

**NATURAL RESOURCES CONSERVATION SERVICE**  
**CONSERVATION PRACTICE SPECIFICATIONS**  
**GRAZING LAND MECHANICAL TREATMENT**  
**(Acre)**  
 Code 548

**Guide for Contour Furrowing**

Applicable only on moderately fine, medium and moderately coarse textured soils and limited to areas of not more than 20 percent slopes.

Applicable on ranges having a short grass sod condition that allows accelerated runoff. For maximum benefits, there should be a climax dominant species present that has a potential (average at least one plant per square yard) for increasing in the plant community as a result of the furrowing and subsequent management.

Furrows must be constructed on the approximate contour.

Depth of furrows is to be at least six inches.

Width of furrow must be at least six inches and not more than 12 inches.

Spacing shall not exceed 1.0 foot vertical interval nor ten feet horizontal interval.

Must be done at a time when the ground is not frozen.

Adequate rest from grazing shall be applied to ensure desired plant responses from this treatment. See practice standard 528a – Prescribed Grazing.

**Guide for Pitting on Natural Grazing Lands**

Limited to fine and medium textured soils with few stones in the upper part of the profile and where slopes are less than 20 percent.

Applicable only on ranges having a short grass sod condition that allows accelerated runoff. For maximum benefits, there should be a climax dominant species with a potential (at least one plant per square yard) for increasing in the plant community as a result of the pitting, or where reseeding is planned.

Pitting will not be done when the soil is wet or frozen or when the soil is covered with snow.

Adequate rest from grazing shall be applied to ensure desired plant responses from this treatment. See practice standard 528a – Prescribed Grazing

**Guide for Aeration and Plugging**

Aeration or plugging may be used only on sod forming grasses and should be planned to coincide with fertilizer and/or irrigation applications.

Aeration and plugging is most applicable on sites where soil surface compaction resulting from livestock or equipment traffic is creating accelerated runoff and retarded water infiltration.

Aeration with spike or blade type aerators may be applied to pastureland as needed, but not more than two times a year. On implements that allow pitch on the knife gangs, care will be taken to limit disturbance to less than 50 percent of the existing cover.

Timing of treatments will vary depending on soil type, soil moisture, and vegetation conditions. Treatments will be done when damage to plants will be minimal and plant response will be quickest.

Due to the large variety of equipment available to perform this treatment, depth of treatment will vary depending on the specific piece of equipment used. Depths will range from 4 - 22 inches, but will average around 8 inches for most equipment.

Grazing deferment requirements will be for at least 1 complete growing season after treatment. More may be required based on specific field observations and on a case by case basis.

All grazing post treatment will follow the grazing plan as agreed to based on the NRCS Practice Standard and Specification and job sheets for Prescribed Grazing (528).

Aeration and plugging is limited to areas of not more than 20 percent slopes.

Conservation practice specifications are reviewed periodically, and updated if needed. To obtain the current version of this specification, contact the Natural Resource Conservation Service.

## Specification 548 - 2

### Guide for Disking

Disking is most applicable on sites where vegetation composition is the concern due to soil compaction. Disking only applies to plants that will make a quick recovery following treatment such as bermudagrass, weeping lovegrass, or old world bluestems.

Suitable equipment includes offset disk, one-way plow, or similar equipment.

Depth of disking will be 4 - 6 inches and is limited to areas of not more than 10 percent slopes.

Provide sufficient plant nutrients, grazing management, and pest management for recovery. Refer to the NRCS Practice Standards and Specifications for Nutrient Management (590), Pest Management (595), and Prescribed Grazing (528) for more information.

### Guide for Chiseling

Chiseling may be used on sites where vegetation composition is the concern because of soil conditions, and improvement of the desired plant community can be accomplished by chiseling. Chiseling for this concern is limited to areas of not more than 20 percent slopes.

Suitable equipment for chiseling is a chisel plow, preferably with twisted shanks.

Chiseling operations should be done in a manner that will shatter restrictive layers with a minimum of surface disturbance. To minimize disturbance in sod pasture, it may be desirable to run a coultter ahead of each chisel. Application of this practice should not destroy the turf nor disturb more than 50 percent of the existing plants. Sod-forming grasses can generally be chiseled on a closer spacing than bunch grasses.

Depth of the chiseling treatment should be determined by finding the depth of the most restrictive soil layer but will generally be from 6 - 10 inches. On shallower soils the majority of the A and B horizons should be fractured. Extremely rocky soils shall not be treated.

Spacing between chisels will be 1 - 3 feet apart.

This practice is not applicable where excessive density of trees and shrubs exist and where the roots would impede the proper use and safety of the equipment.

Clients will see grass response 6"-12" on each side of the chisel and little past that distance.

### Guide for Deep Ripping

Deep ripping is most applicable on sites where soil compaction and/or restrictive layers are too deep to be mediated with chiseling.

Suitable equipment for deep ripping includes a construction ripper or agricultural type subsoiler.

Depth of treatment will be from 10 - 30 inches.

Spacing between the rippers will be 3 - 4 feet apart.

This practice is not applicable where excessive density of trees and shrubs exist and the roots would impede the proper use and safety of the equipment.

Deep ripping is limited to areas of not more than 20 percent slopes that are not rocky.

### Considerations applicable to all treatments

At least 50 percent of the existing undesirable vegetation may be destroyed with this practice. If the combination of other practices such as fertility, pest management and grazing management is not sufficient to restore the desired plant community, then replanting practices should be utilized. NRCS Practice Standards and Specifications for Range Planting (550) and Forage and Biomass Planting (512) may be used in conjunction with Grazing Land Mechanical Treatment.

Resident and migratory wildlife needs and requirements should be considered when planning this treatment. Small birds often use treated areas for nesting sites and other birds such as prairie chickens or pheasants will use contour furrows as travel lanes.

Drought following treatment, low vigor of desirable grasses, or other abnormal conditions may require extension of the grazing deferment

beyond the minimum stated above. The protection period should be extended beyond the original dates whenever the situation warrants.

Time of year, depth, and spacing of treatment will be considered when planning this practice on wet surface soils with traffic pans.

Addition of commercial fertilizer, animal waste, and other soil amendments may be done in conjunction with this practice. Refer to the NRCS Practice Standard and Specification for Nutrient Management (590) for further information and guidelines.

Mechanical treatments should not be considered within watersheds where soil-laden runoff water is captured in a reservoir unless other mitigating

practices are installed.

Increased surface roughness may make the treated area undesirable for some uses. Mechanical treatment may not be desirable on areas to be used for recreation, for example, due to surface roughness.

Investigate for compacted layers with a probe or other appropriate tool prior to treatment.

Investigate for tile drainage systems, pipelines and other buried structures prior to work.

To help ensure uniform utilization by livestock, apply this practice to as many acres as possible within a given grazing unit (pasture, paddock).