Site Preparation

- 1. Subsoiler, plow, or other implement shall be used to reduce soil compaction and allow maximum infiltration. (Maximizing infiltration will help control both runoff rate and water quality.) Subsoiling should be done when the soil moisture is low enough to allow the soil to crack or fracture. Subsoiling shall not be done on slip-prone areas where soil preparation should be limited to what is necessary for establishing vegetation.
- 2. The site shall be graded as needed to permit the use of conventional equipment for seedbed preparation and seeding.
- 3. Topsoil shall be applied where needed to establish

Seedbed Preparation

- 1. Lime—Agricultural ground limestone shall be applied to acid soil as recommended by a soil test. In lieu of a soil test, lime shall be applied at the rate of 100 pounds per 1,000-sq. ft. or 2 tons per acre.
- 2. Fertilizer—Fertilizer shall be applied as recommended by a soil test. In place of a soil test, fertilizer shall be applied at a rate of 25 pounds per 1,000-sq. ft. or 1000 pounds per acre of a 10-10-10 or 12-12-12 analyses.
- 3. The lime and fertilizer shall be worked into the soil with a disk harrow, spring-tooth harrow, or other suitable field implement to a depth of 3 inches. On sloping land, the soil shall be worked on the contour.

Seeding Dates and Soil Conditions

Seeding should be done March 1 to May 31 or August 1 to September 30. If seeding occurs outside of the abovespecified dates, additional mulch and irrigation may be required to ensure a minimum of 80% germination. Tillage for seedbed preparation should be done when the soil is dry

• Other—Other acceptable mulches include rolled erosion enough to crumble and not form ribbons when compressed by hand. For winter seeding, see the following section on dormant seeding.

Dormant Seedings

- 1. Seedings should not be made from October 1 through November 20. During this period, the seeds are likely to germinate but probably will not be able to survive
- 2. The following methods may be used for "Dormant Seeding": 3. Straw and Mulch Anchoring Methods
- Straw mulch shall be anchored immediately to minimize loss by
- wind or water. Mechanical—A disk, crimper, or similar type tool shall be set straight to punch or anchor the mulch material into
- the soil. Straw mechanically anchored shall not be finely chopped but, generally, be left longer than 6 inches. Mulch Netting—Netting shall be used according to the manufacturer's recommendations. Netting may be necessary to hold mulch in place in areas of concentrated runoff
- and on critical slopes. · Asphalt Emulsion—Asphalt shall be applied as recomnended by the manufacture or at the rate of 160 gallons pe

- From October 1 through November 20, prepare the seedbed. add the required amounts of lime and fertilizer, then mulch and anchor. After November 20, and before March 15. broadcast the selected seed mixture. Increase the seeding
- rates by 50% for this type of seeding. From November 20 through March 15, when soil conditions permit, prepare the seedbed, lime and fertilize, apply the selected seed mixture, mulch and anchor. Increase the
- · Apply seed uniformly with a cyclone seeder, drill, cultipacker seeder, or hydro-seeder (slurry may include seed and fertilizer) on a firm, moist seedbed.

seeding rates by 50% for this type of seeding.

 Where feasible, except when a cultipacker type seeder is used, the seedbed should be firmed following seeding operations with a cultipacker, roller, or light drag. On sloping land, seeding operations should be on the contour where

- 1. Mulch material shall be applied immediately after seeding. Dormant seeding shall be mulched. 100% of the ground surface shall be covered with an approved material.
- Materials
- Straw—If straw is used it shall be unrotted small-grain straw applied at the rate of 2 tons per acre or 90 pounds (two to three bales) per 1,000-sq. ft. The mulch shall be spread uniformly by hand or mechanically applied so the soil surface is covered. For uniform distribution of hand-spread mulch, divide area into approximately 1,000-sq.-ft. sections and spread two 45-lb. bales of straw in each section.
- · Hydroseeders—If wood cellulose fiber is used, it shall be applied at 2,000 lb./ac. or 46 lb./1,000 sq. ft.
- control mattings or blankets applied according to manufacturer's recommendations or wood chips applied at 6 tons per acre.
- Synthetic Binders—Synthetic binders such as Acrylic DLR (Agri-Tac), DCA-70, Petroset, Terra Tack or equivalent may be used at rates specified by the manufacturer.
- Wood Cellulose Fiber—Wood cellulose fiber shall be applied at a net dry weight of 750 pounds per acre. The wood cellulose fiber shall be mixed with water with the mixture containing a maximum of 50 pounds cellulose per 100 gallons of water.

