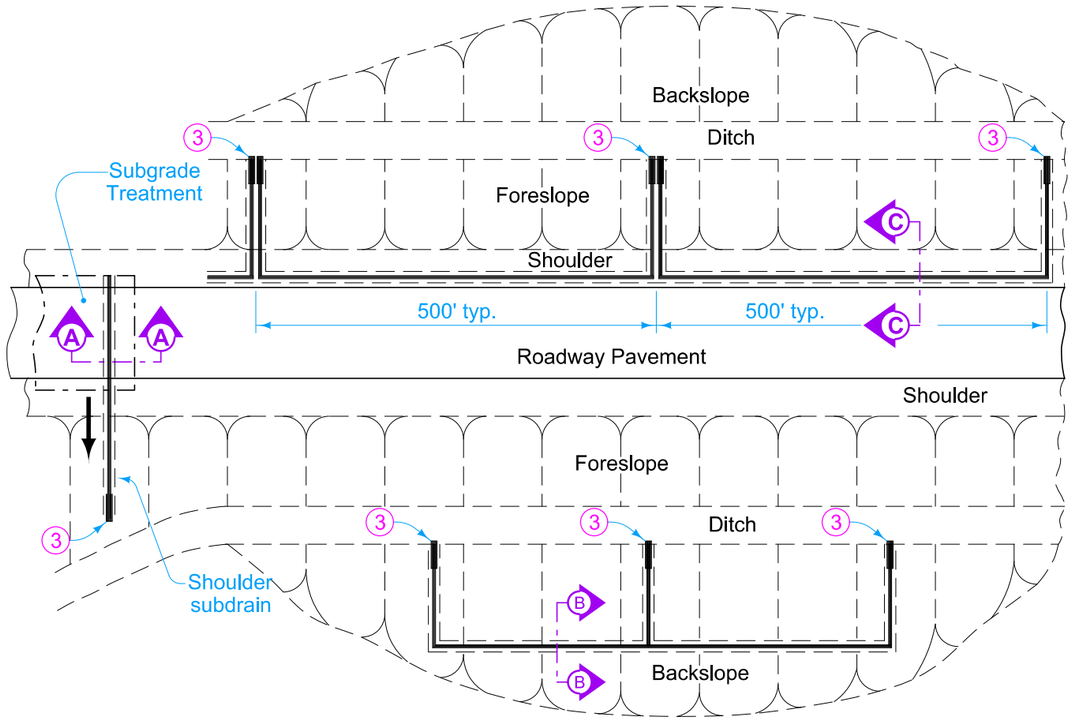
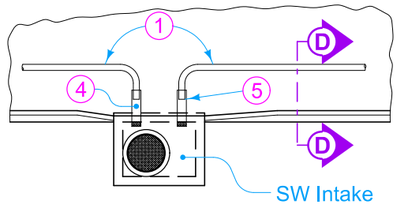
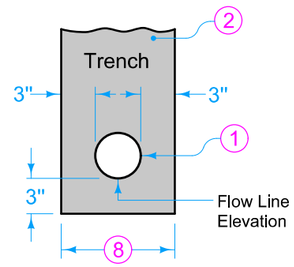


PLAN



INTAKE OUTLET



TUBING PLACEMENT
ALL TYPES

Possible Contract Items:
- Subdrain, Longitudinal, (Backslope)
- Subdrain, Longitudinal, (Shoulder)
- Subdrain Outlet (DR-303)
- Subdrain Outlet (DR-306)

Possible Tabulation:
- 104-9

When culverts which are less than 1 foot below the trench bottom are encountered within a tabulated subdrain, stop the trench 3 feet from the culvert and resume 3 feet beyond the culvert.

On new construction projects, place the subdrain after the special backfill, if required, and prior to granular or paved shoulder material.

Except for backslope installations, if the Contractor's operations result in a trench, place and compact granular shoulder material in the trench to be level with the adjacent surface prior to opening lanes to traffic.

(1) Perforated Subdrain (Corrugated Polyethylene Tubing).

(2) Porous Backfill for Subdrain (compacted).

(3) Subdrain outlets. See DR-306.

