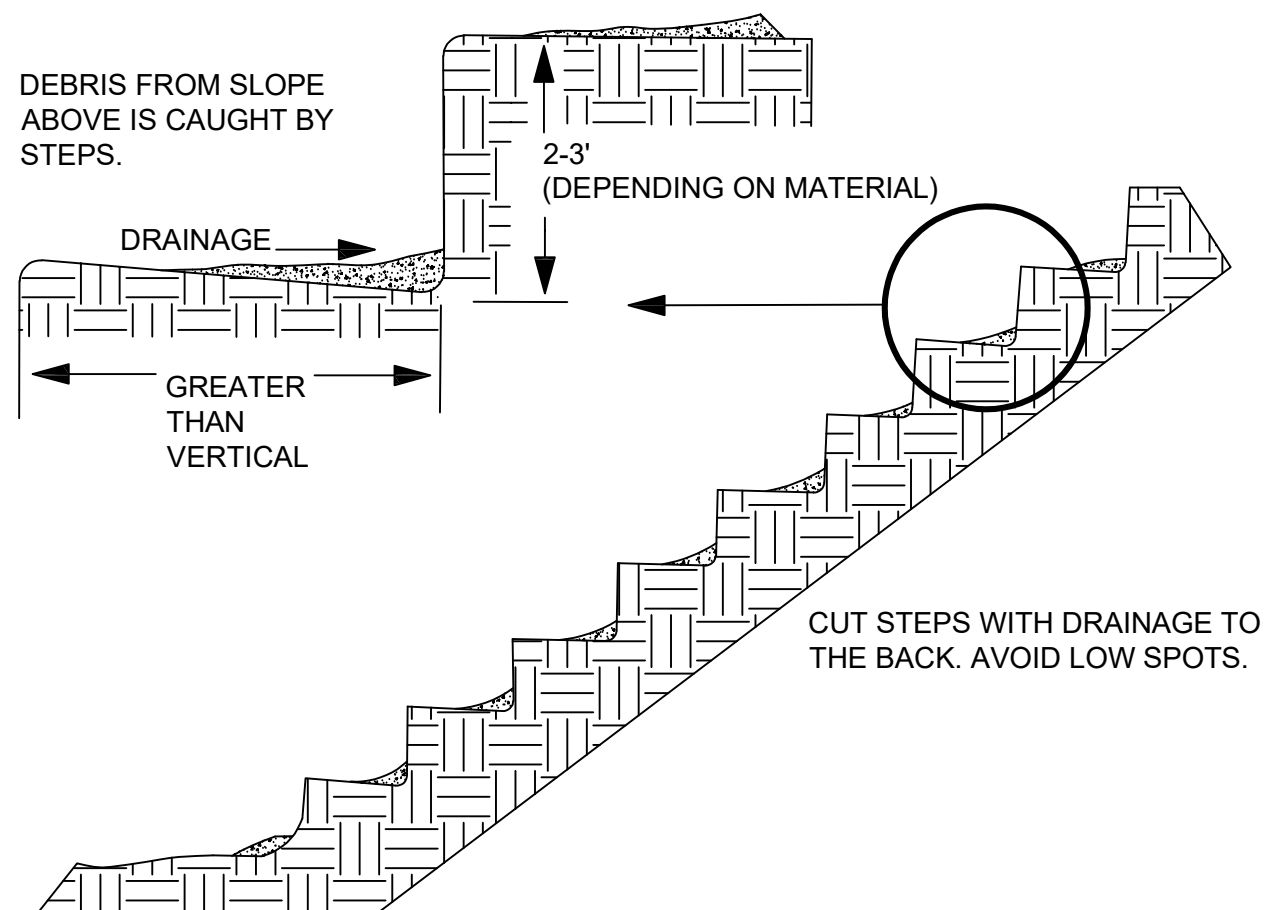


GROOVE BY CUTTING FURROWS ALONG THE CONTOUR. IRREGULARITIES IN THE SOIL SURFACE CATCH RAINWATER AND RETAIN LIME, FERTILIZER, AND SEED.

GROOVING SLOPES



DEBRIS FROM SLOPE ABOVE IS CAUGHT BY STEPS.

DRAINAGE

GREATER THAN VERTICAL

CUT STEPS WITH DRAINAGE TO THE BACK. AVOID LOW SPOTS.

STAIR STEPPING CUT SLOPES

CUT SLOPE ROUGHENING FOR AREAS NOT TO BE MOWED:

1. Stair-step grade or groove cut slopes with a gradient steeper than 3:1.
2. Use stair-step grading on any erodible material soft enough to be ripped with a bulldozer. Slopes consisting of soft rock with some subsoil are particularly suited to stair-stepping.
3. Make the vertical cut distance less than the horizontal distance, and slightly slope the horizontal position of the "step" in toward the vertical wall.
4. Do not make individual vertical cuts more than 2 feet in soft materials or more than 3 feet in rocky materials.
5. Grooving uses machinery to create a series of ridges and depressions that run across the slope (on the contour).
6. Groove using any appropriate implement that can be safely operated on the slope. Such as disks, tillers, spring harrows, or the teeth on a front-end loader bucket. Do not make such grooves less than 3 inches deep nor more than 15 inches apart.

FILL SLOPE ROUGHENING FOR AREAS NOT TO BE MOWED:

1. Place fill slopes with a gradient steeper than 3:1 in lifts not to exceed 9 inches, and make sure each lift is properly compacted. Ensure that the face of the slope consists of loose, uncompacted fill 4 to 6 inches deep. Use grooving, as described above, to roughen the face of the slopes, if necessary.
2. Do not blade or scrape the final slope face.

CUTS, FILLS, AND GRADED AREAS THAT WILL BE MOWED:

1. Make mowed slopes **no steeper than 3:1**
2. Roughen these areas to shallow grooves by normal tilling, disking, harrowing, or use of a cultipacker-seeder. Make the final pass of any such tillage implement on the contour.
3. Make grooves, formed by such implements, close together (less than 10 inches) and not less than 1 inch deep.
4. Excessive roughness is undesirable where mowing is planned.

ROUGHENING WITH TRACKED MACHINERY:

1. Limit roughening with tracked machinery to sandy soils to avoid undue compaction of the soil surface. Tracking is generally not as effective as the other roughening methods described.
2. Operate tracked machinery up and down the slope to leave horizontal depressions in the soil. Do not back-blade during the final grading operation.

SEED AND MULCH ROUGHENED AREAS IMMEDIATELY TO OBTAIN OPTIMUM SEED GERMINATION AND GROWTH.