



CLEARVIEW

TOWNSHIP OF CLEARVIEW
PUBLIC WORKS/PLANNING
LOT GRADING AND DRAINAGE POLICY
2019

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1.0 Introduction

When a new dwelling or building is constructed, it is essential that the lot be graded properly to ensure that surface drainage is directed away from the building such that it does not adversely affect the neighboring properties including the Municipal roadside.

2.0 Policy

All properties being developed shall be designed to drain water away from buildings on the property.

Except as otherwise provided, surface water shall not be directed onto or through any adjacent property.

Surface water may be directed through adjacent properties where there is a written agreement among all persons registered on title of all affected properties or there is an easement for drainage purposes, to the satisfaction of the Township.

The Township of Clearview shall require that all settlement areas where new lots created by severance, infill lots, or lots in which a building permit application has been made to construct, add or raise a dwelling or accessory building (i.e. detached garage), have a Lot Grading and Drainage Plan.

This Policy shall also ensure maintenance of, or acceptable revisions to, the grading and drainage design established on lands developed through the Building Permit applications for future works, which require excavation (i.e. footings, foundation walls, etc.).

The Ontario Building Code (OBC) also sets out requirements for lot grading and drainage, as stipulated in its articles.

3.0 Definitions

In this By-law:

“Township” shall mean the Corporation of the Township of Clearview.

“Settlement Area” shall mean any area designated as a settlement area in the Township Official Plan.

“Infill Lot” shall mean a parcel of land in a Settlement Area that is not a parcel of land within a Plan of Subdivision already covered by an overall lot grading and drainage plan approved by the Township.

“Lot” shall mean a parcel of land suitable for the construction of a building.

“Lot within a Plan of Subdivision” shall mean a parcel of land defined as a lot within a Registered Plan of Subdivision.

“Official Plan” shall mean the Official Plan for the Township of Clearview.

“Owner” shall mean a Person who is the registered under the applicable system of land registration as the Owner of the fee simple estate in the land, his agent or any other person who is in lawful possession of such land, or and Person applying for and taking out the permit for work to be performed within the scope of this By-law.

“Person” means an individual, partnership, corporation, business trust, limited liability company, limited liability partnership, joint stock company, trust, unincorporated association, joint venture, company or other entity or any governmental authority.

“Plan of Subdivision” shall have the meaning as set out in the Planning Act, R.S.O. 1990.

“Professional Engineer” shall mean an individual who hold a license under the Professional Engineers Act in the Province of Ontario.

“Rural Area” shall mean any area outside the Settlement Area.

“Seasonal high groundwater elevation High Groundwater Level” means the elevation of groundwater on the lands during highest seasonal high groundwater elevation condition based on observed groundwater conditions and soil profiles as determined by a qualified soils engineer or hydrogeologist in accordance with requirements of the Municipality;

4.0 Preparation of the Lot Grading and Drainage Plan

A Lot Grading and Drainage Plan is required to be submitted to the Township for approval prior to the issuance of a building permit for structures on any lot.

Prior to the issuance of the building permit, the Owner shall apply for a Lot Grading permit and provide the permit fees and deposits prior to the Lot Grading and Drainage Plan being “Accepted for Construction” by the Township. The application shall include the submission of three (3) copies and one digital copy of the Proposed Lot Grading and Drainage Plan to the Town for review and acceptance.

The Lot Grading and Drainage Plan shall be prepared by a Professional Engineer and the Plan shall conform to the requirements in Section 6.0 of this Policy.

The Lot Grading and Drainage Plan shall be prepared at a minimum on a ledger sized sheet or Standard A1 Sheet, or as may be required by the Township.

The Lot Grading and Drainage Plan shall contain:

- a) A north arrow shall be shown. All drawings received shall be to scale, Metric 1:200 or 1:250 and drawn in ink. **Freehand drawings are not acceptable.**
- b) Name of street, municipal address, lot number and plan or concession number, plus sufficient detail to describe the location.
- c) A key plan detailing the general location of the subject property is to be included on the drawing.
- d) A site plan or legal survey showing distances around the perimeter of the property are to be labeled.
- e) The location of the buildings, existing and/or proposed, including those on adjacent lands.
- f) The location of all downspouts, sump pump and other drainage discharge points. The piping and direct discharge of sump pump flows over sidewalks and curbs is unacceptable.
- g) The locations of all municipal watermain, storm and sanitary sewers as well as utilities within the adjacent municipal right of way are to be shown and labeled accordingly.
- h) Existing elevations on the road, ditch, boulevards, curbs, subject lot and adjoining lands. Sufficient existing grades on adjacent properties must be shown to indicate the drainage pattern.
- i) The existing grade elevations at all lot corners of the lot and the dwelling and significant changes in grades along property lines shall be clearly indicated.
- j) Provide a Building Elevation Table, which specifies the following proposed elevations:
 - i. Apron Elevations
 - ii. Top of Garage floor
 - iii. Top of Finished First Floor
 - iv. Top of Foundation Wall
 - v. Bottom of Basement Slab (minimum 400mm above “seasonal high groundwater elevation high groundwater table elevation”)
 - vi. Underside of Footing

