

STATEMENT OF WORK
Watering Facility (614)
Oklahoma

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

DESIGN

Deliverables:

1. Design documentation that demonstrates that the criteria in the NRCS conservation practice standard have been met and are compatible with other planned and applied practices. Include:
 - a. Identification of client needs, documentation of discussion with client, and a recommended method of resolution.
 - b. Practice purpose(s) as identified in the conservation plan (Supported by a grazing plan).
 - Number of grazing livestock served
 - Number of watering facilities in grazing system
 - Resource concern clearly identified
 - c. List of required permits to be obtained by the client.
 - d. Location of planned practice installation shown on a farm or ranch plan map.
 - e. Impacts on adjacent properties and structures.
 - f. Compliance with NRCS national and state utility safety policy (National Engineering Manual (NEM) Part 503-Safety, Subpart A - Engineering Activities Affecting Utilities 503.00 through 503.06 and NEM Oklahoma Supplement Part 503-Safety, Subpart A - Engineering Activities Affecting Utilities, OK503.02)
 - Oklahoma engineering worksheet OK-ENG-45 Utilities Inventory Form will be used to document utilities
 - g. Practice standard criteria related computations and analyses to develop plans and specifications including but not limited to:
 - Oklahoma engineering design worksheet *WateringFacility614-HUAP561OK.xlsm* or equivalent design documentation will be used to design watering facilities in Oklahoma. Design Documentation will be recorded on *OK-ENG-17 Watering Facility & Heavy Use Area Protection Data Sheet* or equivalent will be used for Troughs and Tanks
 - i. Water Source
 - a) Available flow rate
 - b) Dependability
 - c) Suitability of water for livestock consumption
 - d) Available or planned storage
 - e) Water level controls (switch, float or overflow)
 - ii. Watering facility capacity requirements
 - a) Number, type and size of livestock served by the watering system
 - b) Days of storage required and provided for in the design
 - c) Storage volume calculations
 - iii. Materials
 - a) Climatic Considerations (e.g. freezing)
 - b) Material quantity calculation
 - c) Type and size of watering facility required to meet the standard

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- d) List of all materials needed to install the watering facility
2. Written plans and specifications including sketches and drawings, including plan view, shall be provided to the client that adequately describes the requirements to install the practice and obtain necessary permits.
- a. The appropriate design data sheet should be used to provide installation guidance. Approved Oklahoma standard worksheets and drawings to construct livestock watering facilities include:
- OK-ENG-26 Construction Data Sheet for Trough or Tank and Heavy Use Area Protection (HUAP) Apron – Concrete Wall with Concrete Floor*
- OK-ENG-33 Construction Data Sheet for Trough or Tank and Heavy Use Area Protection (HUAP) Apron – Metal Wall with Concrete Floor*
- OK-ENG-34 Construction Data Sheet for Trough or Tank and Heavy Use Area Protection (HUAP) Apron – Heavy Equipment Tire*
- OK-ENG-35 Construction Data Sheet for Trough or Tank and Heavy Use Area Protection (HUAP) Apron – Energy Free Fountain*
- OK-ENG-46 Construction Data Sheet for Trough or Tank and Heavy Use Area Protection (HUAP) Apron – Concrete Silo Stave Wall with Concrete Floor*
- OK-ENG-47a Construction Data Sheet for Trough or Tank and Heavy Use Area Protection (HUAP) Apron – Fiberglass with Overflow Pipe*
- OK-ENG-47b Construction Data Sheet for Trough or Tank and Heavy Use Area Protection (HUAP) Apron – Fiberglass with Water Level Control Valve and Wall Drain*
- OK-DWG-510 Watering Facility – Freeze Proof Concrete Tank for Earth Dams and Heavy Use Area Protection (HUAP)*
- b. Construction Specifications
- Use Oklahoma General Specification, Watering Facility (614A), *Troughs & Tanks* or Oklahoma General Specification, Watering Facility (614B), *Watering Ramps*, as applicable. For prefabricated watering facilities the manufacturer's installation instructions and specifications should also be included.
 - Additional specifications may need to be written to provide full material and installation instructions.
- c. Site specific drawings and specifications shall be prepared by the designer for all other livestock watering facilities.
3. Design Report as appropriate (NEM Part 511, Subpart B Documentation, 511.10 and 511.11).
4. Quality Assurance Plan (NEM Part 512 - Construction, Subpart D - Quality Assurance Activities, 512.30 through 512.33).
5. Operation and Maintenance Plan.
6. Certification that the design meets NRCS practice standards and specifications criteria, complies with applicable laws and regulations, and is signed by an employee with appropriate approval authority for design assigned on Oklahoma Engineering Worksheet OK-ENG-1 (NEM Part 505 - Non-NRCS Engineering Services, Subpart A - Introduction, 505.0 and 505.3).
- Oklahoma engineering worksheets *OK-ENG-17 Watering Facility & Heavy Use Area Protection Data Sheet* or equivalent will be used for Troughs and Tanks.

INSTALLATION

Deliverables

1. Documentation of 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 (according to inspection plan as appropriate)

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- a. Actual materials used (NEM Part 512 - Construction, Subpart C – Evaluation of Construction Materials, 512.20 through 512.23; Subpart D - Quality Assurance Activities, 512.33).
 - b. Inspection records
 - c. Maintaining a job diary with dates and record of inspections made, testing completed, instructions provided to the contractor, etc., to document compliance with standards and specifications. Documenting in the assistance notes in the plan is acceptable.
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

Deliverables

1. Supporting Documentation As-built documentation
 - a. Completed job diary or assistance notes documenting inspections made, testing completed, materials used, etc.
 - b. Survey notes for layout, inspections, and final checkout documenting compliance with standards and specifications.
 - c. As-built drawings with changes from the original drawing clearly shown.
 - i. Extent of practice units applied and location identified on a map.
 - ii. "Red-line" drawings (NEM Part 512, Construction, Subpart F – As-Built, 512.50 through 512.52)
 - d. Final quantities
 - e. Vegetation certification or schedule documented on OK-ECS-04 – Vegetative Data Worksheet
2. Certification that the installation meets NRCS standards and specifications, is in compliance with permits, and will be signed by an employee with appropriate approval authority for construction assigned on Oklahoma Engineering Worksheet OK-ENG-1 or by special letter. (NEM Part 505 – Non-NRCS Engineering Services, Subpart A - Introduction, 505.3).
3. Progress reporting

REFERENCES

- NRCS Field Office Technical Guide (eFOTG), Section IV, Conservation Practice Standard – Watering Facility, 614.
- National Engineering Manual (NEM)
- NRCS National Environmental Compliance Handbook
- NRCS Cultural Resources Handbook