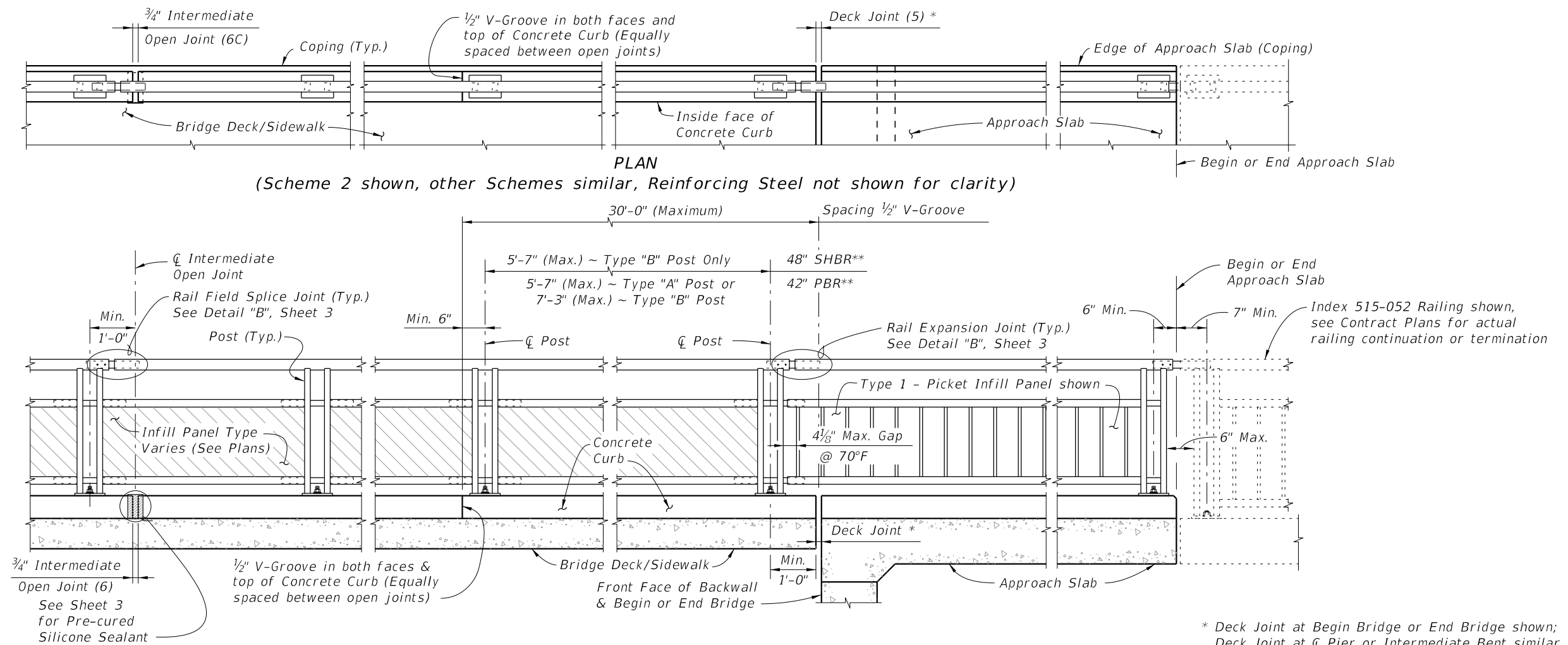




ELEVATION OF INSIDE FACE OF RAILING
 (Scheme 2 shown with Post "A", other Schemes similar, Reinforcing Steel not shown for clarity)

