

2023

DEVELOPMENT MANUAL

G200



Foreword

This manual was prepared by the City of Barrie under the direction of a Technical Working Group consisting of subject matter experts from following City departments/units:

Policy and Standards, Engineering;

Development Services, Engineering; and

Parks Planning and Development, Engineering.

This manual was developed to reflect current Subdivision and Site Plan Application and Development processes as they exist in 2017. The manual also considers corporate initiatives such as the Complete Submission Process. It should be recognized that this manual cannot provide direction for all circumstances encountered. The City reserves the right to apply discretion in the interpretation of these guidelines, and require the use of other applicable guidelines and good engineering judgement when reviewing each project.

Changes and revisions will be made to these standards from time to time and it is the responsibility of the designer to obtain and make use of the latest version available at the time of engineering design.

The design of all infrastructure assets in the City is to be based upon the specifications and standards in effect at the time of submission. It is incumbent upon the designer to ensure that the latest specifications are being utilized. All plans are to be accepted by the City before they are used for the construction of services; however, such acceptance in no way relieves the designer from providing an adequate and safe design. Current legislation shall be followed at all times.

DISCLAIMER

The City of Barrie has supplied this manual with the express understanding that it shall not be liable in any manner whatsoever to any person, corporation or organization for damages, injuries or costs resulting from the use of the information supplied.

The City of Barrie reserves the right to amend, alter or to accept revisions to this manual at any time without further notice.

Over time it will be necessary to update this manual as the regulations, design practices, and technologies continue to evolve and change. It is the user’s responsibility to check the City of Barrie’s website for the current revision of this manual. Manual holders should immediately discard superseded and cancelled standards.

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1	Oct 27, 2017	Revision 1 approval granted
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1 INTRODUCTION

1.1. *Purpose*

This document is intended to guide Developers, Consultants, and the general public through the City of Barrie's development approval process. It outlines the roles and responsibilities of the Engineering Department, Developers, Consultants, and Contractors/Constructors within the process. This manual has been structured to follow the approval process from the Draft Plan Approval phase to the Assumption phase of a Plan of Subdivision, with a general overview of this process provided in Appendix A. Similarly, the process for Site Plan development is highlighted.

The City of Barrie's Engineering Department's roles through this process include, but are not limited to the review of:

- Roadway design and other surface components;
- Linear infrastructure (water, storm, sanitary sewers, and appurtenances);
- Stormwater management;
- Lot grading;
- Impacts and constraints on groundwater supply;
- Source water protection;
- Erosion and sediment control
- Parks/open space development;
- Environmentally protected lands and natural heritage land delineation;
- Tree preservation;
- Streetscape design;
- Fencing; and
- Traffic.

It is the responsibility of the Developer to retain the required Consultants, as outlined in this document, for the balance of the development process. In addition, the retained Consultants will be responsible to provide inspection of all Works associated with the development, and subsequent certification that all Works have been completed in accordance with the approved design.

2 LEGISLATION, ACTS AND REGULATIONS

2.1. *The Planning Act and Approval Authority*

Plans of Subdivision are processed and approved under Section 51 of the [Planning Act](#). Process and circulation requirements are identified in O. Reg. 544/06 of the Planning Act. The City of Barrie is the delegated approval authority for Draft Plans of Subdivision under this Act.

Under provincial legislation, Site Plan Control was introduced (Section 35(a) of The Planning Act 1973), providing the legislative authority for municipalities to implement the Site Plan Control process. The Site Plan Approval Process has been described in the City's Site Plan Application Manual. Site Plan Control is a planning tool provided to municipalities under Section 41 of The Planning Act (RSO 1990).

2.2. *City of Barrie By-Laws*

Prior to any work taking place on private or public property, the following [By-laws](#) (as amended) may apply:

- Development Charge By-Laws (including City wide and area specific);
- Backflow Prevention and Cross-Connection Control By-Law;
- Community Safety Zone By-Law;
- Fees By-Law;
- Municipal Addressing By-Law;
- Noise By-Law;
- Park Use By-Law;
- Property Standards By-Law;
- Public Tree By-law;
- Right-Of-Way Activity By-Law;
- Sewer Use By-Law;
- Site Alteration By-law;
- Site Plan Control By-Law;
- Tree Preservation By-Law;
- Watercourse By-Law; and
- Zoning By-Law.

