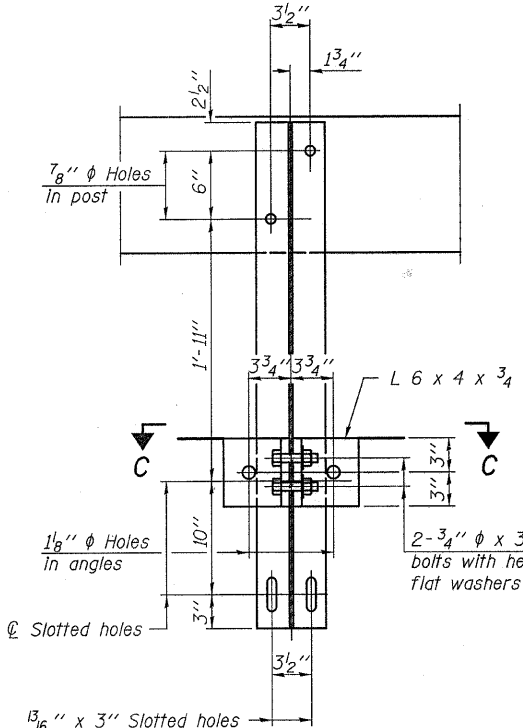
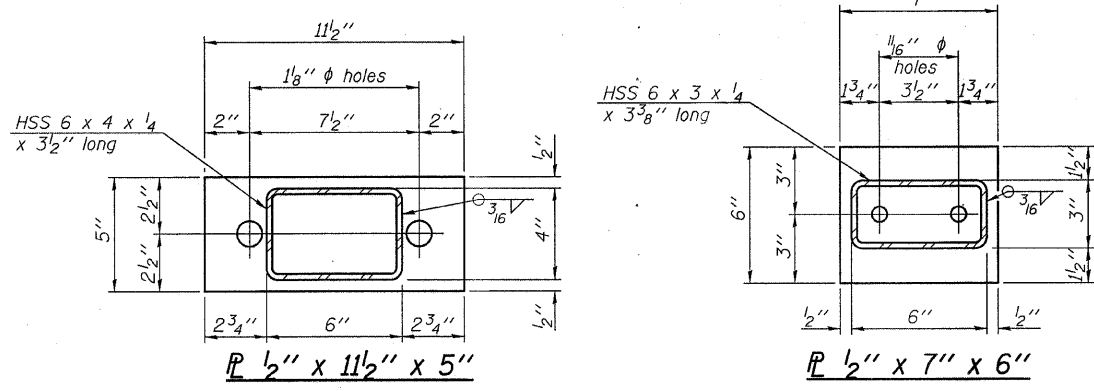
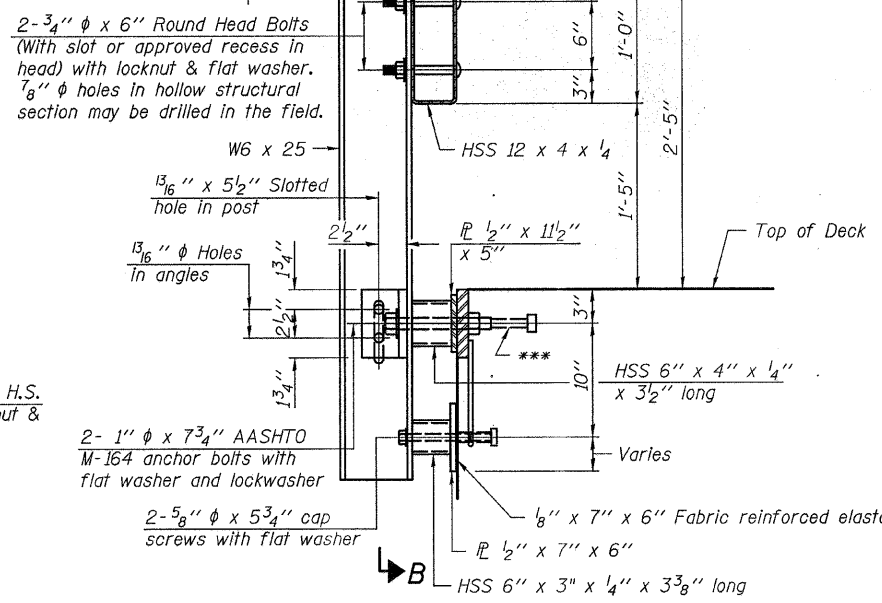


