

ANNEX 1 – Engineering Submissions Required Documents and Processes

This document provides a description of the required Engineering drawings and documents for various types of Development applications.

1. REVIEW TIMELINES

When the Consulting Engineer submits the complete Engineering submission package (Engineering Drawings, studies and other documents) through ePLAN, the response period required by the City shall be in accordance with the ePLAN timelines. This does not include the time required by the Consulting Engineer to respond to the City's comments.

2. ENGINEERING FEES

Engineering fees as per the latest Fee By-law (211-83) shall be provided at the Cycle1 Subdivision application submission, and SPC application submission.

3. LEGAL PLANS REQUIRED FOR DEVELOPMENT APPLICATIONS

Description	Cycle1	Subsequent Cycles
Draft M-Plan of Subdivision	Required	Required
Draft R-Plan (if applicable, for Subdivision and Site Plan)	Required	Required

4. SUBDIVISION APPLICATIONS (TEC)

After Draft Plan approval for subdivisions, as part of the subdivision application (TEC), the consulting engineer will be provided with a **TEC Checklist**. The TEC Checklist provides a list of drawings and documents that are required for the TEC Application submission.

Refer to Section J for Drafting and Drawing Requirements, and ANNEX 2 for the requirements for various reports and studies.

4.1 Engineering Drawings Required for Subdivision Applications

DWG Nos.	Description	Cycle1	Subsequent Cycles
001	Cover Sheet	Required	Required
1 - 99	Index and General Notes	Required	Required
101 - 199	General Plan	Required	Required
201 - 299	Storm Drainage Plan (minor and major) External Storm Drainage Plan Master Storm Drainage Plan	Required	Required
301 - 399	Sanitary Drainage Plan External Sanitary Drainage Plan Master Sanitary Drainage Plan	Required	Required
401 - 499	Grading Plans	Required	Required
501 - 599	Plan & Profile Drawings	Required	Required

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601 - 699	Site Alteration Plans / Erosion Control Plans Details Drawings <i>Include notes as per “General Notes for Site Alteration Plan” (MR35CC)</i>	Required	Required
701 - 799	Composite Utility Plans (CUPs) Details	XX	Required
801 - 899	Pavement Marking & Signage Plans (PMSPs) Details	XX	Required
901 - 999	Traffic Control Signals & Intersection Illumination Drawings Traffic Control Signals & Intersection Illumination Details	XX	Required
1001 -1099	Stormwater Management Pond Stormwater Management Pond Sections and details	Required	Required
1100 -1199	Design Sheets ➤ Sanitary ➤ 5-Year Storm ➤ 100-Year HGL Analysis ➤ Overland Flow calculations at critical Low Points ➤ Major storm inlet calculations ➤ Third pipe system (FDC or RDC)	Required	Required
1201-1299	Detail Drawings ➤ ROW (Right-of-Way) Cross Section ➤ Detail Design Cross sections ➤ City Standards ➤ Others (if required) <i>Note:</i> <i>Shop drawings for non-standard intake structures (e.g. super catchbasins, etc.) shall be provided and stamped by a structural Professional Engineer</i>	Required	Required
1301-1399	Miscellaneous: ➤ Crossings (Bridge, Culvert, etc.) ➤ Retaining Walls ➤ Structural Details ➤ Other Details <i>Note:</i> <i>All structural details, including any structures designed to support vehicular and/or pedestrian load (i.e. bridges, sidewalks, culverts, etc.) shall be stamped, signed and dated by a structural Professional Engineers. Structural shop drawings shall also be stamped, signed and dated by the manufacturer’s P.Eng.</i>	Required	Required
1401-1499	Special Associated Projects: ➤ Regional Roads ➤ Others	Required	Required
2001-2099	Streetlighting Drawings/Complete Package, as required (<i>Refer to Section N</i>)	XX	Required

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4.2 Engineering Documents Required for Subdivision Applications

	Description	Cycle1	Subsequent Cycles
1	<p><u>Environmental Site Assessment (ESA)</u> (if applicable) <u>ESA Phase I/II Study</u></p> <ul style="list-style-type: none"> • Letter of Reliance for ESA Phase I/II Study (as per the City's Standards) • MECP Acknowledgement of Filing of Record of Site Condition (RSC) (for lands to be conveyed to the City) • A cheque in favour of City of Markham for peer review: <ul style="list-style-type: none"> ➢ [\$Amount + Admn. Fee per Fee By-law] + HST <i>City to get cost estimates from the peer reviewer prior to requesting the amount from the Owner</i> 	Required	Required
2	<u>Functional Servicing Study (FSR)</u>	Required	Required
3	<p><u>Stormwater Management (SWM)</u></p> <ul style="list-style-type: none"> • Stormwater Management Study (provide report as per the City of Markham "Submission Requirements for Stormwater Management Reports for Subdivisions") (See Design Criteria - ANNEX 2) • Pond Operation and Maintenance Manual (if applicable) 	Required	Required
4	<u>Geotechnical (Soil) Study</u>	Required	Required
5	<u>Noise Impact Study</u>	Required	Required
6	<p><u>Water Supply Analysis Study</u></p> <p>Sketch showing the layout of the proposed internal watermain which matches the General Plan, demand calculations, watermain sizing, hydraulic simulation under Peak hour, Minimum day & Maximum day + Fire</p>	Required	Required
7	<p><u>Hydrogeological Study</u></p> <p>Required if residential wells are identified within 500 m from the site boundaries (influence zone). The study shall include well monitoring/contingency plan</p> <ul style="list-style-type: none"> • The study shall establish groundwater level, discharge rate, discharge management, dewatering requirements (both temporary and permanent, if required). The study shall also specify if a Permit to Take Water (PTTW) is required • If the above condition is not applicable, provide a letter, stamped, signed and dated by a Professional Engineer, confirming that there are no residential wells identified within 500 m from the site boundaries 	Required	Required
8	<p><u>Transportation</u></p> <ul style="list-style-type: none"> • Traffic Impact Study (TIS) To identify transportation planning and traffic operation requirements. The study is often necessary to assess impacts of a development application (if applicable) 	Required	Required