The various departments within the City that are involved in the Subdivision/Site Plan process include, but are not limited to the following:

- Engineering;
- Planning and Building Services;
- Environmental Services;
- Roads, Parks and Fleet;
- Barrie Fire and Emergency Services;
- Legislative and Court Services;
- Finance;
- Transit and Parking; and
- Legal Services.

The various external agencies that may be involved in the Subdivision/Site Plan process include but are not limited to the following:

- Lake Simcoe Region Conservation Authority;
- Nottawasaga Valley Conservation Authority;
- County of Simcoe;
- Alectra Utilities;
- Enbridge Gas;
- Telecommunications providers (i.e. Hydro One Networks Inc., Bell Canada; Rogers, etc.);
- Canada Post;
- Ministry of Transportation of Ontario;
- Ontario Ministry of the Environment and Climate Change;
- Ontario Ministry of Natural Resources and Forestry;
- Municipal Property Assessment Corporation;
- Simcoe Muskoka Catholic District School Board;
- Simcoe County District School Board;
- Department of Fisheries and Oceans; and
- Metrolinx/GO Transit.

2.3. **Purpose of Subdivision Control**

Plans of Subdivision are required where lands are proposed to be subdivided into two or more lots with the creation of a public right-of-way. Subdivision approval is required to ensure that:

- The land is suitable for its proposed new use;
- The proposal conforms to provincial legislation and policies, and local official plans and community plans (if applicable);
- The timing for the consideration for the proposed subdivision is in accordance with the City of Barrie's Growth Management Strategy and/or other applicable plans, strategies or policies;
- The City is able to ensure that developments are appropriate and do not put undue pressure on City infrastructure, services, or finances;
- The City's and other agency's requirements (e.g. dedications, street widening, roadway improvement, drainage, servicing, etc.) are implemented;
- Municipal infrastructure and other amenities are available to prospective residents of the subdivision;
- The proposed plan of subdivision is consistent with the City of Barrie Strategic Plan and all other relevant Council policies and objectives; and
- The subdivision is consistent with other City documents and plans such as Affordable Housing Strategy, Intensification Area Urban Design Guidelines, Multi-Modal Active Transportation Master Plan, North Shore Trail Master Plan, Waterfront and Marina Strategic Plan, Community Improvement Plans and others.

2.4. **Purpose of Site Plan Control**

The site plan process ensures developments are environmentally sensitive, accessible, functional, and achieve the preferred design objectives of the City.

Matters which must be considered during development include site layout, landscaping, drainage, municipal infrastructure, vehicle and pedestrian access, and site and building design. This means that development proposals must satisfy existing zoning requirements, and be appropriately planned and designed in the context of site plan control.

The provisions of By-Law 99-312 designated site plan control areas within the City of Barrie pursuant to Section 41 of The Planning Act. Therefore, any lot being used for multi-unit residential, commercial, or industrial which abuts specific major roads, and institutional developments within the City's municipal boundaries must obtain site plan approval prior to the issuance of a building permit. Applicants are advised to contact the Planning and Building Services Department to confirm whether or not a particular development is subject to site plan control.

2.5. **Construction Lien Act**

The Developer shall comply with all provisions of the [Construction Lien Act, R.S.O. 1990, c.C.30](#), and shall hold in its possession all statutory holdbacks and any additional funds required to be held by the Construction Lien Act. These holdbacks and funds shall not be disbursed except in accordance with the Construction Lien Act, and as stipulated in the Agreement.

3 DEFINITIONS

“Acceptance” means the date upon which the City considers Works associated with the Site Plan to be substantially completed.

“Agreement” means the Subdivision/Site Plan Agreement including all schedules attached.

“Approved Plans” means all of the plans, drawings, sketches, elevations, details, as-built renderings, and associated design sheets submitted to and approved by the City for development of the Lands including the plans listed in Appendix G.

