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SUBSURFACE DRAINS (OAKDALE 2502)

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes:
 - 1. Construction of subsurface drains and appurtenant materials.
- B. Related Sections:
 - 1. Section 2451 – Trench Excavations and Backfill
 - 2. Section 2105 – Excavation and Embankment
- C. Method of Measurement:
 - 1. Subsurface Drains:
 - a. Measure by length in linear feet along the pipe centerline including fittings.
 - b. Terminal points of measurement will be as follows:
 - 1) Pipe end at free outlets.
 - 2) Junction point with in-place pipe.
 - 3) Center of structures.
 - c. Measure each size and type of pipe separately.
 - d. Includes aggregate backfill.
 - 2. Yard Drain or Cleanout:
 - a. Measure as a unit including all labor, equipment and materials.
 - 3. Connections to existing pipe or structures shall be considered incidental.
- D. Basis of Payment:
 - 1. Price includes aggregate backfill and geotextile or other joint wrapping or sealing materials.
 - 2. Payment for acceptable quantities of subsurface drain items shall be at the Contract Unit Price as listed on the Bid Form. All associated Work items shall be considered incidental.

1.02 REFERENCES

- A. MnDOT 2502 – Subsurface Drains

1.03 SUBMITTALS

- A. Submit Certification of Compliance as required under 1.04.

1.04 QUALITY ASSURANCE

- A. Provide certificate from manufacturer certifying that the pipe, appurtenances, and accessories meet the respective requirements listed in Part 2.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Pipe:
 - 1. Material for the type specified shall be in accordance with the respective MnDOT section as follows:
 - a. Thermoplastic (TP) 3245
 - b. Polyvinyl Chloride (PVC) 3248
 - c. Corrugated Polyethylene Drainage Tubing (PE) 3278
 - 2. Provide with perforations and factory seamed geotextile wrap.
 - 3. Polyvinyl Chloride (PVC) SDR 26
- B. P.E. Yard Drain
 - 1. Tuf-Tite brand drain sump or approved equal.
- C. Core Connection to Existing RCP Pipe:
 - 1. Insert a tee, or approved equal, PVC fitting.
- D. Coarse Filter Aggregate (3 percent modified):
 - 1. Shall be in accordance with MnDOT 3149.2.H except that no more than 3 percent shall pass the No. 200 sieve.

2.02 ACCESSORIES

- A. Pipe Joint Sealer Materials:
 - 1. Material for the type specified shall be in accordance with the respective MnDOT Section as follows:
 - a. Preformed Rubber, Type A 3726
 - b. Preformed Rubber, Type B 3726
 - c. Bituminous Mastic 3728
- B. Geotextile (Type 1):
 - 1. Shall be in accordance with MnDOT 3733.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Trench Excavation:
 - 1. See Section 2451.
- B. Laying Drains:
 - 1. Foundation:
 - a. Shape foundation to fit lower 1/3 of pipe circumference.
 - b. Bed perforated pipe and tile drains on Fine Filter Aggregate.
 - c. Place bedding from 2-inches below the pipe bottom to 6-inches above pipe.

2. Placement;
 - a. Place pipe to line and grade shown on the plans.
 - b. Provide uniform bearing under pipe.
 - c. Place perforations down.
 - d. Place concrete and clay pipe with bell ends upgrade.
 - e. Close upgrade end of all pipe with suitable plug.
 - f. Place approved rodent guard on all exposed end sections.
3. Joints:
 - a. Join pipe sections separately with appropriate bands or fittings.
 - b. Cement solvent type joints.
 - c. Seal concrete pipe joints with elastic material or cover with geotextile.
 - d. Joint openings between clay or concrete tile shall not exceed 1/4 inch.
 - e. Provide secure connection through concrete headwall or structure wall.
4. Backfill:
 - a. Backfill drains immediately after installation and jointing.
 - b. Extend fine filter aggregate to subgrade elevation over top of perforated pipe.
 - c. Compact backfill to meet requirements for adjacent soils.

C. Yard Drains

1. Install perpendicular to subsurface drains as directed by the Engineer.
2. Install in accordance with Plan details.

D. Core Connection to Existing RCP Pipe:

1. Core hole in existing pipe.
2. Insert PVC fitting with approved adapters and gaskets.

3.02 CLEANING

- A. Prior to final acceptance, remove silt and debris or other obstructions from all drains.

END OF SECTION