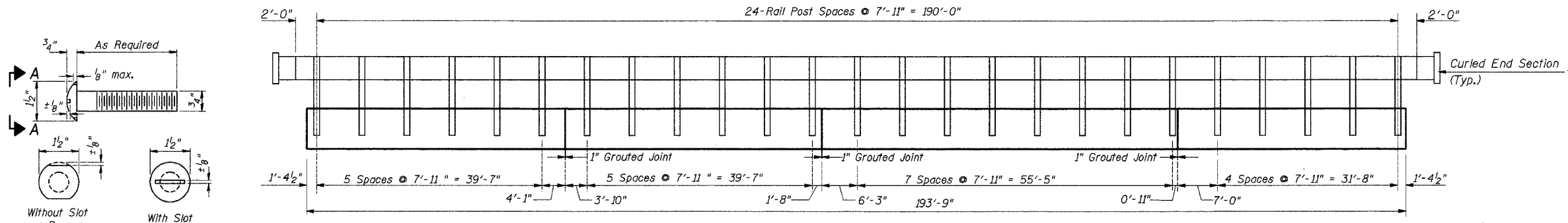


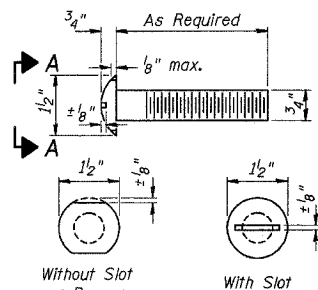
T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
235	93-02109-00-BR	CHRISTIAN	18	13

FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT-

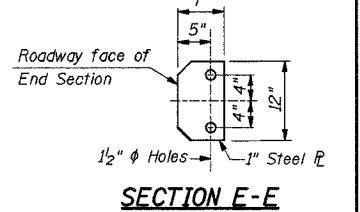
SHEET 5 OF 10



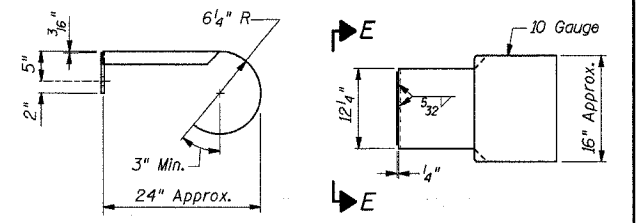
OUTSIDE ELEVATION



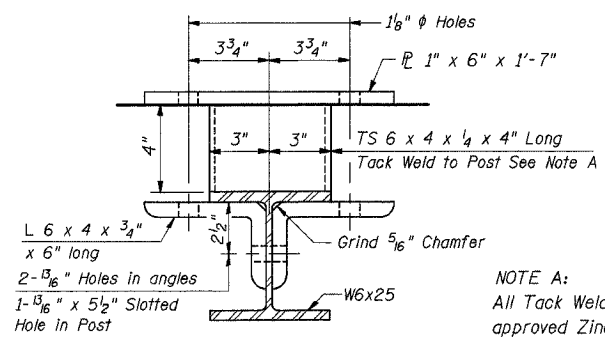
VIEW A-A  
ROUND HEAD BOLT



SECTION E-E



CURLLED END SECTION DETAILS



SECTION B-B

NOTE A:  
All Tack Welds shall be coated with an approved Zinc Rich Paint or Galvanized.  
(Cost incidental to Type S-1 Rail)

