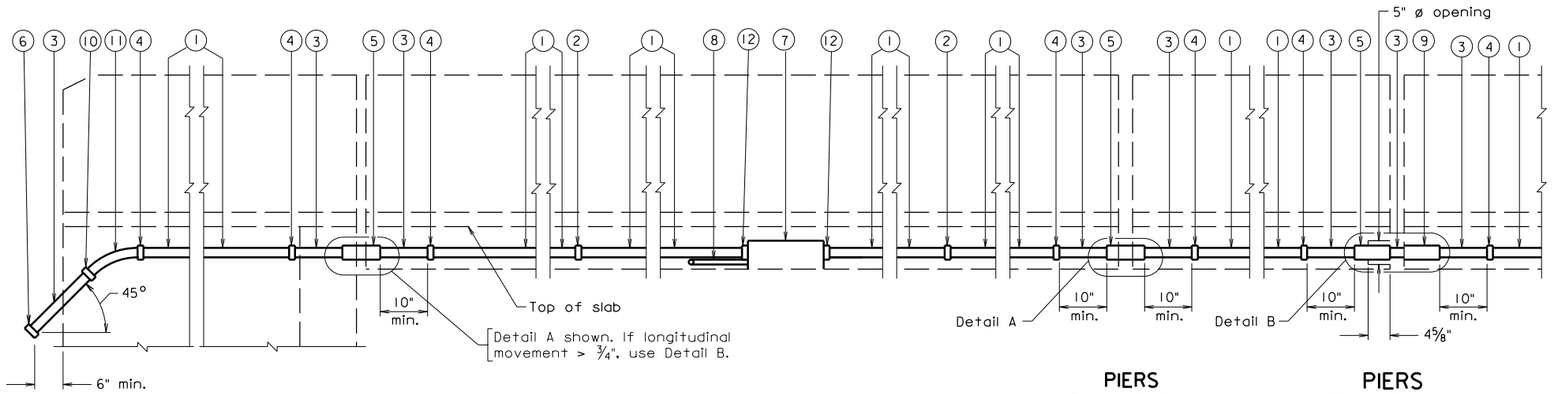
STATE	FEDERAL AID		STATE		SHEET NO.
	ROUTE	PROJECT	ROUTE	PROJECT	
VA.	—				



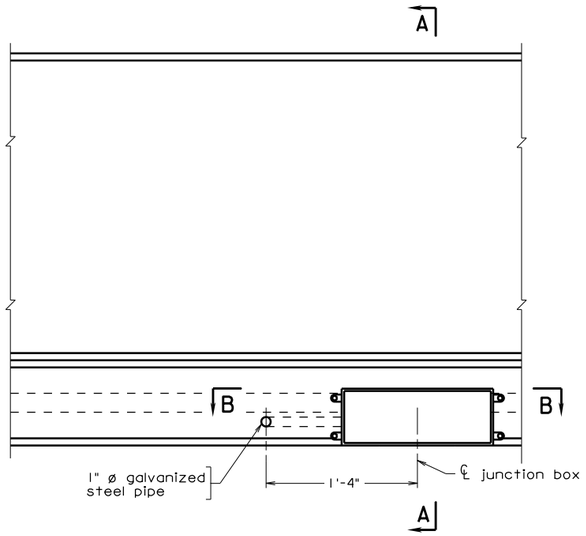
ABUTMENTS

PIERS
For longitudinal movement ≤ ¾"

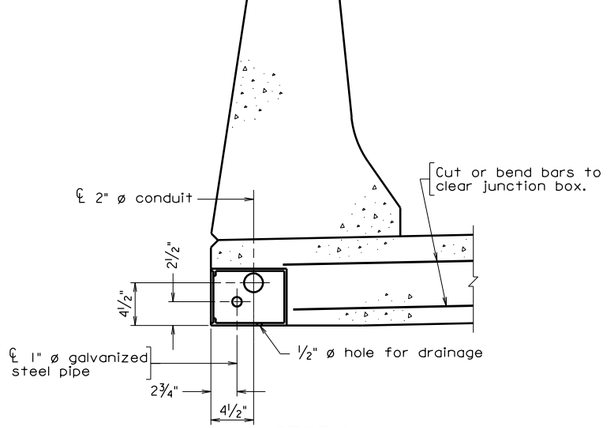
PIERS
For longitudinal movement > ¾"

CONDUIT LAYOUT
Scale: ¾" = 1'-0"

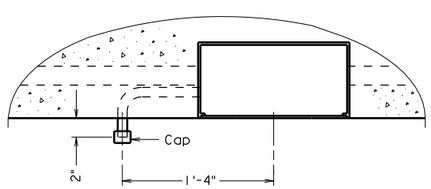
1. 2" ø nonmetallic conduit
2. Nonmetallic coupling
3. 2" ø metal conduit
4. Adapter to connect nonmetallic conduit to metal conduit
5. Metal expansion and deflection fitting
6. 2" ø pipe cap
7. 8" x 6" x 1'-4" junction box
8. 1" ø galvanized steel pipe. Furnish locknut and bushing to connect conduit to junction box.
9. Metal expansion fitting
10. Pipe coupling
11. 2" ø 45° 13" R steel elbow
12. Bell fitting or bushing to connect conduit to junction box



ELEVATION



SECTION A-A



SECTION B-B

Abutment	Pier	Longitudinal Movement	t	Detail Type

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

Notes:

Close adherence to the manufacturer's requirements in regard to clearances for the installation of deflection fittings shall be observed.

Cost of Bridge Conduit System and anchorages shall be included in price bid for parapet

Longitudinal movement is the maximum amount of movement of the expansion and deflection fitting calculated for placement at 60°F and shall be adjusted in accordance with manufacturer's requirements. The amount of movement shall be increased or decreased for every 10°F temperature drop or rise respectively by t.

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

Conduit shall be grounded in conformance with Section 700 with grounding materials that conform to Section 238.

bcs22a.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.

VDOT S&B DIVISION
RICHMOND, VA
STRUCTURAL ENGINEER

No.	Description	Date
	Revisions	

Scale: 1½" = 1'-0" unless otherwise shown.

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

STRUCTURE AND BRIDGE DIVISION

BRIDGE CONDUIT SYSTEM

Designed: S&B DIV	Date	Plan No.	Sheet No.
Drawn: S&B DIV		BCS-22A	
Checked: S&B DIV			

BCS-22A

BRIDGE CONDUIT SYSTEM
OTHER THAN LIGHTING
FOR 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 outside of the parapet, not from the traffic side. If access is required from inside parapet face is required, use standard BCS-29A.

Size of junction chamber: 8" x 6" x 6". Show location of junction box(es) 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) in the CONDUIT LAYOUT needs to be changed.

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).