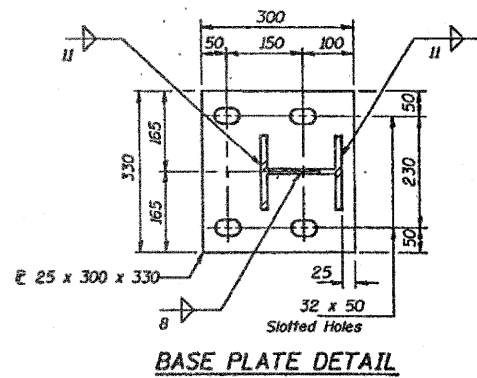


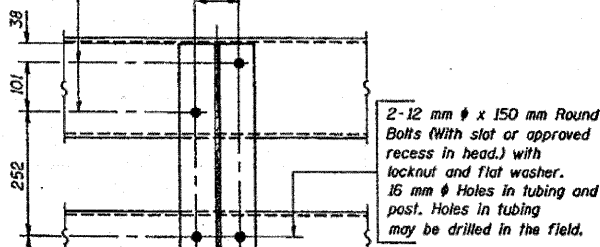
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

* (37-3) RS-1, (37-4) RS & 37-4B-D

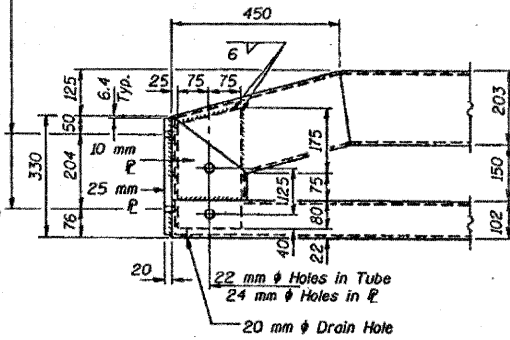
DATE	DESIGNER	CHECKED	DATE	SHEET NO.
7/14/97	HENRY	1/4/98	11/9	3



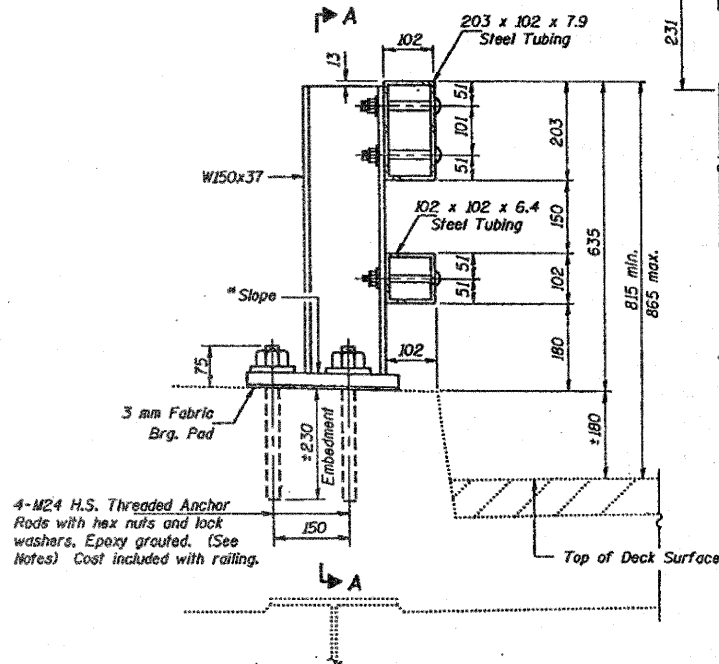
2- 20 mm ϕ x 150 mm Round Head Bolts (With slot or approved recess in head.) with locknut and flat washer. 22 mm ϕ Holes in tubing and posts. Holes in tubing may be drilled in the field.



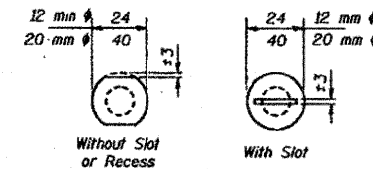
27 mm ϕ Holes for 24 mm ϕ x 100 mm Round Head Bolts. Provide 2 flat washers & locknuts for guard rail connection shown on Std. 631026.



