

PA378. POND

DESIGN AND CHECK DATA REQUIREMENTS

The following items must be addressed in the design folder for the Pond. The following pages shall be included:

- (1) Table of Contents
- (2) Design Data Summary
- (3) Soils and Foundation Data
- (4) Engineering Drawings
- (5) Construction Specifications
- (6) Operation and Maintenance Plan
- (7) Erosion and Sediment Control Plan
- (8) Construction Check Data

Listed below are specific items that are required in the design:

Table of Contents

This organizes the design folder.

Design Data Summary

Important data is recorded and is consistent with the standard and specification. This includes:

- Survey data
- Geologic investigation
- Sediment and detention storage volumes
- Hydrology and hydraulics
- Dimensions and material requirements
- for structures (earthfill, drainfill, and all appurtenances)
- Vegetation requirements
- Outlet stability

Soils and Foundation Data

Document compliance with PA One-Call before digging?

Written soils description for test pits and site specific comments are included? Reference pit locations to site contour map.

Does the investigation go at least 2 feet deeper than the planned embankment cutoff trench?

Include soils lab data and liner calculations where applicable.

Document need for rock excavation, drainage, isolation from open foundation rock, and depth limitations based on soils investigation.

Engineering Drawings

GENERAL

On each drawing sheet, the title block should show the operator's name, type of operation, county and the persons involved in drawing, designing, and checking the pond.

All pond designs require approval by a registered Professional Engineer or an Engineer with NRCS job approval authority for the type, dimensions and capacity of the pond. If a DEP permit is required, additional details may be needed.

Listed are items that should be included:

PLAN VIEW SHEET(S)

North arrow
 Utilities/roads
 Bench mark(s)
 Scale
 Legend
 Access
 Centerlines
 X-section locations
 Construction limits
 Borrow area
 Spoil area
 PA One-Call statement

SITE CONTOUR SHEET

(Preferably same as Plan View Sheet)

North arrow

Bench mark(s)

Scale

Legend

Test pit and drill hole locations

Centerlines

Contour lines

Property lines

Water courses

Structure locations

CROSS-SECTION SHEET(S)

Scale(s)

Test pit and drill hole profile(s)

Embankment with any zones

Spillway(s)

Spillway (open and pipe) profiles

Concrete & reinforcement

Drainage configurations

Reference to detail drawings

Construction Specifications

Enclose the applicable specification(s), e.g. 378, 521, and complete all site specific items of work in Section 11.

Include any "additional conditions" or items that are site specific or must be defined to supplement the standard specification.

Operation and Maintenance Plan

Is it clearly indicated when the pond should be inspected, appurtenances operated, and maintenance performed.

How is the pond accessed?

Are safety features in place; e.g. fencing?

Is an emergency action plan complete, if required by DEP?

Erosion and Sediment Control Plan

Comply with DEP's Erosion and Sediment Pollution Control Program Manual and conservation district requirements.

Construction Check Data

QUALITY ASSURANCE PLAN

A site-specific plan that addresses, but is not limited to:

What specific items need inspection and when?

Who will do the actual inspection?

Is any testing equipment required for the inspection?

ONSITE VISITS

The QAP must include, at a minimum, as applicable to the specific job, onsite visits at the:

1. Start of construction
2. Completion of foundation excavation, to observe and record the foundation conditions encountered and compare with the conditions assumed in the design.
3. Installation of earthfill material.
4. Placement of drainfill and/or pond liner material.
5. Starting to close up concrete wall forms.
6. Placing concrete.
7. Connection of pipe sections.
8. Start of seeding.

DOCUMENTATION

A full set of as-built drawings, with construction certification signatures. Any modifications should be recorded in red.

Checked survey notes.

Material certifications, photographs, etc. as applicable.

Contractors' certifications of conformance.