



RESIDENTIAL LOT GRADING and MAINTENANCE

Site grading shall ensure proper drainage of individual private properties and establish an effective surface drainage system for the whole development area. As of April 2005, new **homes must comply with the City's** Lot Grading Bylaw No. C-546-05. Homes built prior to this are not required to comply but must still have proper lot drainage. A lot grading plan will establish the drainage relationship between adjacent properties and its approval is an effective basis for the control of grading of the properties.

When making changes to the landscaping of your yard, the lot grading and surface water drainage must be taken into consideration.

Flooding caused by heavy precipitation, melting snow, or runoff may pose problems for all kinds of properties. Older and newer houses, residential and commercial developments may be at risk for flooding if proper precautions are not taken. The City of Spruce Grove encourages all builders and homeowners to take preventive measures to avoid flooding, and has set out standards for drainage and lot grading under the **Lot Drainage Bylaw No. C-546-05**.

Property owners are responsible for their own lot grading. Check our information about lot grading guidelines, approval inspections, and dispute resolution to ensure that you are taking the right steps to prevent flooding on your property.

APPROVALS

At two stages during construction, the builder or homeowner is required to have the lot inspected for grading approval. Generally, the homebuilder is responsible for obtaining Rough Grade Approval, and the homeowner for the Final Grade Approval. To make sure the house and lot are constructed in accordance with all requirements, you should be familiar with the procedure for both the rough grade and final grade stages.

In new subdivisions, developers often require a refundable deposit to ensure conformance with the Lot Grading Plan and architectural guidelines. Inquiries about deposits or architectural guidelines should be directed to the homebuilder or developer.

Fees

Inspection fees are levied only to cover the cost of inspection requirements. These fees are collected at the Planning and Development Department when you apply for the building permit.

- Lot Grading Permit (single detached & semi-detached): \$ 125.00
- Rough Grade Inspection: no charge
- Rough Grade Re-inspection: \$ 125.00
- Final Grade Inspection: no charge
- Final Grade Re-inspection (first) no charge
(each subsequent) \$ 125.00

LOT GRADING CERTIFICATES

If there is an approved Surface Drainage Plan (Lot Grading Plan) for a subdivision, a Lot Grading Certificate is required for rough and final grade approvals. This requirement is outlined in the Lot Drainage Bylaw No. C-546-05.

The Lot Grading Certificate for both rough grade and final grade approvals must contain the following information:

- A legal size, scale drawing of the lot and buildings measured in metric units (referenced to geodetic datum).
- All proposed surface elevations shown on the approved Surface Drainage Plan.
- Existing surface elevations at the same points and locations as the proposed surface elevations.
- Existing surface elevations adjacent to the foundation walls.
- Property address, legal description, neighbourhood, applicant information and north arrow.
- Legend and any additional notes.
- Location and elevations of any structures within any registered easements, restrictive covenants or right-of-ways. The certificate must display the location and elevation of any and all features constructed within the affected area. For Rough Grade Approval this might include paths, retaining walls, buildings, decks or other unusual grade alterations. For Final Grade Approval, things such as decks, fire-pits, ponds, paths, bridges, retaining walls, raised gardens and any unusual alterations must be noted. Inclusion of these details enables Drainage Services to evaluate the impact these features have on the functionality of drainage requirements.

The lot grading inspector can ask for a new or revised Lot Grading Certificate when any of the following occur:

- Errors or incomplete information on the Lot Grading Certificate such as property information, client information, design and existing elevations, unsigned or unstamped drawings, house layout, north directional arrow, easements, restrictive covenants or right-of-ways, structures on the lot, existing surface condition, existing elevations on adjacent properties, scale drawing information, reference to metric geodetic datum.
- Verification of existing elevations if the existing elevations on the Lot Grading Certificate are not within tolerances.
- Discrepancies or errors in design and/or existing elevations that require confirmation.
- Red-line revisions to the Lot Grading Plan that are not reflected on the Lot Grading Certificate.
- Poor or unclear Lot Grading Certificate.

