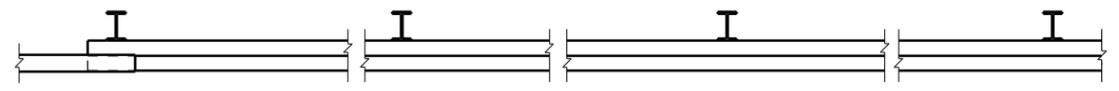
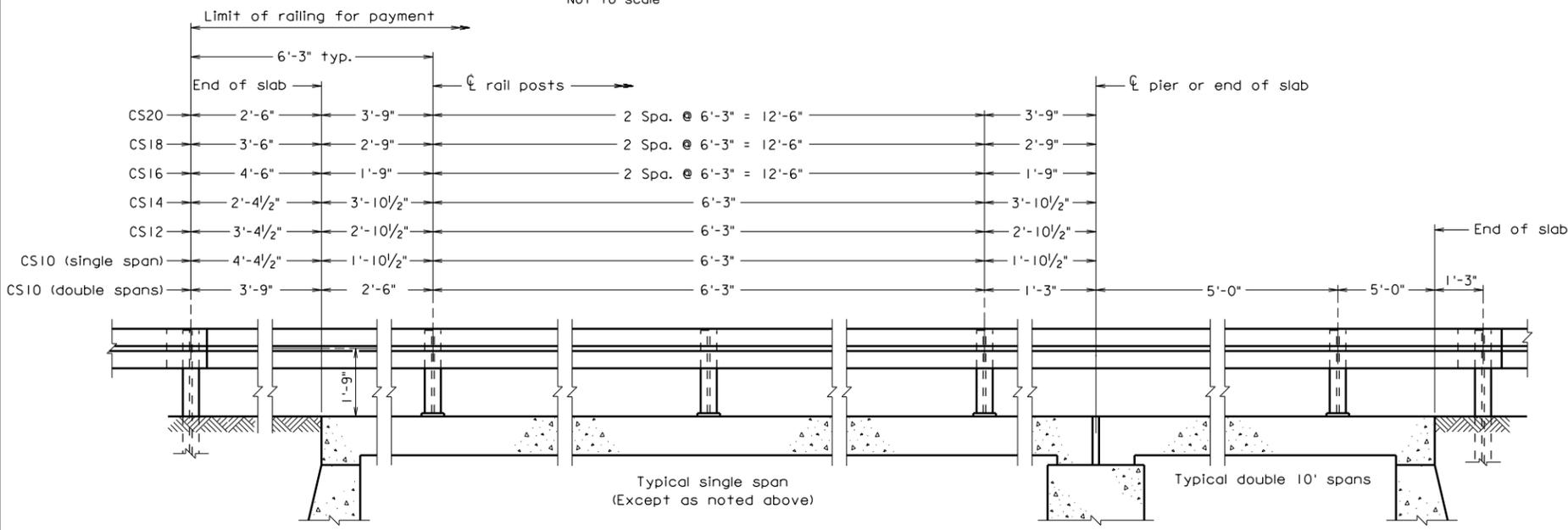


STATE	FEDERAL AID		STATE	SHEET
VA.	ROUTE	PROJECT	ROUTE	PROJECT
				NO.



