ITEM 203.12030017 - PREFABRICATED VERTICAL DRAINS

DESCRIPTION
This work shall consist of staking out, furnishing and installing Prefabricated Vertical Drains (PVD) to the depths and at the locations shown on the plans or as directed in writing by the Engineer.

MATERIALS

A. General. Provide PVD having a continuous plastic drainage core wrapped in a non-woven geotextile material.

B. Basis of Acceptance. The brand name label on the PVD or its container must appear on the current Approved List issued by the Department's Materials Bureau.

Approval of a PVD not on the Approved List may be requested by submitting a 30 foot long sample of the PVD to the Department's Geotechnical Engineering Bureau, for evaluation. The evaluation requires a minimum of four months. Acceptance or rejection of the PVD will be made in accordance with the geosynthetic acceptance procedure issued by the Geotechnical Engineering Bureau.

CONSTRUCTION DETAILS

A. General. Stake out the proposed locations of the drains within 6 inches of the locations indicated on the plans and take all reasonable precautions to preserve the stakes.

Verify location of existing utilities and instrumentation devices prior to installing the PVDs.

B. Installation. Install each drain in a nominal vertical position (within 0.25 inches per foot from vertical) from the top of drainage blanket to the depth or elevation shown in the contract documents or as ordered in writing by the Engineer. Provide the Engineer with a suitable means of determining the depth of the drain at any time, the final length of drain material used at each location, and the plumbness of the equipment.

Advance the drain using a protective mandrel or sleeve through the compressible soils to the required depth using vibratory or static methods and provide anchorage to keep the drain at the required depth as the mandrel or sleeve is withdrawn. Impact hammers are not permitted. Cut the drain at the top surface of the drainage blanket.

Install the drains in a sequence so as to minimize equipment travel over the drains previously installed. Replace drains that are installed out of their plan location by more than 6 inches or damaged by the Contractor's operations.

Splices are permitted with a minimum overlap of 6 inches as long as continuity of flow through the drain material is provided and the method is approved by the Engineer.

If a drain cannot be properly installed using conventional drilling procedures, such as pre-augering or spudding through the surface to a maximum depth shown on the plans, relocate the drain one-half of the drain spacing to the right, left, up-station or down station. If each of the four attempts are unsuccessful, then an obstruction has been encountered which requires the
Contractor to stop work at this location. The Engineer along with the Regional Geotechnical Engineer defines the extent of the obstruction by requiring the Contractor to install proposed adjacent drains.

The Engineer determines if the obstructed drains are to be abandoned or installed to the required tip elevation.

No additional work is required for obstructed drains that are abandoned.

Install obstructed drains directed by the Engineer to be completed to the required tip elevation using drills or other necessary equipment under force account.

**METHOD OF MEASUREMENT**

This work will be measured as the number of feet of prefabricated vertical drain satisfactorily installed or abandoned as directed by the Engineer, as measured from the top of the drainage blanket to the tip of the drain.

**BASIS OF PAYMENT**

The unit price bid shall include the cost of furnishing all labor and materials necessary to properly stake out and satisfactorily install the prefabricated vertical drains, except those installed under force account.