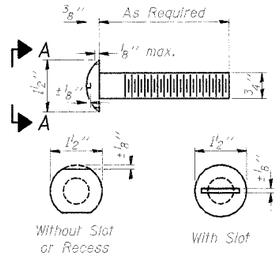
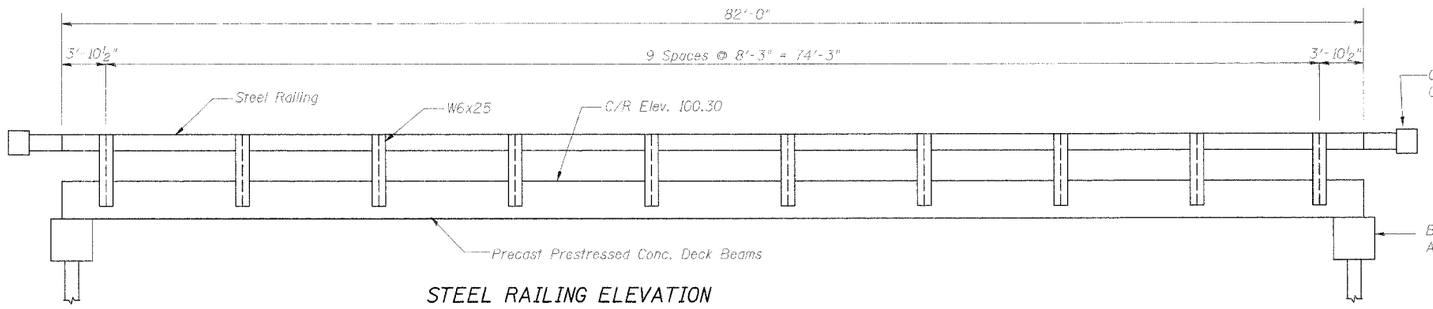
CONTRACT NO. 91349

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 261	*	Vermilion	10	8
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	

