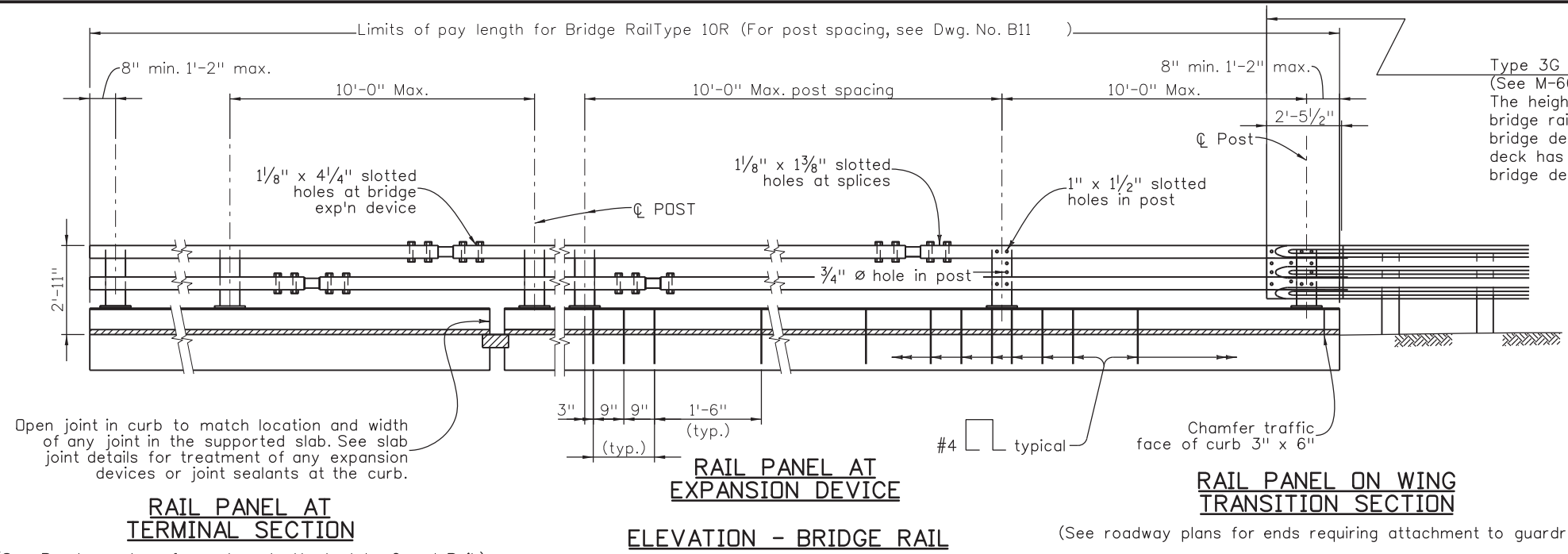


Design		Detail		Quantities	
Designed By	MS	INITIAL	GM	Quantity By	MS
Checked By	GM	DATE	11/16	Checked By	GMM
		DATE	11/16		

617479-PWINT.aecomonline.local:AECDM_ID501_NA.Documents\60505397-US50_RoyalGorge_West_Shg.ctb North\900 Work\910 CAD\02 SHEETS\04_Structural\US50_SH9-S-B21_TYPE 10M RAIL.dgn