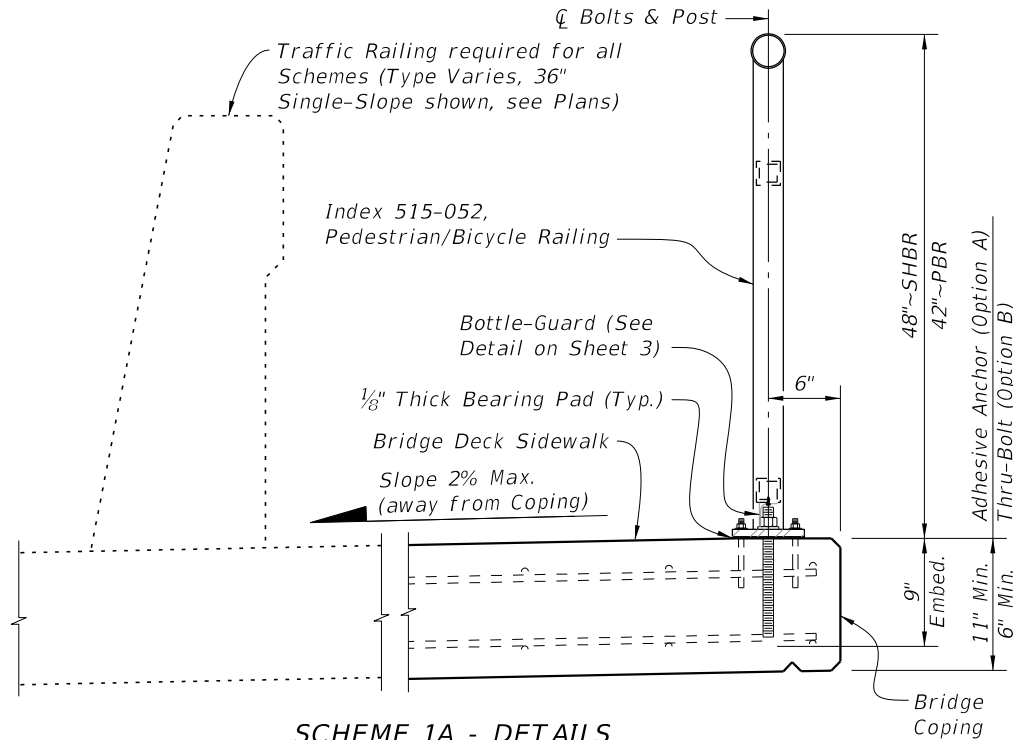
- NOTES:
- Shop Drawings are required.
 - Work this Index with Index 515-052 Bicycle/Pedestrian Railing Details (Steel) and Specification Section 515. Refer to the SPI for Design Criteria and Limits of Use.
 - Materials:
 - Steel: Galvanized after fabrication
 - Fasteners: Hex Head Bolt ASTM A307, Hex Nuts ASTM A563, Washers ASTM F436
 - Support Bracket (Scheme 3) L-shape and Stiffener Plate: ASTM A36
 - Bottle-guard (Schemes 1 & 3) L-shape: ASTM A36
 - Concrete: Same as bridge deck
 - Pre-cured Silicone Sealant: Specification Section 932
 - Bearing Pads: Provide $\frac{1}{8}$ " Plain, Fabric Reinforced or Fabric Laminated bearing pads that meet the requirements of Specification Section 932 for Ancillary Structures.
 - See Structures Plans, Superstructure Sheets for bridge information including concrete type, deck expansion joint locations and orientations, and thermal movement.
 - Railings:
 - 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 $3\frac{1}{2}$ ".
 - For treatment of railings on skewed bridges see Index 521-427.
 - Curbs:
 - Match open curb joints at Deck Expansion Joint locations to the deck joint dimension.
 - Construct Concrete Curb (Scheme 2) vertical with the top surface finished level transversely. See Concrete Curb Details Sheet 3.
 - Provide $\frac{3}{4}$ " Intermediate open joints in curbs coinciding with the $\frac{3}{4}$ " joints in the traffic railing.
 - 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 ϕ Pier or Intermediate Bent similar.

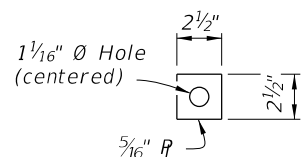
** SHBR~Special Height Bicycle Rail
 PBR~Pedestrian/Bicycle Rail

