2000 – Gallon
2-Compartment Septic Tank

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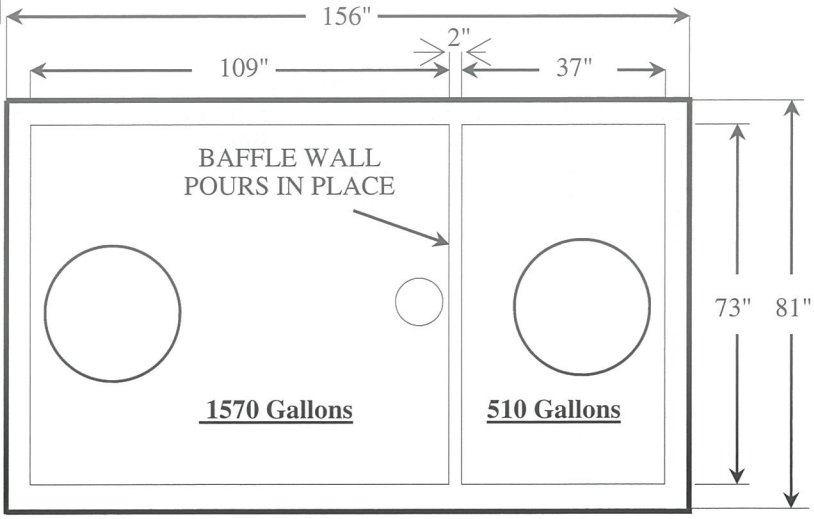
TOP VIEW



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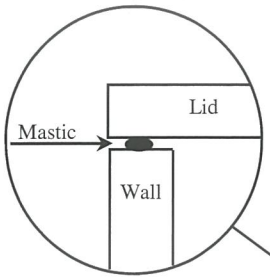
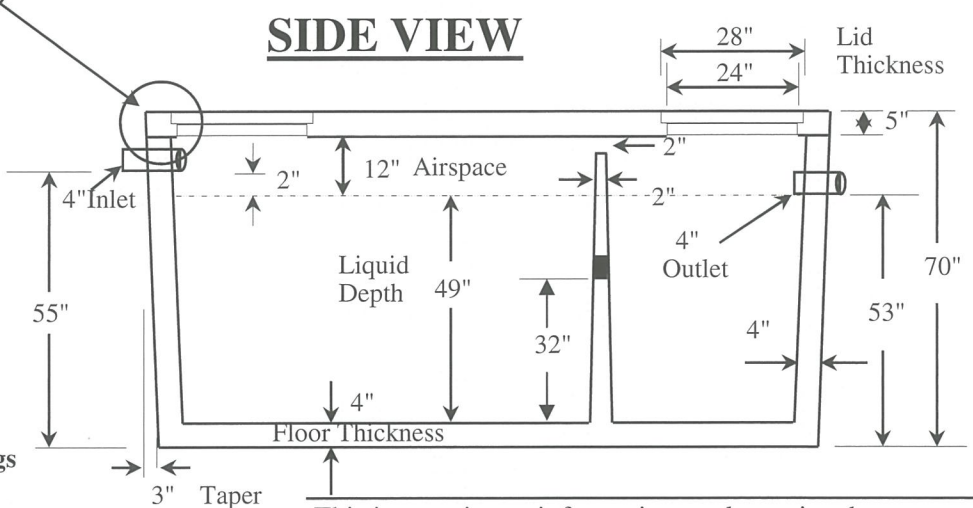
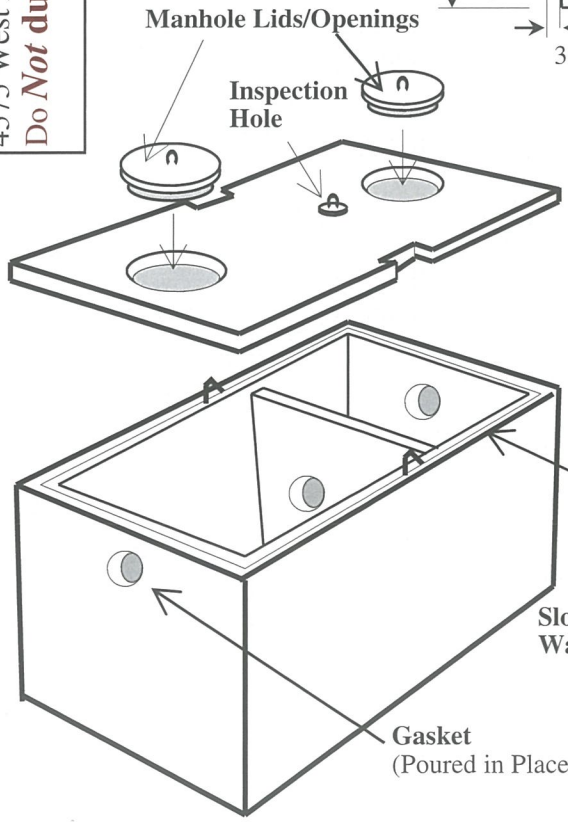


