

**NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD
SOUTH DAKOTA SUPPLEMENTS ITALICIZED**

LAND SMOOTHING

(ac.)
CODE 466

DEFINITION

Removing irregularities on the land surface by use of special equipment.

PURPOSE

This practice may be applied as part of a resource management system to support one or more of the following:

*Improve surface drainage;
Provide for more effective use of precipitation;
Obtain more uniform planting depths;
Provide for more uniform cultivation;
Improve equipment operation efficiency;
Improve terrace alignment;
Facilitate contour cultivation;
Improve irrigation application uniformity.*

CONDITIONS WHERE PRACTICE APPLIES

This practice applies on areas *classed as rough grading*, 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 shall be planned as a component of an overall system to facilitate the conservation use of soil and water resources.

Ordinarily, this land smoothing design does not require a complete grid survey. Land smoothing does not apply to "floating" or "planing" done as a regular maintenance practice on irrigated land or as the final step in Precision Land Forming (462) or in Irrigation Land Leveling (464).

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

CONSIDERATIONS

Water Quantity

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

Potential for changes in plant growth and transpiration because of changes in the volume of soil water.

Water Quality

Effects on erosion and the movement of sediment and soluble and sediment-attached substances carried by runoff.

Effects on the use and management of nutrients and pesticides.

Effects on downstream water quality.

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

Effects on the visual quality of downstream water resources.

Laws and Regulations. *This practice must conform to all federal, state, and local laws and regulations. Laws and regulations of particular concern include those involving water rights, land use, pollution control, property easements, wetlands, preservation of cultural resources, and endangered species.*

CRITERIA

The extent of rough grading required and tolerances of the finished smoothing job shall be in keeping with the requirements of the planned cropping system, *or land use*.

PLANS AND SPECIFICATIONS

Plans and specifications for land smoothing shall be in keeping with this standard and shall describe the

Conservation practice standards are reviewed periodically and updated if needed. The current version of this standard is posted on our website at www.sd.nrcs.usda.gov or may be obtained at your local Natural Resources Conservation Service.

requirements for applying the practice to achieve its intended purpose.

OPERATION AND MAINTENANCE

An Operation and Maintenance Plan must be prepared for use by the landowner or operator responsible for operation and maintenance. The plan should provide specific instructions to insure the practice functions properly. Minimum requirements to be addressed in the Operation and Maintenance Plan are:

Avoid use of tillage equipment that leaves ridges or depressions that cannot be removed by subsequent tillage operations.

On cultivated land, periodically smooth land areas to reestablish the installed field condition. Maintain good vegetative cover on all other areas.

Eradicate or otherwise remove all rodents or burrowing animals. Immediately repair any damage caused by their activity.

Immediately repair any vandalism, vehicular, or livestock damage.

List other items specific to this project on the Operation and Maintenance Worksheet.

REFERENCES

USDA-NRCS, National Engineering Field Handbook, Chapters 3 and 15.

USDA-NRCS, National Engineering Handbook Series: Part 623 Irrigation and Part 652 Irrigation Guide.