

Further Information

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Lot Grading Maintenance



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Please note this brochure has no legal status and cannot be used as an official interpretation of the various regulations currently in effect. Users are advised to contact Planning and Development Services for more information. Strathcona County accepts no responsibility for persons relying solely on this information.

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COUNTY


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Lot Grading Maintenance

New Homes

Once your final grade has been approved, it's up to you, the homeowner, to maintain surface grades around your home and property, in perpetuity, to the standards established at the time that the Final Grade approval was issued. Strathcona County may, at any time, require you to do maintenance to the site grading if settlement or unauthorized alterations are resulting in surface drainage problems to neighbouring lots or County right-of-ways. This requirement is enforceable under the provisions of the County's Surface Drainage Bylaw #16-2009.

Existing Homes

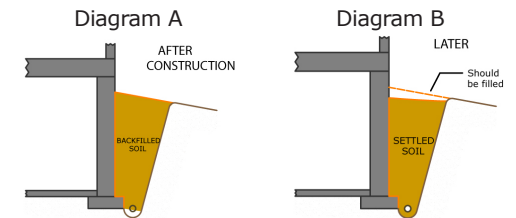
Lot grading plans have been part of the approval process since 2001. If your home was built prior to that, chances are that your area doesn't have an engineered lot grading plan. Settlement or improper re-grading over a period of years can create problems that become evident during spring snow melt and after heavy rain storms. This can result in flooded basements, property damage, and disputes between neighbours. See the maintenance checklist at the end of this brochure for tips on how to avoid this.

Basement Flooding

Basement flooding can be caused by either sewer backups or overland drainage issues. Poor lot grading is the #1 cause of overland drainage problems. Improving and maintaining lot grading is the best defense against surface flooding and groundwater infiltration. Typical home insurance does not provide coverage for flooding related to surface flooding events; therefore, maintaining positive slopes around the foundation and swales at the property line could prove to be one of the best investments a property owner could make. See the maintenance checklist at the end of this brochure for more information.

Foundation Grading

The soil around your home is not compacted back to original ground conditions when it is replaced to backfill the basement excavation. This is a typical building practice in Alberta because unsupported foundation walls cannot withstand the pressure generated by standard compacting techniques (see Diagram A). This practice may result in some settlement adjacent to the foundation which can create negative grading (see Diagram B). Many factors influence the pace and severity of settlement, including seasonal construction, rainfall events and even landscape choices. As settlement occurs, it becomes necessary to re-establish proper foundation grading by adding additional soil to achieve the desired 10% slope away from the building. Sod, decorative rock and mulches may need to be temporarily removed and clay added to re-create the slope.



Rainfall

An average residential property in Strathcona County will receive approximately 35 cm of rain between May and October. This translates to about 140,000 litres of stormwater which must be managed and directed. 50,000 litres of this total amount comes from the roof of a typical home. A normal rainfall that produces 6 to 10 mm of rain would send almost 1000 litres of water from the roof to the ground. While some of this water can be captured and used to support landscape and lifestyle choices, the remainder must be directed to flow away from your home and off your lot without causing damage to you or neighbouring properties.

Rain Barrels

Rain barrels can quickly fill and overflow during heavy rainfalls. Ensure your barrels have an adequately sized overflow pipe that will discharge water to a location that is past the backfill zone (approximately 1.2 metres).

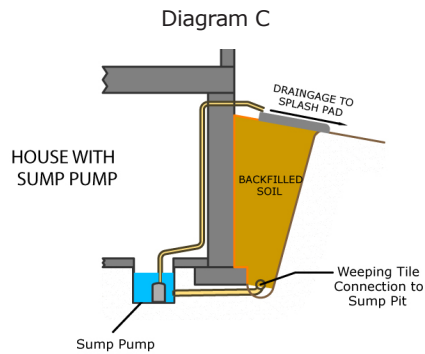
Window Wells

Window wells are installed to accommodate foundation grading that ensures positive slope away from the home. Positive foundation drainage is the most important element of defense against water entering the basement. Ideally, water does not enter window well openings, however water that does enter the window well should flow down the drain tile, installed at the time of construction, to the weeping tile system. Window wells should be kept free of debris or leaves to ensure that water can enter the drain tile and flow to the weeping tile and avoid potential water damage from flooding.

Water Adjacent to the Foundation

Water adjacent to the foundation will accelerate the settlement process. Minimize the amount of water that the foundation backfill receives by ensuring that all downspout extensions are in place after grass cutting or other maintenance tasks.

