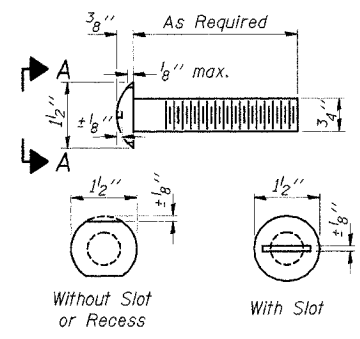
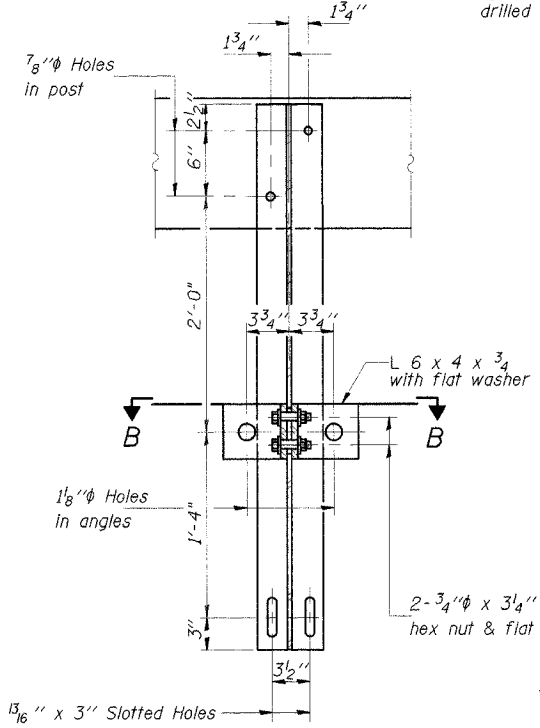


ROUTE NO.	SECTION	COUNTY	SHEET	TOTAL
TR 373	*	Vermilion	19	17
FED. ROAD DIST. NO. 7		ILLINOIS		FED. AID PROJECT
				*02-04130-00-BR

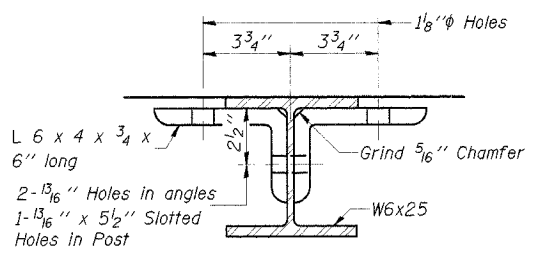


VIEW A-A
ROUND HEAD BOLT

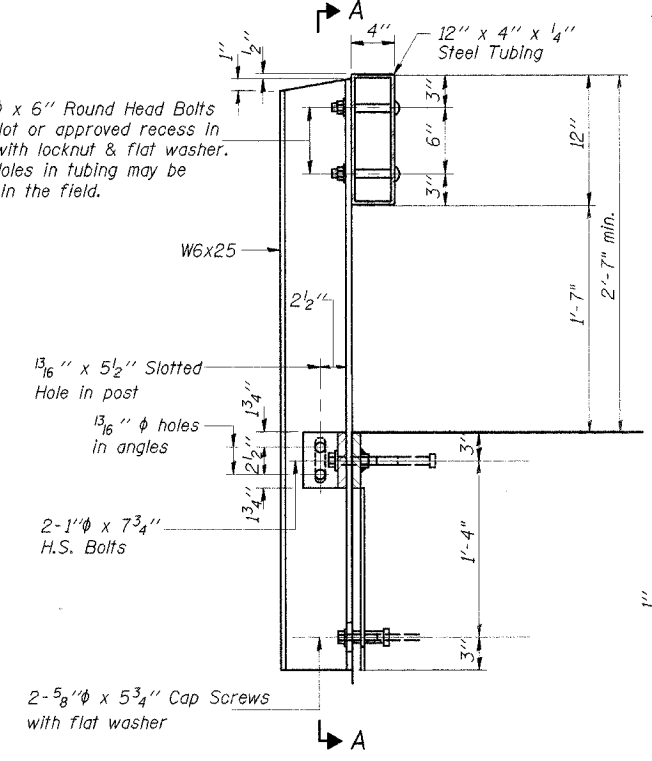
2-3/4" φ x 6" Round Head Bolts (With slot or approved recess in head) with locknut & flat washer. 7/8" φ Holes in tubing may be drilled in the field.



