

SECTION 02715

LATERAL TILE DRAINS

1. PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Field Tile Outlets.
- B. 40 feet of 12 inch Surface Outlet Tube.
- C. 40 feet of 15 inch Surface Outlet Tube.

1.2 RELATED SECTIONS

- A. Section 02222 - Excavation.
- B. Section 02223 - Backfilling.
- C. Section 02279 - Filter Fabric.
- D. Section 03001 - Concrete.
- E. Section 02271 - Slope Protection and Erosion Control.

1.3 REFERENCES

- A. ASTM F405 - Corrugated Polyethylene Tubing.

1.4 SUBMITTALS

- A. Submit under provisions of Section 01300 - Submittals.
- B. Submit shop drawings and product data for all items to be installed and/or constructed within this Section.

1.5 UNIT PRICE - MEASUREMENT AND PAYMENT

- A. Field Tile Outlets:
 - 1. Basis of Measurement: At the unit price bid for each as stated in the proposal.
 - 2. Basis of Payment: Includes material, labor, equipment for installation, 20 feet of pipe, rodent guard, connection to existing field tile as shown on plans, concrete collar or manufacturer's supplied collar to match pipe, filter fabric, grading, backfilling and cobblestone splash pad as detailed in the plans.
- B. 40 feet of 12 inch Surface Outlet Tube:
 - 1. Basis of Measurement: At the unit price bid for each as stated in the proposal.
 - 2. Basis of Payment: Includes material, labor, and equipment to install 40 linear feet of 12 inch C.M.P., flared end section, cobblestone splash pad, filter fabric, emergency spillway, grading and backfilling as detailed in the plans.

- C. 40 feet of 15 inch Surface Outlet Tube:
 - 1. Basis of Measurement: At the unit price bid for each as stated in the proposal.
 - 2. Basis of Payment: Includes material, labor, and equipment to install 40 linear feet of 15 inch C.M.P., flared end section, cobblestone splash pad, filter fabric, emergency spillway, grading and backfilling as detailed in the plans.

1.6 PROTECTION

- A. Care shall be taken to locate and excavate around all field tile outlets.
- B. Any damage to drainage tiles and outlets during construction shall be repaired. The Work to be incidental to the project.

2. PART 2 PRODUCTS

2.1 MATERIALS

- A. Field Tile Outlets – 6 inches to 10 inches – Galvanized corrugated metal pipe, 16 gauge, 2 inches larger diameter than existing field tile, 1 1/2 inches x 1/4 inch corrugations.
- B. Field Tile Outlets – 12 inches and larger – Galvanized corrugated metal pipe, 16 gauge, 2 inches larger diameter than existing field tile, 2 2/3 inches x 1/2 inch corrugations.
- C. 15 inch Surface Outlet Tubes: Galvanized corrugated metal pipe, 16 gauge, 2 2/3 inches x 1/2 inch corrugations.
- D. 12 inch Surface Outlet Tubes: Galvanized corrugated metal pipe, 14 gauge, 2 2/3 inches x 1/2 inch corrugations.
- E. Galvanized Pipe Material: steel coils shall conform to applicable requirements of AASHTO M-218 or ASTM A-444.
- F. Galvanized Pipe: corrugated metal pipe – size, corrugations and gauge as indicated on the plans or Engineer approved equivalent. Manufactured in accordance with the applicable requirements of AASHTO M-36 or ASTM A-929.
- G. Rodent Guard - Manufactured by pipe supplier and approved by the Engineer.
- H. Anti Seep Collars - Manufactured by pipe supplier and approved by the Engineer.
- I. Flared End Sections –Same material as pipe with 2 feet deep toe plate and approved by the Engineer. See Section 02722- Storm Sewerage Systems.
- J. Fittings - Manufactured by pipe supplier according to ASTM Standards and approved by the Engineer.
- K. All corrugated steel joints must be banded according to manufacturer's instructions and must be wrapped with a 3 feet band of filter fabric. Joints must fit within 0.10 feet.
- L. Coupling bands shall be corrugated with rubber gasket and shall be same material as pipe. Bands shall be manufactured by pipe supplier and approved by Engineer.

- M. Backfill - See Section 02223 - Backfilling.
- N. Cobblestone Splash Pads - See Section 02271- Slope Protection and Erosion Control.
- O. Concrete - See Section 03001- Concrete.

3. PART 3 EXECUTION

3.1 PREPARATION

- A. Coordinate locations of proposed surface outlet tubes and field tile outlets with Engineer prior to delivering material to Site. Tubes may or may not be installed based on Landowner preference and Engineer's decision.
- B. Receive direction from Engineer as to which field tile outlets are in need of repair even if indicated on plans.

3.2 INSTALLATION - FIELD TILE OUTLETS

- A. Installation shall be as shown on the plans. See Section 02222 - Excavation and Section 02223 - Backfilling. Backfill material shall be Type D - native material.
- B. Field tile outlets are to be installed at a minimum of 1 percent slope to provide for positive drainage.
- C. All joints between like materials shall be connected with a manufactured connector.
- D. Connection between field tile and field tile outlet with unlike materials as shown in the plans.
- E. Place cobblestone splash pad beneath tile outlet. See Section 02279 - Filter Fabric and Section 02271 - Slope Protection and Erosion Control.
- F. Clean out any field tile outlets that do not require replacement and/or extension.
- G. Cross culvert extension shall be connected to existing with prefabricated metal band and filter fabric for a soil tight joint.

3.3 INSTALLATION - RODENT GUARDS

- A. Rodent guards shall be placed on all tile outlets 3 inches or larger which are cutoff, replaced, or extended during construction of this Project.
- B. Rodent guards do not have to be installed in existing tile outlets, which are not cutoff, replaced, or extended during construction of this Project.

3.4 INSTALLATION - SURFACE OUTLET TUBES

- A. Surface outlet tubes may be replaced with riprap spillways based on Landowner and Engineer preference. Coordinate all installations with Engineer prior to delivering materials to Site.
- B. Provide a minimum of 0.5 feet of fall in tube or as shown on the plans.
- C. Provide a minimum of 2 feet cover.

- D. Install prefabricated metal flared end section on inlet of tube.
- E. Install cobblestone splash pad with filter fabric at the outlet of the tube.
- F. Construct as shown on detail sheet of plans, including emergency spillway.

END OF SECTION