Once the Lot Grading and Drainage Plan is found to be acceptable by the Township the Plan will be “Accepted for Construction” and the approval can be issued by the Township.

In the event an Owner is applying to the Township for Consent to Sever a property, a Condition of Consent will be that the Owner provide an Overall Lot Grading and Drainage Plan, from a Professional Engineer, to demonstrate that positive drainage will be achieved for all created lots that are subject to the application. Easements may be provided in favour of the Township. Following the severance, individual Lot Grading and Drainage Plans shall be required for Building Permits on each lot. The individual plans must be consistent with the accepted overall Lot Grading and Drainage Plan.

5.0 Outside Agencies

If the subject property falls within the regulatory area of the NVCA “Nottawasaga Valley Conservation Authority” or Ministry of Transportation Highway Corridor and any other applicable agencies, then it will require their further approval prior to the issuance of any building permit.

6.0 Design Criteria

1. A Lot Grading and Drainage Plan, bearing the signature and seal of a competent Professional Engineer is required, indicating the means by which the Owner will ensure that each lot is to be properly graded and drained, and does not adversely affect neighboring properties.
2. All elevations should be to Geodetic Datum where possible. If not possible then the point of reference (Temporary Benchmark), which is to be identified, shall be a fixed object in the immediate area.
3. The grading design shall have regard for existing vegetation, which is to be preserved as much as possible.
4. The Lot Grading and Drainage Plan Review Checklist (Appendix D) is to be completed by the Owner’s Professional Engineer and a copy of the checklist is to be included in the plan submittal package.
5. Based on the observed groundwater table elevation, the plan shall provide the “seasonal high groundwater elevation high groundwater table elevation”. Individual lot grading and drainage plans for each lot to comply with the overall grading and drainage plan, which also includes verification that the underside of floor slab shall be entirely located a minimum of 400mm above the seasonal high groundwater elevation high ground water elevation;
6. All proposed sanitary sewer service connections shall be in accordance with the Township of Clearview Engineering Standards including all existing and proposed sanitary sewer service connections shall be equipped with a 200mm diameter cleanout chamber at property line for services over 15m in length to the main connection.
7. All proposed water services shall be in accordance with the Township of Clearview Engineering Standards. All water service boxes shall be setback a minimum of 1.5 meters from any driveway. If the design doesn’t accommodate the setback of the water service box to the driveway, the Owner shall arrange with the Municipality a relocation of the water service box at the Owner’s expense.
8. Swales and slopes must be detailed with sufficient information to show the direction of drainage and the amount of slope. The minimum gradient for all rear and side yard swales shall be 1% with a minimum depth of 150mm.
9. Drainage flows shall be directed away from all buildings at a minimum grade of 2%. Ponding of surface water adjacent to foundation walls is unacceptable.

