TOWN OF AURORA

SITE ALTERATION STANDARDS

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Standards for Site Alteration Plans

The Director may, prior to the issuance of a permit, require the owner and/or proposed Permit holder to enter into an agreement which may be registered on title to the subject lands containing such requirements of the Site Alteration By-law as the Director considers necessary to ensure that the site alteration is done in accordance with the prevailing Town design standards and proper engineering principles.

The Director may at his/her discretion request the applicant to enter into an agreement with the Town approved by the Town Council. This may occur, but is not limited to when the placing or dumping of fill is greater than 1000 m^3 or where the resulting proposed grade will be greater than 3 metres above adjacent existing grade.

The Director may at his/her discretion require that Town Council consider the permit application at a public meeting, at which the applicant or any interested members of the public will have a fair opportunity to make representation, notice of which shall be given to the adjacent property owners and agencies in a similar manner to Regulation 199/96 of the Planning Act.

Any fill received at a site shall meet the Soil, Groundwater and Sediment Standards referenced in O.Reg. 153/04 as amended and unless the Director approves otherwise any fill received at a site shall meet the standards set out in Table 1 of the Soil, Groundwater and Sediment Standards referenced in O.Reg. 153/04 as amended.

Any fill received at a site that does not meet the standards set out in Table 1, but is still in accordance with the Soil, Groundwater and Sediment Standards, referenced in O.Reg. 153/04, as amended, may be permitted by the Director at his/her discretion. The Owner/Applicant shall provide sufficient studies such as hydrogeological studies and any other studies as may be requested by the Director that demonstrate to the Director's satisfaction that the placing or dumping of fill will not have a detrimental effect on the environment which includes but is not limited to groundwater.

Please note that a Site Alteration permit is not considered part of a development, pre-servicing, site plan or subdivision agreement and is separate from a building permit. The Site Alteration plans should therefore focus on providing information on the proposed works to be completed under the Site Alteration permit.

The Director may request multiple drawings as part of the Site Alteration plan to show the different stages and control of site alteration including topsoil stripping, earth excavation and grading, placing or dumping of fill, and final site restoration.

Three (3) certified copies of the Site Alteration Plan drawings and reports are required. All drawings are to be in metric units and printed from the original drawings with all information provided legible and clear. All elevations shall be tied to the existing Corporation's benchmarks and be related to geodetic datum.

1. **Site Alteration Plan General Requirements**

Drawings for the Site Alteration Plan shall be at a scale of 1:250 to 1:1000 as deemed appropriate by the Director and shall include the following information:

1.1 A key map showing the location of the site, site boundaries and number of hectares of the site, including the nearest major intersection and north arrow;

1.2 The existing and proposed use of the land and the location and use of the buildings and other structures adjacent to the site;

1.3 The location, dimensions and use of the buildings and other structures existing or proposed to be erected on the site;

1.4 Identification of driveways on each site and all easements and right-of-ways over, under, across or through each site;

1.5 The location of lakes, streams, wetlands, channels, ditches, other water courses, other water bodies and environmental protection areas on and within thirty (30) metres beyond the site boundary;

1.6 The Regional storm flood line and the Conservation Authority Fill regulation lines;

1.7 The identification and location of predominant soil types;

1.8 The species, grade at base and size, in caliper, of all trees greater than 200mm in caliper and trees that may be subject to the Corporation's Private Tree Protection By-law 5850-16 (as amended or successor legislation thereto); all shrubs, trees and hedges within one (1) metre of the site boundary and driveways on each site; and all easements and rights-of-way over, under across or through each site;

1.9 The location and dimensions of any existing and proposed storm water drainage systems and natural drainage patterns on and within thirty (30) metres beyond the site boundary;

1.10 The location and dimensions of utilities, structures, roads, highways and paving on the site and within thirty (30) metres beyond the site boundary;

1.11 The existing site topography at a contour interval not to exceed one half of one metre determined in accordance with the Canadian Geodetic Datum and to extend a minimum of thirty (30) metres beyond the site boundary with spot elevations along the property line at 0.5 – 1.0 metre contour intervals to clearly show the existing drainage patterns on the land and the abutting lands;

1.12 The proposed final grade elevations and drainage system of the site;

1.13 A description of the proposed fill, including a list of the sources and geotechnical reports as to content and quality prepared by qualified experts in that regard;

1.14 The location and dimensions of all proposed site alteration activities;

1.15 The location and dimensions of all proposed temporary stockpiles for soil and other materials;

1.16 The location and dimensions of all proposed access routes from highways;

1.17 The location and dimensions of all proposed staging areas for equipment;

1.18 The location, dimensions, design details and design calculations of all construction site control measures, including plan and profile drawings of erosion and sediment controls ("ESC") and storm water management ("SWM") facilities, necessary to meet the requirements of the Site Alteration By-law. For the sites with more than four (4) ha disturbed at a time or in a staggered manner, all of which are served by a common discharge location, or with slopes greater than 12 percent grade, or if a channel originates in the disturbed area, one or more sediment control ponds, or equivalent control measures (e.g., SWM facility, if applicable) must be provided. The design criteria for sediment control ponds are provided in Site Design Guidelines Section;

1.20 Provisions for the maintenance of the construction site erosion control and dust control measures during construction and after as required including a mud tracking prevention program which describes the procedure for mud tracking prevention and road clean up and designating a contact person for such a program throughout each land disturbing and land developing activity;

1.21 An indication on the drawings of directions of overland flow and overland flow routes;

1.22 A schedule of the anticipated start and completion dates of each land disturbing or land developing activity including the installation of construction site control measures needed to meet the requirements of the Site Alteration By-law;

1.23 The material of the fill that will be introduced to the native soil;

1.24 Measures that will control the erosion of any fill placement;

1.25 The design details to proper scale of any retaining walls that may be required and the dimensions of any materials to be used in construction of such retaining walls, duly signed by a Qualified person;

1.26 Details of site rehabilitation including the type and location of all interim and permanent stabilization measures;

1.27 The Site Alteration Plan must be stamped, dated and signed by a Qualified Person;

1.28 And such other information with respect to the site as may be required by the Director

2. Site Alteration Plan Erosion and Sediment Control Report

Unless waived by the Director an Erosion and Sediment Control (ESC) report shall be completed and submitted as part of the Site Alteration Plan. An ESC report may include but is not be limited to the following requirements:

2.1 Project description including the nature and purpose of land disturbing activity, the legal description of the property, and a reference to adjacent properties and landmarks;

2.2 Condition of existing site including land use, site topography, soils, vegetation, drainage system, and receiving waters;

2.3 Description of areas within the development site that have potential for serious erosion or sediment problems;

2.4 Description of the erosion and sediment control features within the site alteration plan drawings;

2.5 A delineation and brief description of the measures to be undertaken to prevent erosion and to retain sediment on the site, including, but not limited to, the designs and specifications for swales, dikes, drains, sediment control ponds, and a schedule for their maintenance and upkeep;

2.6 A delineation and brief description of the vegetative measures to be used, including, but not limited to, mulches, types of seeds and fertilizers and their application rates, the type, location and extent of pre-existing and undisturbed vegetation types and a schedule for maintenance and upkeep;

2.7 Description of new erosion and sediment control techniques and measures provided such techniques are proven to be as, or more, effective than the equivalent erosion and sediment controls;

2.8 Record keeping procedure including sample inspection and maintenance forms. Maintenance record-keeping procedure including name of the person who will keep the inspection and maintenance record;

2.9 An estimate of the cost of implementing and maintaining all interim erosion and sediment control measures as per standards acceptable to the Town; and

2.10 The report must be stamped, dated and signed by a Qualified Person.

3. Fill Management Plan as Part of Site Alteration Plan

Where excess fill is to be received at a site the Director may request that the applicant submit a Fill Management Plan as part of the Site Alteration Plan.

At the Director's discretion, the Fill Management Plan may include any or all of the following requirements that the Owner/Applicant shall follow:

3.1 Retain a Qualified Person to confirm to the Director's satisfaction that any fill received at the site meets the standards set out in the Soil, Groundwater and Sediment Standards referenced in O.Reg. 153/04, as may be amended from time to time, with respect to all contaminant in the fill;

3.3 Retain a Qualified Person, approved by the Director, to be responsible for ensuring that the site alteration is in accordance with the Site Alteration By-law, plans submitted as part of the Permit, any environmental control programs approved by the Director and reasonable engineering and environmental practises;

3.4 Provide an environmental control program which may include the following:

3.4.1 specialized training for site personnel;

3.4.2 adequate on-site supervision and security;

3.4.3 isolation of any discovered contamination;

3.4.4 adequate fill screening procedures including chains of custody, visual inspections, detailed recording of all hauling companies dumping on the site and completion of fill inspection checklists for each load/truck entering the site; and

3.4.5 adequate groundwater monitoring procedures including routine laboratory analyses of groundwater samples taken up, down and midstream of the site continuing up to five (5) years following site closure.

3.5 Retain a Qualified Person to provide an Environmental Impact Study, prior to the issuance of a Site Alteration Permit, confirming that the site alteration will be in conformance with the Site Alteration By-law;

3.6 provide a pre-fill condition assessment report for soil and groundwater;

3.7 provide a characterization and pre-approval from all fill source locations prior to the acceptance of any fill at the site;

3.8 provide a plan for dust and noise controls;

3.9 provide a plan for traffic and transportation management;

3.10 provide details of how each load of Fill will be visually inspected to screen for odours, visible staining or debris;

3.11 provide details regarding record keeping and establishing written documentation for the tracking of all incoming loads of fill including;

3.11.1 date and time of arrival to the site;

3.11.2 name and location of the source site;

3.11.3 quality of fill received;

3.11.4 written confirmation and analytical results provided by the site Qualified Person acknowledging that the fill is acceptable for receipt at the site as well as audit sampling protocols that would be representative of the volume of soil received; and

3.11.5 rejections of any loads of Fill due to visual inspection or review of analytical results;

3.12 Once excess fill is received provide written documentation to the Director from a Qualified Person confirming the fill was received and the quality of the fill was acceptable;

3.13 Retain a Qualified Person to provide ongoing monitoring and reports in writing on a regular basis that he/she is satisfied that the site alteration has not resulted in the contamination or pollution of water wells on lands adjacent to the lands on which site alteration is or was taking place for a period of up to five (5) years following the cessation of site alteration;

3.14 retain a Qualified Person to develop plans for fill placement and segregation that include provisions for ensuring that fill from each source is deposited in segregated locations within the fill area so that it can be assessed and, if necessary, remediated;

3.15 provide contingency plans outlining actions to be taken if audit sampling or other information identifies concerns with fill quality from a source site; and

3.16 provide a plan showing the design details to proper scale of any retaining walls that may be required, including dimensions and materials to be used in construction of such retaining walls, duly signed by a Qualified Person.

Site Design Guidelines

1.0 Site alteration shall prevent the impairment of water, groundwater and soil quality as well as the off-site effects of soil erosion and sedimentation. Unless waived in writing by the Director all site alteration activities shall be performed in accordance with the most stringent Erosion and Sediment Control Guideline for Urban Construction as prepared by the Greater Golden Horseshoe Area Conservation Authorities dated December 2006 as may be amended and updated from time to time, federal, provincial, Lake Simcoe Region Conservation Authority, Toronto Region Conservation Authority, Region of York, and Corporation of the Town of Aurora standards and any other applicable legislation that may apply.

2.0 The Site control measures outlined below shall be deemed conditions of every Permit unless waived in writing by the Director.

3.0 **Site Dewatering**

3.1 Water pumped from the site shall be treated by structural devices such as sediment control ponds, temporary sedimentation ponds, grit chambers, sand filters, up-flow chambers, swirl concentrators or other appropriate controls. If water is demonstrated to have no particles greater than forty (40) microns in size, then dewatering operations may be conducted provided water is not permitted to discharge directly into the receiving bodies of water or streams and meets federal, provincial and municipal water quality requirements set forth through legislation.

4.0 **Drain Inlet Protection**

All storm drain inlets shall be protected with filter fabric or equivalent barriers so as not to admit sediment-laden runoff from the disturbed areas and the control measures must meet the standards and specifications accepted by the Director.

5.0 **Site Erosion and Sediment Control Practices**

The Site Alteration Plan should consider the following types of controls:

5.1 Stabilization practices for soil erosion and sediment control are commonly of three types:

5.1.1 vegetative stabilization practices such as temporary seeding, sod stabilization, permanent seeding and plantation, maintenance of buffer zone, and preservation of natural vegetation;

5.1.2 non-vegetative stabilization practices such as mulching, geo-textiles, Soil-retaining measures and stream bank stabilization; and

5.1.3 in-stream stabilization practices such as temporary stream crossings,

cofferdams, dry flumes, sediment curtains, by-passes or full diversions, and dewatering.

5.2 Runoff velocity dissipation measures, which slow down the runoff flowing across the Site by using measures such as check dams and surface roughening, and gradient terraces;

5.3 Stormwater runoff controls, which prevent runoff from flowing across disturbed areas by using measures such as earth dikes, Drainage Swales, and drains;

5.4 Structural practices such as temporary sediment control ponds which hold storm water runoff in a controlled fashion and remove sediments in the storage device; and

5.5 In the event that a sediment control pond cannot be constructed to service the entire Site (i.e., capture all runoff from the Site), the reasons must be documented and alternative control measures must be implemented. Other sediment control measures, which remove sediments from on-Site runoff before it leaves the Site, include silt fences, sediment traps, storm drain inlet protection, filter fabrics, and straw bale barriers.

6.0 Sediment Control Pond

6.1 As required in the Site Alteration By-law, for the sites with more than four (4) ha disturbed at a time, or in a staggered manner, all of which are served by a common discharge location, or with slopes greater than 12 percent grade, or if a channel originates in the disturbed area, one or more sediment control ponds, or equivalent control measures must be provided.

6.2 sediment control pond design criteria should be as follows:

6.2.1 The sediment control pond shall be constructed prior to Topsoil stripping or Fill placement;

6.2.2 The sediment control pond and conveyance channels should be located in such a way that the runoff will be captured and conveyed from the entire disturbed area to the pond;

6.2.3 Each sediment control pond should have a surface area of at least one (1) percent of the area draining to it, at least one (1) metre of depth and constructed in accordance with accepted design specifications. Sediment should be removed from each sediment control pond to maintain a depth of 1 metre. It is not permitted to discharge a sediment control pond directly into receiving streams or bodies of water. Pond discharge rate shall be sufficiently low as to not cause Erosion along the discharge channel;

6.2.4 The pond length to width ratio should be three (3) or greater but less than six (6)

(preferably 4:1). Interior side slopes should not exceed 3:1 and exterior slopes should not exceed 2:1. The pond should have a minimum 1.0 metre depth to avoid re- suspension of previously settled out sediment but should not exceed 2.5 metres in depth;

6.2.5 Unless waved by the Director each sediment control pond should be designed in accordance with the most recent and stringent standards from the Erosion and Sediment Control Guideline for Urban Construction prepared by the Greater Golden Horseshoe Area Conservation Authorities, the Ministry of the Environment Stormwater Management Planning and Design manual, local conservation authority standards or Corporation of the Town of Aurora standards. As a minimum, sediment control ponds should provide the following:

6.2.5.1 a permanent pool component with a minimum 125 cubic metre storage volume per hectare of Drainage area and pond length to width ratio of 4:1;

6.2.5.2 an active storage component with a minimum 125 cubic metre of storage per hectare of Drainage area with a minimum 48 hour drawdown time and control orifice diameter no less than 75mm;

6.2.5.3 if the length to width ratio of the pond is less than 4:1 or the drawdown time for the active storage component is less than 48 hours, the permanent pool component should be sized with a minimum 185 cubic metres of storage volume per hectare of Drainage area;

6.2.6 Other storm water management control functions required for the Site shall be implemented by the Owner as required in other permit approvals (e.g., flood and Erosion controls);

6.2.7 To maintain sufficient permanent pool volume during the Land Disturbance period, the Site Alteration Plan should provide the maintenance schedule for the sediment control pond. The sediment control pond should be cleaned once the designed permanent pool volume has been reduced by 50%. To verify sediment accumulation, the sediment control pond should be measured at least once per year since the start of Land Disturbance; and

6.2.8 A Qualified Person should be assigned by the Owner of the property to oversee Erosion and sediment control practices on the Site and perform the necessary assessments through the duration of the construction and stabilization period. Records of all monitoring, inspections, and repair works should be documented to effectively identify and track areas of susceptibility and plan for future maintenance works, as well as, to share or report this information to other site personnel. The inspection forms/reports should be posted and presented for any agency staff visiting the Site as evidence that due diligence was afforded to the implementation and maintenance of the approved Erosion and sediment control plan.

7.0 **Land Disturbing Activities**

7.1 All the activities on the Site shall be conducted in a phased manner to minimize the area of bare Soil exposed at any one time;

7.2 Concentrated runoff from Adjacent areas passing through the Site shall be diverted around disturbed areas, if practical. Otherwise, the channel shall be protected by cut-off Swales and/or silt fences being placed along channel edges to avoid sediment from disturbed areas reaching the channel;

7.3 Any Topsoil or Fill storage piles containing more than one hundred cubic metres (100 m^3)
of material shall not be located less than ten (10) metres from a roadway, building structure or channel. If remaining for more than thirty (30) days, said Topsoil or Fill storage piles shall be stabilized by mulching, vegetative cover or other means. Erosion from Topsoil or Fill storage piles which will be in existence for less than thirty (30) days should be controlled by sediment control fence (i.e., silt fence) barriers around the pile;

7.4 Runoff from the entire disturbed area on the Site shall be controlled as follows:

7.4.1 all disturbed ground that has been stripped of Topsoil shall be stabilized by seeding, sodding, mulching, or any other control measure deemed acceptable by the Director. The period of time of inactivity shall not exceed thirty (30) days unless permitted by the Director;

7.4.2 notwithstanding the above paragraph, a Permit Holder or Applicant for a Permit who has also applied for but not yet received a building permit or any other necessary permit may be granted an extension to the permitted period of inactivity, at the discretion of the Director, provided that the said Applicant or Permit Holder provides satisfactory proof that he/she has made his/her best efforts to have said building or other necessary permit issued. Fees for the extension will be deferred for the period of inactivity if the Site is secured in a manner satisfactory to the Director;

7.4.3 for Sites less than four (4) hectares disturbed at one time and slopes less than twelve (12) percent grade, sediment control fences and cut-off Swales/channels or equivalent control measures shall be placed along all down-slope boundaries of the Site;

7.4.4 for Sites Adjacent to existing residential areas, a fence and a cut-off Swale/channel may be required around the entire perimeter of the Site to prevent Drainage onto private lands. A three (3) metres wide buffer strip and/or sediment control fence shall be provided along the perimeter of the down-slope boundaries of the Site;

7.4.5 The most stringent standards from the Erosion and Sediment Control Guideline for Urban Construction prepared by the Greater Golden Horseshoe Area Conservation Authorities, the Ministry of Natural Resources for the Province of Ontario, local conservation authority or Corporation of the Town of Aurora standards, are to be followed, unless waived by the Director;

