

Grassed Waterway

North Carolina Practice Job Sheet 412

Prepared for: _____

Prepared by: _____

Farm: _____ Tract: _____ Date: _____



DEFINITION

A shaped or graded channel that is established with suitable vegetation to carry surface water at a non-erosive velocity using a broad and shallow cross section to a stable outlet.

PURPOSE

- ☐ Convey runoff from terraces, diversions, or other water concentrations without causing erosion or flooding
- ☐ Prevent gully formation
- ☐ Protect/improve water quality

CRITERIA

All grassed waterways will have a stable outlet with adequate capacity to prevent ponding or flooding damages. The outlet can be another vegetated channel, earthen ditch, grade stabilization structure, filter strip, or other suitable outlet.

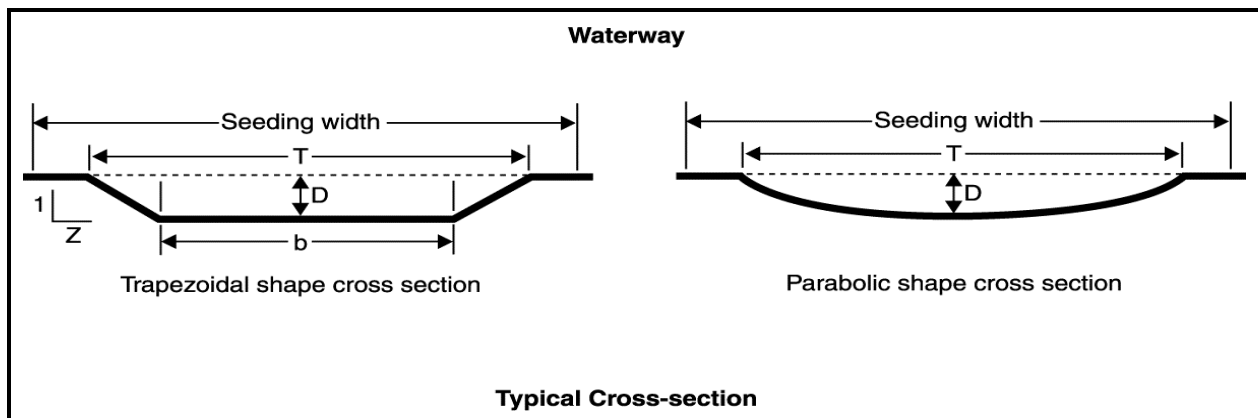
Use subsurface drains, underground outlets, or stone center waterways to keep vegetation established on sites having high water tables, prolonged flows, or seepage problems.

Establish vegetation as soon as possible using the site specific guidance below. Use mulch anchoring, nurse crop, rock or straw or hay bale dikes, fabric or rock checks, filter fences, or runoff diversion to protect the vegetation until it is established. Planting of a close growing crop, e.g. small grains or millet, on the contributing watershed prior to construction of the grassed waterway can also significantly reduce the flow through the waterway during establishment.

Provide livestock and vehicular crossings as necessary to prevent damage to the waterway and its vegetation.

OPERATION AND MAINTENANCE

- Establish a maintenance program to maintain waterway capacity, vegetative cover, and outlet stability. Vegetation damaged by machinery, herbicides, or erosion must be repaired promptly.
- Protect waterway from concentrated flow by using diversion of runoff or mechanical means of stabilization (such as silt fences, mulching, and hay bale barriers, etc.) during vegetation establishment.
- Minimize damage to vegetation by excluding livestock whenever possible, especially during wet periods. Permit grazing in the waterway only when a controlled grazing system is being implemented.
- Inspect grassed waterways regularly, especially following heavy rains. Fill, compact, and reseed damaged areas immediately. Remove sediment deposits to maintain capacity of grassed waterway.
- Avoid use of herbicides that would be harmful to the vegetation or pollinating insects in and adjacent to the waterway area.
- Avoid using waterways as turn-rows during tillage and cultivation operations. Do not use waterways as a field road. Avoid crossing with heavy equipment when wet. Lift tillage equipment off the waterway when crossing and turn off chemical application equipment.
- Mow or periodically graze vegetation to maintain capacity and reduce sediment deposition. Mowing may be appropriate to enhance wildlife values, but must be conducted to avoid peak nesting seasons and reduced winter cover.
- Apply supplemental nutrients as needed to maintain the desired species composition and stand density of the waterway.
- Control noxious weeds.



