

Town of Oakville

Grading and Servicing Plan Guide for Residential Infill Developments

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Table of Contents

Section 1 - Purpose	2
Section 2 - Design Considerations	2
Section 2.1 - Grading and Drainage	2
Section 2.2 - Stormwater Management	2
Section 3 - Types of Applications	3
Section 4 - Application Process	3
Section 4.1 - Responsibilities of the Homeowner	3
Section 4.2 - Responsibilities of the Grading Consultant	4
Section 4.3 - Permit Review, Approval and Close-Out Process	4
Section 4.3.1 - Development Engineering Permit Application (DEPA)	4
Section 4.3.2 - DENG Permit Securities Deposit for Excavation and TSO Permits .	6
Section 4.3.3 - Building Permit Application	6
Section 5 - Grading and Drainage Terms and Definitions	8
Appendix A - Residential Infill Grading & Servicing Plan Checklist	10
Section 1: Pre-Screening Requirements.....	10
Section 2: Site Grading and Site Servicing Items	11
Appendix B - Standard Drawings	17
Standard Drawing 1A - Schematic Lot Grading and Servicing Plan for Residential Infill	17
Standard Drawing 1B – Schematic Pool Permit Grading Plan.....	17
Standard Drawing 1C – Standard General Notes.....	17
Standard Drawing 1D – Erosion and Siltation and Tree Protection Notes	17
Standard Drawing 1E – Swale Cross-Section Detail	17
Standard Drawing 1F – Acceptable Sample Sump Pump Details	17
Road Cut Restoration – Asphalt or Concrete Details.....	17
Appendix C - Stormwater Master Plan Guidelines	25
Appendix D - Lot Grading Certificate Templates	28
Appendix E - Process Maps	29



OAKVILLE

Section 1 - Purpose

A site servicing, grading and drainage plan ensures that the proposed development is integrated with neighbouring lands, municipal services and provides overall serviceability of the area.

The Town of Oakville has a Corporate Goal to provide quality infrastructure within the community. Maintaining functional infrastructure is heavily dependent on our ability to inherit quality road and sewer infrastructure, including grading and drainage.

This guide provides guidance to prepare a Grading and Servicing Plan in support for Development Engineering Permit and Building Permit Applications.

Section 2 - Design Considerations

Section 2.1 - Grading and Drainage

It is responsibility of the property owner to maintain the property's grading and surface drainage. Any work carried out that changes the original approved grades or the historically existing grades, must not impair the land's ability to drain properly or create adverse impact to the adjacent properties, including the municipal right-of-way and town infrastructures.

Typically, the drainage is contained on the subject property and is directed to an approved outlet, e.g. the municipal sewer or ditch, a rear lot catchbasin, or a creek, as in older areas of Oakville. Rainwater, snow melt, etc. flow to the above outlets via sheet flow across your property or focused flow in swales (shallow ditches).

A private property may also have upstream external drainage passing through from adjoining properties as the intended design that follows existing drainage patterns. It is the responsibility of property owners to maintain the existing drainage pattern and not cause a blockage to upstream drainage.

As a result of landscape work, settlements due to natural soil consolidation over time, and the affects of nature such as root growth, mounding at trees and plant bases, buildup of leaves, etc., grading can become challenged.

Section 2.2 - Stormwater Management

Stormwater management measures are implemented to prevent negative impacts on the subject property, adjacent properties, and town infrastructure. Development changes the pattern and amount of runoff as roof and hardened surface areas increase. While the impacts from one individual property may seem inconsequential, cumulative impacts to the town's municipal storm system have been demonstrated via modelling carried out as part of the town's Stormwater Master Plan. Moreover, in some older areas, where drainage swales have subsided over time and the area is flat, additional runoff exacerbates any drainage issues. As such, new developments must demonstrate



OAKVILLE

that the existing drainage patterns are maintained or improved, and how the additional surface runoff is being mitigated.

Changes that do impact properties could result in numerous issues, such as flooding, negative impact to adjacent properties, natural environmental features and municipal infrastructures, costly repairs, negative feelings with your neighbours, and possible charges under the town's by-laws.

This Grading and Servicing Plan Guide, along with the Town of Oakville [Development Engineering Procedures and Guidelines](#), the [Stormwater Master Plan](#), and the [Site Alteration By-law](#), contain all the information required to make a resident infill development or project a success, while protecting private and public properties.

Section 3 - Types of Applications

A Grading and Servicing Plan may be required in support of the following the applications:

- Development Engineering (DENG) Permits
 - Proposed work within the private property
 - Site alteration Permit - pools, landscaping, retaining walls, all teardown rebuilds and additions (for work outside building foot print)
 - Proposed work within the municipal right-of-way
 - Excavation Permit - service connection road cuts (Contact Halton Region for sanitary and water connection permits)
 - Driveway Permit (curb modification) – new or modified curb cut
 - Temporary Street Occupation (TSO) Permit – Minor TSO for materials and equipment storage for the purpose of the Residential Infill Development project. (See the Town's websites for more information on other types of TSO permits).

See the [Development Engineering Permit Guide](#) on the Town's website for more information on the various types of DENG Permits.

- Building Permit for:
 - All teardown rebuilds (only if the footprint is changing)
 - All additions or new structure

See Section 4.3.3 - Grading and Servicing Plan for Building Permit
- If the development site is subject to Site Plan Control, a DESP or a full site plan is required prior to issuance of Building Permit.

Section 4 - Application Process

Section 4.1 - Responsibilities of the Homeowner

Retain a qualified "Grading Consultant" (see Section 4.2) with experience in site grading and drainage to:



1. Prepare, Seal, Sign and Date a Grading and Servicing Plan for inclusion with the required permit application;
2. Provide field review to ensure compliance with the Grading and Servicing Plan; and
3. Provide a final “Lot Grading Certificate” issued by a qualified Grading Consultant upon completion of the final grades.

Section 4.2 - Responsibilities of the Grading Consultant

The “Grading Consultant” must be one of the following:

1. An Ontario Land Surveyor; or
2. An Engineer registered as a member of the Professional Engineers of Ontario in the civil engineering discipline or relevant discipline;

In general, the grading and servicing design prepared by the Grading Consultant shall be in accordance with this guide, the Town of Oakville Development Engineering Procedures and Guidelines, the Stormwater Master Plan, and the Site Alteration By-law.

To provide further guidance to stormwater management in support of the grading and servicing design, refer to the Stormwater Master Plan Guidelines in Appendix C - of this Grading and Servicing Guide.

For Building Permit Applications

The Grading and Servicing Plan shall be prepared in accordance with the Ontario Building Code Section 9.14.6.1.(1) to ensure that the proposed building will be located and the site grading has been designed so that it will not adversely affect adjacent properties. *See Section 4.3.3 - Grading and Servicing Plan for Building Permit.* Works outside of the proposed building footprint may be subject to requiring the applicable Development Engineering Permits, i.e. Site Alteration Permit, Excavation Permit, Driveway Permit, etc.

Section 4.3 - Permit Review, Approval and Close-Out Process

Section 4.3.1 - Development Engineering Permit Application (DEPA)

- a) Where a DENG permit is required as described in Section 3 of this guide, a Development Engineering Permit Application (DEPA) is to be submitted to the Transportation and Engineering Department using the [Online Portal](#). Click the “Planning and Construction” tile, then click the “Development Engineering Permit”. The applicant must log into the Town of Oakville account or create an account.



OAKVILLE

- b) The applicant and property owner are to be identified on the application. Only the applicant (if not the same as owner) will have access to the Portal information. The applicant must declare authorization to act on behalf of the property owner has been obtained by checking the appropriate box on the Portal application.
- c) A Pre-screening of the DEPA submission will be carried out by the Development Permit Administrator at the Transportation & Engineering Department. Comments are provided through the portal. Once the application is deemed complete, the applicant will receive a notification to make payment for the application fee on the Portal.
- d) Follow the instructions on the Portal to pay the application fee. Once the fee is received, the application is circulated for review. The applicant will then receive a notification on the required securities amount. Payment for the securities must be paid prior to issuance of the permit.
- e) Engineering and forestry review comments are communicated through the Portal and by email, respectively. When necessary, the plan reviewer may contact the applicant for clarification or questions. If the applicant has any questions regarding the review, submit an inquiry to Service Oakville (service@oakville.ca), and the inquiry will be directed to the appropriate staff to provide a response.
 - a. Grading and Servicing Plan shall be prepared in accordance with the Town of Oakville Development Engineering Procedures and Guidelines, the Stormwater Master Plan, and the Site Alteration By-law.
 - b. In addition, Appendix A - Residential Infill Grading & Servicing Plan Checklist and Appendix B - Standard Drawing 1A – Schematic Lot Grading and Servicing Plan for Residential Infill shall be used to ensure the Grading and Servicing Plan meets the requirements outlined therein. All other Standard Drawings in Appendix B - must be included where applicable. (Road cut works permitted under an Excavation Permit shall conform to the requirements per the detail drawing, Road Cut Restoration – Asphalt and Concrete, in Appendix B - . Detail drawing not required to be shown on Grading and Servicing Plan.)
 - c. In accordance with the Town’s Stormwater Master Plan, provide a design and/or stormwater management report, where applicable, to demonstrate compliance.
- f) Upon completion of the engineering and forestry review, the Development Engineering Clerk, will check that the payment for securities have been paid. For site alteration permits, a Site Alteration Permit Agreement (SAPA) is to be signed by the property owner and applicant. Upon receipt of securities payment and the signed SAPA, where applicable, the DENG permit is issued.
- g) Upon completion of all the permitted work, the applicant is to submit a Final Inspection request on the Portal. For Site Alteration Permits, a Lot Grading and/or Stormwater Management Device Certificate must be submitted with



the inspection request. An Engineering Inspector will carry out a final inspection to ensure the work has been completed in general conformance to the approved Grading and Servicing Plan. A Deficiency Report will be provided on the portal if any deficiencies are identified. Upon completion of all works to the satisfaction of the Engineering Inspector, the securities will be released back to the property owner. See Section 4.3.2 for exceptions regarding permit securities. See Appendix D - Lot Grading and/or Stormwater Management Device Certificate Templates.

See Appendix E - Process Maps

If a Development Engineering Permit is required for a residential lot located within an unassumed subdivision, the Owner must contact the Transportation & Engineering Department to determine the status of the developer's subdivision work. All subdivision work on the subject residential lot must be completed prior to consideration being given for site alteration work. A letter from the development requesting the property owner's acknowledgement that any site alteration undertaken by the property owner prior to subdivision assumption releases the developer the obligation to certify the lot grading, provided the work is permitted by the Town.

For more information about the DEPA process, see the [Development Engineering Permits](#) webpages on the Town's website.

Section 4.3.2 - DENG Permit Securities Deposit for Excavation and TSO Permits

The applicant for DENG permits may be the property owner or an authorized agent assigned by the property owner, with the exception of Excavation and TSO Permits. The applicant for these permits must be the contractor carrying out the road cut work or occupying the public space, respectively. As the applicant for these permits, the contractor is also required to provide the required securities deposit. Upon the completion of work, the contractor is to request for final inspection and the release of the securities deposit. A Lot Grading Certificate is not required for the release of the securities for these permits.

Section 4.3.3 - Building Permit Application

- a) Where a Building Permit is required for the proposed work on private property, the Building Permit Application is to be submitted to the Building Services Department using the [Online Portal](#).
- b) Visit the [Building Permits](#) webpage for details on how to apply for a building permit.



OAKVILLE

- c) Once you've submitted your application, it will be pre-screened for completeness. Where required, this includes a Grading Plan, a [Tree Protection Declaration](#) form, and a [Grading Declaration](#) form.
- d) The Grading Plan is circulated to a Development Engineering Technologist (DET) in the Transportation & Engineering Department for review.
 - a. The grading plan is reviewed in accordance with the applicable Building Code requirements. Grading comments under the Building Permit review are issued with the notification letter for the Building Permit.
 - b. If determined by the DET that the work outside of the proposed building footprint requires a site alteration permit, the DET will notify the applicant directly. Any proposed work that requires a site alteration permit in accordance with the Town's current Site Alteration Bylaw is to include a grading and servicing design that meets the requirements as outlined in Section 4.3.1 of this guide.
 - c. It is highly recommended that the same grading design is submitted for the Building Permit and DENG Permit for consistency.
 - d. The applicant is able to apply for the DENG Permit in advance of the Building Permit, if desired.
- e) The review of tree protection and removal are completed outside of the Building Permit process by the Forestry Department. Forestry will contact the applicant directly requesting the required documents.
 - a. **Applicants are not permitted to remove/impact trees without Forestry approvals, as per below**
 - i. Trees inside building footprint are exempt
 - ii. Removal of trees outside of building footprint (1m of foundation) requires a Private tree removal permit [[Private Tree By-law \(2017-038\)](#)]
 - iii. All trees in right-of-way, town property or woodlot behind property require a Tree protection permit [[Town Tree By-law \(2009-025\)](#)]
 - iv. All tree protection during construction as per the Town's [Tree Protection During Construction Procedure \[en-tre-001-001\]](#)
 - b. If a DENG permit is required, the Forestry Department will coordinate the two reviews.
- f) Ensure the required Development Engineering Permits and Forestry Permits are secured prior to starting any work.
- g) Follow the permit conditions and applicable by-laws for the proper close out procedures for DEPA permits and Forestry permits.

See Appendix E - Process Maps

For more information regarding the Building Permit Process, visit the Town's website on the [Building Permits](#) webpage.



OAKVILLE

Section 5 - Grading and Drainage Terms and Definitions

Municipalities and the construction industry use many terms that are unique to describing and detailing how grading and drainage works. The following are some of the more common terms used and their definitions:

Apron swale

An apron swale is a swale that is formed across the rear yard of a front draining lot, approximately 5 metres from the house, which collects water from the rear yard and directs it to the side property line swales.

Catchbasin

A catchbasin is typically a square concrete chamber in the ground with a slotted iron lid which allows surface water to be collected and then directed into a storm sewer. They may be found along the edges of a road or in rear corners of private yards.

Focused flow

Surface drainage that has been collected or concentrated in one area or outlet.

Grade

Grade typically indicates the level (height) of the ground. It can be measured from a known point or in comparison to the ground level at a previous/ future time.

High point

Is a location on the ground from where water flows away. Typically it is a starting point of a swale or the top of a sloped area.

Property line swale

A swale located along a property line, where half of the swale is located on each abutting property

Rear to front drainage

Rear to front drainage is where the rear property line is the highpoint. All surface drainage on the property flows to the front of the property via an apron swale in the rear of the property that directs the water around the house to the side lot swales (located on the property line) on either side of the house and then out to the street.

Split drainage

Split drainage is where a high point is established at approximately the mid-point of the property. The surface drainage from the front of the property drains toward the road; and the rear of the lot drains towards the rear lot line where a swale collects the water and directs it to an outlet. e.g. a rear yard catchbasin or adjoining property line swale.



OAKVILLE

Sheet flow

Sheet flow refers to surface drainage that is not collected or focused but allowed to flow over a wide area in a specific direction.

Slope

The amount of inclination or angle up or down that a surface (the ground) has from a flat or horizontal surface.

Surface drainage

Surface drainage is the removal of excess surface water as a result of rain, snow melt, downspout discharge, etc., by the use of sloped ground and swales.

Swale

A swale is a shallow ditch approximately 150 to 300 mm in depth and typically 1 to 2 m in width and having side slopes no greater than 3:1, which is sloped along its length to convey surface drainage from one point to another.



Appendix A - Residential Infill Grading & Servicing Plan Checklist

This checklist should be used as a guide to develop grading and servicing plans for submission to the Town of Oakville. Section 1 indicates the items required for pre-screening to ensure the application is complete. Section 2 are site grading and site servicing items that the Town will be reviewing as part of a grading plan review. These items align with engineering best practices and the Town’s Development Engineering Procedures and Guidelines.

Section 1: Pre-Screening Requirements

Item Number	Item
1.1	Submit one Grading and Servicing Plan that includes all existing and proposed grading and servicing information.
1.2	Title block (Including: municipal address of property, names of Owner and Applicant, name and address of the firm preparing the drawing, legal description of property, north arrow, scale, scale bar, legend, date of submission, and revision box with all revision dates).
1.3	Plan is prepared and created into a vector based, flattened PDF file, to a minimum 1:200 metric scale. Note: scanned PDF files will not be accepted.
1.4	Key plan, showing site location in respect to the Town street network.
1.5	Clear identification of property lines and right of way limits. (Including any road widening, sight triangles and 0.30m reserve blocks adjacent to the subject property, along with existing lot corner elevations).
1.6	Abutting roads, including the location of all existing surface features. (Including walkways, edges of pavement and shoulders, curbs, traffic islands, utility poles and pedestals, handwells and manholes, transformers, streetlight poles, hydrants, bus shelters, mailboxes, sidewalks, watercourses, ditches, culverts, embankments and overhead utilities).
1.7	All existing access/driveway entrances to the subject property and the adjacent properties, including widths and slopes (within private property and within Town Right of Way).
1.8	Existing and proposed: buildings, structures, pools, fences, trees and bushes, window wells, walkways, mechanical equipment, landscaping beds, patios, all above ground features, etc. within the private property.
1.9	For tear down/rebuilds and additions, show existing and proposed elevation and house siting elevations (FFE, USF, Basement Slab, Garage Slab, TFW).
1.10	Any easement(s) within the property and of whom the easements are in favor.



Item Number	Item
1.11	<p>For tear down/rebuilds, show all existing and proposed servicing infrastructure within the road allowance. This includes, but is not limited to:</p> <ul style="list-style-type: none"> • Manholes, storm and sanitary sewers, water mains (include identification of all pipe material, diameter, slope, direction of flow and manhole inverts), catch basins, valve boxes and chambers. • Existing above and underground utility features within the boulevard; including but not limited to gas meters, light poles, utility poles, pedestals, transformers, and all underground and overhead utility lines (hydro, gas, bell, cable). <p><i>(Plan and Profile Drawings and As-Built Drawings can be used as reference only and can be requested via FOI through Town’s Clerks Department).</i></p>
1.12	<p>The Grading and Servicing Plan is stamped, signed, and dated, by a Professional Engineer or an Ontario Land Surveyor. Digital seals must be of the same size and shape as original rubber stamp issued by the associated authority. This includes a certification statement on the plan by the designer that they have reviewed the Town’s Stormwater Master Plan and are not impacting adjacent properties, including Town right-of-way and infrastructure, and designed in accordance with Town standards and guidelines.</p>
1.13	<p>Properties within the Conservation Halton Regulation Limit, Engineering Floodline, require CH clearance prior to Grading approval. CH stamped Grading Plan and Clearance Letter required for the DEPA submission.</p>

Section 2: Site Grading and Site Servicing Items

Item Number	Item
2.1	<p>Existing spot elevations within the project site and along the property limits (lot line elevations).</p> <p>(Minimum of 5m outside the property boundaries, on abutting public streets, and at a maximum of 10m intervals within the property. Include the finished floor elevation and finished floor door sill elevations of adjacent properties).</p>
2.2	<p>Arrows indicating the direction of surface drainage on all proposed paved, granular, and grassed areas and the slope (between 2-5% for softscape and 1-5% for hardscape, as per Development Engineering Procedures and Guidelines).</p>



Item Number	Item
2.3	<p>Proposed spot elevations:</p> <ul style="list-style-type: none">• At all high/low points of the side yard swales, top and bottom of slopes, all changes in gradient, building corners, building entrance, etc.• Of top and bottom of retaining walls (bottom elevations on both sides of the wall shall be provided). Provide cross sections to better illustrate design intent, as required.• Retaining walls that are not designated structures require a site alteration permit (designed as per the Development Engineering Procedures and Guidelines).• Any retaining walls proposed along or near lot lines will require a cross section. (Retaining wall to be a minimum of 0.30m away from the property line within the subject site. Wall ends to be tapered to maximum 0.15m in height).
2.4	<p>For tear down/rebuilds and additions, show house siting elevations:</p> <ul style="list-style-type: none">• Basement slab elevation(s), garage slab elevation(s), finished floor elevation of the ground floor and entrance to all buildings, elevations of underside of footings (identify all footing levels with different elevations) and top of foundation wall elevation. (Where top of foundation wall elevation changes or reverse veneer is used, the limit of the sections and the different top of foundation wall elevations must be identified).
2.5	<p>Proposed swales designed as per Development Engineering Procedures and Guidelines (if different, cross details to be provided for review). (Swales must be designed to convey surface runoff away from the subject site without spilling onto adjacent properties. Infiltration galleries without an overflow outlet are not approved ultimate outlets for surface runoffs).</p>
2.6	<p>Include proposed locations and direction of flow for proposed downspouts. (Downspouts must be designed in accordance with the Development Engineering Procedures and Guidelines).</p>
2.7	<p>Details on proposed vehicular entrances to the subject property, including elevations at the garage and property line, driveway slope between 1-7%. (Driveway elevation at property line must match existing elevation. Slopes of driveway within private property and Town R.O.W. do not have to be the same).</p>
2.8	<p>Proposed and existing sheds, cabanas, structures, pool equipment etc.</p>



