

NATURAL RESOURCES CONSERVATION SERVICE  
CONSERVATION PRACTICE STANDARD

**ROW ARRANGEMENT**

(acre)  
CODE 557

**DEFINITION**

Establishing a system of crop rows on planned grades and lengths primarily for erosion control and water management.

**Scope**

This standard applies to row arrangement on all cropland where crops are grown in rows and a problem of inadequate drainage, soil erosion, or inadequate use of available rainfall or irrigation water exists.

**PURPOSES**

To establish crop rows in direction, grade, and length so as to provide adequate drainage and erosion control and permit optimum use of rainfall and irrigation water.

**CONDITIONS WHERE PRACTICE APPLIES**

Proper row arrangement is applicable:

1. As part of a surface drainage system for a field where the rows are planned to carry excess water to surface drains.
2. To facilitate optimum use of water in graded furrow irrigation systems.
3. In dryland areas where it is necessary to control the grade of rows to use available rainfall more fully.
4. On sloping land, with or without other conservation practices, where control of the length, grade, and direction of rows can help reduce soil erosion.

**CRITERIA**

**General**

Row arrangement shall facilitate the use of applicable field machinery in the field.

**Surface drainage**

As part of a surface drainage system, row arrangement shall:

1. Conform with the drainage part of the technical guide for the area regarding grade and length.
2. Facilitate flow of excess water from the field into surface ditches.

**Furrow irrigation**

As part of a furrow irrigation system, row arrangement shall:

1. Conform with the irrigation guide for the areas regarding grade and length.
2. Facilitate irrigation water management in the field.

**Erosion control and water conservation**

As part of an erosion control and/or water conservation system for a field, row arrangement shall:

1. Conform with the technical guide for the area for the particular practice for which the row arrangement is a facilitating measure.
2. Conform with the grade and length requirements for terraces if the arrangement is used without and other engineering practice.

**CONSIDERATIONS**

**Water Quantity**

1. Effects upon components of the water budget, especially on volumes and rates of runoff, infiltration, evaporation, transpiration, deep percolation, and ground water recharge.
2. Variability of effects caused by seasonal or climatic changes.

3. Effects of vegetation on soil moisture.
4. Effects of snowcatch and melt on water budget components.
5. The potential for a change in plant growth and transpiration because of changes in the volume of soil water.
6. Effects on downstream flows or aquifers that would affect other water uses or users.
7. Effects on the volume of downstream flow to prohibit undesirable environmental, social or economic effects.
8. The effect on the water table of the field to ensure that it will provide a suitable rooting depth for anticipated land uses.
9. Potential use for water management to conserve water.

#### **Water Quality**

1. Effects of both growing and decaying vegetation or nutrient balance in the root zone.
2. Effects of nutrients and pesticides on surface and ground water quality.
3. Effects on the visual quality of downstream water resources.
4. Effects on the movement of dissolved substances below the root zone and toward ground water.
5. Effects of water levels on solid nutrient processes such as plant nutrient use.
6. Effects of soil and water level control on the salinity of soils, soil water or downstream water.
7. Effects on wetlands and water-related wild life habitats.
8. Effects on the field nutrient budget as related to removal, residence, and accumulation of nutrients.

#### **Endangered Species Considerations**

Determine if installation of this practice with any others proposed will have any effect on any federal or state listed Rare, Threatened or Endangered species or their habitat. NRCS's objective is to benefit these

species and others of concern or at least not have any adverse effect on a listed species. If the Environmental Evaluation indicates the action may adversely affect a listed species or result in adverse modification of habitat of listed species which has been determined to be critical habitat, NRCS will advise the land user of the requirements of the Endangered Species Act and recommend alternative conservation treatments that avoid the adverse effects. Further assistance will be provided only if the landowner selects one of the alternative conservation treatments for installation; or at the request of the landowners, NRCS may initiate consultation with the Fish and Wildlife Service, National Marine Fisheries Service and/or California Department of Fish and Game. If the Environmental Evaluation indicates the action will not affect a listed species or result in adverse modification of critical habitat, consultation generally will not apply and usually would not be initiated. Document any special considerations for endangered species in the Practice Requirements Worksheet.

#### **PLANS AND SPECIFICATIONS**

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

#### **OPERATION AND MAINTENANCE**

An operation and maintenance plan must be prepared by the Designer for use by the owner or other responsible for operating this practice. The plan should provide specific instructions for operating and maintaining the system to insure that it functions properly. It should also provide for periodic inspections and prompt repair or replacement of damage components.