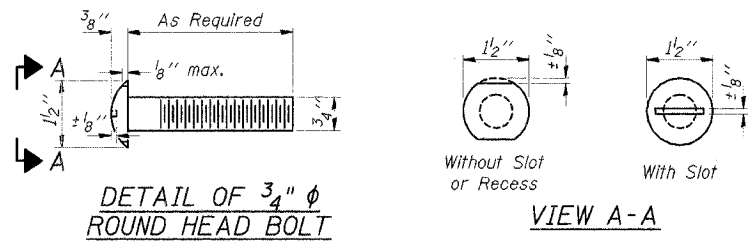


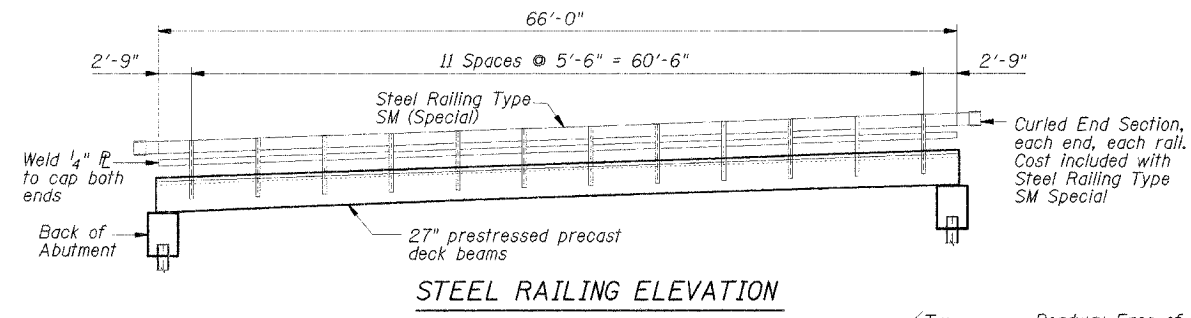
ROUTE NO.	SECTION	COUNTY	SHEET	TOTAL
FAS 507	*	Vermilion	54	50
FAS 507		Vermilion		54
FAS 507		Vermilion		54

*05-00154-00-BR

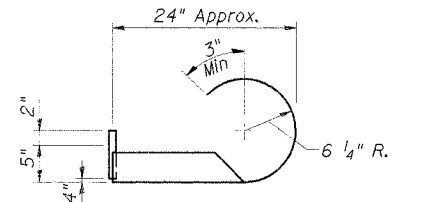


DETAIL OF 3/4" ϕ ROUND HEAD BOLT

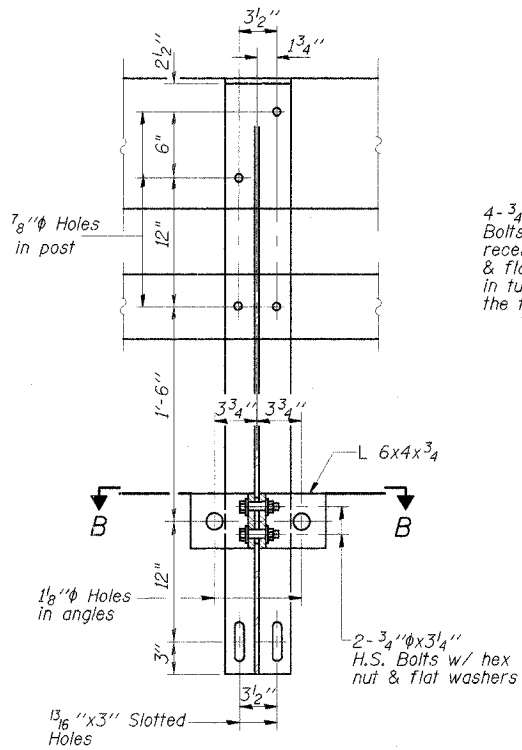
VIEW A-A
Without Slot or Recess
With Slot



