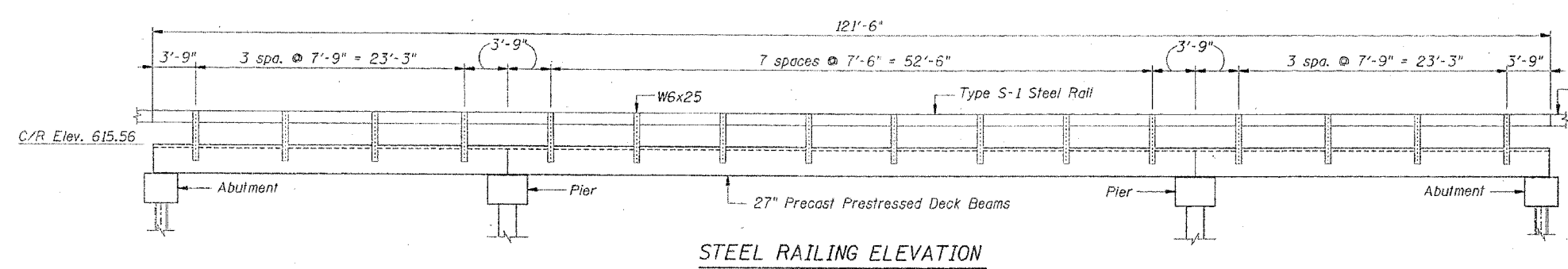
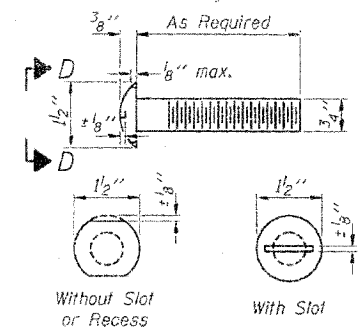


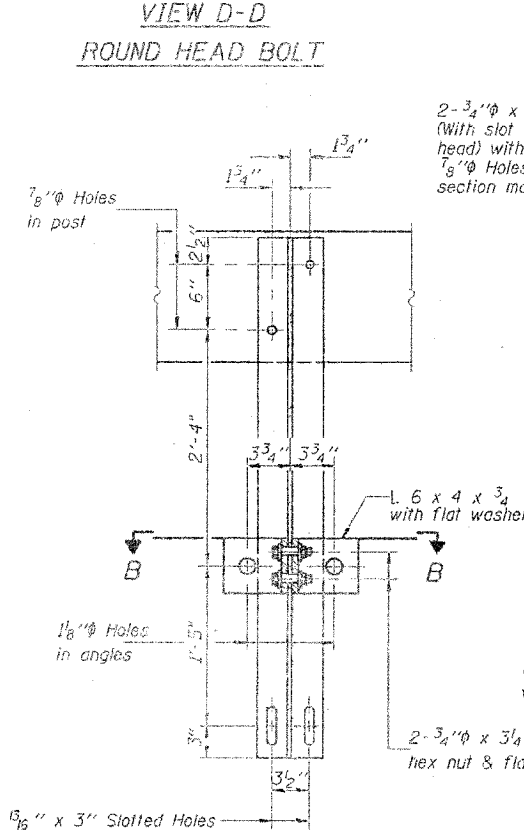
PROJECT NO.	SECTION	COUNTY	SHEET	TOTAL SHEETS
CH 38	*	Kankakee	83	56
CONTRACT NO. 87314 *02-00284-00-WR				



