USDA
NATURAL RESOURCES
CONSERVATION SERVICE

DELAWARE CONSERVATION
PRACTICE STANDARD

SEDIMENT BASIN

CODE 350
(Reported by No.)

DEFINITION

A basin constructed to collect and store debris or sediment.

PURPOSES

This practice may be applied as part of a conservation management system to support one or more of the following 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, agricultural waste solids, 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.

CONSIDERATIONS

Large sediment basins may have an effect 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 peak nesting season during operation and maintenance operations.

Using native species for revegetation when ever possible.

This practice has the potential to affect National Register listed cultural resources or eligible (significant) cultural resources. These may include archeological, historic, or traditional cultural properties. Care should be taken to avoid adverse impacts to these resources. Follow NRCS state policy for considering cultural resources during planning.

CRITERIA

Criteria Applicable to All Purposes

Sediment basin design and construction shall comply with all applicable federal, state, and local 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 378 (Pond), Conservation Practice Standard 410 (Grade Stabilization Structure), or according to the requirements in NRCS 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 or less and a total embankment height of 5 feet or less may be designed according to NRCS Conservation Practice Standard 638 (Water and Sediment Control Basin).

All disturbed areas shall be seeded as soon as possible after construction ends according to NRCS Conservation Practice Standard 342 (Criteria Area Seeding) to control erosion and prevent excess sediment from leaving the site.

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.

SPECIFICATIONS

Plans and specifications for this practice shall be prepared in accordance with the previously listed criteria. Plans and specifications shall contain sufficient detail to ensure successful implementation of this practice. Documentation shall be in accordance with the section "Supporting Data and Documentation" in this standard.

OPERATION AND MAINTENANCE

The sediment basin will be inspected after major storms for damage that may affect its function and performance. Any damage will be promptly repaired.

Mow as needed to maintain adequate vegetative cover and to prevent the establishment of undesirable species.

SUPPORTING DATA AND DOCUMENTATION

The following is a list of the minimum data and documentation to be recorded in the case file:

1. Location the practice on the conservation map.

2. Assistance notes. The notes shall include dates of site visits, name or initials of the person who made the visit, specifics as to alternatives discussed, decisions made, and by whom.

Field Data and Survey Notes

The following is a list of the minimum data needed:

1. Plan view sketch.

2. Establish and describe a temporary benchmark.

3. Topographic survey of the area of the proposed sediment basin.

4. Location and description of trees and other obstacles that may need to be removed.

5. Location and elevation of soil borings.

6. Cross sections and profile of the proposed outlet for the proposed water and sediment control basin.

Design Data

Record on appropriate engineering paper. For guidance on the preparation of engineering plans see Chapter 5 of the Engineering Field Handbook - Part 650. The following is a list of the minimum required design data:

1. Determine soil type and any special restrictions.

2. Design the sediment basin to meet the criteria of this practice standard.

3. Determine peak runoff from the contributing drainage area for the required design storm in accordance with Chapter 2 of the

Engineering Field Handbook – Part 650 or by other approved method.

4. Size the principal spillway in accordance with Chapter 3 of the Engineering Field Handbook – Part 650 or other source.

5. Size the emergency spillway in accordance with Chapter 11 of the Engineering Field Handbook – Part 650 or other source.

6. Provide for the safe outlet of discharge from the sediment basin.

7. Provide for the control of erosion during and following construction.

8. Show the engineering job class on the plans.

9. Include the Miss Utility notification statement.

10. Estimated quantities.

11. Planting plan.

12. Written Operation and Maintenance Plan.

Utilities Notification

1. Forms ENG-5 and ENG-6 can be used to assist in tracking utility notifications.

2. Document on CPA-6 initial discussion about his or her responsibility to notify Miss Utility.

3. Document on CPA-6 any information from the landowner about the existence and location of known utilities.

4. Document on CPA-6 assurances from the landowner that Miss Utility has been notified, including staking by the utilities.

Construction Check Data/As-Built Plans

Record on survey notepaper, NRCS-ENG-28, or other appropriate engineering paper. Survey data will be plotted in red on the as-built plans. Document approval by the designer of any changes from the drawings or specifications before implementation of the change.

The following is a list of minimum data needed for as-built documentation:

1. Documentation of site visits on CPA-6. The documentation shall include the date, who performed the inspection, specifics as to what was inspected, all alternatives discussed, and decisions made and by whom.

2. Profile notes along centerline of top of completed embankment.

3. Cross section notes at one or more locations on the completed embankment.

4. Profile notes along centerline of earth spillway.

5. Cross section notes of emergency spillways as needed to determine whether planned grade and dimensions have been met.

6. Location, size, type, grade, and/or pertinent elevations of the principal spillway.

7. Statement as to the condition or adequacy of vegetation on the embankment, spillway, and other disturbed areas.

8. Type and location of fencing and safety features where appropriate.

9. Final quantities and documentation for quantity changes. Material certifications as appropriate.

10. Sign and date check notes and plans by someone with appropriate approval authority. Include statement that practice meets or exceeds plans and NRCS practice standards.