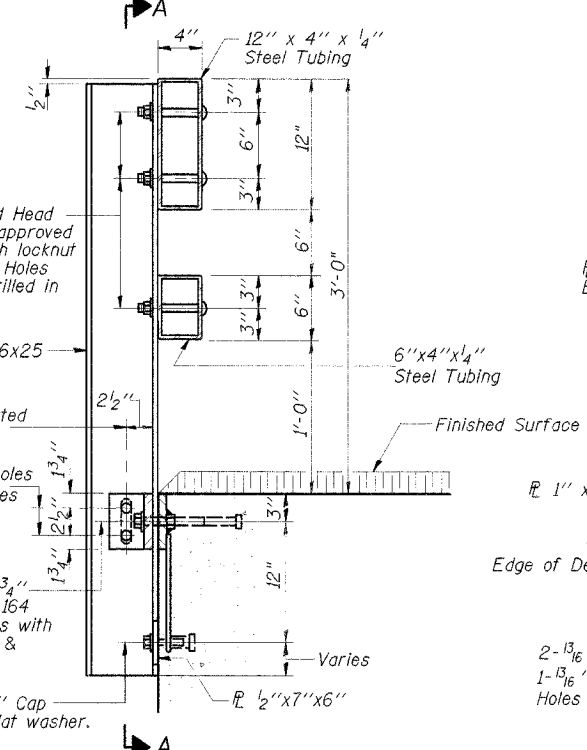
STEEL RAILING ELEVATION



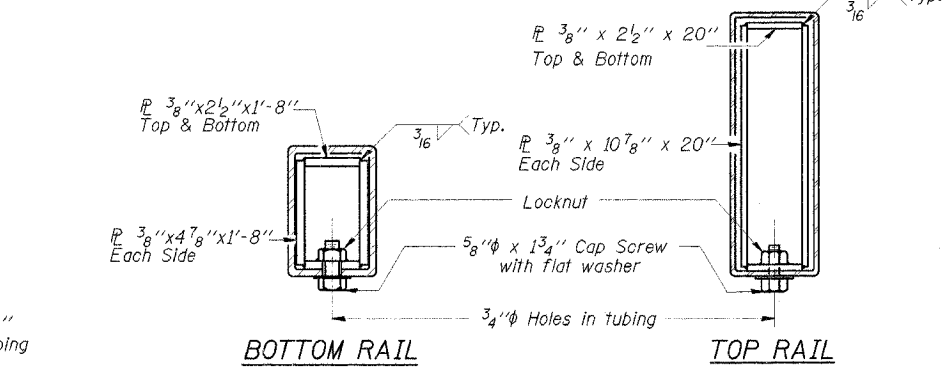
SECTION F-F CURLED END SECTION DETAIL



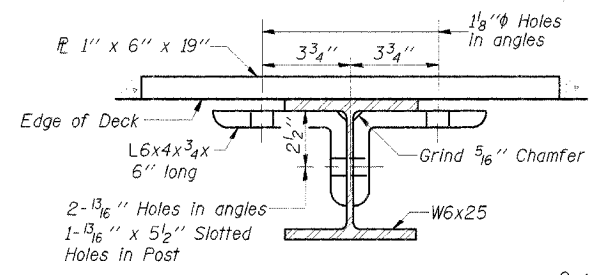
SECTION A-A



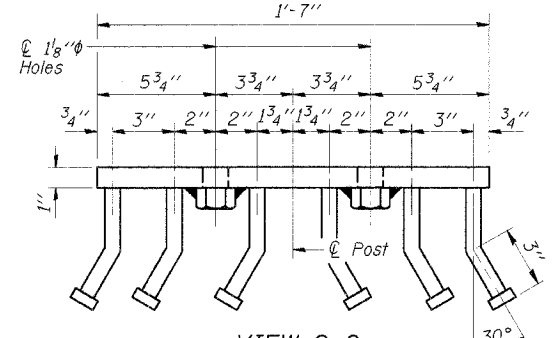
SECTION AT RAIL POST



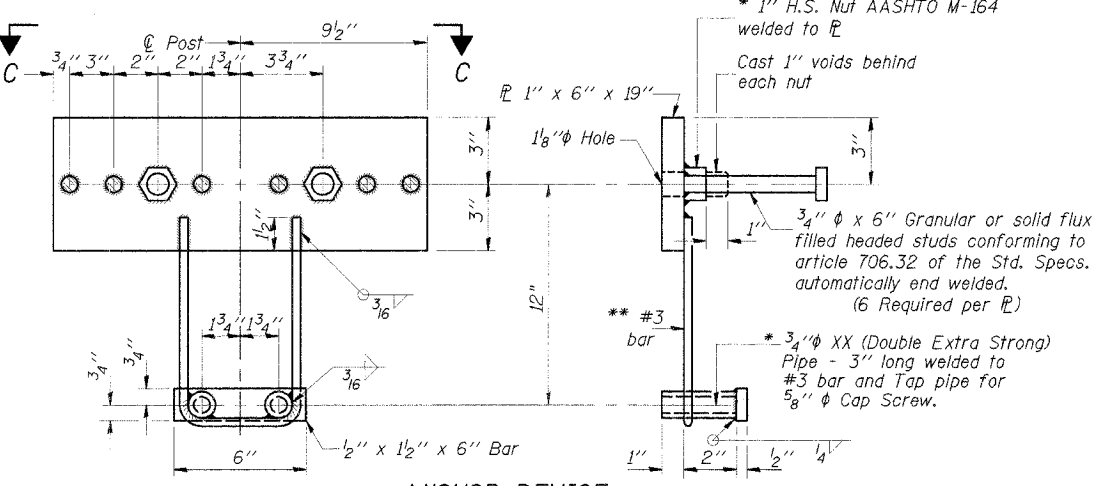
SECTIONS AT RAIL SPLICE



SECTION B-B



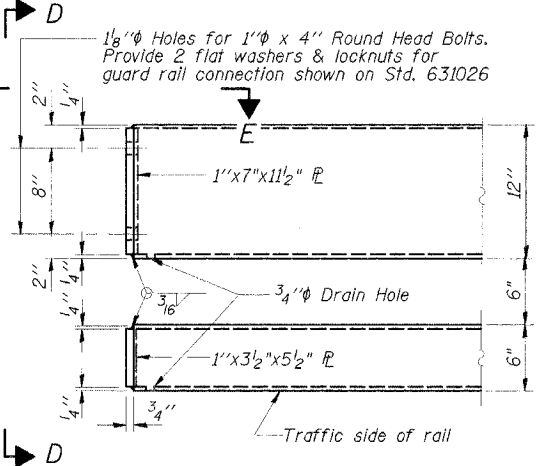
VIEW C-C



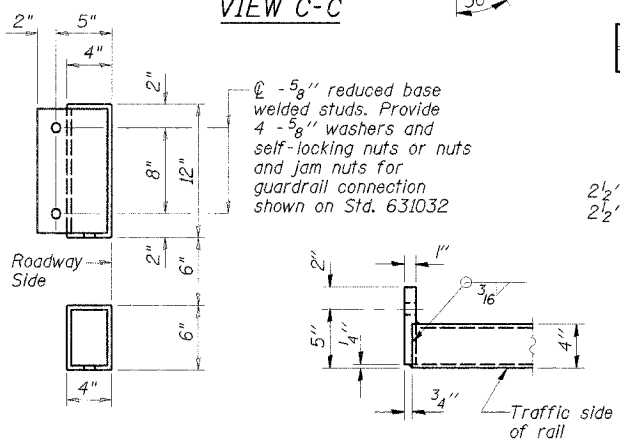
ANCHOR DEVICE

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

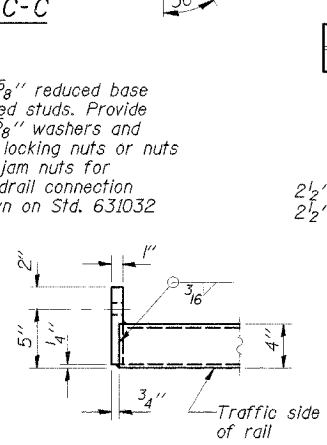
** Whenever the lower insert assemblies interfere with strand locations, the #3 bars shall be cut and adjusted in order to allow raising or lowering of the lower inserts. Maximum adjustment not to exceed 1/2".



END OF RAIL DETAILS



VIEW D-D



VIEW E-E

NOTES

Hollow structural steel tubing 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 requirement 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 in accordance with AASHTO M-232.

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

Railing shall be in accordance with Section 509 of the Standard Specifications, except as noted, and will be paid for at the contract unit price per foot for STEEL RAILING, TYPE SM (SPECIAL).

