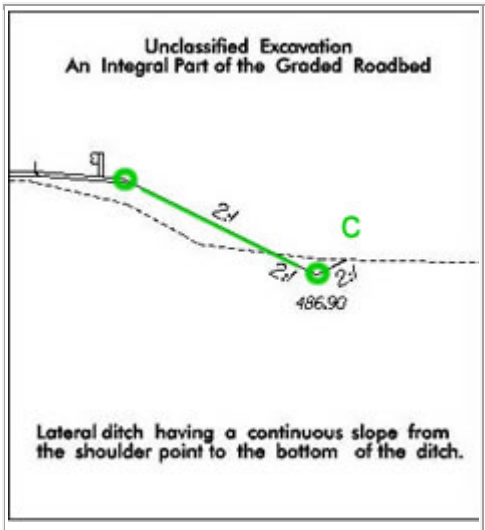
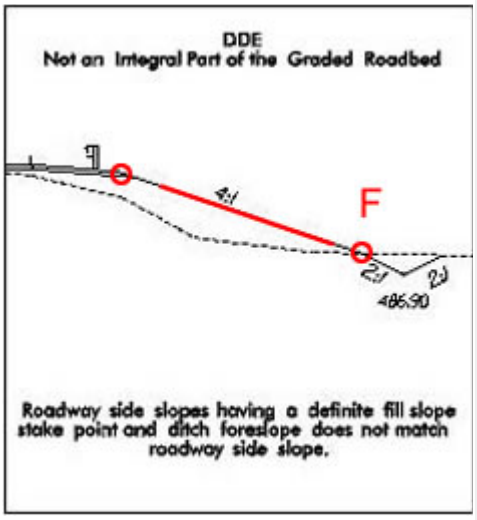
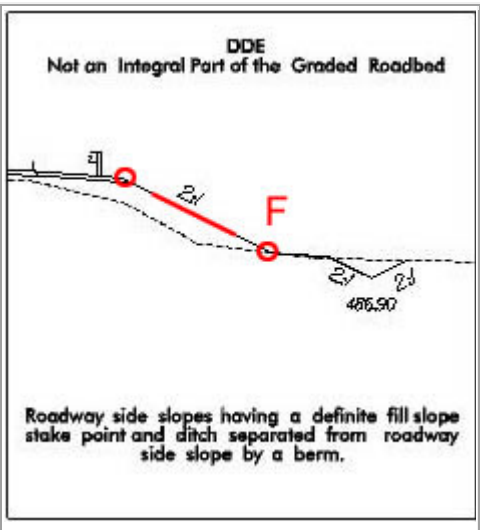
DITCH DRAFTING GUIDELINES

DITCH DRAFTING RULES:

1. Slope stake lines have the highest priority and are always shown no matter in what relation the ditch location is to the slope stake lines.
2. In most cases, ditches located outside the slope stake line are drafted with chevrons (contours) and ditches inside the slope stake lines are drafted with drainage flow lines. See Case IV and Case V below for the few exceptions.
3. Drainage flow lines OR ditch chevrons (contours) should be used to draft ditches. Never should both be combined to draft the same ditch.
4. Only ditches that have a design grade (COGO profile) by Hydraulic Engineers are to be drafted by Roadway Design in the DRN file. Note that it is common practice that DDE criteria be used to draw the ditches in the XSC file and ditch base and boundaries are lay out in the DRN file by means of Geopak Limits of Construction and linear pattern cells.
5. Water flows in the same direction as the flow line arrow heads and in the opposite direction as the chevron contours.
6. Water flow lines indicate the horizontal location of the ditch base. For a V ditch it is a single flow line. For a base ditch, the offset distance between the two (2) flow lines indicate the base width.
7. The boundaries of a berm ditch, STD 240.01, is usually not drafted in the plan view file (DRN).
8. **Standard Specifications for Roads and Structures**, Section 240:

   Drainage Ditches:
   "Unless otherwise classified on the plans, parallel or lateral ditches constructed as an integral part of the graded roadbed, having a continuous slope from the outer limit of the shoulder to the bottom of the ditch, will be considered to be within the roadway grading limits and will be part of the work covered by Section 225 [Roadway Excavation; Unclassified Excavation]."

