



Residential

Lot Grading Guidelines

City of Beaumont



TABLE OF CONTENTS

03	RESIDENTIAL LOT GRADING OVERVIEW
04	LOT GRADING ACCEPTANCE PROCEDURE
10	LOT GRADING REQUIREMENTS FOR ROUGH AND FINAL GRADE
15	INSPECTIONS TIMELINES & FEES
16	CONTACT INFORMATION
17	APPENDIX I

RESIDENTIAL LOT GRADING OVERVIEW

INTRODUCTION

The City of Beaumont’s lot grading acceptance process applies to all residential lots. All lots must be graded in accordance with Beaumont’s Surface **Drainage Bylaw 732-08/732-01-10**, Beaumont’s General Design Standards, and the accepted Grading Plan for the area.

PURPOSE

The purpose of lot grading is to ensure all properties (public and private) have met the surface drainage requirements set out in the area lot grading plan to prevent flooding and other water-related damages. Proper lot grading will ensure surface runoff drains away from all structures and control drainage discharge points and the rate of flow entering the public roads and storm sewer system.

DEFINITIONS

Residential Lot Grading:

Residential Lot Grading is shaping and grading the land to direct surface runoff away from buildings and towards the City right-of-way (lane or street) according to the accepted lot grading plan. Refer to **Appendix I** for lot drainage-type examples.

Lot Grading Plans:

Lot grading plans are required for all new developments and show the drainage design for the specified lot and the relationship between adjacent properties. They specify design elevations, drainage slope percentages, lot types, swale locations and other drainage information required for grading.

Lot Grading Certificate:

The lot grading certificate shows the current and the design elevations on a lot. These certificates are required to determine whether the current elevations meet the requirements and if the grade of a lot will be accepted or refused. The City of Beaumont will accept lot grading certificates signed and certified by a registered Alberta Land Surveyor or Professional Engineer/Technologist.

Rough Grade Stage:

This is the first stage of lot grading, and it includes backfilling the foundation walls with material native to the site (or equivalent) and shaping of the lot to conform to a Lot Grading Plan within acceptable tolerances.

Final Grade Stage:

This is the second stage of lot grading, and it includes applying topsoil and shaping of the lot to conform to a Lot Grading Plan within acceptable tolerances.

LOT GRADING ACCEPTANCE PROCEDURE

INSPECTIONS

There are two stages of inspection for **Lot Grading Acceptance: Rough Grade and Final Grade**. Please note that the development of the lot, including buildings, concrete driveways, and walkways, must be completed before applying for grading acceptance.

Rough Grade Inspection Process:

The **home builder** is responsible for ensuring that the rough grade is completed and accepted. Homeowners should discuss and confirm the lot grading requirements with the home builder when purchasing a new home. A Damage Agreement Inspection will also take place during the Rough Grade stage. The Rough Grade must be **accepted within 18 months** of the issuance of a final occupancy for a home.

- 1) The lot is pre-graded, and a survey is obtained from either an Alberta Land Surveyor or a Professional Engineer/Professional Technologist who will prepare a plan of as-built grades (lot grading certificate).
- 2) The lot grading certificate and a lot grading inspection application are submitted to the City's Lot Grading Department. The City will review the lot grading certificate for compliance. If accepted, the property will be added to the inspection list. If refused, the certificate will be returned to the applicant, who must correct the grading and submit a revised certificate. Once the City receives both the acceptable grade certificate and a completed application, the property will then be added to the inspection list.
- 3) The City staff will visit the property to conduct an inspection of the rough grade. The City staff will also inspect the CC valve, third pipe, sidewalk, and curbs. **(See the Damage Agreement Acceptance section for more information)**. A door hanger will be placed at the property advising the next steps.
- 4) The inspection report will be emailed to the builder and the homeowner (if contact information is supplied in the application). The report will outline the rough grade inspection findings, whether the rough grade was accepted, or if deficiencies exist and a re-inspection is required.
- 5) If deficiencies exist on the lot grading report, the home builder must correct them within 60 days (unless otherwise noted on the inspection report) and request a re-inspection from the City. If the City staff has asked for proof of revised elevations, the re-inspection will not occur until a revised lot grading certificate is received. All re-inspections require payment of the inspection fee before being added to the inspection list.