ROUGH GRADE

This stage includes backfilling the foundation walls and shaping the lot to conform to the design of the approved Surface Drainage Plan. The Rough Grade Approval procedure should occur within 60 days of the initial site grading. It is the builder's responsibility to ensure that roof leaders (downspouts) and foundation drainage systems are installed according to the approved engineering drawings.

Applying for Rough Grade Approval

1. The builder or homeowner has the lot surveyed by an Alberta Land Surveyor (ALS), engineer or architect who prepares a Plan of Certification of As-built Grades (Lot Grading Certificate).
2. Once the certificate is complete, it is submitted to **the City's** Lot Grading Inspector for approval.
3. The lot grading inspector will conduct a visual inspection to verify the lot is graded in accordance with the approved plan. This is usually done within five working days from receipt of the certificate, depending on workload and weather conditions.
4. An Inspection Report is sent to the builder or applicant indicating whether Rough Grade Approval is granted or deficiencies exist.
5. If deficiencies exist, the builder or applicant must correct the deficiencies within 60 days and notify the Lot Grading Inspector for a re-inspection. There are fees for additional inspections.

Once Rough Grade Approval is issued, the builder must then notify the homeowner of the approved status of the lot grading. The builder must also provide the homeowner with the Lot Grading Inspection Report and information regarding the final grading and approval process.

Note: If the builder or applicant chooses to do the landscaping, they can bypass the Rough Grade Approval procedure for the Final Grade Approval stage.

FINAL GRADE

Final Grade Approval must be initiated within 12 months of receiving Rough Grade Approval. The rough grade has an allowance of approximately 10-15 centimetres for topsoil placement. Topsoil should be smoothly spread out and compacted, 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 down. Rock or wood chips do not make up for the 10-15 centimetres of final grade, since surface water can flow through the material.

If a property bypasses the Rough Grade Approval, it is the builder's or applicant's responsibility to ensure that roof leaders (downspouts) and foundation drainage systems are draining according to the approved engineering drawings.

Note: The owner of a lot located near a lake (Stormwater Management Facility), walkway or a ravine shall comply with the terms and conditions of any City of Spruce Grove registered easement, Maintenance and Overflow Area, right-of-way, caveat or restrictive covenant.

Applying for Final Grade Approval

1. The homeowner or applicant (builder where applicable) has the lot surveyed on final grade (on topsoil and/or sod) by an Alberta Land Surveyor (ALS), engineer or architect, who prepares a Lot Grading Certificate.
2. **Once the certificate is complete, it is submitted to the City's Lot Grading Inspector for approval.**
3. Upon receipt of the certificate by the Lot Grade Inspector, the inspector conducts a visual inspection to verify the lot is graded in accordance with the approved plan. This is usually done within five working days from receipt of the certificate, depending on workload and weather conditions.
4. An inspection report is sent to the homeowner or applicant indicating whether Final Grade Approval is granted or deficiencies exist.
5. If deficiencies exist, the homeowner or applicant must correct the deficiencies within 60 days and notify the Lot Grade Inspector for a re-inspection. There are fees for additional re-inspections.
6. If the final grade was completed by a professional landscaper, the homeowner or applicant is responsible for notifying the landscaper of deficiencies.

7. Once the lot grading inspector finds that the lot grading is satisfactory, Final Grade Approval is issued.

The lot grading inspector sends a signed and dated Lot Grading Inspection Report to the homeowner or applicant as notification of Final Grade Approval.

SWALES

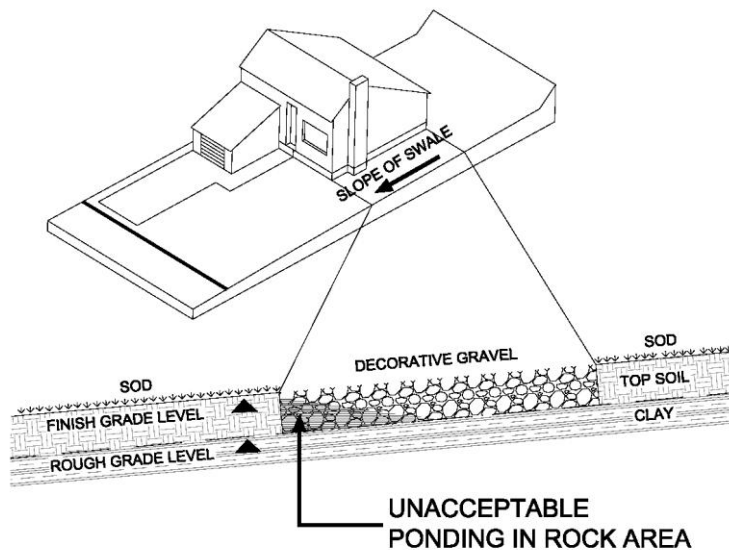
Drainage swales are shallow-sided, sloped ditches designed to convey surface run-off away from buildings towards the nearest street, lane, dry pond or storm water management facility to prevent lot-to-lot drainage. These swales are usually located along common property lines and sometimes at the back of a lot. They should be graded in accordance with an approved Lot Grading Plan. In some areas, an easement or right-of-way is required for grass or concrete drainage swales. Easements are shown on the approved Lot Grading Plan.

Minimum Slope

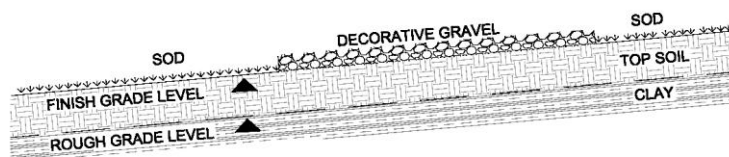
- Grass drainage swale: 1.5%
- Concrete drainage swale: 0.75%

Due to the topography of some neighbourhoods, lot-to-lot drainage may occur on an approved Lot Grading Plan. In those situations lot-to-lot surface drainage is acceptable, but it is important that all affected lots are graded properly.

Below is an example of typical side-lot grading.



PLACING DECORATIVE ROCK ON THE BASE (CLAY ROUGH GRADE) WILL CREATE A PLACE FOR WATER TO POND.



RAISING THE BASE TO FINISH GRADE BEFORE PLACING DECORATIVE ROCK WILL MINIMIZE OR ELIMINATE PONDING.

SPLASH PADS

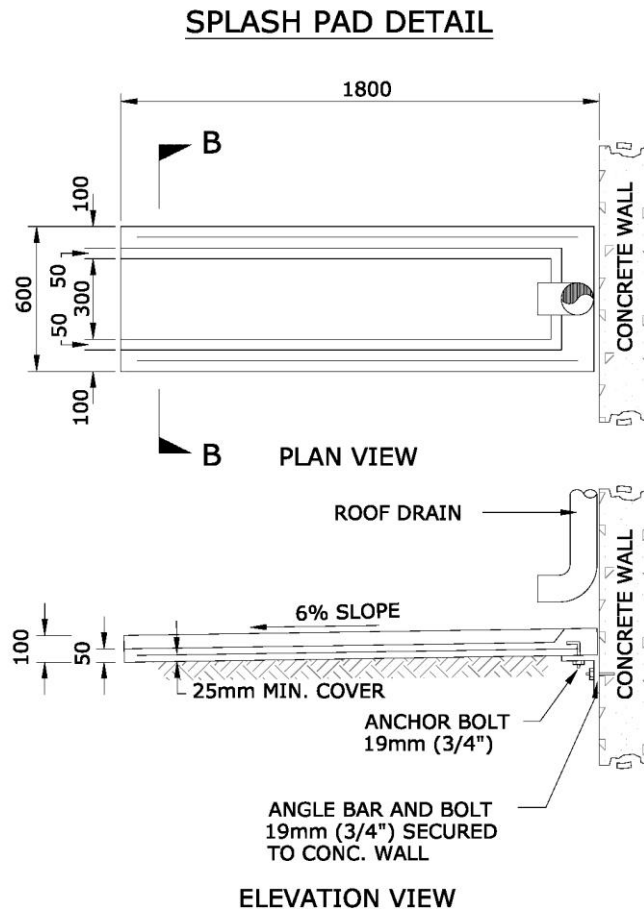
Splash pads are recommended to carry roof leader and sump pump discharge away from foundation walls. The recommended standard type of splash pad is made of concrete and has dimensions of 300 millimetres x 1800 millimetres.