Item Number	Item
2.9	For tear down/rebuilds, show proposed service connections, including the mainline invert and obvert, invert of service connection at property line, identification of pipe length from mainline to property line, material, diameter and slope. <i>(Invert of proposed service connection shall match the obvert of the existing mainline sewer. Distance to closest MH must be scalable on the drawing or dimension is provided. Provide pipe elevations at crossings between mainline sanitary/storm sewers and proposed sanitary/storm connections).</i>
2.10	Demonstrate site's drainage design is not having an adverse impact to subject site and adjacent properties. Identifying any existing swales, ditches, rear yard catch basins, culverts (including size), creeks, watercourses, remnant channels, and drainage easements, overland flow routes, complete with elevations, inverts and flow arrows indicating the surface drainage direction. Provide Stormwater Management Report, where applicable, to comply with the Town's Stormwater Master Plan.
2.11	Show location of proposed sump and/or ejector pumps for storm and/or sanitary, respectively. Indicate if sump pump is to discharge to storm sewer or to splash pad at grade. The Town's preferred approach is to discharge foundation drains to grade with a splash pad, approximately 1.5 m (5 feet) from the foundation (refer to Section 7.3.3. of the Development Engineering Procedures and Guidelines).
2.12	Erosion and sediment control measures are to be used during construction (OPSS 805). Silt fence should be placed at the limit of construction and away from shared property lines (OPSD 219.130 (heavy duty), OPSD 219.110 (light duty)).
2.13	Locations of any regulatory flood lines or development limit lines (i.e., setback and slope stability limits).
2.14	For sites with no municipal services: Location of septic tanks, outline of tile beds, wells, and holding tanks for fire-fighting shall be shown.
2.15	<p>Details on proposed vehicular entrances to the subject property, including.</p> <ul style="list-style-type: none"> • Show limit of garage door opening. • Identify the size of garage (1-, 2- or 3-car). • Provide dimension of driveway apron on private property as per zoning by-law 2014-014 Section 5.8.2 and on Town Right of Way as per Town of Oakville Driveway permit procedure. (Driveway width transition to be on private property and straight edges for Town Right of Way driveway apron). • Ensure minimum offset of 1.0m to boulevard furniture - light and utility poles, pedestals, transformers, hydrants, mailboxes, trees, bus shelters, and street furniture within Town Right-of-Way to remain unchanged. Existing sidewalk elevation not permitted to be



Item Number	Item
	altered to accommodate driveway. If relocation of utility furniture is required, approval from the appropriate agency(ies) must be obtained prior to DEPA approval.
2.16	Walkway location, width, setback from driveway and Walkway-Driveway access point width. (One walkway access may be connected to the side of a driveway. The maximum width of the walkway access at the connection point shall be 1.8m. The walkway shall terminate at the municipal sidewalk (private side) or property line if there is no sidewalk. Curb cuts at walkway are prohibited.
2.17	Driveway border/edging location, width, and elevation (all borders adjacent to the driveway is part of total driveway width). Raised borders within the right-of-way is prohibited. Maximum border width is 0.3m.
2.18	Proposed length of curb modification, cut and/or fill.
2.19	Driveway setback dimension from property lines. (A driveway crossing a frontage or flankage lot line on a corner lot shall be located a minimum of 15.0m from the point of intersection of the front and flankage lot lines or where the lot lines do not intersect the point of intersection of the projection of the front and flankage lot lines, measured along all points of the driveway. Should the lot not be wide enough for the provisions noted above, the following calculation applies: Measured from the inside lot line, the required inside setback, plus the width of the driveway, plus 1m). See Town Procedure ms-per-004-003.
2.20	Culvert length, diameter (min. 300mmØ), material (new; corrugated/ ribbed steel, PVC “Big O” or HDPV pipe) and invert elevations. Indicate on drawing that new culverts are to be installed by the owner at owner’s expense.
2.21	Show catch basin sediment traps and design details, if there are catch basins within close proximity of site. (Note on drawings that catch basins are to be fitted with sediment trap at each catch basin).
2.22	Show location of temporary gravel access pad (mud mat) at the entrance of house construction activities with minimum 300mm depth off 75-100mm diameter clear stones. Size mud mat to suit site. Include mud mat and ditch details on the drawing. (If existing driveway is used as construction access for mud tracking purposes, indicate so on plan).
2.23	Setback dimensions (distance from proposed works to property lines).
2.24	Geodetic survey datum, derived from Town of Oakville benchmarks. Benchmarks used must be identified on the Grading Plan. Information can be found online or by requesting the information through Service Oakville at service@oakville.ca



Item Number	Item
2.25	Topographic Survey of existing elevations, grading features, slopes, berms, swales, trees, etc. (Topographic survey must be completed no longer than 1 year prior to submitting the Grading Plan). Topographic Survey information is superimposed onto one drawing with proposed information. A separate topographic survey drawing is not required to be submitted.
2.26	Existing house footprint on the subject property and adjacent property(s).
2.27	Existing spot elevations within the Town Right-of-Way (minimum every 10m); and slope gradients at all critical locations (Including road center lines; vehicle accesses and driveways, ramps, parking lots, both edges of pavement, curb lines or sidewalks; swales, ditches, culverts, grassed areas, etc.).
2.28	Maintain or reinstate a minimum of 0.30m strip of sod/river rock and filter cloth around perimeter of the site wherever it abuts adjacent properties is maintained. If grades disturbed, restore elevations to match adjacent property at property line.
2.29	A minimum of 0.15m is provided between the highest finished grade adjacent to the house and the top of foundation wall elevation.
2.30	If applicable, show tree protection fence, matching the TPZ approved by Town Parks Forestry Department. (Drawing shall include Oakville’s tree preservation standard drawing. Include any tree preservation note as required by Parks Forestry on the Grading Plan). Tree information such as, species, size, etc. not required on grading and servicing plan.
2.31	Location, elevation and dimensions of proposed pool, hot tub, or pond.
2.32	Add note “Pool water to be pumped using a portable pump to the front Municipal Boulevard.”
2.33	Existing features on the property (i.e., downspouts piped underground, retaining walls or gardens blocking swales, etc.) that may not meet with town standards which impacts grading and drainage as a result of the proposed work activities, shall be identified and corrected by the homeowner prior to a permit being issued or corrected in conjunction with the permit.
2.34	Provide a hydraulic grade line analysis to demonstrate no flood risk for 100-year event in the case of a reverse slope driveway. The major system capacity also needs to be considered for a reverse slope driveway.



Item Number	Item
2.35	<p>For tear down/rebuilds, show all existing and proposed servicing infrastructure within the road allowance. This includes, but is not limited to:</p> <ul style="list-style-type: none">• Manholes, storm and sanitary sewers, water mains (include identification of all pipe material, diameter, slope, direction of flow and manhole inverts), catch basins, valve boxes and chambers.• Existing above and underground utility features within the boulevard; including but not limited to gas meters, light poles, utility poles, pedestals, transformers, and all underground and overhead utility lines (hydro, gas, bell, cable). <p><i>(Plan and Profile Drawings and As-Built Drawings can be used as reference only and can be requested via FOI through Town’s Clerks Department).</i></p>
2.36	<p>For tear down/rebuilds, show location and details of any existing service connections to Town and Region infrastructure, as per locate records. Indicate whether or not they will be decommissioned. If the existing sanitary, water and/or storm service connections are proposed to be re-used, existing invert elevation at property line must be obtained and shown, along with pipe size and type of material. Note on the drawing that the invert elevation at street line is verified by the P.Eng. or OLS sealing and signing the drawing.</p>
2.37	<p>Water box must be located outside of the driveway.</p>
2.38	<p>Provide a minimum 1.0m horizontal offset between proposed and existing service connections.</p>
2.39	<p>Where possible, place proposed storm and sanitary connections in a common trench, with a 0.5m horizontal separation.</p>



OAKVILLE

Appendix B - Standard Drawings

Standard Drawing 1A - Schematic Lot Grading and Servicing Plan for Residential Infill