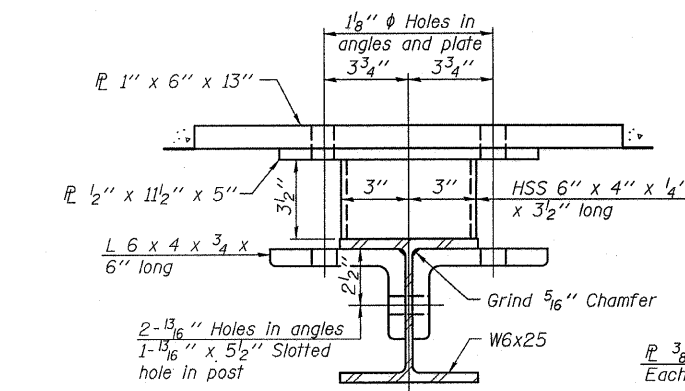
**VIEW A-A
ROUND HEAD BOLT**



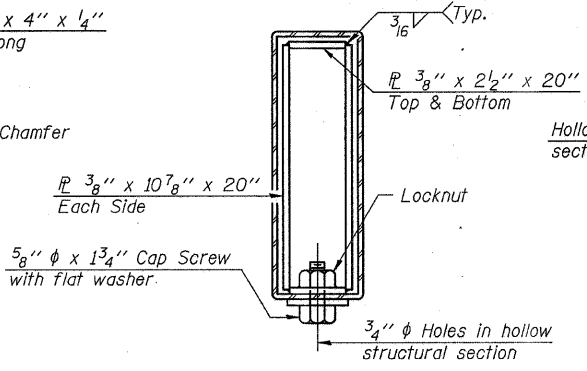
SECTION B-B



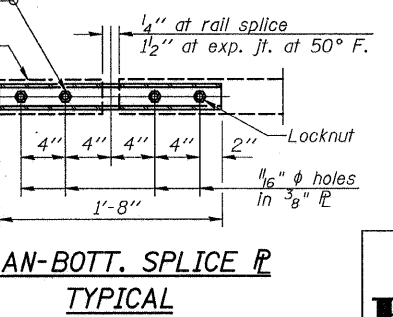
SECTION AT RAILING POST



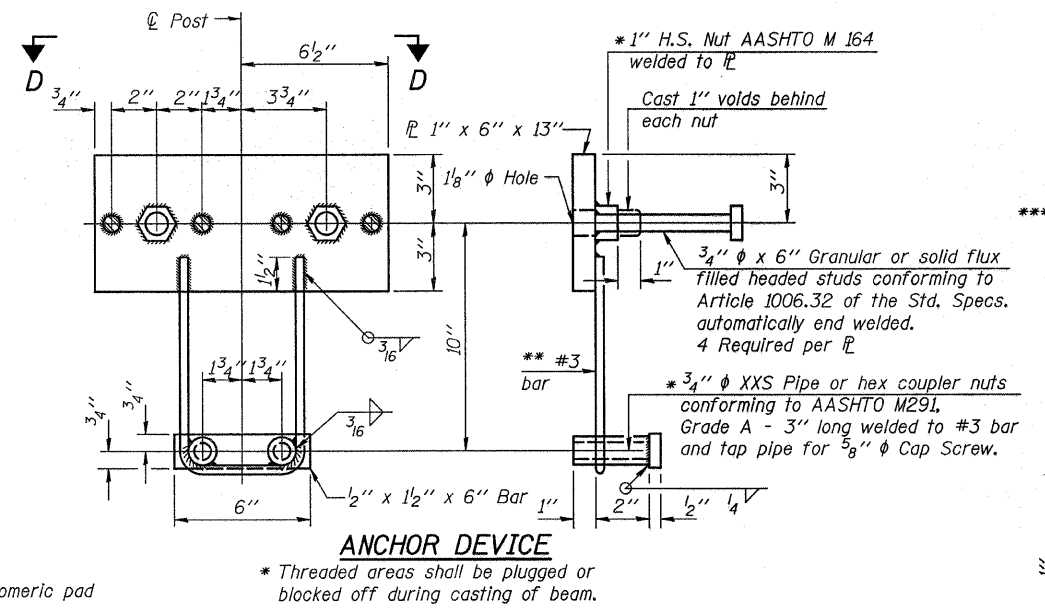
SECTION C-C



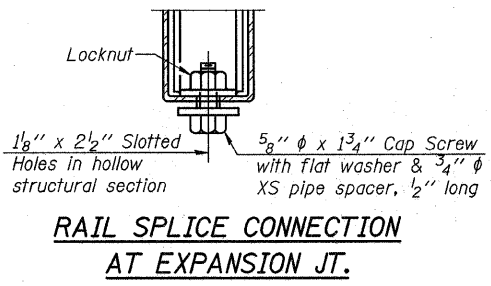
SECTIONS AT RAIL SPLICE



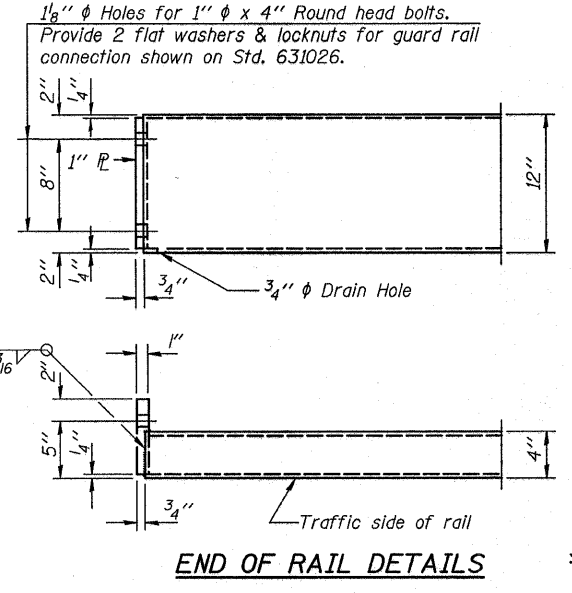
**PLAN-BOTT. SPLICE P
TYPICAL**



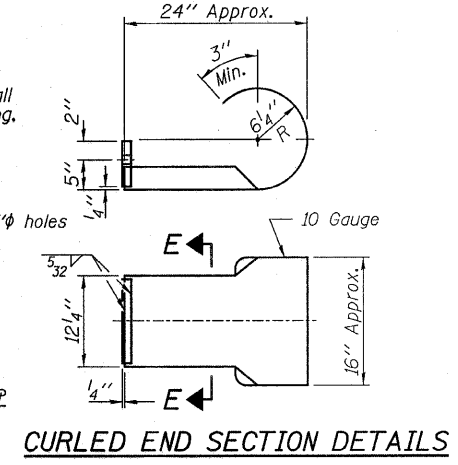
ANCHOR DEVICE



**RAIL SPLICE CONNECTION
AT EXPANSION JT.**



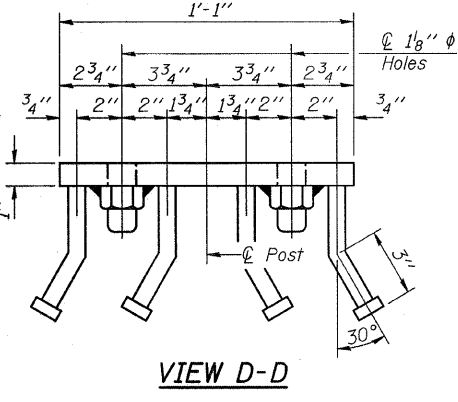
END OF RAIL DETAILS



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

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

Notes:
All field drilled holes shall be coated with an approved zinc rich paint before erection.
For multi-span bridges, sufficient 1/4 inch x 6 inch x 1-2 inch 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 - A.S.L.
CHECKED - S.W.M.
DRAWN - D.A.B.
CHECKED - D.T.M.

R-23A

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

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type S-1	Foot	88

**STEEL RAILING, TYPE S-1
STRUCTURE NO. 097-3265**

HAMPTON, LENZINI & RENWICK, INC. CIVIL & STRUCTURAL ENGINEERS LAND SURVEYORS HLR 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 (217) 546-3400 PROJECT NUMBER: 08.0256.130 DATE: 02/25/09	SHEET NO. 5	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	9 SHEETS	269	07-03119-00-BR	WHITE	12	8
EMMA ROAD DISTRICT			CONTRACT NO. 99370			
FED. ROAD DIST. NO.		ILLINOIS		FED. AID PROJECT BROS-193(35)		