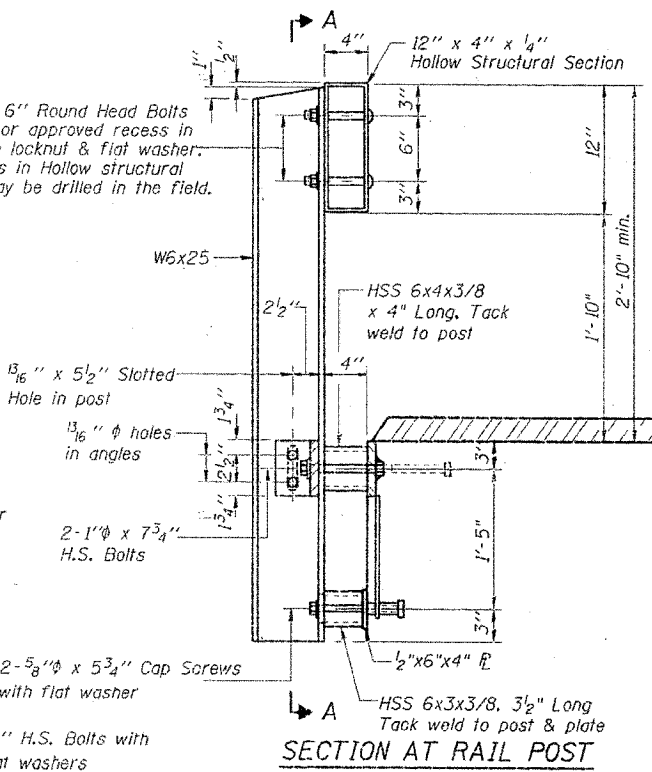
See guardrail information on Plan & Profile

