NATURAL RESOURCES CONSERVATION SERVICE

CONSERVATION PRACTICE STANDARD

ROW ARRANGEMENT

(Ac.)

CODE 557

DEFINITION

A system of crop rows on planned grades and lengths.

PURPOSE

Establish crop rows in direction, grade and length to:

- Provide adequate drainage
- Provide erosion control
- 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 runoff to main or lateral 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 more fully utilize available rainfall.
4. On sloping land where control of the length, grade and direction of the rows can help reduce soil erosion, as a stand-alone practice or in conjunction with other conservation practices.

CRITERIA

General Criteria Applicable to All Purposes

Row arrangement shall be designed to accommodate the type and size of farm equipment to be used in the field.

Additional Criteria for Surface Drainage

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

1. Conform to the NEH, Part 650, Engineering Field Handbook, Chapter 14, Water Management (Drainage) for the area regarding grade, depth, and permissible velocities.
2. Facilitate flow of excess water from the field into surface ditches.

Additional Criteria for Furrow Irrigation

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

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

Additional Criteria for Erosion Control and Water Conservation

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

1. Conform to the particular Conservation Practice Standard for the area (such as 449, Irrigation Water Management) for which row arrangement is a facilitating measure.
2. Conform to the grade and length requirements for Conservation Practice Standard 600, Terrace if the arrangement is used without another engineering practice.

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CONSIDERATIONS

When planning this practice as part of the Resource Management System for a field, the following considerations should be made for water quantity and quality, as applicable:

- Effects upon components of the water budget, especially on volumes and rates of runoff, infiltration, evaporation, transpiration, deep percolation and ground water recharge.
- Effects of snow catch and snowmelt on water budget components.
- The potential for a change in plant growth and transpiration due to changes in the volume of soil water.
- Effects on downstream flows and aquifers that would affect other water uses and users. This would include the effect of nutrients and pesticides on surface and ground water, the movement of dissolved substances below the root zone and toward the ground water, and soil water level control on the salinity of the soils, soil water or downstream water.
- Effects on the volume of downstream flow to prohibit undesirable environmental, social or economic effects, such as, effects on wetlands or water-related wildlife habitats.
- The effects on the water table of the field and/or soil moisture to ensure that it will provide a suitable rooting depth for the anticipated land uses.
- Potential use for water management to conserve water.

PLANS AND SPECIFICATIONS

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

OPERATION AND MAINTENANCE

An O&M plan specific to the intended purpose of the row arrangement system shall be provided to the landowner.

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APPROVAL AND CERTIFICATION

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PRACTICE STANDARD APPROVED:

_____/s/ John Mueller_____ **_____04/23/03_____**

State Conservation Engineer **Date**

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