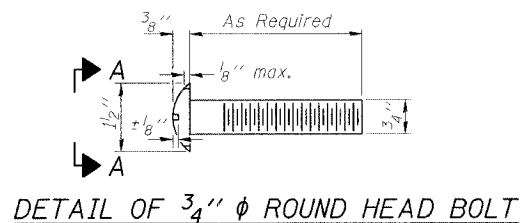
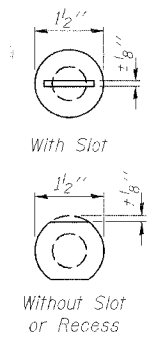


STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

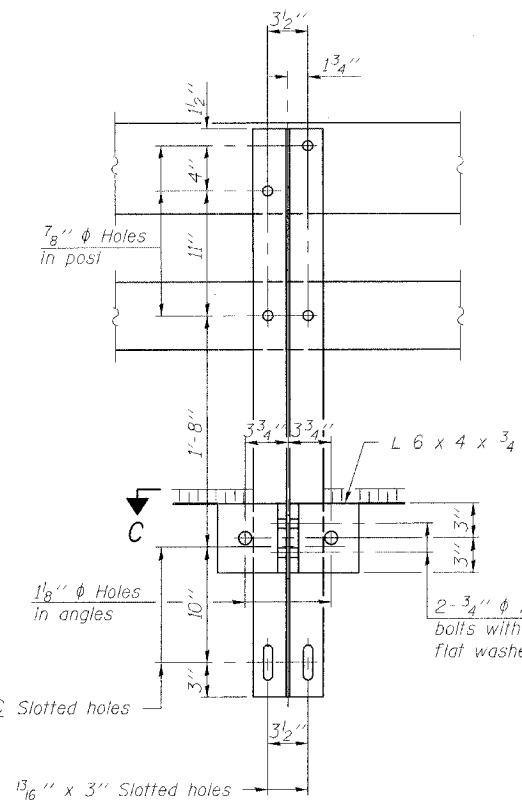
ROUTE NO.	SECTION	COUNTY	SUBSECT	SHEET	SHEET NO. 6 9 SHEETS
FAP 840	136 BR-1	IROQUOIS	45	16	
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		Contract #66668	