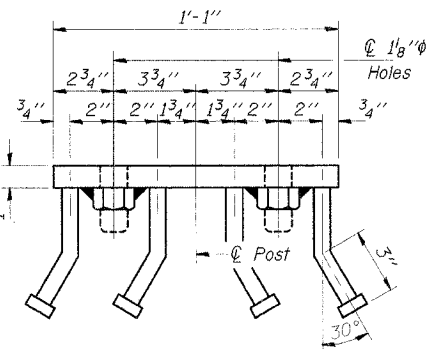
SECTION A-A



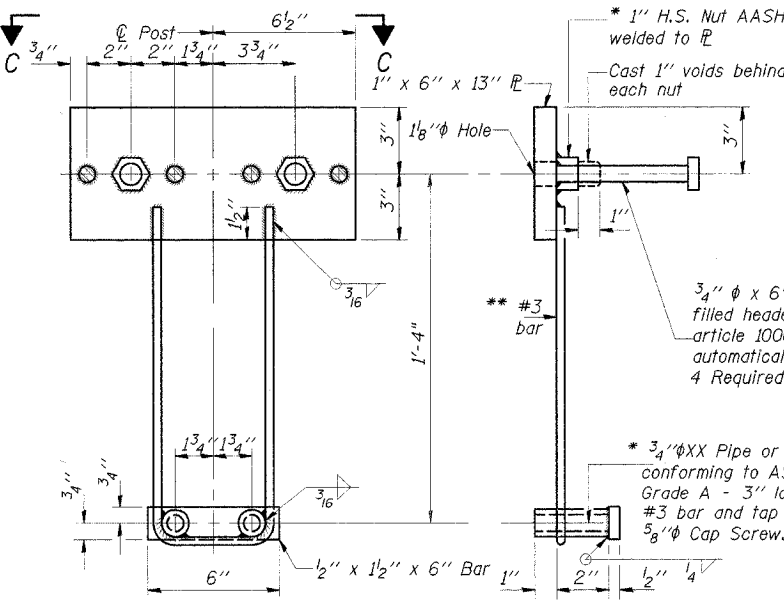
SECTION B-B



SECTION AT RAIL POST



VIEW C-C

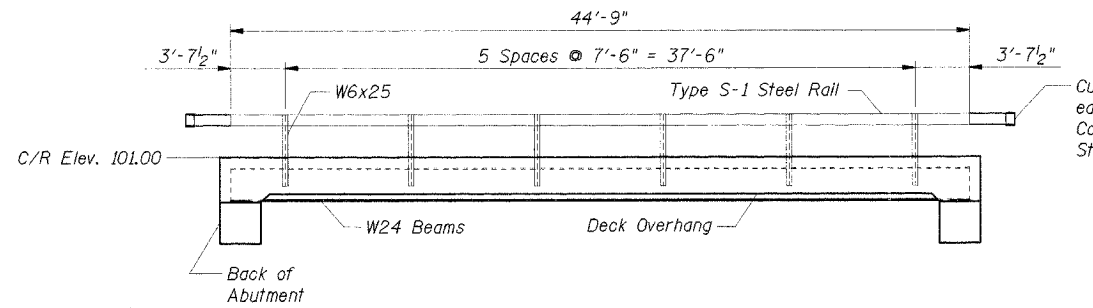


ANCHOR DEVICE * Threaded areas shall be plugged or blocked off during casting of beam.

** 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 inch.

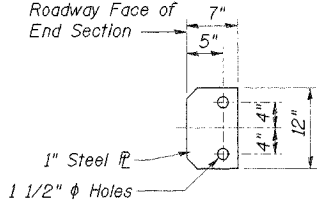
3/4" φ x 6" Granular or solid flux filled headed studs conforming to article 1006.32 of the Std. Specs. automatically end welded. 4 Required per post.

* 3/4" XX Pipe or Hex Nuts conforming to ASTM A-563, Grade A - 3" long welded to #3 bar and tap pipe for 5/8" φ Cap Screw.

