

**NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD**

STRUCTURE FOR WATER CONTROL

**(No.)
CODE 587**

DEFINITION

A structure in an irrigation, drainage, or other water management systems that conveys water, controls the direction or rate of flow, or maintains a desired water surface elevation.

SCOPE

This standard applies to the structures normally installed in a well-planned irrigation or drainage system, wildlife facility or other water management systems for the conveyance, flow control, or level regulation of water. It covers the planning and functional design of such water-control structures but not the detailed design criteria or construction specifications for specific structures. It does not apply to structural components of irrigation pipelines or to subsurface drains or grade-stabilization structures (410).

PURPOSE

To control the stage, discharge, distribution, delivery, or direction of flow of water in open channels or water use areas. Also used for water quality control, such as sediment reduction or temperature regulation. These structures are also used to protect fish and wildlife and other natural resources.

CONDITIONS WHERE PRACTICE APPLIES

This practice applies wherever a permanent structure is needed as an integral part of an irrigation, drainage, or other water-control systems to serve one or more of the following functions:

1. To conduct water from one elevation to a lower elevation within, to, or from a ditch, channel, or canal. Typical structures: drops, chutes, turnouts, surface water inlets, head gates, pump boxes, and stilling basins.
2. To control the elevation of water in drainage or irrigation ditches. Typical structure: checks.

3. To control the division or measurement or irrigation water. Typical structures: division boxes and water measurement devices.
4. To keep trash, debris, or weed seeds from entering pipelines. Typical structure: debris screens.
5. To control the direction of channel flow resulting from tides and high water or backflow from flooding. Typical structure: tide and drainage gates.
6. To control the level of a water table or to remove surface or subsurface water from adjoining land, to flood land for frost protection or to manage water levels for wildlife or recreation. Typical structures: water level control structures, pipe drop inlets, and box inlets.
7. To provide water control for recreation or similar purposes.
8. To convey water over, under, or along a ditch, canal, road, railroad, or other barriers. Typical structures: bridges, culverts, flumes, inverted siphons.
9. To modify water flow to provide habitat or fish, wildlife, and other aquatic animals. Typical structures: deflectors, chutes, cold water release, or structures to make pools and riffles.

DESIGN CRITERIA

Structures for water control are part of a water management system, and criteria in this standard are minimums for the structure. The capacity of the water control structure(s) shall be consistent with the level of protection desired and equal to or more than the capacity of other related components of the overall plan. Related components such as earth embankments, dikes, diversions, irrigation canals, etc., shall meet the criteria of the applicable standard. Criteria for water control structures used

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as components in Wild Rice Paddy Developments are found in Standard 443, Irrigation System, Surface and Subsurface.

Structures shall be designed on an individual job basis, or applicable NRCS standard drawings shall be adapted, to meet site conditions and functional requirements. They shall be part of an approved and overall engineering plan for irrigation, drainage, wildlife, recreation, channel improvement, or similar purposes.

The plan shall specify the location, grades, dimensions, materials, and hydraulic and structural requirements for the individual structure.

Provisions must be made for necessary maintenance. Care must be used to insure that the area's visual resources are not damaged. If watercourse fisheries are important, special precautions or design features may be needed to insure continuation of fish migrations.

If soil and climatic conditions permit, a protective cover of vegetation shall be established on all disturbed earth surfaces. If soil or climatic conditions preclude the use of vegetation and protection is needed, nonvegetative means, such as mulches or gravel, may be used. In some places, temporary vegetation may be used until permanent vegetation can be established. The structure can be fenced, if necessary, to protect the vegetation. Seedbed preparation, weeding, fertilizing, and mulching shall comply with the instructions in Standard 342, Critical Area Planting, and Standard 484, Mulching.

CONSIDERATIONS

Consider the effects on wetlands and water-related wildlife habitats, including threatened and endangered species.

The work must not adversely affect other properties.

Permits.

Structures shall conform to all federal, state, and local laws and regulations. The owner is responsible for securing all necessary permits, complying with all laws and regulations, and meeting all other legal requirements related to the installation and operation of a structure for water control.

OPERATION AND MAINTENANCE

An operation and maintenance plan shall be developed and implemented so that the structure accomplishes its intended purpose. The plan is to be discussed with the landowner or operator who is responsible for operating and maintaining the structure. The structure should be inspected periodically and repairs made promptly as needed.

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.