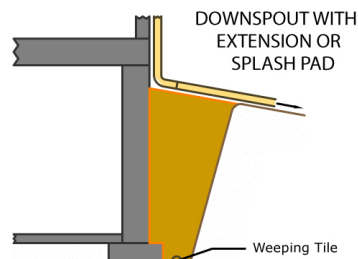
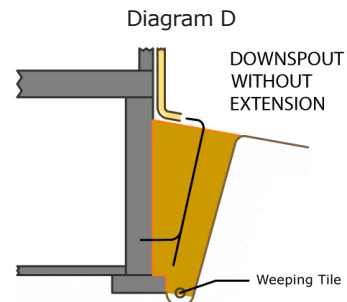
If your house has a sump pump that isn't connected to the municipal storm sewer, the outlet pipe should discharge onto a splash pad in your yard to minimize the risk of water flowing back down the foundation wall and overloading the system.



Watering plants and shrubs adjacent to the foundation should be limited to the minimum amount required to sustain the plants.

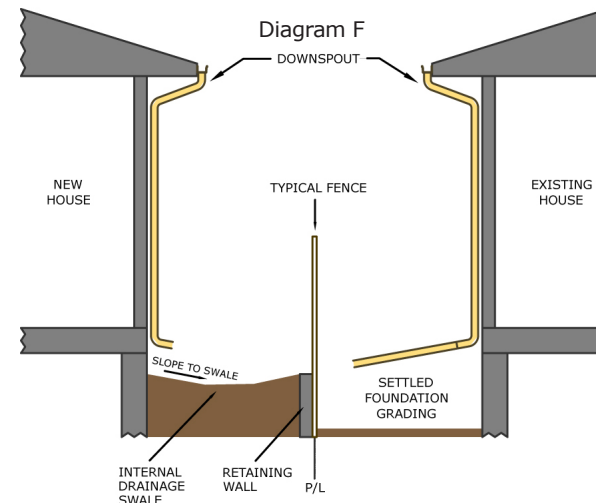
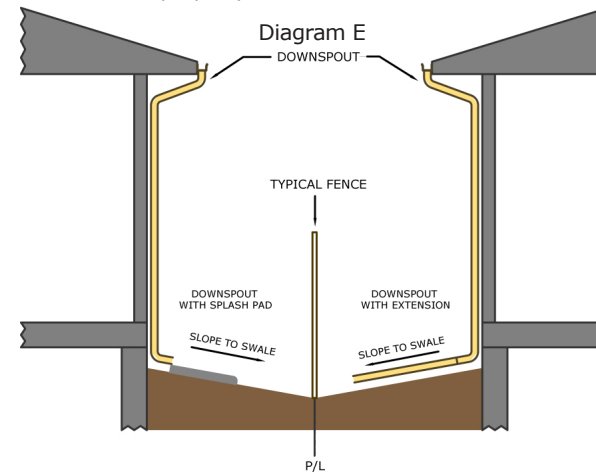
Eavestroughs and Downspouts

Stormwater collected by the eavestroughs is channeled to the ground through the downspouts. This results in a concentration of flow at the discharge points that can be substantial. To protect your home as well as your neighbours' homes, downspout extensions should project past the backfill zone by approximately 1.2 metres, but must not discharge onto adjacent property (see diagram D). If possible, downspouts should be angled at 45 degrees towards the property line. Eavestroughs should be cleaned and inspected regularly to ensure unrestricted water movement with no overflows. Downspout extensions or splash pads minimize foundation zone saturation, which can otherwise increase the risk of water entering the basement (infiltration flooding), or frost heaving any adjacent sidewalks, driveways and/or decks.



Swales

Swales are shallow, sloped surface depressions that convey stormwater and groundwater to a public right-of-way. Typically, property line swales are shared by adjacent properties, and serve to provide surface drainage for both lots (see Diagram E). Internal swales may also be present on the lot and must also be maintained by the homeowner (see Diagram F). Settlements or blockages in drainage swales become obvious during rain events but are relatively easy to fix with the addition of soil or the removal of a blockage. Consultation with adjacent property owners is advised when considering repairs to a common property line swale.



Maintenance Checklist

The maintenance inspection should include all aspects of surface drainage and any potential impact on adjacent properties.

- Ensure downspouts discharge to the ground surface past the backfill zone but no closer than 150 mm (6") to the property line.
- Ensure positive slope exists away from the foundation walls for a distance of at least two metres. 10% is a good target to try to achieve. This means 6" higher at the foundation than a spot 60" away from the foundation (see Diagram D).
- Make sure drainage swales convey water off the lot without impacting adjacent properties. Periodic adjustments may be required as the ground settles over time.
- Ground under steps, decks and build-outs are very susceptible to settling as water doesn't reach these areas, and the clay naturally dries out quicker. Ensure these areas are checked regularly and properly backfilled as needed.
- Window wells should be kept free of debris to ensure efficient drainage.
- Eavestroughs should be cleaned in the spring and fall to ensure unobstructed water flow off the roof and away from the foundation.
- Seal any cracks or separations between sidewalks and foundation walls with a flexible exterior caulking.