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	<ul style="list-style-type: none"> • Functional Traffic Design Study (FTDS) To identify the layout and design of the internal transportation network for a development application. The study is generally based on traffic requirements identified by Traffic Impact Study (TIS) (if applicable) 		
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5. SITE PLAN CONTROL APPLICATIONS (SPC)

For Site Plan Control Application guideline, refer to Section H.

6. SITE ALTERATION PERMIT APPLICATION PROCESS (SALT)

A Site Alteration (SALT) Permit is required as per the Site Alteration By-law 2011-232 to carry out any Site Alteration activities such as the removal of topsoil from land, the placement or dumping of fill on land, the alteration of the grade of land or excavation by any means, the compaction of soil or the creation of impervious surfaces, or any combination of these activities that would change the landform and natural vegetative characteristics of the land. Note that site alteration activities that are related to the removal or preservation of vegetative cover requires a separate SALT Permit from Urban Design.

The Owner submits a Site Alteration Permit application through ePLAN, and the City issues a Permit as per the By-law (2011-232) on submission of the required Engineering Fees, letter of credit, insurance, and Accepted Site Alteration Plans, and other documentation (refer to Section 6.3 below).

The following are required to obtaining an Engineering SALT Permit

- Site Alteration Plans accepted by Director of Engineering
- Letter of Credit (110% of the estimated cost for Site Alteration). The cost estimate shall include 10% contingency.
- The Owner’s Liability Insurance certificate, naming the “City of Markham” as Additional Insured
- Engineering Fees: as per the latest Fee-By-law (211-83), as amended
- Approvals from other authorities having jurisdictions
- Confirmation that the appropriate archaeological assessments on lands deemed to have moderate to high potentials for the discovery of archaeological resources have been completed to the satisfaction of the Ministry of Culture and Tourism

6.1 Site Alteration Permit Application Process for Subdivisions:

The Site Alteration Permit Application submission package can either be:

- a) combined with the TEC submission package, or
- b) a separate package from the TEC if the Owner plans to carry out topsoil stripping / site alteration prior to the Cycle 1 TEC submission. In this case, the Owner has to apply for a Site Alteration Permit in accordance with the Site Alteration By-law.

6.2 Site Alteration Permit Application Process for Site Plans:

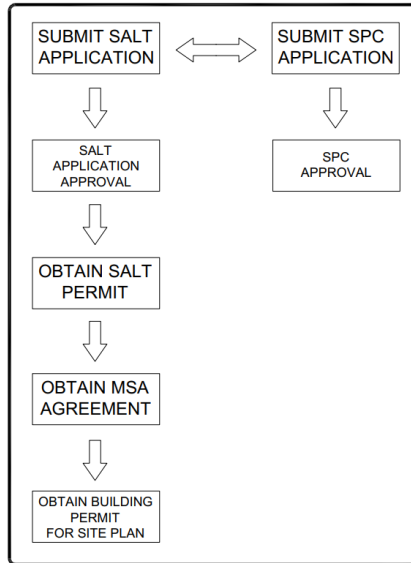
The Site Alteration Permit Application submission package cannot be combined with the submission of the SPC application.

The Applicant shall apply for the Site Alteration Permit in advance, as this is a requirement before a Municipal Services Agreement (MSA) is executed, which is a pre-requisite to obtain a

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Building Permit for the Site Plan. Please note that in order to execute a Municipal Services Agreement, a Site Alteration Permit must be obtained.

Notwithstanding the exemption for a SALT permit for sites less than 1.0 acre (0.405 ha) as per the Site Alteration By-law (2011-232), a SALT permit shall be required to process the MSA.



6.3 Engineering Documents for Site Alteration Permit Application

Below is a description of the drawings and documents required for obtaining a Site Alteration Permit from Engineering. No Site Alteration Activities shall initiate until all the required documents for the SALT Permit are in place.

For Site Alteration drawing and drafting requirements, refer to Section L. For various reports requirements, refer to Annex 2.

