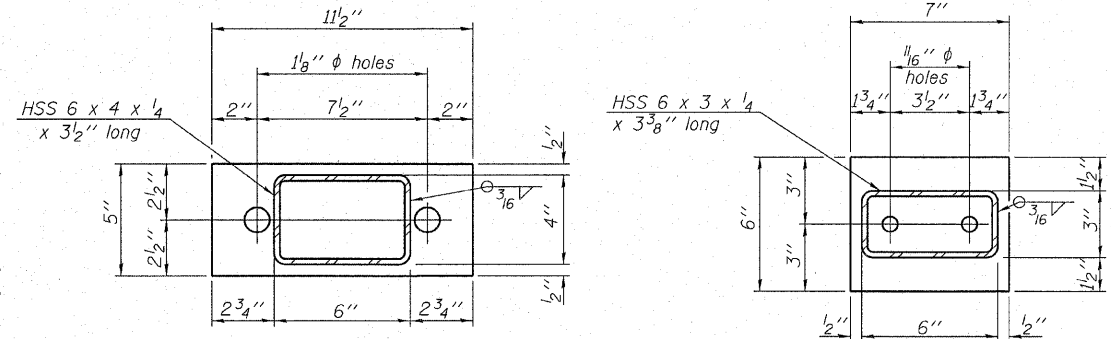
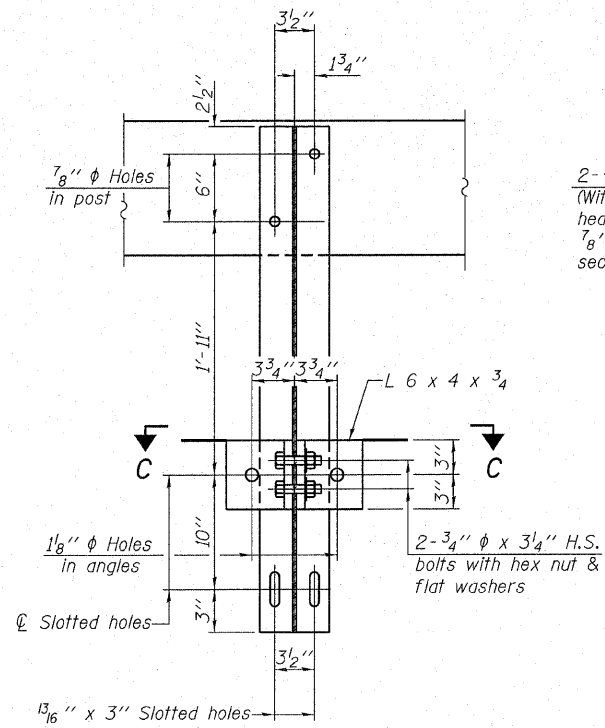


VIEW A-A ROUND HEAD BOLT

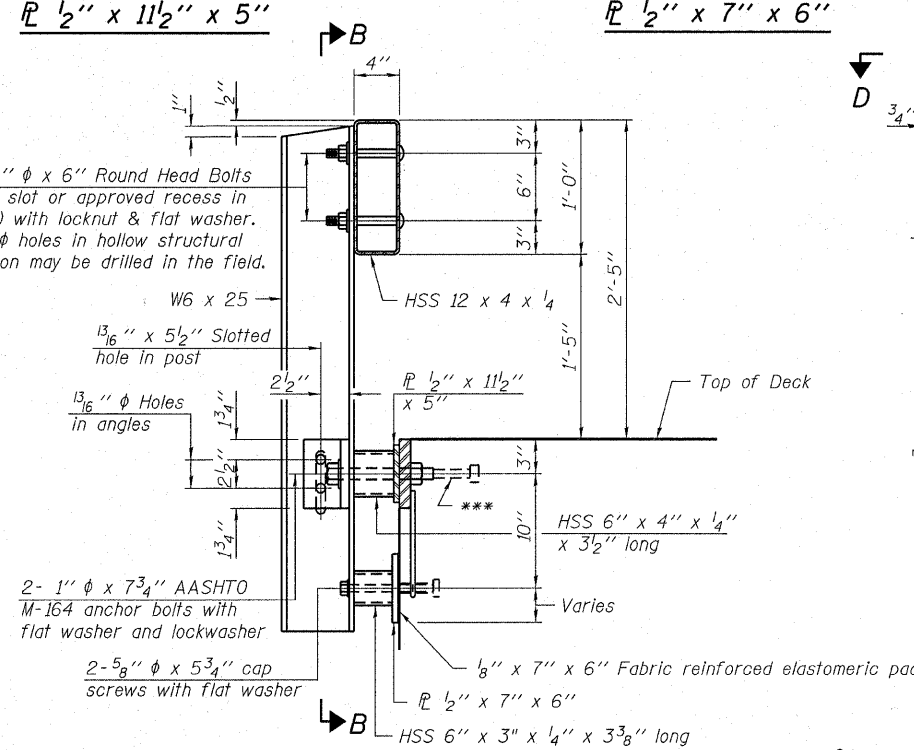


PL 1/2" x 11 1/2" x 5"