“As-Built” means documentation created by or based solely on information provided by a third party that reflects the installed, constructed, or commissioned conditions of a device, machine, equipment, apparatus, structure, system, or other outcome of an engineering project. Since the engineer has not verified that the information is complete or accurate, as-built drawings must not be sealed.

“Assumption” means the date when Works, collectively or in part, as the case may be, under the Agreement have been completed, and the associated Assumption By-law has been passed.

“City” means The Corporation of The City of Barrie.

“Consultant” means Architect, Engineer and/or Landscape Architect who is licensed to practice in Ontario in their appropriate discipline and are acceptable to the City, acting reasonably.

“Council” means the Council of The Corporation of The City of Barrie.

“Developer” means the registered Developer of the Lands against which the Agreement has been registered from time to time, and the terms of the Agreement shall be binding only on the registered Developer of the Lands for the purposes of enforcement of the terms of the Agreement as at the date of such enforcement, unless specifically stated otherwise herein.

“Drainage Plan” means a stormwater management and drainage plan prepared by an Engineer to address stormwater management and drainage requirements set out in the Agreement for the proposed development.

“Easement” means a registered right of use by the City over the Lands of the Developer.

“Engineer” means a Professional Engineer licensed and in good standing with the Professional Engineers Association of Ontario, who holds a Certificate of Authorization for municipal engineering applications, and has relevant experience and training in their discipline.

“Fees” means the costs related to administering and enforcing the conditions of the Agreement, as set out in the Agreement and in accordance with the then current Fees By-law as adopted by the City.

“Final Approval” means approval for the final Plan under the Planning Act.

“Guaranteed Maintenance Period” means the required maintenance period following Assumption of the Subdivision or Acceptance of the Site Plan.

“LSRCA” means the Lake Simcoe Region Conservation Authority.

“Lands” means those lands described in Schedule B of the Agreement, and includes all easement rights and obligations granted in connection therewith.

“Landscape Architect” means a Professional Landscape Architect duly qualified and a member in good standing of the Ontario Association of Landscape Architects.

“Landscaping” means all landscaping and design features shown on the Approved Plans and includes all planting, features, fencing, and hard surface treatments as illustrated thereon including the replanting and replacement of trees, shrubs and vegetation as determined in accordance with the Landscape Plan(s) and the Tree Preservation Plan(s).

“Letter of Credit” means an irrevocable financial document issued from a Canadian Chartered Bank, with an automatic renewal clause, which authorizes the City to withdraw funds from the Developer’s bank.

“MOECC” means the Ontario Ministry of the Environment and Climate Change.

“MTO” means the Ministry of Transportation of Ontario.

“MNRF” means the Ontario Ministry of Natural Resources and Forestry.

“Municipal Act” means the [Municipal Act, 2001, S.O. 2001, c25.](#)

“NVCA” means the Nottawasaga Valley Conservation Authority.

“Phasing” means the division of the Lands in the plan by the Developer, as shown on a schedule prepared by the Developer and approved by the City, dividing the Lands into two or more numbered segments in the order in which the Works are to proceed by the Developer.

“Plan of Subdivision” means the registered M Plan as approved by the City and/or the Ontario Municipal Board.

“Planning Act” means the Planning Act, R.S.O. 1990, c. P.13, as amended, or any successor statute.

“Record” means a document created to accurately reflect as-built, or as-fabricated conditions and that has been sealed by a professional engineer after verifying that the document is accurate. They are usually retained to meet business or regulatory requirements.

“Security” means all forms of security including cash, Letters of Credit, performance bonds, and insurance to be provided by the Developer, pursuant to the requirements of the Agreement and includes any other security provided under related agreements and approvals entered into or given with respect to the proposed development.

“Site Alteration Permit” means a permit obtained from the City in accordance with the then current by-law as approved by Council.

“Tree Preservation Plan” means the plan(s) approved by the City for the preservation of trees on or within the vicinity of the proposed development, in accordance with the requirements of the current City’s Private Tree By-law.