A grassed waterway can have a cross-section configuration that is trapezoidal or parabolic. Side slopes are constructed to be no steeper than a ratio of two horizontal to one vertical. The intent is to accommodate maintenance and tillage/harvesting equipment that will cross the waterway. Keep the bottom width of trapezoidal waterways less than 100 feet unless multiple or divided waterways or other means are provided to control meandering of low flows.

SPECIFICATIONS

Landowner/Operator _____ Field number _____

Purpose (check all that apply)		
<input type="checkbox"/> Convey concentrated flow runoff	<input type="checkbox"/> Other (specify):	
<input type="checkbox"/> Prevent gully formation		
<input type="checkbox"/> Protect/improve water quality		
Layout		
Waterway shape:	<input type="checkbox"/> Parabolic	<input type="checkbox"/> Trapezoidal

Grassed Waterway	1	2	3
Waterway number			
Reach number			
Grade (%)			
Depth - D (ft)			
Top width - T (ft)			
Bottom width-b (ft)*			
Side slopes (Z:1)*			
Length (ft)			
Seeding width (ft)			
Seeding area (acres)			

*Trapezoidal only

Vegetation establishment			
Species**			
Seeding rate (PLS) (lb/ac)			
Lime (tons/acre)			
N (lb/acre)			
P ₂ O ₅ (lb/acre)			
K ₂ O (lb/acre)			

**For multiple species separate with a "/" (e.g., species 1/species 2/species 3)

Vegetated Filter			
Waterway number			
Strip width (ft)			
Strip length (ft)			
Area of filter strip (ac)			
Slope (%)			
Species**			
Seeding rate (PLS) (lb/ac)			
Lime (lb/acre)			
N (lb/acre)			
P ₂ O ₅ (lb/acre)			
K ₂ O (lb/acre)			

**For multiple species separate with a "/" (e.g., species 1/species 2/species 3)

Site Preparation Prepare firm, weed-free seedbed. Additional requirements:
--

Planting Method(s) <i>Establish stand of vegetation according to specified seeding rate. Drill grass and legume seed ____ inches deep uniformly over area. If necessary, mulch newly seeded area with ____ tons per acre of mulch material (Mulch Material=____). Drill and seed small grain as a companion crop, as necessary, at the rate of ____ pounds per acre, but clip or harvest before plants head out. Additional requirements:</i>
Operation and Maintenance <i>Maintain original width and depth of the grassed waterway area. Regularly remove debris and sediment from waterway and filter area. Harvest, mow, reseed, and fertilize to maintain vigorous vegetation, as needed. Inspect periodically and, after major storms, repair eroding or bare areas. Additional requirements:</i>

LANDOWNER/OPERATOR'S ACKNOWLEDGEMENT:

Landowner/operator acknowledges that:

- He/she has received a copy of the drawings, design, and specifications, and that he/she has an understanding of all contents and requirements.
- He/she has obtained any and all necessary permits. (IT SHALL BE THE RESPONSIBILITY OF THE OWNER TO OBTAIN ALL NECESSARY PERMITS AND /OR RIGHTS AND TO COMPLY WITH ALL ORDINANCES AND LAWS PERTAINING TO THIS INSTALLATION.)
- No changes will be made in the installation of the job without prior concurrence of the NRCS.
- Maintenance of the installed work is necessary for proper performance during the project life.

I have reviewed this plan and agree to install as designed.

Cooperator _____ Date _____

PRACTICE COMPLETION:

I have made an on site inspection of the grassed waterway (or I am accepting owner/contractor documentation) and have determined that the job as installed does conform to the drawings, design, and practice specifications.

Completion Certification by:

Planner _____ Date _____

Additional Specifications and Notes: