

Installing a Septic System

A septic system provides onsite wastewater treatment in many areas of Fremont County. A septic system has two components, a septic tank and leachfield, which work together to process and purify household waste, known as effluent. An improperly functioning septic system can be costly and can pose serious threats to health and safety.

There are three factors to consider before installing your septic system:

- Proper Planning & Design
- Proper Installation
- Regular Maintenance

PROPER PLANNING & DESIGN:

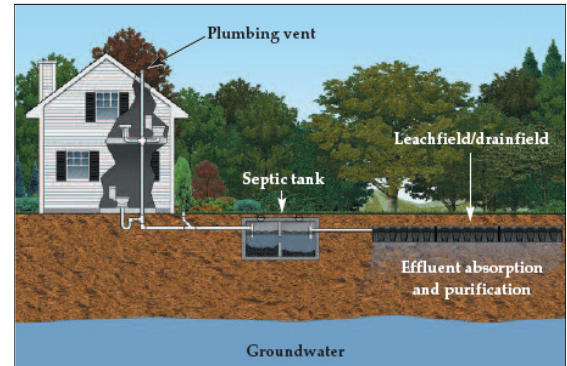
Site evaluation including contractor and county personnel is essential for locating your septic system and identifying any potential site limitations. Arranging the site evaluation prior to any new construction will help educate you as to local and state regulations as well as proper installation and maintenance practices which may prevent system failure.

A site evaluation should include a backhoe cut to reveal soil type (special considerations for certain soil types may apply). The backhoe cut will also reveal any potential groundwater concerns. Remember to locate your system as far from traffic areas as possible.

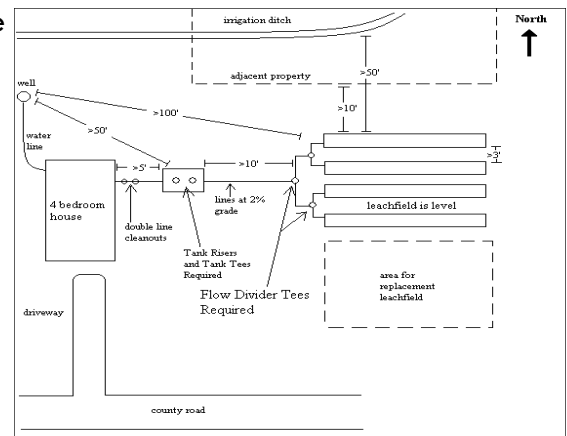
Plan the layout for your home site, well and septic system with the following minimum distance requirements in mind:

<u>Distance From</u>	<u>To Septic Tank</u>	<u>To Leachfield</u>
Wells (including neighboring wells)	50'	100'
Open waterway (including streams, lakes or ditches)	50'	50'
Potable water line	25'	25'
Building foundation (without foundation drain)	5'	10'
Building foundation (with foundation drain)	5'	25'
Break in slope greater than 15%	15'	15'
Property line	10'	10'
Septic tank	n/a	10'

Be sure to choose a site where the bottom of the leachfield is at least 4 feet from the seasonal high groundwater level. The leachfield should also be located at least 4 feet from any bedrock, shale or other impermeable soil layer. If this is not possible please notify the Planning Department.



Typical septic system layout (top) & site plan (bottom)



PROPER INSTALLATION

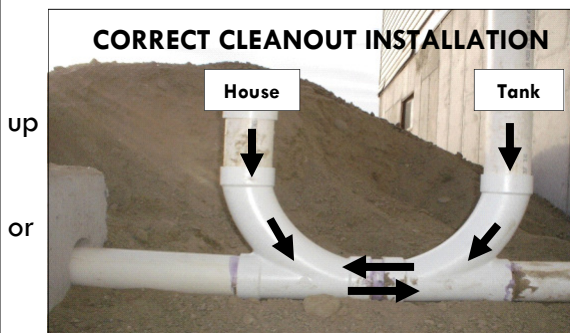
Utilizing effective installation practices is extra insurance against septic system failure. Upon inspection, county personnel will evaluate the system and will consider the following:

Depth of system: Elevation must be carefully planned for building sewer lines: all solid pipe must have a minimum slope of 1/4" per foot (2%) for a 4" pipe. Leachfield depth is another important factor in wastewater treatment because a portion of the treatment area occurs in the soil above the leachfield components. This environment must remain shallow enough to allow aerobic (air breathing) bacteria to break down effluent (minimum of 12" cover for infiltrator chambers and a maximum depth of 48" is recommended).