“Underground services to base asphalt” shall include- the following:

- Sanitary sewers and it’s appurtenances;

- Watermains and its appurtenances (valves, hydrants, water boxes);
- Storm sewer and its appurtenances;
- Front yard infiltration galleries (if applicable);
- Base asphalt, and
- Curb and gutter.

“Works” means all Lands and infrastructure to be constructed by the Developer, or as are necessary to provide adequate services to the development on the Lands, including the extension, improvement, enlargement or upgrading of existing infrastructure.

4 DEVELOPMENT ENGINEERING

4.1. Design References

Prior to any work taking place on private or public property, [City of Barrie Infrastructure Standards](#) have to be taken into consideration.

4.2. External Agency Approvals

Subject to the location of the Subdivision or Site Plan, other permits may be required from Agencies including LSRCA and/or the NVCA (i.e. fill permits), Alectra utilities (formerly PowerStream Inc.), InnPower, MOECC, MTO, MNRF, and Department of Fisheries and Oceans (DFO). These Agencies may be identified during the Pre-Consultation or Draft Plan Approval, and it will be the responsibility of the Developer to clear these requirements prior to registration of the plan.

4.3. Engineering Review

4.3.1. Plans of Subdivision

Following Draft Plan Approval, a detailed Engineering review will commence and the City will prepare standard and specific draft engineering conditions for the proposed development application which will address all issues pertaining to infrastructure, road design, road construction, lot grading and drainage, parks conditions, and financial requirements. This process is outlined in Appendix B. The draft conditions will be sent to the appropriate Consultant/Owner for concurrence, and subsequently the engineering drawings and conditions will form part of the Agreement. The specific plans required for each application will be listed in Schedule C of the Agreement.

4.3.2. Site Plans

Following the review of a complete Engineering submission, the City will prepare engineering comments for the proposed development application which will address all issues pertaining to site servicing, drainage and grading, transportation and financial requirements. This process is outlined in the [City of Barrie Site Plan Application Manual](#). The comments will be sent to the Planning and Building Services Department for inclusion into the Site Plan Agreement.

4.4. Deviations from the Development Manual

This manual has been developed in consideration of industry best practice, the City's ability to operate and maintain infrastructure, lowest lifecycle costing, emergency access, accessibility, the [City of Barrie's Official Plan](#), the [Site Plan Application Manual](#), and process for Plan of Subdivision applications. Deviations from its requirements may be permitted when site constraints prohibit the application of the prescribed requirements. Deviations shall be reviewed on a case-by-case basis. Deviations must address the aforementioned considerations. No deviations are to be implemented without the approval of the Director of Engineering.

4.5. **Design Considerations**

4.5.1. **Watermain Distribution System and Fire Protection**

The Developer shall design and install a complete system of watermains and appurtenances to service the Lands included in the Plan in accordance with the City of Barrie [Drinking Water Infrastructure Design Standard](#).

The Developer shall comply with all relevant provisions of the [Ontario Fire Code](#), and acknowledges that all fire hydrants shall be maintained in operating conditions and shall be readily available and unobstructed for use at all times.

The Developer shall incorporate into the development on the Lands such proper Works and facilities as may be required by the City's Building and Fire Officials (i.e. fire break plan) having jurisdiction in respect to the construction and operation of the development of the Lands. In particular, the following shall be undertaken by the Developer:

- Fire access routes, as shown on the Approved Plans, shall be kept clear at all times;
- Fire access routes shall not be obstructed by waste or other materials during construction;
- During construction, the Developer shall ensure that combustible waste materials do not accumulate on the Lands in such quantities so as to constitute a fire hazard;
- No open burning shall be undertaken unless a Burning Permit has been issued by the City at the request of the Developer;
- The Developer shall ensure that emergency phone numbers for the Fire Department are posted on the site during construction, and that an adequate supply of portable extinguishers are kept on site at all times during construction (the type and location of all extinguishers shall be confirmed with the City prior to the commencement of combustible construction);
- Any temporary heating with propane undertaken by the Developer shall be in accordance with the installation code for propane burning appliances and equipment; and
- The number of fire hydrants and size of watermains as approved by the City shall be located on the Lands.