- 6) Once the inspection is completed, a rough grading acceptance letter and the accepted lot grading certificate will be sent to the homebuilder and homeowner (if contact information is supplied in the application) via email.

Notes:

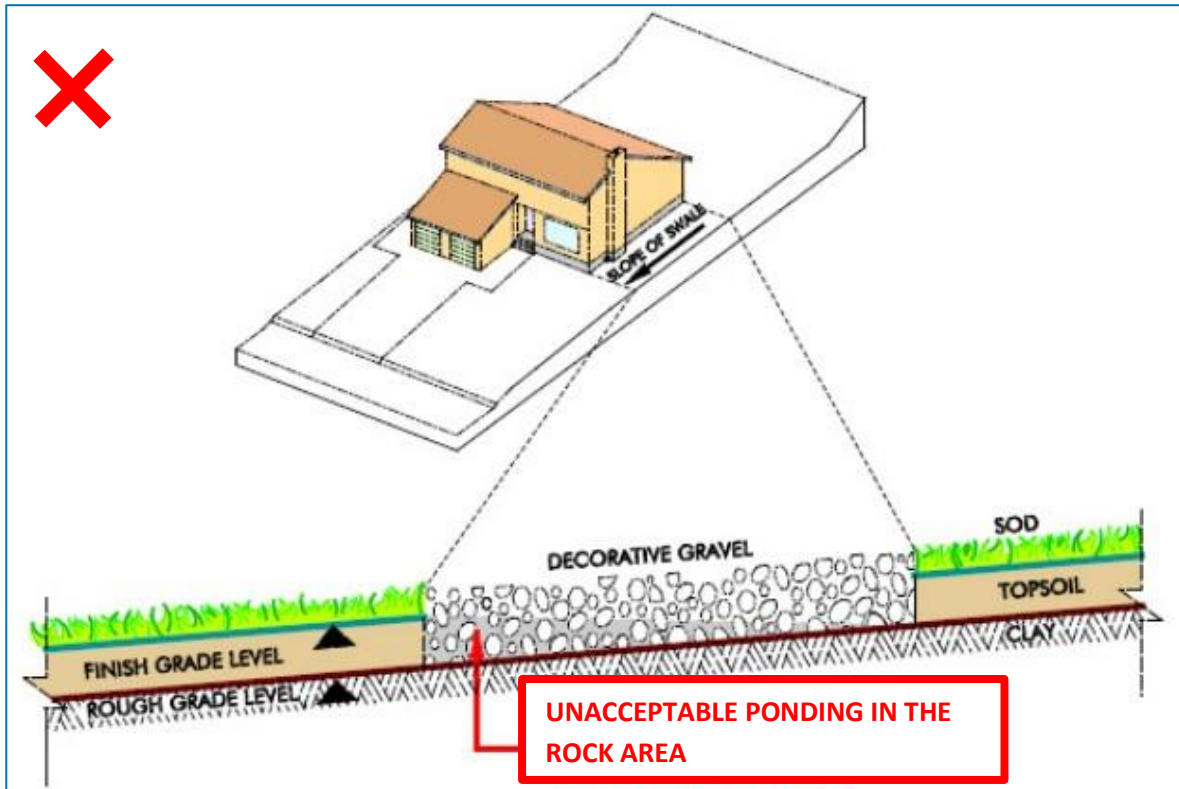
- Failure to apply for rough grade acceptance from the City may result in a penalty fee as per the City of Beaumont's Surface Drainage Bylaw 732-08.

Final Grade Inspection Process:

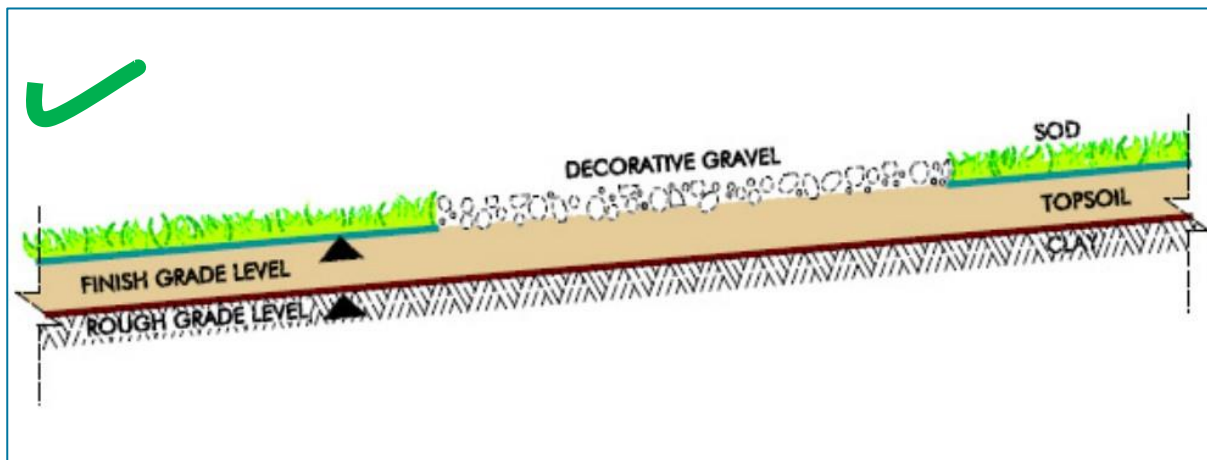
The **homeowner** is responsible for ensuring that Final Grade is completed and accepted. The **home builder** can also do this if finished landscaping is provided with the home. This stage must be completed within 12 months of the Rough Grading Acceptance.

- 1) The homeowner is required to apply topsoil and shape the lot as per the accepted lot grading plan. Once the topsoil is spread and compacted, the homeowner must obtain a new lot grading certificate from an Alberta Land Surveyor or a Professional Engineer/Technologist.
- 2) The certificate is submitted to the City's Lot Grading Department along with a Lot grading inspection application and inspection fees. The City will review the lot grading certificate for compliance. If accepted, the property will be added to the inspection list. If refused, the certificate will be returned to the applicant, who must correct the grading and submit a revised certificate. Once the City receives both the acceptable lot grade certificate and a completed application, the property will then be added to the inspection list.
- 3) The City staff will visit the property to inspect the Final Grade. A door hanger will be placed at the property advising the next steps.
- 4) If deficiencies exist on the lot grading report, the property owner/applicant must correct them **within 60 days** (unless otherwise noted on the inspection report) and request a re-inspection from the Lot Grading Department. If the City staff has requested proof of revised elevations, the **re-inspection will not take place** until a revised lot grading certificate has been received. All re-inspections require payment of the inspection fee before being added to the inspection list.
- 5) Final grade inspections are recommended to take place before a sod has been laid in the event that modifications are required. The applicant is responsible for removing sod and revising lot grading if required.

- 6) If rock or wood chips are part of your landscaping plan, the rough grade (clay base) must be raised to the final grade in those areas before laying decorative materials; rock and wood chips cannot be laid at the same elevation as topsoil as water will not flow over these materials as compared to the sod, and it may lead to ponding areas.



Placing decorative gravel directly on the rough grade level creates a place for unacceptable ponding along the common property drainage swale



Placing soil to match the finish grade level prior to placing the decorative gravel minimizes or eliminates unacceptable ponding along the common property drainage swale

Notes:

- Failure to apply for final grade acceptance from the City may result in a penalty fee as per the City of Beaumont's Surface Drainage Bylaw 732-08.
- In both stages it is the responsibility for the designated party to ensure that all lot grading requirements are met.

APPLICATION TO BYPASS ROUGH GRADING

The builder may apply for an Application to Bypass Rough Grading Inspection if they complete both the homeowner's rough and final grading.

This application must be filled out and submitted for acceptance at least 15 business days before any grading work is undertaken. The Lot Grading Department will review the application and may waive the rough grade inspection requirements; however, the home builder must still obtain a rough grade certificate from a surveyor/professional engineer/professional technologist before placing the topsoil (final grading).

All rough grade elevations on the certificate must be within City's allowable tolerance. The builder/applicant must submit the rough and final grade certificates for the final grade acceptance process. Failure to submit a rough grade certificate with elevations within tolerance may restrict the home builder from bypassing rough grading in the future. It also may require the builder to remove the topsoil and correct any deficiencies. The bypass process is done at the risk of the home builder, and they are responsible for correcting any deficiencies found at any stage.

DAMAGE AGREEMENT ACCEPTANCE PROCESS

The damage agreement acceptance is a 3-step process:

- 1) **Performance/Damage Agreement Form**
 - a. Completed with the Building Permit application.
- 2) **Damage Deposit (DD) Initial Inspection** (Only completed upon request)
 - a. Completed before any activity has taken place on the property.
 - b. Ensure that the sidewalks and curbs are cleaned off and fully visible prior to the inspection time. If surfaces are not clean, the City staff reserves the right to postpone or cancel the inspection. This may delay the inspection process.
 - c. If the initial inspection is **not completed** by the permit issuance date or before the start of construction, **the homebuilder/applicant assumes all liability** for any damages and waives their right to City's initial inspection.

- 3) **Damage Deposit (DD) Final Inspection** (Occurs at the time of rough grade inspection)
- a. The homebuilder must notify the lot grading department that all DD items are ready for review at the time of the rough grade inspection request. If the rough grade inspection fails, the damage inspection will not be completed. The damage inspection would then be completed at the re-inspection. Please ensure the CC valve cap elevation is flush with the design grade, the valve head should be clear from debris, and the valve is operational with the key. Remove debris from the sidewalk area.
 - b. The City staff will inspect the Curb Cock (CC) Valve and its operation, sump pump installation (Third Pipe) and sidewalk, and curb conditions.
 - c. The final damage inspection report will be sent to the builder via email. If deficiencies exist on the damage agreement report, the builder must correct them before the date stated on the inspection report and request a re-inspection from the City staff. **A re-inspection fee will be applied after the first DD final inspection.**
 - d. The builder must complete the deficiencies outlined by the City staff before the date outlined on the damage inspection report. **The full damage deposit amount will be forfeited if the builder fails to meet the deadline.**
 - e. The City of Beaumont will undertake the repairs/replacement at its discretion.
 - i. If sufficient funds are not available through the damage deposit, the **applicant will be invoiced for the balance.**
 - f. **If no deficiencies exist** and the rough grading has been accepted, the damage deposit will be refunded, and cheque will be mailed to the address on the lot grading application form.

CURB COCK (CC) VALVE

The curb stop (CC) valve is generally located in a home's front or side yard; it controls the home's water supply. These valves are put in during subdivision development and can often be damaged during the building process.

The following are the CC valve inspection requirements:

- The valve must be operational at the time of inspection.
- It must be installed at final grade elevation, typically around **15 cm (6 in)** above the accepted rough grade elevation. The cap must be a 5-sided bolt head.
- If the CC Valve is in a landscaped area the green PVC casing must be removed and backfilled around the cap.

SUMP PUMP DISCHARGE (THIRD PIPE)

The sump pump is part of the building's foundation drainage system. All new developments involving single-family, duplexes, or townhomes shall have a third pipe (sump pump discharge) for each unit.

The following are the Sump Pump Discharge inspection requirements:

- The third pipe needs to be attached at a 45° downward angle perpendicular to the foundation of the home
- The third pipe needs to be installed a minimum of 15 cm (6 in) above the final grade elevation

Section 3.2.5.2 of the City of Beaumont's General Design Standards states there shall be no roof leaders (downspouts), garage drains, sanitary lines, or other plumbing systems connected to the sump pump/weeping tile system unless otherwise approved.

SIDEWALK AND CURB CONDITIONS

Sidewalks and curbs can be damaged during building construction. The City staff will document the sidewalk and curb conditions at the Initial DD inspection (if requested by the builder) and the Final DD inspection. The findings in both reports will be compared to determine the damages prior to processing DD refunds.

Note: The builder is NOT allowed to hire a contractor to fix any sidewalk or curb damages that were noted at the time of inspection.

LOT GRADING REQUIREMENTS FOR ROUGH AND FINAL GRADE

DESIGN GRADES AND EXISTING GRADES

The accepted neighborhood lot grading plan shows the accepted design grades for each lot. These elevations are detailed on the lot grading certificate along with the current elevations. The current elevations must be within the tolerances shown below at each respective stage of grading in order to be accepted. For example, if a *rough grade* certificate shows the design grade at 32.30 and the existing grade is at 32.16, the difference of -0.14m is within the allowable tolerance and therefore would be acceptable.

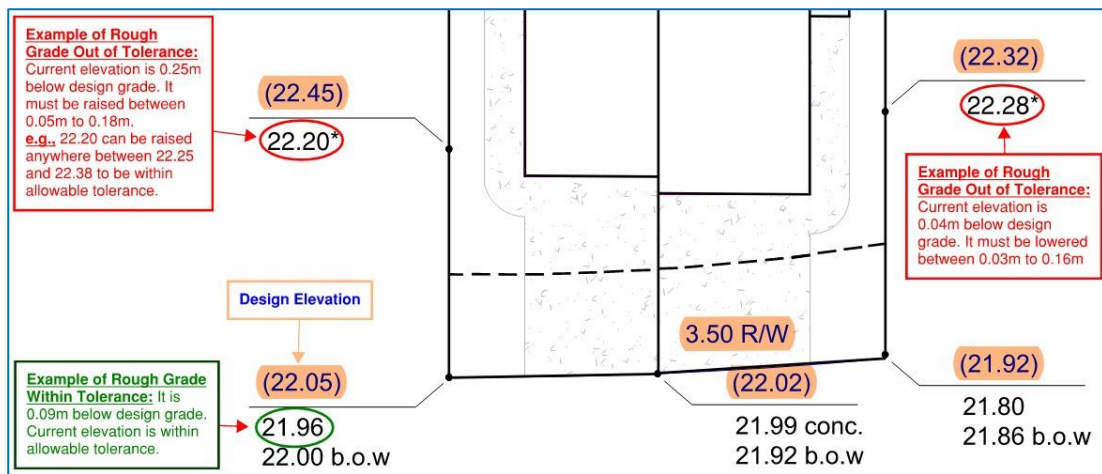
ACCEPTABLE AS-BUILT TOLERANCES

GRADE	TOLERANCE (metric)*	EXPLANATION
Rough Grade	(-0.07m) to (-0.20m)	Between 0.07m and 0.20m <u>below</u> design grade for Clay
Final Grade (on topsoil)	(-0.01m) to (-0.10m)	Between 0.01m and 0.10m <u>below</u> design grade for Topsoil
Final Grade (on landscaping)	(-0.05m) to (+0.05m)	Between 0.05m <u>below</u> to 0.05m <u>above</u> design grade for landscaping

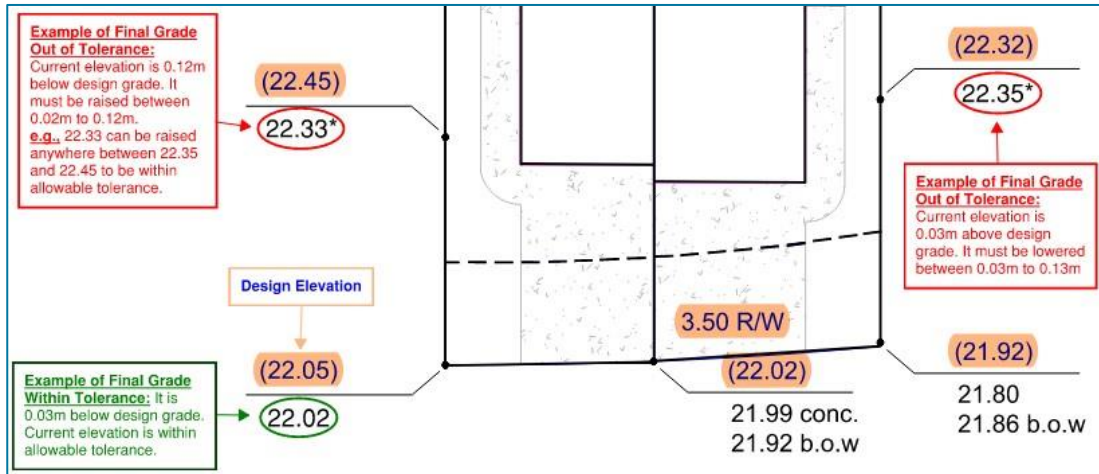
*The City staff has the discretion to accept elevations that are outside of tolerance.

