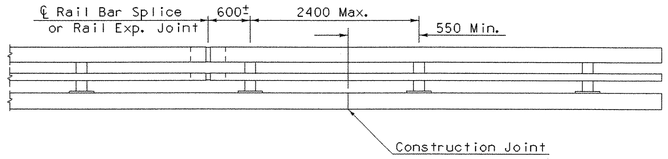
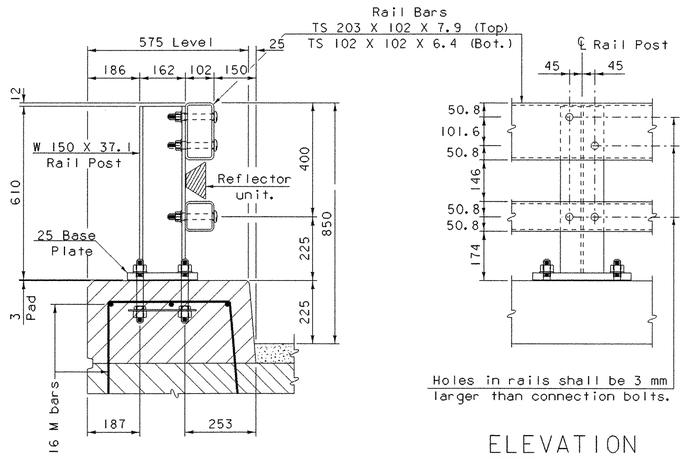
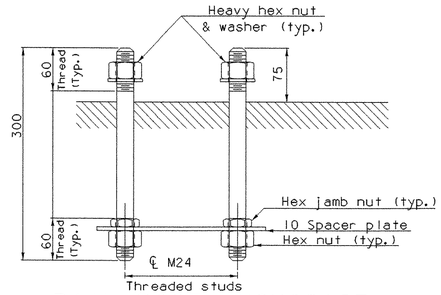


BRIDGE RAILING ELEVATION

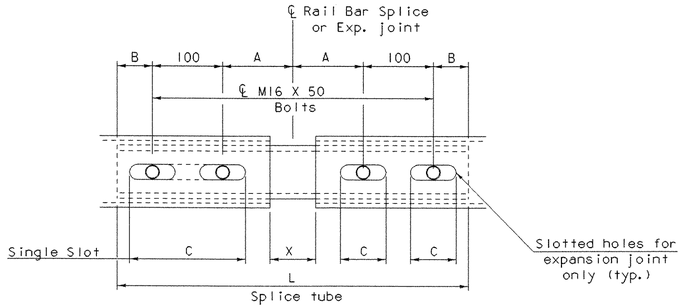


TYPICAL SECTION

ELEVATION

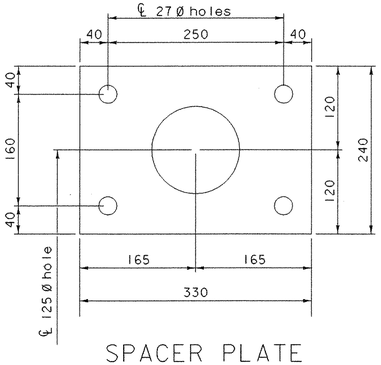


RAIL POST ANCHORAGE

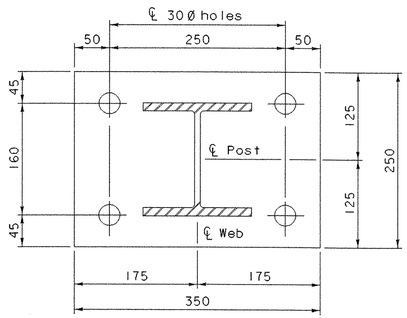


RAIL BAR SPLICE & RAIL EXP. JOINT DETAIL

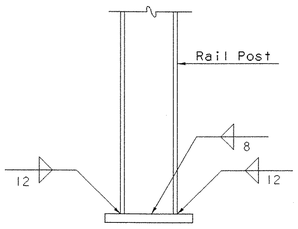
[Bottom View]