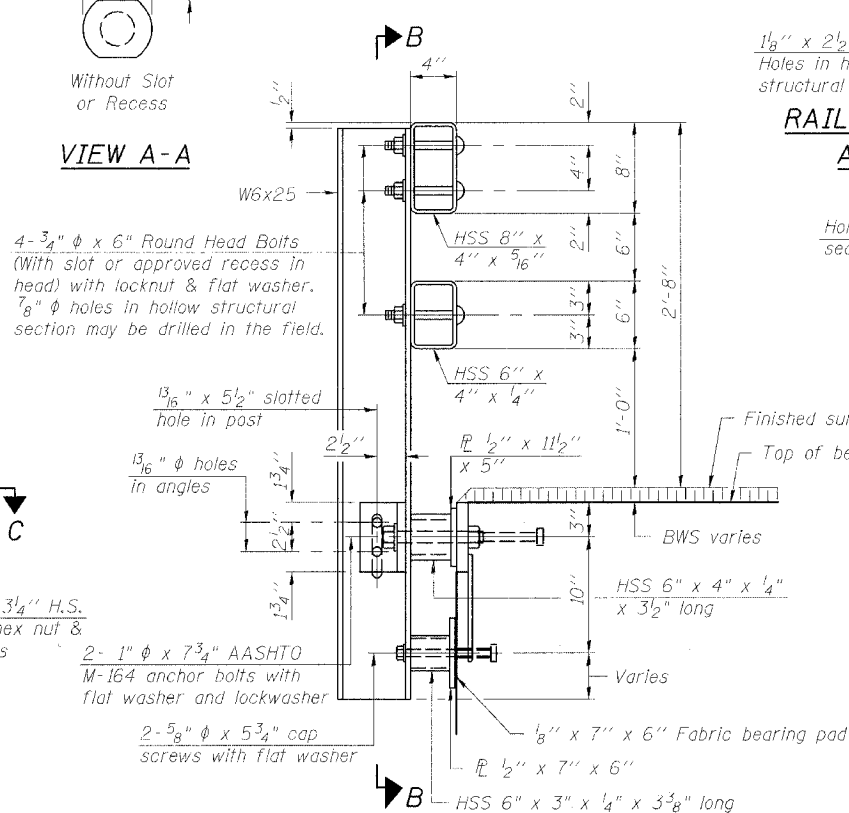
DETAIL OF 3/4" ϕ ROUND HEAD BOLT



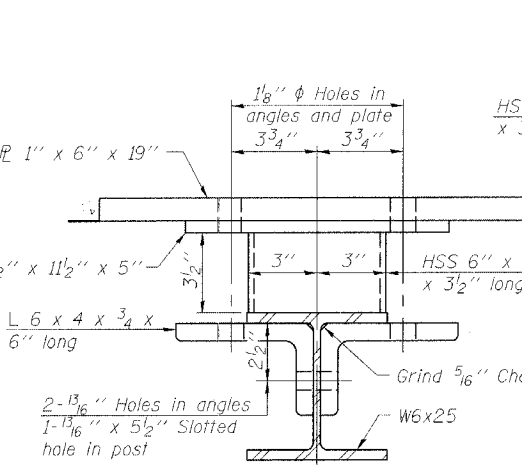
VIEW A-A



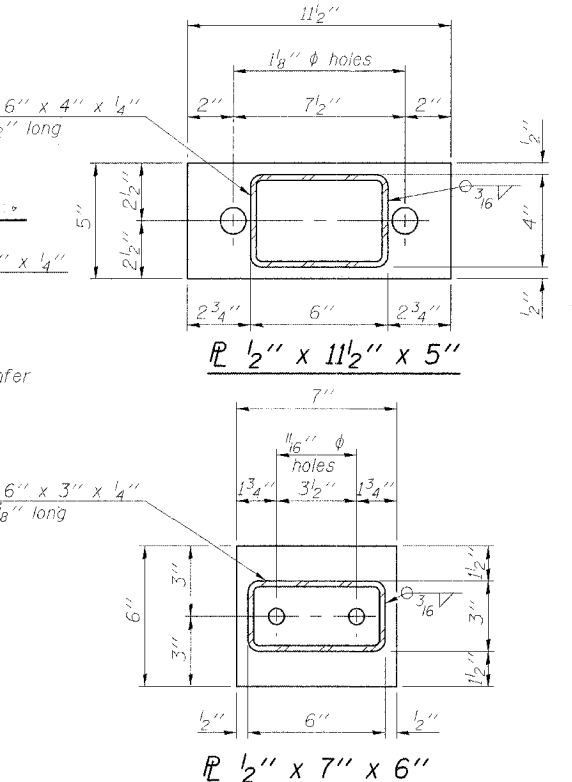
SECTION B-B



SECTION AT RAIL POST

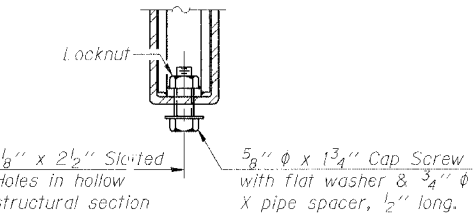


SECTION C-C

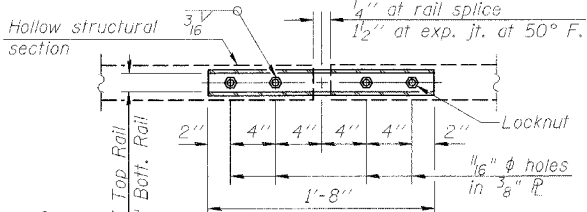


ANCHOR DEVICE

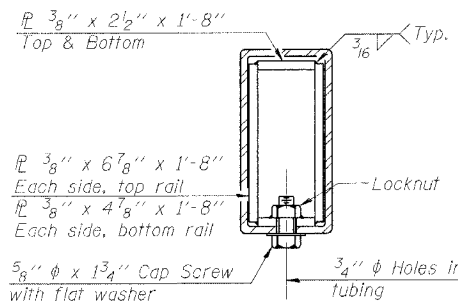
* Threaded areas shall be plugged or blocked off during casting of beam. Galvanized after fabrication.



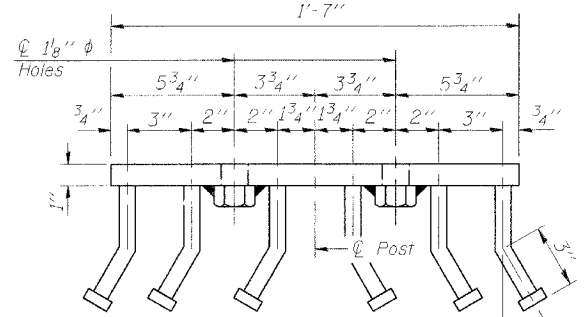
RAIL SPLICE CONNECTION AT EXPANSION JT.



