

NATURAL RESOURCES CONSERVATION SERVICE  
PACIFIC BASIN AREA  
CONSERVATION PRACTICE STANDARD

## ROW ARRANGEMENT

(Hectare, Acre)  
CODE 557

### DEFINITION

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

### PURPOSE

To establish crop rows in a planned direction and length across the predominate slope of the land so as to provide drainage and erosion control benefits 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.

### CONSIDERATIONS

Effects upon components of the water budget, especially on volumes and rates of runoff, infiltration, evaporation, transpiration, deep percolation, and ground water recharge.

The potential for a change in plant growth and transpiration because of changes in the volume of soil water.

The effect on the water table of the field to due to increased infiltration.

Effects on the movement of dissolved substances below the root zone and toward ground water.

Effects on wetlands and water-related wildlife habitats.

Effects on the field nutrient budget as related to removal, residence, and accumulation of nutrients.

### CRITERIA

The definition of rows is not confined to straight lines and to achieve the intended purpose on irregular land surfaces, it will likely be necessary to have curved rows on or near the contour.

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

Field fences, roads, or other structures shall not be constructed so as to hinder the planned row direction, grade or alignment.

#### Additional Criteria as part of a surface drainage system

Conform to the drainage part of the technical guide for the area regarding grade and length. It is essential that grades not be such that surface water flows are at an erosive velocity. Unless supported by hydraulic computations and appropriate evaluation of the erosion resistance of the soil, row slopes shall not exceed 1.5 percent.

Facilitate flow of excess water from the field into surface ditches.

Include adequate stable outlets.

#### Additional Criteria as part of a furrow irrigation system

Conform to the irrigation guide for the areas regarding grade and length.

Facilitate irrigation water management in the field.

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### **Additional Criteria as part of an erosion control and/or water conservation system**

Conform to the technical guide for the particular practice(s) for which the row arrangement is a facilitating measure.

Conform to the grade and length requirements for terrace systems if the arrangement is used with those systems.

Erosion reduction credit shall be derived using appropriate erosion prediction technology issued for use in the Pacific Basin Area.

### **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.

Where rows are to be on or near the contours of the land and the land is not of a uniform slope, stakes, flags or other markings in the field will be provided. Such markings will be numerous enough to maintain required grade through curves required by topographic features of the field.

### **OPERATION AND MAINTENANCE**

Re-establish grade lines in the field as needed.