



LOT GRADING

GUIDELINES FOR LOW DENSITY RESIDENTIAL PROPERTIES

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LOT GRADING GUIDELINES

LOW DENSITY RESIDENTIAL PROPERTIES

Introduction

The Lot Grading Certificate Program came into effect on March 9, 2009. All lots zoned low density residential must be graded in accordance with an approved Overall Lot Grading Plan.

Definitions:

Lot Grading

Lot grading is the reshaping or sloping of the land in such a way that surface drainage from rainstorms, snowmelt or groundwater is directed away from the buildings and is controlled in a manner that eliminates or minimizes the impact on adjacent properties.

Overall Lot Grading Plan

Overall Lot Grading Plans are part of the approval process for residential properties. The plans are required for all new developments. Overall Lot Grading Plans specify design elevations, surface gradients, lot types, swale locations and other drainage information required for lot grading. An Overall Lot Grading Plan establishes the drainage relationship between adjacent properties and its approval is an effective basis for the control of lot grading.

Lot Grading Certificate (Plan of Certification of as-built grades)

A lot grading certificate is a plan that complies with requirements set out in the Lot Grading Guidelines, duly signed and certified by a registered Alberta Land Surveyor, Professional Engineer or Architect as accurately representing the existing surface elevations and surface grades of a lot.

Purpose

The purpose of lot grading is to provide good drainage away from buildings for the benefit of property owners. The purpose of the Lot Grading certificate Program is to regulate lot grading and surface drainage requirements within private properties and Town right-of-ways.

LOT GRADING APPROVAL PROCEDURE

The Lot Grading Approval Procedure is usually done in two stages. The Rough Grade Stage is generally the responsibility of the homebuilder and the Final Grade Stage is generally the responsibility of the homeowner. It is the builder's responsibility to ensure that the downspouts (roof leaders) and the sump discharge are draining correctly.

Rough Grade Stage

This stage includes backfilling the foundation walls and shaping of the lot to conform to the approved Overall Lot Grading Plan within acceptable tolerances before final landscaping is carried out (see acceptable tolerances Page 6). The Rough Grade Approval Procedure should occur within **12 months of the issuance of a building permit for a lot or before occupancy of the home.**

Rough Grade Approval Process

- 1) The builder has the lot surveyed by an Alberta Land Surveyor, Professional Engineer or registered Architect who then prepares a Lot Grading Certificate (Plan of Certification of As-built Grades).
- 2) The Lot Grading Certificate is submitted to the Town of Stony Plain, Planning and Infrastructure department.
- 3) A Lot Grading Inspector conducts a site inspection to verify that the lot is graded in accordance with the approved Lot Grading Plan.
- 4) An Inspection Report is sent to the builder, indicating that the Rough Grade has been approved or that deficiencies exist.
- 5) If deficiencies exist, the builder must correct the deficiencies within 60 days and notify Planning and Infrastructure for a re-inspection. If the lot grading inspector has requested a re-submission of a Lot Grading Certificate to verify corrections or to provide additional information, a re-inspection cannot occur until receipt of the new Lot Grading Certificate.
- 6) When the Rough Grade is approved, the builder and the property owner are both notified.

Final Grade Stage

This stage must be initiated by the homeowner within one year of the Rough Grade Approval. The rough grade has been left approximately 10 to 20 cm below final grade for topsoil placement. The topsoil should be smoothly spread out, compacted and ready for sod, liners, rocks, etc. If rocks, wood chips or other decorative material is planned, the clay base (rough grade) must be raised to final grade before placing the decorative material. Rock or wood chips do not make up the 10 to 20 cm of final grade, since surface water can flow through those materials.

The owner of a lot adjacent to a lake (Stormwater Management Facility), walkway or ravine must comply with the terms and conditions of any registered easement, right-of-way, caveat or restrictive covenant registered in favor of the Town of Stony Plain.

