

What is it?

A Grading Plan is a drawing that shows the existing elevations/grades on both the lands being developed and adjoining lands along with the proposed grading changes to the site. The plan is to reflect existing and proposed drainage patterns, all new structures, existing & proposed easements, access points/driveways and parking areas. Existing and proposed elevations demonstrate the topography to help ensure that the proposed site development drainage pattern will not impact existing lands/drainage patterns and that the grading is subject to sound engineering design.

Who prepares it?

The Grading Plan is to be prepared by a Professional Engineer licensed in Ontario or a licensed Ontario Land Surveyor (OLS). The drawing must be stamped, dated and signed by the licensed professional qualified to design site grading/drainage plan.

When is it required?

A Grading Plan may be required in support of an Official Plan Amendment, Rezoning, Draft Plan of Subdivision / Condominium, Site Plan Control, and/or Consent to Sever applications. A site Grading Plan may also be required for Building Permit applications.

How to prepare it?

A Grading Plan should include, but not be limited to the following:

GENERAL INFORMATION (to be included on all grading plans)

- 1) City standard title block including address or legal description
- 2) Metric scale of 1:250, 1:300, 1:500 or similar
- 3) North arrow
- 4) Key Plan for site location, at a scale of approximately 1:10,000
- 5) Legend identifying existing and proposed site grading information, sump pump, roof leaders/downspouts, areas/limits of surface ponding, surface materials, window wells, fences, retaining walls, etc.
- 6) Property lines (existing/ultimate), street names, registered plan numbers and parts
- 7) Locations of all doors and proposed grades outside and abutting each building entrance
- 8) Street centerline elevations along and beyond the frontage of the site
- 9) Location and details of all existing man-made or natural features on or adjacent to the site, including:
 - Natural features such as trees and watercourses;
 - Easements and public utilities;
 - Embankments and catch basins;
 - Curbs, hydro poles, light standards, fire hydrants and transformers, fences, etc.
- 10) Existing driveway width along the lot line, as well as existing/proposed widths at the street line where modifications are required
- 11) Differentiate between existing and proposed works by using lighter/greyed print to show existing features, text, and line work; and darker/black print to show proposed works
- 12) Location and identification of trees being protected and their associated hoarding zones

DETAILED GRADING INFORMATION (to be included on all grading plans)

- 1) **Show existing grades within the site and beyond the property limits** at a sufficient distance (including existing building line elevations) to clearly define the existing drainage pattern for the area. Elevations along and beyond the property limits are to be carefully examined to ensure the impact of external drainage is considered in the design.
- 2) **Provide proposed grades around the perimeter and within the site**, labelling drainage swale percentages, slope ratios and directional flow arrows. Proposed grades must be compatible with those existing on adjacent lands. Indicate how drainage/runoff as a result of new construction will be managed and self-contained within the site to ensure the adjacent properties are not adversely affected. Indicate the limits wherein the existing grades and drainage pattern will be maintained.
- 3) **Differentiate between existing and proposed works** by using lighter/greyed print to show existing features, text, and line work; and darker/black print to show proposed works.
- 4) **Proposed swales** are to be supported with invert elevations at regular intervals and percentages of slope with a minimum of 2.0% where achievable. Swales are to be sodded and well defined in relation to the existing adjacent grades. Allowable driveway slopes shall be between 2.0 % and 8.0%. Provide cross sections to clarify the proposed grading, particularly in relation to the adjacent private lands and municipal right-of-ways.
- 5) **Cross sections** are to show all relevant information required to properly assess the proposal. Label slopes “3:1 Max” where applicable. The proposed grading shall be in accordance with the Transportation and Works, Development Requirement Manual:
<http://www.mississauga.ca/file/COM/Section7Revised2010.pdf>
- 6) **Show all roof water leaders and sump pump discharge location(s)**, including direction of discharge, and how it will be managed within the subject property boundaries. Discharge shall not adversely affect abutting and/or City-owned lands and infrastructure, including ditches and sidewalks. Applicants are encouraged to design the weeping tile elevation to be at least 1.0 meter above the seasonal groundwater elevation so that sump pumps do not operate continuously. In cases of high ground water table where a sump pump could run continuously if a sump pump was implemented, the applicants should consider raising the basement elevation to be at least 1.0 metre above the elevation of the storm sewer obvert.
- 7) **Ponding limits** and depths are to be depicted on the drawing, and the maximum ponding depth in parking areas is not be exceed 250mm.
- 8) **Identify the areas to be sodded and/or hard-surfaced**, including artificial turf. Label all surface materials on the drawing. Hard surfacing must be Zoning compliant. For additional info, contact Zoning at 311 or 905-615-4311.

