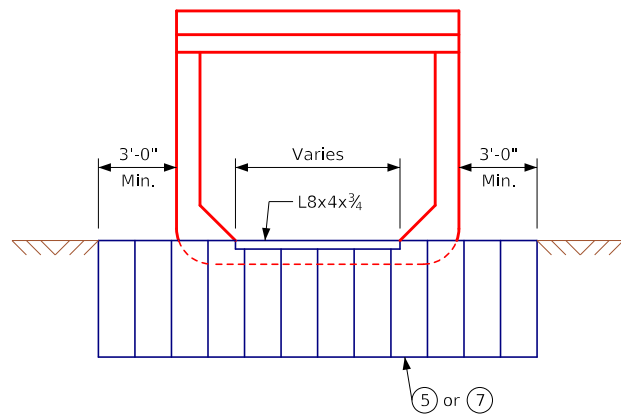
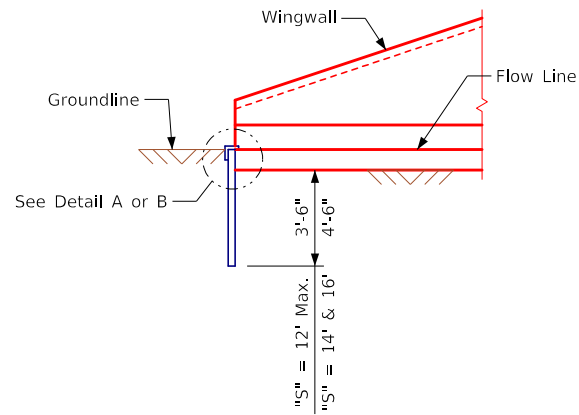


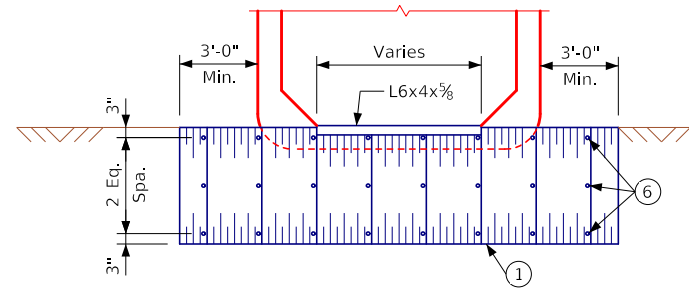
ENGLISHIGNEDPRECASTCULVERTS.DGN - PES 11-20 - THIS SHEET ISSUED 12-2020.



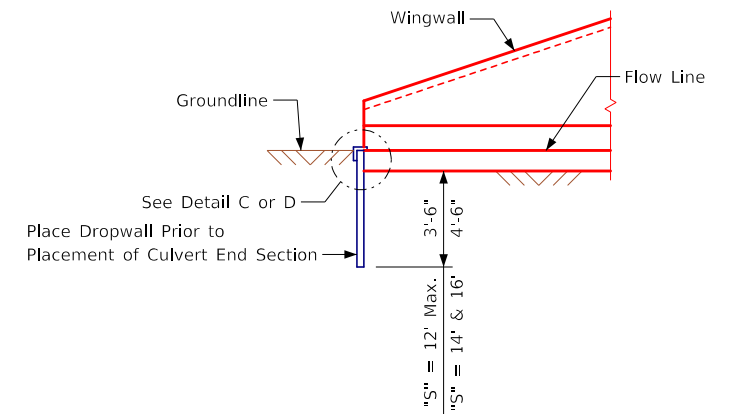
End View



Elevation



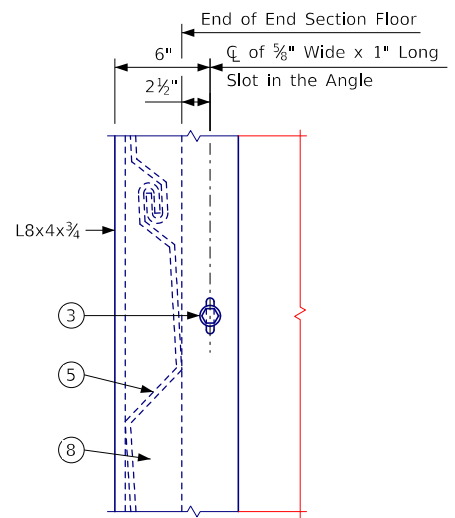
End View



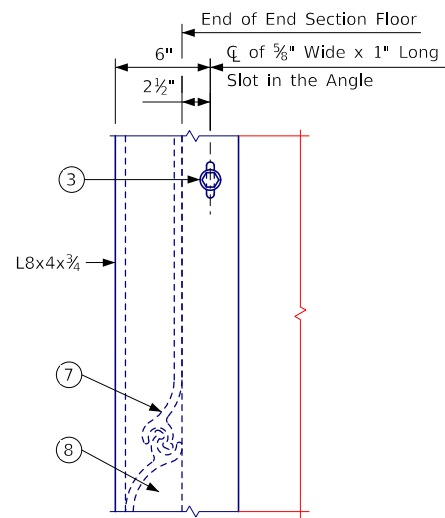
Elevation

Alternates 3 & 4 (Galvanized Steel Sheets)

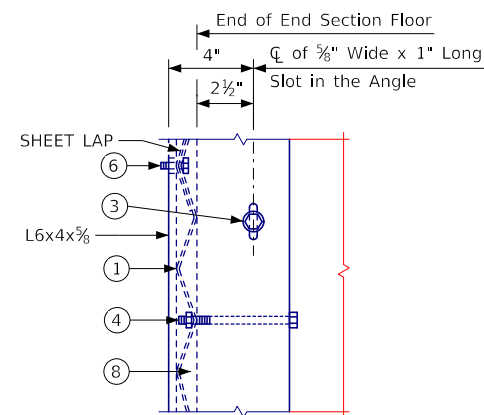
Alternates 1 & 2 (Galvanized Steel Sheet Piling)