Standard Drawing 1B – Schematic Pool Permit Grading Plan

Standard Drawing 1C – Standard General Notes

Standard Drawing 1D – Erosion and Siltation and Tree Protection Notes

Standard Drawing 1E – Swale Cross-Section Detail

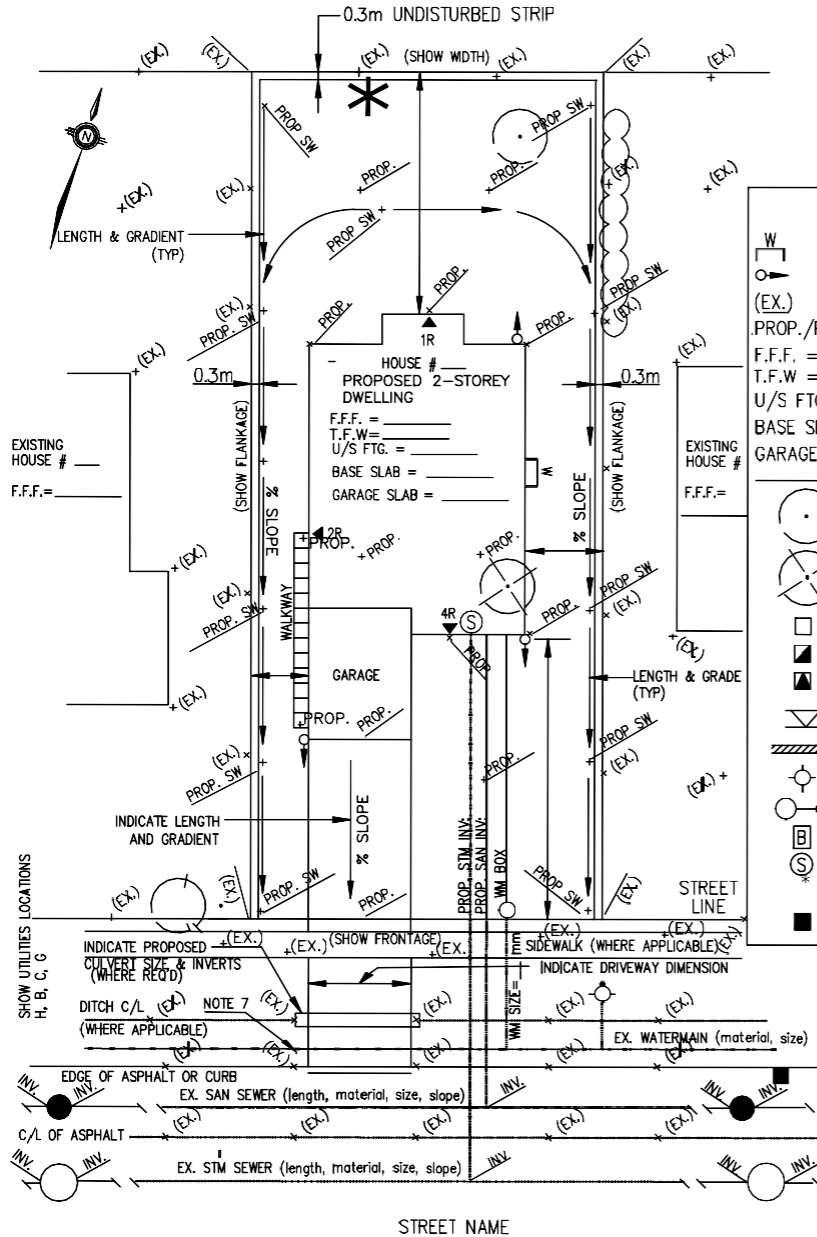
Standard Drawing 1F – Acceptable Sample Sump Pump Details

Road Cut Restoration – Asphalt or Concrete Details

PLAN OF
 PART OF LOT _____
 REGISTERED PLAN _____
 TOWN OF OAKVILLE
 REGIONAL MUNICIPALITY OF HALTON

GEODETIC BENCHMARK

NO.	ELEVATION	DESCRIPTION



LEGEND

	WINDOW WELL
	RAINWATER LEADER
(EX.)	EXISTING ELEVATION REQ'D
.PROP./PROP SW	PROPOSED ELEVATION REQ'D
F.F.F. =	FINISHED FIRST FLOOR ELEVATION REQ'D
T.F.W. =	TOP OF FOUNDATION WALL
U/S FTG. =	UNDERSIDE OF FOOTING ELEVATION REQ'D
BASE SLAB =	BASEMENT SLAB ELEVATION REQ'D
GARAGE SLAB =	GARAGE SLAB ELEVATION REQ'D
	C/L OF PROPOSED SWALE
	EXISTING TREE TO BE PRESERVED
	EXISTING TREE TO BE REMOVED
	REAR LOT CATCH BASIN
	TELECOMMUNICATION PEDESTRAL
	HYDRO TRANSFORMER
	WATERPROOFING AND DAMP-PROOFING
	RETAINING WALL C/W TOP/BOTTOM EL.
	FIRE HYDRANT
	STREET LIGHT
	BELL PEDESTAL
	SUMP PUMP, IF REQ'D
	ENGINEERED FILL
	CATCH BASIN

NOTES:

1. Refer to Town of Oakville Development Engineering Procedure and Guidelines.
2. Refer to Town of Oakville Grading and Servicing Plan Guide for Residential Infill Developments.
3. Include Std. Dwg. 1D - Swale Cross-Section Detail and 1E - Acceptable Sump Pump Details of the Grading and Servicing Plan Guide, where applicable.

As per OBC 9.14.6.1.(1),
 I, _____ (name), certify that the
 proposed building will be located and the
 site grading has been designed so that it
 will not adversely affect adjacent properties.

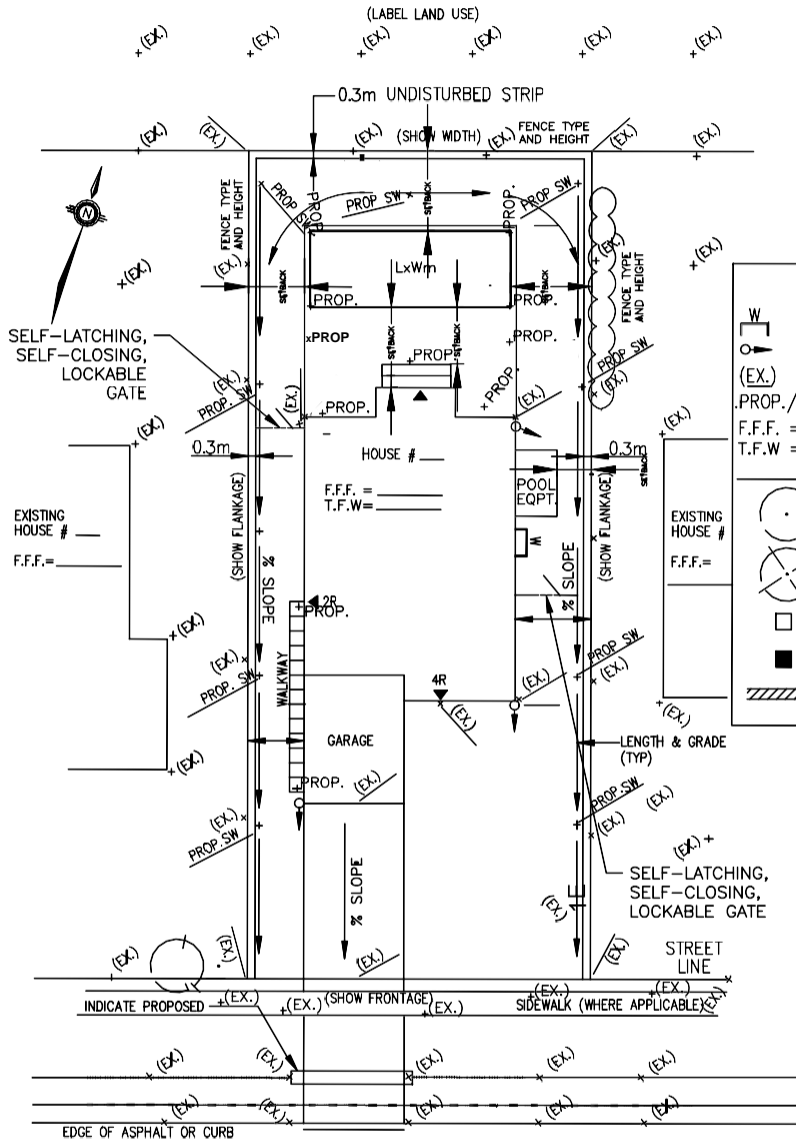
Signature _____ Date _____

Standard Drawing Name SCHEMATIC LOT GRADING AND SERVICING PLAN FOR RESIDENTIAL INFILL	Revision: 0	Revision Date: MAR 2023
	Scale: NTS	Std. Dwg. Number: 1A

PLAN OF
 PART OF LOT _____
 REGISTERED PLAN _____
 TOWN OF OAKVILLE
 REGIONAL MUNICIPALITY OF HALTON

GEODETIC BENCHMARK

NO.	ELEVATION	DESCRIPTION



LEGEND

	WINDOW WELL
	RAINWATER LEADER
	EXISTING ELEVATION REQ'D
	PROPOSED ELEVATION REQ'D
	F.F.F. = FINISHED FIRST FLOOR ELEVATION REQ'D
	T.F.W. = TOP OF FOUNDATION WALL
	C/L OF PROPOSED SWALE
	EXISTING TREE TO BE PRESERVED
	EXISTING TREE TO BE REMOVED
	REAR LOT CATCH BASIN
	CATCH BASIN
	RETAINING WALL C/W TOP/BOTTOM EL.

NOTES:

1. Elevations at property line shall match neighbouring properties.
2. Downspouts shall exit at grade via a concrete splash pad.
3. Any increase in impervious surface from approved plan required to be reviewed via revision process.

STREET NAME

Std. Name SCHEMATIC POOL PERMIT GRADING PLAN	Revision: 0	Revision Date: AUG 2023
	Scale: NTS	Std. Dwg. Number: 1B