10. 150mm diameter subdrains shall be provided under all swales with gradients of less than 1.0%. Subdrains shall be perforated, corrugated plastic pipe with geotextile. Subdrains shall be bedded in a 300mm x 300mm clear stone trench and wrapped with filter fabric and drain to an approved outlet.
11. Soak away pits are to be sized and constructed in accordance with the most current version of the Ministry of Environment Stormwater Management Planning and Design Manual. The minimum size of the soak away pit shall be 1.0m x1.5m x 1.0m deep.
10. The maximum lot surface grade at any location shall be 5% and a slope of 3 parts horizontal to 1-part vertical shall be used to take up the grade differentials in excess of this 5% slope.
11. Minimum driveway grade shall be 2% on boulevards, 1% on lots and shall not exceed a maximum grade of 8%, measured from the garage or dwelling face, to the edge of roadway pavement.
12. Where landscaping improvements are proposed adjacent to the driveway (i.e. driveway edging), driveway edging must be flush with the driveway surface (and back of curb, if applicable) to a minimum of 1.5 meters beyond the edge of pavement/curb line. Where sidewalks exist along the frontage of the proposed dwelling, driveway edging must be flush with the driveway surface for a minimum of 500mm beyond the back of sidewalk.
13. Sediment and erosion control measures shall be implemented to prevent migration of silt and sediment from the subject lot to any adjacent lot, including municipal right-of-way. Special care shall be taken to ensure that silt and sediment laden surface water does not enter any watercourses or environmentally sensitive areas, either overland or through the storm drainage system.
14. Interim grading measures may be required during building construction to ensure that drainage does not adversely affect the neighboring properties. Rough grading of the property shall be completed such that drainage is contained on site or controlled to a positive outlet.
15. In many areas within the Municipality, the municipal drainage systems are limited or non-existent. As such the lot grading design must consider ways and means to keep any increase in surface water run-off from the subject site to a minimum, utilizing acceptable surface water retention techniques. In areas where positive storm drainage is not available within the Municipal road allowance the property Owner may be required to provide catch basins and/or grade the boulevard in such a way that ponding does not occur on the paved surface of the road or sidewalks.
16. Catch basins are to be sized and constructed in accordance with the most current version of the Ministry of Environment Storm Water Management Planning and Design Manual and Township of Clearview Engineering Standards.
17. Where a retaining wall or other similar structure is proposed on the property, it shall be shown complete with top and bottom of wall elevations and material. **Retaining walls are discouraged.** Retaining walls are to be constructed of acceptable treated lumber, architectural block or approved

equivalent. Filter cloth shall be placed behind all retaining walls to prevent the migration of fines. If any retaining wall meets or exceeds 1.0 meter in height, a 1.2 meters high safety fence may be required on top of the wall. Proof of engineering design may be required on retaining walls over 1.0 meter in height. Retaining walls are not to encroach into the Municipal road allowance. Retaining walls along lot lines shall be constructed wholly within the Applicants lot.

18. Designs and certification shall be carried out by a Professional Engineer.

7.0 Mandatory General Notes

The following general notes are to be included on every drawing:

1. Sediment and erosion control measures shall be implemented to prevent migration of silt and sediment from the subject lot to any adjacent lot, including municipal right-of-way. Special care shall be taken to ensure that silt and sediment laden surface water does not enter any watercourses or environmentally sensitive areas, either overland or through the storm drainage system.
2. Minimum cover on watermains, water services, and hydrant branches under ditches shall be 1.7 meters.
3. All downspouts, sump pump and other drainage discharge points shall discharge onto a splash pad or approved equivalent.
4. The Owner is responsible for obtaining utility and servicing locates prior to any works being undertaken.
5. The underside of floor slab and associated drains shall be entirely located a minimum of 0.4 metres above the seasonal high groundwater levels. The High Groundwater Elevation shall be raised, with corresponding increase in construction elevations, if higher groundwater conditions are evident at the time of construction. The High Groundwater Elevation shall be the highest documented groundwater observation.
6. All disturbed areas are to be sodded over a minimum of 100mm of topsoil or approved alternative ground cover.
7. A copy of the "Accepted for Construction" lot grading and drainage plan is always to be on site for reference during construction.
8. All work within the Township Right-of-Way must be restored to equal or better condition

The following general notes are to be included on the drawing as required:

9. Catch basins shall be constructed in accordance with Township of Clearview Engineering Standards. Construction of catch basins are to be confirmed by the designer/engineer that is to sign the Lot Grading Certificate. (To be reviewed on site by the Professional Engineer prior to backfill or submission of photographs from the Contractor may be sufficient).

10. Retaining walls are to be constructed of acceptable architectural block or approved equivalent. Filter cloth shall be placed behind all retaining walls to prevent the migration of fines. Retaining walls are not to encroach into the Municipal road allowance.
11. When applicable, the weeping tile elevation is to be confirmed in writing by the Professional Engineer to the Township prior to the construction beyond foundation.

8.0 Geotechnical Investigation and Report

All lot grading designs must have regard for and take into consideration the presence of the natural ground water table and its seasonal high groundwater elevation fluctuations.

If deemed necessary by the Township, the Applicant may be requested to provide a Geotechnical Report in support of the Lot Grading and Drainage Plan application. The Geotechnical Report shall be prepared by a qualified Geotechnical Consultant identifying site soil conditions and existing groundwater table elevation. Recommendations within the Report shall also make provision for backfill materials, foundations, retaining walls and slope stabilization, as deemed necessary by the Engineering Services.

