

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 rain water 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 rain storms.

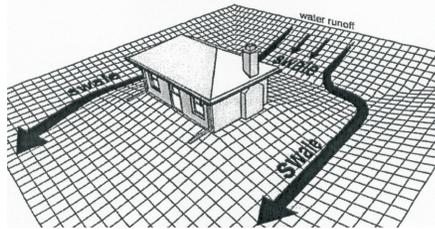


Diagram showing a typical swale design for one-way drainage of a single family residential lot.

Rear Yard Catch Basins

A rear yard catch basin is a vertical concrete inlet chamber with a metal grate at the top which is flush with the ground surface. Rear yard catch basins are located at low points along rear property lines to allow storm water to enter through the metal grate and discharge to the City's sewer system by way of a connecting sewer pipe near the bottom of the catch basin.

It is the home owner's responsibility to ensure that a rear yard catch basin is not blocked in any way that would prevent rain water from entering and discharging to the sewer system.



Hamilton

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Hamilton

A Homeowner's Guide to Lot Grading & Drainage

What is Lot Grading?

Lot grading consists of sloping the land within a lot in order to direct the flow of surface water away from a building's foundation and towards a suitable outlet where water can be discharged safely without affecting abutting properties.

Lot Grading Process

All new residential lots created by plan of subdivision or by land severance require preparation of an overall lot grading plan by the developer's professional engineer as part of the land severance or plan of subdivision process. The overall grading plan is reviewed and approved by the City to ensure that the subdivided land incorporates a proper overall grading design that takes existing drainage patterns, neighbouring property elevations and storm water outlets into consideration.

At the time of building permit application an individual plot plan is prepared by a builder's engineer or surveyor for each new lot based on the overall approved grading plan for the subdivision or severed lands. The individual plot plan shows in greater detail the specific grading design for each new lot and the outline of the actual house to be constructed. This plan is reviewed and approved by the City prior to release of a building permit.

Final lot grading is carried out by the builder following completion of house construction and is verified onsite by an Ontario Land Surveyor. The builder's engineer certifies to the City that the lot has been graded in accordance with the grading plans approved by the City.

It is the home owner's continuing responsibility to maintain the grading of their property as approved by the City. 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 home owner without disruption to the grading design of the lot so as not to adversely affect the drainage patterns within or around their lands.

Lot Grading Design

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, basement dampness or settlement, insurance claims and conflict between owners of neighbouring properties.

With careful planning and the application of some basic principles, a good lot grading design can be achieved. Below are the key elements to a proper lot grading design:

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

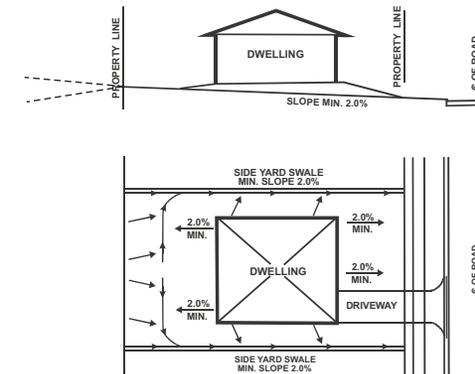
The result of a well planned and properly executed grading and surface drainage system is a lot free of ponding, with no adverse effects to adjacent properties.

Types of Lot Grading

Surface water should always be directed either towards the street or towards the rear property line to a private rear yard catch basin. 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 and catch basin system.