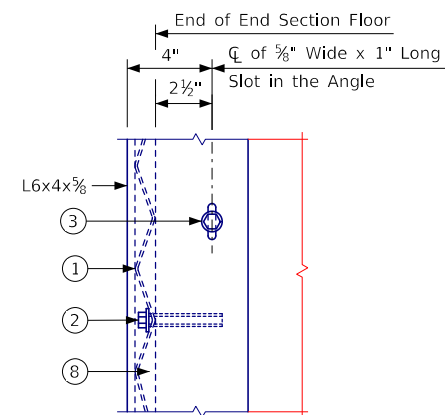
Plan



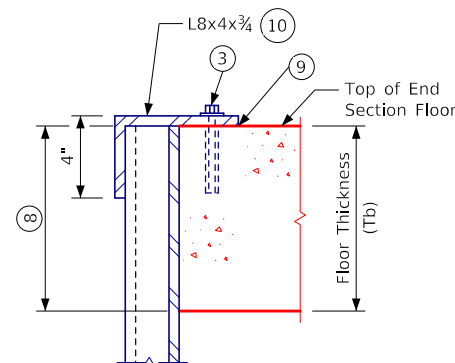
Plan



Plan



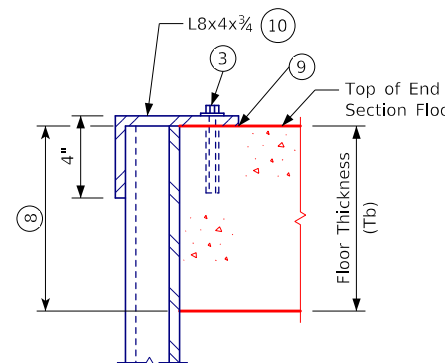
Plan



Elevation

Detail A Alternate 1

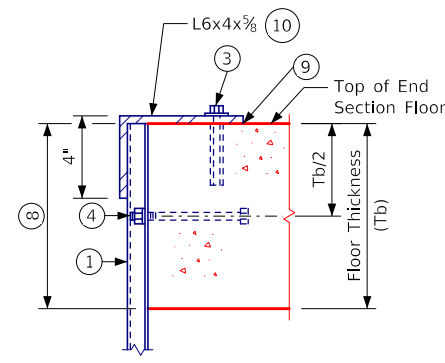
Steel Sheet Piling Shown;
Allowed on New & Old Construction



Elevation

Detail B Alternate 2

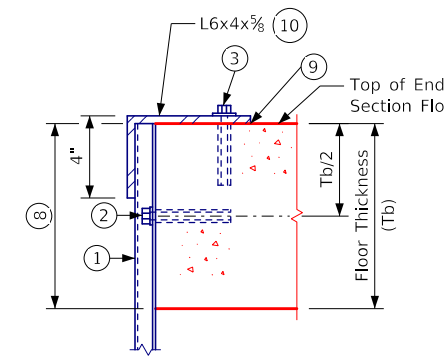
Steel Sheet Piling Shown;
Allowed on New & Old Construction



Elevation

Detail C Alternate 3

Corrugated Sheets Shown;
Allowed on New Construction Only



Elevation

Detail D Alternate 4

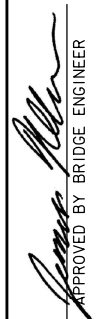
Corrugated Sheets Shown;
Allowed on New Construction Only

Notes:

Use of alternate curtain walls shall be approved by the Engineer.

All curtain wall material, including bolts, nuts, washers, and angles shall be galvanized per I.D.O.T. Standard Specifications. Bolts, nuts and washers shall conform to Article 4153.06, A, of the I.D.O.T. Standard Specifications.

- 1) 2 1/2"x1/2" or 2"x1/2" corrugated (12 gauge or heavier) galvanized steel sheets.
- 2) Fasten the steel sheets to the front edge of the apron with 3/8"x4" bolts and approved anchorages (10" center to center, to the nearest valley). Anchors shall have a minimum pull out strength of 2000 pounds based on 4000 psi concrete.
- 3) Fasten the L8"x4"x3/4" or L6"x4"x5/8" with 3/8"x4" bolts, 1" O.D. washer and an approved anchorage (2'-0" spacing). Anchors shall have a minimum pull out strength of 2000 pounds based on 4000 psi concrete.
- 4) Fasten the steel sheets to the front edge of the apron with 3/8"x5" cast-in-place bolts with nut and lock washer (10" center to center, to the nearest valley).
- 5) Galvanized corrugated (12 gauge or heavier) steel sheet piling, interlocking Type A.
- 6) 3/8"x1" bolt with nut, to lap steel sheets.
- 7) Galvanized steel sheet piling, section PS 27.5 or equal.
- 8) Fill the voids as shown, with Class O concrete or concrete grout, as approved by the Engineer.
- 9) Caulk joint between top of end section floor and angle. Caulking material shall be neutral cure and non-sag silicone. Three products meeting these criteria are Dow 888, CSL 342 joint sealant, and Crafcro Road Saver Silicone.
- 10) A bent plate may be provided as an alternate to the angle. The bent plate shall match the angle dimensions shown.

LATEST REVISION DATE	 APPROVED BY BRIDGE ENGINEER	 Standard Design Single Precast Reinforced Concrete Box Culverts December, 2020	
		Alternate Curtain Wall Details	PES 11-20