

**SECTION 446  
EDGEDRAIN (DRAINCRETE)**

**446-1 Description.**

Construct Edgedrain (Draincrete), and Edgedrain Outlet Pipe as shown in the Plans and Standard Plans, Index 446-001. Use any one of the types of pipe listed in 446-2, unless a particular type is specifically required within the Contract Documents. Use only perforated pipe, and do not use open joints.

**446-2 Materials.**

Meet the following requirements:

|                                 |             |
|---------------------------------|-------------|
| Portland Cement Concrete* ..... | Section 347 |
| Coarse Aggregate .....          | Section 901 |
| Portland Cement.....            | Section 921 |
| Water.....                      | Section 923 |
| Polyvinyl-Chloride Pipe.....    | Section 948 |
| Polyethylene Pipe.....          | Section 948 |
| Filter Fabric.....              | Section 985 |

\*For Draincrete, the concrete requirements of Section 347 are modified as

follows:

Use Type I or II portland cement (no fly ash or other pozzolans permitted).

Composition:

|                                       |                                      |
|---------------------------------------|--------------------------------------|
| Grade of coarse aggregate (stone).... | #57, #67 or #89                      |
| Maximum Water/Cement ratio .....      | 0.38                                 |
| Minimum cement factor.....            | 385 lb/yd <sup>3</sup> of Draincrete |
| Maximum Slump Range .....             | Not Applicable                       |
| Fine Aggregate .....                  | None                                 |
| Admixtures.....                       | None                                 |

Do not use materials which contain hardened lumps, crusts, or frozen matter, or are contaminated with dissimilar material.

**446-3 Control of Quality.**

**446-3.1 Concrete Design Mix:** Submit the proposed design mix prior to production, on the Concrete Mix Design form, for the Engineer's approval. Use only draincrete design mixes having prior approval of the Engineer. Do not change the design mix component materials except as per 446-3.2.

The Department will verify the proposed mix design and may witness the trial batching. Meet the unit weight requirements as determined in accordance with FM 5-530, and the drain rate in accordance with FM 5-570. Also, provide one of the following with the design mix submittal:

1. Evidence from three sets of production data, either from Department acceptance tests or independently verifiable commercial mixes, that draincrete produced in accordance with the proposed design mix meets the requirements of this Section.

2. Test data from a single trial batch of 0.10 yd<sup>3</sup> minimum is required, which demonstrates that the draincrete produced using the proposed mix, designated ingredients, and designated water-cement ratio meets the requirements of this Section.

**446-3.2 Batch Adjustment - Materials:** Meet the theoretical yield requirements of the approved mix design. Inform the Engineer of any adjustments to the approved mix design. Note any batch adjustments and record the actual quantities incorporated into the mix, on the concrete Delivery Ticket/Certification form.

**446-3.3 Delivery Certification:** Furnish to the Engineer a complete Delivery Ticket/Certification form with each batch of draincrete prior to unloading at the site.

#### **446-4 Construction.**

**446-4.1 Excavating Trench:** Meet the requirements of Section 440.

**446-4.2 Laying Pipe:** Meet the requirements of Section 440.

**446-4.3 Placement of Draincrete:** Obtain the Engineer's approval before placing the draincrete. Deliver the draincrete to the site of placement in a freshly mixed unhardened state. Deposit draincrete in the form or trench by a method approved by the Engineer, to ensure uniform distribution. Do not use vibrators. Avoid displacement or damage to the pipe or filter fabric.

#### **446-5 Sampling and Testing.**

**446-5.1 General:** The Engineer will take random samples of the draincrete at the point of placement to determine the drain rate in accordance with FM 5-570 to determine the drain rate. A minimum of two test cylinders will be made for each LOT. A LOT represents one day's production of each mix design.

**446-5.2 Acceptance of Hardened Draincrete:** Meet the minimum drain rate of 6 oz/second. Draincrete not meeting the drain rate requirement will be rejected.

Remove, and replace all rejected draincrete at no cost to the Department.

#### **446-6 Method of Measurement.**

The quantity of Edgedrain (Draincrete) to be paid for will be the length, in feet, measured in place, along the centerline and gradient of the Edgedrain (Draincrete), completed and accepted. The quantity of Edgedrain Outlet Pipe to be paid for will be the length, in feet, measured in place along the centerline and gradient of the outlet pipe, completed and accepted.

#### **446-7 Basis of Payment.**

Price and payment will be full compensation for all work, including all materials, excavation, equipment, labor and incidentals necessary to complete the work.

Payment will be made under:

Item No. 446- 1- Edgedrain (Draincrete) - per foot.

Item No. 446- 71- Edgedrain Outlet Pipe - per foot.