Description	Cycle1	Subsequent Cycles
1. Complete set of Site Alteration Submission Drawings & Reports as follows: <ul style="list-style-type: none"> • Site Alteration Plans / Erosion & Sediment Control (ESC) Plans and Details • Show Pre-Grades (for subdivision) • Preliminary Grading Plans (for site plan) • SWM Report (for site plan) • Erosion and Sediment Control report / brief • Dust Control Plan 	Required	Required
2. Environmental Site Assessment (ESA) Refer to Annex 2	Required	Required
3. Clearance from the Ministry of Culture and Tourism for Archaeological Assessment and other external agencies having jurisdiction	Required	Required
4. Itemized cost estimate for SALT works	Required	Required

ANNEX 1 – Engineering Submissions Required Documents**7. MUNICIPAL SERVICES AGREEMENT (MSA – FOR SITE PLANS)**

A Municipal Services Agreement is required for obtaining a Building Permit for Site Plan Applications.

Development Technologist to request Legal Department to prepare the Municipal Services Agreement.

The Owner / Consulting Engineer shall provide the required documentation in accordance with the PAC Checklist (refer to Appendix A in the PAC Checklist). The PAC Checklist is provided to the Applicant at the pre-consultation stage.

8. MECP'S ENVIRONMENTAL COMPLIANCE APPROVALS (ECA)

The application for MECP's ECA is accepted after Cycle2 Submissions. The City of Markham will process the application. The Applicant is responsible to ensure that ECA application and their supporting documentation and Schedules meet the City's requirements.

It is important to note that no Works shall be carried out without ECA approvals.

8.1 ECA Fees

The Applicant shall pay the ECA fees by cheque, or online, in favour of the "City of Markham", as follows and as amended from time to time:

ECA Fees for Municipal Sewers:

- As per the Fee By-law 2002-276, as amended, with no HST.

8.2 Works to be reviewed under ECA approvals:

Upon Cycle 2 submission, the Consulting Engineer can contact the Development Engineer to initiate the MECP approvals. The required forms will be provided by the Development Engineer, to ensure that MECP approval is in place prior to construction.

Draft forms (Form SS1, Attachment A, and Attachment B) shall be submitted to the Development Engineer to process the application for **Sanitary Sewer**. Note that Attachment B is to be submitted after the completion of construction.

Draft forms (Form SW1, Attachment A, and Attachment B) shall be submitted to the Development Engineer to process the application for **Storm Sewer**. Note that Attachment B is to be submitted after the completion of construction.

Draft forms (Form SW3, Attachment A, and Attachment B) shall be submitted to the Development Engineer to process the application for **Third Pipe System**. Note that Attachment B is to be submitted after the completion of construction.

Draft forms (Form SW2, Attachment A, and Attachment B) shall be submitted to the Development Engineer to process the application for **Stormwater Management Facilities**. Note that Attachment B is to be submitted after the completion of construction.

Any proposed sewer / infrastructure not covered by the agreement between the City and MECP shall be a direct submission to MECP. The Consultant Engineer shall work with the Development Engineer to finalize the package for direct submission to MECP.

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The application for MECP's DWWP is accepted with Cycle2 Submissions. The City of Markham will process the application. The Applicant is responsible to ensure that DWWP application and their supporting documentation and Schedules meet the City's requirements.

It is important to note that no Works shall be carried out without DWWP approvals.

9.1 DWWP Fees

The Applicant shall pay the DWWP fees by cheque in favour of the "City of Markham", as follows and as amended from time to time:

DWWP Fees:

- As per the Fee By-law 2002-276, as amended, with no HST.

9.2 Works to be reviewed under DWWP approvals:

Upon Cycle 2 submission, the Consulting Engineer can contact the Development Engineer to initiate the DWWP approvals. The required forms will be provided by the Development Engineer, to ensure that DWWP approval is in place prior to construction.

Draft form (Attachment A) shall be submitted to the Development Engineer to process the application for **DWWP**.

Other required forms / documents as required shall be submitted to the Development Engineer to process the application for **DWWP**.

10. PRE-SERVICING AGREEMENT PROCESSES (SUBDIVISIONS)**10.1 Requirements for Pre-servicing Agreement**

- a) Pre-servicing Agreement is not required if there is an executed Subdivision Agreement.
- b) Pre-servicing Agreement can only be signed if there is an approved Draft Plan.
- c) TEC Pre-servicing submissions through ePLAN shall be submitted after approval of the Draft Plan of Subdivision. A "Pre-servicing Checklist" will be sent to the Consultant outlining the required submission materials for executing a Pre-servicing Agreement.
- d) Development Engineer to request Legal Department to prepare the Pre-servicing Agreement.
- e) The Owner/Consulting Engineer shall request a Pre-construction meeting with Municipal Inspections after a Pre-servicing Agreement is executed.

11. SUBDIVISION AGREEMENT SUBMISSION REQUIREMENTS

The Applicant can apply any time to Legal Department for initiating the Subdivision Agreement process, after the approval of the Draft Plan.

In order to prepare for the Engineering clauses for the Subdivision Agreement, a Subdivision Agreement Information Package shall be provided by the Consulting Engineer to the Development Engineer. The Subdivision Agreement Information Package details are in Annex 7.