All field drilled holes shall be coated with an approved zinc rich paint before erection.

For multi-span PPC Deck 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 (SPECIAL).

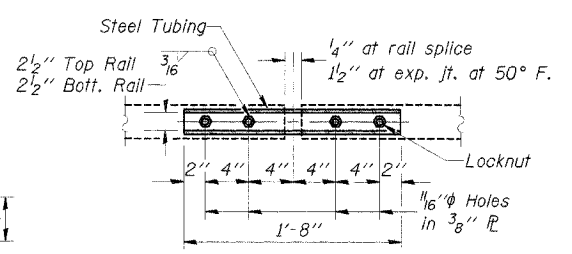
Bolts located at expansion joint shall be provided with locknuts and shall be tightened only to a point that will allow railing movement.

The lower portion of the post flange in contact with concrete shall receive two coats of asphalt paint conforming to Section 1060.07 Type II or place 3/8" fabric bearing pad between the post and concrete.

The 3/4" high strength bolts used to connect the 6 x 4 x 3/4 angles to the post shall be tightened in accordance with Article 505.04(f)(3) of the Standard Specifications. The 1" 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" 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	132



PLAN-BOTT. SPLICE TYPICAL

DSGN	K.J. Hoffmann				
DR	K.J. Hoffmann				
CHK	A.Frauenhoffer				
APVD	A.Frauenhoffer	NO.	DATE	REVISION	BY

FRAUENHOFFER

Frauenhoffer and Associates, P.C. Consulting Engineers
3002 Crossing Court Champaign, IL 61822 217-351-6268

STEEL RAILING TYPE SM		SHEET 50
VILLAGE OF CATLIN SECTION 05-00154-00-BR VERMILION COUNTY		DWG NO. 5022-sm.dwg DATE FEB 2006 PROJ NO. 5022