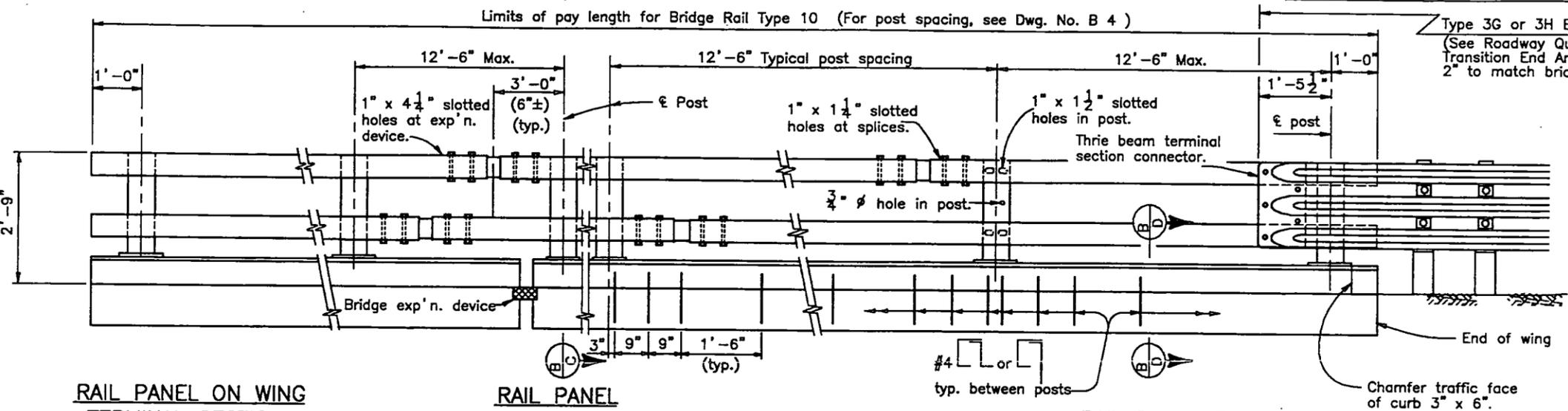


AS CONSTRUCTED
 NO REVISIONS REVISED VOID

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NUMBER	SHEET NUMBER
III	COLORADO	BR 0243-043	31

REVISIONS	



NOTES
 All tubes shall be fabricated from ASTM A-500 Grade B. All posts shall be fabricated from ASTM A-36 steel.
 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 or AASHTO M-169 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.
 The centerline of the posts at the bridge expansion device shall be a minimum of 3'-0" from the centerline of the bridge expansion device, measured along the centerline of posts.
 All bolts that have lock washers shall be tightened to snug only.
 Posts shall be perpendicular to the grade of the deck.
 One or more 12'-6" post spacings may be reduced (8'-4" min.) in order to maintain dimensions from the end of the wings and expansion joints.
 Optional drain hole for galvanizing may be drilled, punched, or clipped leaving smooth surfaces and transitions. No flame cutting or air carbon arc gouging is allowed.
 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 shall be included in item 606 - Bridge Rail Type 10.
 Prior to fabrication of this item, two sets of shop drawings which comply with the requirements of Section 105, shall be submitted to the Department for information only. One set shall be sent to the Colorado Department of Transportation, Staff Materials Branch Inspection Unit, 4340 E. Louisiana Avenue, Denver, Colorado 80222. One set shall be sent to the Engineer. The shop drawings will not be approved or returned.

Structural Steel:
 AASHTO M-183(ASM A-36) $f_y=36,000$ psi
 Cold formed ASTM A-500 Grade B $f_y=46,000$ psi
 For additional details see next rail sheets.

