SEPTIC SYSTEM CONSTRUCTION REQUIREMENTS
ST. MARY’S COUNTY HEALTH DEPARTMENT

The following are minimum requirements for installation of conventional trench sewage disposal systems in St. Mary’s County, Maryland. These requirements are based on Maryland Environmental regulations COMAR 26.04.02 and state and local policy. Sand mound system construction requirements are established in the Maryland Department of the Environment Design and Construction Manual for Sand Mound Systems.

1. **Application for Installation Permit**

   Prior to commencing work, the St. Mary’s County licensed septic system contractor must submit application to Environmental Health and receive approval. The approved application will serve as the permit to install the septic system. Drawing of proposed installation or approved site plan must accompany application. A one-hundred dollar inspection fee must accompany the installation application.

2. **Inspections**

   Applicant must give Environmental Health 24 hours notice when septic system is ready for inspection. All work must be completed and left uncovered prior to inspection. A bucket of water must be provided to check gravity-system distribution boxes. Pressurized systems require operational check of effluent pump and high water alarm. This inspection must be scheduled with the area Sanitarian. Inspector will notify applicant of inspection results.

3. **Sewer Pipe, Building to Distribution Box**

   a. Sewer line from building to septic tank must be 4-inch diameter minimum schedule 40 PVC or cast iron with neoprene gasket or leaded joints, minimum grade is ¼ inch per foot.
b. Sewer line from septic tank to distribution box or pump chamber must be 4-inch diameter minimum schedule 40 PVC; minimum grade is 2 inches per 100-feet.
c. All schedule 40 PVC pipe in septic system and solid pipe in trench header ditches must be bedded in sand or pea gravel to a depth of 6”.
d. All sewer lines must be sleeved in schedule 40 PVC when crossing a driveway or right-of-way.

4. Septic Tank

a. Reinforced concrete, top-seam, two-compartment tank. Design must be approved by Maryland Department of the Environment.
b. Sewer pipe connections at inlet and outlet must be made through water-tight seals or with cement.
c. Primary and secondary chamber outlets must be fitted with sanitary tees or factory installed baffles extending 18 inches below outlet invert.
d. Two-foot diameter risers are required on both inlet and outlet ends of the septic tank. The risers are to be at least 6 inches above finished grade and have solid lids with inspection ports.
e. Tank must be placed at least 10’ from foundation, and must not be installed more than 3’ deep from ground level to top of tank.

5. Pump Chamber

a. Separate pump chamber in addition to the two-compartment septic tank is required for all systems utilizing sewage effluent lift pumps.
b. Reinforced concrete, top-seam watertight chamber, minimum capacity of 1000-gallons. Design must be approved by Maryland Department of the Environment.
c. Sewer pipe and force main connections at inlet and outlet must be made through water-tight seals or with cement.
d. A reinforced concrete riser to ground surface is required for access.
6. Sewage Effluent Lift Pump

a. Use effluent-grade pump only. Must be capable of delivering necessary flow (gallons per minute) at calculated design head (feet).
b. Install pump on 6-inch riser.
c. Pump must be equipped with pump-on/pump-off/high water alarm float switches. Volume between pump-on level and pump-off level must be a minimum of 125 gallons.
d. Volume between high water alarm float and pump chamber inlet should be 500 gallons. High water alarm must be wired on separate electrical circuit, with control panel located above ground in waterproof enclosure or in a building.
e. All electrical connections should be located outside pump chamber.
f. Pump must have operational check by inspector before approval. This will involve observation of one complete pump cycle and inspection of distribution box with pump on.

7. Force Main

a. Force main shall be minimum of 2-inch diameter schedule 40 PVC to within 10-feet of distribution box, at which point expansion coupling will be installed. Last 10-feet of force main shall be 4-inch diameter minimum schedule 40 PVC and needs to be visible during time of inspection. All couplings must be schedule 40 pressure quality.
b. Siphon Breaker Hole of ¼ inch diameter may be drilled in force main inside pump chamber. Install quick disconnect union in force main before pump chamber outlet.
8. **Distribution Box**

   a. Boxes for gravity systems shall be concrete, 5-outlet minimum.
   b. Boxes for pressurized systems shall be concrete, 10-outlet minimum.
   c. Boxes with water-tight inlet and outlet seals are recommended; cemented connections may be approved.
   d. Speed levelers are to be used in on all box outlets on a gravity system.
   e. Do not install speed levelers on box outlets in pressurized systems; they will restrict flow and create back pressure.
   f. Boxes utilizing outlets opposite inlet is allowed. A brick is required to be cemented to box floor in all pressurized systems.

9. **Sewer Pipe, Distribution Box to Drain Fields**

   a. Sewer lines from distribution box to beginning of drain field should be minimum of 4-inch diameter ASTM F 810 solid PVC. Minimum grade is 2 inches per 100-feet.
   b. Pipes in drain fields should be a minimum of 4-inch diameter ASTM F 810 PVC with 3 rows of ¾ inch perforations installed at bottom of pipes. Required grade is 2 to 4 inches per 100-feet.

10. **Drain fields**

   a. Trenches must be located in sewage easement as shown on approved site plan. Keep trenches running parallel with contour (same elevation), do not run up or down hill. Stay 10-feet from property lines and buildings and 50-feet from drilled wells.
   b. **Width**: Trenches of depths between 2-feet and 3-feet must be 3-feet in width. Trenches 3 ½ -feet or deeper need to be 2-feet wide.
   c. **Length**: Trenches must be equal in length and parallel. Trenches cannot exceed 100-feet in length each and they must match total length as listed on perc slip.
d. **Depth**: As listed on perc slip. **If suitable material is not encountered at specified depth, stop work and contact Environmental Health.** However, keep in mind that not all septic systems are installed in what appear to be the most sandy soils. Do not dig deeper than the specified install depth to get into better material as that may bring the trench bottom too close to the ground water table.

e. **Gravel**: Use washed gravel only; size required is from 3/4 inch to 2 inch. Trenches less than 7-feet in depth must have gravel to within 18 inches of ground surface; trenches 7-feet and deeper must have gravel to within 4-feet of ground surface. Place gravel 2 inches over top of pipe.

f. **Paper Fill Barrier**: When trench is completed, place builder’s paper or filter cloth on top of gravel along entire length of trench. This will prevent fill dirt from entering gravel during backfilling. Do not use felt paper. When installing trenches using a pressurized distribution, only use filter cloth or geotextile fabric. Use of builders paper is not allowed.

g. There is no required distance between trees and trenches but it is recommended to cut down trees that pose the threat of root invasion of septic system.

11. **What To Do in Case of Problems:**

**STOP!!!!** Call Environmental Health; if necessary a Sanitarian will visit the site. Changes to site plan layout may not be approvable. This includes but is not limited to, changing the location of the septic tank or installing 2-66 foot drain fields instead of the 3-44 foot drain fields that were approved on the site plan. Solve problems BEFORE you do any work.