

STATEMENT OF WORK
Waste Treatment Lagoon

Code (359)

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 will demonstrate compliance with NRCS practice standard criteria and compatibility 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, along with other participant (client) responsibilities (Reference Form CO-ENG-13, Notification of Participant Responsibilities).
 - c. On site environmental concerns (e.g. liner failure, location, breaching, air quality, appearance).
 - d. Safety concerns (NEM Part 503- Safety, Subpart A, 503.06 through 503.12), and compliance with NRCS utility safety policy (NEM Part 503-Safety, Subpart A - Engineering Activities Affecting Utilities 503.00 through 503.06).
 - e. List of facilitating practices and components
 - f. Provide design survey data, as appropriate, including:
 - (1) Topographic survey covering the entire facility;
 - (2) Profile & cross section surveys along the proposed route of pipes, ditches, diversions, etc.;
 - (3) Approximate location of known utilities; field/property boundaries, and other site constraints.
 - g. Geotechnical Investigation.
 - (1) An on site geotechnical investigation shall be performed for every project.
 - (2) Provide logs of on site boring(s), pit(s), etc., noting:
 - i. Method (auger, backhoe, etc.), location & elevation of ground surface;
 - ii. Unified soil classification for each distinct layer encountered;
 - iii. Depth to water encountered or other hydric indicators; and
 - iv. Total depth investigated (\geq 4 feet below all anticipated excavations).
 - (3) Sample Description - source, sample size, unified classification & tests to be done.
 - (4) Geotechnical report including analysis & recommendations, as appropriate for the site (lab test methods must be in accordance with NRCS requirements)
 - h. Design Report (NEM Part 511, Subpart B, Documentation, 511.11) and Computations, including:
 - (1) Basic climate data, runoff curve number, runoff volume & peak rate computations;
 - (2) Waste production volume calculations;
 - (3) Design calculations, as required to determine required storage volume, minimum treatment volume, and dimensions of detention basins, pipelines, diversion channels, etc.;
 - (4) Liner design rationale and documentation;
 - (5) Structural design calculations; and

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- (6) Construction quantities and estimated construction cost computations.
 - (7) Certifications that the design meets practice standard criteria and comply with applicable laws and regulations (NEM Subpart A, 505.03 (b) (2))
 - (8) Design modifications during installation as required
2. Construction Drawings
- a. Cover Sheet – Include:
 - (1) Location / vicinity map - Map showing location from nearest town, etc.;
 - (2) Table of estimated quantities;
 - (3) General notes, including a bench mark description;
 - (4) Standard Utility Notification Center of Colorado (UNCC) note;
 - (5) Engineering Job Classification; approvals and acknowledgements.
 - b. Overall Plan View – Include:
 - (1) Topography;
 - (2) Approximate location of known utilities, field boundaries & property lines;
 - (3) Location of system components and any other details to be staked out in the field.
 - (4) N arrow, scale, dimensions, stationing, elevations, etc. as appropriate; and
 - (5) Reference points such as bench mark location.
 - c. Profiles (sufficient in detail for layout and construction purposes)
 - (1) For pipes, channels & similar conveyance structures;
 - (2) Show intended grades, elevations, stationing, etc.
 - d. Cross Sections – to show side slopes, fill and excavation limits; dimensions and elevations.
 - e. Structural Details, including dimensional plan views, sectional views, and reinforced concrete details (may require separate sectional and detailing views).
 - f. Mechanical Details - Valves, screens, pumps, etc.
 - g. Construction Notes – add notes on all drawings as needed to describe components, materials and to clarify design intent. All applicable State and Federal (OSHA) safety requirements shall be addressed in the plans and specifications where appropriate.
3. Construction Specifications
- a. Adapt Colorado Conservation Practice Specifications for each practice where applicable.
 - b. Additional specifications may need to be written to provide full material and installation instructions. Use NEH Part 642 format.
 - c. Include a cover sheet with a list of the specifications included.
4. Operation and Maintenance Plan
- a. Adapt “boiler plate” practice O&M plans for site specific conditions.
 - b. Include the following information with the owner's copy of O&M plan, when available:
 - (1) Manufacturer's or vendor's literature for system components;
 - (2) Equipment and installation warranties.

5. Inspection Plan, as appropriate. (NEM Part 512-D, Quality Assurance Activities, 512.30 - 512.32), to include, but not limited to, the following items:
 - a. General description of work
 - b. Items of work requiring inspection or testing
 - c. Timing of inspections or tests
 - d. Skills or certifications required by inspectors
6. Design Approval. For jobs completed by NRCS employees, affix the approval signature of the individual with delegated engineering job approval authority to the drawings. For jobs completed by non NRCS employees, affix a Colorado Professional Engineer's seal to design and construction documents and include the following statement on the cover sheet of the drawings:

"To the best of my professional knowledge, judgment and belief, these plans meet applicable NRCS standards and specifications."

signature

date

Colorado P.E. #

INSTALLATION

Deliverables:

1. Pre Installation conference with client and contractor. (Reference Form CO-ENG-13, Notification of Participant Responsibilities)
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).
 - a. Actual materials used (NEM Part 512, Subpart D 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. Form CO-ENG-1 may be used for this certification.

CHECK OUT

Deliverables:

1. As-Built documentation.
 - a. Extent of practice units applied
 - b. Drawings
 - c. Final quantities
2. Certification that the installation meets NRCS standards, specifications, and all design requirements, and is in compliance with permits (NEM Subpart A, 505.03 (c) (1)). Form CO-ENG-12 may be used for this certification.
3. Progress reporting.

REFERENCES

- See references listed in Conservation Practice Standard 313
- CO-ENG Forms: eFOTG Section IV, Tools