

ELEVATION OF INSIDE FACE OF RAILING (Scheme 2 shown with Post "A", other Schemes similar, Reinforcing Steel not shown for clarity)

for Pre-cured

Silicone Sealant

- 1. Shop Drawings are required.
- 2. Work this Index with Index 515-052 Bicycle/Pedestrian Railing Details (Steel) and Specification Section 515. Refer to the SPI for Design Criteria and Limits of Use.
- 3. Materials:
 - A. Steel: Galvanized after fabrication
 - a. Fasteners: Hex Head Bolt ASTM A307, Hex Nuts ASTM A563, Washers ASTM F436
 - b. Support Bracket (Scheme 3) L-shape and Stiffener Plate: ASTM A36
 - c. Bottle-guard (Schemes 1 & 3) L-shape: ASTM A36
 - B. Concrete: Same as bridge deck
 - C. Pre-cured Silicone Sealant: Specification Section 932
 - D. Bearing Pads: Provide \(\frac{1}{18} \)" Plain, Fabric Reinforced or Fabric Laminated bearing pads that meet the requirements of Specification Section 932 for Ancillary Structures.
- 4. See Structures Plans, Superstructure Sheets for bridge information including concrete type, deck expansion joint locations and orientations, and thermal movement.
- 5. Railings:
 - A. For thermal movement greater than 4" (up to a maximum of 5"), clear opening between adjacent pickets, or panels at Rail Expansion Joints above Deck Joints must be reduced to $3\frac{1}{3}$ ".
 - B. For treatment of railings on skewed bridges see Index 521-427.
- 6. Curbs:
 - A. Match open curb joints at Deck Expansion Joint locations to the deck joint dimension.
 - B. Construct Concrete Curb (Scheme 2) vertical with the top surface finished level transversely. See Concrete Curb Details Sheet 3.
 - C. Provide $\frac{3}{4}$ " Intermediate open joints in curbs coinciding with the $\frac{3}{4}$ " joints in the traffic railing.
- 7. Payment: Support bracket (Scheme 3) is incidental to the cost of railing. Curb concrete and reinforcing steel (Scheme 2) are included in the bridge deck quantities.

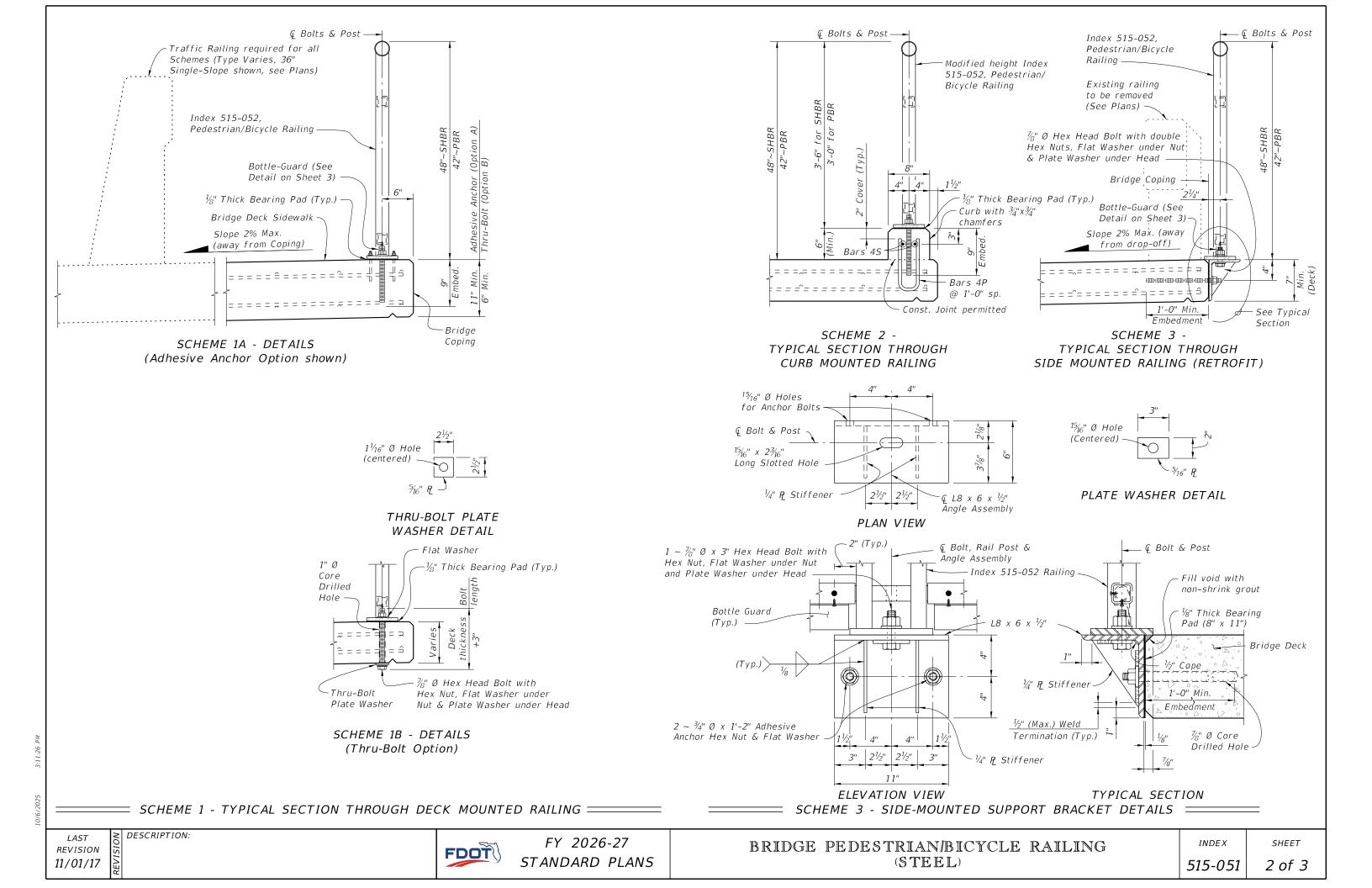
* Deck Joint at Begin Bridge or End Bridge shown; Deck Joint at @ Pier or Intermediate Bent similar.

