

## NATURAL RESOURCES CONSERVATION SERVICE

### DOCUMENTATION REQUIREMENTS

#### POND (378)

##### FIELD DATA

The following is a list of the minimum field data to be collected:

1. For excavated ponds, survey to determine topography for sizing and computing quantities of excavation and earthfill;
2. For embankment ponds (see practice standard Pond (378) for definition of embankment ponds), profile along centerline of embankment, along centerline of principal spillway, and along centerline of emergency spillway;
3. Cross section and profile of upstream and downstream channel for capacity and stability analysis, to determine inlet conditions, and for determining tailwater conditions;
4. Survey of storage area to develop storage volumes;
5. Soil investigation to determine suitability of the site, materials for construction, structure stability, and groundwater recharge if applicable.

##### DESIGN DATA

The following is a list of the minimum required design data, as applicable:

1. Purpose and type of the structure;
2. Pond size requirements and water volume requirements if applicable;
3. Hazard classification, drainage area, frequency of design storms, design discharge of principal and emergency spillways;
4. Adequacy of land treatment in the watershed, and sediment storage computations for the structure;
5. Calculation of tailwater conditions;
6. Stage-storage and stage-discharge curves for the site, principal spillway storm routing, and emergency spillway routing and design;
7. Design of all appurtenant structures, pipe joints, anti-seep collars, drainage diaphragms, trash rack, etc;
8. For embankment ponds, statement of adequacy of downstream channel stability and capacity;
9. Construction drawings shall include the following as a minimum:
  - Plan view including location map and all structure components;
  - Profile along centerline of embankment and cross section of embankment at location of principal spillway. If applicable, profile along centerline of emergency spillway and cross section of emergency spillway;
  - Reference distances and elevations to properly locate the structure and embankment;
  - Borrow area for embankment earthfill;
  - Material and dimensions of the principal and emergency spillways and all appurtenances needed to install and protect the structure;
  - Lime, fertilizer, and seeding requirements according to practice standard 342, Critical Area Planting (may be included as a specification instead);
  - Fence location and fencing detail if needed;
  - Quantities of materials.
  - Critical Inspection Items;
  - Utilities statement and Excavation Safety statement.
10. Construction and material specifications to ensure proper installation of the structure and appurtenances;
11. Written Operation and Maintenance (O&M) plan.

## PRE-CONSTRUCTION & INSPECTION

1. Preconstruction Meeting With Landowner And Contractor. This is a meeting to explain the drawings and specifications, discuss requirements for construction and material certifications, level of staking needed, safety issues, utilities notification, and other topics. Document the following as a minimum:
  - Time and date of meeting;
  - Names of attendees;
  - Items discussed and decisions made.
2. Layout And Staking Of Practices. Document:
  - Survey notes showing layout of the practices, including date and who performed the staking;
  - If the contractor provides staking, then document any reviews made to ensure proper placement of the practice.
3. Utilities Notification. Can use form ENG-5 and ENG-6 to assist in tracking utility notifications (See NEM §MA503). Document:
  - Initial discussion with landowner about his or her responsibility to notify utilities;
  - Information from landowner about existence and location of known utilities;
  - Assurances that utility company has been notified, including staking by utilities.
4. Inspection During Construction. Document:
  - All inspections made during construction, including all those identified on the drawings as critical inspection items;
  - Include visual inspections and conclusions, surveys, tests and test results;
  - Discussions with landowner and contractor;
  - Photographs taken before and during construction;
  - Approval by designer of any changes from the drawings or specifications before implementation of the change.

## CONSTRUCTION CHECK

The following is a list of the minimum required data to support the as-built drawing:

1. For excavated ponds: dimensions of pond, elevations of components;

2. For embankment ponds, profile along top of embankment, along centerline of principal spillway at least 100 feet upstream and downstream to properly show inlet and outlet conditions, and along centerline of emergency spillway;
3. Cross section of emergency spillway at the control section, if applicable;
4. Critical elevations of spillways and appurtenances;
5. Survey of excavated pool area to verify design water volumes if applicable;
6. Type, diameter, thickness and length of conduit and riser, as applicable;
7. Materials documentation to certify quality as stated on drawings and specifications;
8. Notes and measurements to show that each appurtenant device and special design feature was met;
9. Adequacy of seeding and fencing as applicable. Refer to documentation requirements for associated practices (Critical Area Planting (342) and Fence (382)) for construction check data required;
10. Notes on cleanup and disposal of excess fill material.

## CERTIFICATION

The following is a list of what must be certified by a person with the required approval authority for the installed practice:

1. Final quantities and documentation for quantity changes;
2. Statement on the as-built drawings that the installed practices meet or exceed the requirements of the NRCS practice standards;
3. Record in the case file the number of ponds installed;
4. Report in PRMS, as applicable.