7.4.6 for Sites with extensive Fill requirements, the Director may waive the requirements for stabilization of disturbed land after thirty (30) days of inactivity provided that the sediment control measures have been implemented to the satisfaction of the Director;

7.5 All waste and unused building materials (including garbage, cleaning wastes, wastewater, toxic materials or any hazardous materials) shall be properly disposed and not allowed to be mixed with Soil and carried by runoff from the Site into a receiving Watercourse or storm sewer system;

7.6 Precautions shall be taken to ensure that mud will not be tracked off-site by any vehicle exiting the Site. Each Site shall have graveled roads, access drives and parking areas of sufficient width and length to prevent sediment from being tracked onto public or private roadways. In addition, a temporary construction entrance must be installed at all Sites to remove mud from the vehicle tires and keep it off roads. The temporary entrance should be a minimum 50 m by 10 m strip of clear stone 300 mm deep with a woven filter fabric underneath to prevent the gravel from sinking into the ground or as otherwise approved by the Director. If this measure is deemed insufficient by the Director, the Director may request a wash rack be installed at the entrance. Any sediment reaching a public or private road shall be removed by street cleaning (not flushing) before the end of each workday;

7.7 Rehabilitation shall take the form of:

7.7.1 levelling and regrading of the affected lands, the planting of trees or other landscaping; and

7.7.2 the replacement of Topsoil to a minimum depth of ten (10) cm and the stabilization by either sodding, hydro-seeding, mulching or such other methods as approved by the Director;

7.8 All Topsoil stockpiled, prior to the passing of this By-law shall, be subject to the provisions of the Site Alteration By-law.

Insurance

1.0 Prior to the commencing any work on the site or road allowance, and for the entire duration of the work, the Owner shall obtain and maintain insurance coverage as outlined below, provided by (an) insurance company(ies) licensed to transact business in the Province of Ontario and of satisfactory financial standing to the Town. Evidence of such insurance shall be provided to the Town in the form of a Certificate of Insurance signed by an authorized signatory prior to the commencement of any work and annually thereafter until the work is complete to the Town's satisfaction and as otherwise specified below.

2.0 The Commercial General Liability Policy shall be in an amount of not less than Two-Million Canadian Dollars ($2,000,000 CAD) per occurrence and shall insure against third party claims for bodily injury (including death), personal injury and/or property damage as a result of actual or alleged negligence of the Owner. The policy shall include

a) The Corporation of The Town of Aurora as an additional insured;
b) Cross Liability/ Severability of interest clause;
c) Contractual Liability; and
d) A minimum thirty (30) days written notice of cancellation or non-renewal to the Town.

3.0 The certificate of insurance shall confirm Non-Owned Automobile Liability and Owned Automobile Liability Insurance for limits of not less than TWO-MILLION CANADIAN DOLLARS ($2,000,000 CAD) per occurrence for each.

4.0 Confirmation of WSIB coverage is required or in its place (in the event that participation in Workers Compensation is not required or has been opted out of) confirmation of Employer's Liability in an amount not less than TWO-MILLION CANADIAN DOLLARS ($2,000,000 CAD) per occurrence.

5.0 The certificate(s) of insurance shall specify the location of the site and the name and address of the Owner. The name and address and telephone number of the issuing company and/or agent must be shown on the certificate of insurance.

6.0 The Owner shall indemnify, defend and hold the Town harmless from any and all liability for damages on account of injury to persons or damage to property resulting from or arising out of or in any way connected with the presence of the Owner, its servants, agents or employees, and persons duly authorized by the Owner on the site or right-of-way and shall reimburse the Town for all costs, expenses and any loss incurred by it in consequence of any claims, demands and causes of action which may be brought against it arising out of the presence of the Owner, its servants, agents or employees, and persons duly authorized by the Owner, on the site or right-of-way.