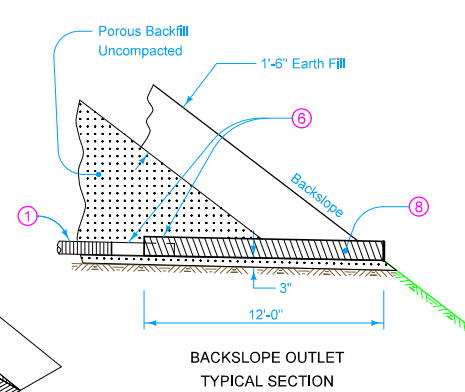
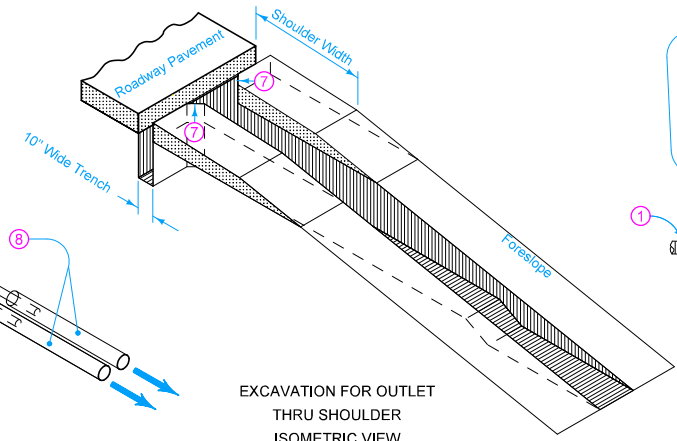
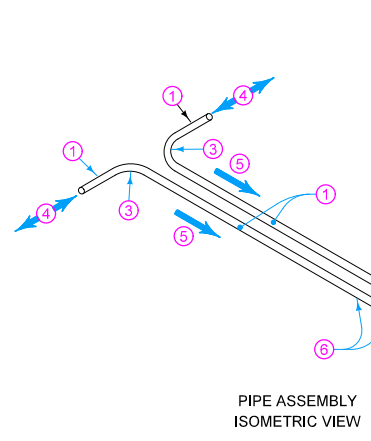


LONGITUDINAL AND TRANSVERSE OUTLETS



Transverse and backslope subdrains require only single outlets. Install double outlet pipes on all longitudinal subdrain systems, except at the beginning and end of the system. At these locations, install a single outlet pipe.

- ① Perforated Subdrain (Polyethylene Corrugated Tubing).
- ② On projects where existing shoulder material is removed, replace the shoulder material according to Article 2502.03, C of the Standard Specifications.
- ③ 'Y' or 'T' connection will not be allowed. Place subdrain on 1 foot minimum radius.
- ④ Direction of flow.
- ⑤ 6 inch minimum drop in elevation between longitudinal subdrain and outlet. 12 inch minimum drop for projects using recycled PCC subbase.
- ⑥ Corrugated metal pipe outlet 2 inches larger than subdrain pipe or corrugated double-walled PE or PVC pipe of the same diameter as the subdrain pipe with an appropriate coupler. If metal pipe is used, the pipes should be coupled in one of the following ways: (1) Use an inside fit reducer coupler (insert coupler a minimum of 12 inches into CMP); or (2) Insert 1 inch of the 4 inch subdrain into the 6 inch metal outlet pipe, then fully seal the entire opening with grout.
- ⑦ Bevel the trench to provide a minimum of 3 inches of porous backfill surrounding all portions of subdrain pipe.
- ⑧ Corrugated metal pipe outlet 2 inches larger than existing subdrain pipe, or corrugated double-walled PE or PVC pipe of the same diameter as the existing subdrain pipe.
- ⑨ Place class 'A' crushed stone or Special Backfill over outlet and carefully compact to avoid damaging outlet pipe.

Possible Contract Item:  
Subdrain Outlet, DR-304

Possible Tabulation:  
104-5C

 <b>STANDARD ROAD PLAN</b>	REVISION
	New 04-21-15
	DR-304
SHEET 1 of 1	

REVISIONS: New. Replaces RF-19E. Removed rodent guards.

*Brian Smith*  
APPROVED BY DESIGN METHODS ENGINEER

**OUTLETS  
FOR LONGITUDINAL, TRANSVERSE  
AND BACKSLOPE SUBDRAINS**