

NATURAL RESOURCES CONSERVATION SERVICE  
CONSERVATION PRACTICE STANDARD

ROW ARRANGEMENT

(Ac.)

Code 557



**DEFINITION**

A system of crop rows on planned directions, 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 or subsurface irrigation systems.
3. On sloping land where control of the length, grade, and direction of rows can help reduce soil erosion, as a stand-alone practice or in

association with other conservation practices

**CRITERIA**

Impact to cultural resources, wetlands and Federal and state protected species shall be evaluated and avoided or minimized to the extent practicable during planning, design and implementation of this conservation practice in accordance with established National and Florida policy, General Manual (GM) Title 420-Part 401; Title 450-Part 401, Title 190-Parts 410.22 and 410.26, National Planning Procedures Handbook (NPPH) Florida Supplements to Parts 600.1 and 600.6, National Cultural Resources Procedures Handbook (NCRPH), National Food Security Act Manual (NFSAM), and the National Environmental Compliance Handbook (NECH).

**General Criteria Applicable To All Purposes**

**Laws, rules, and regulations.** Plan all work to comply with federal, state, and local laws, rules, and regulations.

**Row width.** Row arrangement must 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 National Engineering Handbook (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.

Conservation practice standards are reviewed periodically, and updated if needed. To obtain the current version of this standard, contact the Natural Resources Conservation Service.

3. Ditches shall be designed in accordance with the Florida NRCS conservation practice standards Surface Drain, Field Ditch, Code 607 or Surface Drain, Main or Lateral, Code 608.

#### **Additional Criteria For Furrow Irrigation or Subsurface Irrigation Systems**

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

1. Conform to the NEH, Part 652, Irrigation Guide and Florida supplements regarding grade and length.
2. Designed in accordance with Florida NRCS conservation practice standard Irrigation System, Surface and Subsurface, Code 443.
3. 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 Florida conservation practice standard for the area (such as Irrigation Water Management, Code 449,) for which row arrangement is a facilitating measure.
2. Conform to the grade and length requirements for Florida NRCS conservation practice standard Terrace, Code 600, if the arrangement is used without another engineering practice.

#### **CONSIDERATIONS**

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.
- 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 applying the practice to achieve its intended purpose. As a minimum, the plans and specifications shall include:

- Location of the area where the rows will be established.
- Direction, grade, and length of rows to be established.
- Location of utilities and notification requirements.

#### **OPERATION AND MAINTENANCE**

An Operation and Maintenance plan specific to the intended purpose of the row arrangement system shall be provided and reviewed with the landowner.

At a minimum include the following items in the plan:

- Remove any accumulated sediment.
- Periodically check rows for erosion and repair as necessary.

## REFERENCES

- Florida NRCS Conservation Practice Standards Irrigation System, Surface and Subsurface, Code 443  
Irrigation Water Management, Code 449  
Surface Drain, Field Ditch, Code 607  
Surface Drain, Main or Lateral, Code 608  
Terrace, Code 600  
General Manual  
Title 420-Part 401  
Title 450-Part 401  
Title 190-Parts 410.22 and 410.26  
National Cultural Resources Procedures Handbook  
National Environmental Compliance Handbook  
National Food Security Act Manual  
National Planning Procedures Handbook Florida Supplements to Parts 600.1 and 600.6  
NEH, Part 650, Engineering Field Handbook, Chapter 1, Surveying  
NEH, Part 650, Engineering Field Handbook, Chapter 4, Elementary Soils Engineering  
NEH, Part 650, Engineering Field Handbook, Chapter 14, Water Management (Drainage)  
NEH, Part 652, Irrigation Guide and Florida Supplements.