- 9) **Indicate any proposed retaining walls**, along with the type of material, top and bottom of wall elevations at each end at 10 m intervals along its length or where a change in height occurs. Provide cross sections to support proposed retaining walls. Retaining walls near a lot line and greater than 0.6m in height require certified structural details, cost estimates, and structural certification upon completion.
- 10) **Where municipal storm sewer is available for connection**, an internal storm system may be required to drain the site. A Storm Connection Approval from the Storm Drainage Section is required for any direct connection to municipal storm sewer. Show location of abutting municipal storm sewer where the internal storm sewer connects. For additional info, contact the Storm Drainage Section at ENV.Approvals@mississauga.ca.
- 11) **Include a note referencing the specific City of Mississauga Benchmark** number, elevation, and location/description used to establish the elevations on the plan. See Standard Note #1 below. The established benchmark elevation can be found at: <http://www.mississauga.ca/portal/services/maps>

All existing and proposed elevations are to relate to a local and existing published City of Mississauga benchmark value, without applying any shift. Submissions that show elevations values related to a datum other than the 1928 Canadian Geodetic Datum (i.e. the Mississauga Datum) will not be accepted.

GRADING PLAN STANDARD NOTES (the following notes are to be included on all grading plans)

- 1) "Elevations are referred to the City of Mississauga Benchmark No. ____, located (insert description on benchmark sheet), having a published elevation of ____ metres."
- 2) "I have reviewed the plans for the construction of _____ located at _____ and have prepared this plan to indicate the compatibility of the proposal to existing adjacent properties and municipal services. It is my belief that adherence to the proposed grades as shown will produce adequate surface drainage and proper facility of the municipal services without any detrimental effect to the existing drainage patterns or adjacent properties"

(Signature and Stamp)
- 3)
 - (a) "All surface drainage will be self-contained, collected and discharged at a location to be approved prior to the issuance of a building permit.
 - (b) "The portions of the driveway within the municipal boulevard will be paved by the applicant."
 - (c) "At the entrances to the site, the municipal curb and sidewalk will be continuous through the driveway and a curb depression will be provided for each entrance."

- (d) "All proposed curbing within the municipal boulevard area for the site is to suit as follows:
 - i) For all single family residential properties including on street townhouses, all curbing is to stop at the property limit or the back of the municipal sidewalk, whichever is applicable; or
 - ii) For all other proposals including Industrial, Commercial and Multi-Unit Residential developments, all entrances to the site are to be in accordance with City of Mississauga Standards 2240.030/2240.031 (as applicable) and 2230.20. Driveway and entrance curb radii dimensions shall be in accordance with OSPD 350.010."
- (e) "All excess excavated material will be removed from the site."
- (f) "The existing drainage pattern will be maintained except where noted."
- (g) "The applicant will be required to contact all utility companies to obtain all required locates prior to the installation of hoarding within the municipal right-of-way."
- (h) "The applicant will be responsible for the cost of any utility relocations necessitated by the site plan."
- (i) "Prior to commencing construction, all required hoarding in accordance with the Ontario Occupational Health & Safety Act and regulations for construction projects, must be erected and then maintained throughout all phases of construction."
- (j) "Should any works be required within the municipal right-of-way, a Road Occupancy Permit will be required. PUCC approval will be required. For further information, please contact the PUCC/Permit Technologist, at 905-615-4950 or by email at tw.counter@mississauga.ca or see the website link below."
<https://www.mississauga.ca/services-and-programs/transportation-and-streets/roads-and-sidewalks/apply-for-a-road-occupancy-permit/>

ADDITIONAL RESOURCES

See link to Transportation and Works Development Requirements Manual for further information:

<https://www.mississauga.ca/publication/transportation-and-works-development-requirements-manual/>