United States Department of Agriculture

Natural Resources Conservation Service

Grassed Waterway

Alabama Job Sheet No. AL412

Definition

A grassed waterway is a natural or constructed channel that is shaped or graded to the required dimensions and established in suitable vegetation for the stable conveyance of runoff.

Grassed waterways in farm fields are often essential to a good water disposal system. When properly installed and maintained, they prevent gully erosion, accelerate infiltration, and filter potential pollutants from runoff water. Waterways should always be in place before the terrace or diversion system is installed. Waterways also can provide hay, grazing, seed, and diversity and cover for wildlife.

Location

Natural Draws or Depressional Areas

Grassed waterways are most easily constructed in natural draws or depressional areas in the field by shaping the area as required by the design. These areas can often be developed into the required shape of the grassed waterway by using farm equipment and smoothing it with a harrow. However, minor cutting or filling with earth-moving equipment may be necessary.

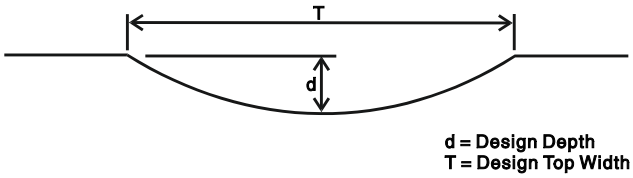
Constructed Waterway

In areas where no draw exists or in places where the draw is too shallow, a grassed waterway will have to be constructed using heavy equipment such as a motor grader, pan, or bulldozer. Soil should be removed from the waterway location and spread into the field so that surface drainage is toward the waterway. Side slopes for the waterway should be at least 8 to 1 or flatter in cropland fields to permit crossing with farm equipment. Salvage all surface soil and spread back over the constructed waterway for vegetation establishment. Use the remaining soil to build terraces or fill low areas.

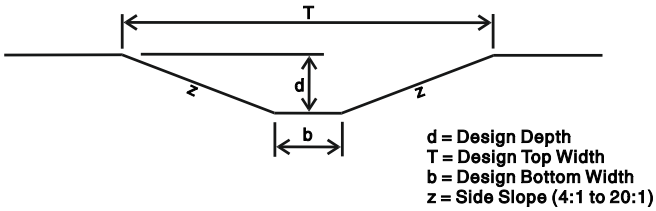
Shape

Waterways are designed to have either a parabolic or trapezoidal shape. The depth (d) and top width (T) are as shown in the following illustrations:

Parabolic



Trapezoidal



Establishing Vegetation

Vegetation for the waterway should be established according to the individualized plan. General recommendations for vegetation establishment are as follows:

Choice of Plants

Bahia grass, bermudagrass, tall fescue, sericea, or other adapted grasses or grass-legume mixtures may be used to vegetate waterways. Hybrid and common bermudagrass sprigs will give excellent results in waterways.

Fertilizer and Lime

Apply according to a current soil test report. When a soil test is not available, use the following rates of plant nutrients.

- ☐ For grasses, use 30 lbs of nitrogen and 100 lbs of phosphorus and potassium per acre at planting. Apply 30 lbs of additional nitrogen when grasses are up to a good stand.
- ☐ For grass and legume mixtures, apply 30 lbs of nitrogen and 100 lbs of phosphorus and potassium per acre at planting.
- ☐ For legumes seeded alone, apply 100 lbs of phosphorus and potassium per acre at planting.
- ☐ Apply lime according to soil test recommendation. However, if a soil test is not made, use 2 tons of agricultural limestone or equivalent per acre, except if the cover is tall fescue and clover, use

  3 tons of agricultural limestone or equivalent. Lime is not needed for Blackland Prairie soils.

Seeding and Mulching

Use twice the amount of seed or plants normally used in pasture planting of grasses and legumes. Mulch the seeding area at a rate of 1-1/2 tons per acre.

