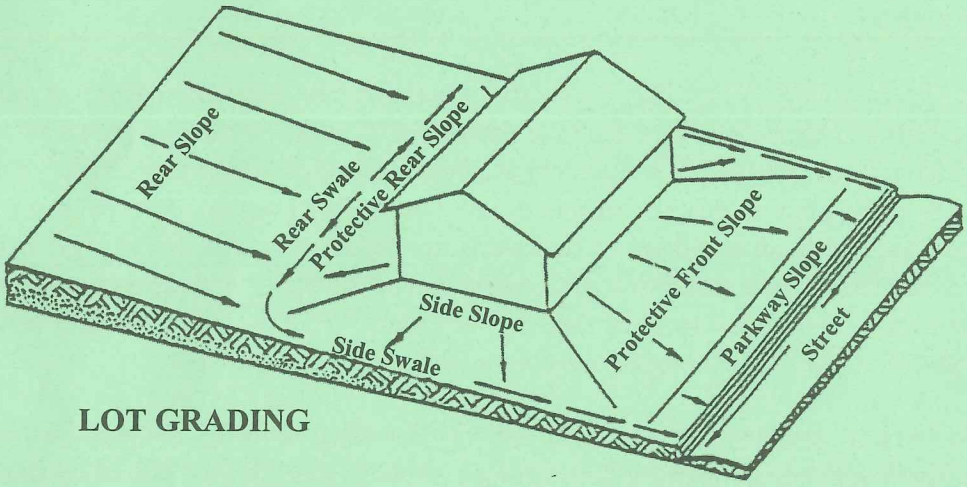
Drainage Around Your Home

You may have a drainage problem around your home if the basement is wet, the yard is flooded periodically, water ponds on your lawn for long periods after rain, or trees, shrubs and other plants grow poorly. About 85 percent of the land in Ohio is affected by a seasonal high water table.

There is a difference in the way you handle excess water, depending on whether the problem is with surface water or subsurface water. In some cases, both surface and subsurface drainage systems will be needed in order to solve the problem.

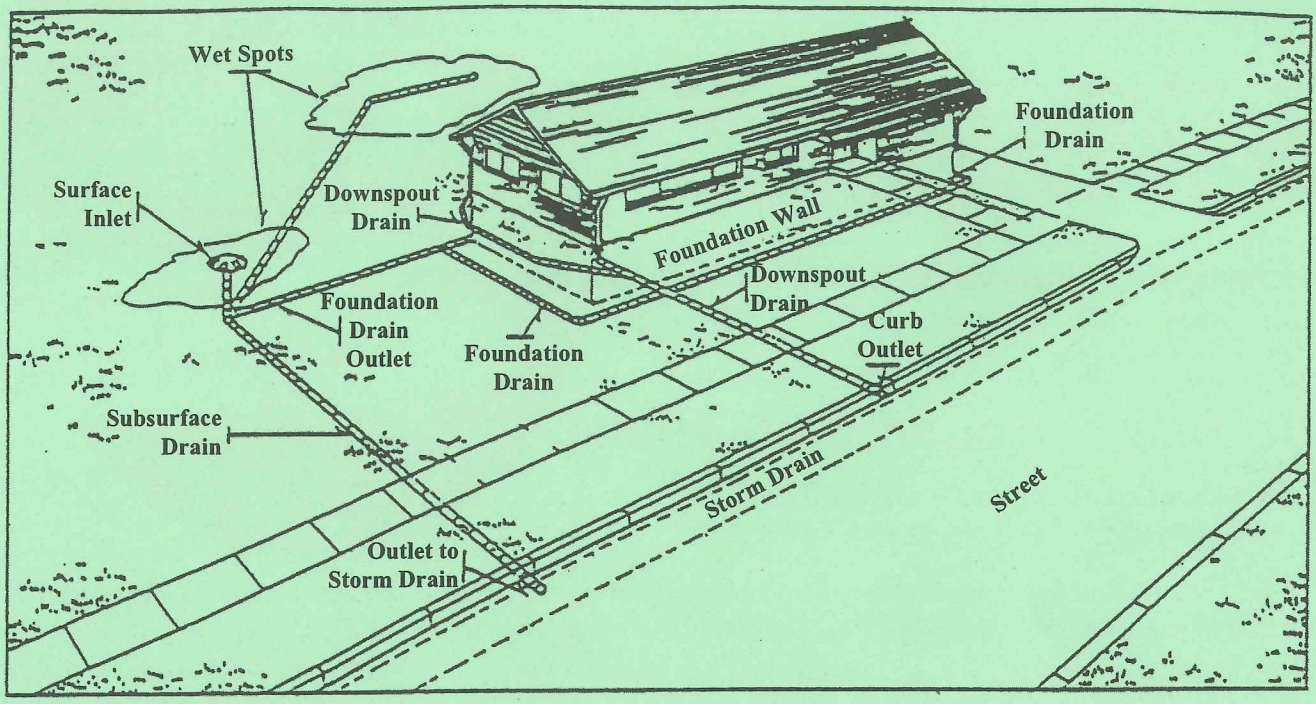
SURFACE: Every dwelling should have a grading and landscaping plan that provides control of all surface water runoff on the lot. Additions to the landscape plan, maturity of shrubbery, soil erosion and similar changes tend to change drainage patterns and direction. This surface water is often directed against the foundation wall.



LOT GRADING

Figure 1 above illustrates the most common drainage problem of a sloping lot. The uphill side of the house must have a drainage waterway (swale) to direct the water around the house. This drainage swale should be at least 10 feet from the house and sloped to convey accumulated water away from the dwelling efficiently, and into a proper outlet. The building code requires a minimum of 6 inches of fall in the first 10 feet away from the foundation.

SUBSURFACE: Subsurface drainage systems are generally constructed of perforated, corrugated plastic tubing. Excess water is drained through pipelines which are placed underground. The pipelines drain the excess water from the lawn and/or foundations into outlet ditches or storm sewers.



Control of external water around and beneath a house is essential. Mildew, wood destroying fungi and wet insulation will result when surface water floods or saturates the ground around and under a house.

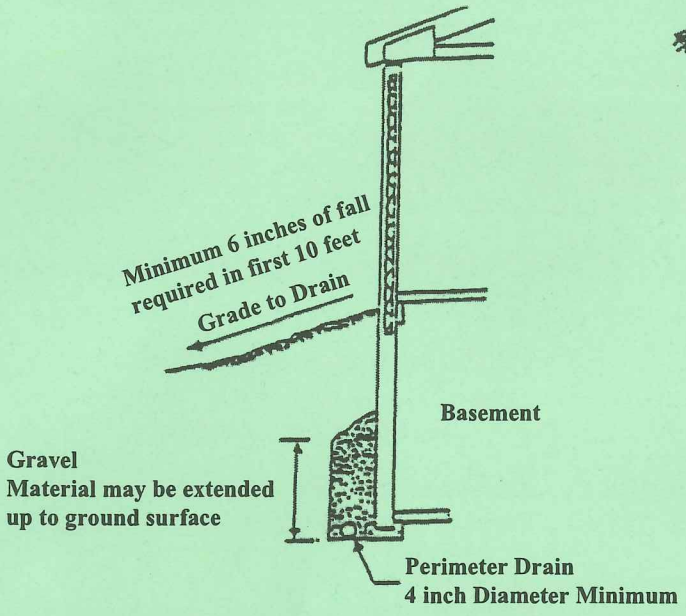
Techniques that will reduce external water problems are:

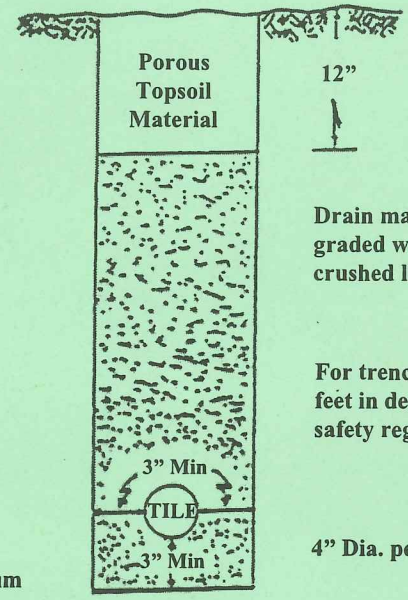
1.A functioning lot drainage system
2.Properly installed and maintained gutters, downspouts, and drains to conduct the water
3.A waterproofed foundation wall with properly installed footer drains
4.A waterproofed floor slab
5.A sump pump

DRAINAGE Law – OHIO: Ohio laws governing water rights and drainage are complex since they have been determined by case law which is constantly evolving. Serious disputes between landowners are often settled in court on a case by case basis. Simply, water should enter and leave your property where it did prior to any construction activities. Changing the flow of water in a manner that causes damage to an upstream or downstream neighbor, may result in legal liabilities for those damages. A landowner is entitled to a reasonable use of the water that flows across her/his land, as long as the water is returned to its natural water course. This includes ponding water behind a dam for personal use or making drainage improvements to protect structures.

There is no government agency which has any authority to issue orders or otherwise resolve conflicts over water rights or drainage problems between neighbors. The exception may be the few cities which have drainage or stormwater ordinances. The Soil and Water Conservation District/USDA Natural Resources Conservation Service can assist landowners who voluntarily wish to correct drainage problems.

HOW TO GET HELP: Local building suppliers, contractors, county or municipal authorities, or your local Soil and Water Conservation District/USDA Natural Resources Conservation Service office may be able to provide more information about planning and installing specific drainage measures around your home.





Drain material should be poorly graded washed river gravel or crushed limestone

For trench depths exceeding four feet in depth, consult OSHA safety regulations.

4" Dia. perforated tile minimum

FOUNDATION DRAIN **SUBSURFACE/INTERCEPTOR DRAIN**

It is a good practice to install subsurface drains, which are at least 4 inches in diameter and are surrounded with gravel or sand. If at all possible, the drain pipe should have 2 feet of cover.

Installing suitable downspouts to control roof water may be adequate to prevent ponding in low areas of your yard. Downspouts can empty into a subsurface drain or into outlet spreaders installed to discharge water in a thin layer over a grassy area *away* from the house foundation. The building code requires water to be discharged at least five feet beyond the foundation.

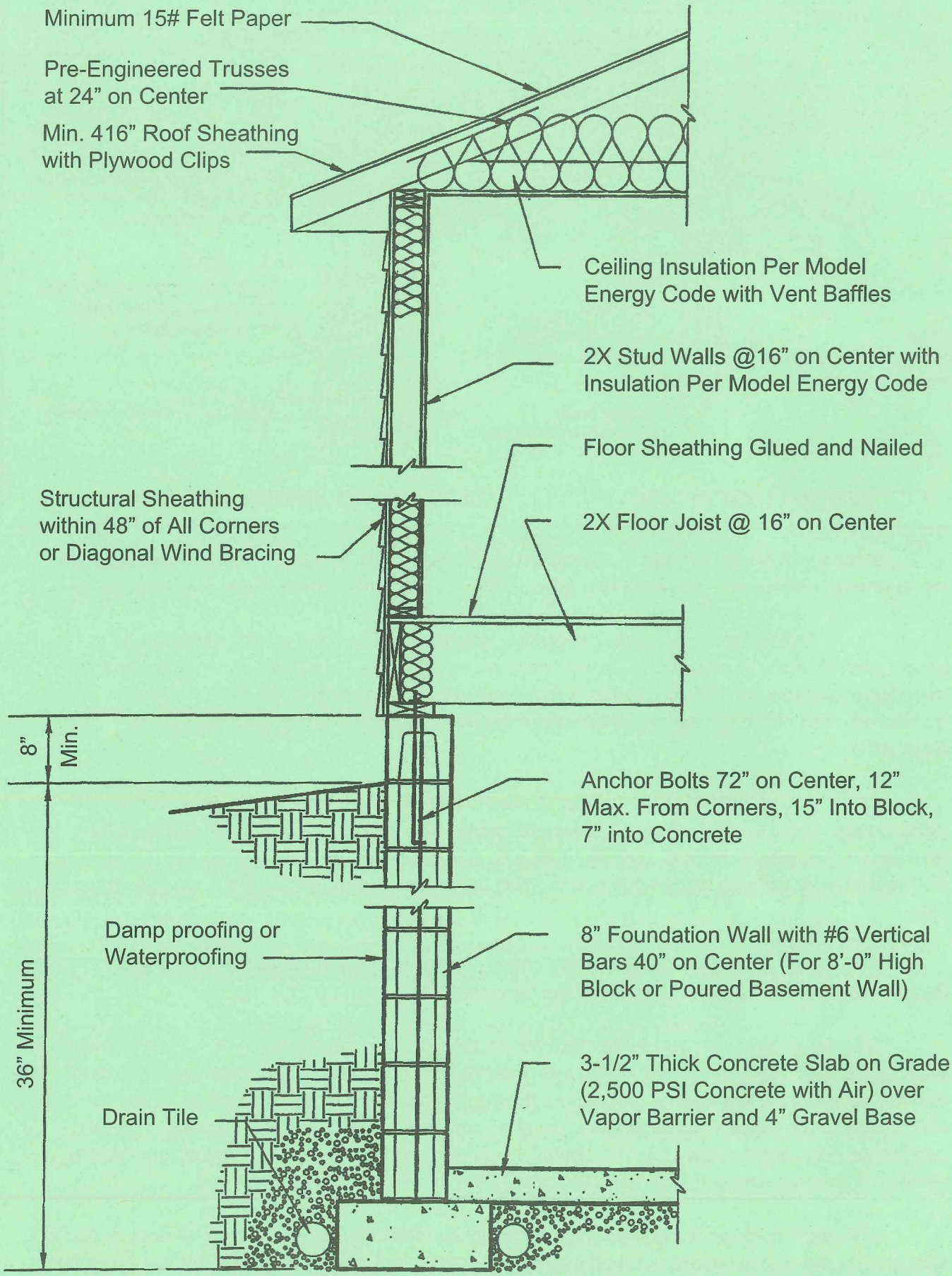
SEASONAL HIGH WATER TABLE: A water table can be defined as the upper surface of ground water or the level at which the soil is saturated with water. This level may fluctuate by several feet throughout the year depending on soil, landscape, and weather conditions. In many areas of Ohio the seasonal high water table is 1 to 3 feet below the ground surface for 4 months during the year.

WET BASEMENTS: Water generally enters a basement through the basement wall, or through the joints between the basement wall and the basement floor.

If water is entering through the wall, the parging (exterior mortar coat) or waterproof seal, is either cracked, too thin or missing or the footer drains may be inadequate or missing. This can be checked by exposing the exterior wall where the most severe leakage is taking place. You can make spot repairs to the parging. If the parging or waterproof seal is missing and the leakage is widely distributed, you need a contractor who specializes in such things. In any case, make sure that the exterior surface grading is taking the water away from the wall before you proceed.

If water is entering through the joint between the wall and the basement floor slab, or through cracks in the floor, you have water under pressure beneath the floor. Foundation drains relieve this pressure.

If you have water along or beneath the basement floor, your home either does not have footer drains or they are not functioning properly. In most cases, the exterior wall will require excavation down to the footer and the functioning drain installed.



Typical Wall Section