STANDARD GENERAL NOTES

1. MUNICIPAL BOULEVARD TO BE RESTORED TO THE SATISFACTION OF TOWN STAFF.
2. RESTORE THE PUBLIC ROADWAY TO TOWN STANDARDS AND CLEARLY INDICATE ON THE ENGINEERING DRAWINGS ALL RESTORATION, TO THE SATISFACTION OF THE TOWN.
3. DRIVEWAYS ON THE MUNICIPAL RIGHT-OF-WAY SHALL BE PAVED BY THE APPLICANT.
4. 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 THE ENTRANCE.
5. ALL ROOF DOWNSPOUTS FROM EAVESTROUGH TO DISCHARGE ONTO SURFACE AND THE RUNOFF DIRECTED TOWARDS THE REAR WHERE POSSIBLE AND TO THE ROAD.
6. ROOF DOWNSPOUT IS LOCATED IN SUCH MANNER AS TO DIRECT DRAINAGE AWAY FROM WALKWAYS, DRIVEWAYS OR PATIO AREAS.
7. MAINTAIN EXISTING GRADES IN AREA AROUND TREES TO BE PRESERVED.
8. PRIOR TO CONSTRUCTION, CONTRACTOR TO VERIFY IN FIELD THE EXACT SIZE AND INVERTS OF THE EXISTING WATER SERVICE CONNECTION AND SEWER CONNECTIONS AND REPORT IT TO THE DESIGN ENGINEER.
9. ALL SURPLUS/EXCAVATED MATERIAL TO BE REMOVED FROM THE SITE.
10. CONTRACTOR TO MATCH EXISTING GRADES ALONG PROPERTY LINES.
11. ALL DISTURBED SODDED AREAS WITHIN EXISTING ROAD ALLOWANCE TO BE REINSTATED WITH TOPSOIL AND SOD TO THE SATISFACTION OF THE TOWN OF OAKVILLE.
12. THE CONTRACTOR IS TO CHECK AND VERIFY ALL DIMENSIONS, IF ANY DISCREPANCIES, THEY MUST BE REPORTED TO THE DESIGN ENGINEER IMMEDIATELY PRIOR TO CONSTRUCTION.
13. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING AND PROTECTING ALL UTILITIES DURING CONSTRUCTION. GAS, HYDRO, TELEPHONE OR ANY OTHER UTILITIES THAT MAY EXIST ON THE SITE OR WITHIN THE MUNICIPAL RIGHT OF WAY MUST BE LOCATED BY ITS OWN UTILITIES AND VERIFIED PRIOR TO CONSTRUCTION.
14. ALL SANITARY AND WATER CONNECTIONS SHALL BE INSTALLED AS PER REGION OF HALTON STANDARDS AND SPECIFICATIONS.
15. BUILDER IS TO VERIFY TO THE ENGINEER THAT THE FINAL FOOTING ELEVATION AND TOP OF FOUNDATION WALL ELEVATION ARE IN CONFORMITY WITH THE BUILDING CODE AND THE CERTIFIED GRADING PLAN PRIOR TO PROCEEDING.
16. OUTSIDE FINISHED GRADE TO BE A MINIMUM OF 150 mm BELOW BRICK/STONE VENEER ELEVATION.
17. PRELIMINARY INSPECTION SHALL BE DONE BY THE DESIGN ENGINEER AND BUILDER PRIOR TO PLACING SOD ON THE LOT.
18. DRIVEWAY GRADES SHOULD BE NOT LESS THAN 1.0% AND NOT GREATER THAN 7.0%.
19. LAWN AND SWALES SHALL HAVE A MINIMUM SLOPE OF 2% AND A MAXIMUM SLOPE OF 5%. SWALE DEPTH SHALL BE A MINIMUM OF 150 mm.
20. WHERE GRADES IN EXCESS OF 5.0% ARE REQUIRED, THE MAXIMUM SLOPE SHALL BE 3:1. GRADE CHANGES IN EXCESS OF 1.0m ARE TO BE ACCOMPLISHED BY THE USE OF A RETAINING WALL.
21. RESTORATION FOR SERVICE CONNECTION TRENCH EXCAVATION SHALL BE IN ACCORDANCE TO THE "ROAD CUT RESTORATION- ASPHALT OR CONCRETE" TOWN DRAWING.
22. SEDIMENT CONTROL MEASURES TO BE INSTALLED AS PER THE TOWN OF OAKVILLE STANDARDS.
23. ALL DAMAGED AND DISTURBED AREAS ARE TO BE REINSTATED IN ACCORDANCE TO TOWN OF OAKVILLE STANDARDS.

Standard Drawing Name STANDARD GENERAL NOTES	Revision: 0	Revision Date: MAR 2023
	Scale: NTS	Std. Dwg. Number: 1C

EROSION AND SILTATION NOTES

1. ALL EROSION AND SEDIMENT CONTROLS ARE TO BE INSTALLED ACCORDING TO APPROVED PLANS TO COMMENCEMENT OF ANY EARTH MOVING WORK ON THE SITE SHALL REMAIN IN PLACE UNTIL A DISTURBED AREAS ARE STABILIZED WITH THE INTENDED FINAL GROUND COVER.
2. EROSION AND SEDIMENT CONTROLS SHALL BE INSPECTED BY THE BUILDER/DEVELOPER.
 - A. WEEKLY
 - B. BEFORE AND AFTER ANY PREDICTED RAINFALL EVENT
 - C. FOLLOWING AN UNPREDICTED RAINFALL EVENT
 - D. DAILY, DURING EXTENDED DURATION RAINFALL EVENTS
 - E. AFTER SIGNIFICANT SNOW MELTS
3. EROSION AND SEDIMENT CONTROLS SHALL BE MAINTAINED IN PROPER WORKING ORDER AT ALL TIMES. DAMAGED OR CLOGGED DEVICES SHALL BE REPAIRED WITHIN 48 HOURS.
4. WHERE A SITE REQUIRES DEWATERING AND WHERE THE EXPELLED WATER CAN BE FREELY RELEASED TO A SUITABLE RECEIVER, THE EXPELLED WATER SHALL BE TREATED TO CAPTURE SUSPENDED PARTICLES GREATER THAN 40 MICRON IN SIZE. THE CAPTURED SEDIMENT SHALL BE DISPOSED OF PROPERLY PER MOECC GUIDELINES. THE CLEAN EXPELLED WATER SHALL BE FREELY RELEASED TO A SUITABLE RECEIVER IN MANNER THAT DOES NOT CREATE DOWNSTREAM ISSUES INCLUDING BUT NOT LIMITED TO EROSION, FLOODING— NUISANCE OR OTHERWISE, INTERFERENCE ISSUES, ETC.
5. EXISTING STORM SEWERS AND DRAINAGE DITCHES ADJACENT TO THE WORKS SHALL BE PROTECTED AT ALL TIMES FROM THE ENTRY OF SEDIMENT/SILT THAT MAY MIGRATE FROM THE SITE. FOR STORM SEWERS: ALL INLETS(REAR LOT CATCHBASINS, ROAD CATCHBASINS, ROAD CATCHBASINS, PIPE INLETS, ETC.) MUST BE SECURED/FITTED WITH SILTATION CONTROL MEASURES. FOR DRAINAGE DITCHES: THE INSTALLATION OF ROCK CHECK DAMS, SILTATION FENCING, SEDIMENT CONTAINMENT DEVICES MUST BE INSTALLED TO TRAP AND CONTAIN SEDIMENT. THESE SILTATION CONTROL DEVICES SHALL BE INSPECTED AND MAINTAINED PER ITEMS 2 AND 3 ABOVE.

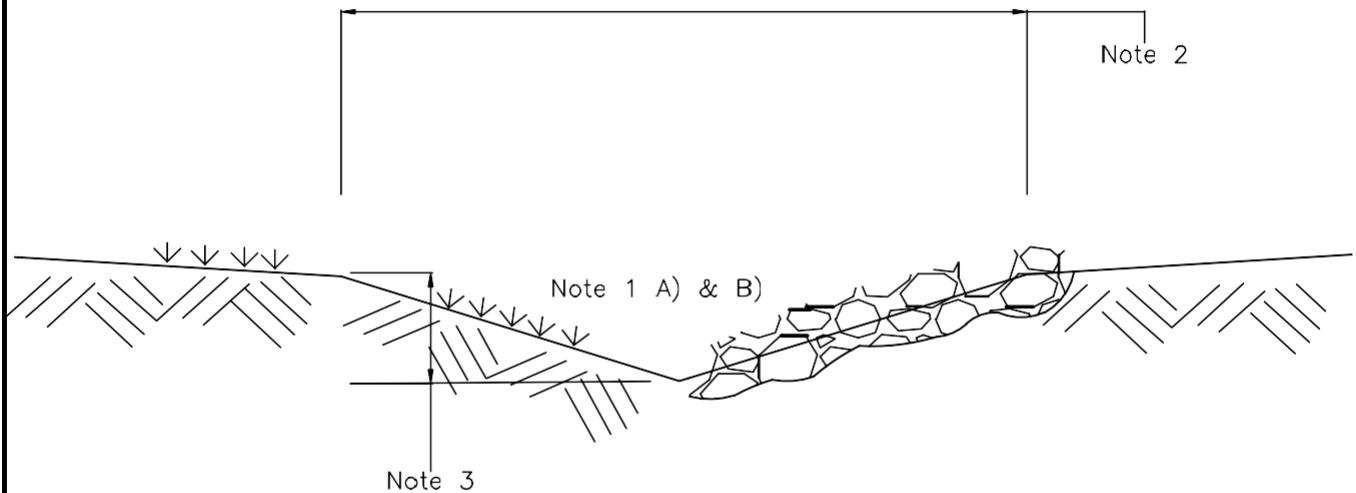
TREE PROTECTION NOTES

1. ALL EXISTING TREES WHICH ARE TO REMAIN SHALL BE FULLY PROTECTED WITH HOARDING, ERECTED BEYOND THEIR DRIP LINE PRIOR TO THE ISSUANCE OF THE BUILDING PERMIT. GROUPS OF TREES AND OTHER EXISTING PLANTINGS TO BE PROTECTED, SHALL BE TREATED IN A LIKE MANNER, WITH THE HOARDING AROUND THE ENTIRE CLUMP(S). AREAS WITHIN THE PROTECTIVE FENCING SHALL REMAIN UNDISTURBED AND SHALL NOT BE USED FOR THE STORAGE OF THE BUILDING MATERIAL AND EQUIPMENT.
2. NO RIGGING CABLES SHALL BE WRAPPED AROUND OR INSTALLED IN TREES AND SURPLUS SOIL, EQUIPMENT DEBRIS OR MATERIALS SHALL NOT BE PLACED OVER ROOT SYSTEMS OF THE TREES WITHIN THE PROTECTIVE FENCING. NO CONTAMINANTS WILL BE DUMPED OR FLUSHED WHERE FEEDER ROOTS OR TREES EXIST.
3. THE DEVELOPER OR HIS/HER/ITS AGENTS SHALL TAKE EVERY PRECAUTION NECESSARY TO PREVENT DAMAGE TO TREES OR SHRUBS TO BE RETAINED.
4. WHERE LIMBS OR PORTIONS OF TREES ARE REMOVED TO ACCOMMODATE CONSTRUCTION WORK, THEY WILL BE REMOVED CAREFULLY IN ACCORDANCE WITH ACCEPTED AGRICULTURAL PRACTICE.
5. WHERE ROOT SYSTEMS OR PROTECTED TREES ARE EXPOSED DIRECTLY TO, OR DAMAGED BY CONSTRUCTION WORK, THEY SHALL BE TRIMMED NEATLY AND THEE AREA BACKFILLED WITH APPROPRIATE MATERIAL TO PREVENT DESICCATION.
6. WHERE NECESSARY, THE TREES WILL BE GIVEN AN OVERALL PRUNING TO RESTORE THE BALANCE BETWEEN ROOTS AND TOP GROWTH OR TO RESTORE THE APPEARANCE OF THE TREES.
7. IF THE GRADES AROUND TREES TO BE PROTECTED ARE LIKELY TO CHANGE, THE OWNER SHALL BE REQUIRED TO TAKE SUCH PRECAUTIONS AS DRY WELLING, RETAINING WALLS AND ROOT FEEDING TO THE SATISFACTION OF THE PLANNING AND BUILDING DEPARTMENT OF THE TOWN OF OAKVILLE.
8. GRADE CHANGED WILL NOT OCCUR WITHIN THE TREE PROTECTION ZONE (TPZ).
9. UTILITY ACCESS CORRIDOR MUST BE OUTSIDE THE TPZ AND/OR NO OPEN TRENCH METHOD OF CONSTRUCTION BELOW—GROUND AS WELL AS NO ABOVE—GROUND LINES WITHIN THE TPZ.