*Any proposed changes to the grading plan must be approved by the City of Beaumont before the applicant undertakes the changes.

*Variance may be granted if a lot is graded to match the existing walkway, lake, park, curb, sidewalk, road, or lane while maintaining a positive surface runoff.



Tolerance Example at Rough Grade Stage

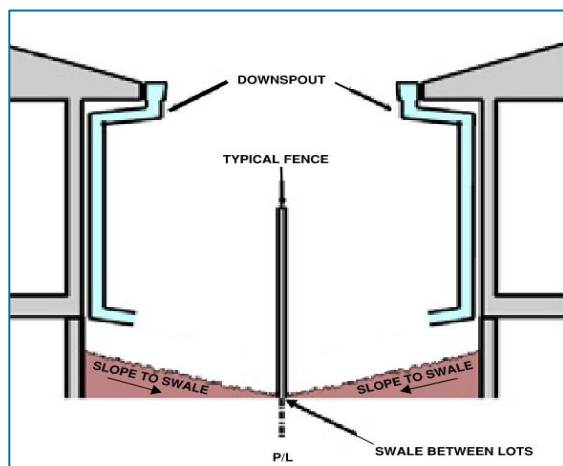


[Tolerance Example at Final Grade Stage](#)

MINIMUM GRADE FROM FOUNDATION WALLS

In order to efficiently reduce the risk of water entering basements during periods of heavy precipitation, a sloped surface is required to effectively drain water away from foundation walls; these areas include beneath decks and steps. There should be no clay chunks or voids under decks, steps or concrete walkways / driveway.

SURFACE TYPE	MINIMUM GRADE REQUIREMENT FROM FOUNDATION WALLS
Landscape Material (clay, topsoil)	For the first 2m - 10% slope OR Min. 0.2m drop from foundation wall to property line
Impervious Surface (concrete)	0.75% slope



[Common Property Drainage Swales](#)



[Slope Away From The Foundation Wall](#)

DRAINAGE SWALES

Drainage swales are shallow-sided sloped ditches intended to transport surface runoff and are usually located along common property lines. **Swales on a common property line should provide a minimum of 30 cm (12in) of unobstructed width within each property.**

Provide minimum slopes of 2% for a grass and topsoil swale drainage or 0.75% for a concrete drainage swale.

Zero Lot Line (ZLL) properties have a designated drainage swale between the homes within a **1.5m Easement registered** on the title and design elevations are to be as per Lot Grading plan.

Due to the topography of some neighborhoods, accepted lot-to-lot drainage may occur, and, on some lots, an easement or right-of-way is registered to allow for the construction of a concrete or grass drainage swale. Easements are shown on the accepted lot grading plan and must be displayed on the lot grading certificate.



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



[String-line guides used to create consistent minimum 2% slope for drainage swales](#)

In order to convey runoff to the nearest street, lane, dry pond or storm water management facility, grading of swales is required to be in accordance with the overall drainage plan for the area.

FENCES

The height of the bottom of the fence rail is to be 5cm (2.0 in) above final grade elevation. The gap allows room for the drainage swale to function adequately.

EXTREME GRADE DIFFERENTIAL

Substantial grade differences can occur when grading homes with walk-out basements or an uneven overall landscape. Grading on these types of homes may require a retaining wall or other form of stabilization. Retaining structures are required on areas with slopes of 25% or more. At the time the plot plan is submitted, slopes greater than 20% are marked for possible retaining walls and the walls are confirmed at the time of home completion. Where a retaining wall exceeds 1.0 meter in height, an engineer's stamped drawing, including a proposed lot drainage plan, shall be submitted.