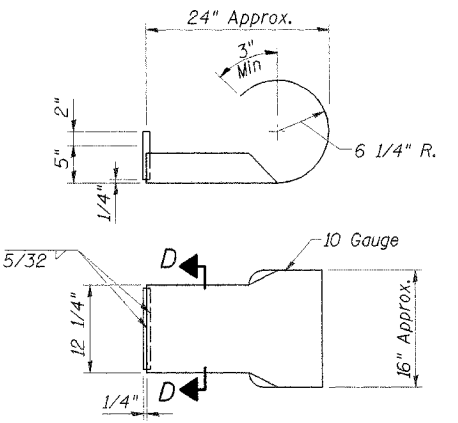


STEEL RAILING ELEVATION

Curled End Section, each end, each rail. Cost included with Steel Railing Type S-1



SECTION D-D



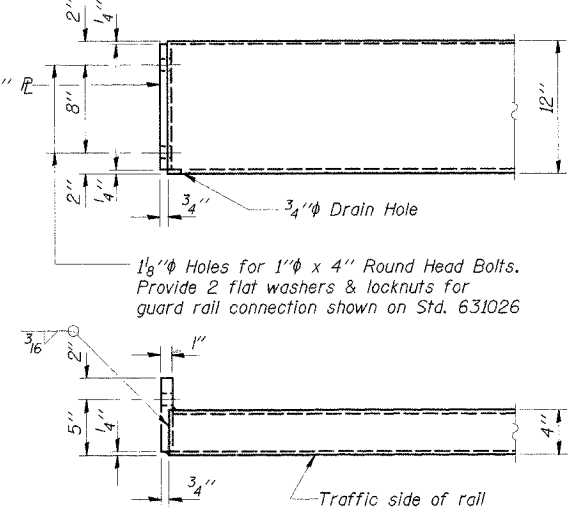
CURLED END SECTION DETAIL

NOTES

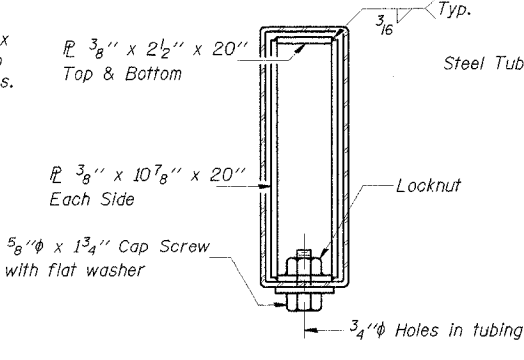
Hollow structural steel tubing shall conform to the requirements of ASTM designation A-500 Grade B Structural Steel Tubing and shall meet the longitudinal CVN requirements of 15 ft-lbs at 0° F. All other steel shapes and plates shall conform to the requirements of AASHTO M-270 Grade 36 except posts and 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 S-1. All field drilled holes shall be coated with an approved zinc rich paint before erection. 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 1/8" 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

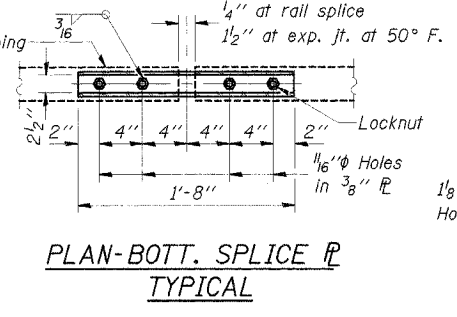
Item	Unit	Quantity
Steel Railing Type S-1	Foot	90



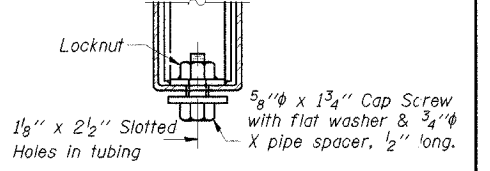
END OF RAIL DETAILS



SECTIONS AT RAIL SPLICE



PLAN-BOTT. SPLICE TYPICAL



RAIL SPLICE CONNECTION AT EXPANSION JT.

DSGN	K.J. Hoffmann				
DR	K.J. Hoffmann				
CHK	K.E. Brandau				
APVD	K.E. Brandau	NO.	DATE	REVISION	BY

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

STEEL RAILING TYPE S-1		SHEET 17
CATLIN ROAD DISTRICT SECTION 02-04130-00-BR VERMILION COUNTY		DWG NO. 6068-31.0gn DATE FEB 2006 PROJ NO. 5C68