Standard Drawing Name EROSION AND SILTATION AND TREE PROTECTION NOTES	Revision:	Revision Date: MAR 2023
	Scale: NTS	Std. Dwg. Number: 1D

SWALE CROSS SECTION DETAIL

(NOT TO SCALE)

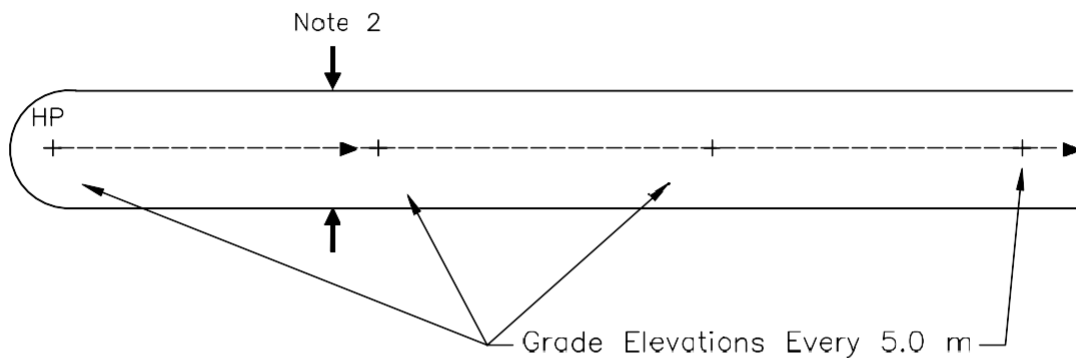


ALL SWALES ARE TO:

1. BE STABILIZED WITH EITHER: A) TOPSOIL AND SOD, OR B) FILTER CLOTH AND RIVER ROCK (POTATO STONE). MATERIALS SUCH AS, FINE GRAVEL, MULCH, ETC. ARE NOT ACCEPTABLE.
2. HAVE A WIDTH OF 1.2 TO 2.0 M (SIDE YARD SWALES MAY BE A MIN. 0.6 M IN WIDTH).
3. HAVE A DEPTH OF 150 TO 600 MM.
4. BE DEFINED AS A "V" WITH SIDE SLOPES OF NO MORE THAN 3:1.
5. HAVE A MINIMUM LINEAR SLOPE OF 2.0 %.
6. MAX. LENGTH OF 60 M BEFORE OUTFALL TO A SEWER, CREEK, OR MUNICIPAL ROAD.
7. HAVE NO WALKWAYS, RETAINING WALLS, GARDENS, TREES, SHRUBS, ETC. LOCATED WITHIN THEM.

SWALE PLAN VIEW

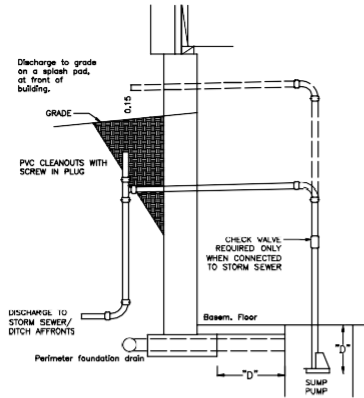
(NOT TO SCALE)



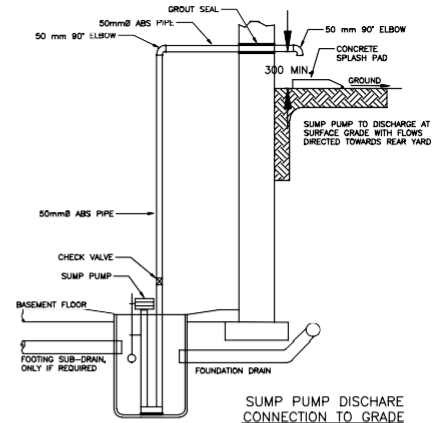
Note: Provide actual cross-section of swale for each different cross-section proposed on the Grading and Servicing Plan. If the design deviates from the Town standards, it must be demonstrated that adequate capacity is provided, and there is no adverse impact to the adjacent properties.

Standard Drawing Name	Revision: 0	Revision Date: MAR 2023
SWALE CROSS-SECTION DETAIL	Scale: NTS	Std. Dwg. Number: 1E

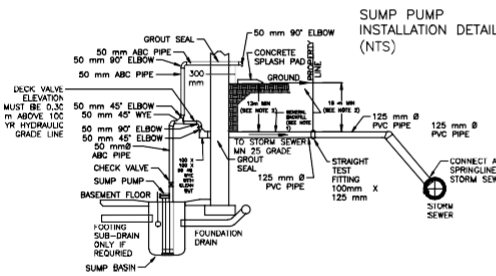
SUMP PUMP DETAIL



NOTES:
 SUMP PIT TO BE LOCATED DIST. "D" FROM THE EDGE OF ALL FOOTINGS (TYP.).
 SUMP PIT BASE TO BE CONTINUOUS WITH (OR BE MECHANICALLY CONNECTED TO) THE PIT WALLS.

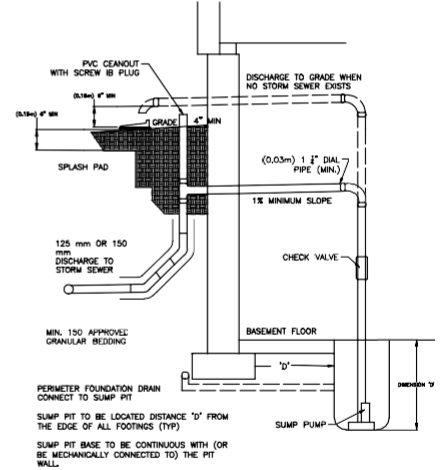


SUMP PUMP DISCHARGE CONNECTION TO GRADE
 N.T.S.



NOTES:
 1) GENERAL BACKFILL TO BE SELECT NATIVE BACKFILL MATERIAL.
 2) INSULATION TO BE REQUIRED WHEN MINIMUM COVER IS NOT ACHIEVABLE.

SUMP PUMP INSTALLATION DETAIL

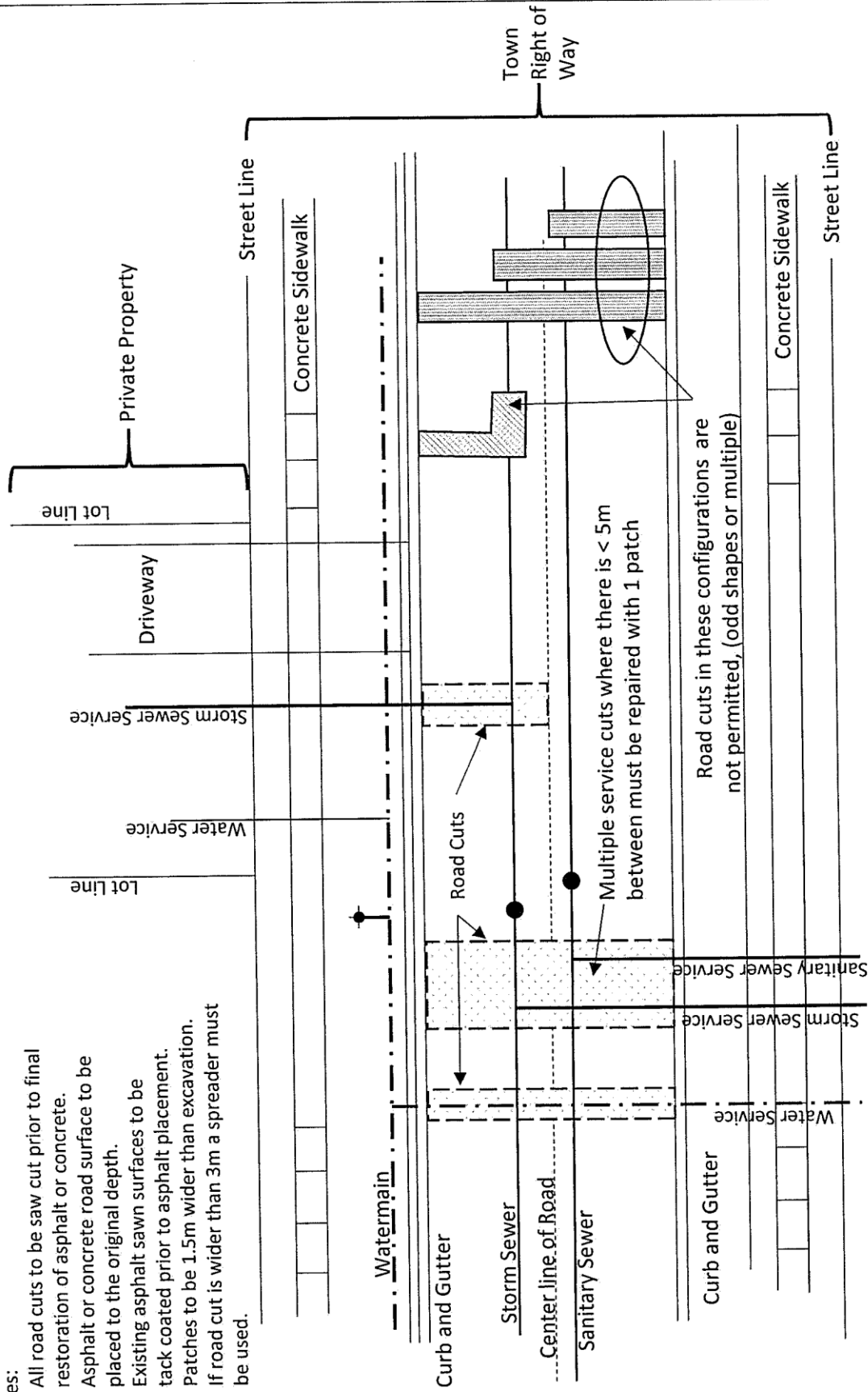


Note: The Sump Pump Details shown on this drawing are examples that are acceptable by the Town of Oakville. They are to be used as a reference. The designer shall provide a detail that best describe their proposed design.