The Geotechnical Report shall make reference to the seasonal high groundwater elevation fluctuations of the groundwater table and provide a “seasonal high groundwater elevation high / groundwater table elevation”. The underside of slab, as outlined in the Engineering Standards, elevation shall be a minimum of **400mm above the seasonal high groundwater elevation high groundwater table elevation**.

In areas where the soil conditions and the underlying groundwater table permit, roof leaders may be discharged to a third pipe as per municipal standards, as shown in Appendix B.

9.0 Building Permits

The Owner covenants and agrees that prior to a building permit being issued for the development or construction that is to take place with respect to any of the lots created pursuant to the severance approval with respect to the Lands, the Owner shall have satisfied the following requirements:

- a) Obtain all approvals prerequisite to the issuance of a building permit;
- b) Unless already conveyed as a condition of consent, may deliver to the Township documentation evidencing the grant of a 3m wide drainage easement on the Lands to the Township, in a form satisfactory to the Township in its sole satisfaction, which Transfer of Easement shall be registered on title free from any encumbrances; this easement shall be granted to the Township at no cost to the Township, and shall be as shown in the approved plans listed in Schedule “B” to the Agreement;
- c) If there are any future drainage works as a requirement of the development of this lot or block, to be completed by the Township, that the fee for such future works have been paid to the Township;
- d) Unless already constructed and approved by the Township as a condition of consent, deliver to and approved by the Township, individual Lot Grading and Drainage Plans for each lot.
- e) Posted a lot grading fee and deposit for each lot pursuant to the Township’s Fee By-law;

- f) Unless already constructed as a condition of consent, provide evidence satisfactory to the Township that drainage system for each of the lots being created is connected to the municipal stormwater management system, if applicable, and if required the posting of insurance and/or securities when work is required to be undertaken on Township lands;
- g) Prepared and submitted to and approved by the Township an architectural control plan in compliance with bylaw 19-35 Township of Clearview architectural control plan.
- h) Provided evidence satisfactory to the Township that all lots and the residential buildings to be constructed thereon are to be connected to municipal water and sewage systems and that all connection and frontage charges have been paid.
- i) Prepared, submitted to and approved by the Township a landscaping plan that illustrates the location of any fencing being installed on the lands, the placement of trees on the boulevard, sodded grass in the front and side yards and any swales, and sod or seed in all other areas, on the lots and a paved or hard surfaced driveway for each lot which shall not exceed more than 40% lot coverage of the property.

10.0 Occupancy

The Owner covenants and agrees not to permit occupancy of any building or part thereof for which building permits have been issued, until:

- (a) Conditions for occupancy under the *Building Code Act* have been satisfied;
- (b) A Professional Engineer has certified that the grading, drainage and driveway surfacing of the lot or block has been completed in accordance with all specifications and requirements of the approved individual grading plan;
- (c) Where any variation of the individual grading plan has been approved by the Municipality, the Owner's Professional Engineer shall prepare and certify and submit an as-built Lot Grading and Drainage Plan;
- (d) The Owner's Professional Engineer has submitted a certificate, certifying that the elevation of the footings, drains and top of the foundation are in conformity with the grading plan and the requirement that all underside of slabs is to be located a minimum of 0.4m above the seasonal high groundwater elevation / high groundwater level; and

the Owner has installed a water meter in accordance with the Municipality's requirements, where development is serviced by a municipal water system, and has made arrangements with the Municipality for water billing.
- (e) The Owner has completed all the work and landscaping outlined in the approved plans; and,
- (f) The Township confirms that all building and landscaping work has been done to its satisfaction;

The Owner covenants and agrees that the Owner shall take all responsibility and fully indemnifies the Municipality for occupancy occurring prior to final grading, sodding and landscaping of the lot or block. The Owner further agrees that the Owner shall have reserved the right in any agreement to transfer or sell a lot or block to permit the Owner and/or the Municipality to enter upon any lot or block to complete or make any alteration to the required Works to ensure proper grading, drainage and landscaping of the lot or block regardless of any transfer of the lot or block Ownership and/or occupancy.

11.0 As-Built Lot Grading / Certification

Township Staff/Engineers involved with site reviews for Lot Grading Certification are provided with the authority / power of entry onto the lands for the purposes of Lot Grading Certification and review of associated deficiency corrections. This shall include the Township.

