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Drainage Bylaw 18093 came into effect on January 1, 2018, replacing Drainage Bylaw 16200. This Bylaw requires that all single family, semi-detached, and row-house residential properties are graded in accordance with an approved Lot Grading Plan or Infill Lot Grading Plan.

**Definition**

Residential Lot Grading is shaping and grading the land to direct surface runoff away from buildings and towards a City right-of-way (lane or street).

**Purpose**

The purpose of lot grading is to provide control of stormwater runoff with slope down and away from buildings on private property toward public land. The Drainage Bylaw, approved Grading Plans and the required inspection process and approval by the City Manager on all new developments allow the City to regulate this control.

**Lot Grading Plans**

Lot Grading Plans have been part of the development approval process for residential properties since 1989. They are required for all new developments and are approved by the City of Edmonton. Lot Grading Plans specify design elevations, surface gradients, lot types, swale locations, and other drainage related information required for lot grading. A Lot Grading Plan establishes the grading relationship between abutting properties and its approval is an effective basis for the control of surface runoff.

*Due to the topography of most neighbourhoods, approved lot-to-lot drainage will often occur.*
Compliance with Encumbrances

As per Drainage Bylaw 18093 and EPCOR Drainage Services Bylaw 18100, property owners must comply with the terms and conditions of any restrictive covenant, easement agreement, utility right-of-way, or any other document that is registered on the certificate of title for their property. With regard to lot grading, these encumbrances are intended to protect ravines, natural areas, structures, ditches, swales, overflow areas, or other drainage features like Stormwater Facilities. Such encumbrances are usually in the form of Right-of-Ways, Easements, and Restrictive Covenants and can be obtained from a licensed registry agent or Government of Alberta Spatial Information System (sign in with an account or as a guest). Any and all such encumbrances should be checked prior to planting, grading, or building in these locations.

**NOTE:** No person shall install, or permit to be installed, any water retention structure or irrigation system on any slope unless the installation has been approved under Bylaw 18093.

Lot Grading Inspection Fees

The lot grading inspection fee is collected at the Development Permit application covers the cost of the first two rough grade and first two final grade inspections for single detached and semi-detached (duplex and row housing). Current inspection fees are found on the [lot grading fees](#) and fee listing websites, and in [Drainage Bylaw 18093](#).

Documentation

- Drainage Bylaw 18093
- EPCOR Drainage Services Bylaw 18100
- City of Edmonton Design and Construction Standards Volume 3 Drainage
- Alberta Building Code
LOT GRADING
APPROVAL
PROCEDURE

Lot Grading Inspectors will inspect properties for two stages of Lot Grading Approval: Rough Grade and Final Grade. Please note that lot development, including buildings, concrete driveways, and walkways, must be completed before applying for grading approval.

Split and rear-to-front drainage

Typical ‘split’ surface drainage design

Typical ‘rear-to-front’ surface drainage design

Rough Grade Stage

The property owner is responsible for ensuring that Rough Grade is approved. Your home builder may have completed this process for you. This stage includes backfilling the foundation walls with material native to the site (or equivalent) and shaping of the lot to conform to an approved Lot Grading Plan within acceptable tolerances. The Rough Grade should be approved within 18 months of the issuance of a building permit for a lot.

These grade stakes indicate the design elevations for final grade. Acceptable Rough Grade elevations are typically 7 to 20 cm below the final grade elevations identified on the Lot Grading Plan.
LOT GRADING GUIDELINES Residential Properties

LOT GRADING APPROVAL PROCEDURE (CONT.)

ROUGH Grade Approval Procedure

1. The applicant has a Lot Grading Certificate prepared by an Alberta Land Surveyor.

2. The Lot Grading Certificate is then submitted to the City of Edmonton for approval. The applicant must provide information for their preferred method of contact (fax, email, or mail) to receive a Lot Grading Inspection Report.

