

**STATEMENT OF WORK**  
**Grassed Waterway (412)**  
**Iowa 2010**

**These deliverables apply to this individual practice. For other planned practice deliverables refer to those specific Statements of Work.**

## **DESIGN**

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### **Deliverables:**

1. Survey notes shall show a site survey sufficient to show the following was completed:
  - a. For waterways with a grade less than or equal to 2% or a drainage area over 30 acres, the survey shall include the following:
    - i. Centerline elevation every 100' or less and at grade breaks.
    - ii. At least one cross section for each design reach not to exceed 400' apart.
    - iii. Elevations shall be referenced to a bench mark. A temporary bench mark with an assumed elevation is acceptable. An example of a temporary bench mark could be nail in a post, the top of a post, the top of a culvert pipe, or a wooden hub in the ground.
  - b. For waterways with a grade greater than 2% and a drainage area less than 30 acres,
    - i. Document waterway grade and at least one cross section.
    - ii. Survey may be completed using a hand level.
  - c. Survey shall extend downstream to show waterway outlet conditions.
  - d. Survey notes shall be in accordance with NRCS Technical Release 62, Engineering Field Handbook, Chapter 1 and/or standard industry practice.
  - e. If surveying with an automatic / electronic data collection device, a print out of the data and an electronic copy shall be included in the file.
  - f. A plot of the survey data with a bar scale and north arrow shall be maintained in the file.
2. Design documents demonstrating the criteria in the practice standard have been met and are compatible with the planned and applied practices, including but not limited to:
  - a. Practice purpose(s) as identified in the conservation plan.
  - b. List of required permits to be obtained by the client.
  - c. Compliance with NEPA requirements documented on form IA-CPA-52.
  - d. Compliance with NRCS national and state utility safety policy (NEM part 503-Safety, Section 503.00 through 503.22), including a note on the drawings stating that the contractor is responsible for calling Iowa One Call at 1-800-292-8989 at least 48 hours prior to beginning any excavation work.
  - e. Documentation that adequate land rights have been obtained if needed.
  - f. Practice standard criteria related computations and analyses to develop plans and specifications including but not limited to:
    - i. Hydrology including delineation of the watershed.
    - ii. Hydraulics.
    - iii. Outlet Capacity and Stability.
    - iv. Erosion Control.
  - g. All design documentation is shown as checked.
3. Plans and specifications include drawings showing the requirements and specifications describing the requirements to install the practice and obtain necessary permits shall be provided to the client. These shall include:
  - a. Drawings, including but not limited to:
    - i. A plan view of the layout of the grassed waterway with waterways labeled.
    - ii. Typical or stationed cross sections of the grassed waterway(s).
    - iii. Profile(s) of the grassed waterway(s) showing existing ground and design elevations. A plotted profile is not required for a design for condition described in 1.b.
    - iv. Applicable grassed waterway geotextile or rock check location and extent.
    - v. Applicable subsurface drainage materials location and extent.
  - b. Construction and material specifications, including but not limited to:
    - i. Excavation, including disposal requirements for excess soil material.
    - ii. Pollution Control, IA-5.
    - iii. Vegetative Establishment.
    - iv. Grassed waterway check material specifications.

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- v. Subsurface drainage material specifications.
- c. Bill of Materials and Cost Estimate.
- d. Engineering job class is shown on the drawings.
- e. Operation and maintenance (O&M) plan.
- f. Certification that the design meets practice standard criteria and complies with applicable laws and regulations (NEM Subpart A, 505.03(b) (2)) or is approved by an employee with the appropriate delegated engineering job approval authority (NEM Subpart A, 501).
- g. Acceptance signature by client.

## **INSTALLATION**

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### **Deliverables**

1. Pre-installation conference with client and contractor.
2. Verification that client has obtained required permits.
3. Staking and layout according to plans and specifications including applicable layout notes.
4. Installation inspection
  - a. Actual materials used.
  - b. Field inspections during construction.
  - c. Record of inspection activities.
5. Facilitate and implement required design modifications with client and original designer.
6. Advise client/NRCS on compliance issues with all federal, state, tribal, and local laws, regulations and NRCS policies during installation.

## **CHECK OUT**

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### **Deliverables**

1. As-built survey notes documenting critical elevations, grades, and changes from the design
  - a. For waterways with a grade less than or equal to 2% or a drainage area over 30 acres, the survey shall include the following:
    - i. Centerline elevation every 100' or less and at grade breaks.
    - ii. At least one cross section for each design reach not to exceed 400' apart. Cross sections shall include shots on the edges, quarter points for parabolic and bottom edges for trapezoidal cross-sections, and centerline of the waterway
    - iii. Elevations shall be referenced to a bench mark.
  - b. For waterways with a grade greater than 2% and a drainage area less than 30 acres,
    - i. At least one cross section for each design reach.
    - ii. At each cross section centerline shot, take additional centerline shots at least 50' upstream and downstream to show the waterway grade.
    - iii. Survey may be completed using a hand level.
2. As-built documentation
  - a. Extent of practice units applied.
  - b. Drawings documenting changes from design.
  - c. Final quantities.
3. Certification that the practice is installed in accordance with the plans and specifications, meets NRCS standards, and is in compliance with permits (NEM 505.03(c) (1)).
4. Progress reporting

## **REFERENCES**

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- Field Office Technical Guide (eFOTG), Section IV, Conservation Practice Standard - Grassed Waterway, 412.
- National Engineering Manual
- National Engineering Handbook Part 650 (EFH) Chapter 7, GRASSED WATERWAYS
- NRCS National Environmental Compliance Handbook
- NRCS Cultural Resources Handbook

## **STATE CONTACT**

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