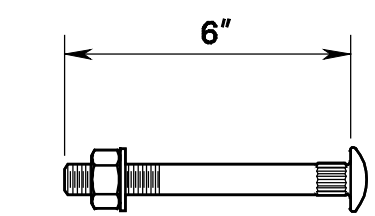
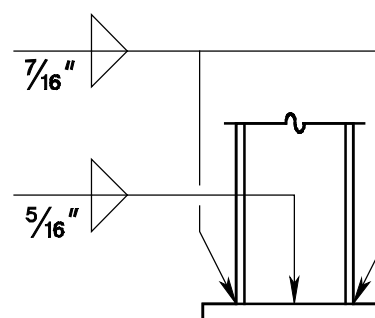


* Weld nuts to plate before assembling splice tube

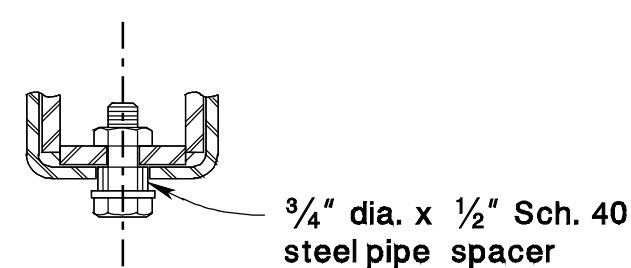
RAIL BAR SPICE SECTION



RIBBED NECK BOLT
(with washer & lock nut)
(See Note No. 9)