3. A Lot Grading Inspector will conduct a site inspection to verify that the lot is graded in accordance with the approved Lot Grading Plan and Drainage Bylaw 18093. The inspection is usually done within 5 working days of the certificate being processed, depending on workload and weather conditions.

4. The applicant will receive an Inspection Report indicating whether the Rough Grade has Passed (approved) or Failed (deficiencies exist).

5. If the Inspection Report indicates a failure, it will identify the deficiencies and their locations. Please note, deficiency items are labeled “left,” “right,” “front,” and “back.” The “front” of a lot is typically determined when facing the property from the City street. In the case of a corner lot, the front property line is the shortest of the two that abut the City street.

6. The builder must correct any deficiencies within 60 days (unless otherwise noted) and call 311 to arrange for a reinspection. A reinspection fee is required on any subsequent failed inspections. If resubmission of a Lot Grading Certificate is indicated, reinspection cannot occur until a new Lot Grading Certificate is received.

7. The applicant and property owner will both be notified when the Rough Grade is approved. This approval is based on the site conditions observed at the time of the lot grading inspection.

Regardless of who applies for grade approval, the Drainage Bylaw 18093 states that the Property Owner is ultimately responsible for all activities and approvals related to his or her property.

Lot Grading Certificate is received.

Rough Grade has been completed in the backyards of these two lots.
LOT GRADING
APPROVAL
PROCEDURE (CONT.)

Final Grade Stage

The property owner is responsible for Final Grade. This stage must be completed within:

+ **12 months** of the Rough Grade Approval;
+ **60 days** of the final grading being completed; or
+ **30 months** of the building permit being issued for the premises.

The property owner can choose to bypass the rough grade inspection and go directly to final grade.

Acceptable rough grade elevations are typically established 7 to 20 cm below the final grade elevations identified on the Lot Grading Plan in order to accommodate the placement of topsoil and landscaping. The topsoil should be smoothly spread out, compacted, and ready for sod, liners, rocks, etc.

If rocks, wood chips, or other porous decorative material is planned for use in the final landscaping, the underlying clay base (rough grade) must be raised to final grade elevations before laying this material. Rocks or wood chips cannot make up for the 7 to 20 cm of final grade because surface water can flow through those materials.

We advise landscape contractors to avoid placing these materials at the design and typical as-built locations to enable the surveyors to obtain accurate information. As-built elevations provided on bark or rock may be subject to recertification to validate drainage functionality and conformance with design tolerance. See page 27: Recertification.
LOT GRADING GUIDELINES Residential Properties

LOT GRADING APPROVAL PROCEDURE (CONT.)

1. The owner arranges for a Lot Grading Certificate to be prepared by a qualified professional (i.e. an Alberta Land Surveyor).

2. The Lot Grading Certificate is then submitted to the City of Edmonton for approval. The property owner must provide information for their preferred method of contact (fax, email, or mail) to receive a Lot Grading Inspection Report.

3. A Lot Grading Inspector will conduct a site inspection to verify that the lot is graded in accordance with the approved Lot Grading Plan, Guidelines and Drainage Bylaw 18093. The inspection is usually done within 5 working days of the certificate being processed, depending on workload and weather conditions.

4. The property owner will receive an Inspection Report indicating whether the Final Grade has Passed (approved) or Failed (deficiencies exist) the inspection.

5. If the Inspection Report indicates a failure, it will identify the deficiencies and their locations. Please note, deficiency items are labeled “left,” “right,” “front,” and “back.” The “front” of a lot is typically determined when facing the property from the City street. In the case of a corner lot, the front property line is the shortest of the two that abut the City street.

6. The property owner must correct any deficiencies within 60 days (unless otherwise noted) and call 311 to arrange for a reinspection. A reinspection fee is required on any subsequent failed inspections. If resubmission of a Lot Grading Certificate is required (as indicated on the inspection report), reinspection cannot occur until a new Lot Grading Certificate is received.

