

CITY OF SARNIA STANDARDS

LOT GRADING POLICY

2022

LOT GRADING REQUIREMENTS

Grade Control – Subdivisions

An overall lot grading plan shall be prepared for each subdivision or phase of subdivision. In addition, a lot grading plan for individual lots, submitted with each building permit application, detailing elevations for the specific lots, easement, and miscellaneous park area or other separate property on the plan(s). Additionally, the grade control plan will establish centre line road grades for all municipal roads within the plan of subdivision. This plan will form the basis for all certified lot grading plans submitted for building permits. Any revision of an individual lot grading plan with a subdivision must be approved by the original Engineer of the subdivision or under the discretion of the General Manger of Engineering. Each lot grading plan shall be designed in accordance with the Lot Grading Guidelines/Specifications (Appendix A).

Grade Control – Severance Building Permit

A lot grading plan shall be prepared for each lot created by the severance application and submitted with the building permit application, detailing elevations to the specific lot, easements, and any additional requirements as detailed in conditions of the severance. Positive drainage from the proposed new lot be provided to an outlet and will be no negative impact on either adjacent or downstream properties. Drainage easements may be required, and be obtained as part of the severance approval process. The easement shall not be deferred to the time of permit application. Each lot grading plan shall be designed in accordance with the Lot Grading Guidelines/Specifications (Appendix A). Any rural lot severance outside the urban growth boundary as described in the Official Plan with a frontage greater than 50 meters (165 feet) and area of each lot created being greater than 0.8 hectares (2.0 acres) a lot grading plan will not be required.

Grade Control – Rural Lot Building Permit

A lot grading plan shall be prepared for and submitted with each building permit application. The lot grading plan shall include detailed elevations to the specific lot, easements, and additional requirements as detailed in the Lot Grading Guidelines/Specifications (Appendix A). Any rural lot outside the urban growth boundary as described in the Official Plan with a frontage greater than 50 meters (165 feet) and area of lot greater than 0.8 hectares (2.0 acres) a lot grading plan will not be required.

Grade Control – Committee of Adjustment

A lot grading plan shall be prepared for and submitted as a requirement of COA, if found the application exceeds the maximum lot coverage, minimum setbacks or other variance of the zoning By-law. The decrease in permeability of surface drainage, and the rise in intensity of rain events within the City of Sarnia area supports a grading design. The grade control plan shall include detailed elevations to the specific lot, easements, Lot Grading Guidelines/Specifications (Appendix A) and any additional conditions as specified in the COA Decision. Positive drainage to be maintained and will be no negative impact on either adjacent or downstream properties. A rear yard catchbasin as detailed in 110-F or 128-F in the City of Sarnia Standards and Specifications must be installed and described on the lot grading plan. Any rural lot outside the urban growth boundary as described in the Official Plan with a frontage greater than 50 meters (165 feet) and area of lot greater than 0.8 hectares (2.0 acres) a lot grading plan will not be required.

Grade Control – Swimming Pool Application

A lot grading plan shall be prepared for and submitted with each swimming pool application. The grade control plan shall include detailed elevations to the specific lot, easements, and additional requirements as detailed in the Lot Grading Guidelines/Specifications (Appendix A). This requirement is specific to in-ground pools (pools below ground) only. Any rural lot outside the urban growth boundary as described in the Official Plan with a frontage greater than 50 meters (165 feet) and area of lot greater than 0.8 hectares (2.0 acres) a lot grading plan will not be required.

Lot Grading Guidelines/Specifications:

1. Plot Plans and lot grading plans must be prepared by an Ontario Land Surveyor or Professional Engineer. The plan must be affixed with the stamp and signature of the Surveyor or Engineer.
2. Certified lot grading plans shall be prepared for each lot within the plan of subdivision or severance.
3. Drawings shall be sufficiently large to show clearly all details including relevant features beyond the property boundaries. Drawings shall be prepared to a metric scale and at a scale of no greater than 1:250.
4. Municipal Street address or Lot number detailed on plan.
5. Existing elevations beyond limit of plan, existing ground elevations adjacent to structure, existing and proposed elevations at lot corners and finished floor elevation to be detailed on the plan.
6. Symbols and conversions to be used on Lot grading plans shall conform to the Design Criteria.
7. Proposed elevations for Lot corners, finished floor elevation, swale inverts and intermediate points of grade change are to be shown at reasonable intervals along the boundaries of the Lot to illustrate the drainage of the Lot in relation to the surrounding lands and buildings.
8. Drainage flows which are to be carried adjacent to the dwelling are to be confirmed in defined swales located near the property line between the houses. Elevations to be detailed with top of slope and centerline swale.
9. The direction of surface water runoff shall be shown by an arrow.
10. Elevations are to be geodetic in nature with a benchmark location.
11. Rear yard catchbasins (DWG 110-F), rim elevation of grate and invert of outlet pipe are to be shown on plans. Rear lot catchbasins shall be designed in accordance with the City of Sarnia Engineering Standard DWG 110-F. The private storm connection to the road to be specified on the grade control plan along with the detail for the rear lot catchbasin certified by a Professional Engineer or OLS. Rear yard catchbasins and outlet pipes shall be located so that the catchbasin is entirely on one Lot and the outlet pipe is on the same Lot. The catchbasin shall be located 1.0m clear of property lines. Footings constructed next to a catchbasin lead pipe or other Municipal Services be installed below the lead pipe excavation. Footings must be constructed on undisturbed soil with an allowable bearing pressure of 75kPa or greater. Rear lot catchbasins are required on all lots where City infrastructure is available.
12. Dry well catchbasins are required on all lots where City infrastructure is not available. As per DWG 128-F, rim elevation of the grate shall be detailed on the plans. Dry well catchbasins to be designed in accordance with the City of Sarnia Engineering Standard DWG 128-F. Dry well catchbasins shall be

