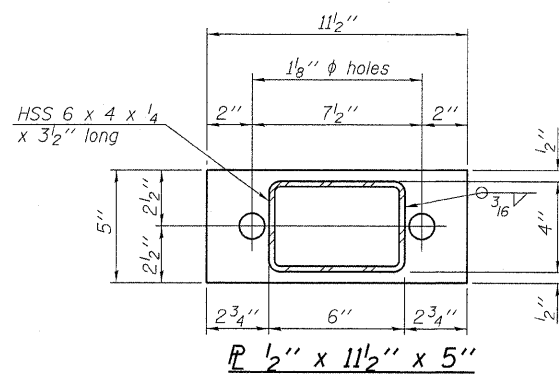
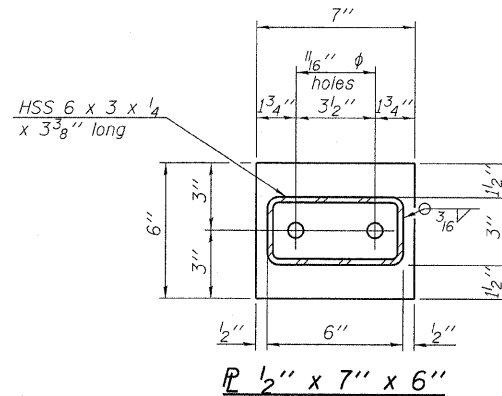


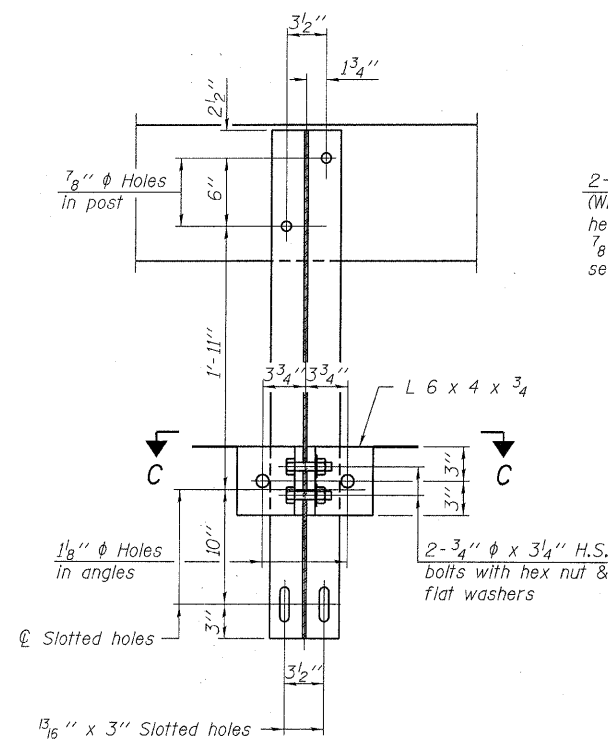
VIEW A-A  
ROUND HEAD BOLT



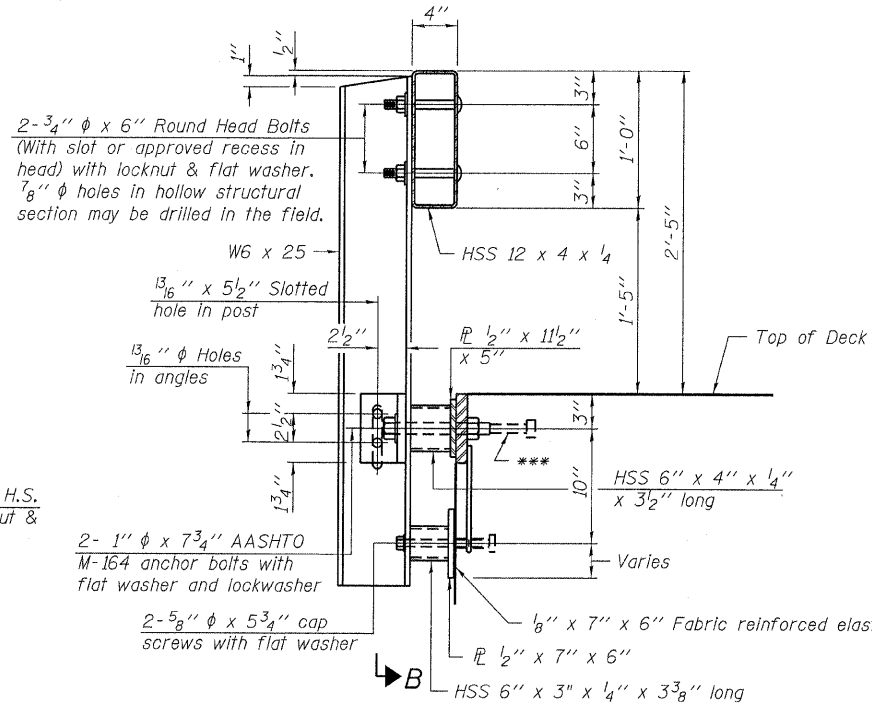
SECTION B-B  
R 1/2" x 11 1/2" x 5"



