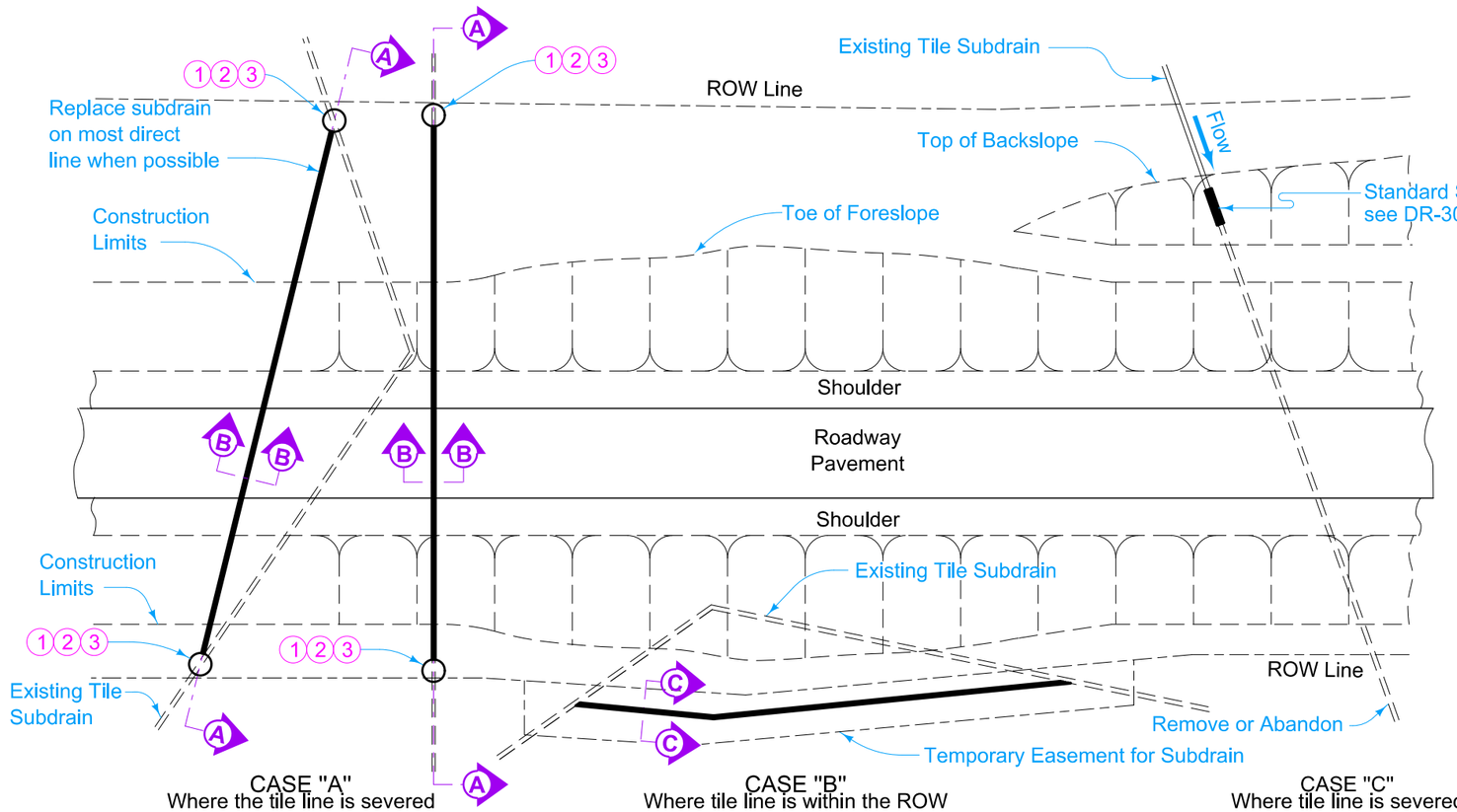
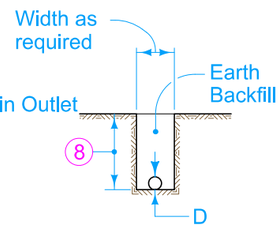
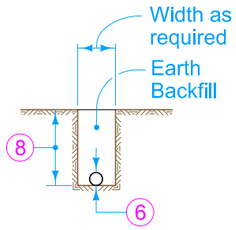