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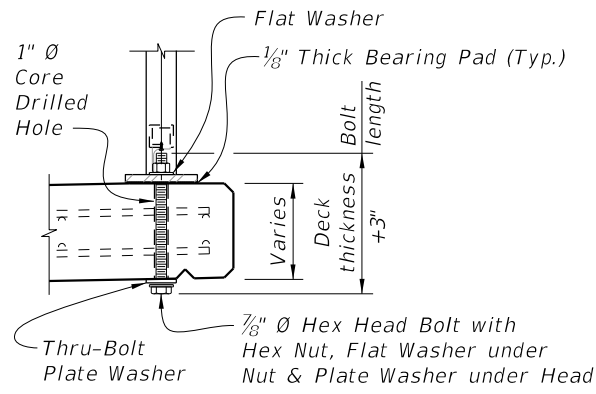
LAST REVISION 11/01/17	DESCRIPTION:	 FY 2027-28 STANDARD PLANS	BRIDGE PEDESTRIAN/BICYCLE RAILING (STEEL)	INDEX 515-051	SHEET 1 of 3
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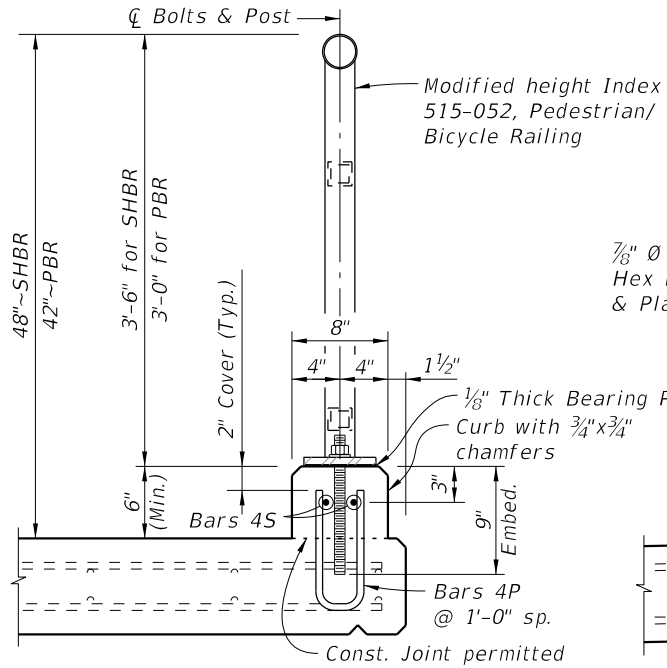
SCHEME 1A - DETAILS
(Adhesive Anchor Option shown)



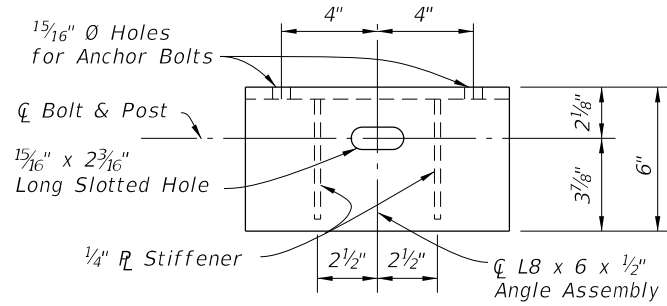
THRU-BOLT PLATE WASHER DETAIL



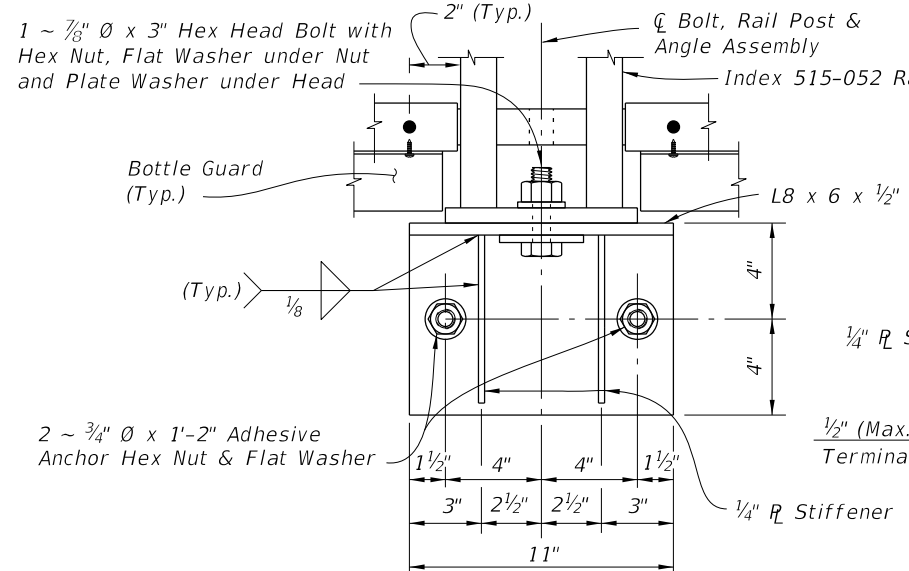
SCHEME 1B - DETAILS
(Thru-Bolt Option)