		
APPLIES TO: CASE IA & IB CASE VA	**APPLIES TO:** CASE II	**APPLIES TO:** CASE III CASE VB

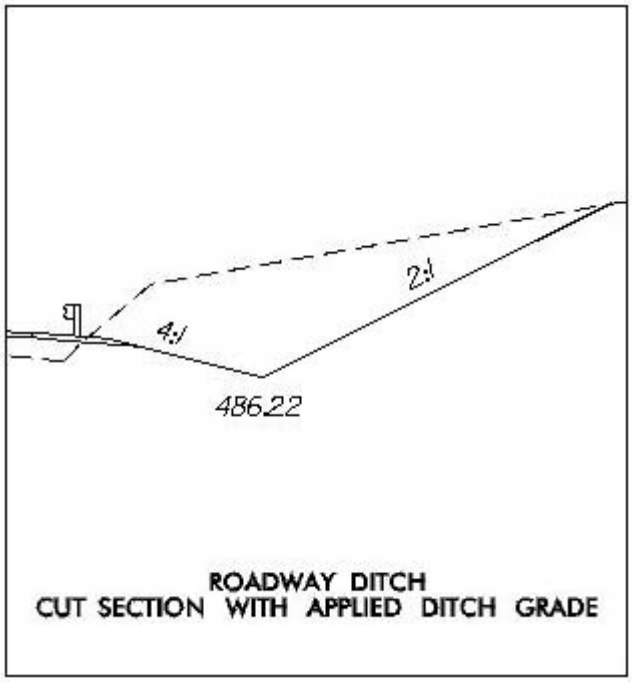
Note that for special ditches called for by the Hydraulic Unit that the dimension, quantity, and the flow direction can not be determined by Roadway cross sections and the data provided by the Hydraulic Unit alone, the Hydraulic Unit will be responsible for the drafting of these ditches as well as determining, computing, and labeling pay items such as DDE, rip rap, and filter fabric, when applicable.

APPLICATION:

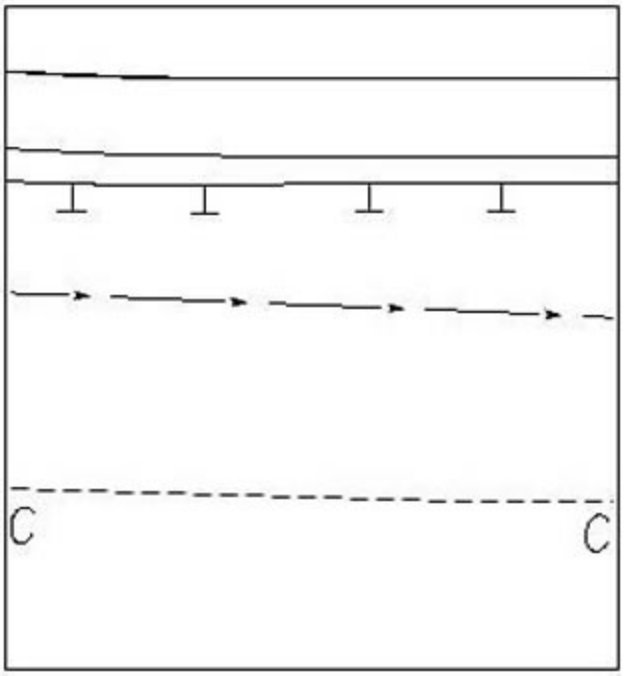
The matrix below can be used as a guide on how to represent the ditches in the plan view file (DRN) depending on how the ditches were draw in the cross section file (XSC). These illustrations are not to scale.

Case I - Roadway Ditch with an Applied Special Ditch Grade by Hydro

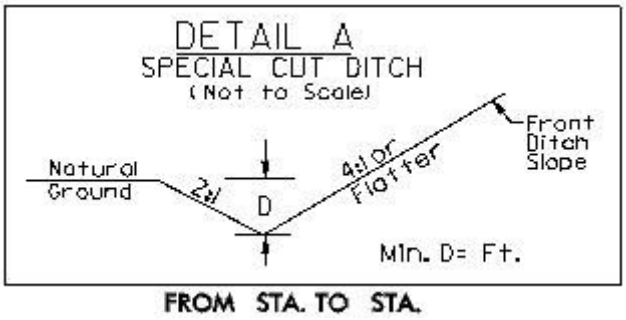
Case IA: If in the cross section file ...



Case IA: Then this how it is shown in plan view.