4.5.2. **Source Water Protection**

Source water protection focuses on actions taken to protect current and future municipal drinking water sources from overuse and contamination as a requirement of the [Clean Water Act](#). The City screens proposed Works to identify those that are located in proximity to, or whose activities may impact, municipal drinking water sources. When necessary the City will contact the Developer to discuss any requirements that pertain to the proposed Works.

The City has prepared a screening document that outlines a decision making framework for determining the suitability of an infiltration LID feature in relation to Drinking Water Source Protection considerations. This document is available on the City's [webpage](#).

4.5.3. **Interference with Private Water Supply**

If at any time prior to the Assumption of Works, the City believes or becomes aware that the construction and operation of the development has caused a negative impact to the water supplies of an

individual, or individuals, the City shall notify the Developer in writing with a copy to the relevant Provincial authority. The Developer, within twelve (12) hours of receipt of such notice, shall make available to any impacted individual, or individuals, a temporary supply of potable water equivalent in quantity and quality, or shall compensate the impacted individual, or individuals, for their reasonable costs in doing so.

If a temporary water supply or other mitigation measure is required under the conditions of the Agreement, the temporary water supply or mitigation measure shall be provided and maintained by the Developer until such time as the Developer has demonstrated to the satisfaction of the responsible Provincial authority and the City, at their sole and unfettered discretion, that either the construction, management, operation, or use of the Lands has not caused the impact, or that corrective actions have been taken so as to restore the water supply and/or environment and to prevent recurrence of the impact.

This requirement and any associated conditions do not create any responsibility for the City for the reporting of any impairment or impact, nor any obligation to corrective measures, and such obligations shall remain fully and completely that of the Developer.

4.5.4. Stormwater Drainage and Stormwater Management

Stormwater drainage and stormwater management facilities shall be designed and constructed in accordance with the City of Barrie's [Stormwater Infrastructure Design Standard](#).

Additionally, the Developer shall:

- Implement erosion and sediment control measures in accordance with the [City of Barrie Stormwater Infrastructure Design Standard](#)
- Conduct Works in accordance with the City of Barrie Site Alteration By-Law (2014-100);
- Adhere to City of Barrie, MOECC and Conservation Authority guidelines and standards; and
- Obtain and adhere to Environmental Compliance Approval (ECA), if required.
- Additionally, the Developer shall maintain all storm sewers and appurtenances until assumed by the City in accordance with the [City of Barrie Stormwater Infrastructure Design Standard](#). All maintenance records shall be supplied to the City prior to Assumption and end of Guaranteed Maintenance Period.

4.5.5. Sanitary Sewage Collection System

Sanitary infrastructure shall be designed and constructed in accordance with the City of Barrie's [Sanitary Infrastructure Design Standard](#).

Additionally, the Developer shall maintain all sanitary sewers and appurtenances until assumed by the City. All maintenance records shall be supplied to the City prior to Assumption and end of Guaranteed Maintenance Period.

4.5.6. Grading and Drainage

Lot grading and drainage shall be designed and constructed in accordance with the City of Barrie's [Lot Grading and Drainage Infrastructure Design Standard](#).

4.5.7. **Utilities**

Utility infrastructure, including hydro-electric, gas, telephone, cable television, telecommunication, etc., for the Subdivision shall be installed at no cost to the City. The Developer agrees to enter into an agreement or agreements with such applicable utility companies, to provide utilities as required, to satisfy all requirements, including, but not limited to the maintenance and repair of their facilities and equipment until the Subdivision Assumption Process has been completed.

It is the Developer's responsibility to ensure that the restoration of the area disturbed by the installation of utilities is completed in a manner and condition satisfactory to the City in its sole and unfettered discretion.

4.5.8. **Street Illumination**

Street Illumination shall be designed and constructed in accordance with the [Right-of-Way Infrastructure Design Standard](#).

The Developer agrees to pay to the City the maintenance and energy costs for all illumination within the Plan until and prior to the date of Assumption in accordance with the Agreement and Fees By-law.