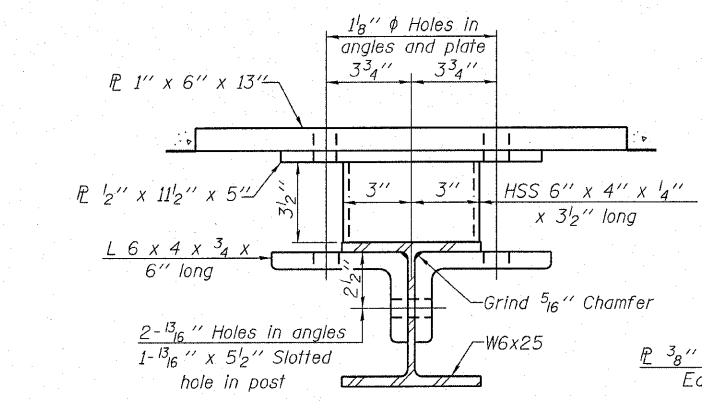
PL 1/2" x 7" x 6"



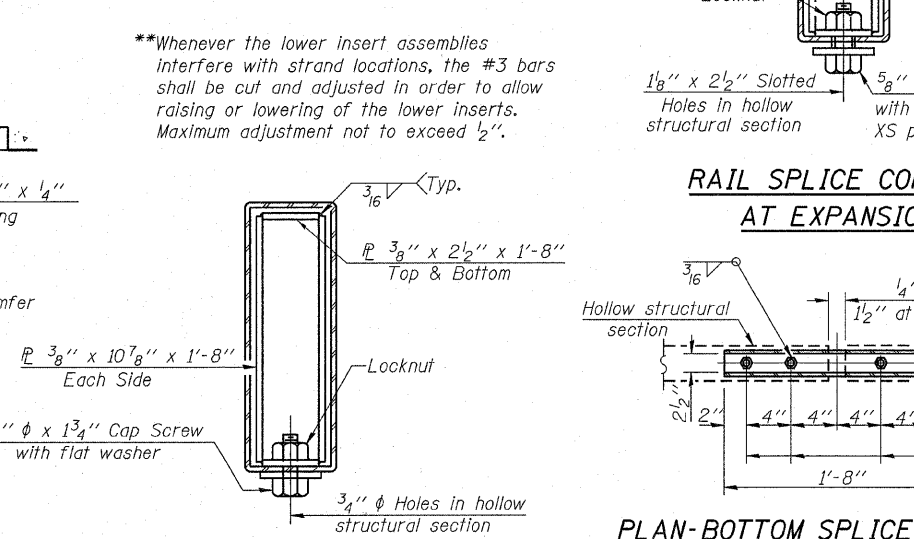
SECTION B-B



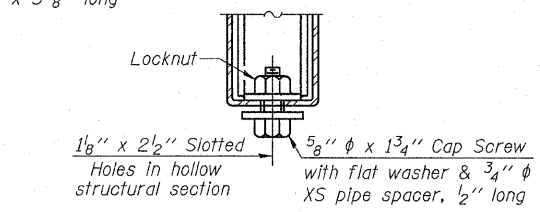
SECTION AT RAILING POST



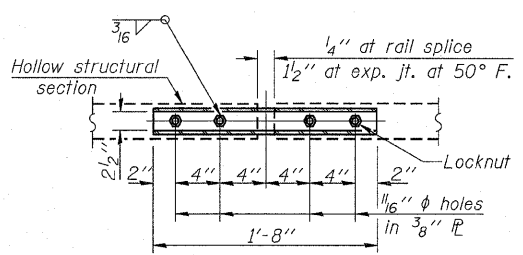
SECTION C-C



SECTIONS AT RAIL SPLICE

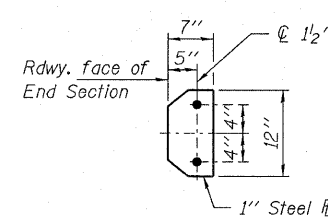


RAIL SPLICE CONNECTION AT EXPANSION JT.