Upon completion of site grading and prior to landscaping, including fencing, the Owner shall be required to submit two (2) copies of the Lot Grading Certificate, which has been certified by a Professional Engineer to the Township. The Certificate is to be confirmed/accepted by Township Staff and/or Engineering Consultant. The Lot Grading Certificate will confirm that the lot grading and drainage works have been completed in conformance with the design accepted by the Township and with reference to the Checklist attached as Appendix A.

It is strongly recommended that a pre-sod inspection be coordinated by the Owner with their Professional Engineer.

Lot Grading Certificate must be provided and accepted by the Township. This includes that prior to acceptance of the Certificate by the Township; the sufficient establishment of ground cover shall be required. Minor adjustments may be accepted on the condition that the Owner's Professional Engineer certifies that the resultant change will not adversely impact on the drainage of the individual lot, the adjoining properties, or the Municipal roadway.

12.0 Grading Fee, Deposit and Release

A lot grading administration and review fee per lot will be required with all Building Permit applications. The fee includes the review of two (2) submissions of the lot grading and drainage plan, one (1) pre-sod site review and one (1) final site review in support of the Lot Grading Certification.

Any additional drawing and/or site reviews will be billed an admin fee at Fifty Dollars (\$50) per instance and taken from the Grading Deposit in addition Township consulting review.

In addition, a Grading Deposit per lot must be provided with all Building Permit applications to ensure the satisfactory completion of the grading and drainage works.

The lot grading deposit will be refunded once all requirements have been met including the Owner's Professional Engineer has submitted a certificate, certifying that the elevation of the footings, drains and top of the foundation are in conformity with the grading plan and the requirement that all underside of slabs are located a minimum of 0.4m above the seasonal high groundwater elevation high groundwater level. Should drainage problems arise, resulting from non-compliance to this Policy, the Township will provide the Owner with 48 hours' notice to correct the problem(s). Upon failure of the Owner to rectify the problem(s), the Township may use the Owner/Builder/Applicant's Grading Deposit to cover the costs of any

remedial works deemed necessary. Any costs of these remedial works more than the amount of the Owner/Builder/Applicant's Grading Deposit shall be the responsibility of the Owner/Builder/Applicant.

Upon acceptance of the Lot Grading Certificate by the Township, the Owner may apply in writing for the release of the Lot Grading Deposit, without interest, **less any cost**, if any, for additional review and/or remedial works performed resulting from non-compliance. The Grading Deposit will only be released to the person who paid/posted the deposit.

No more than one extension shall be provided for any lot or block and each request for an extension shall be accompanied by a processing fee payable to the municipality, in the event lot grading has not been completed by the extension date a lot grading deposit shall not be returned until the lot has been completed and certified.

13.0 Maintenance

It is anticipated that some backfill settlements may occur over several years after construction, and as such, it is the responsibility of the Owner to repair any settlements in order to maintain positive drainage away from the building at all times.

Eavestrough and downspouts and sump pump discharge shall be installed on all buildings related to the approved grading plan. It is also the responsibility of the Owner to maintain all downspouts and to ensure that no subsequent modifications to the grading of the lot are made which will adversely affect the drainage of adjacent lots.

14.0 Approved Plans

The Owner shall, at his own expense and within specified time limits, design, install, pay and complete the works in a good and workmanlike manner to the satisfaction of the Township of Clearview and their Engineers, and all other agencies including the Conservation Authority.

