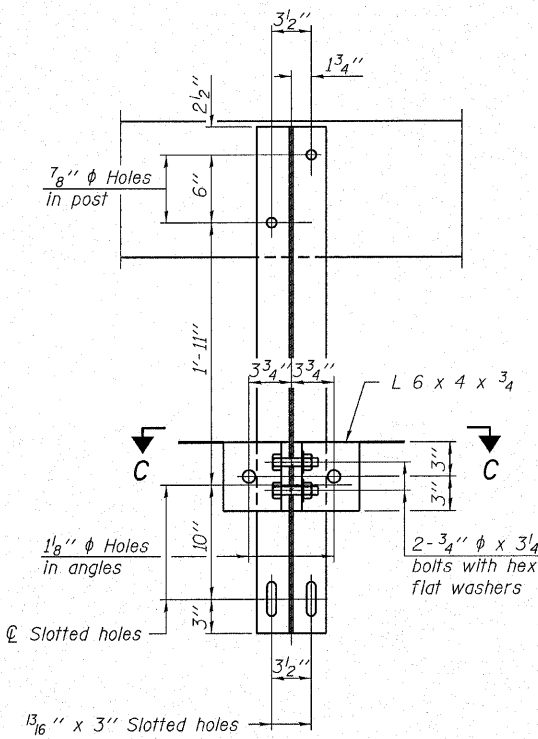
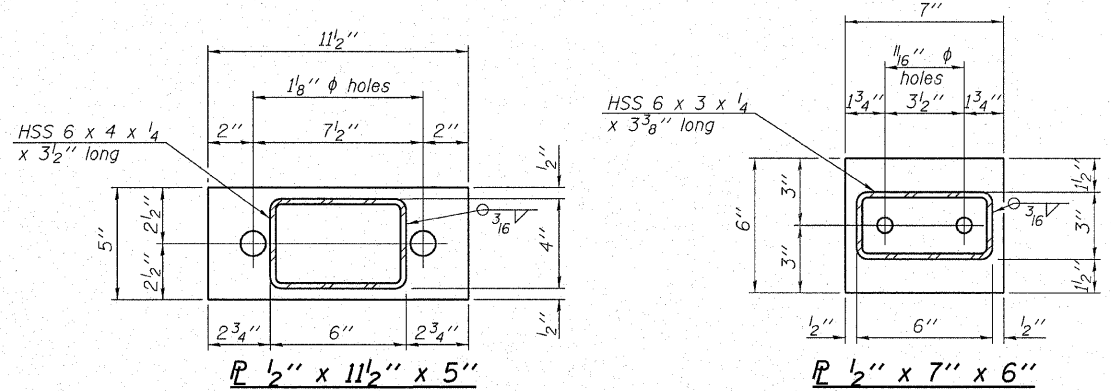
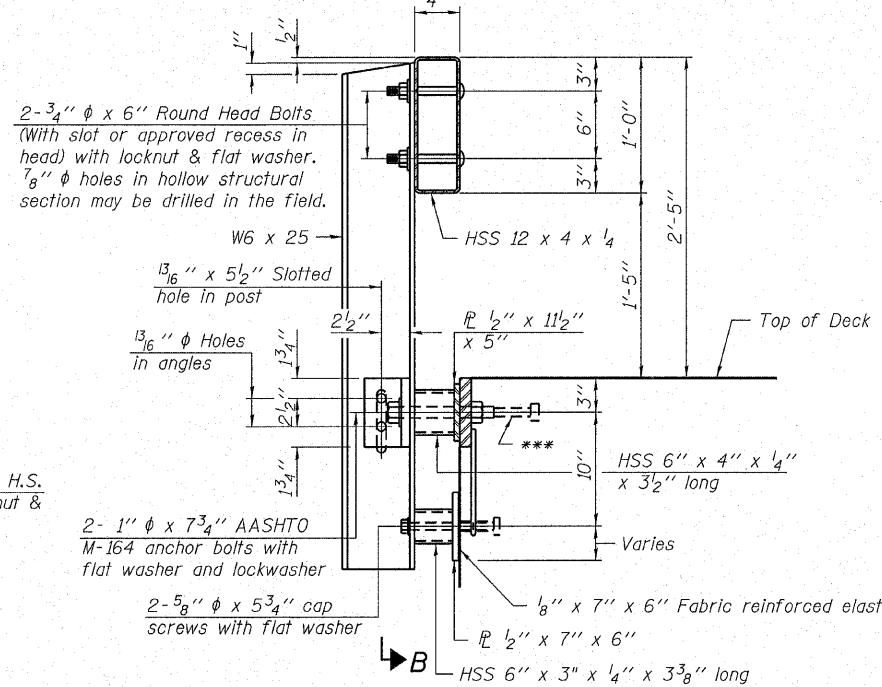