VIEW D-D
ROUND HEAD BOLT

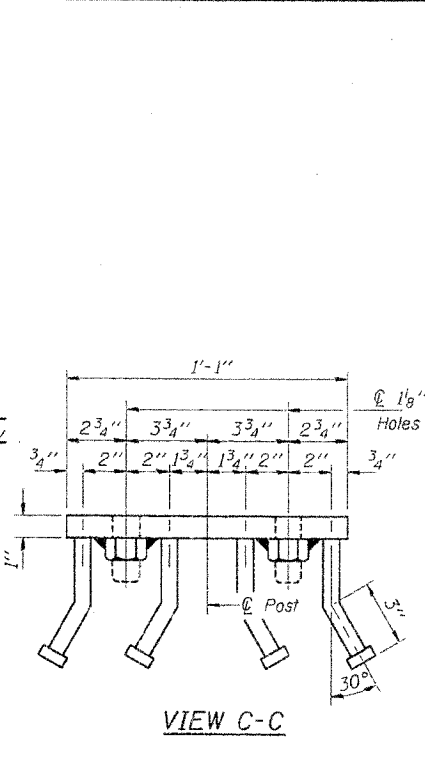
STEEL RAILING ELEVATION



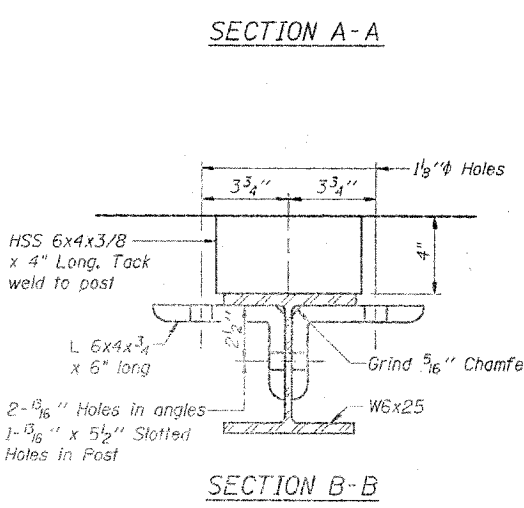
SECTION A-A



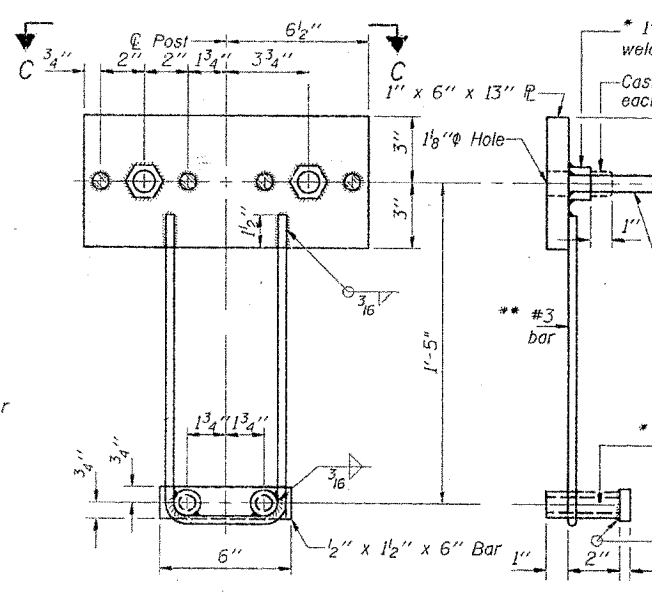
SECTION AT RAIL POST



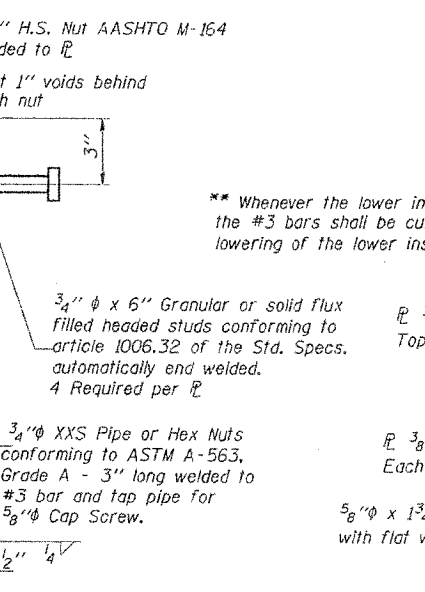
VIEW C-C



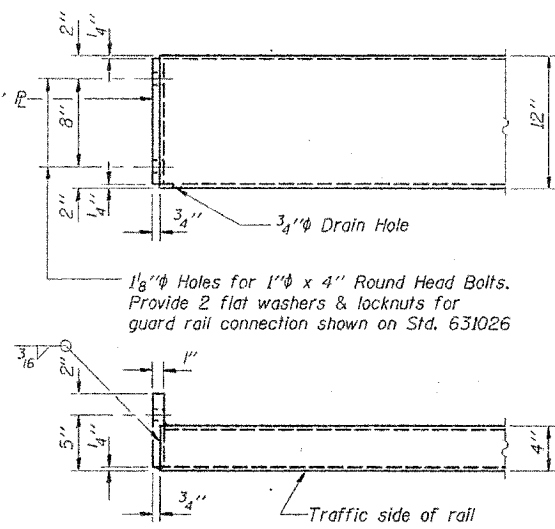
SECTION B-B



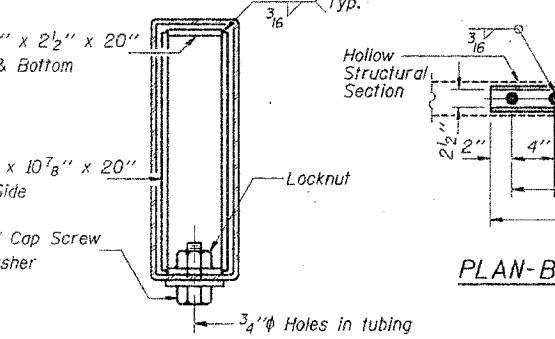
ANCHOR DEVICE



SECTIONS AT RAIL SPLICE



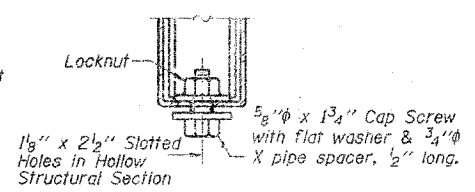
END OF RAIL DETAILS



PLAN-BOTT. SPLICE TYPICAL

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing Type S-1	Foot	243



RAIL SPLICE CONNECTION AT EXPANSION JT.

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 1/2 inch fabric bearing pad between the post and concrete.

The 3/4 inch 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 inch 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 inch cap screws in bottom of posts shall be tightened to a snug fit only.

** 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 inch x 6 inch 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 inch XXS Pipe or Hex Nuts conforming to ASTM A-563, Grade A - 3 inch long welded to #3 bar and tap pipe for 5/8 inch Cap Screw.

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

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

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STEEL RAILING TYPE S-1
COUNTY HIGHWAY 38
SECTION 02-00284-00-WR
KANKAKEE COUNTY

SHEET	56
DWG NO.	3104-st.dgn
DATE	JUL 2006
PROJ NO.	3104