

ADEQUATE OUTLET INFORMATION

A good drainage outlet is essential for most building sites in Union County. The Drainage outlet should have adequate capacity, depth, and stability. If the outlet is inadequate, the value of the entire drainage system can be greatly reduced or lost. This drainage system can include, but is not limited to, the necessary outlet for on-site sewage systems, sump pump drains, roof drains, geo-thermal, and water softener discharge.

Criteria of an Adequate Outlet:

An adequate outlet is an existing tile main, open ditch, or stream which is deep enough and has sufficient capacity to provide a free outlet with adequate cover over a connecting subsurface drain. There are several references which will be used to determine the adequacy of the outlet; the USDA Soil Survey of Union County, the USGS Topographic Maps, and the County Watershed Maps. An indicator of an adequate outlet is a three dot stream in the USDA Soil Survey, a blue line stream on the USGS Topographic Maps, and/or a county maintained ditch or tile on the County Watershed Maps.

The outlet also needs to be relatively free from obstructions that would hinder the flow of water. Public road ditches are not considered to be acceptable outlets. Ponds are typically not an acceptable outlet.

When a subsurface drain outlets into an open ditch, the end of the drain should be protected against erosion, damaging periods of submergence, and entry of rodents or other animals into the drain.

The vertical distance between the bottom of the subsurface drain and the ditch bottom should be at least 1.0 feet. (This vertical distance may be reduced if (1) the outlet ditch is not subject to any significant deposition of sediment, or (2) there is an effective maintenance program on the ditch.) In all cases, the subsurface drain shall outlet above the normal low water stage in the outlet ditch.

The outlet pipe of the subsurface drain shall be a continuous section of rigid pipe and shall be 20 feet in length. At least two thirds of the outlet pipe should be embedded into the ditch bank with the overhanging length discharging at the toe of the ditch slope. If the outlet pipe discharges on the ditch side slope, the slope shall be protected from erosion. The recommended materials for outlet pipes are smooth-wall Polyethylene and Schedule 40 PVC pipe. Animal guards are needed on all outlets to exclude small animals. Gratings or attached screens should not be used, since debris may enter through the inlets and collect on the gratings.

Existing Tile Mains

Existing tile mains that are used as outlets for proposed sunbsurface drains shall be carefully checked to see that they are an acceptable outlet. To be adequate as an outlet for proposed subsurface drains, or to accommodate additional tile laterals, an existing tile main should:

1. Be free from breakdowns, fractured tile, excessive sedimentation, or not dogging.
2. Appear to be working properly abd have an adequate outlet as described above.
3. Have sufficient capacity based on the grade (slope of tile main) and degree of drainage required for the area presently drained and for areas to be drained into the tile main in the future. Please note that most existing tile mains in Union County were not designed to handle the amount of discharge required by residential development.
4. Have sufficient depth to provide a minimum cover of 2.5 feet on all subsurface drains used as part of the drainage system. If there is insufficient cover, smooth-wall pipe, as described above, may be used until adequate cover is obtained.