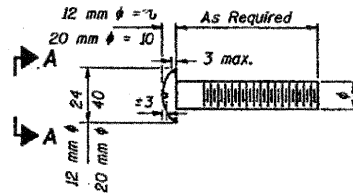
END OF RAIL DETAILS



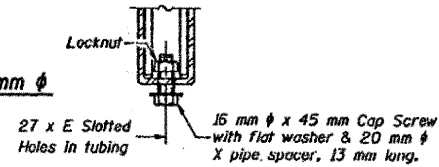
SECTION AT RAIL POST



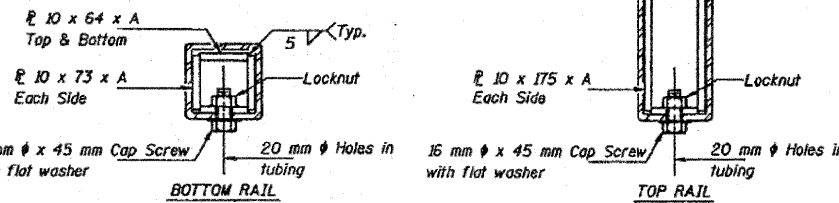
VIEW A-A



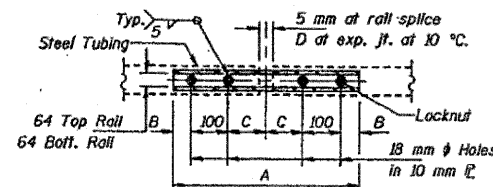
ROUND HEAD BOLTS



RAIL SPLICE CONNECTION AT EXPANSION JT.



SECTIONS AT RAIL SPLICE



PLAN-BOTT. SPLICE TYPICAL

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 20 N m at 18 °C.
All other steel shapes and plates shall conform to the requirements of AASHTO M 270M Grade 250 except posts shall conform to AASHTO M 270M, Grade 345.

Bolts, cap screws and nuts shall conform to the requirements of ASTM designation A 307 except that threaded rods, nuts and washers shall conform to AASHTO M 164M.
All bolts, nuts, cap screws, washers and lock washers shall be galvanized according to AASHTO M 2.32.
All posts, railing, rail splices and anchor rods shall be galvanized after shop fabrication according to AASHTO M 111 and ASTM A 385. Galvanized rail shall not be painted.

Railing shall be according to Section 509 of the Standard Specifications, except as noted, and will be paid for at the contract unit price per meter for STEEL BRIDGE RAIL.

All field drilled holes shall be coated with an approved zinc rich paint before erection.
Posts shall not be located closer than 400 mm to an existing bridge expansion joint or end of bridge.

STEEL BRIDGE RAIL expansion joint shall be provided between any two (2) posts which span a bridge expansion joint. Bolts located at expansion joint shall be provided with locknuts and shall be tightened only to a point that will allow railing movement.

Provide one 3 mm and two 1.6 mm steel shims for 25% of the posts. Shim shall be similar to base plates in size and holes.

Expansion joint width shall be "D" at 10 °C and shall be adjusted for other temperatures according to Article 503.10(c) of the Standard Specifications.

The Contractor shall use the capsule or the adhesive cartridge type anchor rods that have been previously tested and given a prior approval by the Department. The Contractor shall install these anchor rods in pre-drilled holes according to the manufacturer's recommendations and procedures. The capsule or the adhesive cartridge shall be a sealed glass capsule or a sealed glass adhesive cartridge containing premeasured amounts of the adhesive chemical.

Nuts for 24 mm ϕ threaded anchor rods connecting the base plate to the concrete shall be tightened to a snug fit and given an additional 1/4 turn.
All dimensions are in millimeters (mm) except as noted.

**EXISTING BRIDGE PLANS
FOR REFERENCE ONLY**

BILL OF MATERIAL

Item	Unit	Quantity
Steel Bridge Rail	m	82.0

SPLICE DIMENSIONS

T	D	A	B	C	E
≤100	65	500	50	100	65
>100 ≤165	95	610	65	140	90
>165 ≤230	125	710	90	165	230
>230 ≤330	175	860	115	215	280
Rail Splice	6	500	50	100	—

T = Total movement of expansion joint as shown on the design plans.

**SN 037-0018
STEEL BRIDGE RAIL
CURB MOUNTED
(2399)**

DESIGNED	19
CHECKED	
DRAWN	
CHECKED	

R-31 (M) 4-30-97

EXAMINED	CHIEF OF BRIDGE DESIGN
PASSED	CHIEF OF BRIDGES AND STRUCTURES

(1.90 m Maximum Post Spacing)

REVISED 11-21-97