

# What to Expect During The Testing and Engineering of a New Septic System

By:

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## **What are the steps involved in the testing and engineering of a new septic system? Here is a step by step walk through of the process.**

**The process begins with site investigation.** Land and soil characteristics present unique challenges on each project and ultimately dictates the complexity of the system. Some of the factors considered are slope of grade, regulatory distance requirements and individual lot size.

At every site, the structure and characteristics of the soil below grade are looked at to determine the best system for the site needs. These characteristics include soil composition, proximity to water table and hydraulic conductivity or percolation rate.

It's also important to identify the location of buildings, water line/ well, underground utilities and existing septic system. Please note that this is NOT a property line survey.

An important step is to contact Dig Safe before any work is done.

Dig Safe is a free but mandatory service that marks out underground public utilities to decrease the risk of damage to the utilities or accidents to people involved. Then a trench permit is obtained. When digging any hole or trench that meets the requirements, a trench permit must be obtained prior to any digging or excavation. This is required because the hole for the soil evaluation and perk test will be about 10 ft deep.

An application to the Board of Health for a soil evaluation and perk test must be submitted before a soil evaluation and perk test is conducted. .4-6 foot deep test holes are excavated at key points on the property to gain insight into soil composition and seasonal high water table.

The soil evaluation is used to determine the elevation of the water table. The perk test determines the rate at which the water percolates into the soil.

You typically want at least 2 feet of soil above the water table for structural

purposes and to determine how the land profile will need to be manipulated. The percolation test tells the rate of water infiltration into the natural soil, allowing the engineer to size the drainfield and determine if new fill material will need to be imported onto the site. This information in conjunction with the design flow ( water usage ) of the property will determine how big the leach field must be and at what elevation the leach field must be to be a safe distance away from the water table

A design plan is created for the new septic. The design Engineer will take all of the information gathered to date, the Mass DEP regulations, the local Board of Health regulations, and relevant Conservation Commission regulations to design the new septic system.

The new design plan is submitted for review and approval to the Conservation Commission (if applicable) and then the local Board of Health. It may be necessary to attend a meeting if required.

A conservation meeting is required if work is proposed within a flood zone or protected buffer zone. A Board of Health meeting is typically required if a variance to state or local regulations is requested.

Typically these public meetings are held once or twice per month. Public meetings have legal requirements that the agenda must be published in advance of the meeting. Due to this reason ample notice must be given to the public prior to being added to an agenda of a public meeting.

Upon approval by the Board of Health and the Conservation Commission (if applicable) the Board of Health will issue a permit to a Licensed Contractor. A Licensed Contractor is an individual that has shown that they meet the proper requirements to obtain a license including but not limited to workmans compensation insurance, knowledge of state regulations, knowledge of local regulations, and has paid the proper licensing fee.

During construction the Engineer is responsible in conjunction with the Board of Health for conducting routine inspections to ensure the licensed installer is installing the system properly. Typically sewer service will not be interrupted for more than a few hours.

What happens after construction? The Engineer must complete an As Built Drawing to show how the system was actually installed as there may be slight differences from the design plan. Once the As Built is completed it will be submitted to the Board of Health

The Board of Health will issue a Certificate of Compliance once they have the As Built from the Engineer and any additional requirements that they may request. Some of these additional requirements may include a deed restriction or a maintenance contract for the new system.

Septic Preservation Services are available to answer all your questions and help you through the whole process. They have the expertise to help you with any septic project start to finish. Call 877-378-4279 or visit [www.septicpreservation.com](http://www.septicpreservation.com).