APPENDIX A

LOT GRADING CERTIFICATION CHECKLIST

**TOWNSHIP OF CLEARVIEW
LOT GRADING
CERTIFICATION CHECK LIST**

	YES	NO
1. Lot Grading and Drainage Plan is attached.	<input type="checkbox"/>	<input type="checkbox"/>
2. Grading design amendments have received prior Municipal approval.	<input type="checkbox"/>	<input type="checkbox"/>
3. A pre-sod grade check was determined to be satisfactory	<input type="checkbox"/>	<input type="checkbox"/>
4. Sod or alternative ground cover has been placed and is sufficiently established.		
• Front yard and boulevard (Sod Only)	<input type="checkbox"/>	<input type="checkbox"/>
• Side Yards (Sod or approved alternative ground cover)	<input type="checkbox"/>	<input type="checkbox"/>
• Rear Yard (Sod or approved alternative ground cover)	<input type="checkbox"/>	<input type="checkbox"/>
5. Final grades have been checked and are in general compliance with Lot Grading and Drainage Plan.		
- Apron/Garage Floor	<input type="checkbox"/>	<input type="checkbox"/>
- Lot Corners	<input type="checkbox"/>	<input type="checkbox"/>
- Side yards	<input type="checkbox"/>	<input type="checkbox"/>
- Top of Foundation Wall	<input type="checkbox"/>	<input type="checkbox"/>
- Underside of Footing	<input type="checkbox"/>	<input type="checkbox"/>
6. Side yard Swales are well defined.	<input type="checkbox"/>	<input type="checkbox"/>
7. Rear yard Swale is well defined.	<input type="checkbox"/>	<input type="checkbox"/>
8. Splash pads have been placed at all downspouts.	<input type="checkbox"/>	<input type="checkbox"/>
9. Finish grades are a min 150 mm below brick/siding.	<input type="checkbox"/>	<input type="checkbox"/>
10. There are no areas of settlement at or adjacent to foundation walls.	<input type="checkbox"/>	<input type="checkbox"/>
11. Grading encroachment on adjacent lots has been reinstated to the satisfaction of the adjacent lot Owner(s).	<input type="checkbox"/>	<input type="checkbox"/>
12. Water service curb stop flush with final grade and accessible.	<input type="checkbox"/>	<input type="checkbox"/>
13. Sanitary service cleanout flush with final grade, or max. 150mm below final grade and accessible.	<input type="checkbox"/>	<input type="checkbox"/>
14. Weeping tile sleeve elevation confirmed (where applicable).	<input type="checkbox"/>	<input type="checkbox"/>

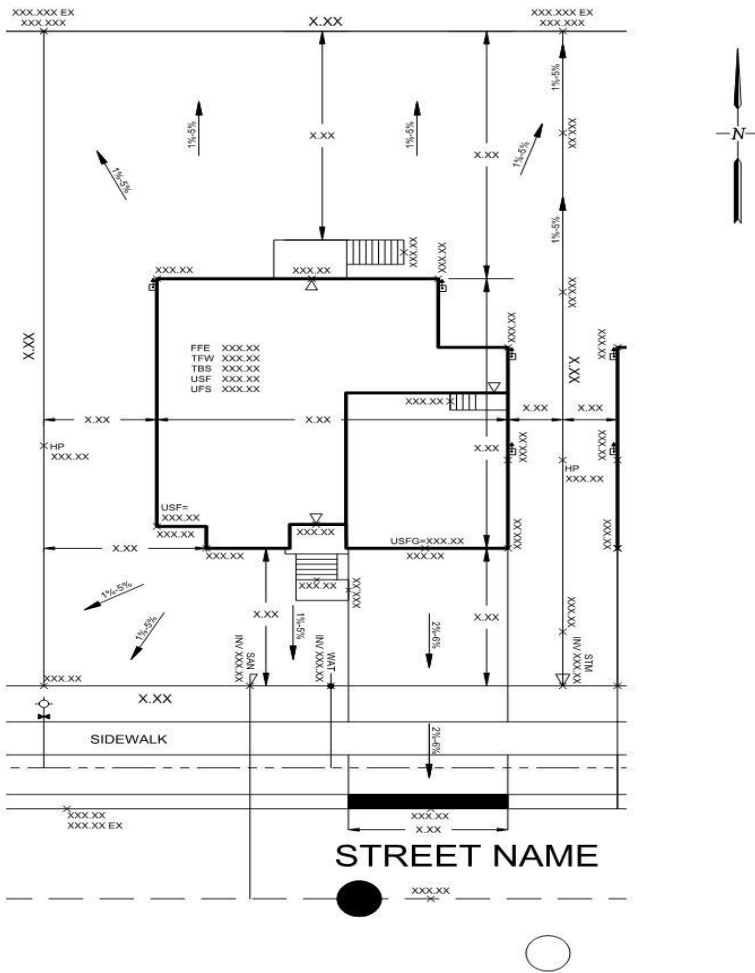
To be tested by Township of Clearview Public Works Department:

1. Water service curb stop operational.	<input type="checkbox"/>	<input type="checkbox"/>
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If **NO** to any item explain and describe graphically on the attached Lot Grading and Drainage Plan.

APPENDIX C

EXAMPLE LOT GRADING AND DRAINAGE PLAN



***NOTE**
 THIS PLAN REPRESENTS A SAMPLE PLAN ONLY, AND DOES NOT NECESSARILY INCLUDE ALL SITE SPECIFIC INFORMATION REQUIRED. ADDITIONAL INFORMATION TO BE PROVIDED AS REQUIRED, AND AT TOWNSHIP OF CLEARVIEW DISCRETION.

