

DESIGN MEMORANDUM NO. 12-05

TO: Chief District Engineers
Design Engineers
Active Consultants

FROM: David E. Kratt, Acting Director *DeK*
Division of Highway Design

DATE: July 27, 2005

SUBJECT: Policy on Best Management Practice (BMP)
to be used for Karst and Significant Resource Areas

The following BMP shall be used during the construction and the maintenance/operations of all roads listed on the National Highway System located in Karst areas and on all roadways which may impact a significant resource as determined by the DEA.

1. Use grass swales for ditches. These swales shall be constructed as shown on the attached detail with a flat bottom cross-section of 2 ft. minimum. The width of the bottom of the swale will be determined by the Design Engineer based on the expected peak flow and the slope so that resulting shear stress will allow as much grass or grass and geo-tech liner as possible.
2. Use interceptor ditches to prevent large volumes of off site water from adding to the volume of run-off being carried by the swales.
3. Use detention/containment basins to temporarily impound the run-off from the swales before it is discharged from the right-of-way. These basins shall have a minimum volume of 10,000 gallons upstream from each final discharge point. This volume may be attained by constructing basins in series if necessary. The discharge point of each basin shall be constructed as a Silt Trap Type B (see attachment). Detention Basins shall be designed to maximize the flow length between the entrance and exit.
4. All swales shall be seeded with the mixture shown on the detail at the rate of 5 lbs. per 1000 sq. ft.
5. When and if these swales and/or basins are cleaned out, they shall be restored.

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This policy is effective for the Design Projects for I-65 and I-66 which are currently being designed and for all other qualifying projects where Right-of-Way plans have not been completed. The Project Team may decide to implement this policy on projects that do not meet the above criteria.

As this is a new policy, details and techniques will need to be further refined as we gain experience with the procedures enumerated above. Please contact Mr. Danny Jasper of the Division of Highway Design with your comments, suggestions or questions.

Maps of the National Highway System are located on the Division of Planning's website at http://transportation.ky.gov/planning/maps/NHS/nhs_kysz_2005.pdf. The Area of Karst Occurrence in Kentucky is located on the Kentucky Geological Survey's website at http://kgsweb.uky.edu/olops/pub/kgs/mc33_12.pdf. A detail of a Grass Swale is attached.

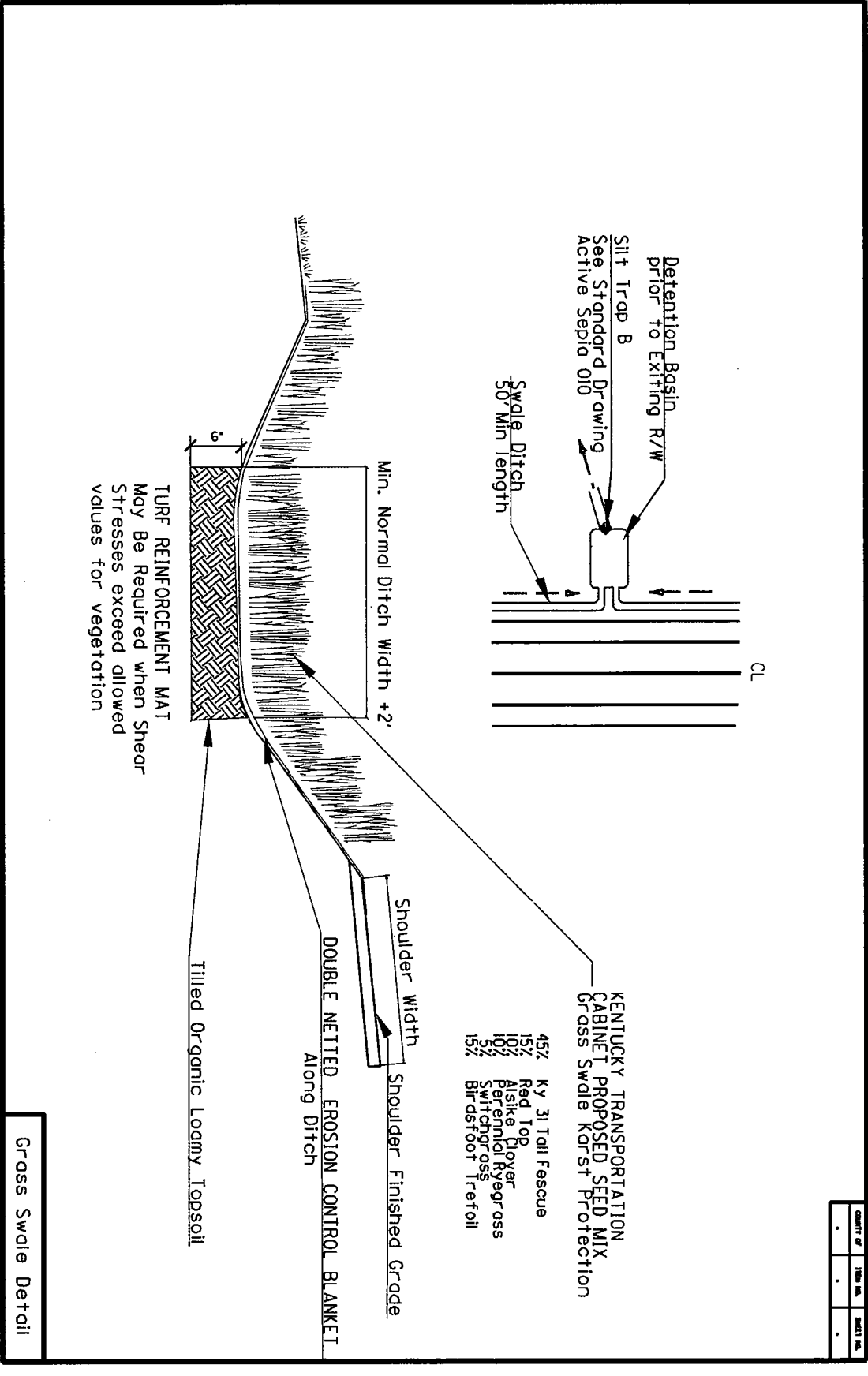
DEK:RDM:WDM:DJ:JAD

Attachment

VERSION: 1.0
 DATE: 7/8/2005

Prepared by: ATTC
 Checked by: ATTC
 Approved by: ATTC

PREPARED BY: _____ DATE: _____
 CHECKED BY: _____ DATE: _____
 APPROVED BY: _____ DATE: _____



Detention Basin
 prior to Exiting R/W
 Silt Trap B
 See Standard Drawing
 Active Sepia 010
 Swale Ditch
 50' Min length

CL

TURF REINFORCEMENT MAT
 May Be Required when Shear
 Stresses exceed allowed
 values for vegetation

Min. Normal Ditch Width +2'

Shoulder width

DOUBLE NETTED EROSION CONTROL BLANKET
 Along Ditch

Tilled Organic Loamy Topsoil

Shoulder Finished Grade

KENTUCKY TRANSPORTATION
 CABINET PROPOSED SEED MIX
 Grass Swale Karst Protection

- 45% KY 31 Tall Fescue
- 15% Red Top
- 10% Alsike Clover
- 10% Perennial Ryegrass
- 5% Switchgrass
- 15% Birdfoot Trefoil

Grass Swale Detail

DATE	BY	REVISION