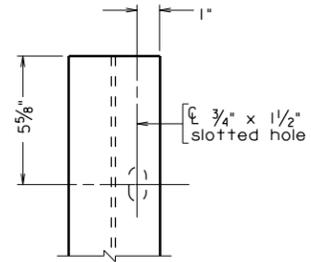
PLAN
Not to scale

Note:
Maintain 6'-3" post spacing for use with 25' standard rail section

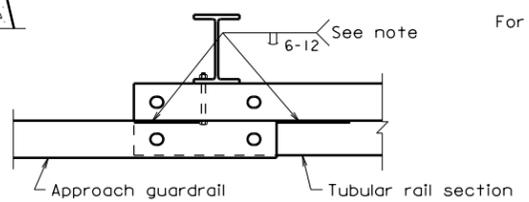


LONGITUDINAL SECTION (ALONG BRIDGE)
Not to scale

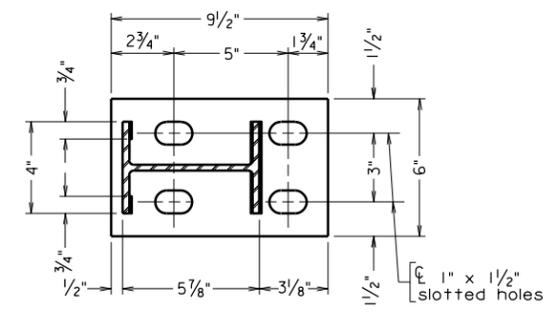
Notes:
All structural steel, including bolts, nuts, and washers shall be galvanized.
For details of guardrail, see GR-2 of the Road and Bridge Standards.
The guardrail installation shall conform with Section 505 of the Virginia Department of Transportation Road and Bridge Specifications, 2002.
Rail posts may be vertical or perpendicular to adjacent roadway grade and cross slope. Grout may be used under base plates if necessary.
Details on this sheet are to be used for both straight and skewed bridges.
Rail shall extend across joints with no change in post spacing or continuity.
Anchor bolts shall be 7/8" Ø A307 (or A36 threaded rods with tack welded nuts) with hex nuts and washers as shown. Threaded rods may be 0.781 min. diameter with rolled threads. Nuts shall conform to A307 requirements and shall be tapped or chased after galvanizing. Bolts and nuts shall have Class 2A and 2B fit tolerances.
Tubular rail member shall be extended and connected to at least the first soil embedded post at each end of the structure. More such posts shall be used to utilize 25 ft. standard sections. Approach guardrail posts shall be spaced at 6'-3" adjacent to the tubular rail since its flexibility is similar to the standard metal beam guardrail. Do not install additional posts at 3'-1 1/2" centers. Fully anchored guardrail must be attached at both ends of tubular rail.
Test have shown that although this rail deflects horizontally two or three feet, adequate vehicle containment and re-direction is achieved. The resulting more gradual deceleration thus produces a safer condition than afforded by other bridge railings.
For details of slabs not shown, see sheet



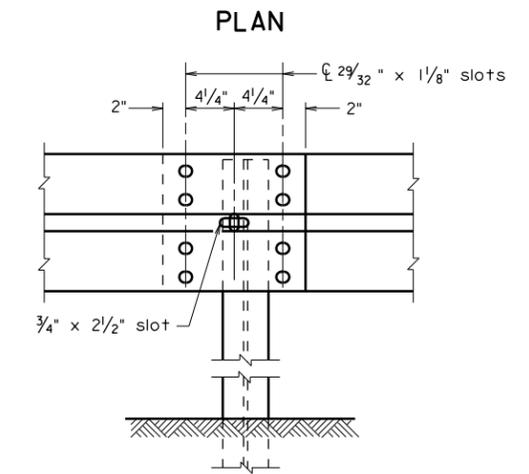
VIEW A-A
Scale: 3" = 1'-0"



PLAN

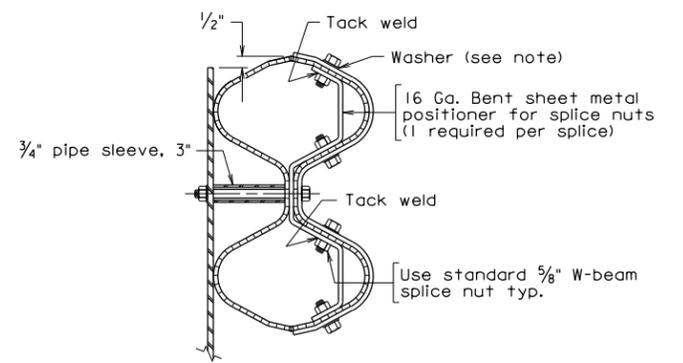


5/8" BASE PLATE
Scale: 3" = 1'-0"