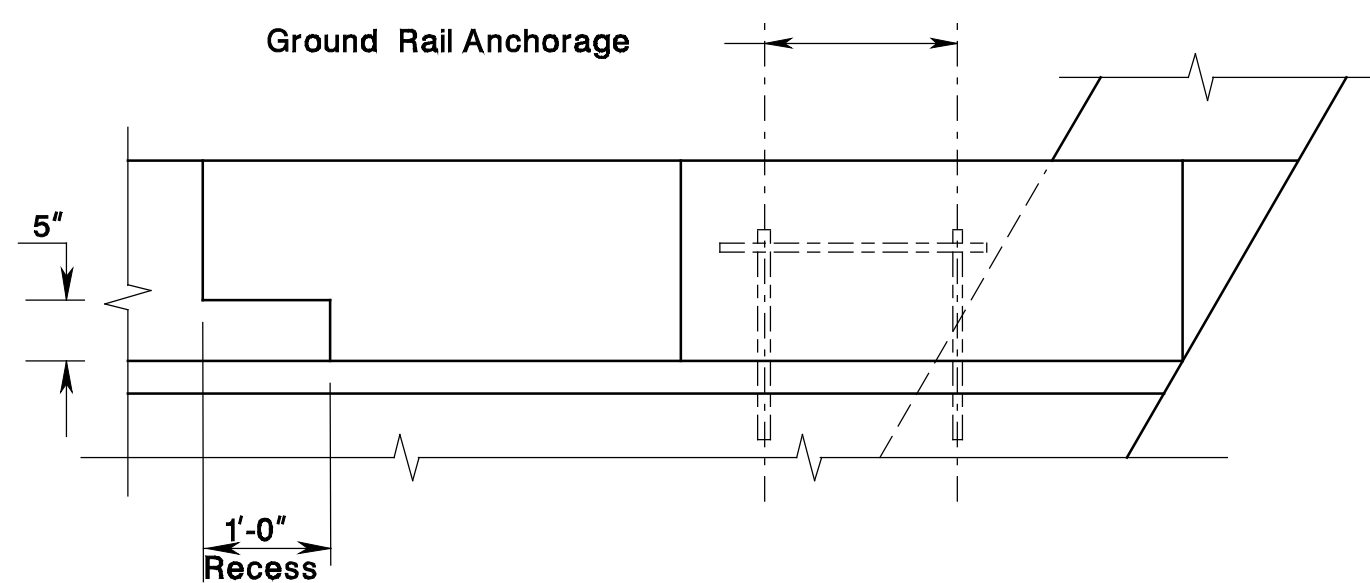
BASE WELD DETAIL



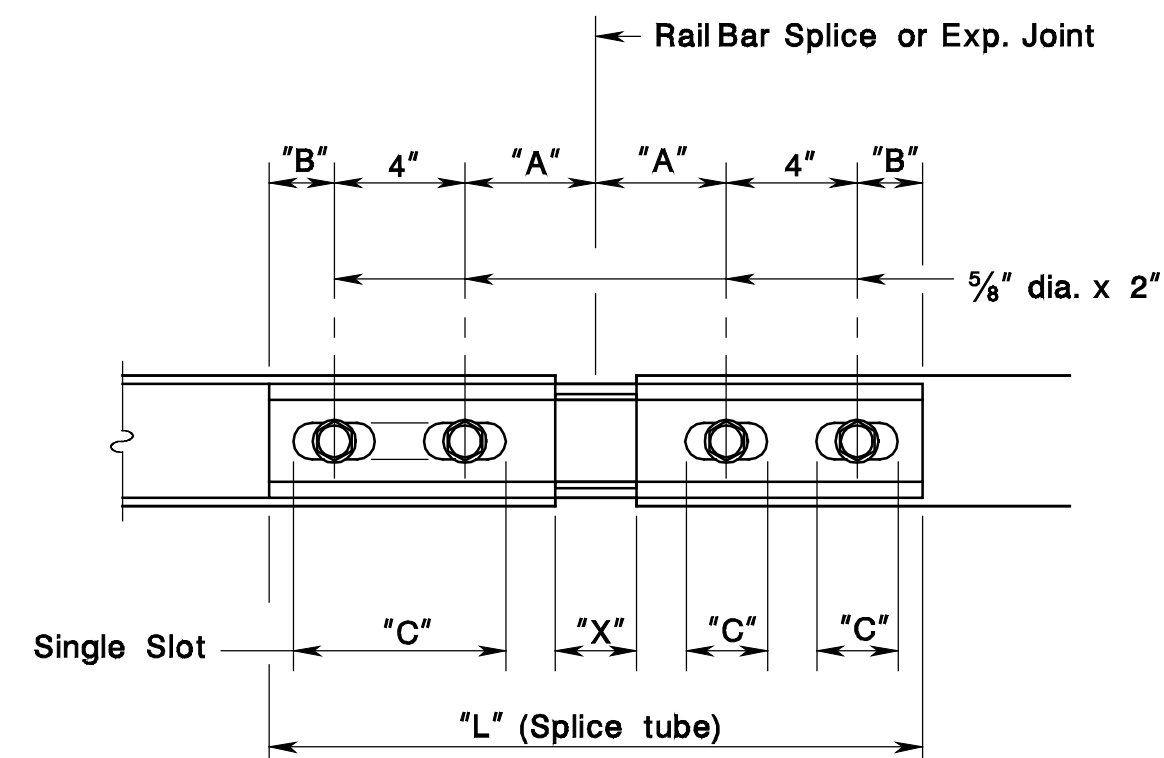
3/4" dia. hole in plate & 1/8" x "C" slot in rail bar for cap screw & plain hardened washer

EXPANSION JOINT SECTION

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



TRANSITION BARRIER PLAN
(Typical all transition barrier types)

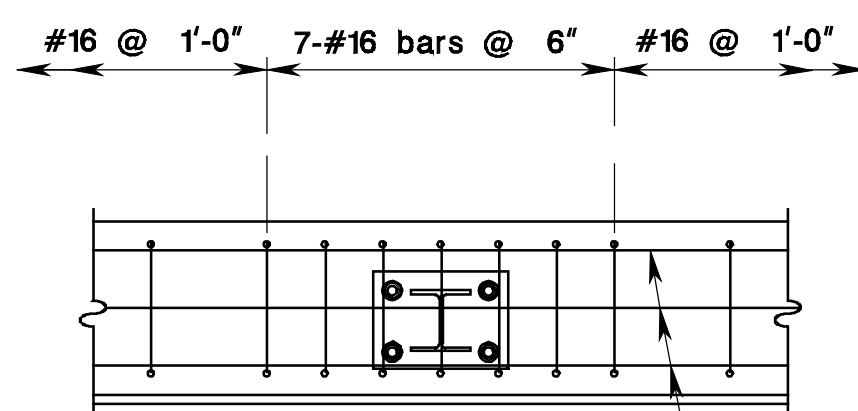


RAIL BAR SPICE & EXPANSION JOINT DETAIL
(Bottom View)