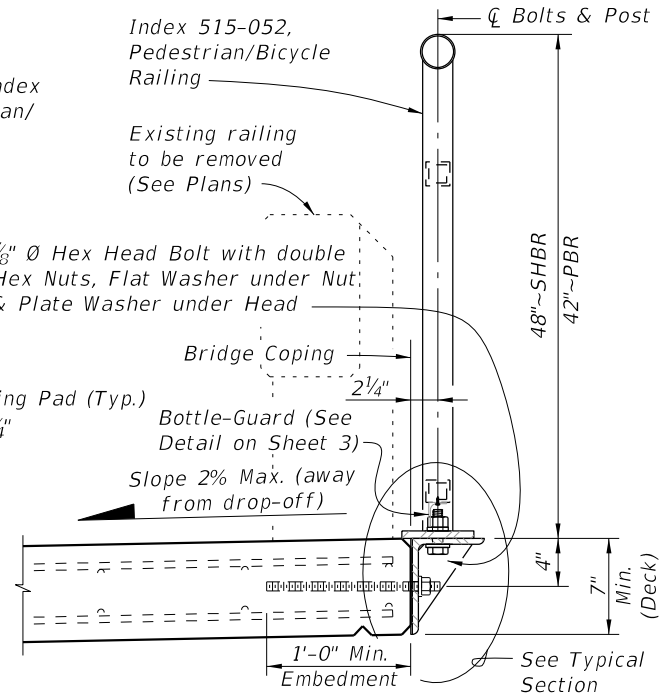
SCHEME 2 -
TYPICAL SECTION THROUGH
CURB MOUNTED RAILING



PLAN VIEW



ELEVATION VIEW



SCHEME 3 -
TYPICAL SECTION THROUGH
SIDE MOUNTED RAILING (RETROFIT)

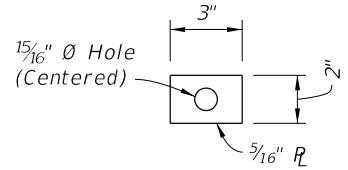
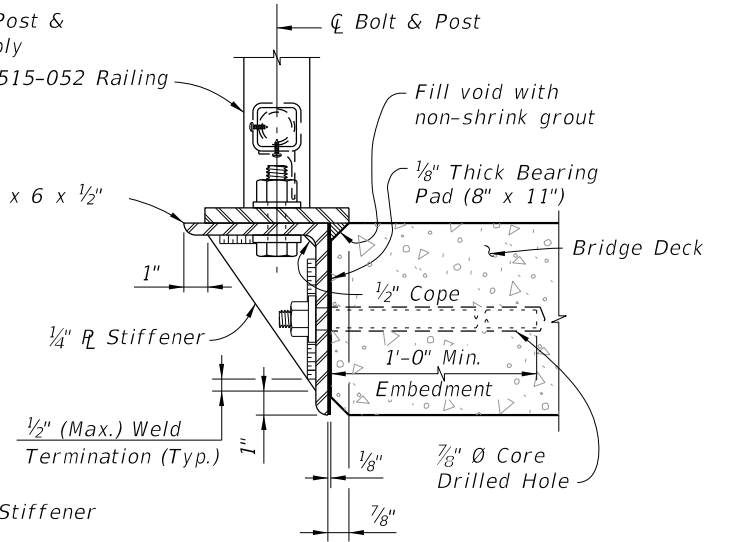


