

ITEM 01604.92 M – SEPTIC SYSTEM INSTALLATION

DESCRIPTION

The Contractor shall furnish and install a complete Septic system consisting of a septic tank, distribution box, and subsurface absorption field constructed in approved fill material at the location shown on the plans or where ordered by the Engineer, including all required applications or reapplications for a permit to construct an individual wastewater treatment system, with said permit to be reviewed and approved on the basis of compliance with 10 NYCRR Part 75 and Appendix 75-A further modified and in accordance with the Albany County Department of Health's addendum to Appendix 75-A.

MATERIALS

All materials furnished, assembled, fabricated or installed shall be new, corrosion resistant and in strict accordance with the details shown in the Contract Documents and in the Standard and Special Specifications.

Approved Fill Material:

The Approved Fill Material shall consist of a well graded run of bank or manufactured mixture of sand and gravel soil material obtained from a borrow pit or supplier approved by Albany County, if required, and placed to the dimensions, line and grades as shown on the plans, or as ordered by the Engineer. The fill material shall not contain any stones or cobbles greater than 100 mm (4 inches) in primary dimension.

Septic Tank and Septic Tank Manhole Access Riser:

The Septic Tank and Septic Tank Manhole Access Riser shall conform to the specifications, Section 704-03 – "PRECAST CONCRETE – GENERAL" and shall be fabricated to the dimensions shown on the plans. The Septic Tank shall include inlet and outlet baffles, sanitary tees, or other devices to prevent passage of floating solids and minimize disturbance of settled sludge and floating scum by sewage entering and leaving the tank. Baffles shall be constructed of a durable material not subject to corrosion, decay or cracking and shall be in accordance with the plans. The Septic tank access manhole and roof shall be designed by the manufacturer for a live load of at least 732 kg per square meter (150 pounds per square foot). The septic tank and manhole access riser shall be installed in accordance with the latest New York State (NYS) and Albany County Health Department Individual Septic System requirements and NYS and Local Building Code Requirements. The manhole riser frame and cover shall conform to Section 604-2 Materials of the NYSDOT Standard Specifications. The manhole frame and cover shall be a Campbell Foundry Pattern, No. 1104 or equivalent as approved by the Engineer.

Sand or Pea Gravel:

The Sand or Pea Gravel shall conform to the specifications, Section 605 – "UNDERDRAINS" and shall be installed as indicated on the plans.

Structure to Septic Tank and Septic Tank to Distribution Box Connection Pipes:

The Septic Connection Pipe shall be 100mm (4") Schedule 40 Polyvinyl Chloride (PVC) Pipe, shall conform to the specifications, Section 603 – "CULVERTS AND STORM DRAINS" and shall be installed as indicated on the plans. All connectors required to join the pipe sections shall be of similar compatible material and be capable of solvent welding.

Distribution Box:

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The Distribution Box shall be precast reinforced concrete, shall conform to the specifications, Section 704-03 - "PRECAST CONCRETE – GENERAL" and shall be fabricated and installed to the dimensions and at the locations as indicated on the plans.

Distribution Laterals, Lateral Connectors, and Lateral End Caps:

The Distribution Lateral pipe shall be 100mm (4") Schedule 40 Perforated Polyvinyl Chloride (PVC) Pipe, shall conform to the specifications, Section 605 – "UNDERDRAINS" and shall be installed perforation down as indicated on the plans. Lateral Connectors, and Lateral End Caps required to complete the work shall be of similar, compatible material and be capable of solvent welding as required.

Crushed Stone or Washed Gravel:

The Crushed Stone or Washed Gravel shall conform to the specifications, Section 623 – "SCREENED GRAVEL, CRUSHED GRAVEL, CRUSHED STONE, CRUSHED SLAG" and shall be installed as indicated on the plans.

Geotextile Trench Separation Material:

The Geotextile Trench Separation Material shall conform to the Standard Specifications, Section 207 – "GEOTEXTILES".

Topsoil and Seeding:

Topsoil shall conform to specifications Section 613 – "TOPSOIL." Seeding shall be accomplished in accordance with the special notes included in this contract.

CONSTRUCTION DETAILS

Prior to commencing any fill placement or septic system work, the Contractor shall stake out the locations of the septic tank, the approved fill material, and after fill placement, the distribution box and laterals, for approval by the Engineer.

The septic tank shall be placed such that the tank top is level. It shall be located where staked by the Contractor and bedded in 75 to 150 mm (3 to 6 inches) of sand or pea gravel as shown on the plans, or as ordered by the Engineer.

The septic tank manhole access riser, if required, shall be constructed in accordance with Section 604 of the Standard Specifications. It shall be needed only if the tank top will be more than 300 mm (12 inches) below finished grade.

Prior to placing any of the approved fill material in the staked basal area and surrounding tapers, the existing ground surface shall be prepared as specified in the notes contained in the plans. The depth of the approved fill material in the basal area shall be verified by the Design Engineer after placement and prior to any work commencing on the subsurface absorption field. The fill material shall be naturally or mechanically compacted after placement to produce a percolation test result of between 5 and 30 minutes per inch obtained from no fewer than two independent percolation test holes advanced to a depth of 600 mm (24 inches) in the basal area fill material. Percolation testing shall be performed by the Design Engineer, or his representative. Failure to achieve the desired test result will require the Contractor to mechanically modify the fill in situ until the desired percolation results are obtained.

The subsurface absorption field shall consist of the distribution box and distribution laterals constructed

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in the approved fill material, with the number and length of distribution laterals based upon the acceptable percolation rate exhibited by the approved fill after testing and in accordance with the “REQUIRED LENGTH OF ABSORPTION TRENCH” table contained in the plans.

The distribution box shall be placed at the location staked and at the elevation shown on the plans, and leveled using the associated leveling screws. Spacing and pitch of the distribution laterals will be as specified on the plans. All pipe perforations will be aligned longitudinally and pipe joints solvent welded to ensure conformance to line and grade. Care shall be taken to ensure that the required PVC end caps are placed and solvent welded on each lateral, and that the Geotextile Trench Separation Material is in place prior to backfill of each lateral.

The Distribution Box and each end of each distribution lateral will remain uncovered to facilitate checking their slope by the Design Engineer, and subsequently backfilled upon approval.

Upon completion of all septic system work, approximately 75mm (3 inches) of topsoil will be placed on all associated disturbed areas prior to application of the approved grass seed mixture.

The Contractor shall prepare a shop drawing and an “as built” diagram which details the complete system and all components supplied. The “as built” diagram will specify the required locations by measurement from the corners of the structure connected to and facing the system to the approximate center of the septic tank and distribution box. The distribution laterals will be drawn with reference to the distribution box. A drawing to scale is not required.

METHOD OF MEASUREMENT

This septic system will be measured for payment as a Lump Sum quantity and shall include furnishing all required appurtenances, installation, testing, and making the system operational.

BASIS OF PAYMENT

The price bid for each Septic system shall include the cost of all excavation, backfill, absorption field surface preparation, approved fill material placement, mechanical fill compaction, piping, reinforcement, concrete, labor, equipment and other materials necessary to complete the work.