Sediment Basin (No.) 350

DEFINITION

A basin constructed to collect and store debris or sediment.

PURPOSES

- Preserve the capacity of reservoirs, wetlands, ditches, canals, diversion, waterways, and streams.
- Prevent undesirable deposition on bottom lands and developed areas.
- Trap sediment originating from construction sites or other disturbed areas.
- Reduce or abate pollution by providing basins for deposition and storage of silt, sand, gravel, stone, and other detritus.

CONDITIONS WHERE PRACTICE APPLIES

This practice applies where physical conditions or land ownership preclude treatment of a sediment source by the installation of erosion-control measures to keep soil and other material in place or where a sediment basin offers the most practical solution to the problem.

CRITERIA

Sediment basins shall be planned, designed, and installed to meet all federal, state, local, and tribal laws and regulations.

The capacity of the sediment basin shall equal the volume of sediment expected to be trapped at the site during the planned useful life of the basin or the improvements it is designed to protect. If it is determined that periodic removal of sediment will be practicable, the capacity may be proportionately reduced.

The design of dams, spillways, and drainage facilities shall be according to NRCS conservation practice standard Pond (378), conservation practice standard Grade Stabilization Structure (410), or according to the requirements in NRCS Technical Release No. 60 (TR-60, Earth Dams and Reservoirs), as appropriate, for the class and kind of structure being considered.

Temporary basins having drainage areas of 5 acres (2 ha) or less and a total embankment height of 5 feet (1.5 m) or less may be designed according to NRCS conservation practice standard Water and Sediment Control Basin (638).

All disturbed areas shall be vegetated as soon as possible after construction ends to control erosion and prevent excess sediment from leaving the site.

Use vegetation adapted to the site that will accomplish the desired purpose. Preference shall be given to native species in order to reduce the introduction of invasive plant species; provide management of existing invasive species; and minimize the economic, ecological, and human health impacts that invasive species may cause. If native plant materials are not adaptable or proven effective for the planned use, then non-native species may be used. Refer to the Field Office Technical Guide, Section II, Invasive Plant Species, for plant materials identified as invasive species.

Provisions shall be made for dewatering sediment pools if necessary for safety and vector control.

Fencing and other safety measures shall be installed as necessary to protect the public.

Due consideration shall be given to good visual resource management.

CONSIDERATIONS

Consider the potential effects of installation and operation of sediment basins on the cultural, archeological, historic, and economic resources.

Large sediment basins may have an affect on the peak discharge rate from a watershed. Planners should consider this, and take steps to mitigate any potential negative effects this may have on riparian habitat downstream from the structure.

Visual aesthetics may be a concern, especially in urban or suburban areas. To address these concerns, the basin could be designed to blend with the surrounding topography, or plantings could be proposed to screen the view from surrounding homes or buildings.

The nesting success and survival rate of ground-nesting species will increase if mowing is delayed

until after the nesting season during operation and maintenance operations.

Using native species for revegetation will increase habitat diversity.

PLANS AND SPECIFICATIONS

Plans and specifications shall be prepared in accordance with the criteria of this standard and shall describe the requirements for applying the practice to achieve its intended use.

Support data documentation requirements are as follows:

- Inventory and evaluation records
  - Assistance notes or special report
- Survey notes, where applicable
  - Design survey
  - Construction layout survey
  - Construction check survey
- Design records
  - Physical data, functional requirements, and site constraints, where applicable
  - Soils/subsurface investigation report, where applicable
- Design and quantity calculations
- Construction drawings/specifications with:
  - Location map
  - "Designed by" and "Checked by" names or initials
  - Approval signature
  - Job class designation
  - Initials from preconstruction conference
  - As-built notes
- Construction inspection records
  - Assistance notes or separate inspection records
  - Construction approval signature
- Record of any variances approved, where applicable
- Record of approvals of in-field changes affecting function and/or job class, where applicable.

OPERATION AND MAINTENANCE

An Operation and Maintenance (O&M) plan shall be developed for this practice. The O&M plan shall be consistent with the purposes of the practice, its intended life, safety requirements, and the criteria for the design.