TYPICAL PLAN FOR REPLACING OR RELOCATING EXISTING FIELD TILE



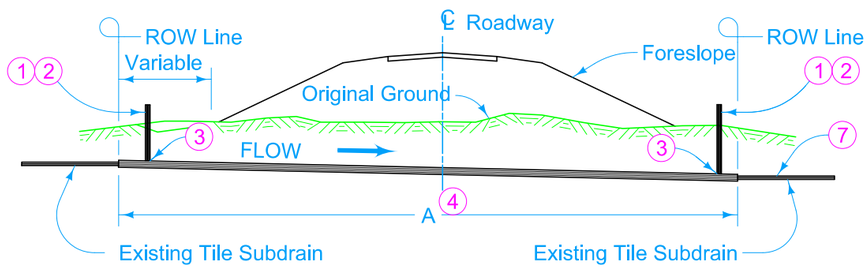
CASE "A"
SECTION B-B



CASE "B"
SECTION C-C

Possible Contract Items:
Standard Subdrain
Subdrain Outlet

Possible Tabulation:
104-5C



CASE "A"
SECTION A-A

1. 4 inch diameter inspection access with cap. Minimum of 3 feet above ground. Use PVC meeting the requirements of Article 4146.03 of the Standard Specifications.
2. Inspection access is required to allow inspection by the upstream and downstream property owners. Perforated pipe may be used to allow ditch drainage into subdrain if approved by adjacent property owners.
3. A t-fitting or saddle connection is required unless an alternate connection is approved by the Engineer.
4. Dimension A indicates the R.O.W. limits in which replacement of tile subdrain according to the replacement schedule is required.
5. Replacement sizes provide equivalent capacity based on a 6 inch settlement assuming a 0.20% slope with n=0.013 for concrete pipe and n=0.025 for corrugated pipe (Manning's Formula)
6. Replace in kind (size and type) or with 'PE' slotted pipe, a minimum of one size larger than existing line.
7. When multiple drains are connected to one outlet, the outlet is to provide full capacity for all connected drain systems.
8. Depth as required.

When the existing tile lines are intercepted by roadway construction, replace them within the ROW limits of the project, or outlet them in a ditch or channel. Where the roadway intersects the tile line in an undesirable alignment, as shown in Case 'A', relocate the tile line to accomplish a more nearly right angle. Where the existing tile line alignment is more parallel to the roadway and within the construction limits, relocate the tile outside the ROW line, as shown in Case 'B'. In cases where new construction requires existing subdrain to outlet into the roadway ditch, as shown in Case 'C', provide the Standard Subdrain Outlet shown in DR-305.

Replace tile lines within the ROW limits according to the replacement schedule shown below. Install an inspection access at each end of replaced tile line. Replace tile lines outside the ROW limits using the same size of pipe as existing line.

REPLACEMENT SCHEDULE CASE 'A'
(Pipe size in inches)

Existing Tile Size	PROPOSED SUBDRAIN SIZE D (5)	
	Concrete Pipe	Coated CMP Pipe
4	-	10
6	-	12
8	12	15
10	15	18
12	15	21
15	18	24
18	21	30
21	24	36
24	30	36
> 24	Existing tile size + 6"	(6)

Install relocated or replacement subdrain so as to cause a minimum of disturbance to existing field tile. Connect to lines of existing tile drains in such a way as to leave the existing tile drains in a functional condition.

Cap blind ends of subdrains with a metal cap or as approved by the Engineer.

When concrete culvert pipe of 2000D (Class III) or stronger is required, furnish and install a DR-121 Type 1 connection at no additional cost to the Contracting Authority.

IOWA DOT

STANDARD ROAD PLAN

REVISION	
2	4-18-23

DR-302

SHEET 1 of 1

REVISIONS: Added note 3. Renumbered notes 4-8.

APPROVED BY DESIGN METHODS ENGINEER

SUBDRAINS
STANDARD
(FARM TILE REPLACEMENT)