

SECTION 501

UNDERDRAINS

I. GENERAL

1.1 DESCRIPTION OF WORK

The Contractor shall furnish all labor, supervision, material (except as herein provided), tools, equipment, supplies, and services; and, shall perform all Work necessary for the construction of underdrains, using pipe, aggregate, and geotextile fabric, in accordance with these specifications and in conformity to the lines and grades shown on the Drawings or as designated by the Owner.

1.2 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 on the Drawings 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

2.1 INSTALLING PIPE

- A. Perforated pipe shall be placed with the perforations down. Pipe sections shall be joined with Owner approved couplings. Semi-round underground pipe shall be placed with the rounded section down.
- B. Wherever the depth of the trench is modified to a lesser depth than shown on the Drawings, concrete or corrugated pipe shall be used.
- C. Pipe shall be placed with the bell end upgrade. **Joints shall be double-wrapped with the same geotextile used for lining the excavation.**
- D. Upgrade ends of pipe, except for combination underdrains, shall be closed with suitable plugs. Where an underdrain connects with a manhole or catch basin, a connection shall be made through the wall of the manhole or catch basin as indicated on the Drawings.
- E. Geotextile drainage fabric shall be installed in accordance with the requirements of Section 303.
- F. After the pipe installation has been approved by the Owner, aggregate backfill material shall be placed and compacted. Pipe shall not be displaced during subsequent operations.
- G. Endwalls for outlet pipes shall be placed on a prepared surface that has been compacted to

comply with the requirements of VDOT Section 303.04.

- H. Prior to final acceptance of the underdrain system, the Contractor shall conduct a video inspection of the installed system in accordance with the requirements of VTM-108.

2.2 COMBINATION UNDERDRAIN OUTLETS

Non-perforated pipe shall be placed in the trench with sections securely joined. After pipe installation has been approved by the Owner, the trench shall be backfilled with aggregate material in layers not more than 6-inches in depth and thoroughly compacted.

III. MEASUREMENT FOR PAYMENT

3.1 GENERAL

Measurement will be made on the basis of completion of the Work in accordance with the Contract Documents and this Section.

3.2 MEASUREMENT OF QUANTITIES

- A. Underdrains and combination underdrains will be measured in linear feet, complete-in-place.
- B. Geotextile drainage fabric, when a pay item, will be measured in linear feet, complete-in-place.
- C. **Measurement and payment for end walls are specified in Section 302.**

3.3 INCIDENTAL ITEMS

Items considered incidental work will not be measured for payment or paid for as such. Incidental items are identified in Section 109.1.1 and also include the following:

Geotextile drainage fabric (when not a pay item)
Bedding stone, including labor, materials and satisfactory compaction and testing.

3.4 PAY ITEMS

- A. Payment will be made for underdrain and combination underdrain, at the unit price per linear foot.
- B. Geotextile drainage fabric will be paid in linear feet.

End of Section