

NATURAL RESOURCES CONSERVATION SERVICE

DOCUMENTATION REQUIREMENTS

GRASSED WATERWAY (412)

FIELD DATA

The following is a list of the minimum field data to be collected:

1. Plan view sketch;
2. Slope of each design reach (hand level survey is permitted when slope is steeper than 2 percent);
3. Cross sections (minimum of one representative cross section per reach, not to exceed 300 ft intervals);
4. Length of each reach, and total length;
5. Verification of soil survey description of texture and wetness;
6. Profile and cross section of waterway outlet downstream to a stable point.

DESIGN DATA

The following is a list of the minimum required design data for each reach, as applicable:

1. Peak discharge calculations;
2. Based on verified soil texture and proposed vegetation, determine allowable velocity;
3. Design slope, dimensions, velocities for stability and capacity;
4. Design of special features, such as:
 - Subsurface drainage for wet soils (see practice standard 606, Subsurface Drainage);
 - Stone center for continuous base flow;
 - Surface intake and underground outlet for continuous base flow;
 - Erosion control lining due to excessive velocity. If rock is to be used as a liner, then design method for grass waterway is not valid and design must conform to practice standard 468, Lined Waterway or Outlet;
5. Design of outlet protection. Refer to the appropriate practice standard for design criteria

(for example, Lined Waterway or Outlet (468) and Grade Stabilization Structure (410));

6. Construction drawings shall include the following as a minimum:
 - Plan view including location map and all system components;
 - Profile view with slopes of 2 percent or flatter and when elevations are critical, regardless of slope;
 - Cross section of each design reach;
 - Details of the outlet protection (see documentation requirements for associated practices);
 - Details of special features and appurtenant devices, such as stone center, surface intake, rodent guard, etc;
 - Lime, fertilizer, and seeding requirements according to practice standard 342, Critical Area Planting (may be included as a specification instead);
 - Quantities of materials;
 - Critical Inspection Items;
 - Utilities statement and Excavation Safety statement.
7. Construction and material specifications;
8. Written Operation and Maintenance (O&M) plan.

PRE-CONSTRUCTION & INSPECTION

1. Preconstruction Meeting With Landowner And Contractor. This is a meeting to explain the drawings and specifications, discuss requirements for construction and material certifications, level of staking needed, safety issues, utilities notification, and other topics. Document the following as a minimum:
 - Time and date of meeting;
 - Names of attendees;
 - Items discussed and decisions made.

2. Layout And Staking Of Practices. Document:
 - Survey notes showing layout of the practices, including date and who performed the staking;
 - If the contractor provides staking, then document any reviews made to ensure proper placement of the practice.
3. Utilities Notification. Can use form ENG-5 and ENG-6 to assist in tracking utility notifications (See NEM §MA503). Document:
 - Initial discussion with landowner about his or her responsibility to notify utilities;
 - Information from landowner about existence and location of known utilities;
 - Assurances that utility company has been notified, including staking by utilities.
4. Inspection During Construction. Document:
 - All inspections made during construction, including all those identified on the drawings as critical inspection items;
 - Include visual inspections and conclusions, surveys, tests and test results;
 - Discussions with landowner and contractor;
 - Photographs taken before and during construction;
 - Approval by designer of any changes from the drawings or specifications before implementation of the change.

6. Calculate acreage of waterway (final design width times the installed length);
7. Materials documentation to certify quality as stated on drawings and specifications.

CERTIFICATION

The following is a list of what must be certified by a person with the required approval authority for the installed practice:

1. Final quantities and documentation for quantity changes;
2. Statement on the as-built drawings that the installed practices meet or exceed the requirements of the NRCS practice standards;
3. Record in the case file the acres of grassed waterway installed;
4. Report in PRMS, as applicable;
5. See documentation requirements of associated practices to determine certification requirements.

CONSTRUCTION CHECK

The following is a list of the minimum required data to support the as-built drawing:

1. Measurements to show grade and cross section of each reach;
2. Measured length of total waterway (paced distance acceptable only when waterway is not cost-shared);
3. Seeding performed;
4. Adequacy of special features and appurtenant devices;
5. Adequacy of outlet. Refer to documentation requirements for associated practices (such as Lined Waterway Or Outlet (468) and Grade Stabilization Structure (410)) for construction check data required;