Case IA: Ditch Detail

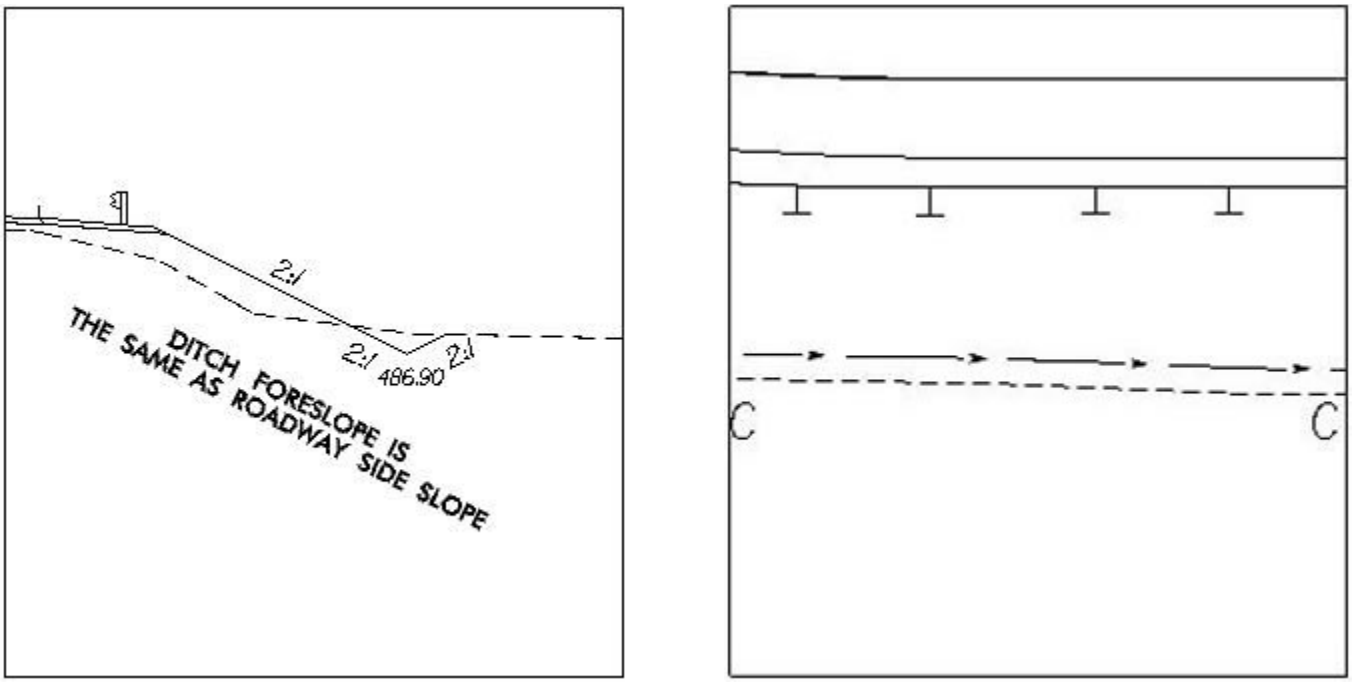


PAID FOR AS: UNCLASSIFIED COMMON EXCAVATION (Cubic Yard)

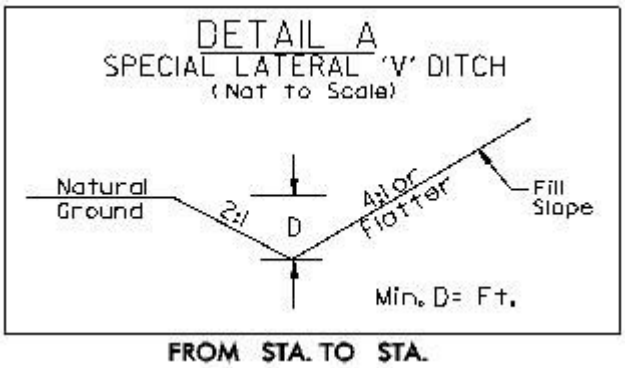
Note that the ditch elevation is the applied COGO ditch grade proposed by Hydro.

Case IB: If in the cross section file ...

Case IB:Then this how it is shown in plan view.