7. The property owner will receive an approval report and the Lot Grading Certificate when Final Grade is approved. This approval is based on the site conditions observed at the time of the lot grading inspection.
LOT GRADING REQUIREMENTS FOR ROUGH AND FINAL GRADE APPROVAL

Site Servicing

Each property must dispose of water from the roof and the foundation drainage systems in the manner specified by the EPCOR site servicing requirements:

+ **Foundation Service**: weeping tile systems must be discharged to a foundation sewer service

+ **Storm Service**: downspouts and the weeping tile system must be discharged to a storm sewer service

**NOTE**: Storm service riser pipes must be extended above final grade elevation.

For more information about site servicing requirements, contact EPCOR Water and Sewer Servicing at 780–496–5444 or email wass.drainage@epcor.com.
LOT GRADING REQUIREMENTS FOR ROUGH AND FINAL GRADE APPROVAL (CONT.)

Design Grades

Approved Lot Grading Plans identify design grades at specific, discrete locations for each property and the Lot Grading Certificate identifies as-built elevations taken at the same specific locations as well as additional locations (see certificate requirements on pages 25–26). Grading for common property and internal swales must be consistent from design point to design point without obstructions or low areas while maintaining a minimum consistent 1.5% slope.

Acceptable as-built tolerances (from design grades):

ROUGH GRADE:

+ Between 7 cm and 20 cm below final grade for clay
  Example: Design Grade 682.25 m; Existing Grade 682.10 m = 15 cm below design grade.

FINAL GRADE:

+ Between 0 cm to 10 cm below final grade for topsoil – NOTE: (“0 cm” is approved design)
  Example: Design Grade 682.25 m; Existing Grade 682.20 m = 5 cm below design grade.

+ Between 10 cm below to 10 cm above final grade for finished landscaping (sod, concrete)
  Example: Design Grade 682.25 m; Existing Grade 682.30 m = 5 cm above design grade.

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

+ The Lot Grading Inspector has the discretion to accept elevations that are not within tolerance when:
  + a lot is graded to match the existing walkway, lake, park, curb, sidewalk, road, or lane while maintaining a positive surface runoff.
  + a lot is graded to match an abutting property and has proper on-site surface runoff (sloping away from the property) that also works with the abutting property.
**LOT GRADING REQUIREMENTS FOR ROUGH AND FINAL GRADE APPROVAL (CONT.)**

*Minimum Grade from Foundation Walls and Concrete Slab-on-Grade Buildings*

A sloped surface is required to effectively drain water away from the foundation walls, including areas under steps and decks.

Refer to the Lot Grading Detail Drawings for more information:
[www.edmonton.ca > residential & neighbourhoods > lot grading > drawings](http://www.edmonton.ca)

+ **Minimum grade requirements:**
  + 10% for 2 metres – Minimum 20 cm drop for soft surface / landscaping (i.e. clay, topsoll, or sod).
  + 5% for the first 2 m (slab-on-grade) – Minimum 10 cm drop for final grade on soft landscaping.
  + Minimum 15 cm drop for a side yard less than 1.5 metres for both soft and hard surface grading/landscaping.
  + 0.75% for hard surface or other impervious surface treatment (i.e. concrete or asphalt), provided a minimum 15 cm drop occurs between the building and a drainage swale.

*Foundation grading directs surface runoff away from buildings where it is conveyed towards a right-of-way via common property drainage swales.*

*Foundation grading slopes towards the common property drainage swale*

*Slope away from the foundation wall below a future deck*
LOT GRADING GUIDELINES Residential Properties

LOT GRADING REQUIREMENTS FOR ROUGH AND FINAL GRADE APPROVAL (CONT.)

Drainage Swales

Swale: a shallow, sloped linear depression (a shallow ditch) for conveyance of surface runoff towards a City right-of-way (lane or street).

Swales are often wet.

Minimum slopes for drainage swales
+ 1.5% for a grass drainage swale
+ 0.75% for a concrete drainage swale

Internal and common property drainage swales must provide a minimum unobstructed width of 15 cm within each property and a minimum depth of 10 cm and a minimum 1.5% slope to direct surface runoff towards a City right-of-way.