located so that the catchbasin is entirely on one lot. The catchbasin shall be located 1.0m clear of property lines. Dry wells to be in areas where the natural groundwater level is below the bottom of the dry well. Dry wells shall be not less than 5.0m from the building foundation and located so that drainage is away from the building.

13. All above ground services including curbs, sidewalks, valves, hydrants, streetlight poles, transformers and easements be shown.
14. The degree and limits of slopes over 5 horizontal to 1 vertical shall be shown.
15. The plan shall indicate proposed locations for buildings, private sewage disposal systems and private water supply systems.
16. House connections, water, sanitary and storm sewer invert lateral elevations be shown on the Plot Plans.
17. Detail and show the extent of typical side yard treatments where yard is less than 1.8m between dwellings.
18. House elevations including finished first floor, basement slab and underside of footing. Sill elevations are to be shown at side entrances where elevations differ from the finished first floor. The number of risers must be indicated at entrances to dwellings.
19. Road layout including curbs, sidewalks and centre line road elevations shall be shown.
20. Proposed retaining walls shall have proposed spot elevations indicated at top of wall and bottom of wall.
21. Lot surfaces within 6.0m of the dwelling shall be constructed at a 2% - 5% slope.
22. A slope of 3 parts horizontal to 1 part vertical shall be used to accommodate any grade differential with a vertical dimension not exceeding 600mm. Where the overall vertical dimension exceeds 600mm a retaining wall shall be constructed.
23. A Building Permit is required for a retaining wall considered to be a Designated Structure under the OBC and must conform to all OBC requirements related to retaining walls. A retaining wall is considered to be a Designated Structure where the retaining wall is exceeding 1000mm in exposed height adjacent to, (i) public property, (ii) access to a building, or (iii) private property to which the public is admitted. The retaining wall shall be protected by guards on all open sides where the public has access to open space at the top of the retaining wall.
24. Except as provided for in Item 25, overland drainage swales shall be graded at a minimum 2% and a maximum 5% slope.
25. Side yard drainage swales shall be graded at a minimum of 3% where dwellings are located less than 1.8m apart.

26. Boundary slopes are to be constructed on the lower property.
27. Except as permitted in item 28, front yards and driveways of residential Lots shall be graded to drain towards the street.
28. Where driveway drainage to the street cannot be achieved, driveway and catch basin design shall be approved by the City of Sarnia Chief Building Official Building and/or the General Manager of Engineering.
29. If the distance between the main walls of adjacent units is less than 1.8m, a side yard drainage swale shall be constructed between the units and shall be surfaced with a minimum of 130mm of limestone screenings overlaid by a 600mm wide patio slab walkway.
30. Rear to front drainage shall not be permitted where the combined width of abutting side yards is less than 1.8m. In such cases split draining swales shall be served by rear lot catch basins.
31. Where side yards are less than 1.8m and are designed with a side yard entrance, a minimum 600mm concrete walkway shall be provided.
32. Driveways are not permitted as outlets for drainage swales.
33. The site shall be graded so that water will not accumulate at or near the building(s) and will not adversely affect adjacent properties.
34. Maximum depth for swales shall be 300mm.
35. Where architecture permits, rooftop rainwater leaders are to be located to the front of the dwelling unit to reduce the volume of runoff discharged into side yards. Eavestroughs and rainwater leaders to be sized to accommodate expected flows. Rainwater leaders shall not be connected to any sewer connection unless such connection is contemplated in the overall servicing design. Measures shall be taken to prevent erosion from roof runoff.
36. Exterior cladding and windowsills shall be a minimum of 0.15m above finished grade. Window wells shall be properly drained and connected to the foundation drains. There shall be a minimum of 0.15m separation provided between the specified house grade and sill elevations at house entrances.
37. Gas meters, hydro meters, water meters, side yard steps and landings and outside water taps are not permitted within a side yard less than 1.2m wide.
38. Walls constructed with a face height of greater than 600mm shall be designed and certified by a professional engineer except where pre-engineered, proprietary systems are used.
39. Timber retaining walls will be constructed of pressure treated lumber to prevent decay.
40. A minimum setback of 0.5m shall be maintained from retaining wall tiebacks to the foundation of any structure.
41. Construction details of retaining walls must be noted on both Lot Grading Plan and the Plot Plan and accepted by the City of Sarnia.