PLATE WASHER DETAIL



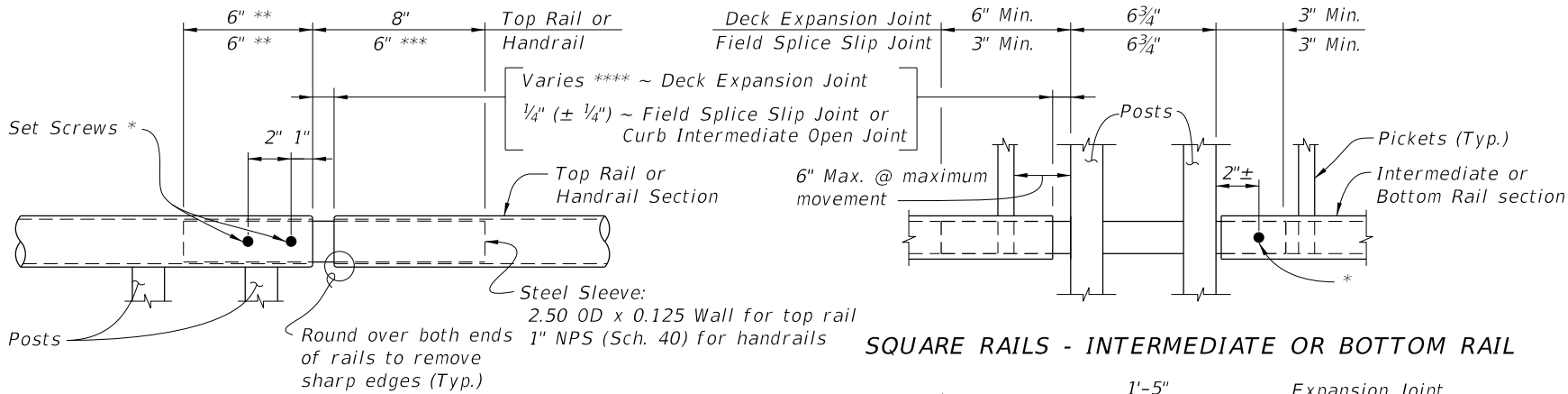
TYPICAL SECTION

SCHEME 1 - TYPICAL SECTION THROUGH DECK MOUNTED RAILING

SCHEME 3 - SIDE-MOUNTED SUPPORT BRACKET DETAILS

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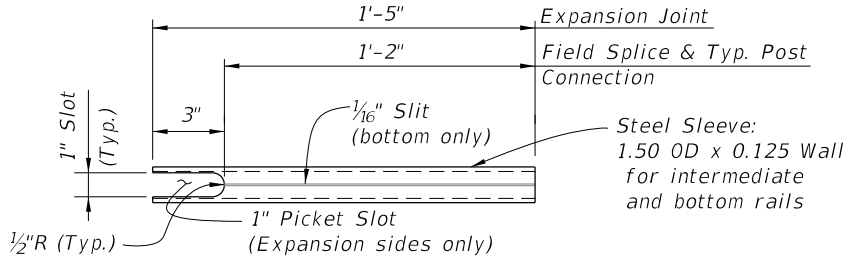
<div>LAST REVISION</div> <div>11/01/17</div>	<div>REVISION</div> <div>DESCRIPTION:</div>	<div> <div> <div>FDOT</div> <div>FY 2027-28</div> <div>STANDARD PLANS</div> </div> </div>	<div>BRIDGE PEDESTRIAN/BICYCLE RAILING</div> <div>(STEEL)</div>	<div>INDEX</div> <div>515-051</div>	<div>SHEET</div> <div>2 of 3</div>
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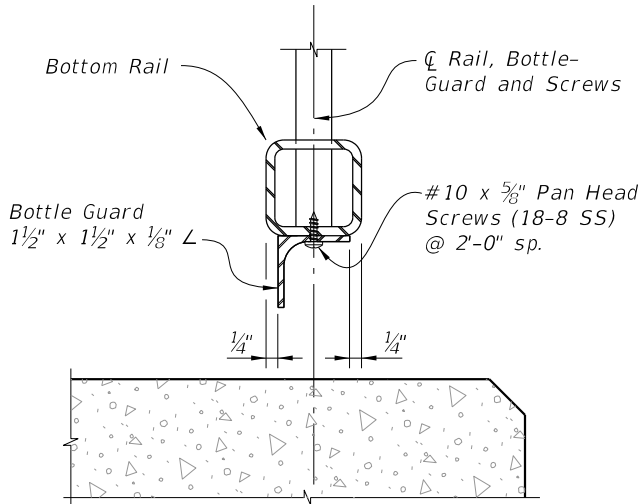
ROUND RAILS - TOP RAIL OR HANDRAIL

- * 1/4" Ø x 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 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".
- **** Expansion Joint opening shall match the clear opening in the deck joint but not greater than 3".