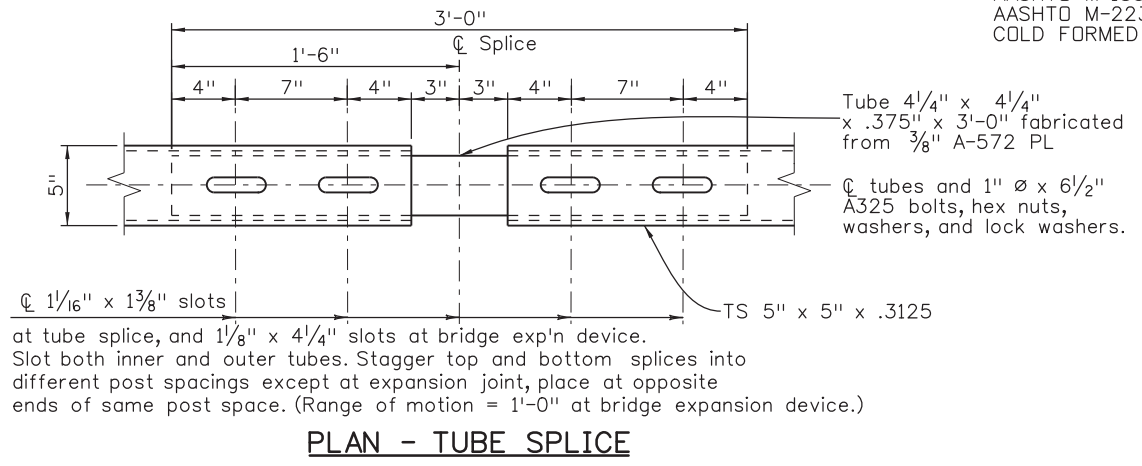
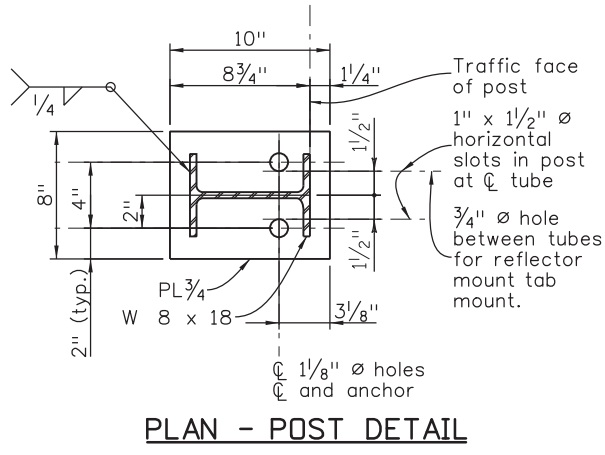
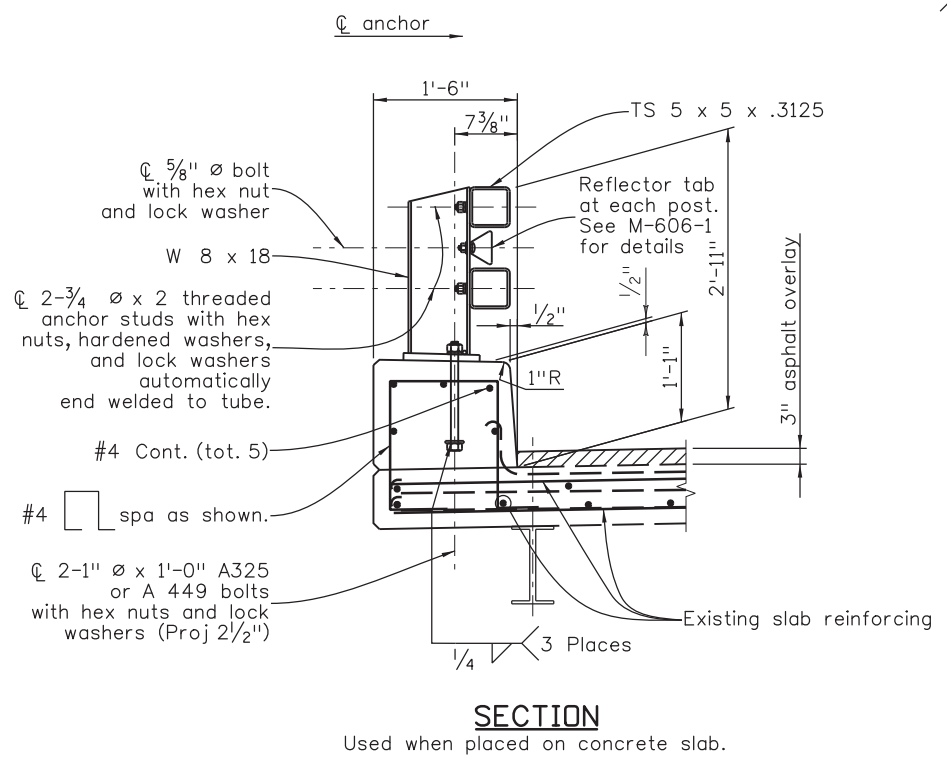


Type 3G or 3H transition
(See M-606-1)
The height of the transition will vary to match bridge rail and roadway guardrail: 1" when bridge deck has a 3" overlay, 2" when bridge deck has a 2" silica fume overlay and 4" when bridge deck does not have an overlay.

NOTES:

- All tubes shall be ASTM A-500 Grade B. All posts and base plates shall be ASTM A-572 Grade 50. All other steel shall be ASTM A-36 unless otherwise noted.
- The above material and all anchor bolts and miscellaneous bolts, nuts, and washers shall be galvanized after fabrication in accordance with Section 509. Concrete, reinforcing steel, and structural steel elements shall conform to the requirements of sections 601, 602 and 509, respectively.
- Post anchor, encased in concrete, shall be ASTM A-36 (AASHTO M-183) steel and need not be galvanized.
- The tubes shall be shop bent or fabricated to fit horizontal curve when radius is less than 1,500 feet.
- Tubes shall be continuous over not less than two posts. No welded butt splices will be allowed in the tube sections.
- The centerline of the tube splice shall be 1'-8" minimum and 2'-6" maximum from the centerline of the posts.
- All bolts that have lock washers shall be tightened to snug only.
- Posts shall be perpendicular to the longitudinal roadway grade.
- One or more 10'-0" post spacings may be reduced (6'-8" min.) in order to maintain dimensions from the end of the rail and expansion joints.
- Payment will be made under item 606, Bridge Rail type 10R for all posts, post anchors, base plates, backing plates, anchor bolts, miscellaneous bolts, nuts, washers, tubes, tube expansion devices, tube splices, end plates, curb concrete (Class D), curb reinforcing steel, and reflector tabs.
- Prior to fabrication of this item, three sets of working drawings which comply with the requirements of section 105, shall be submitted to the Engineer for information only.

Structural Steel:
 AASHTO M-183 (ASTM A-36) $f_y = 36,000$ psi
 AASHTO M-223 (ASTM A-572) GRADE 50 $f_y = 50,000$ psi
 COLD FORMED ASTM A-500 GRADE B $f_y = 46,000$ psi



Print Date: 1/25/2017
 File Name: US50_SH9-S-B21_TYPE 10M RAIL.dgn
 Horiz. Scale: 1:1 Vert. Scale:

TRANSPORTATION
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Sheet Revisions		
Date:	Comments	Init.

Colorado Department of Transportation

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Region 2 DW

As Constructed
No Revisions:
Revised:
Void:

BRIDGE RAIL TYPE 10R REPLACEMENT RAIL STR NO. K-15-G			
Designer:	M. SUELAU	Structure	K-15-G
Detailer:	L. BUSANSKY	Numbers	
Subset:	Bridge	Subset Sheets:	B14 of B15

Project No./Code
STA 0503-089
21255
Sheet Number 117