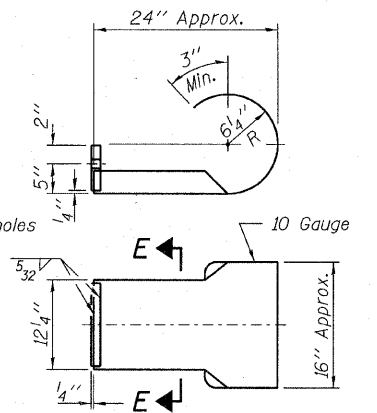


PLAN-BOTTOM SPLICE PL TYPICAL

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

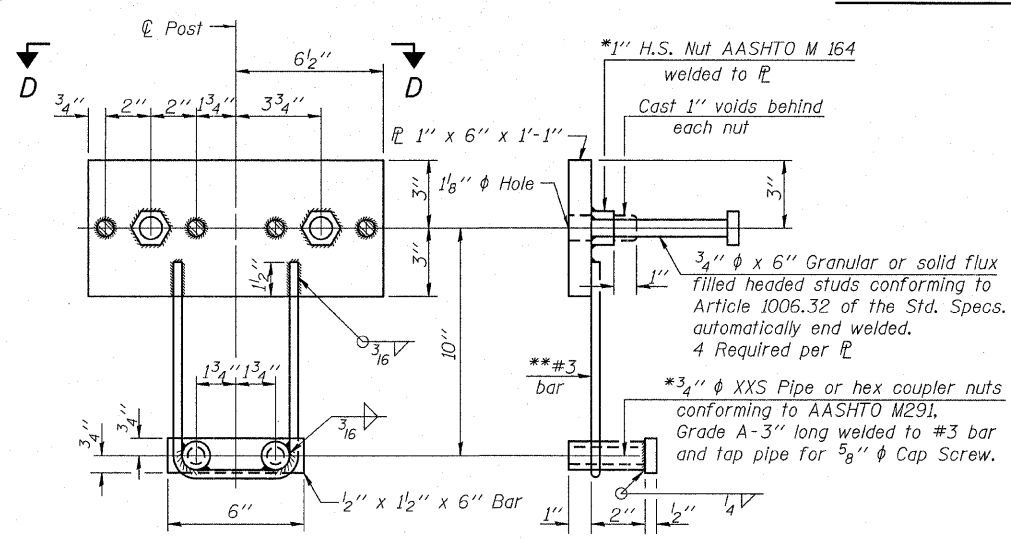


SECTION E-E



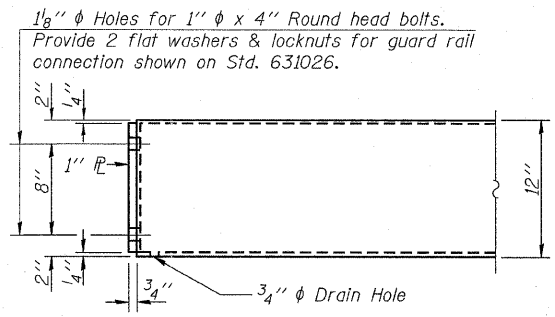
CURLED END SECTION DETAILS

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.

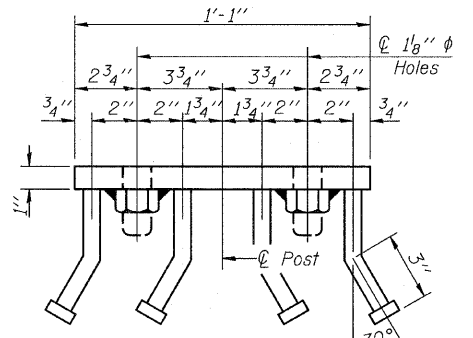


ANCHOR DEVICE

*Threaded areas shall be plugged or blocked off during casting of beam.



END OF RAIL DETAILS



VIEW D-D

BILL OF MATERIAL

| Item | Unit | Quantity |
|-------------------------|------|----------|
| Steel Railing, Type S-1 | Foot | 109 |

STEEL RAILING, TYPE S-1
 STRUCTURE NO. 092-3433

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

R-23A

5-16-08 (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 0198.130 DATE: 01/13/09

| T.R. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---------------------|----------------|---------------------------|--------------|-----------|
| 365 | 01-19135-00-BR | VERMILION | 16 | 13 |
| VANCE ROAD DISTRICT | | CONTRACT NO. 91398 | | |
| FED. ROAD DIST. NO. | | ILLINOIS FED. AID PROJECT | | |