

UNITED STATES DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE

STATEWIDE

TECHNICAL GUIDE  
SECTION IV

Sediment Basin 350 -1

**Sediment Basin (No.)**

**Definition**

A basin constructed to collect and store debris or sediment.

**Scope**

This standard applies to the installation of all basins where the primary purpose is to trap and store waterborne sediment and debris.

**Purpose**

To preserve the capacity of reservoirs, ditches, canals, diversions, waterways, and streams; to prevent undesirable deposition on bottom lands and developed areas; to trap sediment originating from construction sites; and to reduce or abate pollution by providing basins for deposition and storage of silt, sand, gravel, stone, agricultural wastes, 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.

**Design criteria**

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 SCS standards for ponds (378) and grade stabilization structures (410) or according to the requirements in TR-60, 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 ft or less may be designed with less conservative criteria if conditions warrant. The embankment shall have a minimum top width of 4 ft and side slopes of 2:1 or flatter. An outlet shall be provided of earth, pipe, stone, or other devices adequate to keep the sediment in the trap and to handle the 10-year-frequency discharge without failure or significant erosion.

Provisions shall be made for draining sediment pools if necessary for safety and vector control. Fencing and other safety measures shall be installed as necessary to protect the public from floodwater and soft sediment. Due consideration shall be given to good visual resource management.

**Plans and specifications**

Plans and specifications for installing sediment basins shall be in keeping with this standard and shall describe the requirements for applying the practice to achieve its intended purpose.

## **Sediment Basin Specifications**

Construction of sediment basins within the scope of the standard for ponds (378) shall have, as a minimum, specifications commensurate with those for ponds (378). Those within the scope of TR-60 shall be in accord with the guide specifications contained in the National Engineering Handbook, Section 20.

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NATIONAL  
SUPPLEMENT  
350-NS-1

## Sediment Basin (no.)

### Planning considerations for water quantity and quality

#### *Quantity*

1. Effects on the water budget, especially volumes and rates of runoff, infiltration, evaporation, deep percolation, and ground water recharge.
2. Effects on downstream flows and aquifers that would affect other water uses and users.
3. Effects on volume of discharge flow on the environmental, social, and economic conditions.
4. Effects on the water table downstream and the results of changes of vegetative growth.

#### *Quality*

1. Effects on erosion, movement of sediment, pathogens, and soluble and sediment-attached substances.
2. Effects on the visual quality of onsite and downstream water resources.
3. Effects of construction and early establishment of protective vegetation on the surface and ground water.
4. Effects on wetlands and water-related wildlife habitats.

SEDIMENT BASIN

The following additional standards apply to sediment basins.

Design Criteria

Sediment basins shall have a minimum capacity to contain the estimated 10-year sediment yield of the watershed. The sediment yield will be determined by the geologist.

Vegetation

Disturbed areas not otherwise covered or protected shall be established to grass as soon as practicable after construction. If soil or climatic conditions preclude the use of vegetation and protection is needed, nonvegetative materials, such as mulches or gravel, may be used. Seedbed preparation, seeding, fertilizing, and mulching shall comply with instructions in local technical guides. The vegetation shall be maintained and undesirable species controlled by chemical or mechanical means.

Seeded areas shall be fenced where necessary to provide protection for the vegetation and for controlled grazing. Fencing shall comply with local technical guides.

Laws, Regulations, and Permits

All federal, state, and local laws, rules, and regulations governing construction activities within streams or concerning water use shall be followed. The owner or his agent shall be responsible for securing all necessary permits and for performing all work in accordance with such laws and regulations.

Plans and Specifications

Montana Construction Specification MT-350 applies to this practice. Additional Montana Construction and Construction Material Specifications are required and shall be compiled and attached to MT-350.

If other additional specifications or measurement and payment clauses are required, they shall be in keeping with the requirements of Standard Construction and Material Specifications--West.