SQUARE RAILS - INTERMEDIATE OR BOTTOM RAIL

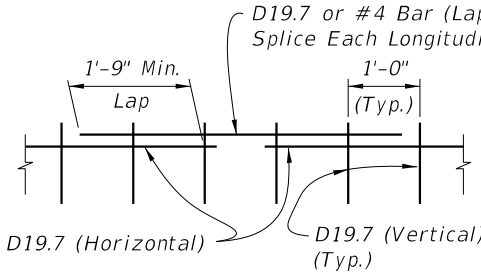
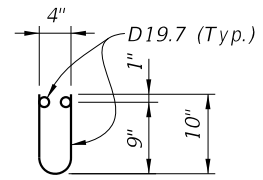
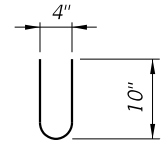
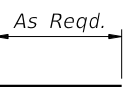


INTERMEDIATE OR BOTTOM RAIL - STEEL SLEEVE DETAIL (Bottom Side Shown)



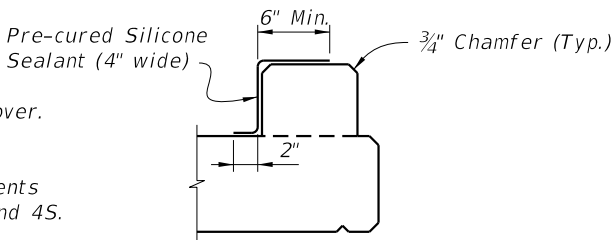
TYPICAL SECTION THROUGH BOTTOM RAIL (Post Not Shown for Clarity)

SCHEME 1 - BOTTLE GUARD DETAIL

ALTERNATE REINFORCING (WWR) DETAILS		CONVENTIONAL REINFORCING		
<p>NOTE: Place wire panels to minimize the end overhang. End Overhangs greater than 4 3/4" are not permitted.</p>  		STEEL BENDING DIAGRAMS		
		BILL OF REINFORCING STEEL		
		MARK	SIZE	LENGTH
		P	4	2'-0"
		S	4	As Req'd.
				
<p>SPLICE DETAIL (Between WWR Sections)</p>		<p>BAR 4P BAR 4S</p>		

CURB REINFORCING STEEL NOTES:

- All bar dimensions in the bending diagrams are out to out.
- The reinforcement for the curb on a retaining wall shall be the same as detailed for an 8" deck.
- All reinforcing steel at the open joints shall have a 2" minimum cover.
- Bars 4S may be continuous or spliced at the construction joints. Bar splices for Bars 4S shall be a minimum of 1'-8".
- 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

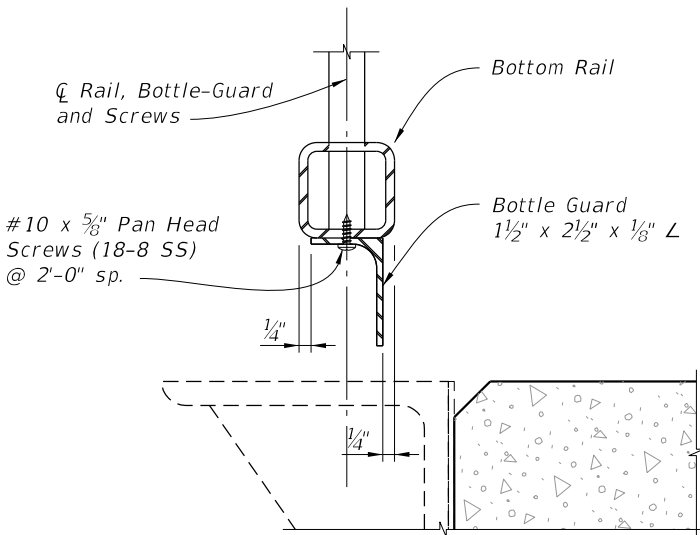
INTERMEDIATE JOINT SEAL NOTE:

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.

ESTIMATED CONCRETE CURB QUANTITIES (SCHEME 2)		
ITEM	UNIT	QUANTITY
Concrete	CY/LF	0.0124
Reinforcing Steel	LB/LF	4.01

SCHEME 2 - CONCRETE CURB DETAILS

CROSS REFERENCE:
See Sheet 1 for Bridge Railing Notes.



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

SCHEME 3 - BOTTLE GUARD DETAIL

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11/01/16						