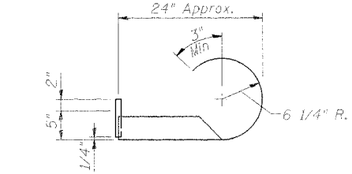
*94-14129-00-BR

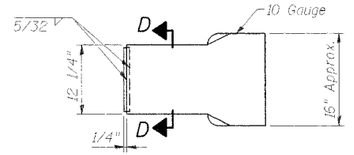


VIEW A-A
ROUND HEAD BOLT

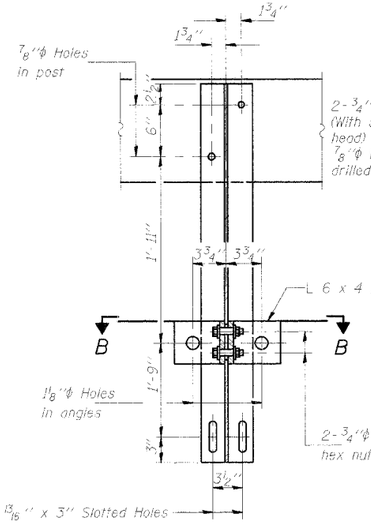


STEEL RAILING ELEVATION

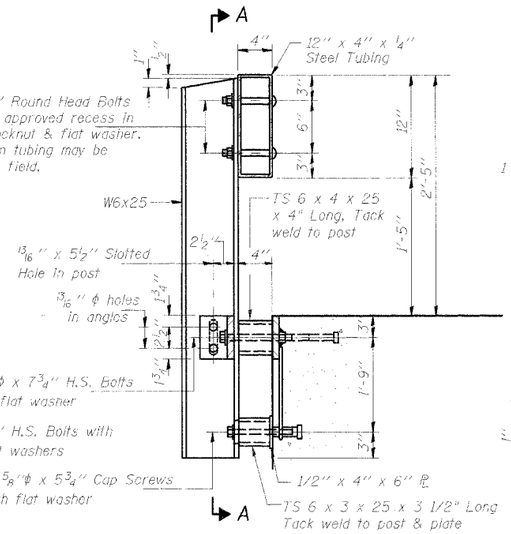




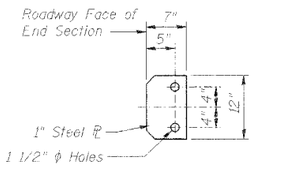
CURLED END SECTION DETAIL



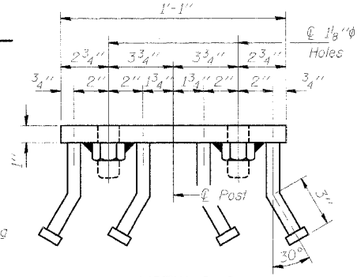
SECTION A-A



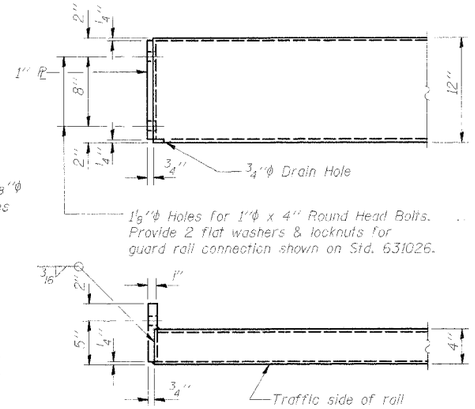
SECTION AT RAIL POST



SECTION D-D



VIEW C-C



END OF RAIL DETAILS

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.

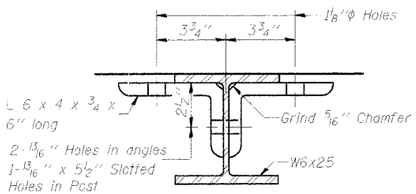
All posts, railing, rail splices, anchor devices and angles shall be galvanized after shop fabrication in accordance with AASHTO M-111 and ASTM A-385. Galvanized rail shall not be painted.

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.

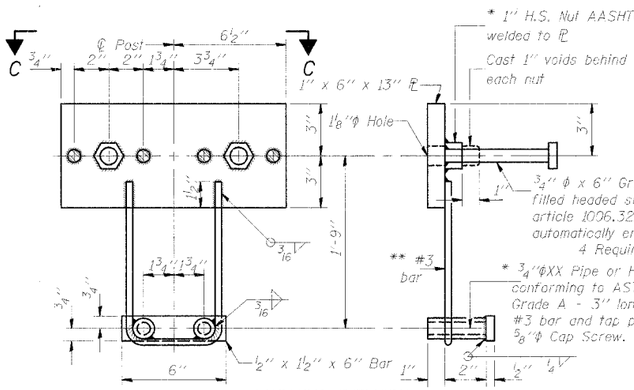
All field drilled holes shall be coated with an approved zinc rich paint before erection.

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"ϕ 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"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.



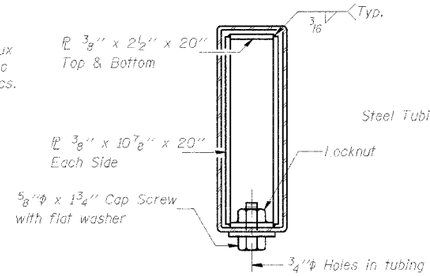
SECTION B-B



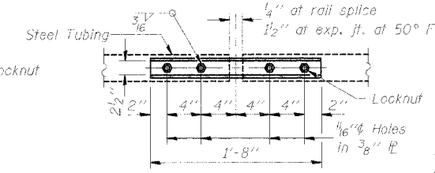
ANCHOR DEVICE

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

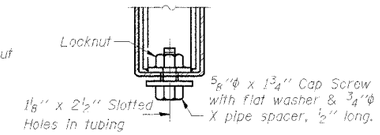
** Whenever the lower insert assemblies interfere with strand locations, the #3 bars shall be cut and adjusted in order to allow raising or lowering of the lower inserts. Maximum adjustment not to exceed 1/2".



SECTIONS AT RAIL SPLICE



PLAN-BOTT. SPLICE PL TYPICAL



RAIL SPLICE CONNECTION AT EXPANSION JT.

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing Type S-1	Foot	164

DSGN	D.W. Walter				
DR	D.W. Walter				
CHK	K.E. Brandau				
APVD	K.E. Brandau				
NO.	DATE	REVISION	BY	APVD	

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

STEEL RAILING TYPE S-1
OAKWOOD ROAD DISTRICT
SECTION 94-14129-00-BR
VERMILION COUNTY

SHEET 8
DWG NO. oak2-s1.dgn
DATE DEC. 2005
PROJ NO. 97062