

ITEM 10604.5102nn M - STORMWATER TREATMENT SYSTEM (SWTS)

DESCRIPTION.

This work shall consist of designing, furnishing and installing a stormwater treatment system (SWTS) in accordance with this specification as shown in the contract documents and as directed by the Engineer. The system shall also be cleaned and maintained until the installation has been approved by the Engineer.

MATERIALS.

All precast concrete materials shall meet the requirements of Section 704-03, *Precast Concrete - General*, of the Standard Specifications except the concrete shall have a minimum compressive strength of 35 Mpa at the end of 28 days. Precast units shall be fabricated at facilities approved by the Department.

The stormwater treatment system components, inserted or cast into precast concrete units, shall be one of the following or an approved equal:

*Vortechs*TM system as manufactured by

Vortechics, Inc.
41 Evergreen Drive
Portland, ME 04103
Phone (207) 878-3662

*Stormceptor*TM system as manufactured by

CSR Stormceptor
712 Broadway, Suite 600
Kansas City, MO 64105
Phone (800) 909-7763
Fax (816) 802-3871

*Baysaver*TM as manufactured by

Baysaver, Inc.
1302 Rising Ridge, Unit 1
Mount Airy, MD 21771
Phone 1-800-229-7283

*V2BI*TM as manufactured by

Environment 21, Inc.
8713 Reade Road, E. Pembroke, NY 14056
Phone (716) 762-8216

*Downstream Defender*TM as manufactured by

Hydro International
94 Hutchins Drive, Portland, ME 04102
Phone (207) 756-6212

The contractor shall provide the manufacturer's standard sheets, installation details, and operations and maintenance manuals to the Engineer prior to the installation. Detailed fabricator shop drawings shall be supplied to the Materials Bureau prior to fabrication of the stormwater treatment systems into precast concrete units. The structure(s) must meet the following performance specifications: (1) the manufacturer must document a sediment removal efficiency of 80% for all particles entering the structure as determined by a third party, independent scientific study; (2) the manufacturer shall determine the rise in Hydraulic Grade

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Line (HGL) of the drainage system upstream of the SWTS. This shall consist of a stage-discharge table indicating the water surface elevation at the entrance of the SWTS for the full range of flows that may pass through the system. Documentation of these performance standards must be submitted to the Engineer and Regional Design Engineer for approval prior to fabrication of the stormwater treatment units.

Sizing of the unit will be determined by the manufacturer based on the Peak Design Flow and/or Design Capacity and Required Sediment Storage Capacity as indicated on the contract plans. Inlet, bypass and outlet pipe diameters will be as required by the manufacturer and/or as indicated on the plans. All pipe sizes and invert elevations determined by the manufacturer shall be verified by the contractor prior to installation of pipes at the unit.

CONSTRUCTION DETAILS.

The contractor shall follow the procedures established by the manufacturer for installation and field testing. The contractor shall be responsible for cleaning the system when needed, maintaining performance / efficiency, and keeping a record of maintenance inspections until the system is approved by the Engineer. If the system is not functioning as outlined in the Operation and Maintenance Manual for the system, then the contractor, with the Engineer's approval, shall take the necessary steps to diagnose and correct problems at no additional cost to the State.

Final approval of the installation will be made by the Engineer verifying that the system has been installed, field tested and functioning as outlined in the Operation & Maintenance Manual for the system.

METHOD OF MEASUREMENT.

This work will be measured as the number of SWTS's installed in accordance with this specification, and approved by the Engineer.

BASIS OF PAYMENT.

The unit price bid for each stormwater treatment system shall include the cost of all labor, materials, equipment necessary to complete the work including manhole frames and covers, and necessary maintenance until the installation has been approved by the Engineer.

The cost of excavation, backfill, sheeting, and outlet/inlet pipes will be paid for under their respective items.

NOTE: “ nn” in the item number denotes locations of the system as shown on the project plans.