

**Natural Resources Conservation Service  
Conservation Practice Standard**

**BEDDING  
(Ac.)  
CODE 310**

**DEFINITION**

Plowing, blading, or otherwise elevating the surface of flat land into a series of broad, low ridges separated by shallow, parallel channels with positive drainage.

**PURPOSE**

To improve the drainage of surface water at relatively low cost by establishing adjoining parallel beds of land running in the direction of the available natural slope. Drainage is best accomplished by moving soil toward the center of beds to form a series of ridges and dead furrows (troughs) that will minimize water pondage, provide gradients for removing runoff, permit efficient operation of tillage and harvesting equipment, or eliminate sources for mosquito production.

**CONDITIONS WHERE PRACTICE APPLIES**

This practice applies to poorly drained areas on flat to nearly flat land usually having slowly permeable soils. It is generally applicable where land use does not warrant more intensive drainage.

**CRITERIA**

**General**

Bedding is usually established without detailed engineering plans. Bedding shall run in the direction of the available land slope so that drainage can be provided without causing harmful erosion. Beds shall be shaped and cross-row ditches provided where required to provide free movement of water from the crown to the dead furrow. However, when required for best drainage, installation shall be from a plan established from designs based on adequate investigations and surveys of the entire area.

The plans will show the location, grade, depth, cross section, soils, and other pertinent data.

**Design**

Drainage requirements. Locate and design beds to serve as an integral part of the surface drainage system to meet conservation and land use needs. The degree of drainage required by crops and land use on the various soils needing drainage are set forth in the National Engineering Field Manual for Conservation Practices or as determined locally for the site.

Spacing. Spacing and minimum height of beds will be determined to fit the soil type involved and be consistent with row widths and number of rows to fit tillage and harvesting equipment. Crowns shall be developed so as to provide a cross slope of not less than 0.3 ft. per 100 feet. A suitable outlet with adequate capacity and depth to provide for the removal of water from dead furrows must be available. Bedding shall run in the direction of the available land slope so that drainage can be provided without causing harmful erosion.

Parallel (dead furrow) channels may be shallow and side slopes steep or flat, based on the depth of the soil, crops grown, and local construction and maintenance methods. Parallel channels shall be graded toward an outlet.

An outlet, natural or constructed, must have sufficient capacity and depth to provide for removal of water from the dead furrow channels.

**CONSIDERATIONS**

Water quantity

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

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evaporation, transpiration, deep percolation, and ground water recharge.

- Potential for a change in rates 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 relation of the soil surface to the water table to ensure that a suitable rooting depth for crops.

#### Water quality

- Effects on erosion and the movement of sediment and soluble and sediment-attached substances carried by runoff.
- Effects on the use and management of nutrients and pesticides and their effect on surface and ground water quality.
- Effects on the movement of dissolved substances below the root zone and to ground water.
- Effects of water levels on soil processes such as nutrient use by the plant.
- Effects on wetlands or water-related wildlife habitats.
- Effects on the visual quality of downstream water.
- Effects on cultural resources.

#### **PLANS AND SPECIFICATIONS**

Plans and specifications for bedding shall be in keeping with this standard and shall describe

the essential requirements for properly applying the practice to achieve its intended purpose. The Plans and specifications shall identify the areas where the practice will be applied, the direction of the channel drainage, the crown height, side slope, width, and length of the bed cross section, and location of the outlet. Areas where the rooting depth may limit plant growth after construction of the beds should be identified on the plan map.

#### **OPERATION AND MAINTENANCE**

A site-specific operation and maintenance plan shall be provided to, and reviewed with, the landowner(s) before the practice is installed. The plan shall adequately guide the landowner(s) in the routine maintenance and operational needs of the bedding. The plan shall also include guidance on periodic inspections and post-storm inspections to detect and minimize damage to the bedding.

Inspections should be made following heavy rains and at least once each year. Tillage operations shall be planned to maintain the planned height. Sediment shall be removed from the channels as necessary to facilitate drainage and to prevent ponding. The outlet shall be maintained in a stable condition.