

MAP CODE  
TILG

# TILLAGE

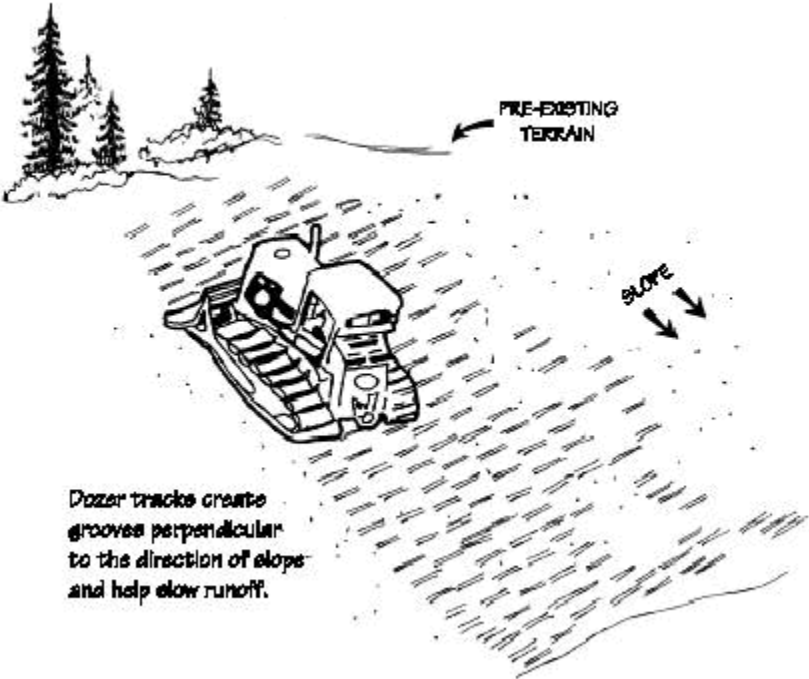
**USE**  
Erosion  
Reclamation  
Sediment Control  
Water Quality

## What

- Roughening of exposed soil surface with horizontal grooves running across the slope.
- Achieved by tractor with disc attachment or by stair stepping or tracking with construction equipment.
- Often done during reclamation.

## Purpose

- To shape the surface of the soil and create pockets that prevent runoff, minimize pondage, and catch and retain moisture.
- Can also break up restrictive layers below normal plough depth that inhibit water movement or root development.
- Aids the establishment of vegetative cover, improves water infiltration and decreases runoff velocity.



Source: Center for Sustainable Design, Mississippi State University, 1999

## Where

**YES:** During reclamation, especially in poorly drained or compacted areas. Also, any flat to nearly flat land having poor drainage, such as recently reclaimed areas or cleared or grubbed areas not yet put into extraction.

## Materials, Equipment & Costs

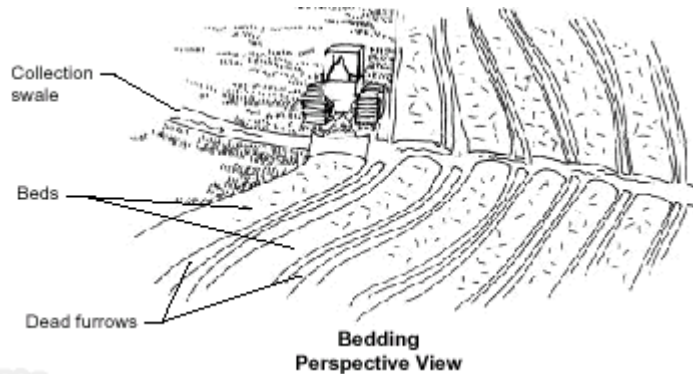
 None.

Tillage

- ✘ Bulldozer, tractor, harrow or chisel blades.
- \$ Minimal.

## Plans & Specs

- A neat or uniform appearance is not important: the rougher the soil, the better.
- Grooves can be large-scale, such as stair-step grading with small benches or terraces, or small-scale, such as grooving with disks, tillers or other machinery.
- Heavy tracked machinery should be used only if soil is sandy and non-compressible.
- Restrictive soil layers should be less than 40 centimetres deep.
- Bedding is a technique of creating narrow width ploughed tracks with equally spaced dead furrows running perpendicular to the prevailing land slope. This configuration is accomplished by moving soil toward the centre of beds to form a series of ridges and dead furrows (troughs) that will minimize runoff and pondage.



Source: NRCS, 1999

## Maintenance

- Minimal.
- Inspect roughened areas after heavy rainfalls to ensure erosion has not occurred.

## Sources

Smolen, M.D., D.W. Miller, L.C. Wyatt, J. Lichthardt, A.L. Lanier, W.W. Woodhouse and S.W. Broome (1988): **Erosion and Sediment Control Planning and Design Manual**; North Carolina Sedimentation Control Commission, NC Dept. of Natural Resources and Community Development.

United States Department of Agriculture (1999): **NRCS National Handbook of Conservation Practices**; Natural Resources Conservation Service.

United States Department of Agriculture and Mississippi State University. (1999): **Chiseling**; in Water Related BMP's in the Landscape/Best Management Practices/Water Runoff Control/B. Source Reduction. *Watershed Science Institute United States Department of Agriculture and Mississippi State University*, <<http://abe.msstate.edu/csd/NRCS-BMPs/contents.html>>, October 2001.