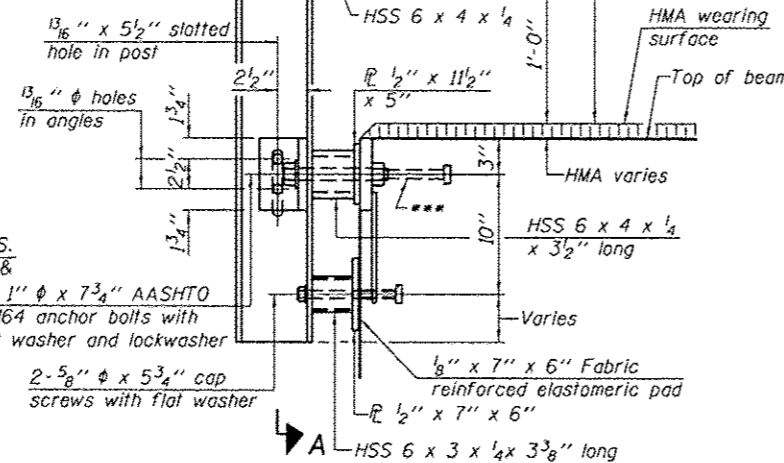
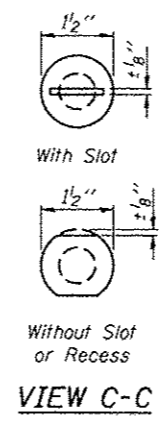
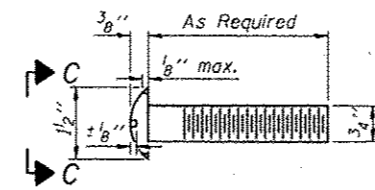