SIDE VIEW





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M E CONCRETE PROD.
4002 CATLETT RD.
CATLETT, VA. 20119
Ph.: 540-788-4238
Fax: 540-788-7615

Drawing Approved By: _____

Approval Date: _____

The Company/Persons named above shall be given written permission upon purchase of the Concrete Form to duplicate and promote sales literature on this septic tank by: ***Del Zotto Products of Florida Inc.***

2000 – Gallon 2-Compartment Septic Tank
Drawing #: DZ-2
Drawing by: SMR **Date: 1/26/2018**

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2000 – Gallon Single Compartment Septic / Pump Tank

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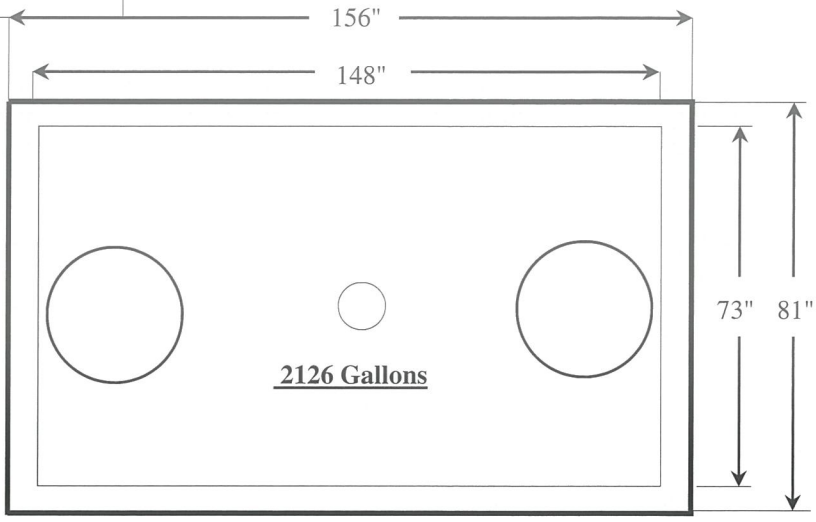

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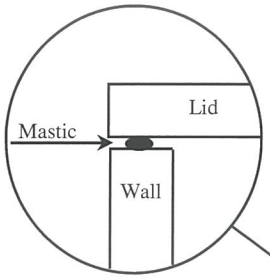

