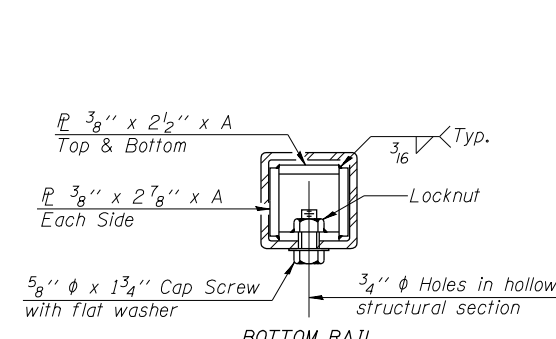
VIEW C-C



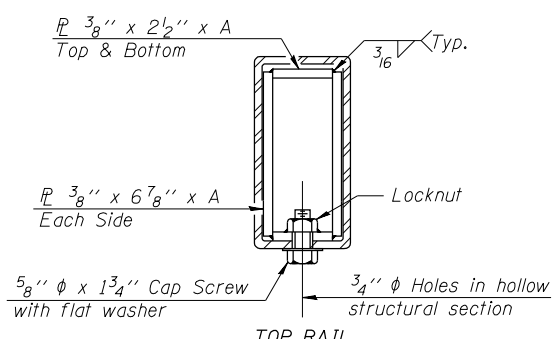
DETAIL OF 1/2" φ & 3/4" φ ROUND HEAD BOLTS



BASE PLATE DETAIL

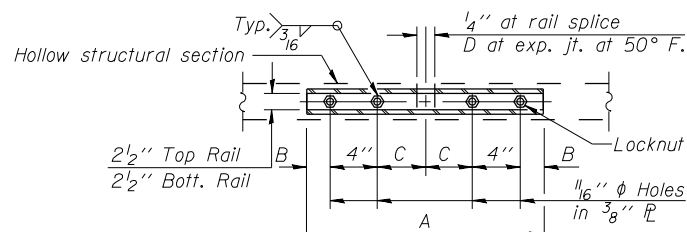


BOTTOM RAIL

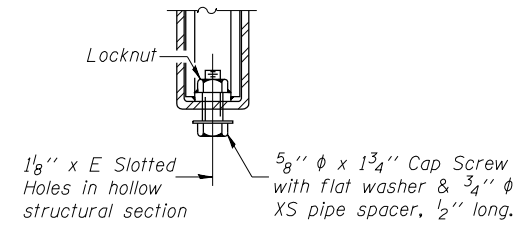


TOP RAIL

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 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	1/4"	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	82



USER NAME = has	DESIGNED - JTS 01/12	REVISED -
ESCA PROJECT NO. 988.10	CHECKED - JAF/RDP 02/12	REVISED -
PLOT SCALE = 1/8" = 1' IN.	DRAWN - DWH 02/12	REVISED -
PLOT DATE = 6/4/2014 8:11:44 AM	CHECKED - JTS 03/12	REVISED -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

STEEL RAILING, TYPE 2399
 STRUCTURE NO. 041-2021

SHEET NO. 5 OF 9 SHEETS

F.A.P. RTE. 849	SECTION 113B-1	COUNTY JEFFERSON	TOTAL SHEETS 36	SHEET NO. 26
ILLINOIS FED. AID PROJECT			CONTRACT NO. 78210	