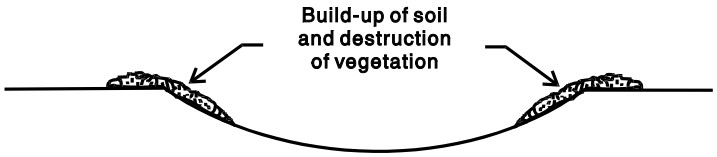
Special Attention

The most critical time in successfully installing grassed waterways is when vegetation is being established. Special protection such as mulch anchoring, nurse crops, hay bale barriers, and other methods may be warranted to get the vegetation established. Irrigation may also be necessary to establish the grass during dry times. In any case, large flows should not be allowed in the waterway prior to establishing the vegetation. Also, newly established waterways shall be protected from grazing and heavy traffic.

Maintenance

Vegetation damaged by farm machinery, erosion, cattle, drought, or herbicides must be repaired promptly.

Maintenance fertilizer should be applied according to the vegetation plan or a current soil test report. In general, each spring apply about 800 pounds per acre of 10-10-10 or equivalent plant nutrients to grasses and 500 pounds per acre of 0-10-10 to sericea. Maintain a dense sod at all times. Mow or use herbicides to control weeds and bushes. Care must be taken to prevent plowing into the edges of waterways when plowing and cultivating the fields. The following illustration shows a buildup of soil and destruction of vegetation at the edge of a waterway.



If the edge of the waterway is destroyed or a soil buildup occurs, a scraper or blade should be used to reshape the area to the original dimensions and then reestablish vegetation. Repair damaged waterways and disposal areas promptly by removing sediment and reseeding or by transplanting sod to damaged areas. Remove sediment deposits as they develop.

Waterways should not be used as farm roads. Grassed waterways can be used for grazing or hay production with good management.

