

ITEM 604.5017NN08 – UNDERGROUND STORMWATER DETENTION SYSTEM

DESCRIPTION:

This work shall consist of designing, furnishing and installing an Underground Stormwater Detention System in accordance with this specification, as shown in the contract documents and as directed by the Engineer. The system shall also be routinely inspected, cleaned, and maintained for the duration of the contract. Chamber baffles, access manholes, partitions and outlet control shall be provided in accordance with the plans.

MATERIALS:

All precast concrete elements 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 28 days, unless otherwise noted on the approved fabrication drawing. Precast units shall be fabricated at facilities approved by the Department. Manhole frames and covers shall meet the requirements of Section 655, *Frames, Grates And Covers*, of the Standard Specifications.

The contractor shall provide the manufacturer's standard sheets, installation details, and operations and maintenance manuals to the Engineer ten days prior to the installation. Units shall be designed to withstand an HS-15 highway loading. Design calculations and fabricator working drawings shall be stamped by a Professional Engineer licensed and registered to practice in New York State. Fabricator working drawings, prepared in accordance with the requirements of Section 704-03, *Precast Concrete - General*, of the Standard Specifications, shall be supplied to the Materials Bureau for approval prior to fabrication of the precast concrete units. The structure(s) must meet the following performance specifications: (1) system components shall meet peak flow attenuation and water quality requirements within the footprint area and elevations of inflow and outflow pipes provided on the plans. Additional requirements are shown in the underground detention structure and underground sand filter requirements tables; (2) the manufacturer shall determine the rise in Hydraulic Grade Line (HGL) of the drainage system upstream of the Underground Stormwater Detention System. This shall consist of a stage-discharge table indicating the water surface elevation at the entrance of the Underground Stormwater Detention System for the full range of flows that may pass through the system. Documentation of these performance standards must be submitted to the Engineer.

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 for the duration of the contract. 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.

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METHOD OF MEASUREMENT:

This work will be measured as the number of Underground Stormwater Detention System installed in accordance with this specification, and approved by the Engineer.

Note: nn denotes serialized pay item by the location of the underground structures.

BASIS OF PAYMENT:

The unit price bid for each Underground Stormwater Detention System shall include the cost of all labor, materials, equipment necessary to complete the work, including manhole frames and covers; all necessary excavation, backfill, sheeting; and necessary maintenance for the duration of the contract.

The cost of the outlet/inlet pipes, sand filter media, debris screens, underdrain collection pipe and filter media, will be paid for under their respective items.

Seventy-five percent of the price bid for this item will be paid upon satisfactory installation of the system. The remaining percentage will be paid after the system is satisfactorily cleaned at the completion of the contract.