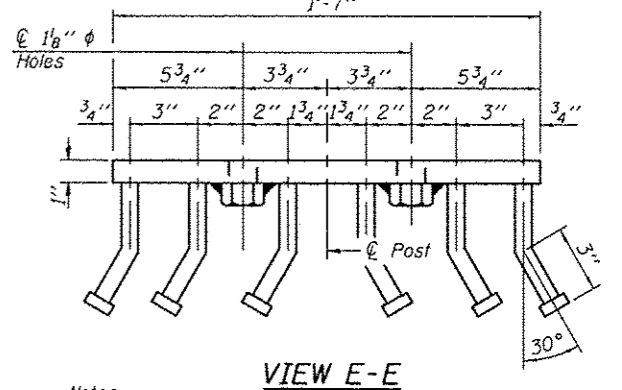
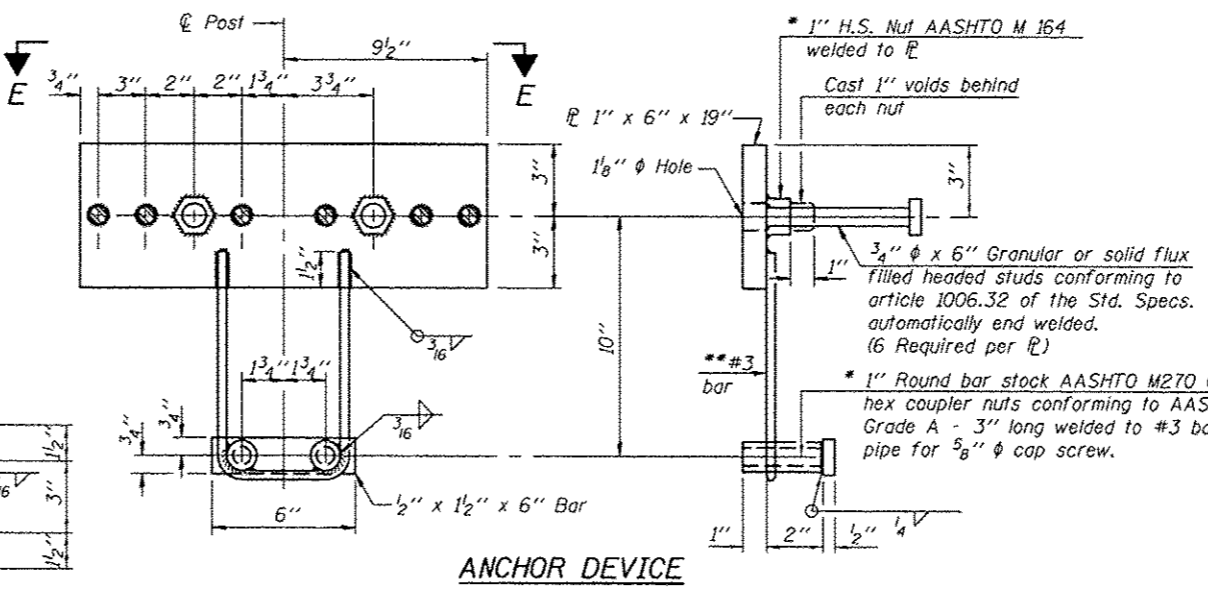
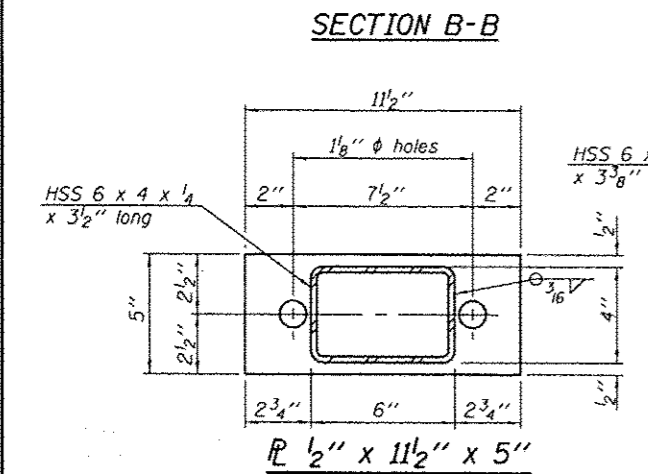
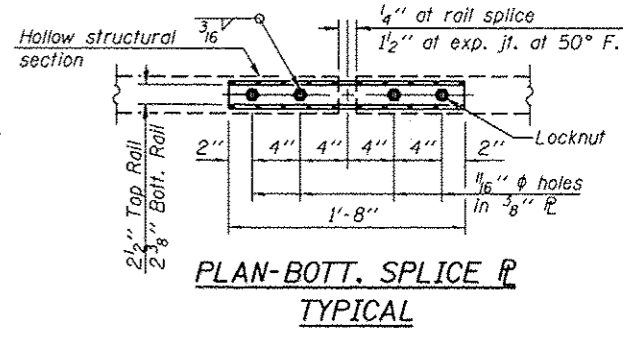
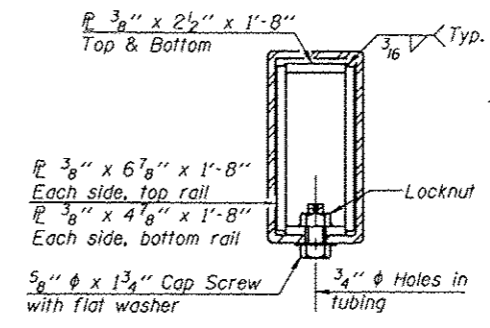
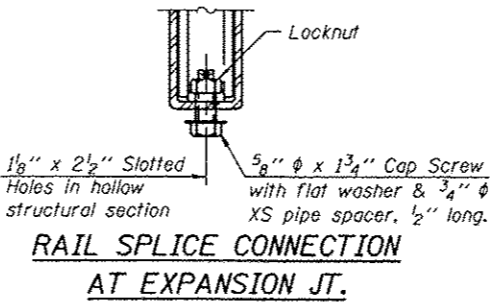
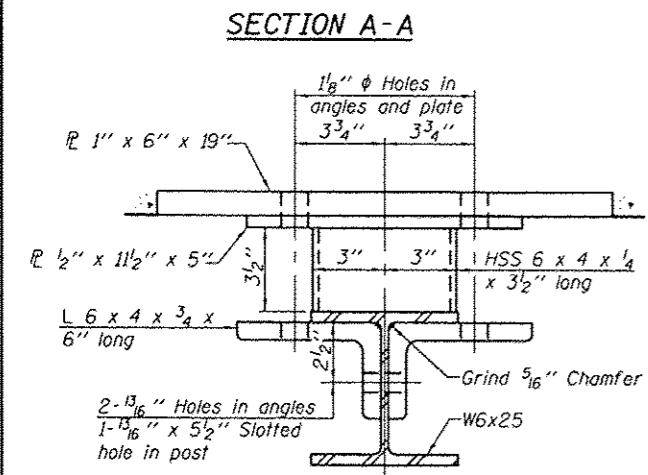
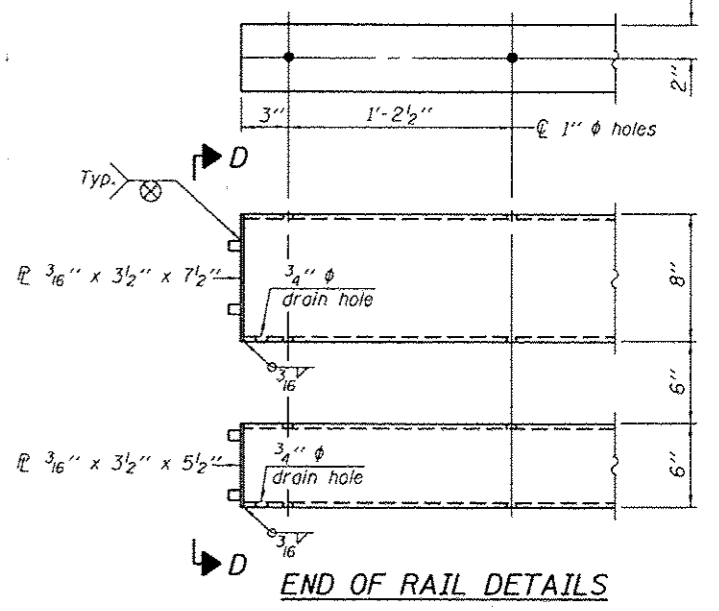
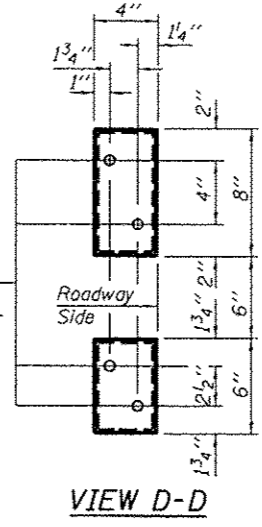
4-3/4" φ x 6" Round Head Bolts (With slot or approved recess in head) with locknut & flat washer. 7/8" φ holes in hollow structural section may be drilled in the field.