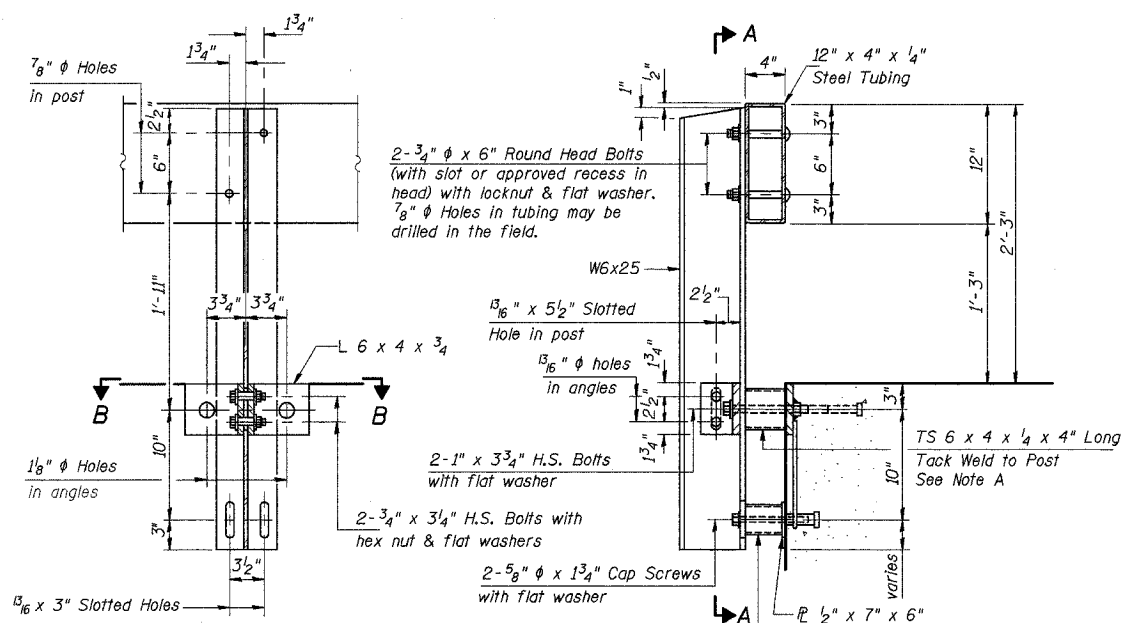
NOTES

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 Article 505.04(f)(2) 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.  
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.  
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 incidental to STEEL BRIDGE RAIL, TYPE S-1  
Bolts located at expansion joint shall be provided with locknuts and shall be tightened only to a point that will allow railing movement.  
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)(2) 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

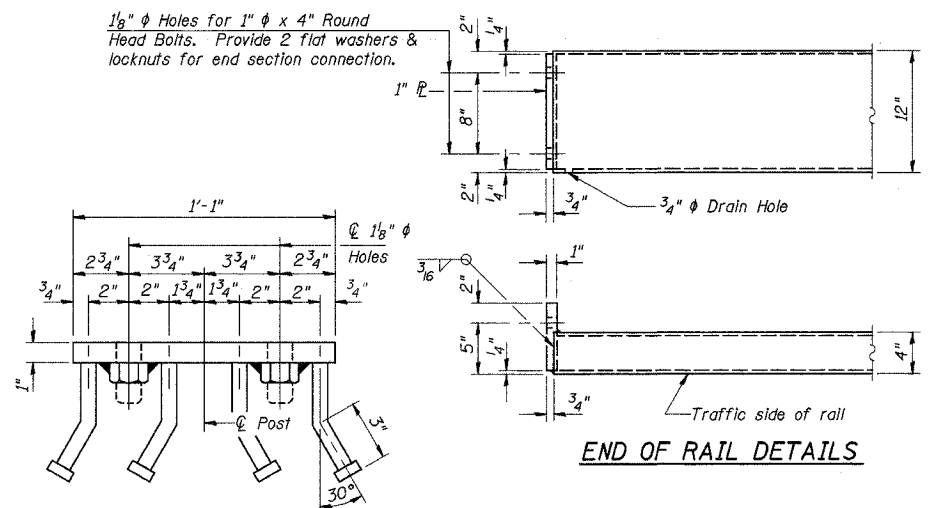
Item	Unit	Quantity
Steel Railing Type S-1	Foot	388