WINDOW WELLS

Depending on location, window wells may be required on some basement windows. The following requirements shall be met:

- If there is a 15 cm (6 in) or greater gap between the bottom of the window and the top of final grade, a window well is **not** required.
- If the gap measures under 15 cm (6 in) between the bottom of the window and the top of final grade, a window well is required.
- The bottom of the window well must be completely in the clay (no daylighting out).
- The top of the window well must be a minimum 25-30 cm (10-13 in) higher than rough grade and 15 cm (6 in) higher than final grade. If these distances cannot be met, a window well extension will be required.
- **Washed rock is required and must be added** uniformly 5-10 cm (2-4 in) to the entire window well.

DOWNSPOUTS/SPLASH PADS

Downspouts help convey roof leader discharge away from the foundation walls to help prevent infiltration and erosion. The downspouts outlet is to be a minimum 1m away from the foundation wall and directed towards the drainage swale along the common property line. The outlet must also be a minimum of **1.5 m** away from the property line of adjacent lots and **3 m** away from Beaumont's Right-Of-Way. Downspouts must discharge on top of the final grade.

Where downspouts are not installed (or setback requirements cannot be achieved), splash pads are recommended and are an acceptable substitution. Splash pads minimize soil erosion and water recycling through the foundation drainage system.

Note: Zero lot lines (ZLL) requires Rainwater Leaders (RWL) to be connected to storm services.

Section 15(a) of Beaumont's Surface Drainage Bylaw 732-08 states No Owner shall permit roof drainage or pumped subsurface Drainage from a Building to be discharged directly onto a pervious ground surface within one (1) meter of the building for all buildings that have a basement or a level below the finished ground surfaces.

Section 15(b) of Beaumont's Surface Drainage Bylaw 732-001-10 states No Owner shall permit roof drainage or pumped subsurface Drainage from a Building to be discharged within 1500mm of an adjacent lot or within 3000mm of Beaumont's Right-of-Way.

INSPECTION TIMELINES & FEES

INSPECTION TIMELINES

Typically, the inspection season runs from June 1 to October 15. These dates are weather and condition dependent. Any application received after October 1 may not get an inspection before the season closes.

- Rough grade inspections are typically completed within **15** business days once an inspection request application and the rough grade certificate has been received.
- Final grade inspections are typically done within **10** business days once an inspection request application and the final grade certificate has been received.
- Inspection timelines are weather and volume dependent and can vary from season to season. All times are given as estimates only, and the completion period may get extended due to the high volume of requests.
- Inspections (properties) are typically inspected in the order that they are received.

INSPECTION FEES

All applicable fees must be paid before any inspections can take place. Inspection fees are subject to change yearly. Please refer to the City's 2023 Fee and Charges Bylaw 1025-22. <https://www.beaumont.ab.ca/759/Fees>

Please be advised that the Initial Lot Grading Inspection fee is collected at time of Building Permit application.

The initial fee only covers **ONE** Rough Grade Inspection and **ONE** set of Damage Deposit Inspection (Pre & Post Inspection). All subsequent inspections will require a payment of **\$164.00 + GST**.

Payment is to be made at City Hall reception. **Proof of Payments/Receipts** should be attached to the **Lot Grading Inspection Application** and emailed to lotgrading@beaumont.ab.ca.