** SHBR~Special Height Bicvcle Rail PBR~Pedestrian/Bicycle Rail

REVISION 11/01/17 DESCRIPTION:



SHEET

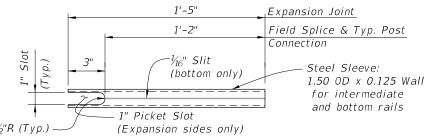


ROUND RAILS - TOP RAIL OR HANDRAIL

- * $\frac{1}{4}$ " Ø x $\frac{3}{4}$ " Pan Head Stainless Steel (Type 316 or 18–8 Alloy) Set Screws along outside face of railing. Set screws must be set flush against the rail surface. A $\frac{3}{4}$ " Ø plug weld may be substituted for the two set screws at expansion joints.
- ** Embedded length may be 4" for plug welded connection.
- *** Increase handrail sleeve embedment to 8" for Expansion Joint openings greater than 2".

sharp edges (Typ.)

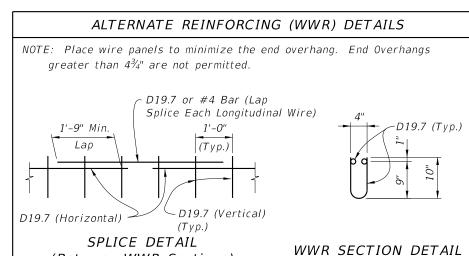
**** Expansion Joint opening shall match the clear opening in the deck joint but not greater than 3".

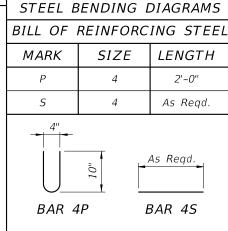


INTERMEDIATE OR BOTTOM RAIL - STEEL SLEEVE DETAIL (Bottom Side Shown)

CONVENTIONAL REINFORCING

== DETAIL "B" EXPANSION JOINT (FIELD SPLICE SIMILAR) =

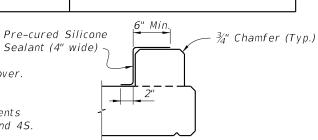




CURB REINFORCING STEEL NOTES:

(Between WWR Sections)

- 1. All bar dimensions in the bending diagrams are out to out.
- 2. The reinforcement for the curb on a retaining wall shall be the same as detailed for an 8" deck.
- 3. All reinforcing steel at the open joints shall have a 2" minimum cover.
- 4. Bars 4S may be continuous or spliced at the construction joints. Bar splices for Bars 4S shall be a minimum of 1'-8"
- 5. Deformed Welded Wire Reinforcement (WWR) meeting the requirements of Specification Section 931 may be used in lieu of all Bars 4P and 4S.



DETAIL "A" - SECTION AT INTERMEDIATE OPEN JOINT

QUANTITIES (SCHEME 2)

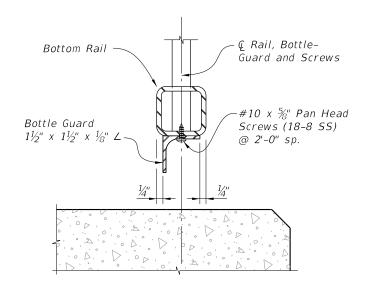
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ITEM	UNIT	QUANTITY
Concrete	CY/LF	0.0124
Reinforcing Steel	LB/LF	4.01

ESTIMATED CONCRETE CURB

INTERMEDIATE JOINT SEAL NOTE:

At Intermediate Open Joints, seal the lower 6" portion of the open joint with Pre-cured Silicone Sealant. Apply sealant prior to any Class V finish coating and remove all curing compound and loose material from the surface prior to application of bonding agent.

SCHEME 2 - CONCRETE CURB DETAILS

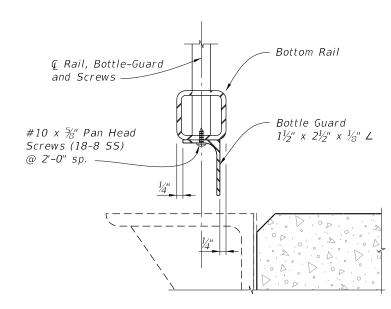


TYPICAL SECTION THROUGH BOTTOM RAIL (Post Not Shown for Clarity)

== SCHEME 1 - BOTTLE GUARD DETAIL ====

CROSS REFERENCE:

See Sheet 1 for Bridge Railing Notes.



TYPICAL SECTION THROUGH BOTTOM RAIL (Post Not Shown for Clarity)

= SCHEME 3 - BOTTLE GUARD DETAIL =

REVISION 11/01/16

DESCRIPTION:

FY 2026-27 STANDARD PLANS

BRIDGE PEDESTRIAN/BICYCLE RAILING (STEEL)

INDEX

SHEET

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