References

NRCS AL Conservation Practice Standard
Grassed Waterway - Code 412

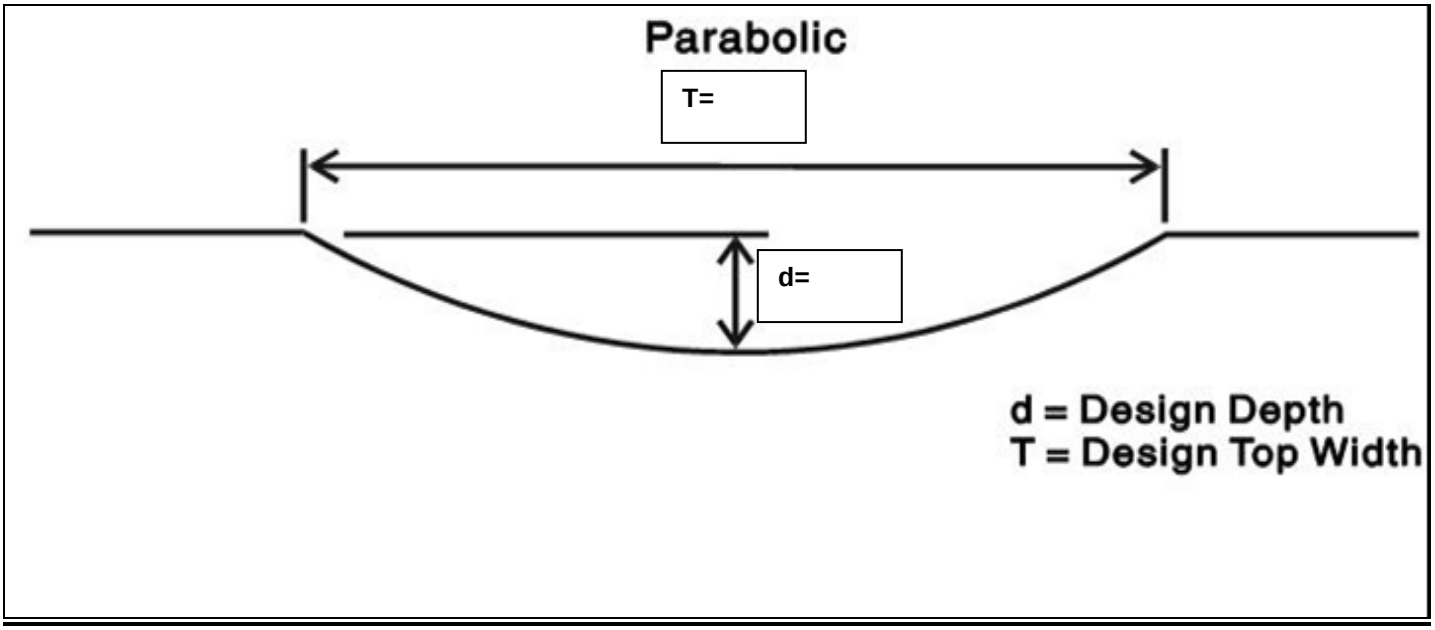
Grassed Waterway Worksheet

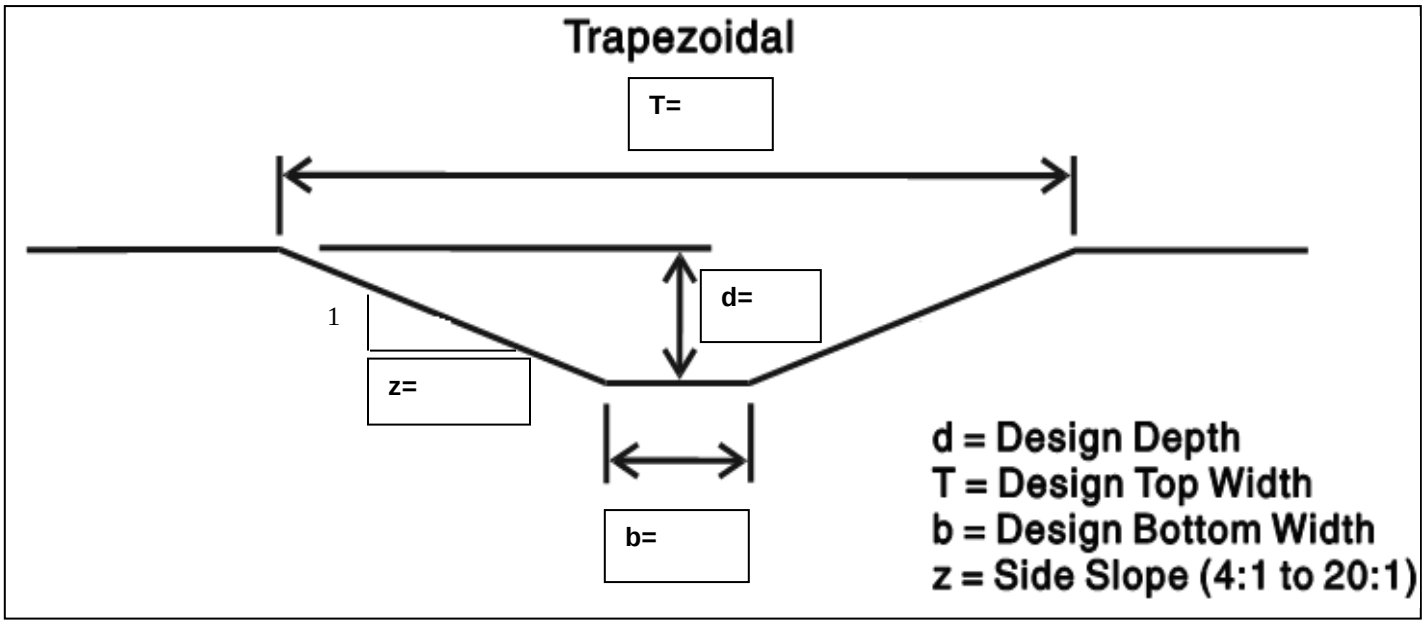
Land User: _____ **County:** _____ **Date:** _____

Farm No.: _____ **Tract No.:** _____ **Assisted By:** _____

Drainage Area: _____ **Acres:** _____ **Channel Slope:** _____

Shape:_____





Plants: _____

Fertilizer and Lime: N: _____lbs P: _____lbs K: _____lbs Lime: _____tons

Amount of erosion control blanket, if needed: _____yd^2