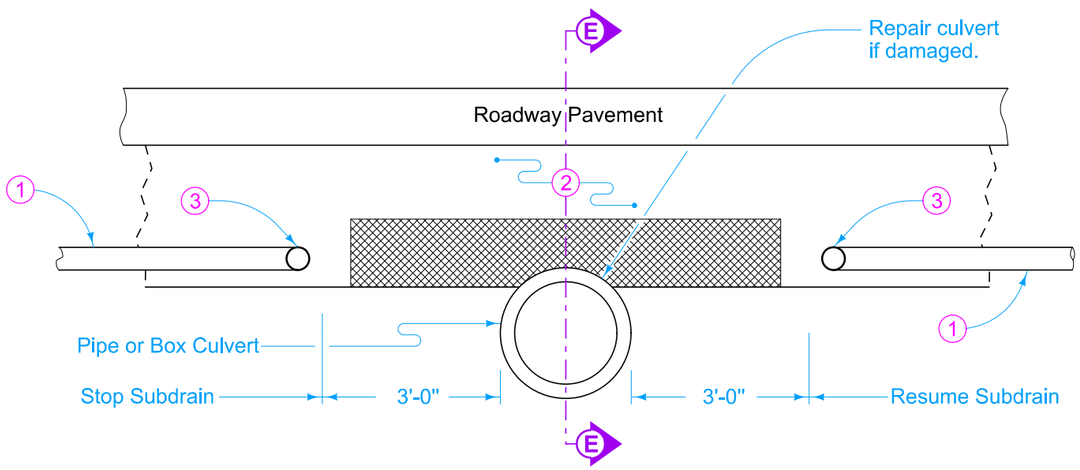
(4) 2 foot section of corrugated metal pipe of diameter 2" larger than subdrain or 2 foot section of double-walled PE or PVC pipe of the same diameter as subdrain. Pipe will be paid for as "Subdrain Outlet (DR-303)".

(5) Connect PE or PVC outlet with an appropriate coupler. Connect CMP outlet one of two ways: (1) Inside-fit reducer coupler (1 foot minimum fit inside CMP); or (2) Insert 1 foot of the 4 inch subdrain into 6 inch CMP and fully seal entire opening with grout.

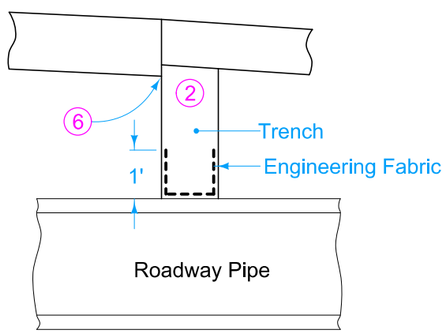
(6) Place porous backfill in direct contact with a minimum of 2 inches of pavement and continuous to shoulder material as per note 10 or 11.

(7) If the trench is inadvertently carried over the culvert, repair the trench as detailed on this sheet. If obstruction is 1 foot or more below trench bottom, carry subdrain line over in continuous alignment. No payment will be made for trench repair.

(8) 10 inches for 4 inch subdrain. 12 inches for 6 inch subdrain.



TRENCH REPAIR AT PIPE CULVERT (7)



SECTION E-E

IOWA DOT

STANDARD ROAD PLAN

REVISION	
3	10-17-17

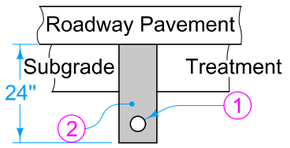
DR-303

SHEET 1 of 2

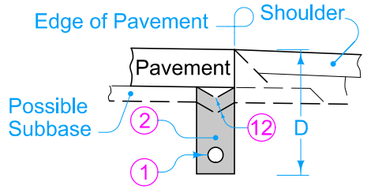
REVISIONS: Referencs to the DR-304 have been changed to the DR-306.