KEY PLAN
 SCALE: N.T.S.

BUILDING STATISTICS

REG. PLAN No.	_____
ZONE	_____
LOT NUMBER	_____
LOT AREA (m ²)	_____
BLDG AREA (m ²)	_____
LOT COVERAGE (%)	_____
No. OF STOREYS	_____
MEAN HEIGHT (m)	_____
PEAK HEIGHT (m)	_____
DECK LINE (m)	_____
LOT FRONTAGE (m)	_____
FRONT YARD (m)	_____
REAR YARD (m)	_____
INTERIOR SIDE YARD (m)	_____
EXTERIOR SIDE YARD	_____

LEGEND

FFE	FINISHED FLOOR ELEVATION	→	SWALE DIRECTION
TFW	TOP OF FOUNDATION WALL	⊠	SUMP PUMP
TBS	TOP OF BASEMENT SLAB	⊠	BELL PEDESTAL
USF	UNDER SIDE FOOTING BASEMENT	⊠	CABLE PEDESTAL
UFS	UNDER SIDE FLOOR SLAB	⊠	CATCH BASIN
USFR	UNDER SIDE FOOTING AT REAR	⊠	DBL CATCH BASIN
USFG	UNDER SIDE FOOTING AT GARAGE	⊠	ENGINEERED FILL
TEF	TOP OF ENGINEERED FILL	⊠	HYDRO CONNECTION
R	NUMBER OF RISERS TO GRADE	⊠	STREET LIGHT
WOD	WALKOUT DECK	⊠	MAIL BOX
LOB	LOOKOUT BASEMENT	⊠	TRANSFORMER
WOB	WALKOUT BASEMENT	⊠	SEWER CONNECTIONS, 2 LOTS
REV	REVERSE PLAN	⊠	SEWER CONNECTION, 1 LOT
STD	STANDARD PLAN	⊠	WATER CONNECTION
○	DOOR	⊠	WATER VALVE
○	WINDOW	⊠	HYDRANT AND VALVE
⊠	AIR CONDITIONING	⊠	HYDRO METER
⊠	DOWN SPOUT TO SPLASH PAD	⊠	GAS METER
⊠	DOWN SPOUT CONNECTED TO STM	⊠	MANHOLE - STORM
⊠	FIRE BREAK LOT	⊠	MANHOLE - SANITARY
---	CHAIN LINK FENCE		
---	PRIVACY FENCE		
---	SOUND BARRIER		
---	SANITARY SEWER		
---	WATERMAIN		

- GENERAL NOTES**
- SEDIMENT AND EROSION CONTROL MEASURES SHALL BE IMPLEMENTED TO PREVENT MIGRATION OF SILT AND SEDIMENT FROM THE SUBJECT LOT TO ANY ADJACENT LOT, INCLUDING MUNICIPAL RIGHT-OF-WAY. SPECIAL CARE SHALL BE TAKEN TO ENSURE THAT SILT AND SEDIMENT LADEN SURFACE WATER DOES NOT ENTER ANY WATERCOURSES OR ENVIRONMENTALLY SENSITIVE AREAS, EITHER OVERLAND OR THROUGH THE STORM DRAINAGE SYSTEM.
 - MINIMUM COVER ON WATERMANS, WATER SERVICES AND HYDRANT BRANCHES UNDER DITCHES SHALL BE 1.7 METRES.
 - ALL DOWNSPOUTS, SUMP PUMP AND OTHER DRAINAGE DISCHARGE POINTS SHALL DISCHARGE ON TO A SPLASH PAD OR APPROVED EQUIVALENT.
 - THE OWNER IS RESPONSIBLE FOR OBTAINING UTILITY AND SERVICING LOCATES PRIOR TO ANY WORKS.
 - ALL DISTURBED AREAS ARE TO BE SODDED OVER A MINIMUM OF 100mm OF TOPSOIL OR APPROVED ALTERNATIVE GROUND COVER.
 - A COPY OF THE "ACCEPTED FOR CONSTRUCTION" LOT GRADING AND DRAINAGE PLAN IS ALWAYS TO BE ON SITE FOR REFERENCE DURING CONSTRUCTION.

