

# CONSTRUCTION SPECIFICATION

## VA-772. WATERING FACILITY

### 1. SCOPE

The work will consist of constructing or installing troughs or reservoirs and appurtenances at the locations shown on the construction drawings or as directed by the NRCS or SWCD representative.

### 2. SITE PREPARATION

The site and immediately surrounding area will be cleared of all trees, brush, weeds, loose rocks, loose or wet soils and other materials not suitable for the subgrade. All loose surface soil will be removed to undisturbed material and the area will be graded and smoothed to permit free drainage of surface water.

### 3. FOUNDATION PREPARATION

Troughs will not be placed on fill material unless adequate measures are taken to prevent differential settling.

All loose soil will be removed to undisturbed material and any low areas will be backfilled with gravel or materials shown on the construction drawings.

The subgrade will be compacted, if needed. When specified, the bedding materials will be placed and spread to the thickness shown on the construction drawings.

### 4. TYPES OF TROUGHS AND RESERVOIRS

Troughs and reservoirs may be constructed of concrete, steel, plastic, fiberglass, heavy equipment tires, or other approved materials.

The type of trough will be shown on the construction drawings.

### 5. MATERIALS

- 1) The landowner is responsible for determining that heavy equipment tires have not been filled with materials that may cause a health concern for animals using the facility.
- 2) Concrete troughs will have an inside taper from top to bottom. The largest dimension will be at the top. The minimum thickness will be 4 inches at any point on the sides and bottom.
- 3) All cast in place concrete will be ready-mixed concrete (minimum 28 day compressive strength of 3000 psi), pre-bagged commercially available concrete mix, or site-mixed concrete. Air entrainment admixture will be used to maintain air entrainment between 4% and 7%. Reinforcing steel, if required, will be placed as shown on the construction drawings.
- 3) Troughs and reservoirs will be approved by the NRCS or SWCD representative prior to installation.
- 4) Bedding materials will be clean granular materials of the gradation shown on the construction drawings.

- 5) All materials used in installation of the trough or reservoir will be in good condition and will meet the applicable ASTM or commercial specifications shown on the construction drawings.

## 6. APPURTENANCES

- 1) Piping – Pipes used for filling, operating, draining, and cleaning will conform to the size and type as shown on the construction drawings and will meet the requirements of Construction Specification VA-745 Plastic Pipe; or ASTM A53 or AWWA C220 for steel pipe.
- 2) Control devices - Automatic water level control and overflow facilities will be installed as specified on the construction drawings.
- 3) Electric Heaters - Heaters will be protected from disturbance from animals. All electrical supplies will be equipped with a ground-fault circuit-interrupter (GFCI) located near the waterer for safety.
- 4) Fences - All fencing will meet the requirements of Virginia Conservation Practice Standard *Fence (Code 382)*.
- 5) Anchor Pads - Anchor pads for frost-free troughs will be installed with a level mounting surface for the trough and will extend a minimum of 18 inches on all sides of the trough.

## 7. INSTALLATION

- 1) After the foundation as been prepared, and all pipes installed, the foundation will be inspected by the NRCS or SWCD representative. The placement and installation of the trough will conform to the manufacturer's recommendations.
- 2) Troughs that require anchoring will be secured as noted on the construction drawings, or as recommended by the manufacturer.
- 3) After the trough or reservoir has been installed, the earth surface and the gravel surface adjacent to the site will be graded to convey surface runoff away from the site.
- 4) The water control devices will be adjusted for proper function of the trough.
- 5) Outlets for overflow, reservoir or trough drain, and foundation drain pipes will be protected.

## 8. HEAVY USE AREA PROTECTION

Areas adjacent to the trough will be graveled, paved or otherwise treated to provide firm footing and reduce erosion. The treatment method will be as shown on the construction drawings or as approved by the NRCS or SWCD representative.

Where gravel is required, the minimum thickness will be 4 inches. The gradation of the gravel will be as specified on the construction drawings. The gravel will be placed over a Nonwoven Geotextile as detailed on the construction drawings.

Concrete will conform to the requirements shown in Section 5. The minimum thickness will be 5 inches. Concrete will be placed on a 5" thick (minimum) subbase of sand or gravel.

9. SEEDING

Areas that have been disturbed during construction and that have not been otherwise treated to prevent erosion, will be prepared, fertilized, seeded and mulched in accordance with Construction Specification VA-706, Seeding.