APPROVED BY DESIGN METHODS ENGINEER

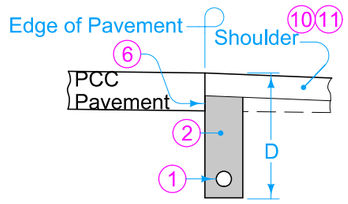
SUBDRAINS (LONGITUDINAL)



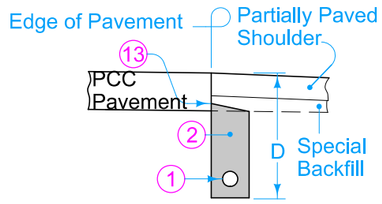
TYPE 5 INSTALLATION
SECTION A-A
Subgrade Treatment Subdrain



TYPE 6 INSTALLATION
SECTION C-C
For Drain Placement Prior to
Subbase or Pavement Placement

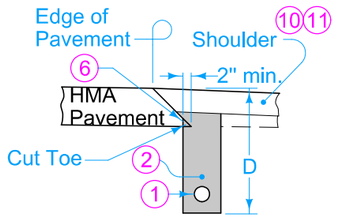


TYPE 7A INSTALLATION
SECTION C-C

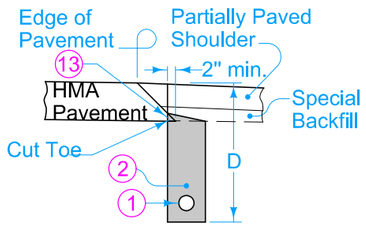


TYPE 7B INSTALLATION
SECTION C-C

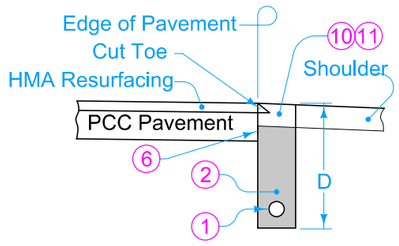
1. Perforated Subdrain (Corrugated Polyethylene Tubing).
2. Porous Backfill for Subdrain (compacted).
6. Place porous backfill in direct contact with a minimum of 2 inches of pavement and continuous to shoulder material as per note 11 or 12.
9. Install subdrain as cut proceeds.
10. On existing Granular or Earth Shoulders, replace with 4 inch minimum depth granular shoulder material.
11. On Paved Shoulders, refer to Section 2502 of the Standard Specifications for finishing shoulder.
12. Cut "V" notch just prior to subbase (if proposed) or pavement placement to assure uncontaminated contact.
13. Place top of subdrain trench at the bottom of pavement. Backfill trench so that a wedge of porous backfill has a minimum vertical contact of 2 inches with the pavement.



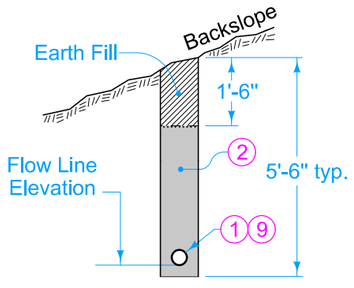
TYPE 8A INSTALLATION
SECTION C-C



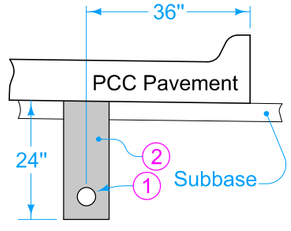
TYPE 8B INSTALLATION
SECTION C-C



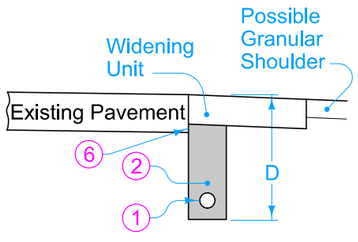
TYPE 9 INSTALLATION
SECTION C-C
Composite Pavement
with Existing Shoulder



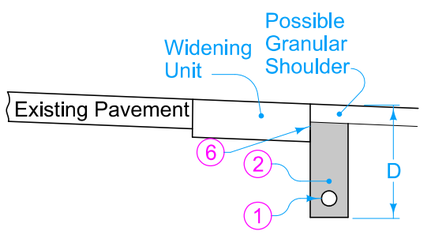
TYPE 11 INSTALLATION
SECTION B-B
Backslope



TYPE 12 INSTALLATION
SECTION D-D



TYPE 13 INSTALLATION
SECTION C-C
For New Widening Unit if
Thinner than Existing Pavement



TYPE 14 INSTALLATION
SECTION C-C
For New Widening Unit if
Thicker than Existing Pavement

IOWA DOT

STANDARD ROAD PLAN

REVISION	
3	10-17-17

DR-303

SHEET 2 of 2

REVISIONS: References to the DR-304 have been changed to the DR-306.

APPROVED BY DESIGN METHODS ENGINEER

SUBDRAINS
(LONGITUDINAL)