

# Lot Grading and Drainage Design Guidelines

One of the most contentious issues related to the development of land is improper drainage of surface water. Poor lot grading can result in inadequate surface drainage, ponding, flooding, foundation settlement, insurance claims and conflict between owners of neighboring properties. With careful planning and the application of some basic principles, a good lot grading design can be achieved. Below are some key elements to a proper lot grading design:

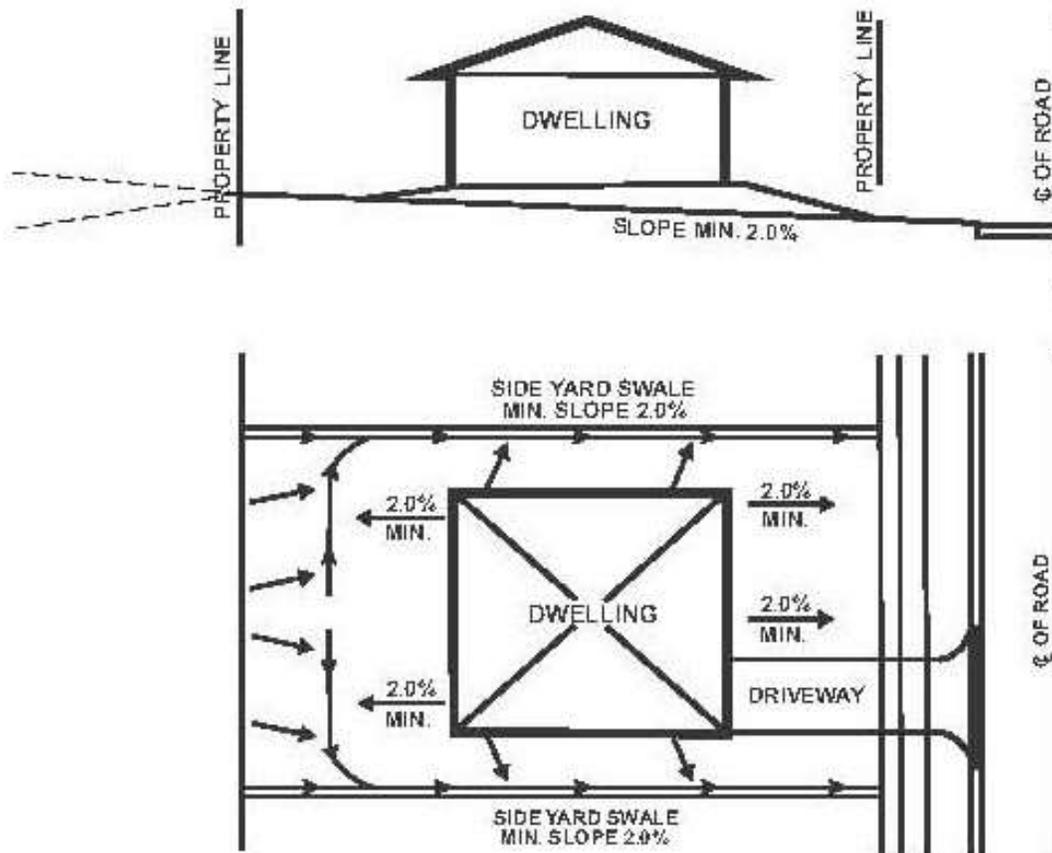
1. The ground should be sloped to direct surface water away from the house foundation.
2. Proper lot grading should not block existing drainage patterns or direct additional drainage on to adjacent lands.
3. Swales should be constructed along the property lines with a minimum 2.0% grade.
4. All slopes, other than swales, shall be 3:1 (Horizontal to Vertical) or flatter.
5. Lot and house grade should be generally compatible with existing topography and surrounding development.

## Types of Lot Grading

Surface water should always be directed either towards the street or towards the rear property line. There are two common types of lot grading.

### 1. One-Way Drainage

In one-way drainage the rear lot line is the high point of the lot. An elevated apron is created around the house and surface drainage flows forward to the street.



## 2. Split Drainage

In split drainage, the house is the high point and the lot is graded so that surface drainage flows forward to the street and back towards the rear lot line. The rear lot line is then generally drained by way of a swale or other system.

### **Swales**

Swales are shallow grassed drainage channels with gently sloping sides. They are created on the surface of a lot as part of the grading design. The purpose of a swale is to collect and direct storm water away from the building foundation and towards a suitable rainwater outlet such as the street or a catch basin. Swales are generally located along property lines separating abutting lots and at the midpoint of the rear yard when the overall slope of the rear yard is toward the house. Swales should never be filled in or blocked in any way as this will cause storm water to collect and pond on a property and could result in flooding during intense rainstorms.



The result of a well-planned and properly executed grading and surface drainage system is a lot free of ponding, with no adverse effects to adjacent properties.

It is the homeowner's continuing responsibility to maintain the grading of their property. Often drainage problems will occur due to incorporation of landscaping features and construction of fencing, patios, walkways, decks and swimming pools etc. All new landscaping and construction should be carried out by the homeowner without disruption to the grading design of the lot so as not to adversely affect the drainage patterns within or around their lands.