At-Grade Systems

An at-grade, as its name implies, is a system installed with the distribution media placed at the original soil surface. It is designed to solve similar issues as the mound, but where the soil conditions are somewhat more favorable. The operation of the at-grade component is a two-stage process involving both effluent treatment and dispersal into the underlying soil. Treatment is accomplished predominately by physical and biochemical processes within the soil. These processes are affected by the physical characteristics of the effluent wastewater, influent application rate, temperature, and the nature of the receiving soil.

The at-grade component contains a septic tank(s), pump tank, distribution system that consists of distribution media and a pressure distribution system, which is installed directly on top of the plowed natural soil and covered by loamy or sandy cover material and topsoil, as shown in the Figure 12-16 of the SSTS Manual for Septic System Professionals in Minnesota. Effluent flows into the soil, where it undergoes biological, chemical, and physical treatment and dispersal into the environment. The natural soil serves as the treatment medium and disperses the effluent into the environment.

An at-grade system under construction. Notice the geotextile fabric covering the rock media.