Final Grade Approval Process

- 1) The homeowner has the lot surveyed (on sod or topsoil) by an Alberta Land Surveyor, Professional Engineer or Registered Architect who prepares a Lot Grading Certificate (Plan of Certification of As-built Grades).
- 2) The Lot Grading Certificate is submitted to the Town of Stony Plain, Planning and Infrastructure. The homeowner must provide information on their preferred method of contact to receive a Lot Grading Inspection Report. The methods are: fax, e-mail or mail.
- 3) A Lot Grading Inspector conducts a site inspection to verify that the lot is graded in accordance with the approved Overall Lot Grading Plan.
- 4) An Inspection Report is sent to the homeowner, indicating that the Final Grade has been approved or that deficiencies exist.
- 5) If deficiencies exist, the homeowner must correct the deficiencies within 60 days and notify Planning and Infrastructure for a re-inspection. If the lot grading inspector has requested a re-inspection of a Lot Grading Certificate to verify corrections or to provide additional information, a re-inspection cannot occur until receipt of the new Lot Grading Certificate.
- 6) When the Final Grade is approved, the owner will be sent an approval report and a copy of the Lot Grading certificate.

Lot Grading Inspection Fees

A lot grading inspection fee of \$120.00, paid at the time the building permit is issued, covers the cost of rough and final grade inspections for low density residential housing.

LOT GRADING REQUIREMENTS

The following requirements must be met prior to the issuance of Rough or Final Grade Approval. Any requirements that are not met will be marked as deficiencies on the Lot Grading Inspection Report.

Site Servicing

Each property must dispose of water from the downspouts and the sump discharges in the manner specified by the site servicing requirements.

- Surface Drainage: downspout extensions or splash pads must be placed under the downspouts and the sump discharge.
- Foundation Service: the sump discharge outlet pipe must be connected to the service.

Design Grades

Approved Overall Lot Grading Plans have proposed design grades at specific locations for each lot. The Lot Grading Certificate has as-built elevations taken at the same locations.

Acceptable as-built tolerances (from design grades)

Rough Grade:

- **Between 10 cm and 20 cm below final grade for clay**

Example: Design Grade 682.25m, Existing Grade 682.10m = 15cm below design grade.

Final Grade:

- **Between 0 cm and 10 cm below final grade for topsoil (black dirt)**

Note: "0" is at approved design grade.

Example: Design Grade 682.25m, Existing Grade 682.20m = 5 cm below design grade

- **Between 10 cm above or below final grade for finish landscaping (sod, concrete)**

Example: Design Grade 682.25m, Existing Grade 682.30m = 5 cm above design grade.

Note: At Final Grade, the surface elevation **below** decorative rock, washed rock or wood chips, must be within tolerance.

- The Lot Grading Inspector has the discretion to accept elevations that are not within tolerances when the following conditions occur:
 - The landscaping is graded to match an existing fence, walkway, lake, park, curb, sidewalk, road or lane and there is no impact on the surface drainage.
 - The landscaping is graded to match an adjacent property and it appears to the Lot Grading Inspector that there is positive on-site surface drainage.
 - A proposal is submitted by the design engineer to revise the design elevations on the approved Overall Lot Grading Plan to existing elevations, providing that there is no negative impact on surface drainage and any affected property owners agree to the revision.

Minimum Grade from Foundation walls

A sloped surface is required to effectively drain water away from foundation walls, including areas under steps and decks. This will greatly reduce the risk of surface water entering the basement during rainfalls and snowmelt.

- Minimum grade requirements
 - 10% for the first 2.0 m – Minimum 20 cm drop for final landscaping.
 - 0.75% for concrete, asphalt or other impervious surface treatment

Drainage Swales

Drainage swales are shallow sided, sloped ditches intended for the conveyance of surface runoff. Grading of swales should be in accordance with the approved Overall Lot Grading Plan. Drainage swales are usually located on the common property lines and lots that drain from rear to front. Swales on a common property line must provide a minimum of 15 cm of unobstructed width within each property. Swales convey surface runoff to the nearest street, lane, dry pond or storm water management facility. Due to topography of some neighborhoods, approved lot-to-lot drainage may occur. On some lots, an easement or right-of-way is registered to allow for the construction of a concrete or a grass drainage swale. Easements are shown on the approved Lot Grading Plan and must be displayed on the Lot Grading Certificate.

- Minimum swale slope requirements for drainage swales
 - 1.5% for a grass drainage swale
 - 0.75% for a concrete drainage swale

Backfill at Back of Concrete Walks or Paved Lanes

To reduce water infiltration into the granular base of concrete walks and paved lanes, non-granular backfill must be placed to the top (the surface) of the concrete or asphalt. This will enhance the long term performance of the walk or lane by preventing water infiltration through the granular base.