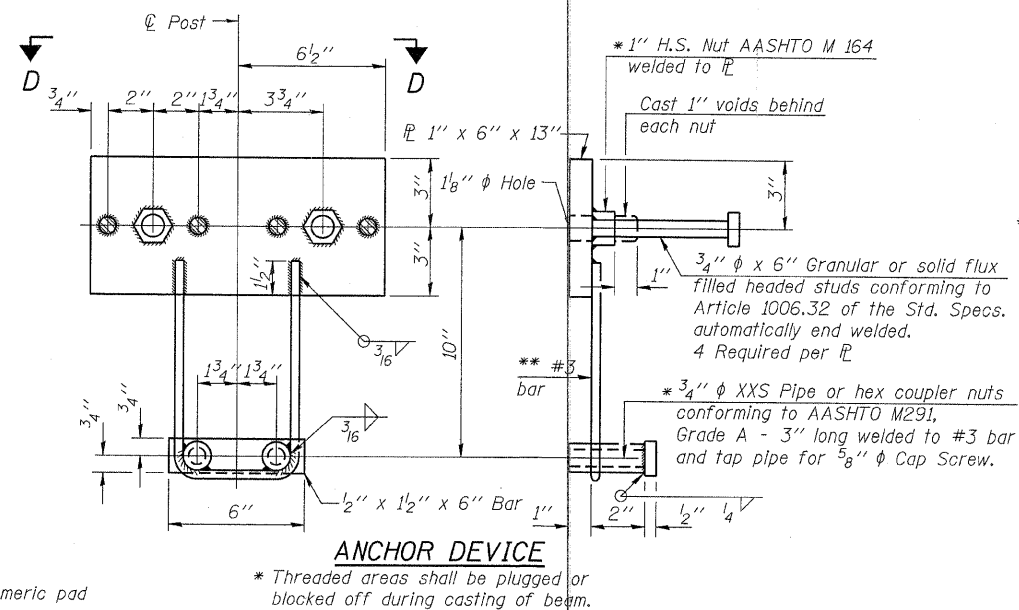
SECTION C-C  
R 1/2" x 7" x 6"