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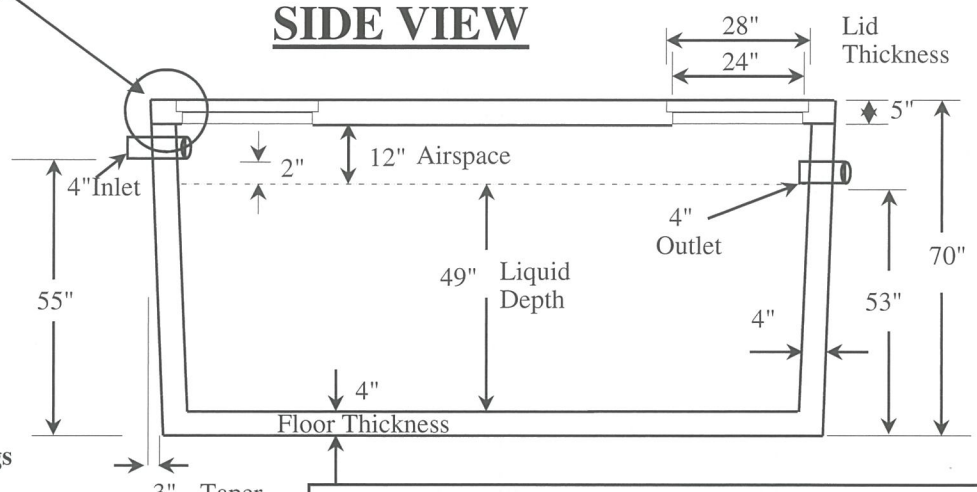

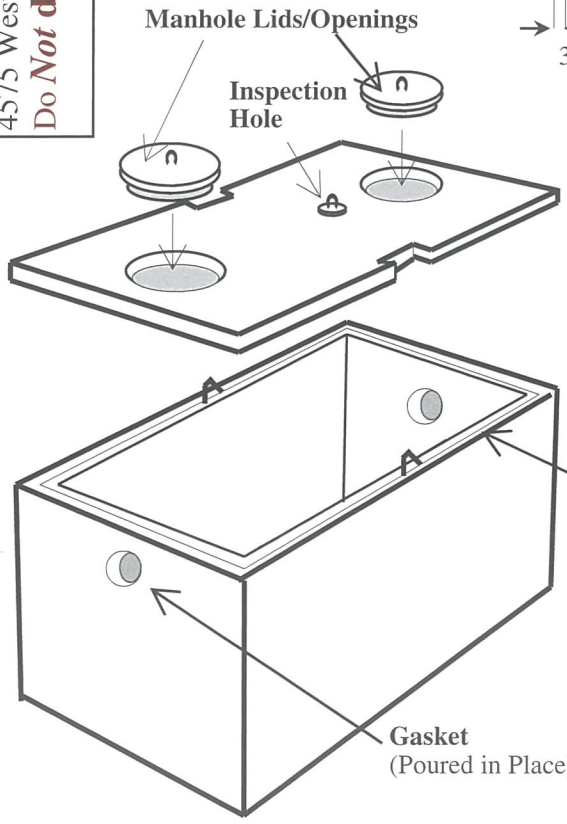

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2000 – Gallon Single Comp Septic / Pump Tank
Drawing #: DZ-2
Drawing by: SMR **Date: 1/26/2018**

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1500 – Gallon
2-Compartment Septic Tank

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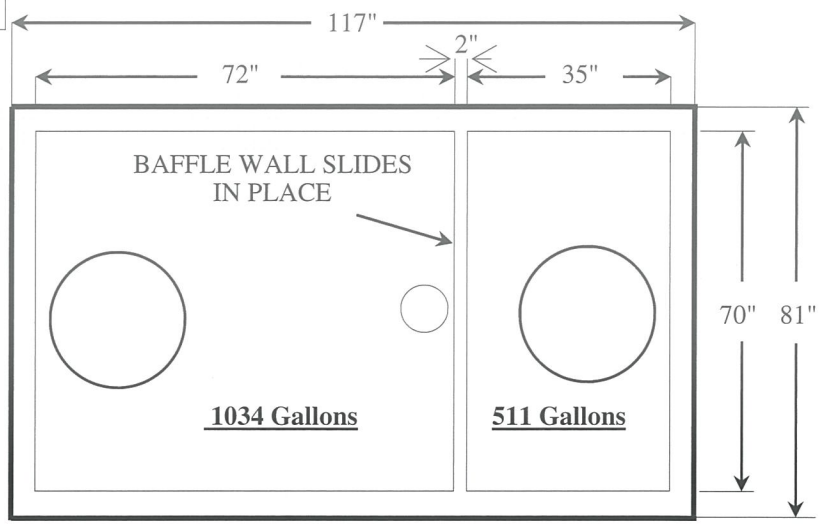