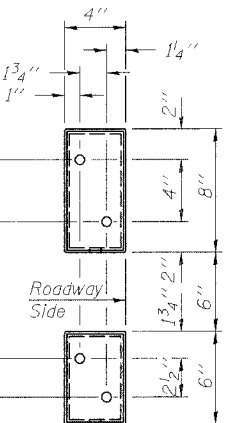
PLAN-BOTT. SPLICE R TYPICAL



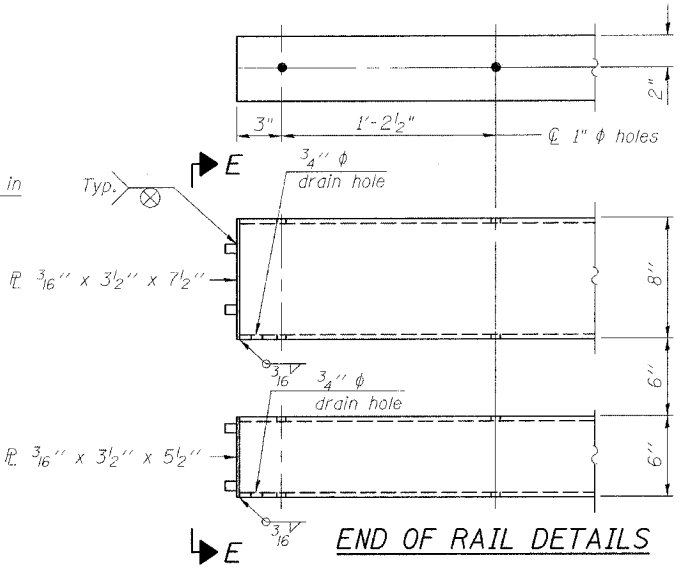
SECTION AT RAIL SPLICE



VIEW D-D



VIEW E-E



END OF RAIL DETAILS

NOTES

Hollow structural sections shall conform to the requirements of ASTM designation A 500 Grade B Structural Steel Tubing and shall meet the longitudinal CVN requirements of 15 ft-lbs at 0° F.

All other steel shapes and plates shall conform to the requirements of AASHTO M 270 Grade 36 except posts and angles shall conform to AASHTO M 270, Grade 50.

Bolts, cap screws, and nuts shall conform to the requirements of ASTM designation A 307 except for high strength bolts, nuts and washers noted which shall conform to AASHTO M 164.

All bolts, nuts, cap screws, washers and lock washers shall be galvanized according to AASHTO M 232.

All posts, railing, rail splices, anchor devices and angles shall be galvanized after shop fabrication according to AASHTO M 111 and ASTM A 385. Galvanized rail shall not be painted.

Railing shall be according to Section 509 of the Standard Specifications, except as noted, and will be paid for at the contract unit price per foot for Steel Bridge Rail, Type SM.

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 Bridge Rail, Type SM.

The 3/4" ϕ high strength bolts used to connect the 6 x 4 x 3/4 angles to the post shall be tightened according to Article 505.04(f)(2) of the Standard Specifications. The 1" ϕ high strength bolts connecting the angles to the concrete shall be tightened to a snug fit and given an additional 1/8 turn. The 5/8" ϕ cap screws in bottom of posts shall be tightened to a snug fit only.

BILL OF MATERIAL

Item	Unit	Quantity
Steel Bridge Rail, Type SM	Foot	187

**TYPE SM
STEEL BRIDGE RAIL SIDE MOUNTED
WITH BITUMINOUS WEARING SURFACE**

ILLINOIS DEPARTMENT OF TRANSPORTATION
**TYPE SM STEEL BRIDGE RAIL
SIDE MOUNTED**

FAP ROUTE 840 (IL 49) OVER SHAVETAIL CREEK
SECTION 136 BR-1 IROQUOIS COUNTY
STA. 616+84.00
S.N. 038-0093

REVISIONS	
NAME	DATE

SCALE: VERT. HORIZ.
DATE: 9/27/05

DRAWN BY: HEBERLING
DESIGNED BY: SANFORD
CHECKED BY: TRELLO

COMPUTER FILE NO.: SNO38-0093.RL.dgn
PROJECT 03236 W012
11/3/05-MML

GREENE & BRADFORD, INC.
OF SPRINGFIELD
CONSULTING ENGINEERS
200 SOUTH MAIN STREET
SPRINGFIELD, ILLINOIS 62761
PROFESSIONAL ENGINEERS
REGISTERED IN ILLINOIS
ILLINOIS LICENSE NO. 021-0000001
REGISTERED PROFESSIONAL ENGINEERS
CORPORATION
407 FIVE STAR CENTER DRIVE, SUITE 200
SPRINGFIELD, ILLINOIS 62761

FILE NAME: I:\03236\w012\drawings\sno38-0093\SM038-0093.RL.dgn
PLOT DATE: 09/22/2005
PLOT TIME: 15:57:07 PM
OPERATOR: michellel

R-34BWS 10-28-05 (6'-3" Maximum Post Spacing) (1/4" minimum to 3/8" maximum BWS thickness)