

STATEMENT OF WORK

Dike (356)

Iowa

This Statement of Work lists the minimum deliverables required for this individual practice; for deliverables required for associated practices, refer to the associated Statements of Work. NRCS and non-NRCS service providers shall provide the required deliverables to the landowner and NRCS.

PRE-DESIGN

Deliverables (Usually completed by NRCS; must be in the case file prior to beginning design)

1. Documents that demonstrate that adequate planning activities have been completed.
 - a. Report or conservation assistance notes summarizing pre-design meeting(s) with client.
 - i. Identify the resource concern being addressed and the landowner objectives.
 - ii. Define roles and responsibilities of all parties that will be involved in the project.
 1. Landowner
 2. Designer
 3. NRCS and/or other funding source(s)
 4. Contractor
 - iii. Advise client on potential compliance issues with federal, state, tribal, and local laws, regulations and NRCS policies.
 - b. The practice is included in a conservation plan and meets one or more of the purpose(s) described in the Conservation Practice Standard.
 - c. Completed IA-CPA-52 showing NEPA requirements have been met and documented (i.e., cultural resources and threatened and endangered (T&E) species).
2. The following information has been provided to the landowner to enable him to request a Clean Water Act determination of jurisdiction from the U.S. Army Corps of Engineers:
 - a. Location map and plan view of the dike.
 - b. Cross section of the dike.
3. Determination of jurisdiction letter from the U.S. Army Corps of Engineers or documentation of non-response.

DESIGN

Deliverables (Completed by the responsible designer)

1. A copy of survey notes which show that a thorough and detailed site survey was completed.
 - a. Survey notes shall be in accordance with NRCS Technical Release 62, Engineering Field Handbook (EFH), Chapter 1, Engineering Surveys, and/or standard industry practice.
 - b. If survey equipment with automatic / electronic data collection devices is used, an electronic copy of each survey shall be provided on a non-volatile medium such as CD-ROM. In lieu of an electronic copy of the data, a print out of the data may be included in the file. Both printed and electronic data shall be provided in a delimited ASCII format that includes point number, easting, northing, elevation, and description for each surveyed point, and include the date of the survey, purpose of the survey, the survey crew, equipment used, weather conditions, and the horizontal and vertical datums used.
 - c. Rod Readings or Elevations shall be referenced to a bench mark. A temporary bench mark (TBM) may be acceptable. The TBM shall be selected to ensure its availability through completion of construction activities.
 - d. The design survey shall meet the accuracy standard for Ordinary or Rough Surveys as presented in Chapter 1 of the EFH, and include the data necessary to design and construct the practice in compliance with the standard. Survey elements include but are not limited:
 - i. Benchmark and control points, property lines, grade breaks, and other important features such as exposed geological features, fences, wells, underground utility markers, culvert inlets and outlets, tile intakes and outlets, road rights-of-way, power poles, and buildings.
 - ii. Profiles and cross sections shall extend far enough to show that adjacent conditions meet the requirements of the practice standard.
 - iii. A topographic survey of the planned work area unless survey verified LiDAR is used.

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- e. Elevation data collected with LiDAR meeting Iowa Standard or FEMA Compliant specifications can be used for:
 - i. Planning and watershed delineation
 - ii. Stage storage computation
 - iii. Earthwork if LiDAR elevations are verified with Survey Grade GPS Field Survey. Field survey verification includes:
 1. Establishment of on-site benchmark and control points.
 2. Gathering site specific survey as shown in 1.d.
 3. Determining if current site conditions are reflected correctly by LiDAR. For example, look for changes due to erosion or construction activity and verify accuracy due to vegetation ground cover or canopy.
 4. Verifying local elevation accuracy relative to the survey datum identified in item 1.b.
2. Design documents that demonstrate the criteria in the practice standard have been met and are compatible with other planned and applied practices:
 - a. Practice standard substantiating data, computations, and analyses to develop plans and specifications including but not limited to:
 - i. Geology and soil mechanics
 - ii. Hydrology/Hydraulics
 - iii. Environmental considerations
 - iv. Erosion control/Seeding
 - v. Safety considerations
 - b. All design documentation is shown as checked by someone other than the designer.
3. Written plans and specifications which adequately describe the requirements to install the practice and obtain necessary permits.
 - a. Drawings, which include but are not limited to the following elements, if applicable:
 - i. Location map of the site, including the township, range, section, scale, and north arrow.
 - ii. Plan view of the project site showing the practice relative to fences, property lines, streams, bench mark, etc., including borrow and waste areas, and work limits.
 - iii. Bench mark elevation and description.
 - iv. Quantities
 - v. A listing of the applicable Construction and Material Specifications.
 - vi. Coordinates and elevations of horizontal and vertical control points needed for practice layout.
 - vii. Contour lines for normal pool, auxiliary crest, and top of dam elevation.
 - viii. Contour lines showing the existing topography of the planned work area, as needed.
 - ix. Profile(s) and cross sections of planned excavations and fills.
 - x. Profile(s) of planned pipe installations.
 - xi. Other items required by the current Conservation Practice Standard.
 - xii. 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.
 - xiii. A note on the drawings stating that if a cultural resource is identified during construction, work will stop immediately and the NRCS Archeologist will be notified.
 - xiv. The Iowa Engineering Job Class is shown on the drawings (NEM Part 501, Form IA-ENG-6).
 - xv. Completed title block showing dates and the names of the designer and checker, and the signature of the person approving the design.
 - xvi. Acceptance signature by client.
 - b. Construction and material specifications, including but not limited to:
 - i. Appropriate specifications listed in the Conservation Practice Standard.
 - ii. Other specifications required for the project.
 - iii. IA-5 Pollution Control Construction Specification or its equivalent is required for all jobs.

