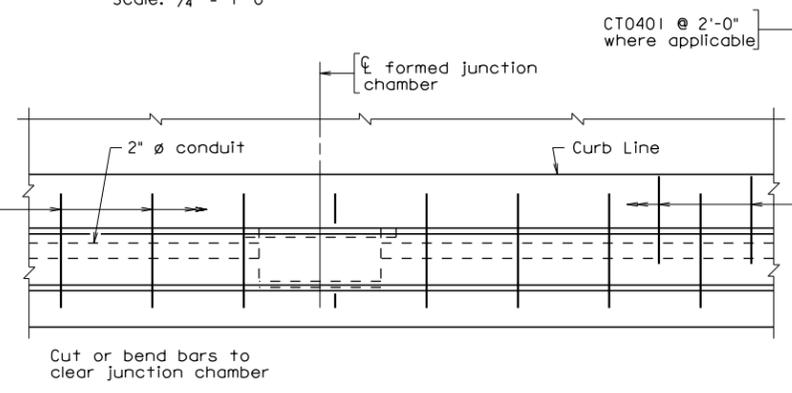


- ① 2" \varnothing nonmetallic conduit
- ② Nonmetallic coupling
- ③ 2" \varnothing metal conduit
- ④ Adapter to connect nonmetallic conduit to metal conduit
- ⑤ Metal expansion and deflection fitting
- ⑥ 2" \varnothing pipe cap
- ⑦ 8" x 8" x 1'-4" formed junction chamber
- ⑧ 1" \varnothing metal conduit
- ⑨ Metal expansion fitting
- ⑩ Pipe coupling
- ⑪ 2" \varnothing 45° 13" R steel elbow
- ⑫ 2" \varnothing 45° 9 1/2" R nonmetallic elbow
- ⑬ 1" \varnothing pipe cap



Abutment	Pier	Longitudinal Movement	t	Detail Type

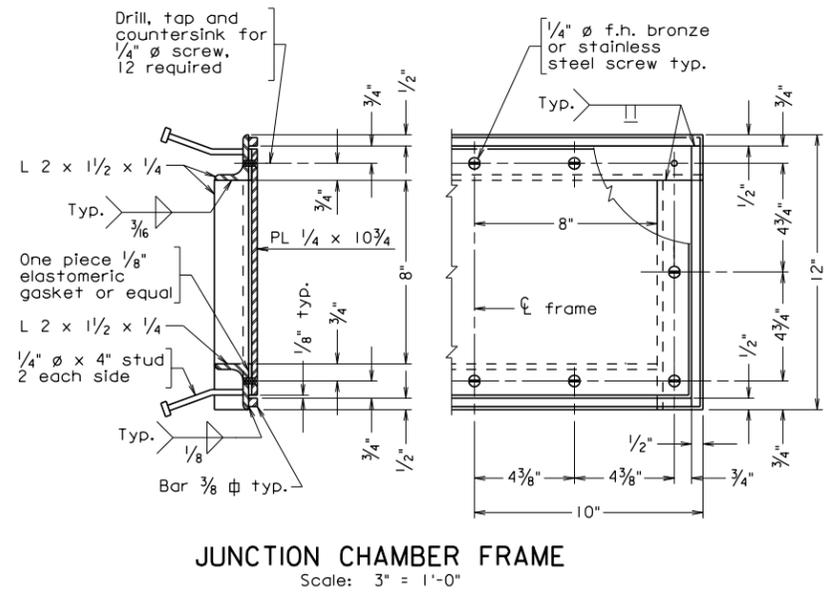
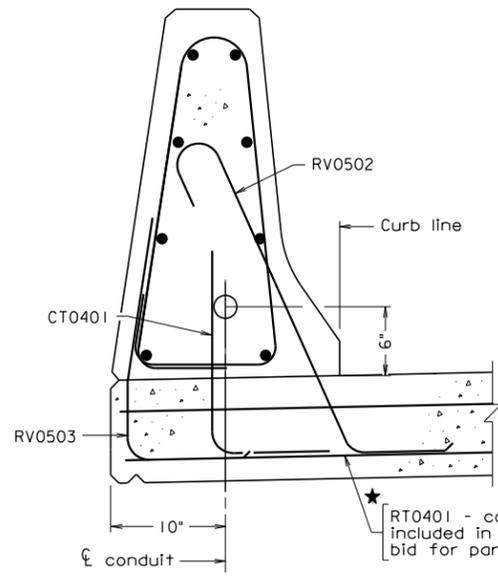
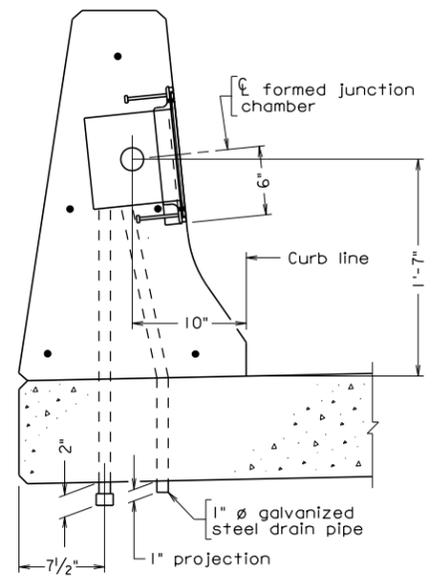
When deck is continuous over pier, expansion and deflection fitting detail is not required.