Shared drainage swales (detail A) are located between abutting properties. The grading of the common property drainage swale must allow for a 10% slope from the foundation walls of adjacent houses and must provide drainage functionality for both properties.

Zero Lot Line properties developed in subdivisions have an internal swale in between the homes along with a 1.5 m Easement registered on title and design elevations as per Lot Grading Plan.

Internal side-yard swales (detail B) are built in locations where a common property drainage swale cannot be constructed due to inadequate foundation grading on an abutting property such as for Infill Development (see page 32).
LOT GRADING GUIDELINES Residential Properties

LOT GRADING REQUIREMENTS FOR ROUGH AND FINAL GRADE APPROVAL (CONT.)

Internal rear-yard swales are located in the backyards of lots in order to drain the rear portion of the yard. A rear internal swale is created where the forward slope of the lot meets the rearward slope of the foundation grading or where the slope away from a detached garage meets the slope away from the main building. A rear internal swale* conveys surface runoff to the side-yard swales where the water will drain towards a City right-of-way.

Grade contractors are encouraged to indicate the high point on the rear internal swale in order to guide the surveyors and enable them to locate and provide meaningful as-built elevations for the rear internal swale.

*see Typical ‘rear-to-front’ surface drainage design drawing on page 6 to view an example of a rear internal swale.
LOT GRADING REQUIREMENTS FOR ROUGH AND FINAL GRADE APPROVAL (CONT.)

Stormwater conveyance is evident after a light rainfall.

Stormwater created a prominent track in this common property drainage swale.

Any features must have a minimum 15 cm space within the property line for a drainage swale.

A sidewalk location must provide 15 cm within the property for a common property drainage swale.
Placing decorative gravel directly on the Rough Grade Level creates a place for unacceptable ponding on the common property drainage swale.

Placing soil to match the Finish Grade Level prior to placing the decorative gravel minimizes or eliminates unacceptable ponding on the common property drainage swale.
LOT GRADING REQUIREMENTS FOR ROUGH AND FINAL GRADE APPROVAL (CONT.)

This rough grade base has been raised to match the final grade before placing decorative rock. Ponding will potentially be minimized.

String-line guides used to create consistent minimum 1.5% slope on grass and topsoil swales

A concrete common property drainage swale between buildings
Right-of-ways and Easements for Drainage Swales

Major drainage swales are often constructed on private properties in an easement or a right-of-way. These are indicated on a Lot Grading Plan and are Registered on Title.

Examples of grass drainage swales developed and is registered as a Drainage Easement on private property.

Concrete swale in drainage easement right-of-way

Concrete swale with a catch basin and temporary sediment control
Backfill at Back of Concrete Walks or Paved Lanes (Rough Grade only)

To reduce water infiltration into the granular base of concrete walks and paved lanes, non–granular material must be laid on top of the concrete walk or asphalt. This material will enhance the long term performance of the walk or lane by minimizing water infiltration into the granular base of the structure.
LOT GRADING REQUIREMENTS
FOR ROUGH AND FINAL GRADE APPROVAL (CONT.)

Downspouts

The downspout must have an elbow with an extension or a concrete splash pad to convey surface runoff past the foundation excavation zone. The elbow and extension should be directed away from the building and towards a drainage swale.

Sump Pump Discharge

The sump pump is part of the building’s foundation drainage system and has been a requirement since 1988.

Since 2006, all new developments involving single detached, semi-detached, or duplex houses must provide “Foundation Drain Discharge Collection Systems.” These properties must connect the foundation drainage system to a foundation service.

The sump pump discharges subsurface water collected from the weeping tile directly to a Storm or Foundation Sewer service. For properties developed prior to 2006, if the sump pump discharges to the surface it is important to provide a splash pad at the discharge point. The splash pad minimizes soil erosion and prevents recirculation of subsurface water down the foundation wall and back into the weeping tile system. The splash pad should be directed to drain towards a drainage swale. If a sump pump discharge hose is used to discharge the water away from the foundation, it should be disconnected in the winter to prevent freezing in the hose.
LOT GRADING REQUIREMENTS
FOR ROUGH AND FINAL GRADE
APPROVAL (CONT.)

1988 - 2005 sump pump discharges to the surface

After 2006, sump pumps discharge to a downpipe
(foundation service riser pipe).

The sump pump discharge pipe connects to
the foundation service riser pipe.

Installation of Storm and Foundation
Service before backfilling.
Splash Pads

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

If a direct connection to a Storm or a Foundation Service is not available, splash pads should be placed:

+ beneath all downspouts draining onto soft landscaping (sod, topsoil, or mulch) or

+ beneath the sump pump discharge outlet where it is draining onto soft landscaping (sod, topsoil, or mulch).
LOT GRADING REQUIREMENTS FOR ROUGH AND FINAL GRADE APPROVAL (CONT.)

Downspout and Foundation Drainage
Surface Discharge Requirements

Discharge points must be located within the property a minimum distance of:

+ 15 cm from an abutting private property
+ 30 cm from an abutting City property

Downspout extensions discharge stormwater towards a common property drainage swale.
LOT GRADING REQUIREMENTS FOR ROUGH AND FINAL GRADE APPROVAL (CONT.)

Grading for Detached Garages / Buildings

The concrete pad for a detached garage or other building is elevated to provide positive slope away from the building. Finished grade elevations for pads are a design requirement presented on the Plot Plan that is submitted in application for a development and building permit. Provide a minimum 5% slope away from the Garage wall for a distance of 2 metres or provide a 10 cm drop to the common property swale if there is insufficient space to provide a 2 metre gradient. Surface runoff is directed towards the internal swale between the house and the detached garage, the side-yard swales and towards a City right-of-way. The design and the as-built elevations are shown on the lot grading certificate to support the grading inspection and approval process.

The garage pad elevation provides slope away from the building.

An internal swale is configured between the detached garage and the house.

Pads have been built with retaining walls for future garages.
Lot Grading Certificates

Grade designs for a residential property are impacted by the location of the house within the lot. In addition to the elevations from the approved Lot Grading Plan, a Plot Plan design specifies final grade elevations for front and rear of house, elevations for garage slabs, location of retaining walls, and elevation of lowest opening (if applicable).

Including these site specific elements on the lot grading certificate facilitates accurate and timely grade inspections.

Lot Grading Certificates must display the following:

+ Certification by an Alberta Land Surveyor
+ Title identifying the purpose of document (i.e. Final Grade Certificate, Rough Grade Certificate, etc.)
+ “Revised” added to certificate titles for revised certificate submissions
+ Revision Table added to certificate to track revision history of as-built information
+ Presentation on 8 ½” x 14” (legal size) format in portrait orientation with the rear of the lot at the top of the page and the front of the lot labelled (this format supports the location references in the grading reports)
+ Name of the individual or company that produced the Certificate
+ Date the as-built elevations were obtained
+ Legal Description and Municipal Address of the property
+ Surface Condition of the lot (clay, topsoil, sod, landscaped, etc.)
+ A note indicating that the grading is subject to approval by the Local Authority
+ North Arrow
+ Legend, including scale of drawing
+ House and garage/parking pad layout, including garage pad design elevation when it exists or N/A when a design elevation has not been predetermined
+ Design elevations from the approved Lot Grading Plan or the approved Infill Lot Grading Plan
+ As-built swale elevations
  + at design locations
  + across from building corners, and
  + at any breakpoint (i.e. swale high-point relocated from the approved design)
+ An asterisk (*) designating as-built elevations that exceed tolerance
  + Rough Grade –7 cm to –20 cm from design
  + Final Grade +/-10 cm from design (including sod)
+ As-built elevations of retaining walls, sidewalks, driveways, and garage pads
  + retaining walls (top of wall and internal swale or foundation grade)
  + sidewalks (adjacent to front step)
  + driveways (adjacent to garage door)
  + garage pads
  + fence bottom (if exposed), particularly adjacent to Public Utility Lot and Municipal Reserve Properties
+ As-built rear internal swale high point elevation (see internal rear-yard swale page 14)

