The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any form is implied or provided with this standard to other formats or for incorrect results or damages resulting from its use.

Reinforcing Steel

Vertical Bars U may rest on top of slab. Installed Anchor Bolts. See "Anchor Bolt Assembly Details".

PARAPET SHOE

(Parapet Shoe weight = 92 lb each. For contractor's information only)

VIEW B-B

SECTION D-D

SECTION E-E

SECTION F-F

ON BRIDGE SLAB

ON ABUTMENT WINGWALLS OR CIP RETAINING WALLS

SECTIONS THRU RAIL

VIEW C-C

VIEW G-G

RAIL CURB FORMING DETAIL

Reinforcing steel and rail curb chamfers not shown for clarity.

Increase 2" for structures with overlays.

6" when vertical reinforcing has closer clear cover over horizontal reinforcing in abutment wingwalls or retaining walls on traffic side of wall.

6" Dia Anchor Bolts. See "Anchor Bolt Assembly Details".

Top longitudinal slab bar may be adjusted vertically 3" plus or minus to be reinforcing.

Adjust Bars Z(#5) as necessary to avoid Bars V(#5).

Length shown for 6" Min bar embedment with no overlay. Adjust as required.

Increase 2" for structures with overlay.

BARS U(#5)
BARS U(#5)
BARS V(#5)
BARS V(#5)
BARS Z(#5)
CONSTRUCTION NOTES:
The face of tubular sections and rail curb must be plumb unless otherwise approved. Steel posts must be square to the top of curb. Use Type V813 epoxy mortar under post base plates if gaps larger than 1/16" exist.

Bend tubes to required radius for curved rails. Shop drawings for approval are required for curved rails.

The shop splice per rail member section is permitted with minimum 65 percent penetration. The weld may be square groove or single vee groove. Round or chamfer exposed edges of rail members and rail posts to approximately 1/8" by grinding.

Brush all exposed concrete corners.

MATERIAL NOTES:
Provide ASTM A572 or A500 Gr B for all IFS.
Provide Grade 60 reinforcing steel.

Concrete must be placed per Section 4185, “Concrete” and Section 4187, “Concrete Placement & Curing” and 4188, “Concrete Curing and Painting Steel”. Screws and anchor bolts must receive galvanization prior to installation and only field paint after installation unless directed otherwise by Engineer.

Anchor bolts for base plate must be 11/32" Dia ASTM F3125 or A325 or ASTM A193 Gr B7 or ASTM F1554 Gr 105 threaded rod with one tack welded heavy hex nut not each with one hardanding steel washer (ASTM 4526) placed under each heavy hex nut. Nuts must conform to ASTM A563 requirements.

Provide 1/2" Dia x 1/2" hex bolts (ASTM F3125 or A325) for expansion or splice joints in HSS with one regular washer and one lock washer placed under each hex bolt. Nuts must conform to ASTM A563 requirements.

Provide 3/8" Dia round bar U-bolts (ASTM A536) with plate washer (ASTM A563) and regular lock washers placed under nuts that conform to ASTM A563 requirements. See “U-Bolt Detail”.

GENERAL NOTES:

This rail has been successfully evaluated by full-scale crash test and meets MASH TL-3 criteria. This rail can be used for speeds of 45 mph and greater when a TL-3 rated guard fence transition is used. When a TL-2 rated guard fence transition is used, this rail can only be used for speeds of 40 mph and less.

This rail cannot be used on bridges with expansion joints providing more than 5" movement or on cast-in-place retaining walls, unless otherwise noted.

This rail is not permitted on bridges with expansion joints. Submittal drawings showing panel lengths, rail post spacing, and anchor bolts setting to the Engineer for approval.

Average weight of railing with no overlay: 114 lb total 125 lb (Curb) 42 lb (Rail).

Decker dimensions are clear dimensions, unless noted otherwise. Reinforcing bar dimensions shown are out-to-out of bar.

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Provide Grade 60 reinforcing steel. Concrete must be placed per Section 4185, “Concrete” and Section 4187, “Concrete Placement & Curing” and 4188, “Concrete Curing and Painting Steel”. Screws and anchor bolts must receive galvanization prior to installation and only field paint after installation unless directed otherwise by Engineer.

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