Details

Ms. Justine Beltz has contracted with Thompson Environmental Consulting, Inc. (TEC) to prepare a fast track septic proposal for a 5-bedroom single family residence to be located on Mountain View Road (PIN: 4810-77-7844) in Statesville, North Carolina.

Based upon an investigation performed by TEC on the 13.85 acre tract, it was determined that a sufficient amount of "Suitable" Group IV soils were available for the installation of a gravity flow accepted system with a 25% reduction approval for a 5-bedroom residence (The proposed repair system will be a gravity flow accepted 25% reduction system as well). The residence will be served by a private well.

Ms. Beltz would like to request that the Iredell County Health Department, Environmental Health Division, (ICHD) consider issuing the appropriate permits for a subsurface wastewater treatment and disposal system, as well as an individual well permit, based upon the following proposal.

Location

The subject property is located on Mountain View Road in Statesville, North Carolina. From I-77 north, take I-40 west to Exit 150. Travel north on NC 115 approximately 10 miles and turn left onto Mountain View Road. The subject property will be located on the right.

References

Laws and Rules for Sewage Treatment and Disposal Systems, 15A NCAC 18A, Section .1900, Department of Environment and Natural Resources, Division of Environmental Health, On-Site Wastewater Section, August 2007.

Onsite Wastewater Treatment and Disposal Systems; EPA 625/R-00/008 Design Manual, February 2002.

Primary Investigator's Credentials

NC Registered Sanitarian No. 1208
NC Licensed Soil Scientist No. 1287
Professional Wetland Scientist No. 1346
NC Subsurface Septic System Operator No. 22199
NC Grade IV Wastewater System Installer No. 1762
NC Certified Wastewater System Inspector No. 17621

Plans and Specifications

A. Septic Tank

1. The septic tank shall be State approved (Section .1953 of 15A NCAC 18A), watertight, structurally sound, and 1500 gallons in capacity.
2. The septic tank will be fitted with an approved effluent filter.
3. It is the responsibility of the septic contractor to thoroughly inspect the septic tank prior to accepting delivery to assure that the tank has had time to properly cure and is free of cracks or other structural deficiencies.

B. Pipes and Fittings

1. All discharge piping, connectors and supply lines should be made of SCH 40 PVC.
2. All joints must be properly "welded" utilizing the appropriate PVC cement for each application.

C. Distribution Method

1. This is a gravity flow system. Wastewater from the septic tank will be directed into a distribution box for equal distribution to each of the drainlines.
2. The distribution box shall be water tested for equal distribution at the time of the final inspection.

D. Drainfield Installation

1. The drainfield location has been marked on-site utilizing metal stemmed flags. Once this area has been approved by the county, the property owner/builder should mark this area and isolate it from construction traffic. Prior to the system installation, the septic contractor shall contact the county for a preconstruction conference at which time the drainfield area will be re-verified.
2. Under no circumstances shall any construction take place within the drainfield area while the soil is in a wet condition. If the installer has doubts as to whether or not the drain field area is dry enough to begin construction, the environmental health specialist for this area should be contacted for permission to proceed with the installation.
3. The specified system is a gravity flow accepted 25% reduction system.
4. The initial drain field consists of six (4) lateral trenches 3 feet wide by 125 feet long.
5. It is essential that the lateral trenches be constructed on contour with the land, with each trench being excavated level from beginning to end. The use of a tripod mounted engineer's level is essential to assure that each trench is constructed as level as possible.
6. The maximum trench depth for this system shall be **28 inches**. Each trench shall be placed on a minimum of 9 foot on centers.
7. Once trenches are dug, the side walls shall be raked.

8. Once the drainlines have been installed, the trenches shall be left open for the final inspection by the ICHD.

E. Final Landscaping

1. The drainfield shall be shaped to shed rainwater and be free from low spots.
2. The entire area of the drainfield should be planted with grass as soon as possible to prevent erosion. The soil should be properly tilled, limed (if necessary) and fertilized prior to planting. After applying grass seed, the area should be heavily mulched with straw or other suitable material.

F. Utility Conflicts

1. The builder and property owner must take special care in planning for utilities (water, power, gas, telephone, cable lines, etc.). All utilities shall be kept clear of the septic system and its proposed repair area. Improper planning for underground utilities can negatively impact the installation and, in some cases, cause irreparable damage and permit revocation.
2. Water lines must be kept at least ten (10) feet from any portion of the septic system.
3. Irrigation systems should not be placed in the drainfield area.

Maintenance

H. In General

1. The homeowner must maintain the drainfield area through periodic mowing. The drainfield must not be allowed to become overgrown.
2. The septic tank should be pumped every 4 years or when the solids within the septic tank reach an elevation that is equivalent to 25 percent of the volume of the tank. In some situations, the tanks may need to be pumped more frequently. If using a garbage disposal, it is recommended that the homeowner have the septic tank pumped out every year.
3. When it becomes necessary to clean the effluent filter, the filter should be removed and the accumulated debris washed back into the septic tank – not onto the lawn.
4. Any damp areas, leakages or malfunctions in the drainfield area should be addressed immediately.
5. Divert gutter downspouts and surface water runoff away from the septic and pump tanks.

I. Suggestions to the Homeowner

1. As previously mentioned, if you plan to use a garbage disposal in your home you should plan to have your septic and pump tanks cleaned out annually. The ground up garbage adds large amounts of solids into a septic tank that tend to degrade at a very slow rate.

2. Grease, cooking oils, coffee grounds and non-degradable solids (disposable diapers, cigarettes and solid paper wastes) should never be put into a septic tank.
3. Used motor oil or any oily liquids should not be disposed of in a septic tank.
4. Be aware of the amount of water that you are using in your home. Water saving fixtures and devices can be installed on sinks, toilets and showers to reduce the volume of wastewater that you are sending to your drain field.
5. Run dishwashers and washing machines only when you have a full load.
6. Use liquid detergents. Powdered detergents have binding agents in them that tend to solidify in the wastewater disposal system.
7. Repair leaky faucets and toilets. Small drips equal large volumes of water over time and can over burden your drain field.
8. Do not use chemical additives in your system. Studies have indicated that they do not increase the biological activity that naturally occurs in the septic system and in some cases certain additives have been found to be detrimental to the life of a system.

Design Specifics

Daily Design Flow:	600 GPD – 5 bedroom house
Septic Tank Size:	1500 Gallons
Effluent Loading Rate:	Design = 0.3 GPD per sq. ft.
Number and Size of Drainlines:	(4) 3' Wide x 125' Long
Distribution Method:	Gravity Flow – Dist. Box
Drainfield Type:	25% Reduction System
Trench Width:	36 Inches Wide
Maximum Trench Depth:	28 Inches Deep
Drainline Spacing:	9 Foot on Centers
Total Length of Drainline:	500 Feet
Repair System:	25% Reduction with a 0.3 GPD per sq. ft. LTAR