42. Retaining walls greater than 1.0m in height shall be served by guards or otherwise treated to reduce any public hazard.
43. Houses shall be sited, and driveways located to provide for maximum on-street parking.
44. Wherever possible, driveways are to be straight and perpendicular to the curb and garage door. Driveway deflection shall not be permitted to provide clearance to street utilities.
45. The maximum grade for driveways shall be 8% and the minimum grade shall depend upon the nature of the surface but never be less than 1.5%. Driveway grades are to be compatible with approved sidewalk grades.
46. Wherever possible, a 500mm sodded strip shall be provided between the edge of driveway (including boulevard portions) and property lines to maintain driveway separation.
47. Driveways are to be set back a minimum of 1.0m, from any tree or street hardware (hydro vault, light standards, hydrants, etc.).
48. Sanitary cleanouts and water service boxes shall not to be installed within driveway limits under any circumstances and constructed according to the Standard Specifications.
49. Prior to final grading approval a Plot Plan is to be submitted to the Building Department as per Schedule L2. The plan will show both proposed and "as built" Lot corner elevations.
50. The Owner's Consulting Engineer shall notify the Building Department prior to proceeding with construction or grading where grade deviations of greater than 150mm from the accepted plans are identified.

SCHEDULE L1

CONSULTANT'S CERTIFICATE

DATE:

City of Sarnia

ATTENTION: CHIEF BUILDING OFFICIAL

I have reviewed the site and grading plan for the proposed building to be constructed, and hereby certify that:

1. The proposed grading and appurtenant drainage Services comply with sound engineering principles.
2. The proposed grading is in conformity with the Lot Grading Plan approved for this subdivision and will not adversely affect adjacent lands.
3. The proposed building is compatible with the proposed grading.
4. The water service curb stop and sanitary sewer cleanout is located in the proposed grassed portion of the front yard.
5. The driveway conforms with the City of Sarnia Design Criteria and is a minimum 1.0m clear of all street landscape, catchbasins, fire hydrants and utilities.

NAME OF ENGINEERING FIRM

Signature of Engineer

PROFESSIONAL ENGINEER'S STAMP

SCHEDULE L2

FINAL LOT GRADING CERTIFICATE

DATE:

ATTENTION: CHIEF BUILDING OFFICIAL

RE: (NAME OF SUBDIVISION)

LOT OR BLOCK..... R.P.....

CERTIFICATION OF BUILDING AND FINAL LOT GRADING

I have inspected the complete Lot grading and building elevations on the above Lot, and hereby certify that the Lot grading and building elevations are:

- _____ in conformity with the approved Lot Grading Plan and Plot Plan.
- _____ not in conformity with the accepted Lot Grading Plan and Plot Plan, but have been constructed in accordance with sound engineering principles and vary from the accepted Lot Grading Plan and Plot Plan as shown on the attached as-built Lot Grading Plan and Plot Plan, signed and stamped by the undersigned.
- _____ The water service curb stop and sanitary sewer cleanout is located in the proposed grassed portion of the front yard and level with finished sod.
- _____ The driveway conforms to the City of Sarnia Design Criteria and is a minimum 1.0m clear of all street landscape, catchbasins, fire hydrants and utilities.

Yours very truly,

Name of Engineering Firm OR OLS

Signature

PROFESSIONAL ENGINEER'S STAMP

(Appendix A)

Lot Grading Checklist

		Yes	No	N/A
a	Plot Plans and lot grading plans must be prepared and stamped by an Ontario Land Surveyor or Professional Engineer			
b	Metric scale / max 1:250			
c	Address/Lot #			
d	North Arrow			
e	Property dimension			
f	Elevations to be geodetic with benchmark location			
g	Existing elevations - beyond plan, at structure and at lot corners			
h	Proposed grades at lot corners, finished grade, finished floor and underside of footing elevations			
i	Drainage flows adjacent to dwelling, elevations for top of slope, centerline of swale, and swale inverts			
j	Proposed catchbasin location including rim and invert of pipe			
k	Above ground Services including curbs, sidewalks, valves, hydrants, streetlight poles, transformers shall be shown			
l	Detail any easements pertaining to the property			
m	Indicate proposed locations for buildings, private sewage disposal systems and private water supply systems			
n	Road layout including curbs and sidewalks shall be shown			
o	Detail centre line road elevations every 30 meters and at any high or low points			
p	Proposed retaining walls shall have proposed spot elevations indicated at top of wall and bottom of wall			
q	Any walkouts onto the lands and any changes to the proposed finished elevations to be detail			
r	Maximum grade for driveways shall be 8% and the minimum grade be less than 1.5%, detail elevation of driveway entrance at garage and street			