RAIL BAR SPLICE & EXPANSION JOINT DETAIL

(Bottom View)

SPLICE TUBE DIMENSIONS		
	TS 8" X 4"	TS 4" X 4"
Top & Bot. Plates	2½" X⅜" "L"	2⅝" X⅜" "L"
Side Plates	6¾" X⅜" "L"	2⅞" X⅜" "L"

SPLICE & EXPANSION JOINT TABLE					
"T"	"A"	"B"	"C"	"L"	"X"
Splice	4"	2"	--	1'-8"	¾"
≤ 4"	4"	2"	2½"	1'-8"	2½"
> 4" ≤ 6½"	5½"	2½"	3½"	2'-0"	3¾"
> 6½" ≤ 9"	6½"	3½"	9" *	2'-4"	5"
> 9" ≤ 13"	8½"	4½"	11" *	2'-10"	7"

T = Total Movement * = Single Slot

POST & BASE PLATE PLAN

ANCHOR PLATE PLAN

RAIL BAR CAP

RIBBED NECK BOLT

(with washer & lock nut)

(See Note No. 9)

BASE WELD DETAIL

CURB REINFORCEMENT STEEL PLAN

SIDEWALK REINFORCEMENT STEEL PLAN

℄ 1 1/16" dia. hole in plate & 1⅛" x "C" slot in rail bar for cap screw & plain hardened washer

EXPANSION JOINT SECTION

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

TRANSITION BARRIER PLAN

(Typical all transition barrier types)

RAIL POST ANCHORAGE

NOTES:

1. Conform all work and materials to the provisions of the Standard Specifications for Road and Bridge Construction.
2. Fabricate and inspect the post-to-base welds in accordance with the latest edition of the AWS D1.5, Bridge Welding Code.
3. Ensure that all exposed cut or sheared edges are rounded and free of burrs.
4. Set rail posts normal to grade unless otherwise shown.
5. Attach Lengths of rail bar to a minimum of two rail posts and to at least four posts whenever possible.
6. Provide rail bar expansion joints in any rail bay spanning a superstructure expansion joint. Ensure that expansion joint width is "X" at 45° F and adjusted in the field by the RE. Refer to detail and table for dimension "X".
7. Galvanize all parts after fabrication in accordance with ASTM A123, except that hardware to meet the requirements of either ASTM A153 or ASTM B695, Class 50, Type 1. blast- clean parts except hardware prior to galvanizing in accordance with SSPC - SP6.
8. Set anchor bolts with a template and place securely in their final position prior to the placement of the embedding concrete. Install post anchor assemblies to within 3/16 inch of theoretical horizontal and vertical location. Ensure that post bearing areas are dressed smooth and true to grade. Prior to post erection, finish each rail post location to the theoretical elevation determined from profile grade, cross slope and curb height until it is within 3/16 inch of theoretical elevation, as measured at the top of concrete. Use preformed pads to adjust the rail posts for height and alignment. Ensure that the preformed pads are neoprene meeting the elastomer properties for Grade 0 or Grade 2 of AASHTO M 251. Ensure that the number of preformed pads supplied is 10% in excess of the theoretical minimum number required. Tight nuts securing the post base plate to a snug fit and given an additional ⅛ turn. After erection of the railing, the contractor must clean the whole assembly, to present a neat and uniform appearance.
9. Attach rail bars alternatively to posts using ⅝" dia. - ASTM F1554, Grade 36 or 50 bolts (5/8" dia. - ASTM A307 bolts may be substituted) inserted through the face of the rail bar. Ensure that bolts are round or dome head and may be rib neck, slotted, wrench head or tension control (TC or twist-off). Use 1/16" larger holes than the diameter of the bolt in posts. Drill holes in rail bars to size as follows:

   Slotted, wrench head or TC bolts --------1/16" larger than bolt diameter
   Rib neck bolts ----- size appropriate to accommodate an interference fit

   Use 6" length bolts for fastening the rail bars to the posts and include a flat washer under the nut.
10. Field - drill holes in rail bars and coat with an approved zinc-rich paint prior to erection.
11. Tight bolts in expansion joints only to a point that will allow rail movement.
12. If there is a conflict between these Standard Details and the Working Drawings, the Contractor must notify the RE immediately.
13. Ensure that ⅛" pads under post base plate are fabric pads conforming to the Standard Specifications.

MATERIALS:

Rail bars ---------- ASTM A500, Grade B
Rail posts ---------- ASTM A709, Grade 50
All other shapes & plates ---------- ASTM A709, Grade 36
Anchor bolts ---- ASTM F1554, Grade 55

STEEL 4-BAR BRIDGE RAILING DETAILS

BCD-507-11

NEW JERSEY DEPARTMENT OF TRANSPORTATION
BUREAU OF STRUCTURAL ENGINEERING

BRIDGE CONSTRUCTION DETAILS

BCD-507-11.1

BDC15D-04 -- RAILING TITLE, MATERIALS & NOTES 2,3,7,8,9
BDC12D-01 (NOTE 6)
BDC12D-01 ORIGINAL SHEET

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