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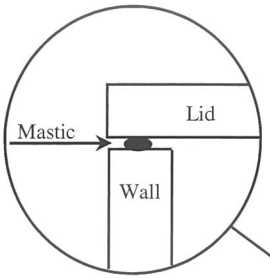
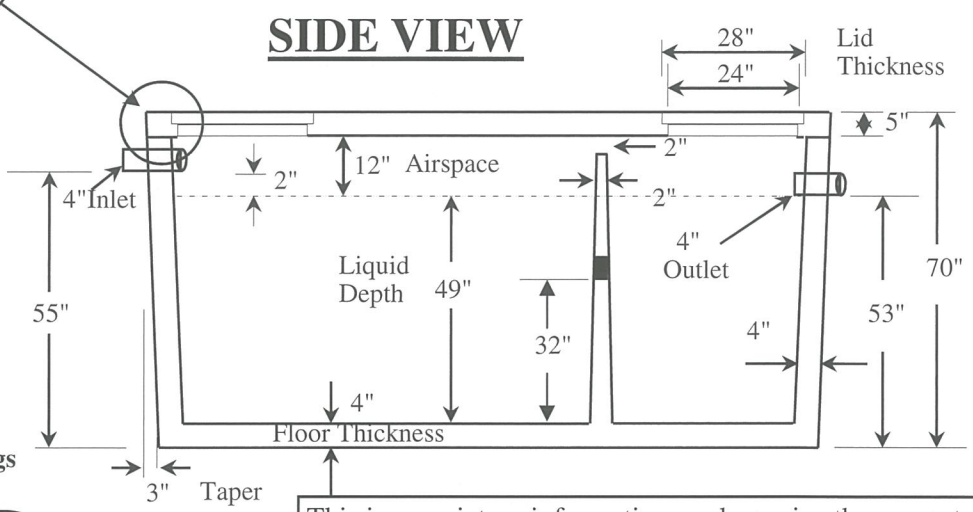
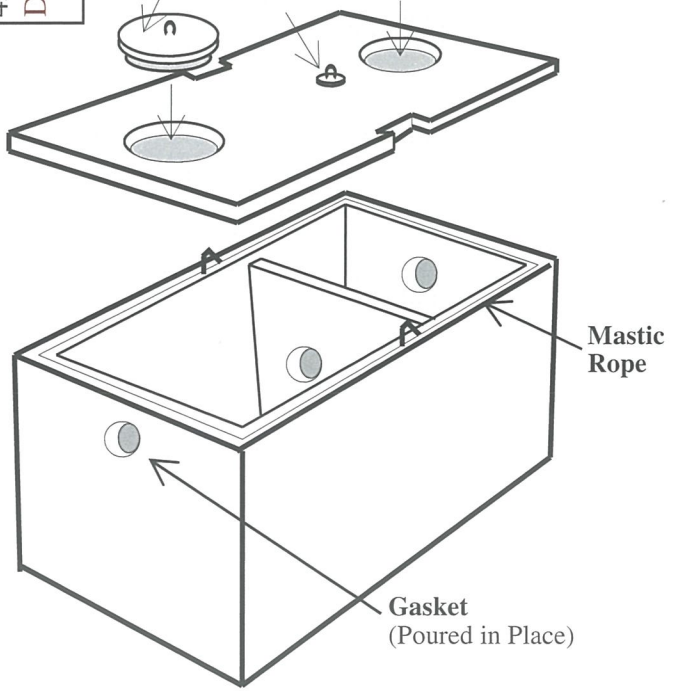


SIDE VIEW



Manhole Lids/Openings

Inspection Hole



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Drawing #: DZ-2
Drawing by: SMR **Date: 1/26/2018**

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1500 – Gallon Single Compartment Septic / Pump Tank