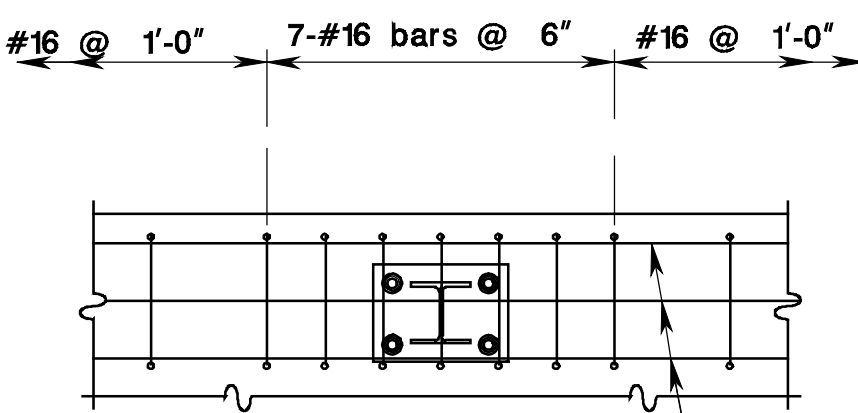
SPICE TUBE DIMENSIONS			
	TS 8" X 4"	TS 4" X 4"	
Top & Bot. Plates	2 1/2" X 3/8" "L"	2 5/8" X 3/8" "L"	
Side Plates	6 3/4" X 3/8" "L"	2 7/8" X 3/8" "L"	

SPICE & EXPANSION JOINT TABLE					
"T"	"A"	"B"	"C"	"L"	"X"
Splice	4"	2"	--	1'-8"	3/4"
≤ 4"	4"	2"	2 1/2"	1'-8"	2 1/2"
> 4" ≤ 6 1/2"	5 1/2"	2 1/2"	3 1/2"	2'-0"	3 3/4"
> 6 1/2" ≤ 9"	6 1/2"	3 1/2"	9" *	2'-4"	5"
> 9" ≤ 13"	8 1/2"	4 1/2"	11" *	2'-10"	7"