DETAIL OF 3/4" φ ROUND HEAD BOLT



4-5/8" reduced base welded studs. Provide 4-5/8" washers and self-locking nuts or nuts and jam nuts for guardrail connection shown on Std. 631032.



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 SM.
 All steel rail members 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.

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

** Whenever the lower insert assemblies interfere with strand locations, the #3 bars shall be cut and adjusted in order to allow raising or lowering of the lower inserts. Maximum adjustment not to exceed 1/2".

BILL OF MATERIAL

| Item | Unit | Quantity |
|------------------------|------|----------|
| Steel Railing, Type SM | Foot | 108 |

| | | |
|----------------|---|------------------|
| DESIGNED VP | EXAMINED | DATE |
| CHECKED VHV | <i>Timothy A. Anhalt</i> | JANUARY 31, 2013 |
| DRAWN ballvo | ACTING ENGINEER OF STRUCTURAL SERVICES | |
| CHECKED VP VHV | PASSED | |
| | <i>Michael J. Long</i> | |
| | ACTING ENGINEER OF BRIDGES AND STRUCTURES | |

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STEEL RAILING, TYPE SM
SN 060-0249

| | | | | |
|-------------|---------------|---------|--------------|-----------|
| F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
| 789 | IS4,58,6BR5-4 | MADISON | 44 | 44 |

SHEET NO. 5 OF 5 SHEETS

ILLINOIS FED. AID PROJECT

CONTRACT NO. 76F27