

## Subsurface and Surface Drains for Protections of Groundwater and Septic Systems

### Subsurface Drains

**Subsurface drain**, commonly referred to as a **French** or curtain drain, is a tool utilized in the protection of groundwater and subsurface septic systems. To know if a subsurface drain is applicable, the following guidelines should be considered:

- ⇒ If the vertical space between the bottom of the lateral trench and the groundwater vein is less than four feet (4') at some time during the year, and/or,
- ⇒ If holes dug to approximately six inches (~6") in diameter and three feet (3') deep around the outside of the lateral field **fill with water**.

To construct a subsurface drain:

*(Refer to Figure 1-A located on the back of this page.)*

- ◆ The slope of the perforated pipe must be one tenth of a foot (0.1') per 100 feet. The drainpipe must exit the ground to allow the groundwater to flow out.
- ◆ Subsurface drains should be fifteen feet (15') up slope and have a fifteen feet (15') horizontal separation from the lateral field.
- ◆ In the trench, perforated pipe must be set with the holes upward to catch the groundwater. The pipe must be surrounded with enough broken stone, tire chips, or gravel to fill the trench eight inches (8") from the top. Backfill for the trench must be of good loamy soil.

### Surface Drains

**Surface drains**, or diversion drains, are used as a tool to divert surface water off a lateral field.

**Used when:**

- ⇒ A surface water problem is occurring and flooding the lateral field area.

To construct a surface drain:

*(Refer to Figure 1-B located on the back of this page.)*

- ◆ The surface drain should be installed up slope and around the perimeter of the lateral field,
- ◆ Should be installed perpendicular to the slope of the ground to catch the surface water, and
- ◆ Should be installed to divert the surface water from the lateral field.

**NOTE:** Some situations may require construction of both types of drains to protect the groundwater and/or the lateral field of a septic system. *(Refer to figure 1-C located on the back of this page.)*