+ As-built house corner elevations and an as-built elevation 2 metres from the back of the house

+ As-built elevations for drainage swales within Right-of-Ways and Drainage Easements

+ As-built elevations are to be shown in metres, referenced to the datum used to derive the as-built elevations, being one or more Alberta Survey Control Markers or other benchmark approved by the City

+ Lake lot certificates present detailed as-built locations and elevations for structures constructed within a "maintenance and overflow area"

+ Full Name (company or homeowner) and contact information for the applicant’s preferred method to receive inspection reports or grading approval documents (mailing address, fax number, or email address)

Please note, Lot Grading Certificates for four-plex developments, where each unit is fee simple, must display the design and the as-built elevations for the all the units. Due to cross lot drainage, approval of any single unit is contingent on approval for all units.
LOT GRADING GUIDELINES Residential Properties

LOT GRADING REQUIREMENTS FOR ROUGH AND FINAL GRADE APPROVAL (CONT.)

Recertification

The Lot Grading Inspector may require a new or revised Lot Grading Certificate when any (but not limited to) the following deficiencies occur:

- Errors (incomplete or unclear information on the Lot Grading Certificate)
- Verification of as-built elevations if the as-built elevations on the Lot Grading Certificate are not within tolerances
- Verification of as-built elevations, if requested by the inspector, due to substantial regrading
- Discrepancies or errors in design and/or as-built elevations that require confirmation

+ As-built elevations have been provided on top of bark mulch or rock instead of existing slope below
+ Red-line revisions to the Lot Grading Plan that are not reflected on the Lot Grading Certificate
+ Application for partial approval on final grade (i.e. An approval for front landscaping when the backyard is still in rough grade)
Restrictive Covenants and Stormwater Facilities

Restrictive covenants are registered on the title of the lot. These instruments restrict the types of development that are allowed on properties located on top-of-bank and abutting stormwater facilities or on easements. Obtain these documents from a licensed registry agent or Government of Alberta Spatial Information System and review the information prior to creating landscape design features to avoid non-compliance Bylaw violations (i.e., decorative ponds or retaining wall features).

NOTE: As per Drainage Bylaw 18093 Part II Section 12, the owner of a premises shall not install, or permit to be installed, any water retention structure or irrigation system on any slope unless the installation has been approved by the City Manager.

NOTE: Note: As of September 1, 2017 Stormwater Facilities are owned and operated by EPCOR Drainage. For more information visit https://www.epcor.com/products-services/drainage/stormwater/.
Lot Grading Certificates for properties located adjacent to Stormwater Facilities display the location and elevation of all features constructed within the maintenance and overflow area (Registered on Title as a Restrictive Covenant). Features to note include, but are not limited to: decks, fire pits, ponds, paths, bridges, retaining walls, buildings, raised gardens, or grade alterations. Inclusion of these details enables the Lot Grading Team to evaluate the impact these features may have on surface runoff and stormwater storage requirements.

Lot grading certificates for lake lots include all features developed within the restrictive covenant area.

A typical sign located at stormwater facilities.

After a rainstorm, the level of the stormwater facilities rises inside the registered right-of-way on these private properties.

Stormwater facility (lake) typical cross section.
LOT GRADING REQUIREMENTS FOR ROUGH AND FINAL GRADE APPROVAL (CONT.)

Retaining Walls

Retaining walls are required to support substantial differences in elevation between abutting properties. Elevation differences occur, by design, on walk-out properties in new developments. Elevation differences are common for infill development due to the requirement to direct surface runoff towards a City right-of-way without impacting existing developments. Retaining walls are also utilized to facilitate surface grading solutions related to unintended circumstances, such as low buildings.

