ITEM 11615.0321 M - DRIP IRRIGATION SYSTEM

DESCRIPTION

This work shall consist of the designing, furnishing and installing drip irrigation system in accordance with the contract documents and as directed by the Engineer. This system shall consist of a remotely controlled low volume drip irrigation system for the raised planter in the median of the toll plaza area. The Contractor shall provide all controls, pipe, fittings, miscellaneous structures, specialties, labor, materials, equipment and services necessary for, and incidental to, the construction of an underground drip irrigation system.

MATERIALS

A. Polyethylene pipe for the drip irrigation system

B. Valves:
   1. Stop: Bronze, threaded, 19mm, 860kPa WOG
   2. Drain Valve: Filtered, 6mm male threaded inlet, ABS plastic perforated cap with fine-mesh dispersion pad, maximum 0.06-l per second flow rate before sealing, operating pressure up to 860 kPa.

C. Control Zone Kit shall consist of:
   1. 19mm prepackaged kit with operating range of 100 to 515-kPa; flow range of 0.013- to 1.4-l per second consisting of the following components:
      a. 19mm Ball Valve: PVC body and ABS handle; positive drip-tight shut-off.
      b. 19mm Inline Wye Filter: No. 200 mesh.
      c. 19mm-inch Remote-Control Valve: 24-volts AC, 50- to 60-Hertz solenoid power requirement; operating range up to 52-degrees Celsius.
      d. Inline Pressure Regulator.
      e. Fittings: 19mm by 38mm Schedule 80 PVC nipples.

D. Emitters:
   1. Single-Outlet: Non pressure compensating with operating rate of 240- to 345-kPa; flow range of 0.007- to 0.002-l per second; barbed inlet; outlet barb to accept 6mm vinyl distribution tubing.
   2. Multi-Outlet: Pressure-compensating with range of 100 to 345-kPa; six - 0.0011-l per second outlets with barbed inlets; outlet barb to accept 6mm vinyl distribution tubing.
   3. Emitter Box: Subterranean slotted body, ultraviolet-resistant thermoplastic.

E. Appurtenant Items:
   1. 13mm distribution tubing
   2. 6mm distribution tubing
   3. Diffuser Cap: 6mm
   4. Tubing Stake: 6mm
   5. Compression Adapter Fitting: 13mm
   6. Plastic to Metal Threaded Joint Make-up: Teflon tape, 0.01mm
   7. Drain Valve Pocket: No. 6 washed stone

F. Controls - Controller: Electromechanical, four-station, programmable with a 14-day calendar dial, timer in one minute increments, with 1 to 6 automatic starts per day.

G. Vaults - Small sectional concrete vault, masonry, frame and cover adapter, and any other necessary appurtenances. Frame and cover shall be labeled “WATER VALVE”.

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H. Wire and Cable - Control valve wiring shall be No. 14 AWG, 600-volt rated solid copper conductor with Type PE insulation listed for use as irrigation control wire and UL listed. Conductor shall meet the requirements of ASTM B3. Wire colors shall be in accordance with the manufacturer's recommendations.

I. Wire Identification Tags - Provide wire identification tags

CONSTRUCTION DETAILS

The Contractor shall tap off of the existing median water service.

All electrical splices shall be made in accordance with current requirements of the National Electrical Code and New York City Building Code.

Submittals shall consist of the following:

A. Drip irrigation system detailed drawings.
B. Polyethylene pipe for the drip irrigation system
C. Valves
D. Control Zone Kit
E. Emitters:
    1. Single-Outlet
    2. Multi-Outlet
    3. Emitter Box
F. Appurtenant Items:
    1. 13mm distribution tubing
    2. 6mm distribution tubing
    3. Diffuser Cap: 6mm
    4. Tubing Stake: 6mm
    5. Compression Adapter Fitting: 13mm
    6. Plastic to Metal Threaded Joint Make-up: Teflon tape, 0.01mm
G. Controller
H. Vaults
I. Wire and Cable
J. Splice Kit
K. Wire Identification Tags

Valve boxes and vaults that will be subject to vehicular loading shall be rated for HS20-44 loading.

METHOD OF MEASUREMENT

This work will be measured on a lump sum basis.

BASIS OF PAYMENT

The lump sum price bid shall include the cost of furnishing all labor, materials, and equipment necessary to satisfactorily complete the work.

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