

## NATURAL RESOURCES CONSERVATION SERVICE

### CONSERVATION PRACTICE STANDARD

#### STRUCTURE FOR WATER CONTROL

(No.)

#### CODE 587

#### DEFINITION

A structure in a water management system that conveys water, controls the direction or rate of flow, maintains a desired water surface elevation, or measures water.

structures are checks, flashboard risers, and check dams.

#### PURPOSE

The practice may be applied as a management component of a water management system to control the stage, discharge, distribution, delivery, or direction of water flow.

- Control the division or measurement of irrigation water. Typical structures are division boxes and water measurement devices.

#### CONDITIONS WHERE PRACTICE APPLIES

This practice applies wherever a permanent structure is needed as an integral part of a water control system to serve one or more of the following functions:

- Convey water from one elevation to a lower elevation within, to, or from a water conveyance system such as a ditch, channel, canal, or pipeline designed to operate under open channel conditions. Typical structures are drops, chutes, turnouts, surface water inlets, head gates, pump boxes, and stilling basins.
- Control the elevation of water in drainage or irrigation ditches. Typical structures are checks, flashboard risers, and check dams.
- Keep trash, debris, or weed seeds from entering pipelines. Typical structures are debris screens.
- Control the direction of channel flow resulting from tides and high water or backflow from flooding. Typical structures are tide and water management gates.
- Control the water table level, remove surface or subsurface water from adjoining land, flood land for frost protection, or manage water levels for wildlife or recreation. Typical structures are water level control structures, flashboard risers, pipe drop inlets, and box inlets.
- Convey water over, under, or along a ditch, canal, road, railroad, or other barriers. Typical structures are bridges, culverts, flumes, inverted siphons, and long span pipes.
- Modify water flow to provide habitat for fish, wildlife, and other aquatic

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animals. Typical structures are chutes, cold water release structures, and flashboard risers.

- Provide silt management in ditches or canals. Typical structure – sluice.
- Supplement a resource management system on land where organic waste or commercial fertilizer is applied.
- Create, restore, or enhance wetland hydrology.

## CRITERIA

### General Criteria Applicable to All Purposes

Vegetation complying with Critical Area Planting standard (code 342) shall be established on all disturbed earth surfaces. Where soil, climate, or site-specific conditions preclude establishing permanent vegetation, other protective means such as mulches or gravels shall be used.

The structure shall be fenced, if necessary, to protect the vegetation.

Structures shall not be installed that have an adverse effect on septic filter fields.

The water level upstream of water control structures shall not be raised on adjacent landowners without their permission.

## CONSIDERATIONS

When planning, designing, and installing this practice, the following items should be considered:

- Effects on the water budget, especially on volumes and rates of runoff, infiltration, evaporation, transpiration,

deep percolation, and ground water recharge.

- Potential for a change in the rate of plant growth and transpiration because of changes in the volume of soil water.
- Effects on downstream flows or aquifers that would affect other water uses or users.
- Effects on the field water table to ensure that it will provide a suitable rooting depth for the anticipated crop.
- Potential use for irrigation management to conserve water.
- Effect of construction on aquatic life.
- Effects on stream system channel morphology and stability as it relates to erosion and the movement of sediment, solutes, and sediment-attached substances carried by runoff.
- Effects on the movement of dissolved substances below the root zone and to ground water.
- Effects of field water table on salt content in the root zone.
- Short-term and construction-related effects of this practice on the quality of downstream water.
- Effects on wetlands or water-related wildlife habitats.
- Effects on the turbidity of downstream water resources.

- Existence of cultural resources in the project area and any project impacts on such resources.
- Conservation and stabilization of archaeological, historical, structural, and traditional cultural properties, when appropriate.

Design alternatives presented to the client should address economics, ecological concerns, and acceptable level of risk for design criteria as it relates to hazards to life or property.

### **PLANS AND SPECIFICATIONS**

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

The plan shall specify the location, grades, quantities, dimensions, materials, and hydraulic and structural requirements for the individual structure. Provisions must be made for necessary maintenance. Care must be used to protect the surrounding visual resources. If watercourse fisheries are important, special precautions or design features may be needed to facilitate continuation of fish migrations.

### **OPERATION AND MAINTENANCE**

An operation and management plan shall be provided to and reviewed with the land manager. The plan shall be site specific and include, but not be limited to, the following: Structures will be checked and necessary maintenance, including removal of debris, shall be performed after major storms and at least semi-annually. Water level management and timing shall be adequately described wherever applicable.