Case IB: Ditch Detail

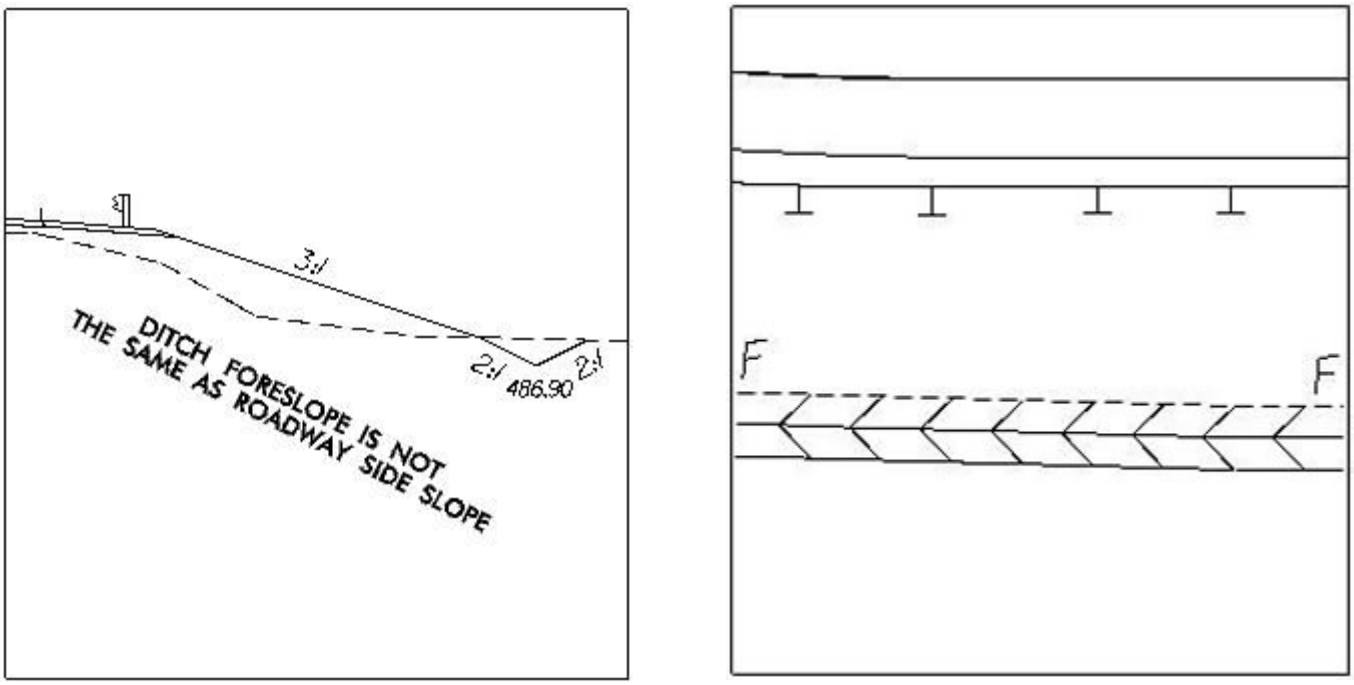


PAID FOR AS: UNCLASSIFIED COMMON EXCAVATION (Cubic Yards)

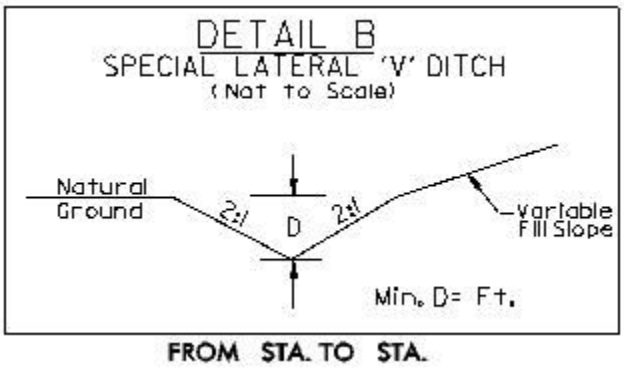
back to top...

Case II - Special Lateral V Ditch or Base Ditch

If in the cross section file ... Then this how it is shown in plan view.