Downspouts

The downspouts must have an elbow and a hinged extension or concrete splash pad. The downspout elbow should be directed away from the foundation walls toward the drainage swale along the common property line. Downspout extensions or splash pads must not project past the property line. Hinged downspout extensions are acceptable provided they do not extend on to adjacent property.

Minimum distance from property line:

- 15 cm from an adjacent private property
- 30 cm from an adjacent Town property

Splash Pads

Splash pads convey roof water and groundwater past the foundation excavation zone and away from the foundation walls. They minimize soil erosion and recycling of water through the foundation drainage system. The recommended standard concrete splash pad is 30 cm x 107 cm.

- Where direct connections to a Storm or a Foundation sewer service are not available , splash pads are to be placed:
 - Underneath all downspouts draining onto soft landscaping (sod, topsoil and/or gravel)
 - Underneath the sump pump discharge outlet where it is draining onto soft landscaping (sod, topsoil and/or gravel).

LOT GRADING CERTIFICATES

Where there is an approved Overall Lot Grading Plan, a Lot Grading Certificate is required for an approval of Rough and Final Grade. For in-fill development, where there is no approved Overall Lot Grading Plan, submission of either a rough or final grade certificate is required to validate that the grading meets the requirements of the Lot Grading Guidelines.

Lot Grading Certificates for Rough and Final Grade display the following information:

- Certification by an Alberta Land Surveyor, Professional Engineer or a Registered Architect
- Name of the Company that produced the Certificate.
- Property Information: Legal Description and Municipal Address
- Surface Condition of the Lot: i.e. Clay, Topsoil, Sod, or Landscaped
- Note indicating that the Grading is subject to the approval of the Local Authority
- Design and existing elevations referenced to geodetic datum, **with an asterisk designating existing elevations that exceed the grade tolerance**
- As-built elevations of structures such as: retaining walls, sidewalks, driveways, fences
- As-built elevations of the adjacent property, if landscaped, at the design elevation locations
- Foundation grade elevations with an additional elevation 2-3 meters from the back of the house
- As-built property line (swale) elevations opposite the corners of the building, for locations that are more than 3 meters from a design point
- Elevation of as-built high point on split grade lots, if location is different from the design
- Date of Survey
- Scale of Drawing
- House Layout

- North Arrow
- Drainage Easements and Right-of Ways
- Detailed Surveys of lake lots require the location and elevation of structures or features within the Maintenance and Overflow Area
- Lot Orientation is portrait, with the rear of the lot at the top of the page and the “Front” of the lot labeled
- Name of the applicant and the information required to send inspection reports or grading approval i.e. Mail, fax number or e-mail address

Lake, Ravine or Top of Bank Lots

Properties located adjacent to Stormwater Management Lakes, ravines or top of banks that have a right-of-way, easement or restrictive covenant registered in favor of the Town of Stony Plain, require the Lot Grading Certificates to display the location and elevation of all features constructed within the affected area. Features to note include: decks, fire-pits, ponds, paths, bridges, retaining walls, buildings, raised gardens or unusual grade alterations. Inclusion of these details will enable Planning and Infrastructure to evaluate the impact these features have on drainage and water storage requirements. This information must be included on the Lot Grading Certificate prior to the request for an inspection or re-inspection.

Sprinkler Systems

Irrigation systems, an automatic or manually operated system of pipes and sprinkler heads or drip hoses installed in place to supply moisture to the ground, are prohibited on any slope.

Extreme Grade Differential

Lot Grading with substantial grade differences, from the side of the house to the rear of the house, can occur on Walk-Out basements. Grading for these homes may require a retaining wall or some form of stabilization at the transition point at the rear corner(s) of the house. The grading of the drainage swale down the common property line follows the approved overall lot grading plan for this area. The first property that is graded within tolerance sets the precedence for the adjacent properties to match (with or without grade separation). This situation can occasionally occur on non walk-out lot types as well.

Lot Grading Maintenance

Once Final Grade Approval has been issued, it is the property owner’s responsibility to maintain the surface grading in perpetuity. The Town of Stony Plain may, at any time, require maintenance on the surface grading if alterations or settlements result in surface drainage problems.

IN-FILL HOUSING

Grading Approval and Lot Grading Certificates are a requirement for in-fill developments.