Permanent seeding shall include irrigation to establish vegetation during dry weather or on adverse site conditions, which require adequate moisture for seed germination and plant

Irrigation rates shall be monitored to prevent erosion and damage to seeded areas from excessive runoff.

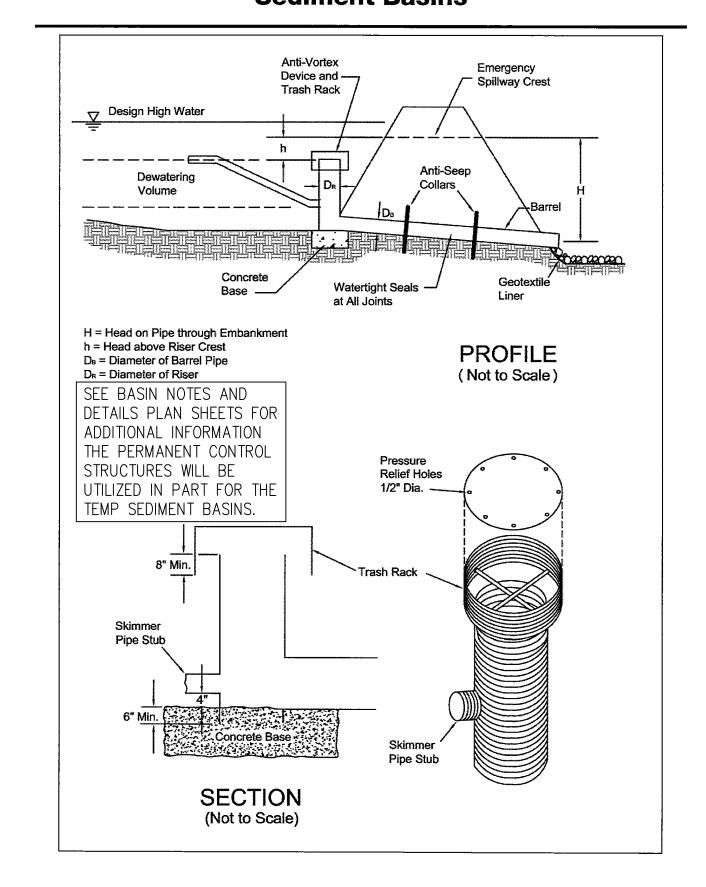
Table 7.10.2 Permanent Seeding

| Cond Mile | See | ding Rate | Neter | | |
|--------------------------|-----------|--------------------------|--|--|--|
| Seed Mix | Lbs./acre | Lbs./1,000 Sq. Feet | Notes: | | |
| | | General Use | | | |
| Creeping Red Fescue | 20-40 | 1/2-1 | For close mowing & for waterways with <2.0 | | |
| Domestic Ryegrass | 10-20 | 1/4-1/2 | ft/sec velocity | | |
| Kentucky Bluegrass | 20-40 | 1/2-1 | | | |
| Tall Fescue | 40-50 | 1-1 1/4 | | | |
| Turf-type (dwarf) Fescue | 90 | 2 1/4 | | | |
| | \$ | teep Banks or Cut Slopes | | | |
| Tall Fescue | 40-50 | 1-1 1/4 | | | |
| Crown Vetch | 10-20 | 1/4-1/2 | Do not seed later than August | | |
| Tall Fescue | 20-30 | 1/2-3/4 | | | |
| Flat Pea | 20-25 | 1/2-3/4 | Do not seed later than August | | |
| Tall Fescue | 20-30 | 1/2-3/4 | | | |
| | | Road Ditches and Swales | | | |
| Tall Fescue | 40-50 | 1-11/4 | | | |
| Turf-type | | | | | |
| (Dwarf) Fescue | 90 | 2 1/4 | | | |
| Kentucky Bluegrass | 5 | 0.1 | | | |
| | | Lawns | | | |
| Kentucky Bluegrass | 100-120 | 2 | | | |
| Perennial Ryegrass | | 2 | | | |
| Kentucky Bluegrass | 100-120 | 2 | For shaded areas | | |
| Creeping Red Fescue | | 1-1/2 | | | |

