

Installing a new septic system is a significant project that involves several steps, from initial planning and obtaining permits to final installation and inspection. Please note that Marks Engineering only DESIGNS septic systems and assists with permitting. Our firm does not handle installation. We are happy to provide you with a list of local septic installation companies we work with. Here's a general guide to help you understand the process:

Step-by-Step Guide to Installing a New Septic System

1. Assessment and Planning (Engineer)

- **Site Evaluation:** Marks Engineering will conduct a soil test (percolation test) to determine the soil's absorption capacity.
- **System Design:** Based on the soil test, Marks Engineering will design a system that meets local regulations and your property's needs.

2. Permits and Approvals (Engineer)

- **Local Regulations:** Marks Engineering has experience working with local health departments and environmental agencies to understand the requirements and obtain necessary permits.
- **Professional Consultation:** In many municipalities, you must work with a licensed engineer.

3. System Selection (Engineer)

- **Type of System:** Marks Engineering will choose the type of septic system based on your soil test results and site conditions. Common types include conventional (gravity-fed) systems, mound systems, and aerobic treatment units.

4. Site Preparation (Installer)

- **Excavation:** You will need to hire an experienced septic system installer (we can give you a list of installers we work with) to clear the installation site of any vegetation and excavate the area for the tank and drain field according to the design plan.
- **Leveling:** Ensure the site is properly leveled and prepared for installation.

5. Tank Installation (Installer)

- **Placement:** Install the septic tank in the excavated area, ensuring it is level and at the correct depth.
- **Connections:** Connect the tank to the house's plumbing system, ensuring all pipes are properly sealed and secure.

6. Drain Field Installation (Installer)

- **Trenching:** Dig trenches for the drain field lines according to the design plan.
- **Pipe Installation:** Lay perforated pipes in the trenches, covered with gravel or a similar material to promote drainage.
- **Covering:** Cover the pipes with a geotextile fabric to prevent soil from clogging the system, then backfill with soil.

7. System Testing (Engineer)

- **Inspection:** Before backfilling completely, have the system inspected by local authorities to ensure it meets all regulations and standards.
- **Leak Test:** Conduct a water-tightness test to ensure there are no leaks in the system.

8. Backfilling and Final Grading (Installer)

- **Cover the System:** Once the inspection is complete, finish backfilling the area around the tank and drain field.
- **Final Grading:** Grade the soil to ensure proper drainage away from the system and prevent water pooling.

9. Maintenance and Care (Installer and Septic Pumping company)

- **Regular Inspections:** Have the system inspected regularly by a professional to ensure it is functioning correctly.
- **Pumping:** Schedule regular pumping of the septic tank to remove accumulated solids.

Tips for a Successful Installation

- **Hire Professionals:** Always work with licensed and experienced professionals for both design and installation.
- **Get quotes upfront:** design and installation professionals should be able to quote you for the work provided. Installers should also be able to quote you the cost of the tank, distribution box and leach lines needed if applicable.
- **Follow Local Codes:** Ensure all work complies with local health department regulations and building codes.
- **Consider Future Use:** Design the system with future use in mind, considering potential increases in water usage.

Common Types of Septic Systems

- **Conventional Systems:** Use gravity to move wastewater from the house to the tank and into the drain field.

- **Mound (Raised Bed) Systems:** Used in areas with high groundwater or shallow soil; wastewater is treated in a mound built above ground.
- **Aerobic Treatment Units:** Use oxygen to help break down organic matter, suitable for properties with limited land or poor soil conditions.

By following these steps and working closely with professionals, you can ensure a smooth and successful septic system installation.