If there are no drainage connections to the storm sewer, splash pads are to be placed against the foundation walls at the following locations:

- Underneath all downspouts draining onto landscaping (sod, topsoil and/or gravel)
- Underneath the sump pump discharge where it is draining onto landscaping (sod, topsoil and/or gravel)

Hinged downspout extensions are not recommended as they can be easily damaged or left in the up-position. However, they are acceptable provided they do not extend onto an adjacent property.

Below is an example of typical splash pad.

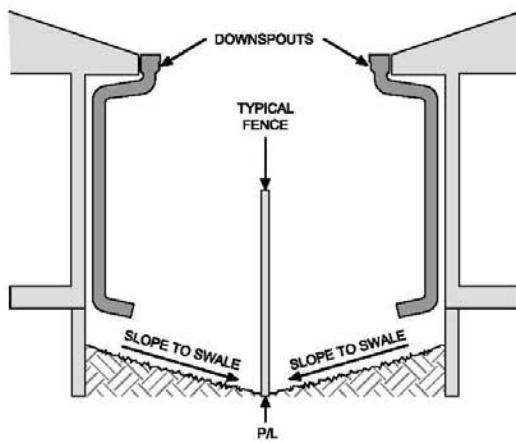


DOWNSPOUTS

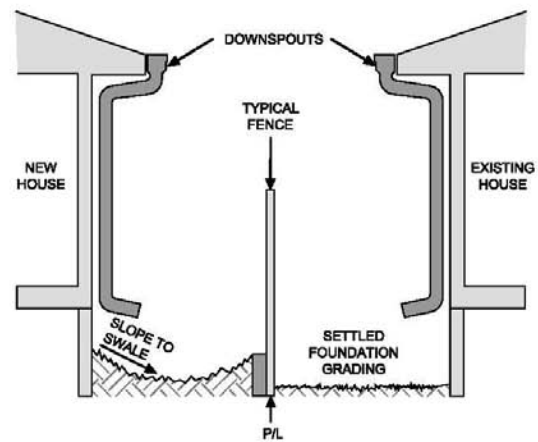
Downspouts (roof leaders) are located along the walls and carry surface water from the eaves troughs to the drainage swales. The exceptions to this are areas adjacent to a lake, ravine or river. These downspouts must connect to a storm service to minimize soil erosion. A geotechnical engineer will determine if this is necessary before the area is developed.

Downspout Requirements

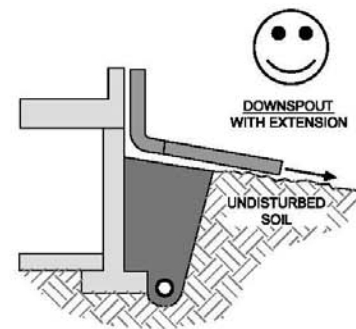
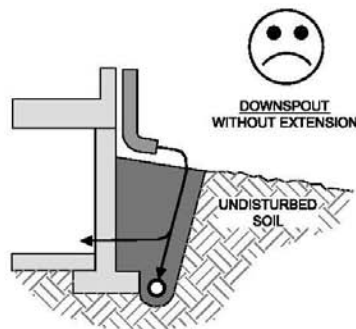
- The downspout must have an elbow and a hinged extension and/or concrete splash pad.
- The downspout elbow should be directed away from the foundation walls toward the drainage swales within the subject property.
- Downspout extensions or splash pads must not project past the property line.