Case II: Ditch Detail



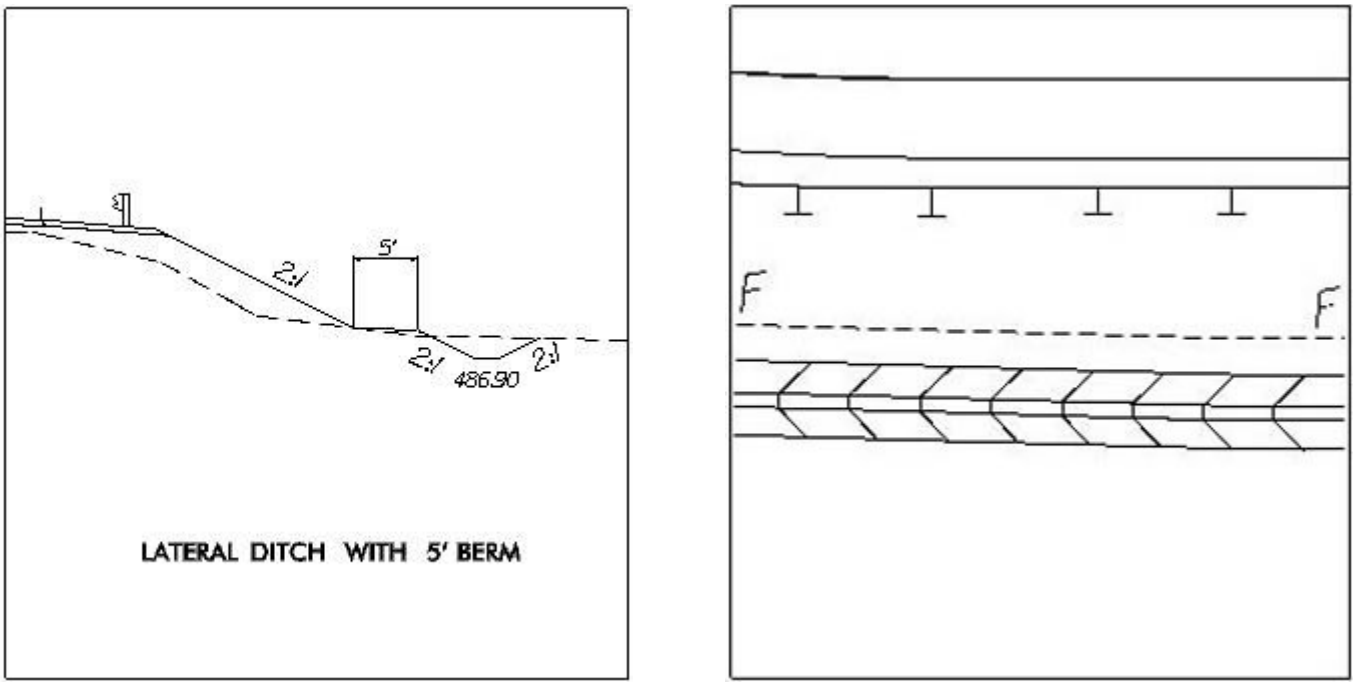
FROM STA. TO STA.

PAID FOR AS: DDE (Cubic Yard)

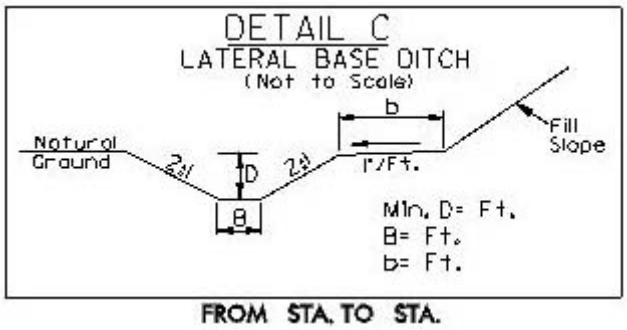
back to top...

Case III - Special Lateral V Ditch or Base Ditch with a Berm

If in the cross section file ... Then this how it is shown in plan view.