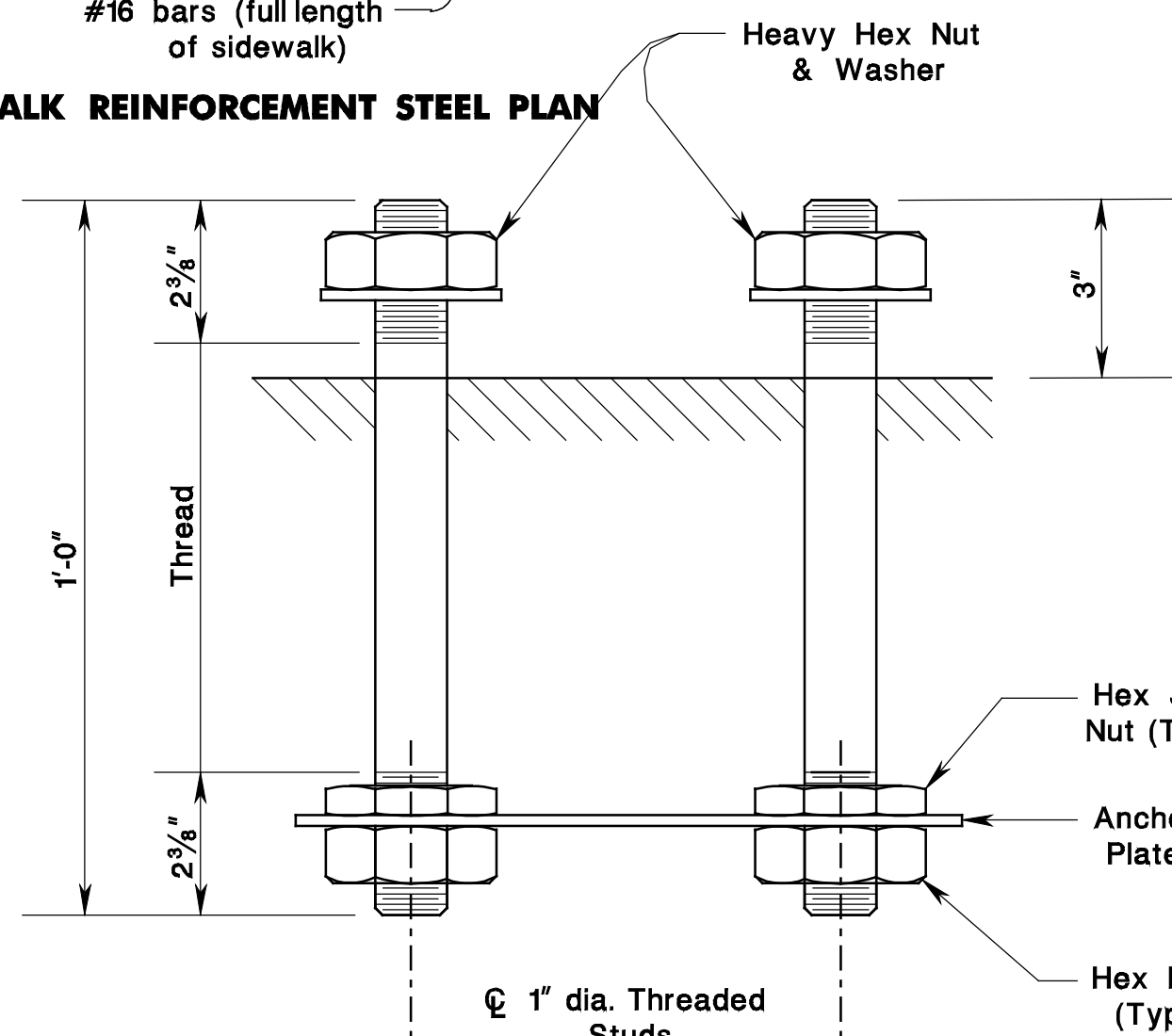
T = Total Movement * = Single Slot



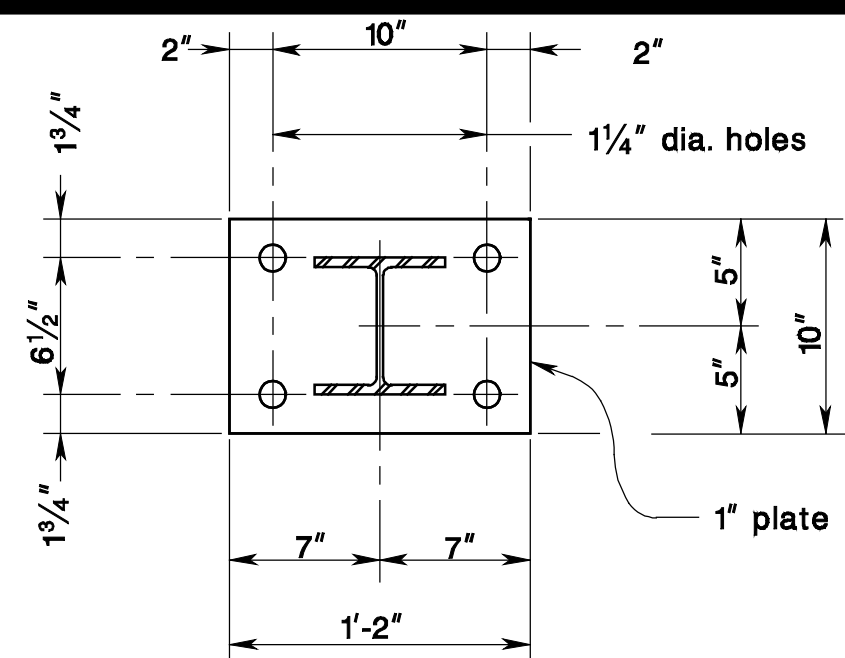
CURB REINFORCEMENT STEEL PLAN



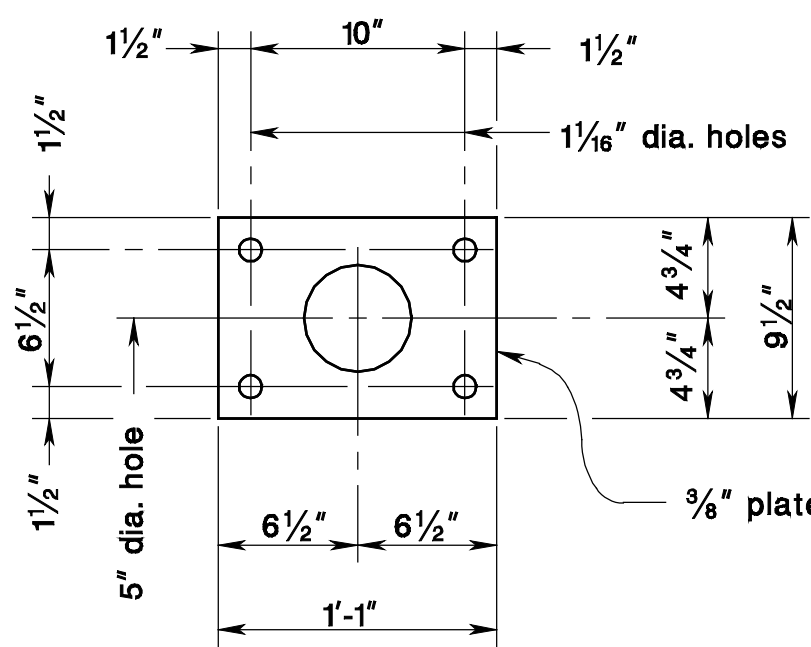