Some factors which affect elevation include:

- installing a basement,
- topography,
- over-excavation, and,
- installing plumbing under the foundation (*this may cause the sewer line to collapse as structures settle*).

Cleanouts: Cleanouts are a critical component in any properly designed septic system. Cleanouts allow access in the event of a clog or frozen line and should be installed every 100 feet. Cleanouts should be installed outside the foundation between the structure and the septic tank with the 'sweeps' of each cleanout facing one another to form a "U" shape. This allows access both into the tank and back into the house. Reversing the cleanouts results in a space unreachable with a sewer tape, and may mean digging up the line if a clog occurs.

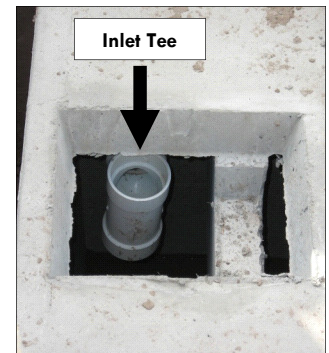
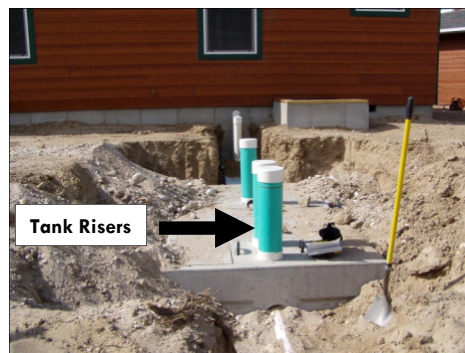
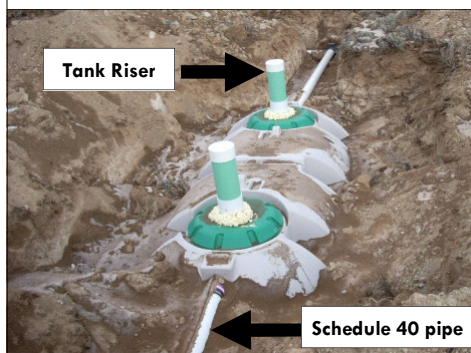


Septic tank: Tanks should be a minimum 1,000 gallon tank for to a 4 bedroom home. Five bedrooms and larger require a 1,250 1,500 gallon tank. Selecting the appropriate tank allows a 36 hour

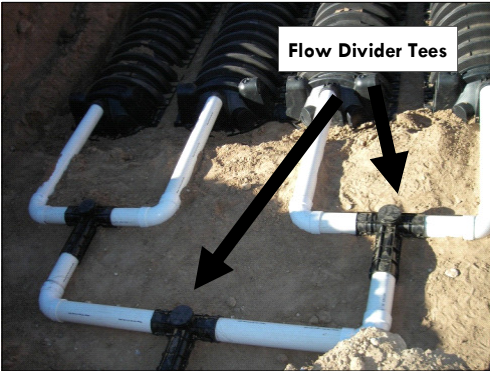


retention time for solids, grease and water to separate. The tank should contain two compartments and be level (Polyethylene tanks must be filled with water prior to backfilling). Sanitary tees are required at the inlet and outlet pipes, as well as tank risers which allow access to the tank for inspections/maintenance. Finally, 4" Schedule 40 PVC pipe is required in and out of the tank to undisturbed ground. Both polyethylene and cement tanks are approved, however you should review your tank with county personnel to ensure it meets Wyoming DEQ standards.