SWALE BETWEEN LOTS



INTERNAL DRAINAGE SWALE



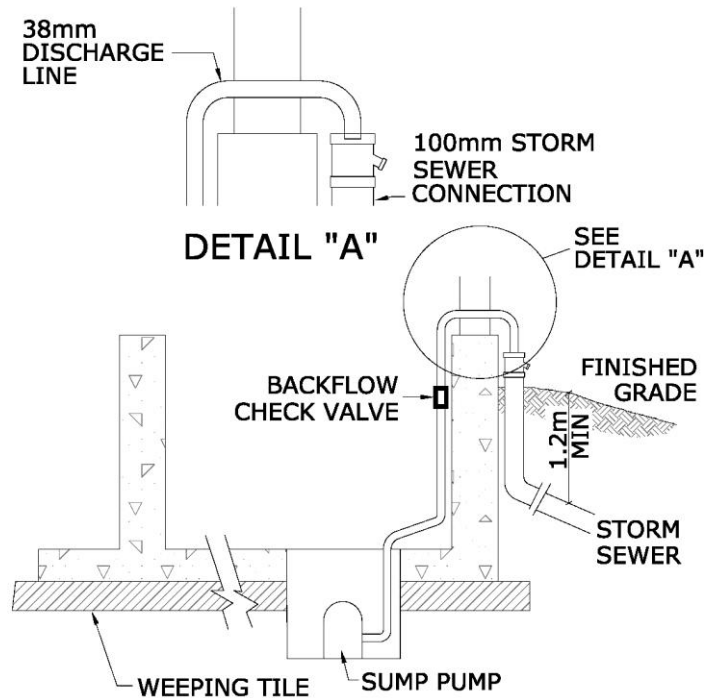
SUMP PUMPS

The sump pump is part of the home's foundation drainage system, and has been a building requirement since 1990. It is usually located at the side of the house. The weeping tile (a perforated hose adjacent to the foundation wall) intercepts ground water and drains it to the sump well. When the water level rises the sump pump starts and pumps the ground water over the foundation wall to the surface grade or to the foundation drainage service. Sump pump discharge then spills onto a splash pad, concrete sidewalk or through a flexible hose to the common drainage swale. In some newer subdivisions, the sump pump flows directly into the storm sewer.

It's important to provide a splash pad and/or flexible hose below the discharge point. This helps minimize soil erosion at the foundation wall and prevents the re-circulation of the ground water back to the weeping tile. The flexible hose and/or splash pad should be directed to the drainage swales but not onto an adjacent property or discharged less than 30 cm from City property. To prevent the sump pump discharge hose from freezing, it should be disconnected during the winter months.

Note: Engineering Services receives a number of inquiries about excessive sump pump discharging. In the fall and winter, excessive flows result in inconvenient or dangerous icing conditions. To effectively address these concerns, Engineering Services will consider an alternative to discharging sump pump flows onto surface grade.

SCHEMATIC WEeping TILE SUMP PUMP & DISCHARGE



LAKE, RAVINE AND TOP OF BANK LOTS

Most lots located on either a stormwater management lake, a ravine or the top of a bank have an easement, restrictive covenant or right-of-way registered in favour of the City. These areas are preserved for use as maintenance and overflow areas. We recommend you obtain the easement information from Alberta Land Titles.

For these types of properties, the Lot Grading Certificate must display the location and elevation of any and all features. This helps the lot grading inspectors assess the impact of these features on the overall grading. Features include, but are not limited to: decks, fire-pits, ponds, paths, bridges, retaining walls, raised gardens and any unusual alterations.

Note: Underground sprinklers are prohibited in these areas.

MINIMUM GRADE

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

The minimum grade from the foundation wall on sod, topsoil, clay and/or clay with gravel, is 5 percent to 3.0 meters or minimum 0.15 meter drop from wall to property line. If the side yard is less than 1.5 meters wide, then the drop from the property line to the foundation wall should be a minimum of 0.15 meters (or 10 percent).