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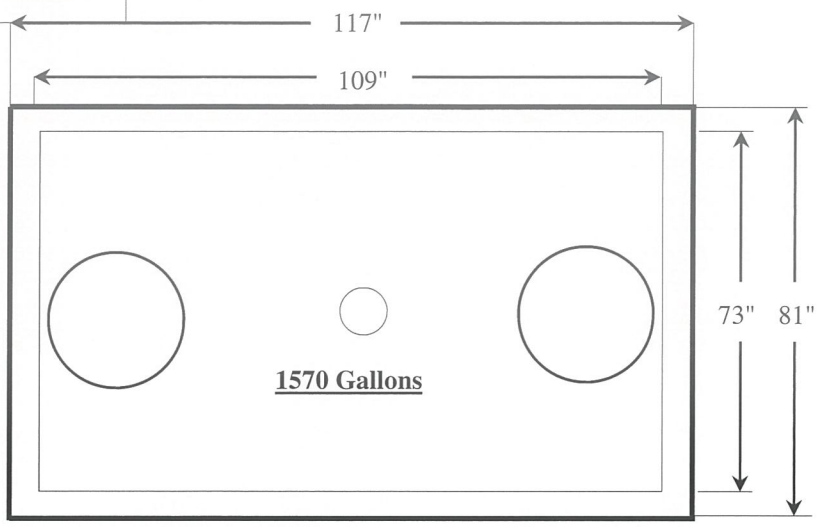

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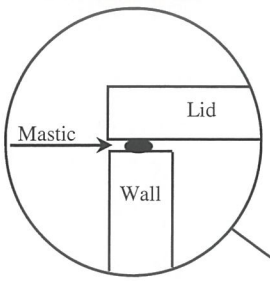

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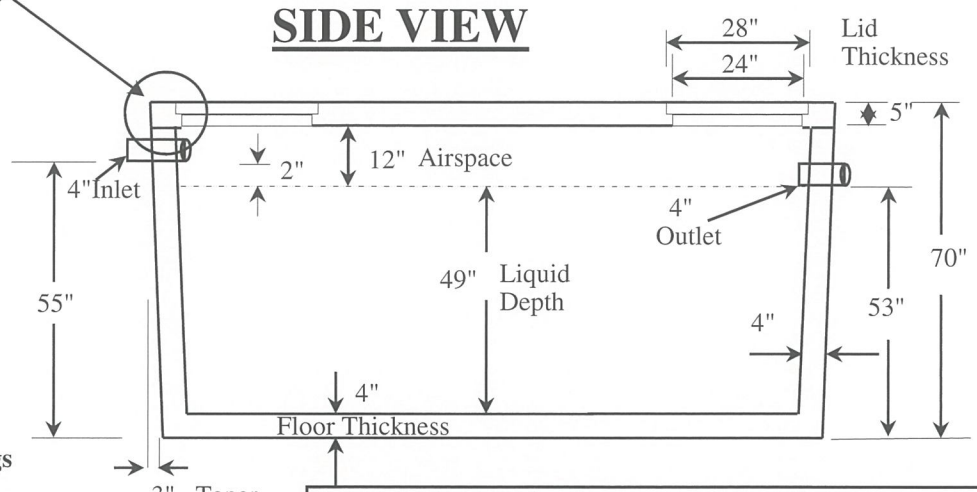

