



Montana Department of Transportation
PO Box 201001
Helena, MT 59620-1001

Memorandum

To: Distribution

From: Paul Ferry, P.E.
Highways Engineer

Date: December 17, 2009

Subject: Furrow Ditches - Clarification

The clarification of the following items is intended to supplement the memo on furrow ditches that is dated November 30, 2009.

The furrow ditch note will be included in all appropriate plans (generally those that involve major grading). If the Geotechnical Section decides that a furrow ditch should not be utilized at specific locations, the note will be expanded to describe the area where the note does not apply. If the Hydraulics Section determines that an interceptor ditch needs to be designed, they will coordinate with the designer and the design of the ditch will typically be developed in accordance with the *Permanent Erosion and Sediment Control Guidelines*. It will have a detail in the plans, a quantities summary and possibly a special provision. The ditch addressed by a note is much more common. Its installation is often dictated by the EPM based on need and practicality, and is not measured for payment. The following guidance/clarification is provided for both the designed furrow ditch and the furrow ditch addressed by a note (common ditch).

Construction Limits

Designed Ditch: Depending on its size, this ditch may require changes to the construction limits. The R/W needs will be determined during the project development process.

Common Ditch No adjustments to the construction limits are necessary. If there is insufficient room to construct this ditch, it is generally eliminated. However, potential erosions problems due to eliminating the ditch should be considered

Back Slope Rounding

Designed Ditch Back slope rounding is used to determine a theoretical catch point to ensure that the construction limits are adequate for equipment operation. The actual rounding is performed to somewhat blend the top of the cut to surrounding terrain. It may be substantially different than what is designed. Since this type of ditch will be shown in the cross sections, its impact on back slope rounding must be considered. The cross sections in the areas of the designed ditch must be evaluated to ensure that the top of the cut

slope can still be rounded without adversely impacting the designed ditch. In these cases the location of the ditch may need to be modified and/or the back slope rounding modified. This should be discussed in the design process and evaluated on a case-by-case basis.

Common Ditch Since these ditches are not shown in the plans or cross sections, no modifications to the standard practice of displaying back slope rounding are necessary. Continue to include and show back slope rounding as it has been customarily shown

Dimensions

Designed Ditch The dimensions will be determined through an assessment of anticipated flows and will vary from project to project. As noted above, a detail and quantities will be provided in the plans.

Common Ditch Although these ditches are generally about 1 foot deep and 2 – 3 feet wide at the top, the dimensions can vary. Dimensions will not be included in the plans.

If you have questions concerning this, please contact me at 444-6244.

Pf.

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