The minimum grade from the foundation wall on concrete is 2.0 percent to within 0.15 meters of a swale along the sides of a house (example: a concrete sidewalk along the side of the house/garage and/or driveway), and/or 2.0 percent for 2.0 meters from a foundation wall at any other locations.

SURFACE ELEVATIONS

Approved Lot Grading Plans have proposed surface elevations (design grades) at specific locations indicating the height in metres. The As-built Plan (Lot Grading Certificate) has existing elevations taken at the same points as the design grades.

The actual surface elevations must fall within the following design tolerances:

-7cm (-3") to -20cm (-8")	on clay
-10cm (-4") to +5cm (+2")	on topsoil (black dirt)
-10cm (-4") to +10cm (+4")	on final landscaping (sod, concrete).

Exceptions: loose stone, washed rock, or mulch. The surface elevation below the stone, rock, or mulch must be within the tolerance.

Maximum 10cm cumulative difference at property line.

The lot grading inspector has discretion to accept elevations that are not within design tolerances when the following conditions occur:

- Existing elevation is graded to match an existing walkway, lake, park, curb, sidewalk, road or lane and does not affect surface drainage.
- Existing elevation is graded to match an adjacent property and it appears to the lot grading inspector that there is positive surface drainage on both lots.
- A red-line revision was made to the design elevations on the previously approved Lot Grading Plan reflecting changes from original design.

Note: In cases where existing conditions make it difficult to achieve design tolerances, such conditions must be brought to the attention of the parties affected and the lot grading inspector. In addition, where changes have been accepted, those changes will be noted on the Lot Grading Inspection Report and stamped on the Lot Grading Certificate.

MAINTENANCE & ENFORCEMENT

Once Final Grade Approval has been given, it's the owner's responsibility to maintain the surface grades to the standards established at the time of Final Grade Approval. The City may, at any time, require maintenance on the surface grading (lot grading) if alterations or settlements result in surface drainage problems. This requirement is enforceable under the Lot Drainage Bylaw No. C-546-05.

Lot Grading Inspection Reports, non-compliance or non-conformance letters or a Notice to Comply are used to advise an owner, builder, contractor or developer of any impending enforcement. Properties that do not comply with the lot grading requirements or Surface Drainage Bylaw provisions will be fined. Non-compliance fines start from \$300 per day. Each day that the property does not comply may be deemed a separate offence. In most cases, notification is sent to the current registered property owner, since the owner is responsible for the maintenance of lot grading.

This bylaw is enforceable for all properties. In deciding whether to enforce this bylaw, the City of Spruce Grove may take into account any practical concerns, complaints and inquiries. Though most complaints are in areas of the city that do not have any Lot Grading Plans, our department does not provide any funding for surface grading repairs. See Surface Drainage Problems for information on how to deal with drainage problems in areas developed before 2005.

SURFACE DRAINAGE PROBLEMS

In some neighbourhoods, complications may arise between neighbours if drainage is not properly designed. Most problems can be resolved with open communication. Neighbouring **property owners have an equal interest in effective drainage of surface water. The City's** representatives (lot grading inspectors) are not mandated to act as dispute arbitrators, but are available to investigate surface drainage problems and enforce the provisions of the Lot Drainage Bylaw No. C-546-05. If you are experiencing problems, there are several things you can do:

- Check your own surface drainage for problems and see our Frequently Asked Questions for answers to your questions about common drainage disputes.
- Talk to your neighbours to work out solutions. They may not realize there is a problem.
- Contact a professional, such as a landscaper or foundation drainage expert.
- If property has been damaged, try mediation before you consider legal action against the offender.

If you're unable to settle on satisfactory drainage arrangements, you can contact the City of Spruce Grove to investigate. A lot grading inspector will examine surface drainage conditions on both properties and make recommendations for improvements. A Letter of Non-Compliance or Notice to Comply will be sent for infractions of the Lot Drainage Bylaw No. C-546-05. Property owners must then take steps to bring their property in to compliance with the bylaw, or face fines.