SIDEWALK REINFORCEMENT STEEL PLAN



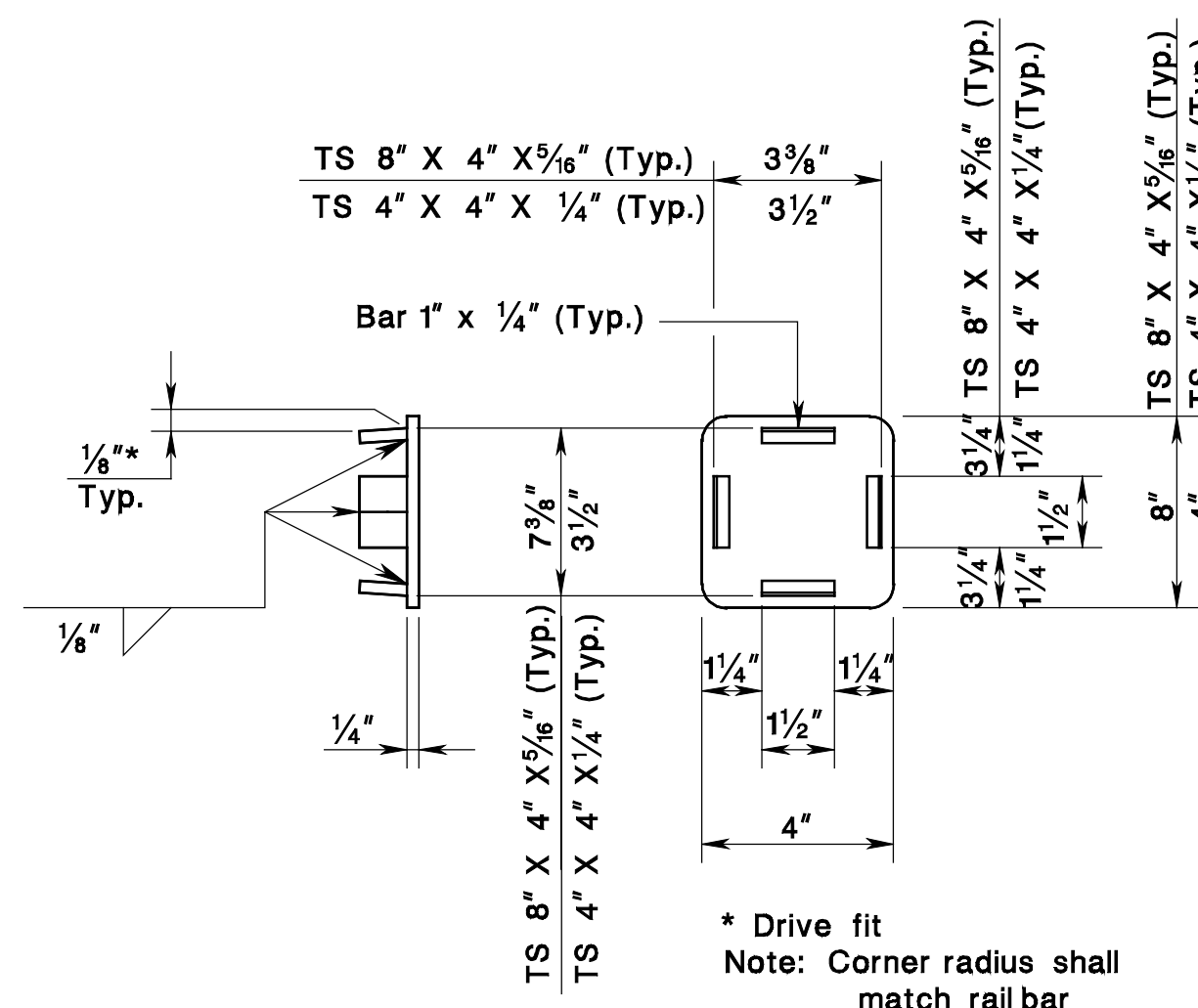
RAIL POST ANCHORAGE



POST & BASE PLATE PLAN



ANCHOR PLATE PLAN



RAIL BAR CAP

MATERIALS:

