

STATEMENT OF WORK
Karst Sinkhole Treatment (527)
Wyoming

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

Items that are marked **(TSP or Non-NRCS Engineer)** need to be completed only if design is provided by a TSP or Non-NRCS Engineer. Items that are marked **(NRCS Employee)** need to be completed only if design is provided by an NRCS Employee. All other items are required by all designers.

DESIGN

Deliverables and Documentation Requirements:

1. Design documentation that will demonstrate that the criteria in NRCS practice standard have been met and are compatible with other planned and applied practices.
 - a. Practice purpose(s) as identified in the conservation plan
 - b. List of required permits to be obtained by the client
 - c. Verify with the Field Office conservation planner that all concerns under the National Environmental Policy Act (NEPA) and the National Historic Preservation Act (NHPA) have been adequately addressed.
 - d. Compliance with NRCS national and state utility safety policy (M_210_NEM_503_A-Safety, Engineering Activities Affecting Utilities, 503.00 through 503.6)
 - e. Practice standard criteria related computations and analyses to develop plans and specifications including but not limited to:
 - i. Geology and Soil Mechanics (M_210_NEM_531_A-Geology, Geologic Investigations)
 - ii. Hydrology/Hydraulics
 - iii. Structural
 - iv. Environmental Considerations
 - v. Vegetation
 - vi. Safety Considerations (M_210_NEM_503_A-Safety, Engineering Activities Affecting Utilities, 503.10 through 503.12)
2. Written plans and specifications including sketches and drawings shall be provided to the client that adequately describes the requirements to install the practice and obtain necessary permits including but not limited to:
 - a. Plan view delineating the sinkhole and sinkhole area, including topographic information and photographs.
 - b. A geologic investigation that includes a study of potential impacts on the karst resource.
 - c. Depth to stable, competent bedrock, if applicable.
 - d. Details of planned treatment measures.
 - e. The drainage area of sinkhole delineated on a topographic map.
 - f. Availability of safe outlet for surface water, if applicable.
 - g. Special safety requirements, as appropriate.
 - h. Additional site-specific considerations.
3. Design Report and Inspection Plan as appropriate (M_210_NEM_511_B- Design, Documentation, 511.11) and (M_210_NEM_512_D-Construction, Quality Assurance Activities, 512.30 through 512.32).
4. Operation and Maintenance Plan
5. Certification that the design meets practice standard criteria and complies with applicable laws and regulations (M_210_NEM_505_A-Non-NRCS Engineering Service, Introduction, 505.3). **(TSP or Non-NRCS Engineer)**
6. Engineering job classification is shown and proper engineering approval is obtained. **(NRCS Employee)**
7. Design modifications during installation as required.

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INSTALLATION

Deliverables and Documentation Requirements

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. Verify with the Field Office conservation planner that the location of the staked practice is within the original scope of the practice and is still in compliance with the National Environmental Policy Act (NEPA) and the National Historic Preservation Act (NHPA).
5. Installation inspection (according to inspection plan as appropriate).
 - a. Actual materials used (M_210_NEM_512_D-Construction, Quality Assurance Activities, 512.33)
 - b. Inspection records
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.
7. Certification that the installation process and materials meets design and permit requirements.

CHECK OUT

Deliverables and Documentation Requirements

1. As-Built documentation.
 - a. Extent of practice units applied
 - b. Drawings
 - c. Final quantities
2. Certification that the installation meets NRCS standards and specifications and is in compliance with permits (M_210_NEM_505_A-Non-NRCS Engineering Service, Introduction, 505.3.C.(1)).
(TSP or Non-NRCS Engineer)
3. Statement of compliance signed by NRCS personnel with applicable job approval authority that the work meets the plans and specifications. **(NRCS Employee)**
4. Progress reporting.

REFERENCES

- NRCS Field Office Technical Guide (eFOTG), Section IV, Conservation Practice Standard – Karst Sinkhole Treatment (527)
- NRCS National Engineering Manual (NEM).
- NRCS National Environmental Compliance Handbook
- NRCS Cultural Resources Handbook