Case III: Ditch Detail



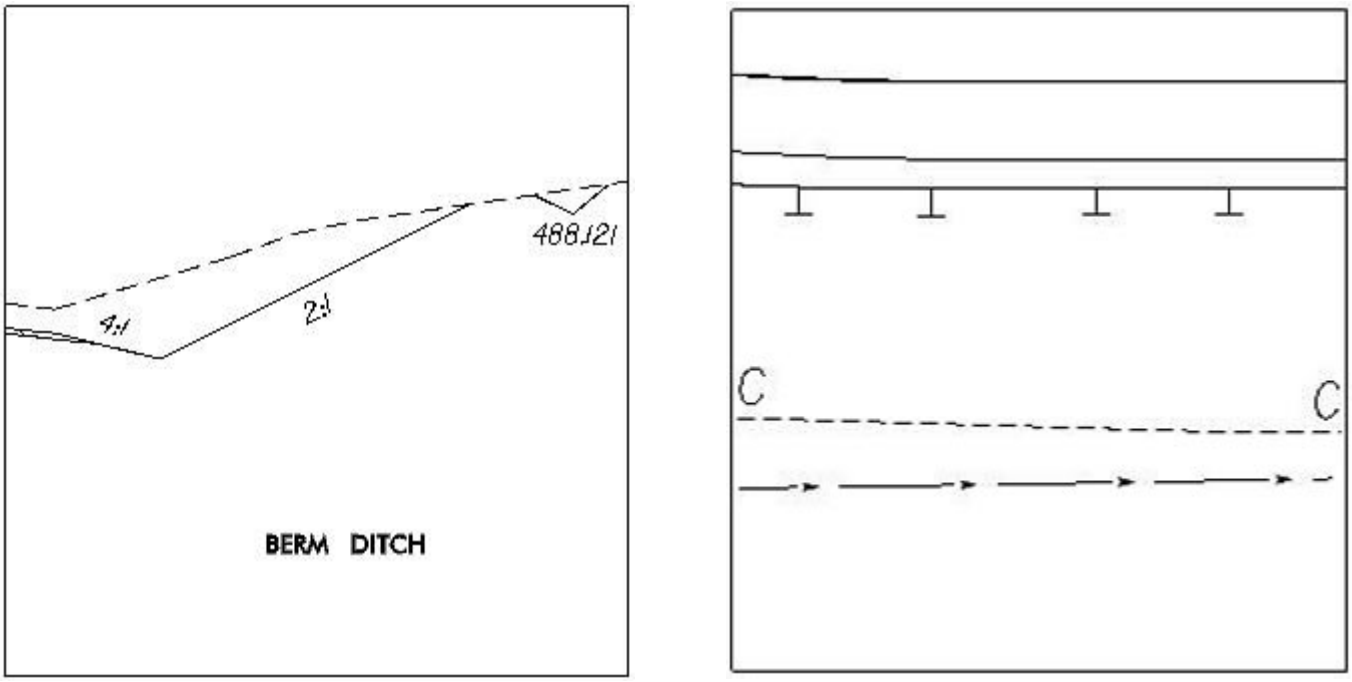
PAID FOR AS: DDE (Cubic Yard)

back to top...

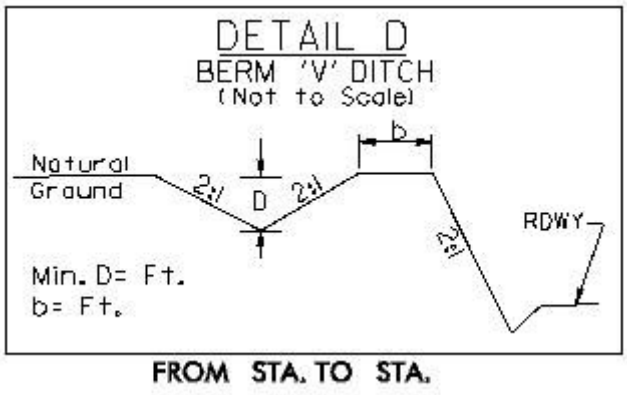
Case IV - Berm Ditch STD. 240.01

Note that special consideration should be exercised when berm ditches are used in a project. Roadway Designers should reference the cross section to determine the clearing limits as well as right of way limits. If the berm ditch back slope does not meet standards or can not be obtain, then the Roadway Designer will have to resolve the issue with the Hydraulic and Geotechnical Units.

If in the cross section file ... Then this how it is shown in plan view.