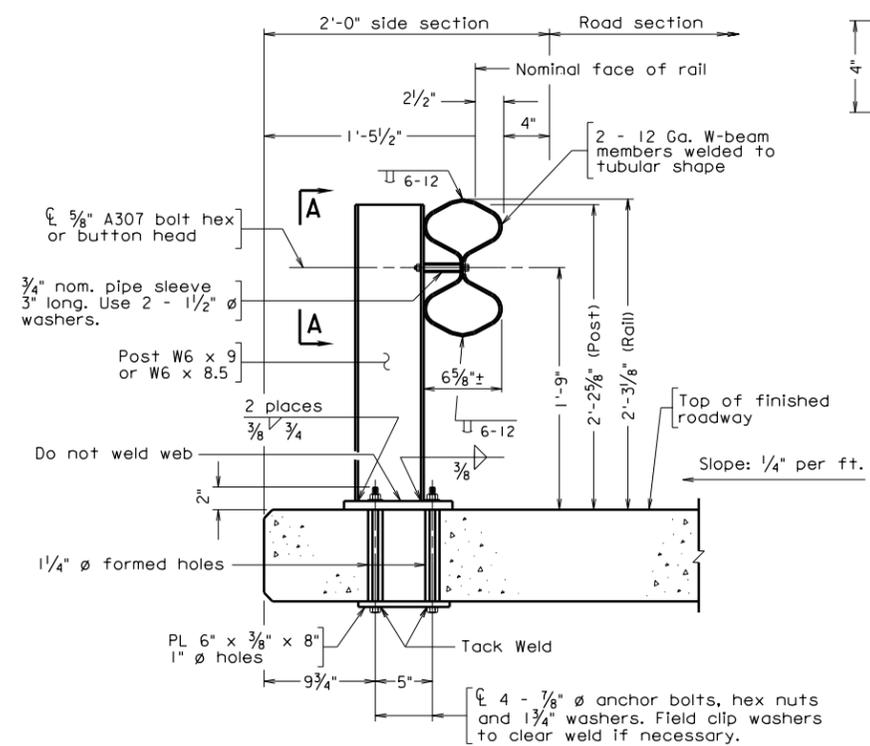
GUARDRAIL-TUBULAR RAIL SPLICE

Note:
Tubular W-beam rail member is to be fabricated from standard 25' nominal W-beam sections. Top and bottom seams shall be butt welded 6" at 12" spacing. Continuous seam welding is also acceptable. Welds shall be clipped and cleaned and the complete 25 ft. tubular member shall be galvanized after fabrication.



SPLICE DETAIL
Scale: 3" = 1'-0"

Note:
8 - 5/8" splice nuts shall be tacked to a bent sheet metal positioner as shown. Other suitable positioning methods or devices may be substituted. The completed splice shall have 8 bolts. Each bolt will include a 1 3/4" x 3 x 3/8" plate washer or a 2" diameter washer.



PART TRANSVERSE SECTION

csgr.dgn
06-14-2010
Sealed and Signed by:
Julius F.J. Volgyi Jr.
Lic. No. 010487
On the date of
June 14, 2010
A copy of the original
sealed and signed
standard drawing
is on file in the
Central Office.
CS-GR
VDOT S&B DIVISION
RICHMOND, VA
STRUCTURAL ENGINEER

Scale: 1/2" = 1'-0" unless otherwise noted

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		COMMONWEALTH OF VIRGINIA DEPARTMENT OF TRANSPORTATION			
		STRUCTURE AND BRIDGE DIVISION			
		RAILING (TEXAS T-6)			
		No.	Description	Date	Revisions
		Designed:	Date	Plan No.	Sheet No.
		Drawn:			
		Checked:			
				CS-GR	

CAST-IN-PLACE CONCRETE SLAB SPANS

RAILING (TEXAS T-6)

NOTES TO DESIGNER:

Railing (CS-GR) may be used in lieu of cast-in-place concrete parapet (F-Shape) (CS-P1, CS-P2 and CS-P3) when the overall bridge length does not exceed 20'-0". This bridge guardrail has been crash tested for TL-2 (TL = test level).

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

PROJECT/TITLE BLOCKS:

Project block and title block shall be completed in accordance with Manual of the Structure and Bridge Division, Volume V – Part 2, Chapter 4.

ESTIMATED QUANTITIES:

Compute estimated quantities for the following and enter in table of ESTIMATED QUANTITIES on CS-EST:

- Railing, Texas T-6

ESTIMATED QUANTITIES	
Span Length, ft.	* Railing (Texas T-6), LF
10	50
12	50
14	50
16	50
18	50
20	50

*Two – 25 ft. tubular rail sections shall be furnished and installed regardless of bridge length.

STANDARD CS-GR: NOTES TO DESIGNER

VOL. V - PART 6
DATE: 11Jul2008
SHEET 2 of 2
FILE NO. CS-GR-2