

Plan the retaining system

TLDR

A pond that holds water begins with the soil profile and a dependable water supply. Investigate the basin, embankment foundation, and available fill before choosing a sealing method. Connect the basin seal, core trench, embankment, and penetrations as one water-retaining system. Specify moisture, lift thickness, equipment, and acceptance testing for the actual materials. Confirm the work before covering it or filling the pond. Surface appearance and equipment weight alone do not establish performance.

Before earthwork

- ☐ Document intended uses, target storage and water level, expected dry-period supply, and source-water quality.
- ☐ Investigate soil layers in the basin, embankment foundation, core-trench area, and borrow areas. Record bedrock, groundwater, and unusual ground conditions.
- ☐ Determine whether materials are native or imported. Confirm testing and suitability for each intended use.
- ☐ Confirm applicable permits, project design criteria, utility locations, and the responsible designer or reviewer.
- ☐ Select the basin-sealing method and define its connection to the core trench, embankment, banks, and penetrations.
- ☐ Plan weather and moisture management, construction access, inspection responsibilities, and the handling of unsuitable material.

Project / location / owner / designer or reviewer

Design drawings, soil reports, and revision references

A checked box records that the item was addressed. It does not certify that the pond or dam meets a design standard.

Record before placing fill

Use the project's approved criteria. This form deliberately provides no universal lift thickness or compaction percentage.
Material / borrow source / location of intended use

Core trench and basin connection: drawing / detail reference

Amendment, if specified: product, verified rate, mixing depth, and test basis

Lift thickness and units; explicitly identify loose or compacted thickness

Moisture requirement, test method, and corrective procedure

Compaction equipment and project procedure / trial-section reference

Density acceptance criterion; laboratory reference and field test method

Test locations / frequency / responsible reviewer

Hold points: work that must be reviewed before covering or proceeding

Equipment tracks, firmness underfoot, and roller impressions can prompt investigation; they do not replace the specified acceptance tests.
Record deviations and obtain the responsible reviewer's decision.

Inspect, document, verify

- ☐ Confirm removal of organic or unsuitable material and preparation of interfaces according to the design.
- ☐ Confirm core-trench excavation and material conditions match the design. Escalate unexpected permeable layers or deeper suitable strata before backfilling.
- ☐ Record lift placement, amendment mixing where specified, moisture, compaction operations, test results, and corrective work.
- ☐ Review pipes, joints, penetrations, filter or drain details, and connections before they are buried.
- ☐ Document the final inspection, initial-filling plan, water-level monitoring, and maintenance access.

Date / weather / work area / lift identification / observer

Test reports, photographs, deviations, and corrective work

Reviewer decision / outstanding actions / date (not a certification signature)

When the foundation differs from the plan

NRCS describes a foundation cutoff connecting to relatively impervious material, with additional seepage controls where needed. If permeable layers remain beneath the trench, amended backfill alone should not be assumed to address that pathway. Have the design reviewed for the actual foundation conditions.

NRCS Pond Standard 378: national reference; consult state criteria

Natural Waterscapes pond soil evaluation

Based on the Natural Waterscapes interview. Construction acceptance and dam-safety requirements remain project-specific.