

## CONSTRUCTION SPECIFICATION STRUCTURE FOR WATER CONTROL – 587

### Scope

The work shall consist of furnishing and installing flash board structure, conduits and appurtenances for the water control structure system as shown on the drawings and specified herein.

### Utilities

The landowner and/or contractor shall be responsible for locating all buried utilities in the project area, including drainage tile and other structural measures.

### General

Construction operations shall be carried out in a manner and sequence that erosion and air and water pollution are minimized and held within legal limits.

The completed job shall present a workmanlike appearance and shall conform to the line, grades, and elevations shown on the drawings or as staked in the field.

All operations shall be carried out in a safe and skillful manner. Safety and health regulations shall be observed and appropriate safety measures used. Contractor shall be assured that all state laws concerning buried utilities have been met.

Documentation of materials used (rock or concrete delivery tickets, geotextile tags, seed tags, photographs of pipe labeling, etc) shall be saved and provided to NRCS.

All trees, stumps, roots, brush, weeds, and other objectionable materials shall be removed from designated work area.

### Materials

Materials for the structure for water control, conduit and appurtenances shall meet the requirements as shown in the plans and specifications. Materials shall be carefully inspected before installation. Materials with physical imperfections shall not be installed.

The following reference specifications pertain to conduit products currently acceptable for use in the water control structure system:

<b>REFERENCE SPECIFICATIONS FOR CONDUIT MATERIALS</b>	
<b>Description</b>	<b>ASTM</b>
<b><i>Plastic</i></b>	
Corrugated Polyethylene (PE) Pipe and Fittings	F405 F667
Poly Vinyl Chloride (PVC) Pipe and Fittings	F949 D1785 D2241
Styrene-Rubber (SR) Plastic Drain Pipe and Fittings	D2852
<b><i>Dual Wall Polyethylene Pipe</i></b>	
Corrugated Polyethylene (PE) Pipe and Fittings	F2306 F2648 F405 F667
Elastomeric Seals and Joints (Gaskets)	F477 D3212
<b><i>Clay</i></b>	
Clay Drain Tile and Pipe	C4 C700 C301
<b><i>Concrete</i></b>	
Concrete Drain Tile and Pipe	C412 C118 C14 C76 C444
Test Methods for Concrete Pipe	C497
Portland Cement	C150
<b><i>Metal</i></b>	
Corrugated Aluminum Pipe	B745
Corrugated Steel Pipe	A760

### Placement

The structure for water control shall be installed to the line and grade shown on the drawings. Excavations below grade shall be corrected by backfilling and compacting by hand-operated or power equipment as specified by NRCS.

Equipment shall not be operated within 2 feet of any structure or pipe. Fill adjacent to structures, pipe conduits, and anti-seep collars shall be placed in 4 inch layers and compacted to a density equivalent to that of the surrounding fill by means of hand tamping or manually directed power tampers. Care should be taken that compaction around the pipe does not cause uplift on the pipe with a resulting void beneath the pipe. Hand tamping, only, should be used to compact the fill under the bottom half of the pipe.

Conduits installed in a trench shall be bedded and backfilled throughout the width of the embankment. Broken pieces of clay tile shall be kept away from the conduit. Friable soil shall be placed in 4 inch lifts and hand tamped to a depth of 2 feet above the conduit. The sides of the remaining trench under the embankment shall be sloped no steeper than 3 horizontal to 1 vertical and backfilled meeting embankment requirements.

### Outlet

Where the construction plans call for a free outlet, a continuous section of non-perforated conduit shall be used at the outlet, unless a

headwall is used. All outlets shall have an animal guard, hinged to allow passage of debris.

The continuous section of non-perforated conduit shall be long enough to satisfy all requirements of Conservation Practice Standard 606 – Subsurface Drain:

- At least two-thirds of the pipe shall be buried in the ditch bank.
- The cantilever section must extend to the toe of the ditch side slope or to the side slope protected from erosion.
- The continuous section must be at least 10 feet long.

Acceptable materials for use at the outlet include the following:

- Corrugated metal pipe, galvanized or aluminum, 16-gauge, minimum thickness,
- Smooth steel pipe with 3/16 of an inch minimum thickness,
- Smooth plastic pipe, polyvinyl chloride (PVC), with a SDR of 35 or less or schedule 40 or heavier, and
- Dual wall corrugated polyethylene pipe.

All plastic and polyethylene pipe outlets shall include an ultra-violet stabilizer. Conduit ends shall be protected from sun damage during installation.