Common property fences may not be used to retain soil in raised beds or other landscape features. Fences are not retaining walls.

Retaining walls are constructed to support any elevation difference. Retaining walls must be constructed of concrete or a minimum 10cm x 15cm (4” x 6”) pressure treated timbers, must be self supporting and must project below the existing ground elevation. Timber walls require a dimpled waterproof membrane.

This grade differential will require a supporting wall.

A retaining wall attached to a walk-out basement.

A retaining wall supports a substantial grade differential at this “walk-out” development.

This retaining wall supports the common property grading between these “walk-out” developments.
Retaining Walls (cont.)

Examples of retaining wall locations and elevations indicated on lot grading certificates.

A retaining wall at this low driveway supports construction of a common property drainage swale and controls cross-lot drainage.
Residential Infill Development

Infill development often presents unique challenges that require specific attention. An application for an infill development permit must be accompanied by a proposed Lot Grading plan for any property where an approved Lot Grading plan does not exist.

Lot Grading Plans must be approved by the City of Edmonton, Lot Grading prior to the construction of any buildings, additions to buildings, or alterations of surface drainage on the premises as per Drainage Bylaw 18093 and Zoning Bylaw 12800.

When formulating your grading design plans, collaboration with adjoining property owners could minimize costs associated with stormwater control. Create a Lot Grading Plan that defines how your lot will convey surface runoff to a City right-of-way without flowing onto adjacent private properties.

- Contact EPCOR, Water and Sewer Servicing at 780-496-5444 or email wass.drainage@epcor.com for information about Storm Sewer servicing for collection and disposal of water from the roof and foundation drainage systems. For lots where no Storm Sewer service exists, obtain information for disposal of the subsurface water from the foundation drainage system.

- Internal Swales must be designed to provide a minimum slope of 1.5%, a minimum width of 10 cm and depth of 15 cm for surface runoff. Swale design must begin with the elevation of the final drain point at the sidewalk, curb, or paved lane when locating critical high points and calculating slopes. Also, the design must provide an elevation difference of 15 cm between the lowest opening (entrance door or window well) and the bottom of the drainage swale.

- Retaining walls are constructed to support any elevation difference between a developing property and an adjacent private property (Detail B). Retaining walls must be constructed of concrete or a minimum 10cm x 15cm (4” x 6”) pressure treated timbers, must be self supporting and must project below the existing ground elevation of an adjacent property. Timber walls require a dimpled waterproof membrane.

- Common property swales (Detail A) are possible where abutting properties are suitably graded. Such as an existing approved infill development or where abutting property owners collaborate to create common property swales by undertaking grading improvements on their properties.

- Plan the demolition and reconstruction processes to ensure interim control of surface runoff during all phases of the redevelopment project. Including creating internal drainage swales and controlling roof, downspouts and sump pump discharge. Directing or allowing surface runoff to flow onto adjacent private property is a bylaw violation.
Minimum Plan Requirements:

Lot grading plans are to include the following items:

- **Presentation on 8.5” x 14” (legal size) format** in portrait orientation with the “REAR” of the lot at the top of the page and the “FRONT” of the lot labelled (this format supports the location references in the subsequent Lot Grading Inspection Reports)

- **Legal description and Municipal Address**

- **Proposed finished elevations** at the front and the rear of the buildings

- **Proposed elevation** at the driveway, parking pad, or detached garage

- **Internal or common property drainage swales** including design high points; intermediate grade points; and the location, height, and extent of retaining structures

- **Surface slopes of drainage swales** with flow direction arrows

- **Elevation of City right-of-way** at the discharge ends of the swales

- **Property boundary elevations** include proposed and existing elevations and existing elevations at lot corners

- **Lot drainage pattern** indicating whether split drainage or through drainage

- **Rear internal swale** (if required)

