

**NATURAL RESOURCES CONSERVATION SERVICE  
CONSERVATION PRACTICE STANDARD**

**LAND SMOOTHING**

(Ac.)

**CODE 466**

**DEFINITION**

Land smoothing is removing irregularities on the land surface.

**PURPOSE**

Land smoothing improves surface drainage, provides for more uniform cultivation, and improves equipment operation and efficiency.

**CONDITIONS WHERE PRACTICE APPLIES**

This practice applies to land areas where depressions, mounds, old terraces, turn-rows, and other surface irregularities interfere with the application of needed soil and water conservation and management practices.

Land smoothing is limited to land areas having adequate soil depth or where topsoil can be salvaged and replaced.

Land smoothing does not apply to the regular maintenance on irrigated land or on land that has been modified using practice standards Precision Land Forming (462) or Irrigation Land Leveling (464).

**CRITERIA**

The extent of rough grading required and tolerances of the finished smoothing job must be in keeping with the requirements of the planned cropping system.

Construction operations are to be carried out in such a manner that erosion and air and water pollution are minimized.

Smooth irregularities to the degree required for the planned use.

The land to be smoothed will be cleared of vegetative matter and trash.

Install needed conservation practices when warranted by changes in runoff patterns as a result of land smoothing (ex. removing old terraces).

**CONSIDERATIONS**

Where possible, the ground surface should be plowed or disked prior to smoothing.

Consider the effects on the water budget, especially on volumes and rates of runoff, infiltration, and evaporation.

Effect on erosion and the movement of sediment and soluble substances attached to sediment carried by runoff should be minimized.

Potential for earth moving to uncover or redistribute toxic materials, such as saline soils should be addressed.

Consider the effects on wetland hydrology and/or wetland wildlife habitat.

Address potential impacts to existing utilities by locating and avoiding all utilities.

Consider the effects on soil loss due to increased wind erosion potential and subsequent deposition.

Ensure that cultural resources, inventory and assessment have been completed prior to movement of soil.

**PLANS AND SPECIFICATIONS**

Plans and specifications for land smoothing must be in keeping with this standard and must describe the requirements for applying the practice to achieve its intended purpose.

Plans and specifications must include construction plans, drawings, job sheets or other similar documents. These documents

must specify the requirements for installing the practice.

### **OPERATION AND MAINTENANCE**

An Operation and Maintenance (O&M) plan must be prepared for and reviewed with the landowner or operator. Actions must be carried out to insure that this practice functions as intended. Such action must include performing maintenance when needed to insure that surface irregularities are maintained at the degree of smoothness required. The plan must specify that the treated areas and associated practices are inspected annually and after significant storm events to identify repair and maintenance needs.

### **REFERENCES**

U.S. Department of Agriculture, Natural Resources Conservation Service, 2009. Engineering Field Handbook, Chapter 1. Surveying. National Engineering Handbook, Part 650.01, Washington, DC.

U.S. Department of Agriculture, Natural Resources Conservation Service, 1990. Engineering Field Handbook, Chapter 4. Elementary Soils Engineering. National Engineering Handbook, Part 650.04, Washington, DC.

U.S. Department of Agriculture, Natural Resources Conservation Service, 1961. Irrigation Land Leveling. Section 15, Chapter 12. National Engineering Handbook, Part 623.12. Washington, DC.

Conservation practice standards are reviewed periodically, and updated if needed. To obtain the current version of this standard, contact your Natural Resources Conservation Service [State Office](#), or visit the [Field Office Technical Guide](#).