

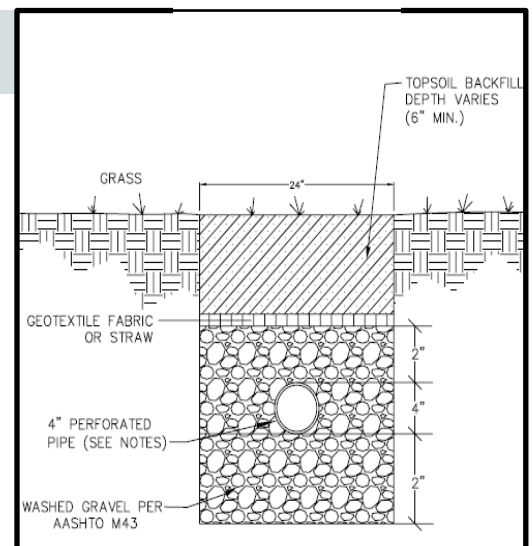
Soil Absorption Trenches & Drains

Septic tanks to soil absorption (leaching) trenches are the most common type of system installed in Ohio. After the wastewater leaves the septic tank, it flows into a distribution box, where it is evenly distributed into a network of perforated pipes laid in gravel trenches in the ground. The effluent seeps from these pipes and into the soil where it is further treated and dispersed. The soil is used as the primary media for treatment.

Advantages: Septic tank to soil absorption trenches can effectively treat sewage as simple and low maintenance systems. **Disadvantages** to these systems are that they function properly when soils are not seasonally saturated with water. Overtime the soil absorption trench will develop a bio-mat consisting of suspended particles, organic matter and bacterial slimes that will eventually clog trenches and can lead to system failure.

○ Leaching Trenches

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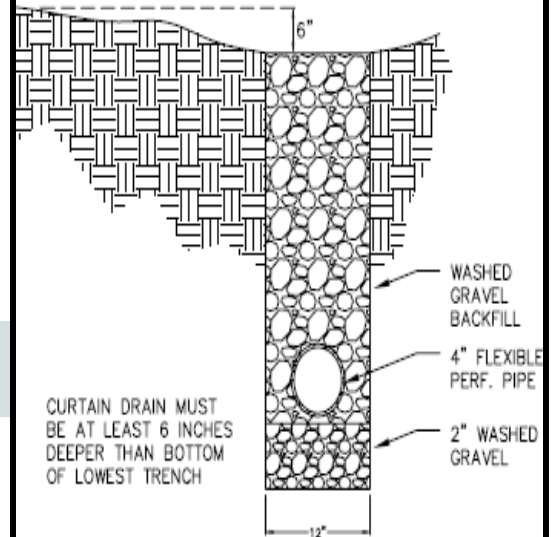
Curtain Drains

Curtain drains were used to attempt to drain shallow water tables or perched saturated zones. The curtain drain surrounds the perimeter of a leach trench system or ET trench system to promote the removal of water that is perched over a slowly permeable horizon. Perforated pipe is laid in the bottom of a trench and the trench is filled in with gravel. Here the curtain drain will intercept the surface water and attempt to lower the ground water table in hopes of providing a drier soil for the operation of the sewage treatment system.

Interceptor Drains

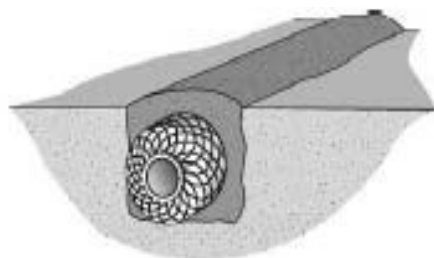
This type of drain is designed similar to a curtain drain but is used to intercept the horizontal flow (uphill side only) of subsurface and surface water to divert it around the system. This drainage can reduce the impact on a down gradient soil absorption area.

Diagram of Curtain & Interceptor Drain

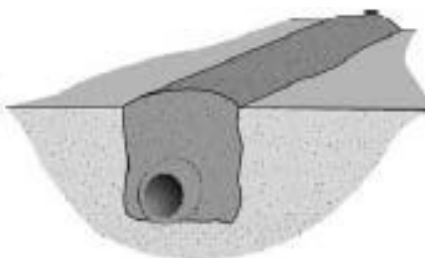


Trenches with Gravel less Products

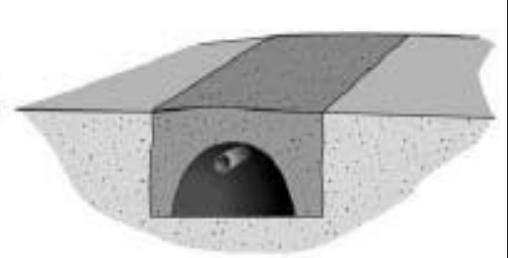
Many alternative aggregate or chamber products have been developed to the traditional gravel and pipe trench. These alternatives include polystyrene "peanuts" wrapped around a pipe, large diameter pipes wrapped in a geo textile fabric and a chamber system which maintains a large open area in the trench. (See below for diagrams of these three alternatives to traditional trenches).



Polystyrene
Wrapped Pipe



Geo-textile
Wrapped Pipe



Chamber