- **Roof drainage provisions** – roof drain connection or surface discharge of downspouts

- **Foundation drainage** – connection or surface discharge details

- **Easements, Right-of-ways, and/or restrictive covenants** related to drainage provisions and development restrictions

- **Geodetic elevations**

- **Scale of drawing**

- **Building and Garage/parking pad layout**

- **North Arrow**

- **Legend**

- **Applicant’s name**
Establishment of Grade Elevations at Buildings:

Finished grade elevations at buildings are generally established by following the Alberta Building Codes, Part 9 – Housing and Small Buildings. The Alberta Land Surveyor, Engineer, Architect, or other applicant for a building permit will set the elevation. The relative surface elevations must allow for the slope of the ground adjacent to the building to be at a minimum of 10% for a distance of 2 m or to the property line on all sides of the house with the slope directing surface runoff away from the building. Provide reasonable slopes of 1.5% to 2% from all points within the property to the property boundary at which the surface runoff may escape.

Swale Details:

The lot grading plan must show locations, slopes, and cross section details for the swales.
RESIDENTIAL INFILL DEVELOPMENT (CONT.)

Properties Abutting Infill Development

For properties with no approved Lot Grading Plan, including properties abutting infill developments, the City of Edmonton Drainage Bylaw 18093 provides a requirement, in Part II – Section 6, for all property owners to establish and maintain surface grades and elevations adjacent to buildings in such a way that water drains (a) away from the buildings and (b) towards a City right-of-way.

Infill development creates an opportunity for abutting property owners to consider the existing state of their grading and to take steps to improve the surface drainage on their property. In many cases, grading improvements can be made in conjunction with the grading for the infill development.

The City of Edmonton has developed Residential Infill Guidelines to provide direction to developers, communities, City staff and City Council on how infill development in mature neighbourhoods should occur.

Lot Grading Maintenance

Final Grade Approval is based on the site conditions observed during the lot grading inspection and property owners are responsible to maintain approved surface grading in perpetuity.

The City of Edmonton may require a property owner to repair surface grading if alterations or settlements result in surface drainage issues for others.

Infill property on the left is blending their grading with the existing grading on the right making a common swale at rough grade and final grade.

Adding topsoil over the existing settled grade is a common method of repair.
Regrading and Landscaping in Mature Neighbourhoods

Regrading to alter the flow of surface runoff on any premises must be supported by an approved Lot Grading Plan. Therefore, consulting with abutting property owners is a critical step when considering any grade changes or downspout location changes that affect surface runoff management between neighbouring lots. Changes to a downspout or sump pump discharge location that directs surface runoff onto an abutting private property is a bylaw violation.

Common property swales (see Detail A) are ideal to convey surface runoff for adjoining properties.

An internal drainage swale (see Detail B) is required when undertaking grading improvements independent of adjoining properties.

Enforcement

When a Lot Grading Inspector discovers or identifies a situation that is noncompliant with Drainage Bylaw 18093, the inspector will serve a notice to the property owner. Correction of the noncompliant issue must be completed before the deadline specified in the notice. Bylaw penalties will be imposed for properties when compliance is not achieved by the specified deadline.

In consideration of enforcing the bylaw, the City takes into account any damaging impact on abutting properties.
FOR MORE INFORMATION

Pamphlet Series

+ “Lot Grading Inspections”
  Residential Properties

+ “Lot Grading Inspections”
  Final Grade Stage

+ “Lot Grading Maintenance”
  After Final Grade Stage

CONTACT INFORMATION

Urban Planning and Economy,
Development Approvals and Inspections

311 – General Inquiries
7:00am – 7:00pm
Monday–Sunday
(Closed Statutory Holidays)
– Reinspection Requests

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Internet Resources

Commercial & Multi-Family Residential:
https://www.edmonton.ca/business_economy/lot-grading-commercial.aspx

Residential Lot Grading:
www.edmonton.ca/lotgrading