- Rail bars ----- ASTM A500, Grade B
- Rail posts ----- AASHTO M223 (ASTM A572), Grade 50
- All other shapes & plates ----- AASHTO M270 (ASTM A709), Grade 36
- Anchor studs, washers & exposed nuts ---- ASTM F1554, Grade 55
- All other bolts & nuts (unless noted) ----- ASTM F1554, Grade 36 or 50

NOTES:

- All work and materials shall conform to the provisions of the Standard Specifications for Road and Bridge Construction.
- Twenty five percent of the post-to-base welds in a production lot shall be tested by the Magnetic Particle Method. If rejectable discontinuities are found, another twenty five percent of that production lot shall be tested. If rejectable discontinuities are found in the second twenty five percent, all post-to-base welds in that lot shall be tested. Acceptance criteria shall be in accordance with the latest edition of the AWS D1.5, Bridge Welding Code.
- All exposed cut or sheared edges shall be rounded and free of burrs. The inside weld flash of tubing shall be removed at splices and expansion joints.
- Rail posts shall be set normal to grade unless otherwise shown.
- Lengths of rail bar shall be attached to a minimum of two rail posts and to at least four posts whenever possible.
- Rail bar expansion joints shall be provided in any rail bay spanning a superstructure expansion joint. Expansion joint width shall be "X" at 45° F and will be adjusted in the field by the RE. Refer to detail and table for dimension "X".
- All parts shall be galvanized after fabrication in accordance with AASHTO M11, except that hardware shall meet the requirements of either ASTM A153 or ASTM B695, Class 50, Type 1. Parts except hardware shall be blast-cleaned prior to galvanizing in accordance with SSPC - SP6.
- Anchor bolts or anchor bolt sleeves shall be set with a template and shall be securely placed in their final position prior to the placement of the embedding concrete. Post anchor assemblies shall be installed to within 3/16 inch of theoretical horizontal and vertical location. Post bearing areas shall be dressed smooth and true to grade. Prior to post erection, each rail post location shall be finished to the theoretical elevation determined from profile grade, cross slope and curb height and will not be acceptable until it is within 3/16 inch of theoretical elevation, as measured at the top of concrete. Preformed pads shall be used to adjust the rail posts for height and alignment. The number of preformed pads supplied shall be 10 % in excess of the theoretical minimum number required. Nuts securing the post base plate shall be tightened to a snug fit and given an additional 1/8 turn. After erection of the railing, the contractor shall clean the whole assembly, to present a neat and uniform appearance.
- Rail bars shall alternatively be attached to posts using 5/8 inch dia. - ASTM F1554, Grade 36 or 50 bolts (5/8 inch dia. - ASTM A325 bolts may be substituted) inserted through the face of the rail bar. Bolts shall be round or dome head and may be rib neck, slotted, wrench head or tension control (TC or twist-off). Holes in posts shall be 1/16 inch larger than the diameter of the bolt. Holes in rail bars shall be drilled to size as follows:

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

All bolts for fastening the rail bars to the posts shall be 6 inch in length and shall include a flat washer under the nut.
- Holes in rail bars shall be field - drilled and shall be coated with an approved zinc-rich paint prior to erection.
- Bolts in expansion joints shall be tightened only to a point that will allow rail movement.
- If there is a conflict between these Standard Details and the Working Drawings, the Contractor shall notify the RE immediately.
- 1/8 inch pads under post base plate shall be fabric pads conforming to the Standard Specifications.

4 - BAR OPEN STEEL PARAPET DETAILS

NEW JERSEY DEPARTMENT OF TRANSPORTATION
BUREAU OF STRUCTURAL ENGINEERING

BRIDGE CONSTRUCTION DETAILS

BCD-507-11.1

BCD-507-11

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