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4. Design Report (NEM Part 511, Subpart B - Design Documentation, 511.11) with detail appropriate to the complexity of the job. A detailed design report is required for Class I and II dikes. If multiple practices are part of a single job, a combined design report may be acceptable. The design report shall include, but not be limited to the following:
 - a. Summary of project objectives.
 - b. Site assessment.
 - c. Summary of design documentation from item 2 listed above.
 - d. List of facilitating practices.
 - e. List or map showing land rights to be obtained, if needed.
 - f. List of required permits to be obtained by the client, including, but not limited to the following:
 - i. U.S. Army Corps of Engineers Section 404 permit. See Regional Permit 33 for guidance.
 - g. Bill of Materials and Itemized Cost Estimate
 - h. Bid Sheet to be used by the client, if appropriate.
5. Inspection Plan (NEM Part 512, Subpart D Quality Assurance Activities, 512.30 through 512.33) appropriate to the complexity of the job. A detailed inspection plan is required for Class I and II dikes. The inspection plan shall describe the following:
 - a. Items of work and materials requiring inspection.
 - b. Knowledge, skills, and abilities required of the inspector.
 - c. Type and frequency of testing, if needed.
 - d. The as-built documentation required.
 - e. Quality Control responsibilities.
 - f. Quality Assurance responsibilities.
6. Operation and maintenance plan meeting the requirements of the current Conservation Practice Standard.
7. Certification that the design meets practice standard criteria and complies with applicable laws and regulations (NEM Part 505, Subpart A), or is approved by an employee with the appropriate delegated engineering job approval authority (NEM Part 501, Subpart A).

INSTALLATION

Deliverables (Completed by the responsible designer)

1. Pre-installation conference with client and contractor.
 - a. Review plans and specifications.
 - b. Review NRCS utility safety policy. (NEM Part 503 – Safety, Subpart A – Engineering Activities Affecting Utilities, and Iowa amendments)
 - c. Review roles and responsibilities of all parties involved in the project installation.
 - d. Verification that client has obtained required permits and land rights.
2. Staking and layout according to plans and specifications including applicable layout notes.
3. Installation inspection documented in the case file assistance notes or in a job diary to include:
 - a. Dates and record of inspections made, testing completed, instruction provided to the contractor, etc., to document compliance with standards and specifications.
 - b. Actual materials used.
4. Facilitate and implement required design modifications with client and the original designer. Design modifications required during installation are properly approved and documented.

CHECK OUT

Deliverables (Completed by the responsible designer)

1. Survey for Checkout conducted and recorded as for the design survey.
 - a. Location of the practice components installed.
 - b. Profile and cross sections along excavation and fill.
 - c. Profile along the route(s) of planned pipe installation.
 - d. Cross-sections of the structure as needed to document practice installation.

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2. As-built documentation.
 - a. Extent of practice units applied.
 - b. Drawings with changes from the original construction plans clearly shown.
 - c. Materials documentation including final quantities.
 - d. Testing reports, as required.
 - e. Survey and construction notes for layout, inspections, and final checkout documenting compliance with standards and specifications as described for the Design Survey.
3. Certification that the practice has been installed in accordance with NRCS practice standard criteria and specifications and complies with applicable laws and regulations, or is approved by an employee with the appropriate delegated engineering job approval authority (see Design Deliverable Item 7).
4. Progress reporting. (Completed by NRCS)

REFERENCES

- Iowa Administrative Code
- NRCS Field Office Technical Guide (FOTG), Section IV, Conservation Practice Standard, Dike (356)
- NRCS National Engineering Manual (NEM)
- NRCS National Environmental Compliance Handbook
- NRCS Cultural Resources Handbook
- NRCS General Manual

STATE CONTACT

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