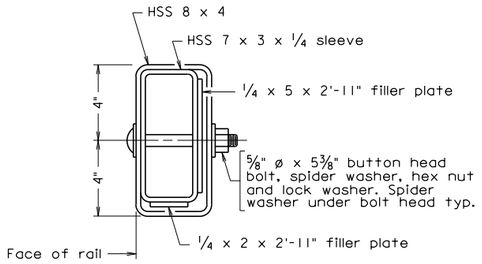
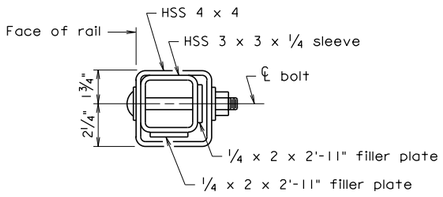
STATE	FEDERAL AID		STATE		SHEET NO.
	ROUTE	PROJECT	ROUTE	PROJECT	
VA.	—				

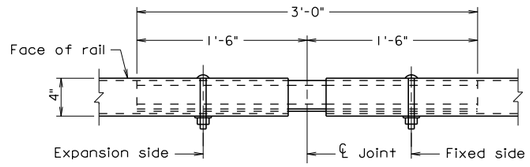


TOP RAIL

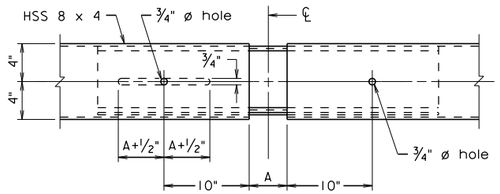


BOTTOM RAIL

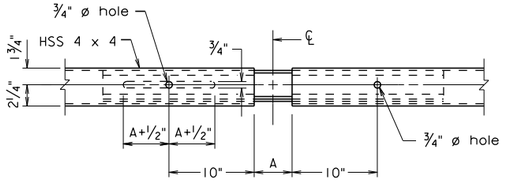
END VIEW RAIL



TOP VIEW FOR TOP AND BOTTOM RAILS

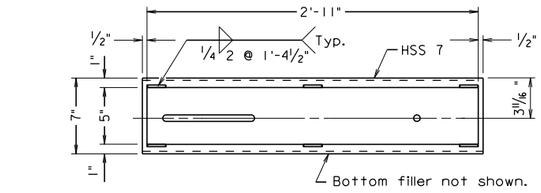


SIDE VIEW TOP RAIL

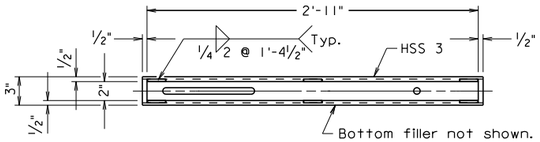


SIDE VIEW BOTTOM RAIL

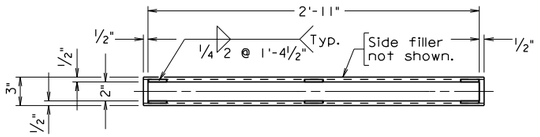
EXPANSION/SPLICE JOINT DETAILS



SIDE VIEW FILLER PLATE FOR 7" SLEEVE



SIDE VIEW FILLER PLATE FOR 3" SLEEVE



BOTTOM VIEW FILLER PLATE FOR 7" AND 3" SLEEVE

WELDED FILLER PLATE DETAILS

Notes:

All reinforcing bars shall be Corrosion Resistant Reinforcing Steel, Class __.

All concrete shall be Class A4.

All bevels for concrete on this sheet shall be 3/4".

Posts and plates shall be ASTM A36 steel.

Rail members and sleeves shall be ASTM A500 Grade B steel. Steel pipe sleeves shall be ASTM A53. Round head bolts shall be ASTM A449. All other bolts shall be ASTM A325. Nuts shall be ASTM A563, Grade DH or ASTM A194, Grade 2H and washers shall be ASTM F436. All steel shall be hot dip galvanized.

Post shall be seated on neoprene pads 1/16" minimum thickness, having a nominal durometer hardness of 60. Pads shall conform to post base dimensions.

Cut bottom of posts to match cross slope before welding so that posts will be vertical. Steel shims may be used for adjusting post alignment, maximum thickness of shim build-up not to exceed 1/8". Where more tilting of the post is required, the concrete shall be ground down.

Anchor bolts may be set normal to profile grade.

Steel bridge rail expansion joints shall be provided between any two posts which span a bridge expansion joint. Bolts located on expansion side shall be tightened only to a point that will allow railing movement.

For details of wingwall below construction joint, see abutment sheet(s).

Terminal walls are detailed to take guardrail attachment GR-FOA-1.

Holes, where shown, shall be formed with sleeves of 1 1/2" diameter nominal pipe.

Bolts for guardrail attachment where shown shall be 5/8" diameter expansion anchor bolts 6" long to be drilled and installed when rub rail is attached.