Standard Drawing Name	Revision: 0 Revision Date: MAR 2023
ACCEPTABLE SAMPLE SUMP PUMP DETAILS	Scale: NTS Std. Dwg. Number: 1F
	

Notes:

1. All road cuts to be saw cut prior to final restoration of asphalt or concrete.
2. Asphalt or concrete road surface to be placed to the original depth.
3. Existing asphalt sawn surfaces to be tack coated prior to asphalt placement.
4. Patches to be 1.5m wider than excavation.
5. If road cut is wider than 3m a spreader must be used.





Appendix C - Stormwater Master Plan Guidelines

Stormwater management measures are implemented to prevent negative impacts on the subject property, adjacent properties, and Town infrastructure. Development changes the pattern and amount of runoff as roof and hardened surface areas increase. While the impacts from one individual property may seem inconsequential, cumulative impacts to the town's municipal storm system have been demonstrated via modelling carried out as part of the town's Stormwater Master Plan. Moreover, in some older areas, where drainage swales have subsided over time and the area is flat, additional runoff exacerbates any drainage issues. As such, the review will seek to ensure that existing drainage patterns are maintained or improved and how the additional surface runoff is being mitigated. The Town has prepared a Stormwater Master Plan to identify the minor and major system capacities during the 5-year and 100-year storms. The minor drainage system includes catch basins, sewers, ditches and driveway culverts – this system handles common storms. The major drainage system consists of roads, diversion channels, and natural water ways. It handles stormwater flows that are too large for the minor system.

The links to the drawings below shall be used in conjunction with the design of the lot grading plan to demonstrate no impacts to adjacent properties, including the town's right-of-way. **It is important to not only review the system capacity at the site, but to also review the downstream capacity.**

[7.3 – 5 Year Storm Event Urban and Hybrid Performance – Existing condition](#)

[7.8 – 5 Year Storm Event Ditched System Performance – Existing Condition](#)

[7.1 - Schematic of Minor System Level of Service Conditions Pertaining to 5 Year Storm Event](#)

[7.4 – 100 Year Storm Event Minor System Performance – Existing condition](#)

[7.7 – 100 Year Storm Event Major System Performance – Existing condition](#)

[7.6 - Schematic of Major System Level of Service Conditions Pertaining to 100 Year Storm Event](#)



If it is determined that the Town's existing infrastructure is not capable of receiving additional drainage (i.e. The 5 year and/or the 100-year system performance is shown as Orange/Red on the subject road adjacent to the subject property or downstream) mitigation measures such as infiltration or retention will be required. If the Town's existing infrastructure is shown as green/yellow for the area adjacent to the subject property and downstream, that does not mean that unlimited additional flows are permissible, but that some minor increases are tolerable.

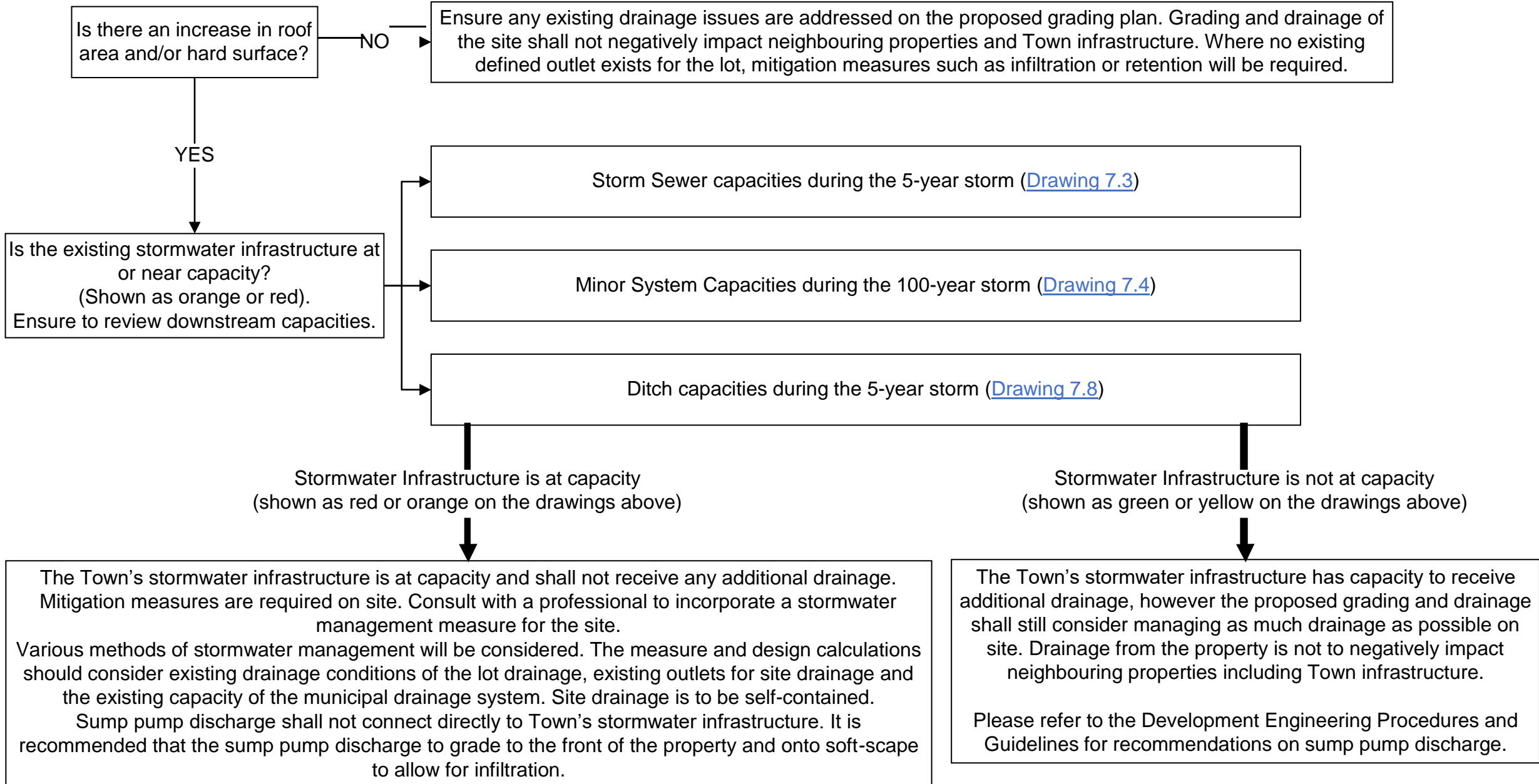
Measures such as rear lot catchbasin, infiltration or retention methods may be required to mitigate higher flows prior to the connection to the Town's storm infrastructure. Existing drainage conditions, outlets and the existing capacity of the municipal drainage system should all be considered when designing stormwater management on site.

Remnant Channels

The Town of Oakville has several open water features that are referred to as remnant channels. These remnant channels are remnants of former tributaries to area creeks that are not regulated watercourses. These channels drain private properties and can also receive runoff from public lands. It is important to determine if there is a remnant channel on or adjacent to the property under construction. To verify if there is a remnant channel, please review the maps in Appendix K Part 1-3 of the Stormwater Master Plan ([Stormwater Master Plan \(oakville.ca\)](#)). Remnant channel areas and the 100 year storm even for the remnant channels can be found on [Drawing 7.11](#) of the Oakville Stormwater Master Plan.

Construction is to occur outside of the limits of the 100-year flow within the remnant channel to avoid interrupting the existing drainage pattern and capacity of the channel. **There should be no proposed grading works within the 100-year flow limits of the remnant channel.** If it is determined that work must be done in the remnant channel limits, to support a pool and not a habitable structure, a 100-year flood line delineation and cut/fill balance study to demonstrate no impacts to adjacent properties, is to be done and reflected on the grading plan.

Stormwater Master Plans Guideline for Grading Design of the Building Permit





OAKVILLE

Appendix D - Lot Grading Certificate Templates

[Development Engineering Permit and Application Grading Certifications](#)

