

ITEM 0100801

CURB UNDERDRAIN

DESCRIPTION

This item shall include excavation for, furnishing and setting to line and grade new 6" curb drain pipe wrapped in filter fabric, furnishing and placing new crushed stone and or processed traprock backfill, furnishing and placing utility detection tape, making all necessary pavement repairs and grading where necessary.

REFERENCED ITEMS

Items 0100101, 0103703

REQUIRED SUBMITTALS

Certified Test Report:

Submit 5 copies of certified test reports for 6" underdrain and 3/4" crushed stone in accordance with the contract general requirements.

Material Samples:

Submit 1' - 2' sample of 6" underdrain with filter fabric in accordance with the contract general requirements.

MATERIALS

1. **CRUSHED STONE**

Crushed stone of 3/4" gradation shall meet the following requirements:

CRUSHED STONE - 3/4" GRADATION

Square Mesh Sieves	Percent Passing By Weight
1"	100
3/4"	90 - 100
1/2"	20 - 50
3/8"	0 - 20
#4	0 - 5

2. SIX INCH (6") CURB DRAIN PIPE AND FILTER FABRIC

The new curb drainpipe shall be 6" diameter slotted corrugated polyethylene pipe, shall conform to AASHTO M252-02 or AASHTO M294-04 and shall meet the requirements of the Sewer Division of the Metropolitan District Commission.

The filter fabric shall be integrated with corrugated polyethylene pipe, non-rotting, acid and alkali resistant and have sufficient strength and permeability for the purpose intended, including handling and backfilling operations. Fibers shall be low water absorbent. The fiber network shall be dimensionally stable and resistant to delamination. The fabric shall be free of any chemical treatment or coating that will reduce its permeability. The fabric shall also be free of any flaws or defects, which will alter its physical properties. Torn or punctured fabrics shall not be used. For each specific use, only commercially available fabric which is certified in writing by the manufacturer for the purpose intended shall be used. The Contractor shall submit a two-foot long sample of the pipe to be used.

The Engineer reserves the right to reject any pipe, which he deems unsatisfactory.

3. PROCESS TRAPROCK

All process traprock material used for backfill shall conform to the material requirements of Item 0103703.

CONSTRUCTION METHODS

1. EXCAVATION

Excavation for foundation shall be a minimum depth of 4' - 0" below top of finished curb or 3' - 6" below gutter grade and to a minimum width of 6" on each side of the curb drain. The bottom of the excavation shall be compacted and graded smooth to the required finished grade.

2. PLACING CURB DRAIN

The Contractor shall first obtain a permit from the Metropolitan District Commission (MDC) as any connections made to MDC structures require a MDC permit and inspection.

The curb drain pipe shall follow the same line as all proposed curbs and shall parallel the grade for the proposed pavement. Where no curb exists, the curb drain shall be installed to the same line as if a curb were being installed and parallel to the finished grade of pavement. The finished curb drain shall be constructed to a smooth grade with pipes joined evenly to prevent any ponding of water within the pipe.

The contractor shall also furnish and install underground utility detection tape one foot above the top of underdrain piping in all locations.

The curb drain shall be connected to the catch basin by breaking into the catch basin through the wall at a point 3' - 6" +/- below the top of curb of the catch basin. The 6" curb drain shall be installed to the proper grade and the catch basin repaired in a workmanlike manner. The curb drain shall be installed in accordance with plan requirements, unless otherwise specified by the Engineer.

3. **BACKFILL**

Backfill under and around the pipe for the full width of the trench shall be crushed stone of 3/4" gradation to depth of 18". For the rest of the trench, the backfill shall be processed traprock base conforming to Item 0103703. Backfill shall be placed in layers not over 6" thick, and each layer shall be thoroughly compacted using pneumatic powered tamps.

When granite curbing is scheduled to be installed or reset directly over the 6" polyethylene pipe underdrain the processed traprock backfill shall be placed up to the required grade to allow for installation of the curb.

When bituminous concrete curb is to be installed or when the 6" polyethylene pipe underdrain is not directly under the curb, the processed traprock backfill shall be placed to the top of the proposed roadway processed stone base elevation.

4. **PAVEMENT REPAIR**

The following applies where the entire roadway is not to be resurfaced. The edge of the pavement shall be trimmed to neat straight lines not less than 12" from the face of the curb and shall be painted with hot asphalt cement. The face of the curb below gutter grade shall also be painted with hot asphalt cement of viscosity grade AC-20 as specified under Item 0100101.

Hot mix bituminous concrete of the mix approved by the Engineer, shall be furnished and placed in two layers to repair the pavement. The bottom layer shall be thoroughly compacted using all steel tamps. The top layer shall be thoroughly compacted to a smooth surface matching existing pavement and using all steel tamps or a motor driven vibratory compactor with water dispensing equipment designed for use on bituminous concrete. The joint between the patch and the existing pavement shall be sealed with hot asphalt cement.

METHOD OF MEASUREMENT

This work will be measured for payment by the actual number of linear feet of underdrain completed and accepted and measured in place.

BASIS OF PAYMENT

This work will be paid for at the contract unit price per linear foot for "CURB UNDERDRAIN" which price shall include the pipe, processed traprock base, furnishing and placing new backfill, furnishing and placing utility detection tape, all materials, equipment, tools and labor incidental thereto.

There will be no direct payment made for furnishing and installing filter fabric and for connecting the underdrains to the existing or proposed drainage system, but the cost thereof shall be included in the unit cost of the curb underdrain.

<u>PAY ITEM</u>	<u>DESCRIPTION</u>	<u>PAY UNIT</u>
0100801	Curb Underdrain	LF