STEEL RAILING TYPE S-1 DETAILS  
T.R. 235 OVER BEAR CREEK  
SECTION 93-02109-00-BR  
CHRISTIAN COUNTY  
STR. NO. 011-3400  
STA. 6+24.42



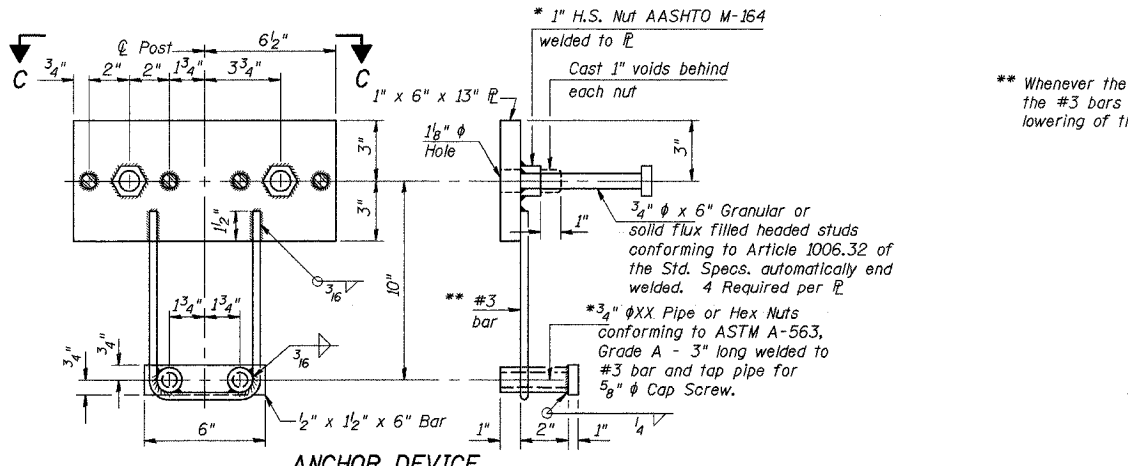
SECTION A-A

SECTION AT RAIL POST



VIEW C-C

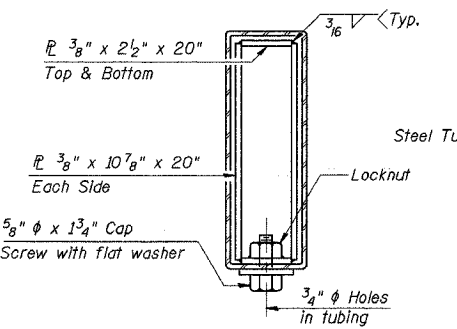
END OF RAIL DETAILS



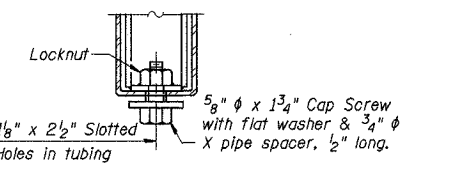
ANCHOR DEVICE

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

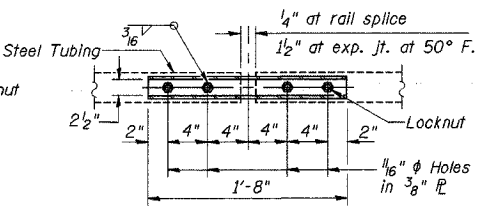
\*\* Whenever the lower insert assemblies interfere with strand locations, the #3 bars shall be cut and adjusted in order to allow raising or lowering of the lower inserts. Maximum adjustment not to exceed 1/2".



SECTIONS AT RAIL SPLICE



RAIL SPLICE CONNECTION AT EXPANSION JT.



PLAN-BOTT. SPLICE TYPICAL

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WWW.IE-CONSULTANTS.COM

DESIGNED BY: G.B.M.	CHECKED BY: D.R.B.	DRAWN BY: T.H.W.	DATE: 5-03-04
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