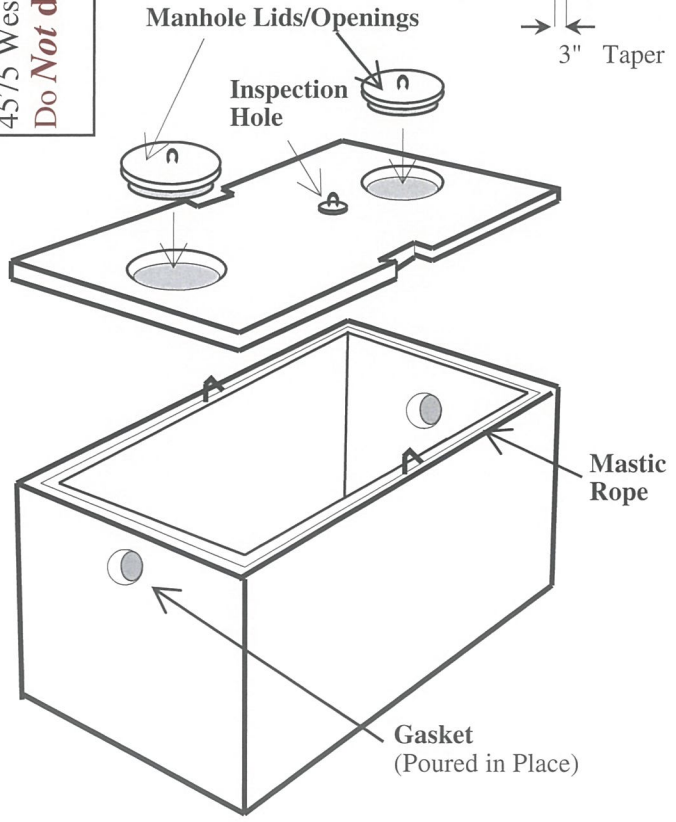

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1500 - Gallon Single Comp Septic / Pump Tank
Drawing #: DZ-2
Drawing by: SMR **Date: 1/26/2018**

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SCE
SOIL CONSULTANTS ENGINEERING • SINCE 1960

CONSULTING ENGINEERS • BUILDING OFFICIALS
CONSTRUCTION PROFESSIONALS • SOIL SCIENTISTS & GEOLOGISTS

August 14, 2017

ME Concrete Products
4002 Catlett Road
Catlett, Virginia 20119

Attn: Mr. Greg Morgan

Re: Reinforcement of Septic Tank Lids

Dear Mr. Morgan:

In accordance with your request, SCE has completed our evaluation of the reinforcement requirements for the lids of three (3) different septic tanks. The follow is a recap of our evaluation.

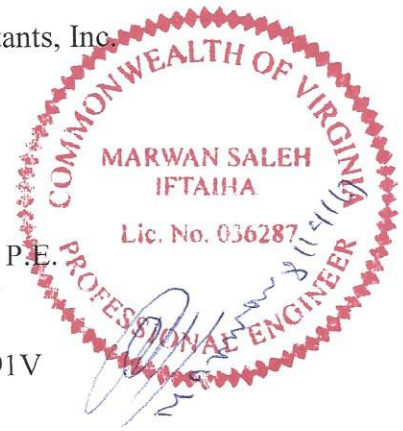
Our evaluation is based on the following:

- Information and tank specifications form Del Zotto Products of Florida, Inc. for 500, 1500, and 2000 gallon tanks
- Assumed soil weight of a maximum of 150.0 pounds per cubic foot (pcf)
- Concrete Strength (f'c) = 4200 psi
- Reinforcing steel Fy = 40,000 k
- Lid thickness 5 inches
- A maximum backfill depth of 3.5 feet (44 inches)
- Wheel loading of 2500 psf on the tank lid per Loudoun County requirements

Based on the above criteria, the tank lids for the three noted gallonage size shall be reinforced with #6 rebars at 4.5 inches on center. The reinforcement placed side to side (short distance) shall be centered in the middle of the tank lid. The transverse steel, running length wise shall be placed on top of this steel. Any lifting hook steel shall be placed below the reinforcing mat.

We thank you for the opportunity to serve you on this project. If you have any questions regarding this letter, please feel free to contact us.

Sincerely,
For Soil Consultants, Inc.



Marwan Iftaiha, P.E.
Senior Engineer

Project No.: 1491V

May 4, 2018

ME Concrete Products
4002 Catlett Road
Catlett, Virginia 20119

Attn: Mr. Greg Morgan

Re: Backfill Soil Recommendations for
500, 1500 and 2000 Gallons Septic Tanks

Dear Mr. Morgan:

In accordance with the request of ME Concrete Products, Soil Consultants Engineering, Inc. (SCE) has completed our evaluation of the backfill recommendations for the installation of 500-gallon, 1500 gallon and 2000 gallon single and two-compartment septic tanks.