Bid item for railing shall include rails, rail posts, bearing pads, anchor assemblies, sleeves and other associated metal parts as shown on the plans. Also included in bid item are concrete noted in plans and reinforcing steel indicated in Reinforcing Steel Schedule.

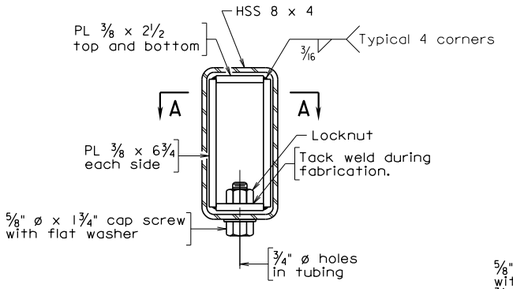
Barrier delineator size, color, and spacing to be in accordance with the Specifications. Cost of delineator to be included in the price bid for railing. Reflective surface of barrier delineator, in all instances, to be facing oncoming traffic.

1/2" ø drain holes shall be provided in both top and bottom rails approximately half-way between posts except at open joints near pier(s). Drain holes shall be provided at each low end of rail.

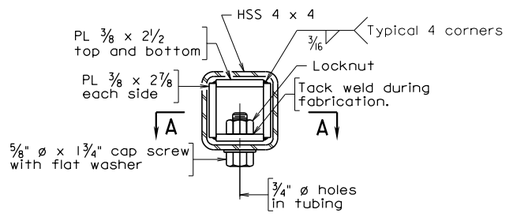
The Contractor shall determine all dimensions and details necessary for installation.

Plan dimensions shown are measured in the respective horizontal and vertical planes. The reinforcing steel shown has been detailed based on a standard 1/4" per foot cross slope. The Contractor shall adjust the reinforcing steel as required for other cross slopes.

For rail details, see sheet __.

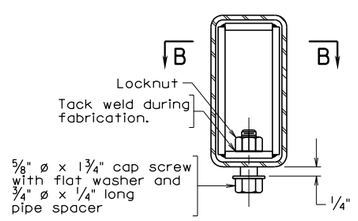


TOP RAIL



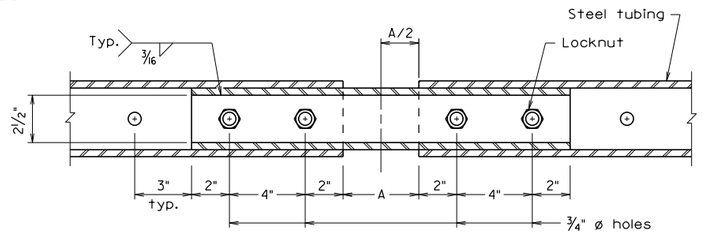
BOTTOM RAIL

SECTION AT RAIL SPLICE

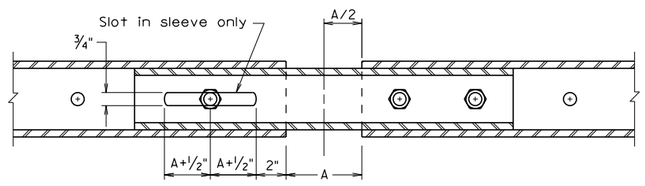


RAIL SPLICE CONNECTION AT EXPANSION JOINT

Details shown for top rail. Details for bottom rail similar.



SECTION A-A



SECTION B-B

For details and dimensions not shown, see Section A-A.

Fabricator's notes:

Rails to be continuous over a minimum of 3 posts before splicing. Dimension A for splice joints = 1".

Posts shall be equally spaced. Maximum spacing is 6'-0". Minimum spacing is 4'-0".

Rail expansion joint shall be provided between any two posts which span a bridge expansion joint. Dimension A for expansion joints is equal to deck joint opening + 1". Bolts in slot shall be tightened only to a point that will allow railing movement.

ALTERNATE EXPANSION/SPLICE JOINT DETAILS

Not to scale

bir3.dgn

12-14-2012

BIR-3

Sealed and Signed by: Julius F.J. Volgyi Jr. Lic. No. 010487 On the date of December 14, 2012

A copy of the original sealed and signed standard drawing is on file in the Central Office.

VDOT S&B DIVISION RICHMOND, VA STRUCTURAL ENGINEER

No.	Description	Date
	Revisions	

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

STRUCTURE AND BRIDGE DIVISION

ILLINOIS STEEL RAILING MISCELLANEOUS DETAILS

Designed: S&B..DIV	Date	Plan No.	Sheet No.
Drawn: ....S&B..DIV		BIR-3	
Checked: S&B..DIV			

ILLINOIS STEEL RAILING

MISCELLANEOUS DETAILS

NOTES TO DESIGNER:

Include this standard when using standard BIR-1 or BIR-2.

ADD THE FOLLOWING NOTES, DIMENSIONS, DETAILS, ETC. TO STANDARD:

NOTES:

Complete first note by adding the Class I, II or III of corrosion resistant reinforcing steel required. For additional information on corrosion resistant reinforcing steel (CRR), see Structure and Bridge Division Memorandum (current IIM-S&B-81).