Case IV: Ditch Detail



PAID FOR AS: Berm Ditch Construction (Linear F00t)

Standard Specifications 240-5

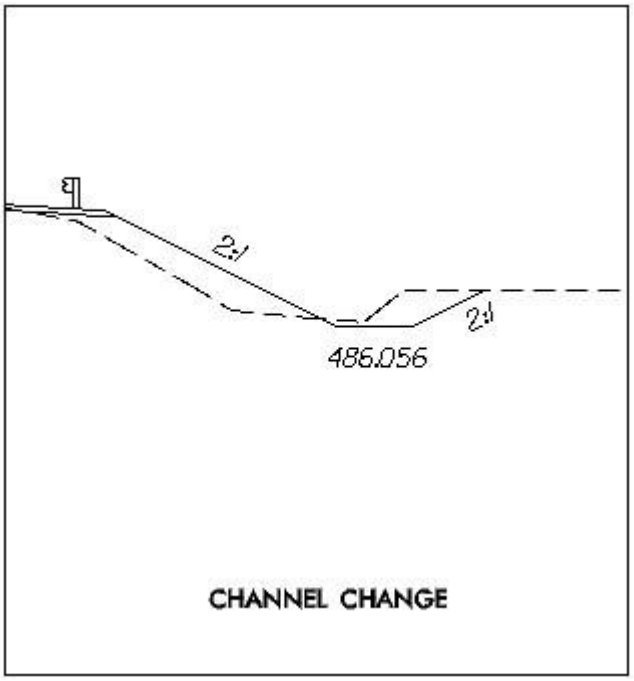
Note that for a Berm Base Ditch, two flow arrow lines are drawn to represent the berm ditch base.

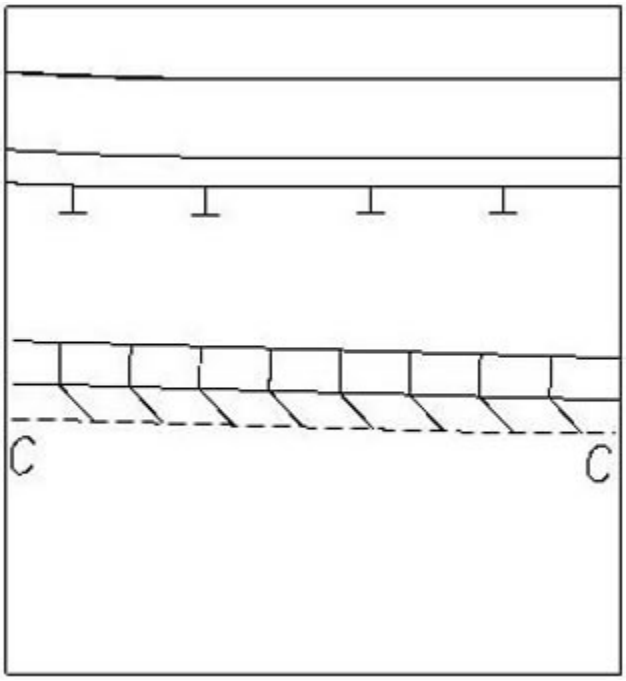
back to top...

Case V - Channel Change

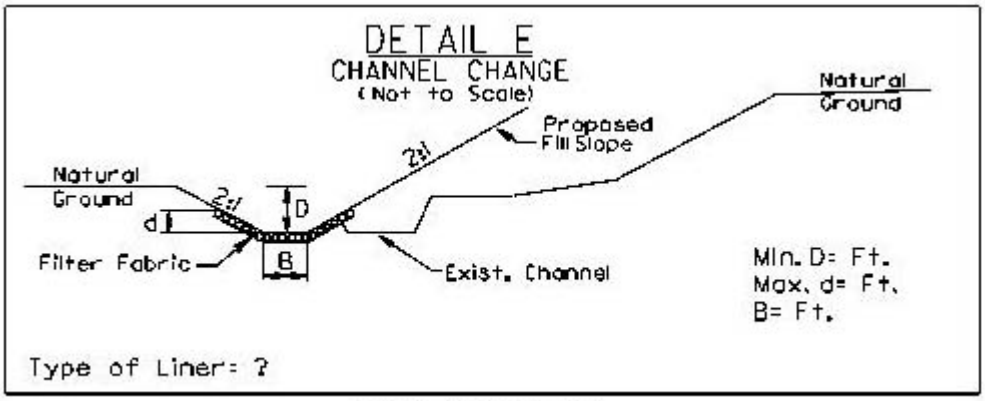
Case VA: If in the cross section file ...

Case VA: Then this how it is shown in plan view.