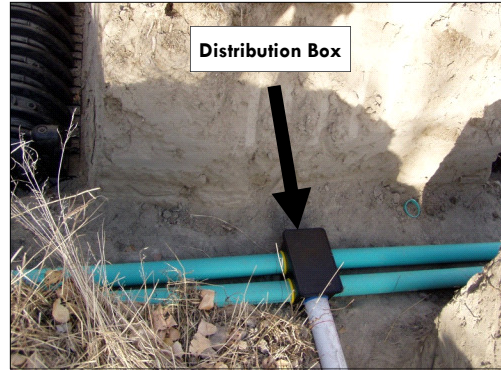
Leachfield: County personnel will size the leachfield according to the percolation test results provided by you, an



engineer or your contractor. The ability of soil to provide wastewater treatment varies widely across Fremont County, and conducting an accurate perc test is a critical step ensuring your leachfield is adequate for your present and future needs.



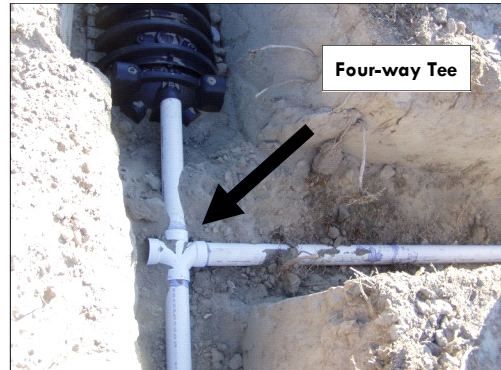
Preferred components for even distribution of effluent: Flow Divider Tee (left) and Distribution Box (right)



In addition to leachfield size, leachfield layout should be carefully planned to provide equal distribution of effluent among each row. Contact the Planning Department for more information on possible leachfield configurations. Furthermore, the manifold, or header, must also be level for even distribution of effluent. The use of flow divider tees or a distribution box can assist with even distribution of effluent, and are encouraged over the use of straight or four-way sanitary tees. These components should be set on undisturbed soil to reduce settling.



Straight tees (left) and four-way tees are not recommended because they will not evenly divide effluent entering the leachfield.



Finally, if you will be installing the infiltrator chambers, please remember to utilize the top port on the multi-port end caps (see photos). Failing to use the top port results in an effective reduction of 2/3 the original leachfield capacity and is likely to lead to an early failure.

INCORRECT: BOTTOM PORT



CORRECT: TOP PORT



REGULAR MAINTENANCE

Consistently inspecting and maintaining your septic system is the final step in preserving your investment.

- An annual inspection by a licensed contractor can inform you of any potential issues and prevent property damage.
- Pumping your tank every 3 to 5 years will help eliminate solids and grease that accumulate and prevent them from entering the leachfield.
- Select water-conserving plumbing fixtures which will reduce the overall wastewater volume entering the system and may prolong the life of your properly-installed system.
- Follow basic household water conservation practices to avoid overloading the septic system.
- Consider using hair traps and sink strainers as sink wastes and hair do not readily break down.
- Installing a water softener or garbage disposal is not recommended with a septic system.
- Use household cleaners, solvents, paints and other chemicals sparingly as these items can suppress the natural bacterial action within the tank. Look for septic-safe labels when shopping for paper products, soaps, cleansers, etc.
- Consider planting sod or perennials over the leachfield as roots from trees and shrubs may interfere with proper function.
- Divert other sources of water, like roof drains, foundation drains and sump pumps, away from the septic tank and leachfield. Excess water keeps the soil in the drain field working effectively.
- Consider installing an effluent filter at the outlet of the tank. These filters work to trap hair and other solids so that they do not enter the leachfield. However, these filters require some additional maintenance on your part as they will need to be rinsed periodically.
- Keep a copy of your septic permit, receipts and maintenance records accessible and updated. These records will be useful in the event of repairs, new construction or a home sale.

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