Site Preparation

Before the start of Septic Tank construction, all unsuitable materials shall be removed from proposed septic tank areas including offsets as defined below.

All unsuitable material includes but is not limited to: uncontrolled fill; vegetation; topsoil; organic soils; soil mixed with excessive amounts of roots or other deleterious materials; soft, very wet and loose soils; and any building remains, including foundations and slabs, existing utility lines, pavements, debris, and drain fields and backfill soil, must be removed prior the system construction. Holes formed by the removal of trees shall be cleaned and backfilled with compacted, controlled fill, as specified herein. If any of the previous conditions were encountered, Septic Tank offset area shall be at least 5 feet plus the height of any required fill, whichever is greater, outside Septic Tank footprint lines. For compacted, controlled fill within any slope, the cleared area shall include offsets of at least 10 feet beyond the toe of the slope.

Digging a large hole in loose or sandy soil may be dangerous. For this type of conditions the sides of the holes may need to be supported.

Once the clearing and removal of unsuitable materials, as defined above, is complete, a geotechnical engineer or the engineer's qualified representative shall observe the subgrade of the excavation. The cleared Septic Tank subgrades, shall be proof-rolled using a heavy loaded construction equipment. If pumping or rutting is observed, the soft or wet material shall be removed down to firm subgrade and replaced with suitable fill.

The geotechnical engineer need to inspect the subgrade conditions, before placing the tank in the hole, remove any large rocks and create a smooth surface.

If potential shrink-swell soil (soil with a liquid limit of 40 or greater or with a plasticity index of 15 or greater) is encountered within 2 vertical feet of the subgrade of Septic Tank, it shall be undercut to a depth of at least 2 feet below the design subgrade elevation and replaced by compacted, controlled fill.

If the soil at the subgrade of an excavation becomes wet, due to surface water or groundwater entering the excavation, the excavation shall be halted. Dewatering measures shall be applied to lower the groundwater or prevent surface water from entering the excavation.

Excavation shall be resumed only after the geotechnical engineer or the engineer's qualified representative has confirmed that the groundwater level has been lowered at least 2 feet below the level of the planned excavation.

If softening of the subgrade occurs, or if water permeates the excavation, it will be necessary to remove all the soft and/or excessively wet soils, and replace them with compacted, controlled fill. If the soils in an undercut area are moist and pump under the load of heavy construction equipment, the geotechnical engineer shall be informed so that appropriate remedial action may be designed.

If blasting is employed, it shall be controlled in such a manner as to eliminate or minimize over blasting. If over-blasting does occur, all "overshot" rock fragments shall be removed from Septic Tank areas, including offsets as defined above, and replaced with compacted, controlled fill.

Structural Fill

Compacted, controlled fill shall consist of clean, non-plastic sandy clay (CL) or more granular soil (per ASTM D 2487) with a Liquid Limit less than 40 and Plasticity Index less than 15. The backfill shall be compacted, controlled fill and shall consist of clean, non-plastic, well-graded sandy silt (ML) or more granular soil (per ASTM D 2487) with a Liquid Limit less than 40 and Plasticity Index less than 15.

The soil material with fines content less than 12% (GP, GW, SP, or SW) are not recommended below the septic tank. The fill material shall contain no organics or roots, plastic clay or silt lumps, deleterious materials or stones larger than 3 inches. It shall have a maximum dry density (per ASTM D 698) of not less than 105 pounds per cubic foot.

If soft soils, debris waste, organic matter, problematic soils (Elastic/plastic) are encountered, this need to be removed and replaced with non-plastic, well-graded sandy silt (ML). The fill shall be placed in layers of 6 to 8 inches and compacted to a density of not less than 95 percent of the maximum dry density according to ASTM D 698. The qualified technician shall test the density of each layer of structural fill. Additional fill shall be placed only after the test results show that the required compaction has been achieved. If soft disturbed soils are encountered in depth areas, the compacted, and controlled fill shall extend outside all septic tank lines a distance of at least 10 feet or 5 feet plus the height of the fill, whichever is greater.