The following fee schedule applies for the 2023 Lot Grading Season:

Rough Grade (Re-Inspection) - \$164.00 plus GST for Each Inspection/per unit

Final Grade Inspection/Re-Inspection - \$164.00 plus GST for Each Inspection/per unit

Damage Deposit (Re-inspection) - \$164.00 plus GST for Each Inspection/per unit

CONTACT INFORMATION

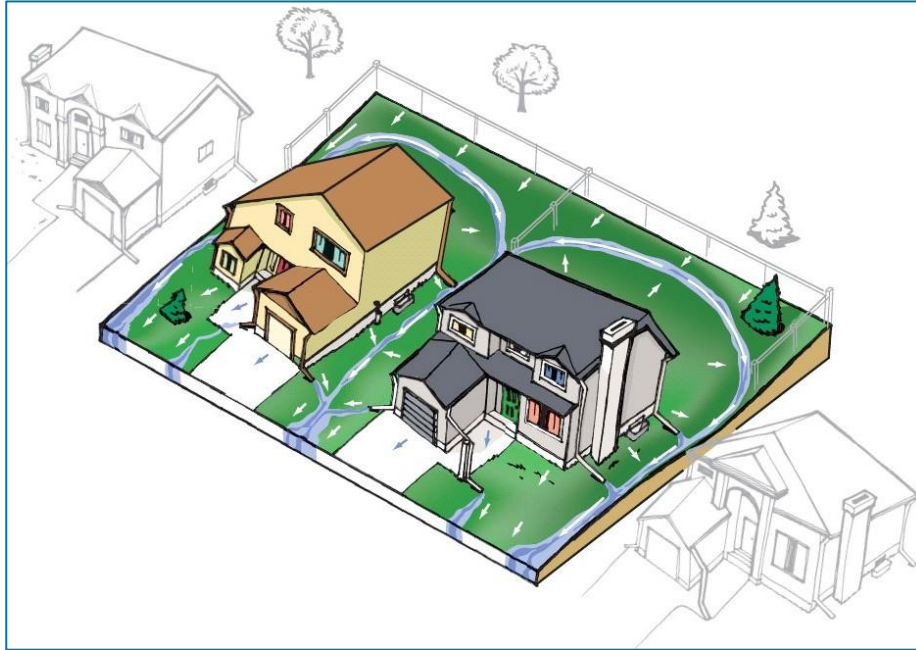
Any questions can be directed to the Lot Grading email. Please note the phone line is not regularly monitored outside the lot grading season.

E-mail: lotgrading@beaumont.ab.ca

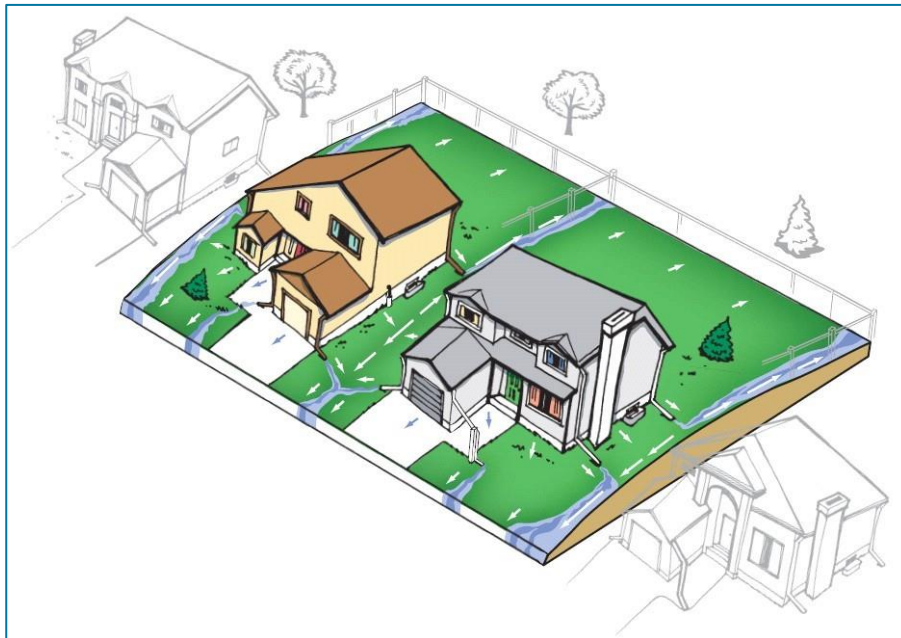
Phone: (780) 929-4314

Web Address: <https://www.beaumont.ab.ca/172/Lot-Grading>

APPENDIX I



Example of "Back to Front" Lot Drainage



Example of "Split Lot" Drainage