

## SECTION 501

### UNDERDRAINS

#### I. GENERAL

##### 1.1 DESCRIPTION OF WORK

The Contractor shall furnish all labor, supervision, material, tools, equipment, supplies, and services; and, shall perform all Work necessary for the construction of underdrains, crossdrains, edgedrains, and prefabricated geocomposite pavement edgedrains (PGPE), including outlet pipe, (collectively, “underdrains”) using pipe, aggregate, and geosynthetics, in accordance with the latest edition of the VDOT *Road and Bridge Specifications*, the VDOT *Road and Bridge Standards*, and in conformity to the lines and grades shown in the Contract Documents or as designated by the Owner.

##### 1.2 MATERIALS

- A. Pipe for underdrains shall conform to VDOT Road and Bridge Specifications, Section 232.
- B. Fine Aggregate material used to level and fill depressions in the bottoms of underdrain, crossdrain, and outlet pipe trenches shall conform to VDOT Road and Bridge Specifications, Section 202.
- C. Coarse Aggregate material used to backfill underdrain, crossdrain, and outlet pipe trenches shall conform to VDOT Road and Bridge Specifications, Section 203 and be No. 57 aggregate, No. 8 aggregate, or crushed glass conforming to No. 8 aggregate material gradation requirements.
- D. Geosynthetics, including geotextile drainage fabrics and prefabricated geocomposite pavement edge drains shall conform to VDOT Road and Bridge Specifications, Section 245.

##### 1.3 SUBMITTALS

Submittals shall be made by the Contractor in accordance with the procedures set forth in Section 105 and as described below:

- A. The Contractor shall furnish copies of the manufacturer’s specifications for installations indicated in the Contract Documents and Standard Details, listing specific materials proposed.
- B. The Contractor shall furnish the Owner with an affidavit stating that products to be installed on this project comply with specification requirements.

#### II. EXECUTION

The Contractor shall execute the Work in accordance with the latest edition of the VDOT *Road and Bridge Specifications*, Section 501.03, Procedures. Any references to “Engineer” or VDOT personnel shall mean the “Owner”.

#### III. MEASUREMENT FOR PAYMENT

- A. Underdrains and combination underdrains will be measured in linear feet and will be paid for at the contract unit price per linear foot, complete-in-place. The contract unit price for underdrains

and crossdrains installed at depths greater than those shown in the *VDOT Road and Bridge Standards* will be increased 20 percent for each 1-foot increment of increased depth. No adjustment in the contract unit price will be made for an increment of depth of less than 6 inches. The contract unit price shall include removing and replacing pavement in kind when underdrains or crossdrains are to be installed under pavement that is not constructed under the Contract.

- B. Prefabricated geocomposite edge drains will be measured in linear feet, complete-in-place, and will be paid for at the contract unit price per linear foot. This price shall include furnishing and installing edge drain including connections.
- C. Outlet pipe for underdrain, crossdrain, and PGPE systems will be measured in linear feet, complete-in-place, and will be paid for at the contract unit price per linear foot.
- D. Geotextile drainage fabric, when a pay item, as indicated on the Bid form, will be measured in square yards and paid for at the contract unit price per square yards of area covered.
- E. These prices shall include furnishing and installing underdrain and outlet pipe (including couplings, fittings, and plugs), geotextile drainage fabric (when not included as a separate pay item), aggregate materials, splice kits, inspection ports (if designated), and outlet markers (if used). These prices shall also include excavating or trenching, leveling or filling depressions, backfilling, compaction, disposing of surplus and unsuitable materials, and video inspection.
- F. Incidental items are identified in Section 109.1.2 and also include the following:
  - Geotextile drainage fabric (when not a pay item)

End of Section