Case V: Ditch Detail

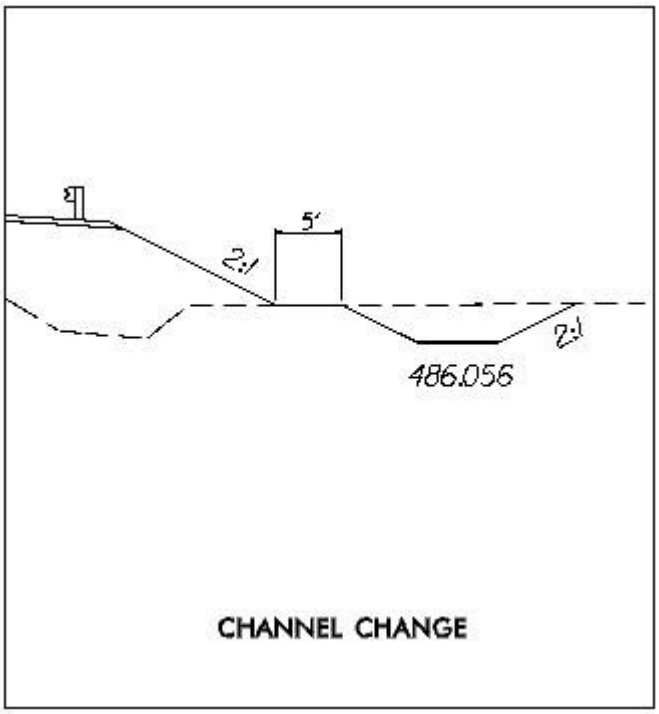


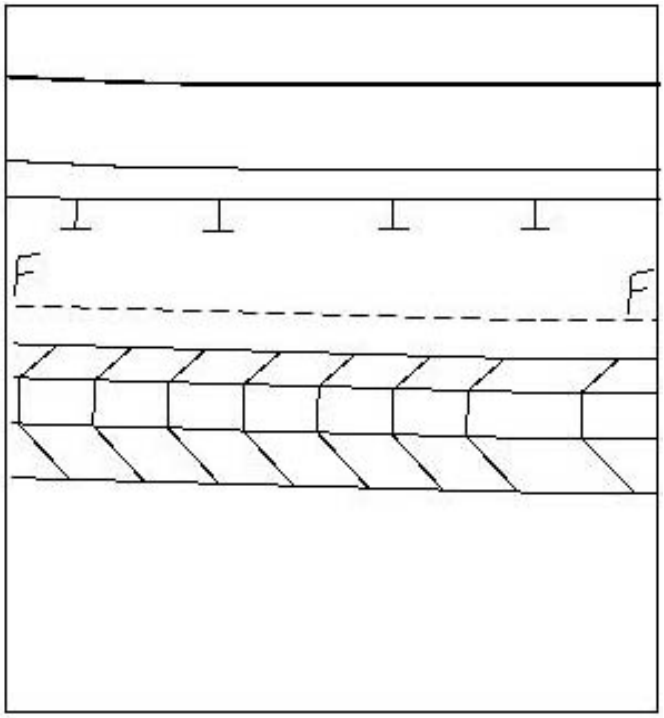
FROM STA. TO STA.

PAID FOR AS: UNCLASSIFIED COMMON EXCAVATION (Cubic Yards)

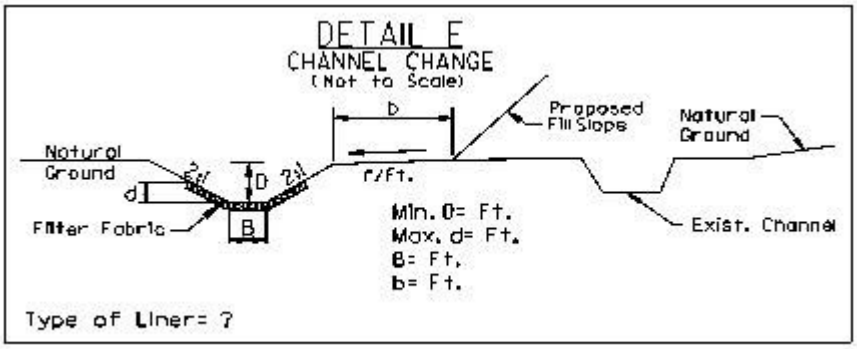
Case VB: If in the cross section file ...

Case VB: Then this how it is shown in plan view.





Case VB: Ditch Detail



FROM STA. TO STA.

PAID FOR AS: DDE (Cubic Yard)