Sample: Certification 1, Lot Grading Certification

Sample: Certification 2, Lot Grading and Stormwater Device Certification

Sample: Certification 3, Stormwater Device Certification



OAKVILLE

Appendix E - Process Maps

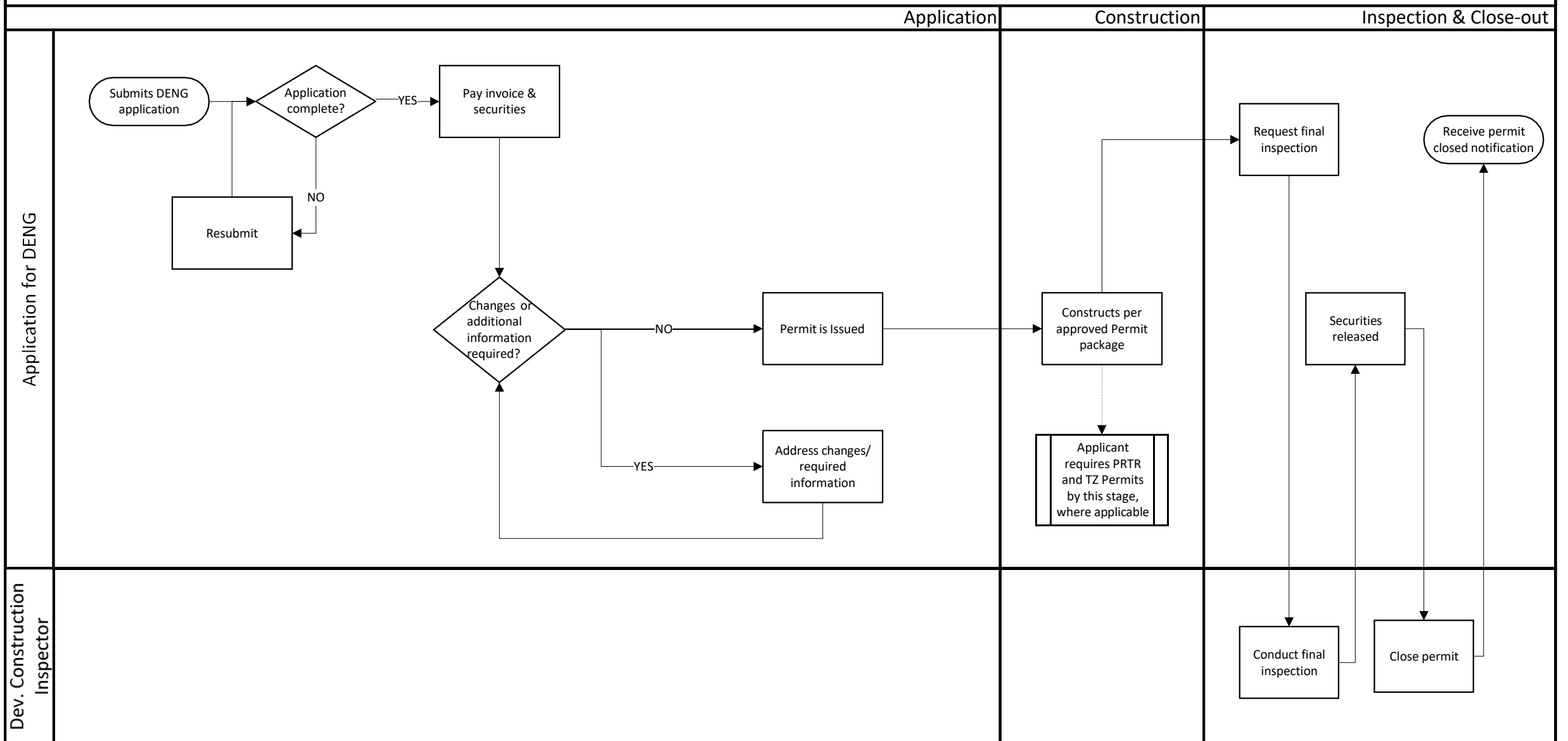
DENG Permit Process Map

Building Permit Process

Signed Tree Declaration Form Process

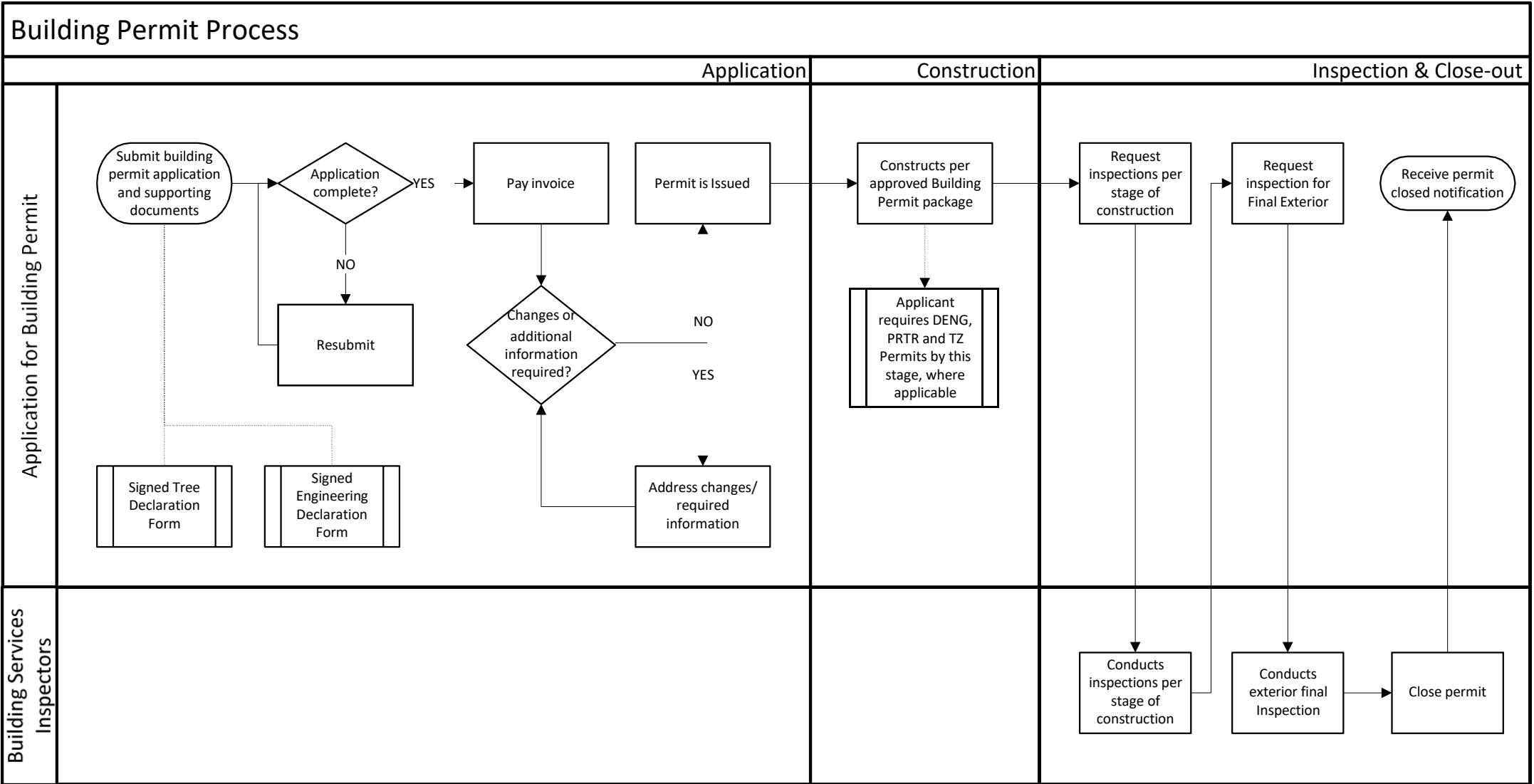
Signed Engineering Declaration Form Process

Development Engineering Permit (DENG)



Notes:

- It is highly recommended that the same grading design is submitted for the Building Permit and DENG Permit for consistency.
- The applicant is able to apply for the DENG Permit in advance of the Building Permit, if desired.

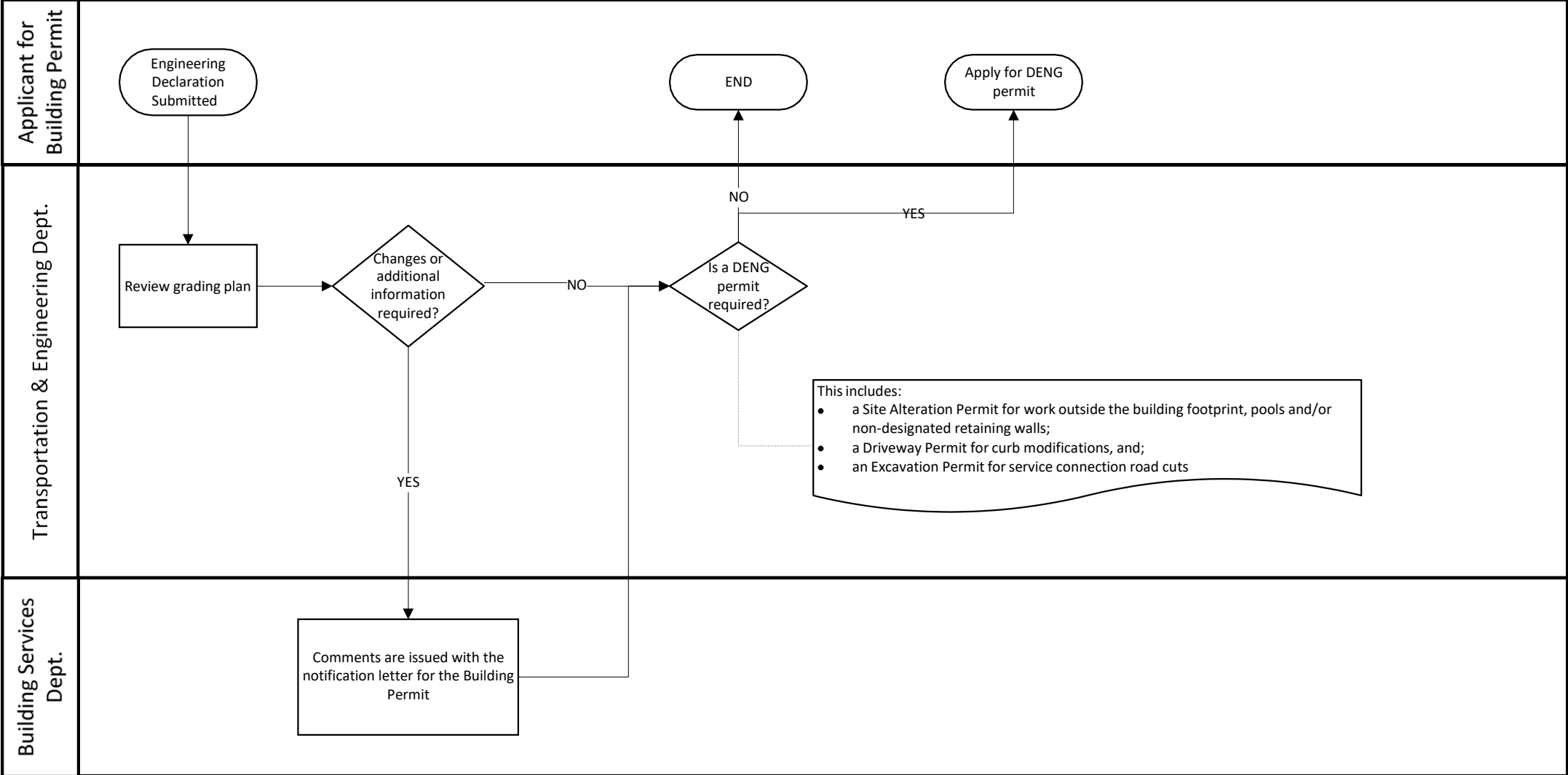


Notes:

- It is highly recommended that the same grading design is submitted for the Building Permit and DENG Permit for consistency.
- The applicant is able to apply for the DENG Permit in advance of the Building Permit, if desired.

Signed Engineering Declaration Form

Application



Note:

- If a DENG permit is required, the Forestry Department will coordinate the two reviews.