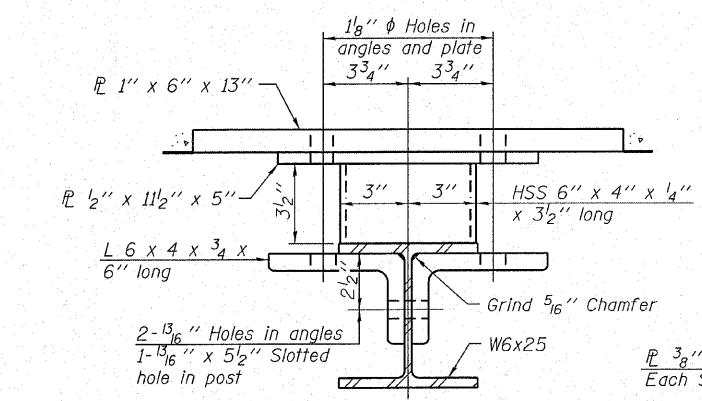
**VIEW A-A  
ROUND HEAD BOLT**



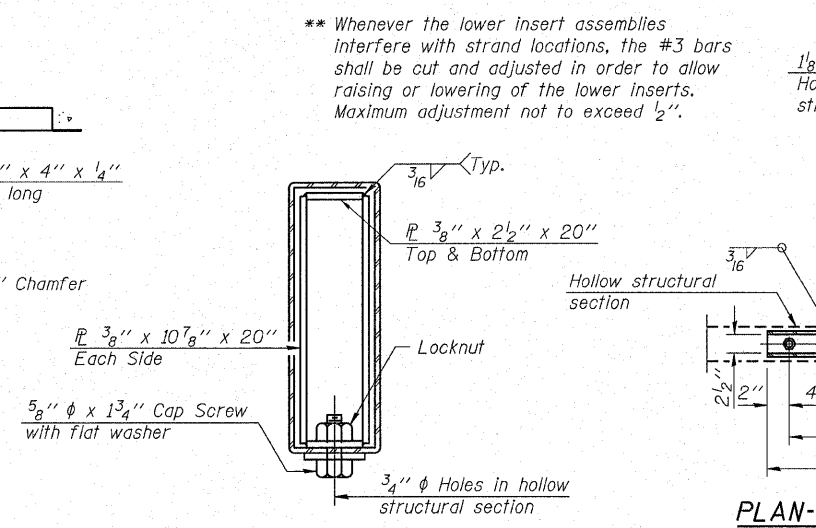
**SECTION B-B**



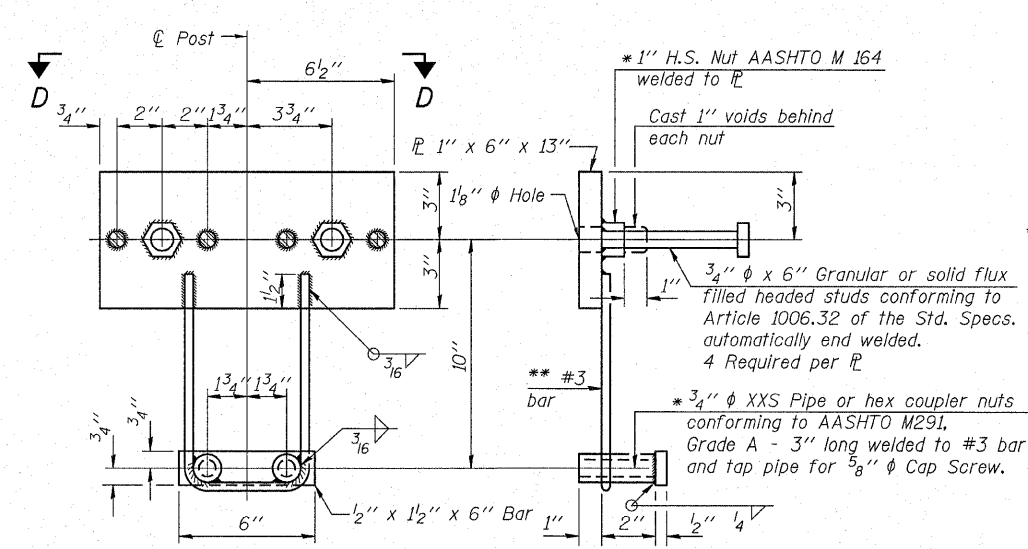
**SECTION AT RAILING POST**



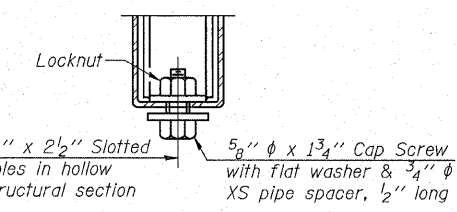
**SECTION C-C**



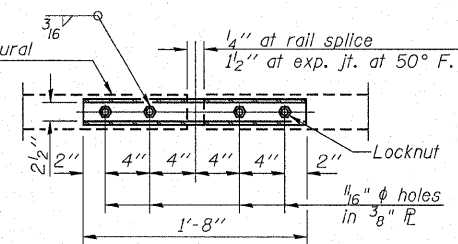
**SECTIONS AT RAIL SPLICE**



**ANCHOR DEVICE**

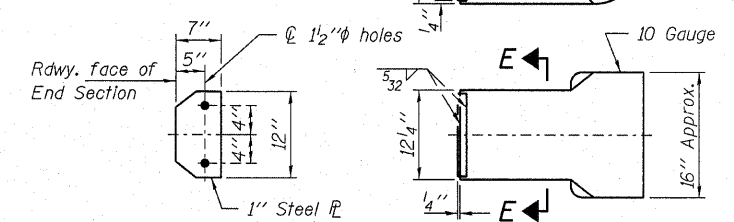


**RAIL SPLICE CONNECTION  
AT EXPANSION JT.**



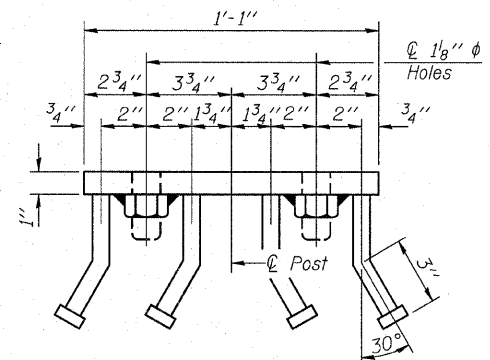
**PLAN-BOTT. SPLICE R  
TYPICAL**

Note: Cost of curled end sections shall be included with the Steel Railing. (4 Required)

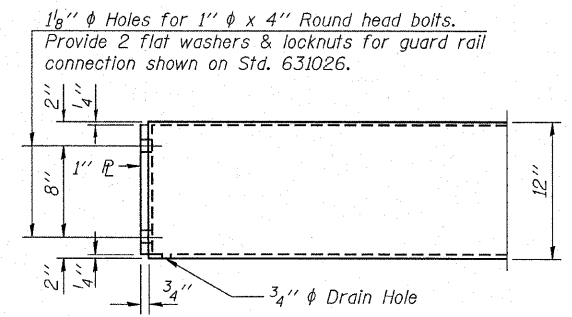


**SECTION E-E CURLED END SECTION DETAILS**

Notes:  
All field drilled holes shall be coated with an approved zinc rich paint before erection.  
For multi-span bridges, sufficient 1/4" x 6" x 1'-2" galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with Steel Railing, Type S-1.  
All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.  
\*\*\* The studs of the anchor devices shall be placed below the top reinforcement bars and the outermost longitudinal reinforcement bar shall be placed directly above the studs of the rail post anchor device.



**VIEW D-D**



**END OF RAIL DETAILS**

**BILL OF MATERIAL**

Item	Unit	Quantity
Steel Railing, Type S-1	Foot	259

**STEEL RAILING, TYPE S-1  
STRUCTURE NO. 041-3742**

DESIGNED - A.S.L.
CHECKED - S.W.M.
DRAWN - D.T.M.
CHECKED - D.A.B.

R-23A

10-1-08 (10'-9" Maximum Post Spacing)

**HAMPTON, LENZINI & RENWICK, INC.**  
CIVIL & STRUCTURAL ENGINEERS  
LAND SURVEYORS

**HLR** 3085 STEVENSON DRIVE, SUITE 201  
SPRINGFIELD, ILLINOIS 62703  
(217) 546-3400

PROJECT NUMBER: 08.0127.130 DATE: 01/21/09

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
10	03-03113-00-BR	JEFFERSON	15	10
CASNER ROAD DISTRICT		CONTRACT NO. 99362		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		