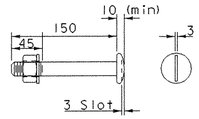
SPACER PLATE



POST & BASE PLATE



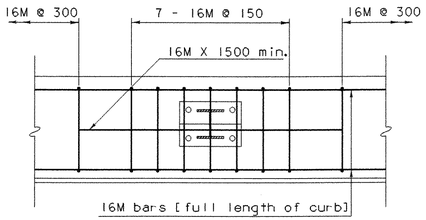
BASE WELD DETAIL



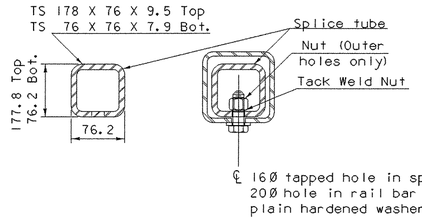
M20X2 M164M (TYPE 1) ROUND HEAD BOLT

[with washer & prevailing torque type lock nut]
[See Note No. 9]

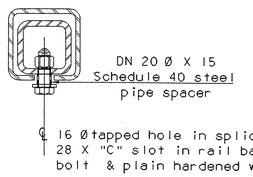
Note: Only full diameter body bolts will be allowed.



CURB REINFORCING PLAN



RAIL BAR SPLICE SECTION



EXPANSION JOINT SECTION

For details not shown, see "Rail Bar Splice Section"

SPLICE & EXPANSION JOINT TABLE					
T	A	B	C	L	X
Splice	100	50	--	500	20
≤ 100	100	50	65	500	65
~~>100 ≤165~~	~~140~~	~~60~~	~~90~~	~~600~~	~~100~~
~~>165 ≤225~~	~~165~~	~~85~~	~~225*~~	~~700~~	~~125~~
~~>225 ≤330~~	~~215~~	~~110~~	~~275*~~	~~850~~	~~175~~

T = Total Movement * = Single Slot

NOTES

1. All work and materials shall conform to the provisions of Section 525 - Railings of the Standard Specifications for Construction.

2. Tubing and posts shall meet the requirements of Section 732 - Railing materials of the Standard Specifications for Construction.

3. All exposed cut or sheared edges shall be rounded to a 1.6 mm radius and be free of burrs.

4. Rail posts shall be set normal to grade.

5. Sections of rail bar shall be attached to a minimum of two rail posts and preferably to at least four posts.

6. Rail bar expansion joints shall be provided in any rail bay spanning a superstructure expansion joint. Expansion joint width shall be "X" at 7 °C and will be adjusted in the field by the Engineer.

7. All parts shall be galvanized after fabrication in accordance with AASHTO M111, except that hardware shall meet the requirements of AASHTO M232.

8. Rail posts anchoring nuts shall be tightened to a snug fit and given an additional 45 degree turn.

9. Rail bars shall be attached using M20 full diameter body AASHTO M164M (Type 1) round head bolts inserted through the face of the bar. Holes in posts shall be 2 mm larger than the bolt size.

10. Holes in rails for rail bar attachment may be field - drilled. Holes shall be coated with an approved zinc - rich paint prior to erection.

11. If there is a conflict between these Standard Details and the Design Drawings, the requirements of the Design drawings shall be followed.

12. Any bending of rail shall be by shop procedure only.

13. The fabricator shall submit shop drawings including welding procedures to the structures section for approval in accordance with the provision of 506.04, shop drawings. All welding shall conform with section 506.10.

14. The drop-weight tear test in section 732 shall not apply to the structural tubing on this standard.

MATERIALS

Rail bars.....ASTM A500, Grade B or ASTM A501
Rail posts.....ASTM A709/A709M, Grade 345
All other shapes & plates.....ASTM A709/A709M, Grade 250
Anchor studs.....ASTM F568M, Class 8.8
All other bolts [unless noted].....AASHTO M164M, Type 1

Nuts for AASHTO M164M bolts shall comply with AASHTO M291M. Nuts for anchor studs shall comply with ASTM A563.

Washers shall comply with AASHTO M293M (ASTM F436M) specification.

3 mm pad shall comply with standard specification subsection 731.01 or 731.02.

Set screws for delineation devices shall conform to ASTM F880M, Class A1-70, Condition CW, Alloy Type 304.

SHEET NAME: NETC BRIDGE RAILING DETAILS (1)

PROJECT NAME: LEICESTER
PROJECT NUMBER: BRF 0160(3)S
HIGHWAY NO.: TH 1
BRIDGE NO.: 6
OVER: OTTER CREEK

FILE NAME: 95J288\Structures\sJ288rdl.dgn
PROJECT MANAGER: R. R. WHITCOMB
DESIGNED BY: C. CARLSON
BRIDGE SHEET NUMBER:
PLOT DATE: 17-AUG-2005
DRAWN BY: G. ROY
IPARM NAME: sJ288brdl.i
SHEET 56 OF 90