Note: Other approved seed species may be substituted.

Sediment Basins

Specifications



Specifications

Sediment Basins

- 1. Sediment basins shall be constructed and operational before upslope land disturbance begins.
- 2. Site Preparation -The area under the embankment shall be cleared, grubbed, and stripped of any vegetation and root mat. The pool area shall be cleared as needed to facilitate sediment cleanout. Gullies and sharp breaks shall be sloped to no steeper than 1:1. The surface of the foundation area will be thoroughly scarified before placement of the embankment material.
- 3. Cut-Off Trench -The cutoff trench shall be excavated along the centerline of the embankment. The minimum depth shall be 3 ft. unless specified deeper on the plans or as a result of site conditions. The minimum bottom width shall be 4 ft., but wide enough to permit operation of compaction equipment. The trench shall be kept free of standing water during backfill operations.
- 4. Embankment -The fill material shall be free of all sod, roots, frozen soil, stones over 6 in. in diameter, and other objectionable material. The placing and spreading of the fill material shall be started at the lowest point of the foundation and the fill shall be brought up in approximately 6 in. horizontal layers or of such thickness that the required compaction can be obtained with the equipment used. Construction equipment shall be operated over each layer in a way that will result in the required compaction. Special equipment shall be used when the required compaction cannot be obtained without it. The moisture content of fill material shall be such that the required degree of compaction can be obtained with the equipment used.
- 5. Pipe Spillway -The pipe conduit barrel shall be placed on a firm foundation to the lines and grades shown on the plans. Connections between the riser and barrel, the antiseep collars and barrel and all pipe joints shall be watertight. Selected backfill material shall be placed around the conduit in layers and each layer shall be compacted to at least the same density as the adjacent embankment. All compaction within 2 ft. of the pipe spillway will be accomplished with hand-operated tamping equipment.

- 6. Riser Pipe Base -The riser pipe shall be set a minimum of 6 in. in the concrete base.
- 7. Trash Racks -The top of the riser shall be fitted with trash racks firmly fastened to the riser pipe.
- 8. Emergency Spillway The emergency spillway shall be cut in undisturbed ground. Accurate construction of the spillway elevation and width is critical and shall be within a tolerance of 0.2 ft.
- 9. Seed and Mulch -The sediment basin shall be stabilized immediately following its construction. In no case shall the embankment or emergency spillway remain bare for more than 7 days.
- 10. Sediment Cleanout -Sediment shall be removed and the sediment basin restored to its original dimensions when the sediment has filled one-half the pond's original depth or as indicated on the plans. Sediment removed from the basin shall be placed so that it will not erode.
- 11. Final removal Sediment basins shall be removed after the upstream drainage area is stabilized or as indicated in the plans. Dewatering and removal shall NOT cause sediment to be discharged. The sediment basin site and sediment removed from the basin shall be stabilized.



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| DESCRIPTION | ISSUED FOR REVIEW | REVISED PER AGENCY COMMENTS | | | | |
|-------------|-------------------|-----------------------------|--|--|--|--|
| REV. DATE | 01/23/17 | 04/17/17 | | | | |
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ISSUED FOR: PERMIT 01/23/17 BID CONSTRUCTION AS-BUILT PROJECT MANAGER DESIGNER ALF

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