

Grady Consulting, L.L.C. provides design plans and specifications for the replacement / construction of septic systems.

Massachusetts has specific regulations, commonly referred to as Title 5, that regulate the use of and design of septic systems. The Massachusetts Department of Environmental Protection (DEP) is the authority in charge of regulating the Title 5 policy. The DEP website contains an abundance of information relative to Title 5 and septic systems ([310 CMR 15.000: Septic Systems \("Title 5"\) | Mass.gov](#))

In addition to State regulations, each municipality may establish its own supplemental regulations to Title 5. The supplemental regulations may be more stringent than the state regulations but cannot remove or reduce any State regulations.

There are several items that must be completed as part of an overall septic system design and permitting which we can provide.

Some of the items include:

Percolation (Perc) Testing:

This is the procedure that is required by DEP to determine the permeability (how easily water will pass through) of the soil. A perc test is the procedure specified by DEP in which water is poured into the soil. The amount of time the water takes to dissipate is recorded to determine the soil's permeability. The permeability or impermeability of the soil determines the size of the leaching field portion of the septic system.

In some instances, a standard percolation test cannot be performed due to the presence of groundwater. In these cases, the DEP allows the use of a sieve analysis in place of a standard perc test. (Sieve Analysis is not allowed for new construction or increased flow, it is only allowed for the repair\upgrade of an existing septic system).

Soil Evaluation

Soil evaluation is a procedure required by DEP that describes the type of soil and its characteristics (depth, compaction). A deep hole is excavated by a backhoe or excavator to a minimum of 10 ft to expose the soil for the evaluation. The soil evaluation is used concurrently with the percolation test and groundwater determination to evaluate the suitability of locating a septic system within the soil at a specific location.

Groundwater Determination

Groundwater determination is a component of the soil evaluation. The groundwater elevation is determined by either indicators within the soil called mottling or by observation of water within the deep hole. Groundwater determination is an important component of your septic system design as the leaching portion of your septic system is required to be elevated 4 ft or 5 ft above the groundwater.

Topographic Survey

Topographic survey provides a graphic representation of your site that is used for the septic

system design. This item includes a detail survey of any items pertinent to the design of the septic system. This will generally include location and elevation survey of the house, driveway, fences, utilities and any other items important for design. The survey information is then plotted on the computer for the basis of your design plan.

Asbuilt Certification and Plan

Following system construction we will inspect the system for conformance with the approved design plan. An “As Built” plan will be prepared which will show the new system with elevations and distance ties to system components. This plan, with an engineer’s certification, will be forwarded to you and the Board of Health. The Board of Health will issue a certificate of compliance upon receipt of this item. The certificate of compliance is the official document from the approving authority indicating that the system was properly installed. The Certificate of Compliance is often required for occupancy permits or by a mortgage lender to complete the transfer of property.

The asbuilt certification and system inspection eliminates the requirement of additional system inspections (if you decide to sell your property) for a period of 2 years (or 3 years if the pumping records demonstrating system pumping at least once per year are submitted to the Board of Health).

Sieve Analysis

Sieve Analysis is an alternative to standard percolation testing if a standard percolation test cannot be completed due to the presence of groundwater. If the groundwater or damp soils are above the location of pervious soil that is to be tested (preventing a successful perc result), a soil sample may be taken and sent to a laboratory for testing. The DEP state regulations, Title 5, allow the use of a sieve analysis for system repairs.

The permitting process for approval of a sieve analysis is a Title 5 variance that must be approved by the Town and State Department of Environmental Protection (DEP). Sieve Analysis is not allowed for new construction or increased flow, it is only allowed for the repair\upgrade of an existing septic system.

This option does allow you to keep going forward with the sale of your property and\or the repair of your septic system. However, there are a few restrictions and items that should be brought to your attention that are required with the use of a sieve analysis. The items are as follows:

1. The variance prohibits any increase in design flow and requires a restriction to be recorded with your deed that both prohibits any increase in design flow and references the approval letter from the DEP. This means any subsequent owner would not be able to construct an addition that adds another bedroom. An addition could be constructed for a family room or bathroom etc., as long as it doesn’t result in additional design flow. Disclosure of this requirement needs to be recorded with your deed and any subsequent sales of the property until the system can be brought into full compliance with Title 5 or until sewer is available.