



LOT GRADING

*GUIDELINES FOR
COMMERCIAL, INDUSTRIAL, INSTITUTIONAL,
MEDIUM AND HIGH DENSITY
RESIDENTIAL PROPERTIES*

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LOT GRADING GUIDELINES

COMMERCIAL, INDUSTRIAL, INSTITUTIONAL, MEDIUM AND HIGH DENSITY RESIDENTIAL PROPERTIES

Introduction

The Lot Grading Certificate Program came into effect on March 9, 2009. All land zoned Commercial, Industrial, Institutional, Medium and High Density Residential are to 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

An Overall Lot Grading Plan (herein referred to as Lot Grading Plan) is part of the approval process for Commercial, Industrial, Institutional, Medium and High Density Residential properties. The plans are required for all new developments. Lot Grading Plans specify design elevations, surface gradients, lot types, swale locations and other drainage information required for lot grading. A 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

Lot Grading Plan Approval Process

Upon application for a development permit for any land zoned Commercial, Industrial, Institutional, Medium and High Density Residential the developer will submit a proposed Lot Grading Plan to Planning and Infrastructure.

- Proposed Lot Grading Plan Requirements:
 - A scale drawing of the property in metric units, designed by an Alberta Land Surveyor, Professional Engineer or Registered Architect.
 - Existing surface elevations, contours and surface grades of the property based on geodetic datum.
 - Proposed geodetic surface elevations at the property corners and at intervals around the perimeter of the property.
 - Proposed geodetic surface elevations adjacent to the foundation walls or concrete slab-on-grade for each proposed building.
 - Proposed direction of surface drainage flow, indicated by arrows.
 - Proposed surface conditions. Ex: Sod, Asphalt, Concrete, Gravel.
 - Provisions for accommodating overland flows from adjacent undeveloped lands.
 - Private storm drainage system.
 - Information referring to Geotechnical Reports produced by a Geotechnical Engineer when unusual or special requirements are needed.
 - Property Information: Legal description, subdivision or neighborhood, property address or road names and north arrow.
 - Property Information: Project Name, applicant information, development boundary, revision box, legend, notes.
 - Space near the bottom right hand corner of the plan for the Approval Stamp.
- When the proposed Lot Grading Plan has been reviewed, the applicant will be notified if the plan is approved or if revisions are required. If revisions are to be made, a list will be sent to the applicant to have the design engineer address the comments and re-submit the revised Lot Grading Plan for further review.
- Once approved, the Lot Grading Plan will be stamped and signed and returned to the applicant. This approved plan will then become the approved Lot Grading Plan for the site.

Lot Grading Inspection Fees

The Lot Grading Inspection Fee for Medium and High Density Residential Properties is \$200.00 plus an additional \$50.00 for each residential or commercial unit on the first level. A lot grading inspection fee of \$200.00 per hectare will be assessed for Commercial, Industrial and Institutional Properties. Fees are collected on application for the building permit.

Lot Used for	Lot Grading Inspection Fee
Medium and High Density Residential Properties	\$200.00* plus \$50.00 for each residential or commercial unit on the first level.
Commercial, Industrial and Institutional Properties	\$200.00 per hectare, subject to a minimum of \$200.00

*The indicated lot grading fee is payable for each separate Building Permit application.

Grading Approval Process

The Town of Stony Plain's grading approval process applies to Final Grade only.

In application for a Final Grade Approval for any land zoned Commercial, Industrial, Institutional, Medium and High Density Residential, the developer, contractor, builder or owner will submit an AS-Built Lot Grading Plan to Planning and Infrastructure.

- As Built Lot Grading Plan Requirements:
 - Scale drawing of the property on metric units certified by an Alberta Land Surveyor, Professional Engineer or registered Architect.
 - All proposed surface elevations and surface grades shown on the approved Lot Grading Plan.
 - As-Built surface elevations and surface grades, measured from geodetic datum, at the same points and locations as the proposed surface elevations and surface grades.
 - As-Built surface elevations adjacent to the foundation walls and concrete slab-on-grade for each proposed building.
 - As-Built surface conditions. Ex: Sod, Asphalt, Concrete, Gravel.
 - As-Built provisions for accommodating overland flows from adjacent undeveloped lands.
 - Property Information: Legal description, subdivision or neighborhood, property address or road names and north arrow.
 - Property Information: Project Name, applicant information, development boundary, revision box, legend, notes.

As-built information is best displayed on a copy of the Approved Lot Grading Plan.

- Planning and Infrastructure will send a Lot Grading Inspector to conduct an inspection to ensure that the property is graded in accordance with the approved Lot Grading Plan.
- A detailed Lot Grading Inspection Report will be sent, indicating the locations of deficient grading and in Multiple Family Projects, the units that are accepted. Accepted units will not be re-inspected.
- If deficiencies exist, the developer, contractor, builder or owner must correct the deficiencies within 60 days and notify Planning and Infrastructure for a re-inspection. When the Lot Grading Inspector finds that the lot grading is satisfactory, Final Grade Approval is issued.

Final Grade Approval is issued when the AS-Built Lot Grading is stamped, signed and dated by the Lot Grading Inspector.

LOT GRADING REQUIREMENTS

All properties shall provide private drainage systems for stormwater runoff from roofs, parking areas, paved areas, courtyards and side-lots. All surface drainage for Commercial, Industrial, Institutional, Medium and High Density Residential properties must be controlled within the site.

Surface Elevations (Design Grades)

Approved 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 the approved grades:

- **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: For decorative rock, washed rock or wood chips, the surface elevation below that material 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 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 and Concrete Slab-on-Grade

A sloped surface is required to effectively drain water away from foundation walls and concrete slab-on-grade buildings. This also includes areas under steps and decks. This will greatly reduce the risk of surface water entering Commercial, Industrial, and Institutional buildings and the basements of High Density Residential buildings 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. They are located between or around buildings and are graded to intercept and convey surface runoff to the nearest on-site catch basin, thus preventing lot-to-lot drainage.

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

Downspouts

Downspouts (roof leaders) carry roof water from eave troughs to the drainage swales or directly to the on-site storm sewer service. If the downspout is discharging to the ground, then the downspout must have an elbow and a hinged extension or concrete splash pad. The downspout elbows should be directed away from the foundation walls towards the drainage swales. Downspouts extensions or splash pads must not project past the property line. Hinged downspout extensions are not recommended as they are easily damaged or left in the up position. However, hinged extensions are acceptable provided they do not extend on to adjacent property.

Sump Pump Discharge

The sump pump discharges groundwater from the weeping tile to the drainage swales or directly to the on-site storm sewer service. If the sump pump discharges to the ground, then it is important to provide a splash pad or flexible hose at the discharge point. This minimizes soil erosion at the foundation wall and the re-

circulation of the groundwater back to the weeping tile. The flexible hose or splash pad should be directed to the drainage swales and not onto an adjacent property. The sump pump discharge hose should be disconnected during the winter months to prevent freezing in the hose.

Splash Pads

Splash pads convey roof water and groundwater away from the foundation walls and concrete slab-on-grade buildings. 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 sewer 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).

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, but are not limited to: 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 the functionality of drainage requirements. This information must be included on the As-Built Lot Grading Plan prior to the request for an inspection or re-inspection.

Sprinkler Systems

Irrigation systems, consisting of a permanent system of pipes and sprinklers or drip hoses are prohibited on any slope.

Lot Grading Maintenance

After Final Grade Approval has been issued, it is the property owner's responsibility to maintain the surface grading to the standards established at the time of Final Grade Approval, 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.