



What to do about....

Subsurface Drainage Around Your Home

In many parts of Marion County homeowners suffer with wet crawl spaces, basements and with water that stands in the yard for weeks on end. In flat topography where surface drainage is poor and soils percolate slowly, subsurface drainage by drainage tile is often a good solution for alleviating these problems.

What is drainage tile? Modern drainage tile is most often corrugated plastic tubing with slots or perforations cut into it to allow groundwater to enter. When the perched groundwater table is high and the soil is saturated with water, the tile provides a void that the water will be drawn into. Optimally, install tile 3 feet deep so that the water will be drawn from a greater distance than if the tile is placed shallower. In many soils tile at a depth of 3 feet will drain 40 feet to each side (or 80 feet across). In this way, a large area can be drained by placing parallel tile lines every 80 feet. This is how farm fields were drained years ago when settlers first began farming in our predominately swampy county.

How can drainage tile be used in urban areas? Drainage tiles can be found throughout the county. We have more miles of tile than we do roads! Tile is used along roadways to lower the groundwater table and keep the road surface from cracking from shrink-swell and freeze-thaw action of the soil. In neighborhoods and around homes tile can be used to dry out swampy lawns and wet crawlspaces or take water away from around basements to a proper outlet.

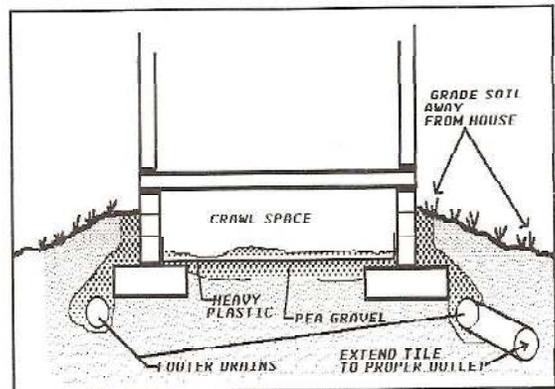
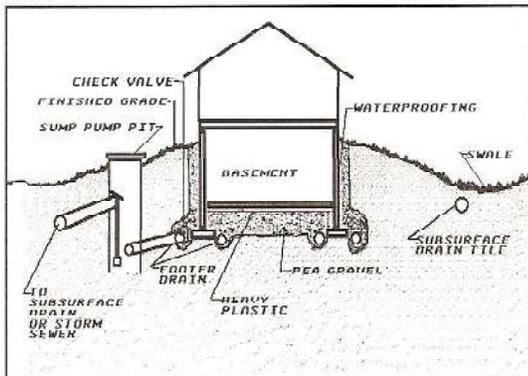
In new subdivisions tile is required along drainage swales which have less than 1 percent grade. These are used in combination with storm sewers to take surface and subsurface water to retention ponds and eventually out to a ditch or stream. Those living in older subdivisions may need to coordinate with neighbors in order to improve drainage in their neighborhoods.

Areas which pond water for long periods of time may become mosquito breeding areas and are difficult to maintain. Surface drainage swales are recommended for these areas, but if the area has less than 1 percent gradient you may need to use drainage tile along the side of the swale to help drain the area. Another option is to plant the swale to native hydrophilic vegetation and create a bioswale. These plants love wet feet, will filter pollutants and sediment, and will provide an aesthetically pleasing alternative to grass which you will not need to mow. You can find more information on rain gardens by looking at the rain garden & bioswale pages on our website (www.marionswcd.org).

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**For more information contact the Marion County Soil & Water Conservation District
(317)786-1776 www.marionswcd.org**

Many of the soil types in Marion County have seasonal high groundwater tables which cause water to stand in crawl spaces and sometimes even in heating ducts of homes. This is a very unhealthy condition for the occupants as mold and mildew grow, and it damages the integrity of the structure as the moisture causes decay. If areas of your home which are usually closed up, such as a closet, smell musty you may have a drainage problem which should be addressed.



Subsurface drainage tile can be used to improve the drainage of a crawl space. We recommend tiling around the outside perimeter of the home at a depth below the footer and as close to the foundation as possible. The water should be taken by gravity (with at least a 0.2 percent grade) to a **proper outlet** such as a ditch, stream, or storm sewer.

Basement drainage problems can be handled similarly but finding a gravity outlet may be difficult or impossible. For basements, the perimeter tile is again placed below the footer, a vapor barrier is installed along the foundation side of the trench and the trench is backfilled with clean #8 stone or equivalent to within one foot of the surface. Use topsoil for the final foot so that grass can be established. At the outlet end, use Schedule 40 PVC for the last 10 feet and install an animal guard. If a gravity outlet is not available, an outside sump pump can be installed to pump the water to the outlet. Unfortunately, a sump pump will add expense and maintenance issues to the project.

If your only possible outlet is a storm sewer, you may be able to obtain a permit from the Indianapolis Department of Business & Neighborhood Services (BNS) to connect to the storm sewer. You will need a drainage plan showing all existing and proposed elevations of your project when you apply. You may not drain surface or subsurface water into a sanitary sewer. Be sure to contact BNS before starting any drainage improvement project to check on permit requirements. The Soil & Water Conservation District can often give technical assistance for small drainage projects. Call them at 317-786-1776 or visit their web site at www.marionswcd.org for more information. The office is located at 1200 Madison Ave. Suite 200, Indianapolis, IN 46225.