The backfill for septic tanks shall be placed using suitable materials under controlled conditions, or according to Virginia State and VDOT regulations. The complete backfill for the septic tank system, need to be consisted by native soils or selected fill to a minimum six (6) inches above pipe unless otherwise specified in the system design and as required by the permit.

Backfill material must be clean and free of rocks, trash, and debris, as they may eventually impinge on the system. We strongly recommend, avoid driving vehicles over the system prior to final backfill.

To reduce economic impact associated with groundwater and wet soils and to minimize the amount of soil that becomes unsuitable due to high moisture content; it would be advisable to construct this site during a dry season. The sides of all excavations shall be sloped back or shall be supported according to County, State (VOSHA) and Federal (OSHA) regulations.

Soil Consultants recommends that all Septic Tank subgrades and all fill operations, to include proof-rolling of subgrades as well as fill placement, be monitored during construction. Because of our familiarity with the site conditions and the recommendations of this report, Soil Consultants can effectively perform the required construction monitoring services.

Construction monitoring should include the following services during the construction phase of the project:

- Observe all soil subgrades.
- Verify the suitability of off-site and on-site material for use as compacted, controlled fill beneath the structures by performing laboratory tests as required.
- Monitor and test subgrade and fill layers before, during and after fill placement.
- Perform at least one field density test for every 2500 square feet of fill placed to confirm that the required soil compaction has been achieved.
- Perform at least one field density test for each lift of fill placed for each 200 feet of utility trench, to confirm that required soil compaction has been achieved.
- Submit a daily field report for each day's work during construction summarizing the compaction test results, observations, and general quality control comments.
- Monitor concrete placement and perform laboratory compressive strength tests as required for compliance with project specifications.

We thank you for the opportunity to serve you on this project. If you have any questions regarding this letter, please feel free to contact us.

Sincerely,
For **Soil Consultants Engineering, Inc.**

Krystina Scott
Geotechnical Project Manager

COMMONWEALTH OF VIRGINIA
LUBOMIR D. PEYTCHEV
Lic. No. 0402053888
5-6-2018
PROFESSIONAL ENGINEER

Lubomir D. Peytchev, P.E.
Senior Geotechnical Engineer

Project No.: 1491V

ME Concrete Products Co.

NOTICE to Onsite Wastewater System Designers and Installers

Virginia Department of Health Listing as Approved Onsite Wastewater System Components- June 6, 2018

2,000 gallon – two-compartment septic tank

2,000 gallon - single compartment septic tank

1,500 gallon – two-compartment septic tank

1,500 gallon - single compartment septic tank

Subsequent to review by the Virginia Department of Health – Office of Environmental Health Services, the above concrete tank models manufactured by ME Concrete Products Company have been listed by the Virginia Department of Health (VDH) as approved Onsite Sewage System (Septic System) Components. The following information, offered for the use of installers and designers supplements the drawings and other information that follows.

1. Tank volumes listed are nominal volumes. Effective volumes of the tanks as shown on the attached drawings exceed the nominal volumes listed.
2. Relative dimensions of installed inlet and outlet structures (tees and piping) must comply with the requirements of the Commonwealth of Virginia Sewage Handling and Disposal Regulations (12VAC5-610-815.C. - Septic Tank Design – Inlet Outlet Structures)
3. Gaskets for pipe penetrations will be Polylok Poly III flexible rubbers seals (or equivalent) and cast in place by ME Concrete Products, to facilitate compliance with 12VAC5-610-820.C – Water Stop. Pipe connections to these seals must be in accordance with the manufacturer's recommendations.
4. Tank penetrations for the inspection ports shown on the drawings are optional and provided by ME Concrete Products only when requested.
5. Compliance with the Commonwealth of Virginia Sewage Handling and Disposal Regulations (12VAC5-610) is required.