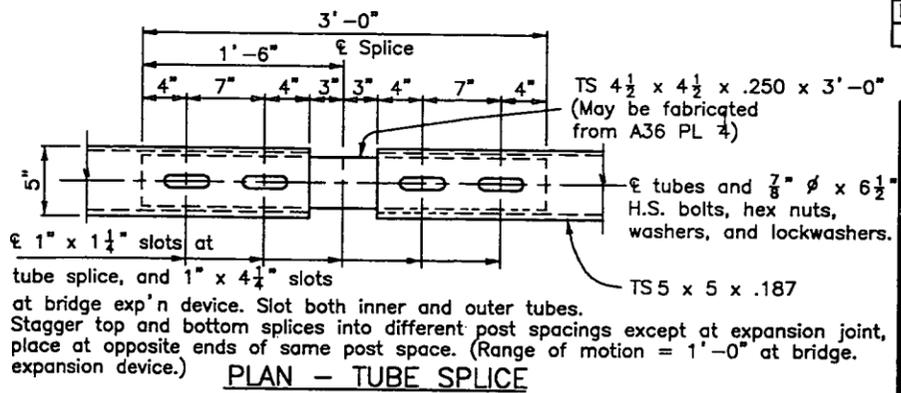
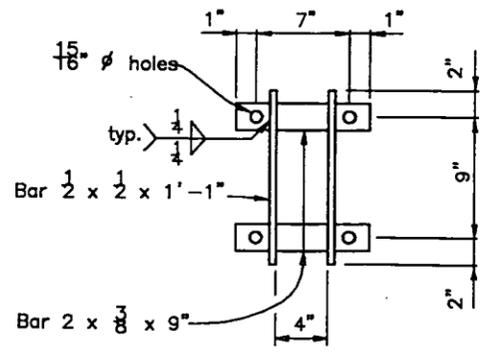
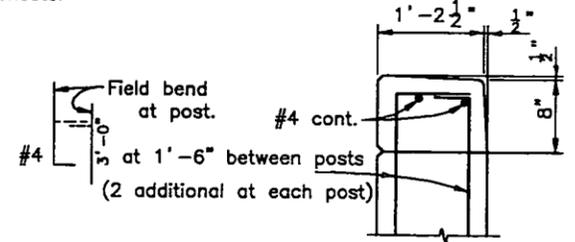
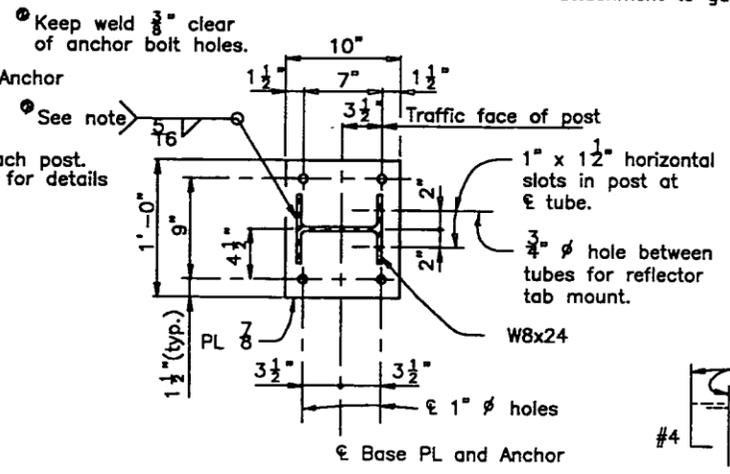
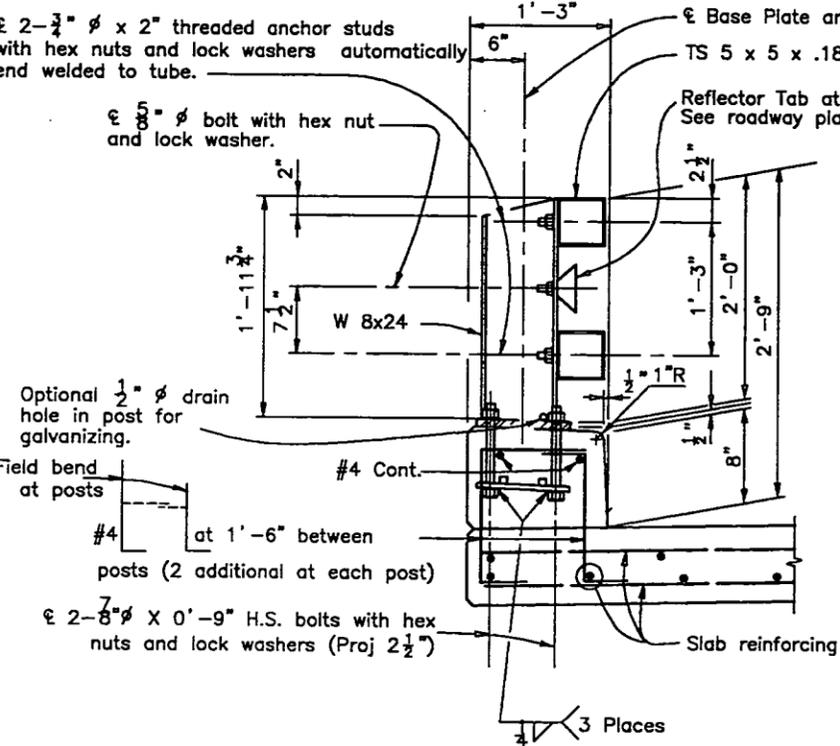
**RAIL PANEL ON WING
 TERMINAL SECTION**

**RAIL PANEL
 AT EXPANSION DEVICE**

**RAIL PANEL ON WING
 TRANSITION SECTION**

ELEVATION - BRIDGE RAIL

Quantity	Initial	Date	Quantity	Initial	Date
	J.S.V.	05/85	J.S.V.	07/85	07/85
	S.L.W.	09/85	S.L.W.	09/85	09/85
	M.C.	09/85	M.C.	09/85	09/85



INFORMATION ONLY

Description	Unit	Per Lin. Ft.
Structural Steel (Galvanized)	Lb.	33.1
Concrete Class D (Bridge)	Cu.Yd.	.04
Reinforcing Steel (Epoxy Coated)	Lb.	4.0

**COLORADO
 DEPARTMENT OF TRANSPORTATION**

BRIDGE RAIL TYPE 10

Designer M. Condiotti	Structure	I-17-GN
Detailer J. Virdi	Numbers	
Drawing Number B 11 of 18	Drawings	

Revision Dates	(Preliminary Stage Only)
8-90 11-90 11-91 3-92 8-94	