

14_32 Roadway Ditch Grade

Question:

When I sent the cross section file to Hydro, the cross sections were cut sections (Roadway ditches). Hydro proposed the extension of the ditch slope to a ditch grade. A few proposed Roadway ditches had a base. Can I run the DDE Criteria to reflect these changes?

Answer:

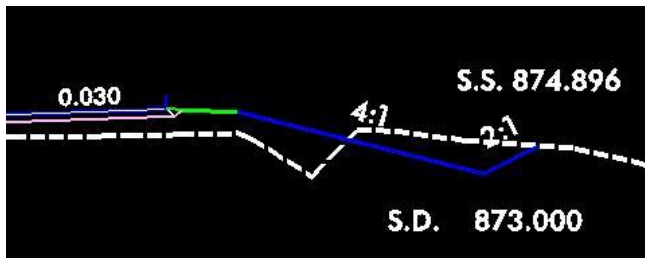
No. DDE Criteria are only valid with a Roadway fill section. DDE Criteria are only applicable after the original proposed templates have been drawn. You would have to rerun your original Criteria input file, regardless if the Roadway ditch is a base or V ditch. Also the earthwork covered under this scope of work is commonly computed as Unclassified Excavation, not Drainage Ditch Excavation (DDE).

As we progress toward 3D modeling of cross sections, one of our main objects is to minimize "hand" modifications to cross sections as the number of times we cut cross sections and rerun Criteria will drastically increase. Therefore, I have extensively modified the local design side slope (LDSS) Criteria files to accommodate the design of Roadway ditches before Hydraulic design and post Hydraulic plans for total automation.

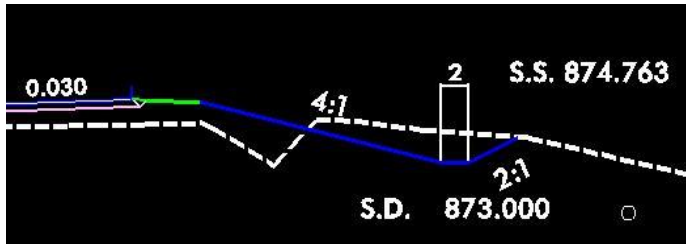
Typical Roadway Ditch Before Hydro



Typical Roadway Ditch Post Hydraulic Design



or



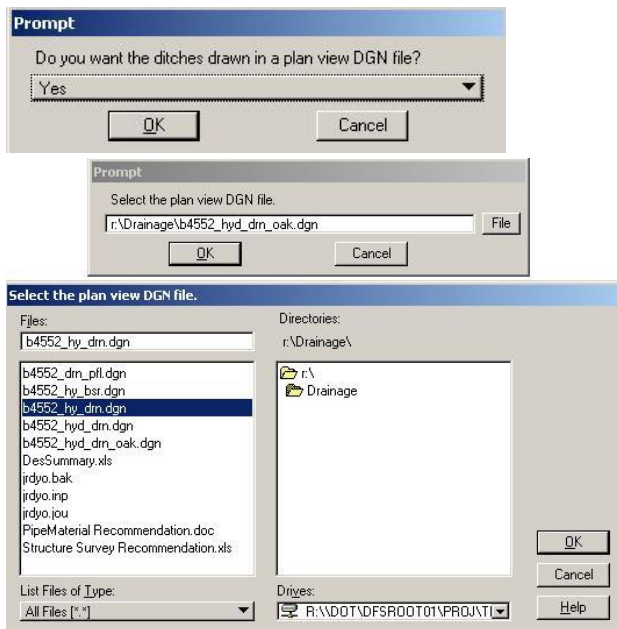
Note that if a base Roadway ditch is proposed, the base width is automatically dimensioned.
 Typical Criteria Input Before Hydro

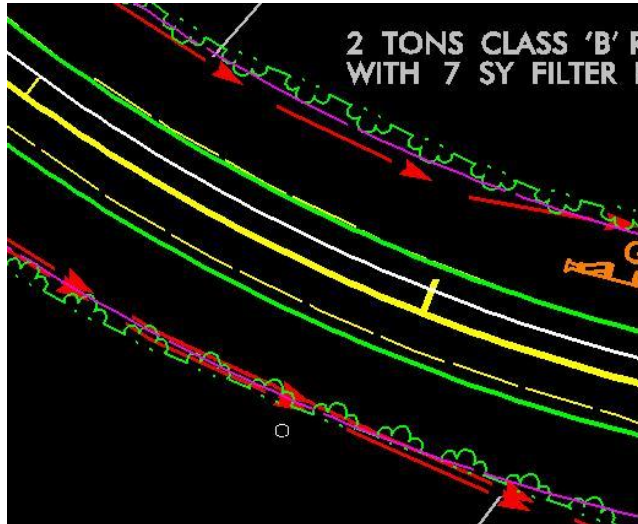
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DEFINE "LD01 DITCH WIDTH" 13
DEFINE "LD01 DITCH SLOPE" 4
DEFINE "LD01 FIX CUT SLOPE" 2
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Typical Addition to Criteria Input Post Hydraulic Design

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DEFINE "LD01 USE DITCH GRADE" 1
DEFINE "LD01 DITCH SLOPE SWITCH" 1
DEFINE "LD01 DITCH GRADE RIGHT" RTDITCH1
DEFINE "LD01 DITCH GRADE LEFT" LTDITCH1
DEFINE "LD01 DITCH GRADE RIGHT BASE WIDTH" 2
DEFINE "LD01 DITCH GRADE LEFT BASE WIDTH" 5
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In addition, if a special ditch grade is used, then an option to draft the ditch into a plan view DGN file is made available (just like the DDE criteria).





Note that the direction of ditch flow lines are automatically and correctly placed. This is in compliance with our Ditch Drafting Guideline. As a check, if the proposed ditch grade elevation is above natural ground, then an error statement will indicate where the problem has occurred.



Lastly, at this time there are no considerations for the same modifications being done to the arterial design side slope (ADSS) and freeway design side slope (FDSS) Criteria files. This is due to the complexity of the ditch width warrants, hinge point for cuts, and the 8' vertical curves (on FDSS ditches) associated with these type of ditches. We will address these scenarios as the need for them arise.

Reference:Ditch Drafting Guideline

Reference:Criteria Manual-LDSS

Roadway Design Manual, Part I, Chpt. 1-2A, F-1

(B) ARTERIALS (OTHER THAN EXPRESSWAYS AND FOUR LANE FACILITIES), COLLECTORS, AND LOCALS (OVER 4000 ADT DESIGN YEAR TRAFFIC)

**1-2A
F-1**

(C) COLLECTORS AND LOCALS (4000 ADT OR LESS DESIGN YEAR TRAFFIC)