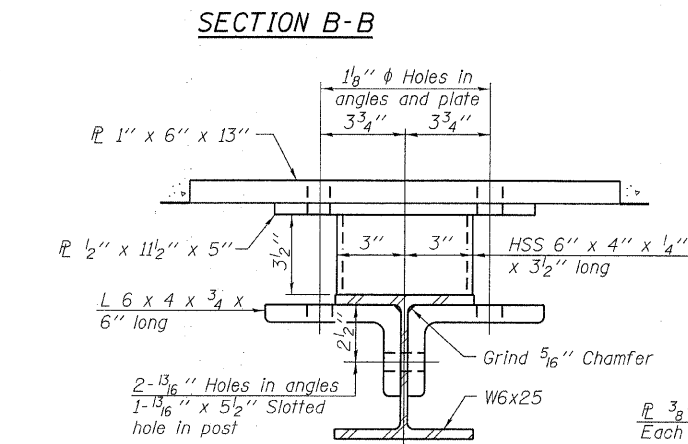
SECTION B-B



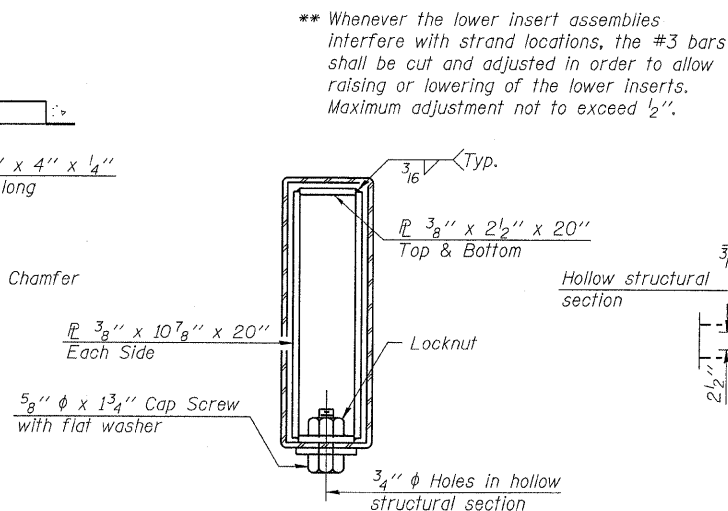
SECTION AT RAILING POST



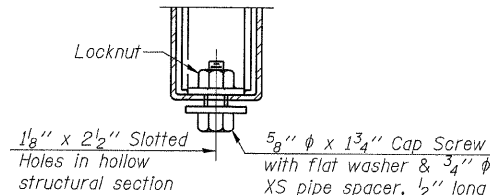
ANCHOR DEVICE



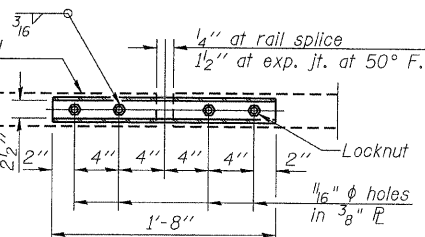
SECTION C-C



SECTIONS AT RAIL SPLICE

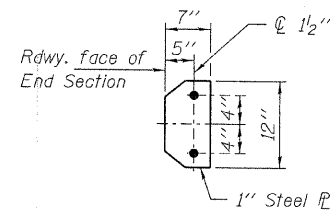


RAIL SPLICE CONNECTION  
AT EXPANSION JT.

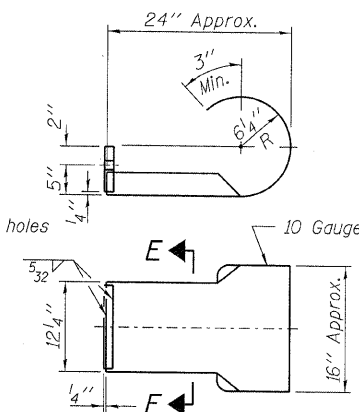


PLAN-BOTT. SPLICE R  
TYPICAL

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

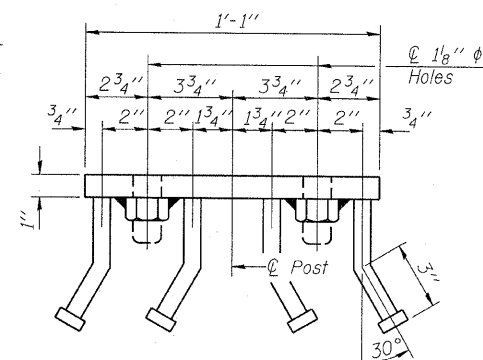


SECTION E-E



CURLLED END SECTION DETAILS

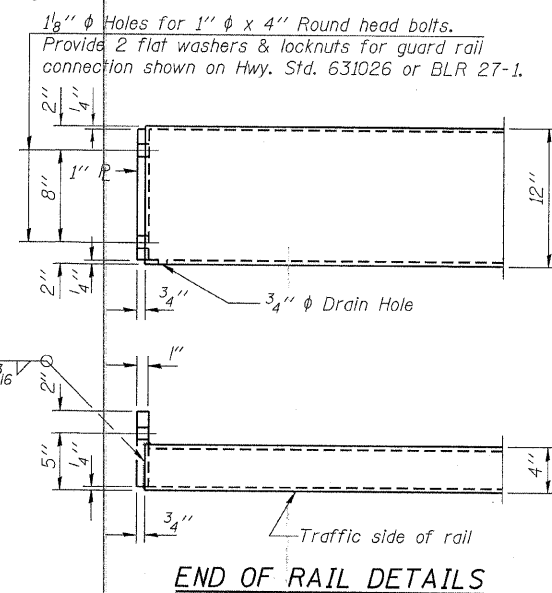
Notes:  
All field drilled holes shall be coated with an approved zinc rich paint before erection.  
For multi-span bridges, sufficient 4" x 6" x 1'-2" galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with Steel Railing, Type S-1.  
All steel rail elements 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

DESIGNED - S.W.M.
CHECKED - V.J.H.
DRAWN - D.T.M.
CHECKED - S.W.M.

R-23A 11-1-09 (10'-9" Maximum Post Spacing)



END OF RAIL DETAILS

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type S-1	Foot	140

STEEL RAILING, TYPE S-1  
STRUCTURE NO. 033-3313

HAMPTON, LENZINI AND RENWICK, INC.  
CIVIL ENGINEERS - STRUCTURAL ENGINEERS - LAND SURVEYORS  
3085 STEVENSON DRIVE, SUITE 201  
SPRINGFIELD, ILLINOIS 62703  
217.548.3400 www.hlrengineering.com  
184.000959 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORPORATION  
PROJECT NUMBER: 09.0069.130 DATE: 04/27/10

SHEET NO. 5  
9 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
454	08-01116-00-BR	HAMILTON	13	9
BEAVER CREEK ROAD DISTRICT		CONTRACT NO. 99442		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT BROS-065(045)		