

STEEL RAILING ELEVATION

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type SM	Foot	289

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.

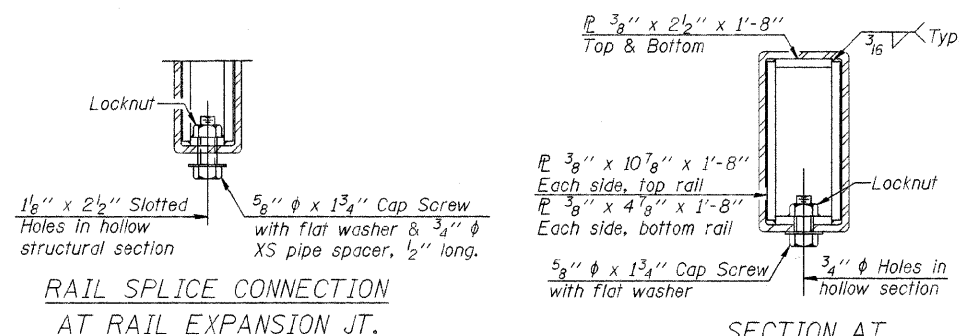
All field drilled holes shall be coated with an approved zinc rich paint before erection.

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.

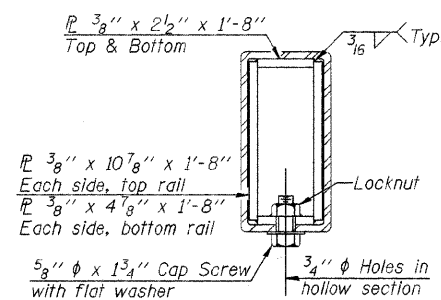
Steel rail elements shall be galvanized according to Article 1006.34 of the Standard Specifications.

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

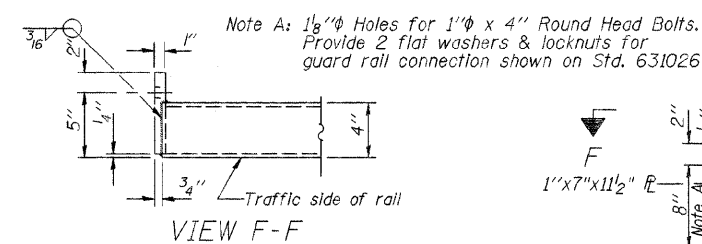
** The studs of the anchor devices shall be placed below the top reinforcement bars and the outermost longitudinal reinforcement bar shall be placed directly above the studs of the rail post anchor device.



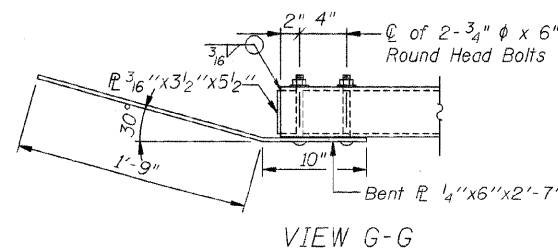
RAIL SPLICE CONNECTION AT RAIL EXPANSION JT.



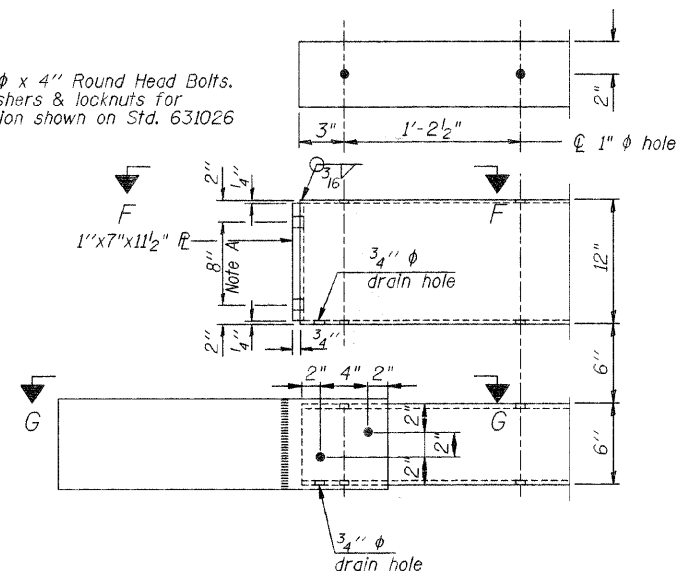
SECTION AT RAIL SPLICE



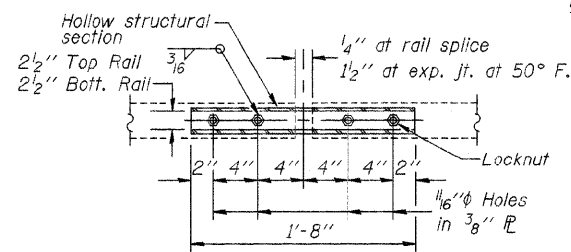
VIEW F-F



VIEW G-G



END OF RAIL DETAILS



PLAN-BOTT. SPLICE TYPICAL

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STEEL RAILING, TYPE SM (SHEET 2 OF 2)	SHEET 17b
FAS 496 (C.H. 14) OVER MIDDLE BRANCH OF N. FORK	DWG NO. 97051S1.dgn
SEC. 97-00141-00-BR	DATE SEP 2009
VERMILION COUNTY	PROJ NO. 97051