- GENERAL NOTES**
- THE UNDERSIDE OF FLOOR SLAB AND ASSOCIATED DRAINS SHALL BE ENTIRELY LOCATED A MINIMUM OF 0.4 METRES ABOVE THE SEASONAL HIGH GROUNDWATER LEVELS. THE HIGH GROUNDWATER ELEVATION SHALL BE RAISED, WITH CORRESPONDING INCREASE IN CONSTRUCTION ELEVATIONS, IF HIGHER GROUNDWATER CONDITIONS ARE EVIDENT AT THE TIME OF CONSTRUCTION. THE HIGH GROUNDWATER ELEVATION SHALL BE THE HIGHEST DOCUMENTED GROUNDWATER OBSERVATION.
 - ALL WORK WITHIN THE TOWNSHIP RIGHT-OF-WAY MUST BE RESTORED TO EQUAL OR BETTER CONDITION.

ESTIMATED SEASONAL HIGH WATER TABLE ELEVATION:
 TEST PIT LOCATION:
 DATE ACQUIRING ELEVATION:

BENCH MARK LOCATIONS AND ELEVATIONS

MUNICIPAL ADDRESS
 XXXXXXXXX

Figure Title
PROJECT TITLE
 LOT GRADING PLAN SAMPLE

Client
CLIENT NAME

Drawn	Checked	Date	Figure No.
XX	XX	XX/XX/XX	
Scale	Project No.		----
XX	XXXXXXXXXX		

APPENDIX D

LOT GRADING AND DRAINAGE PLAN REVIEW CHECKLIST

Name & Lot Location: _____

Contact Person: _____

Firm: _____ **Phone Number:** _____

Contact Person: _____ **Email Address:** _____

The items below represent the minimum requirements for acceptance of the submitted lot grading plan. Plans not meeting these requirements will be deemed incomplete and returned without further review.

This checklist must be **completed and submitted by the P.Eng. / C.E.T.** as part of the plan submittal package.

Any items which do not apply to the project should be marked N/A (Not Applicable)

Please reference the Township of Clearview Engineering Standards for further details.

- A key plan, north arrow, plan scale and lot locations information
- Building elevation table including:
 - Garage floor
 - Finished first floor
 - Top of foundation wall
 - Underside of footing
 - Underside of floor slab (min 400mm above HGWL)
- (Municipal Address)
- Geodetic elevations and a survey benchmark
- Location of all existing & proposed municipal and utility services
- Street trees & other applicable landscaping
- Existing elevations on center line of road, ditch, boulevards, curbs & adjacent properties
- Offsets from the building to the property line
- Easements to be shown, if required.
- General notes, per Township Standards
- Erosion & sediment control measures and notes
- The location of all existing and proposed buildings, including adjacent properties and existing features
- Elevations of underside of basement slab, underside of footing, first floor, garage floor and top of foundation wall
- Proposed and existing elevations at all lot corners and significant changes in grade along property line
- Limits and details of seeding and sodding
- Water service invert at property line. Water services to have minimum 1.7 meter cover
- Sanitary service invert at property line. Sanitary services to have a minimum 2.7m cover or sufficient depth for basement floor drains and frost cover
- Water services, sanitary services, hydro poles, transformers, etc., to be minimum 1.5m from the driveway
- Septic/Well locations and grades where applicable
- The seasonal high groundwater elevation, location of the test pit and date measured
- Driveway grades, driveway slopes to be less than 8%. 8% is the maximum and not recommended. Maximum grade change to be 4% at curb or sidewalk
- Driveway culverts, labeled with material, size, length and inverts. Headwalls are shown and labelled. Min. size is 450mm, min. length is 7.5m.
- The location of all downspouts, sump pump and other drainage discharge points. Splash pads and rain barrels are noted to be provided
- Lot grading plan to match overall plan of subdivision. Grading along property lines is to match any previously submitted plans for adjacent properties
- The building envelope elevation is to be 0.45m to 1.5m higher than the finished crown of the opposite center line of the road
- Elevations at building corners. Yards to be graded away from the building at 5% for 1.5m to 3.0m from house foundation
- Curb to rear of building to be 2% to 5% slope
- Yard areas to have a 1% to 5% grade. Non-yard areas shall have a maximum grade 30%
- Swale grades to be 1% to 5% slope, and minimum depth of 0.15m. If swales do not meet min. 1% slope, a 150mm subdrain with proper outlet to be provided
- Swales are to be located within limits of the lot, or permission from adjacent land owner must be obtained and provided
- Rear lot drainage such as CB or area drains indicated as required, including type, material, inverts. Pipes and structure to be located a minimum 1.5m from lot line
- If retaining wall exceeds 1.0m, a safety fence is required and designed by a P.Eng