REINFORCING STEEL SCHEDULE					
Mark	No.	Size	Pin \varnothing	Length	Location
CT0401		#4	3"	2'-5"	Conduit tie
RV0401	⊙	#4			
RV0502	⊙	#5			
RV0503	⊙	#5			
★RT0401	⊙	#4			

Dimensions in bending diagram are out-to-out of bars.

⊙ Bars RV0401, RV0502, RV0503 and RT0401 are detailed and accounted for on parapet detail sheet.

★ Used only when deck transverse reinforcement is parallel to skew of bridge



BCS-29A

Sealed and Signed by:
Prasad L. Nallipameni
Lic. No. 033003
On the date of
March 10, 2015

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

COMMONWEALTH OF VIRGINIA DEPARTMENT OF TRANSPORTATION STRUCTURE AND BRIDGE DIVISION					
BRIDGE CONDUIT SYSTEM					
No.	Description	Date	Designed: S&B...DIV	Date	Plan No.
			Drawn: ...S&B...DIV		Sheet No.
Revisions			Checked: S&B...DIV	BCS-29A	

**BRIDGE CONDUIT SYSTEM
OTHER THAN LIGHTING WITH F-SHAPE PARAPET**

NOTES TO DESIGNER:

Standard is to be used for miscellaneous bridge conduit system other than bridge lighting, e.g., for lighting signs/sign structures attached to bridge. Details are for use with F-shape parapet. Terminal wall for parapet is located on abutment or U-back wing.

Access to junction box is from the inside of the parapet face on the traffic side. If access is required from the outside of the parapet, use standard BCS-22A.

Size of junction chamber: 8" x 6" x 1'-4". Show location of junction chamber(s) on appropriate plan sheet, normally plan of deck slab. Conduit size: 2" diameter. Show location and size of conduit(s) on transverse section sheet.

For larger conduits the bend radius in the conduit (steel elbow and nonmetallic elbow) and the run of the junction chamber need to be changed in the CONDUIT LAYOUT. The minimum run for the junction chamber is 8 x nominal diameter of conduit. For example, the minimum run for a 2" dia. conduit is 1'-4" (8 x 2" = 16" = 1'-4"). For large diameters, the JUNCTION CHAMBER FRAME needs to be adjusted, i.e., if the run is adjusted, the spacing of the screws also needs to be adjusted.

Longitudinal movement (for filling table):

Coefficient of linear expansion of:

concrete: 0.000006 in./in./°F (AASHTO *Standard Specification for Highway Bridges*, 1996; 1997 and 1998 Interim Specifications; and VDOT modifications, Article 8.5.3)

steel: 0.0000065 in./in./°F (AASHTO *Standard Specification for Highway Bridges*, 1996; 1997 and 1998 Interim Specifications; and VDOT modifications, Article 10.2.2)

Temperature ranges (AASHTO *Standard Specification for Highway Bridges*, 1996; 1997 and 1998 Interim Specifications; and VDOT modifications, Article 3.16):

concrete structures: 40°F

steel structures: 60°F

Example: Steel structure, 250 feet of expansion

Longitudinal movement = 250 x 0.0000065 x 60 = 0.0975 ft = 1 1/8 in.

t (movement/10°F) = 250 x 0.0000065 x 10 = 0.01625 ft = 3/16 in.

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

TABLE:

Complete table. Use 1/8" multiples for longitudinal movement. Use 1/16" multiples for t (movement/10°F).