

**NATURAL RESOURCES CONSERVATION SERVICE  
CONSTRUCTION SPECIFICATIONS**

**IRRIGATION RESERVOIR**

**1. Scope**

The work shall consist of all construction operations and furnishing all materials for the complete installation of the irrigation reservoir as required by the construction plans and specifications.

**2. Location**

The location of the irrigation reservoir and all related appurtenant structures shall be as shown on the construction plans or as staked in the field.

**3. Site Preparation**

**Clearing.** The area of the excavation and embankment and any area for disposal shall be cleared of trees, stumps, logs, brush, boulders, rubbish, and other debris which will hinder or prevent placement of the material. Waste material shall be disposed of by piling, burying, or burning at locations outside the pond area as directed by the inspector or as shown on the construction plans. Burning shall comply with all state and local policies pertaining to open burning.

**Stripping.** The area of the embankment shall be stripped of topsoil, rubbish, organic matter, and other perishable material so that a good bond will be obtained between the fill and the foundation. Such stripping shall extend the base width of the embankment or 20 feet, whichever is less.

**4. Excavation**

All excavations shall conform to the lines, grades, and elevations shown on the construction plans or as staked in the field.

**5. Placement of Earthfill**

The material placed in the fill shall be free of sod, roots, frozen soil, stones over 6 inches in diameter, and other objectionable material. The placing and spreading of fill material shall be started at the lowest point of the foundation and the fill brought up in horizontal layers of such thickness that the required compaction can be obtained. The fill shall be constructed in continuous horizontal layers except where openings or sectionalized fills are called for. In those cases, the slope of the bonding surfaces between embankment in place and embankment to be placed will not be steeper than 3:1. The bonding surface is to be treated the same as that specified for the foundation so as to ensure a good bond with the new fill.

The distribution and gradation of materials shall be such that there are no lenses, pockets, streaks, or layers of material differing substantially in texture or gradation from the surrounding material. Where it is necessary to use materials of varying texture and gradation, the more impervious material shall be placed in the center and upstream portions of the fill. Where zoned fills are specified of substantially differing materials, the zones shall be placed according to lines and grades shown on the construction plans.

The completed work shall conform to the lines, grades, and elevations shown on the construction plans or as staked in the field.

Stockpiled topsoil strippings will be placed on the outer portion of the embankment as a part of each lift. Topsoil shall not be less than 6 inches or more than 2 feet thick measured vertically and shall be compacted concurrently with the earthfill.

**6. Moisture Control**

The moisture content of the fill material shall be such that the required compaction can be obtained. Material that is too wet shall be dried to meet this requirement, and material that is too dry shall have

water added and mixed until the requirement is met. Moisture requirements will be as shown on the construction plans or in the "Construction Details" section.

## **7. Compaction**

The construction equipment shall be operated over the areas of each lift of earthfill in a way that will result in the required compaction. Special equipment will be used when the required compaction cannot be obtained without it. Compaction requirements will be as shown on the construction plans or in the "Construction Details" section.

## **8. Spoil Disposal**

The spoil material shall be placed, spread, leveled, or shaped as shown on the construction plans or the "Construction Details" Section. The surface of the completed job shall be finished so that it can be traveled with farm-type equipment, unless otherwise specified in the "Construction Details" Section.

## **9. Pipe Conduit**

The materials and manufacture of the pipe, anti-seep collars, coupling bands, coatings, and other appurtenances shall be as shown on the construction plan and shall conform to the appropriate material specifications suitable for the intended purpose.

The pipe shall be laid to the line and grades shown on the construction plan, be placed in original earth or properly compacted earthfill, and be uniformly bedded to the depth and in the manner specified.

Selected impervious backfill material shall be placed around the conduit and appurtenances in layers not more than 4 inches thick before compaction; and each layer shall be thoroughly compacted by hand tamping, manually directed power tampers, or plate vibrators to the density of the surrounding material. The height of fill shall be increased at approximately the same rate on all sides of the structure. Heavy equipment shall not be operated within 2 feet of any structure.

## **10. Vegetation**

All disturbed or exposed surfaces in the construction area not covered by permanent water shall be seeded or vegetated. Preparing the seedbed, seeding, fertilizing, mulching, or planting other vegetation shall be as specified in the "Construction Details" Section.

## **11. Fencing**

Fencing shall be installed to protect vegetation when specified in the "Construction Details" Section. Fencing shall be as specified in the "Construction Details" Section.

## **12. Measurement**

The quantity of the excavated material and embankment fill will be determined from the measured ground surface to the neat lines as shown on the construction plan. Computations will be made to the nearest cubic yard.

## **13. Construction Details**

Refer to Construction Specifications for 378, Pond ([Excavation](#) or [Embankment](#)), for additional items and details to consider.