4.5.9. **Public Roadways**

Roadway shall be designed and constructed in accordance with the City of Barrie [Right-of-Way Infrastructure Design Standard](#).

4.5.10. **Temporary Cul-De-Sacs**

The Developer agrees that if construction of the Plan is being phased, or if the Plan abuts future development land, the Developer will provide adequate turning space for vehicles at the applicable phase of the boundaries of the Plan. The turning space will be constructed in accordance [R329 Temporary Cul-de-Sac](#). The Developer is responsible for all of the costs associated with the creation of and removal of turning circles.

4.5.11. **Haul Route and Traffic Control**

The Developer acknowledges and agrees that the City shall have the right to designate and limit access to the Lands from Roadways adjacent thereto. No roadway outside the limits of the Lands may be blocked or closed without the written consent of the City. For roadways outside of the limits of the Lands which may be blocked or closed, the Developer shall obtain a City of Barrie [Right-Of-Way Activity Permit](#). The City reserves the right to limit or prohibit the use of any existing access road by the Developer.

4.5.12. **Development of Public Parks**

All Park Works shall be designed in accordance with the [City of Barrie's Infrastructure Standards, Policies and Guidelines](#), and the construction and installation of same shall be supervised by the approved Landscape Architectural Consultant at the Developer's expense.

All design drawings for Park Works shall bear the seal and signature of the Landscape Architectural Consultant and any other associated professional endorsements (as applicable).

4.5.13. ***Streetscapes***

The Developer shall:

- Submit detailed working drawings to the City for approval prior to construction or installation for all landscape related elements, including but not limited to fencing, street trees, storm water facility plantings, entrance features, trails, pathways, ecological restoration and associated design elements;
- Supply and installation of all elements on the approved Landscape Plan(s) unless otherwise specified within the rights-of-way of all roadways, stormwater facilities, open space and parkland to be dedicated to the City, and/or individual lots or blocks in accordance with the approved Landscape Plan(s) prepared by a Landscape Architectural Consultant;

4.6. ***Engineering Submissions***

Engineering submission requirements can be found in Appendix D. All required information must be submitted in the quantity, frequency, and format as outlined.

4.6.1. ***Reports***

A list of reports and studies commonly required as part of a complete application for a proposed Plan of Subdivision or a proposed Site Plan is located in Appendix E. Submission requirements for each application (Subdivision or Site Plan) will be identified through the Draft Plan Approval process or Pre-Submission Consultation process. All reports must be carried out by a competent professional in the specific area, certified to practice in the Province of Ontario.

4.6.2. ***Engineering Drawings***

Engineering Drawings required are outlined in Appendix F.

4.7. ***Plan of Subdivision Submissions***

4.7.1. ***First Submission***

A complete first submission shall be submitted by the Consultants to the Engineering Department. Any submissions found to be incomplete will be returned to the Consultant.

The first submission drawing sets shall conform to the [City of Barrie Digital Information Standard \(DIS\)](#) (as amended), and will be distributed by the Engineering Department to required City departments. All comments will be sent to Engineering Development Services staff that will consolidate all of the comments. A marked up copy of the drawings and/or reports along with a letter consolidating all comments and issues will be sent to the Consultant by Engineering staff.

4.7.2. ***Second and Subsequent Submissions***

The second and subsequent submissions shall include revisions incorporating comments provided by the City of Barrie. The second submission drawing sets shall conform to the City of DIS (as amended). The Consultant shall circulate the second submission to all utility companies for comment.

A letter from the Consultant addressing the comments and concerns sent by Engineering staff as part of the first submission review shall be submitted along with the second and subsequent submission drawings. This letter shall include a description of any additional changes made by the Consultant.

4.7.3. ***Final Submission***

After final approval by the City of the aforementioned submissions, the following is required:

- Drawings per Appendix F, and in conformance with the City of Barrie DIS (as amended);
- Final design data in conformance with the City of Barrie DIS (as amended);
- Four (4) signed hard-copy ECA packages, and associated fees per Fees By-law;
- Form 1 - Record of Watermains Authorized as a Future Alteration. The prescribed fee must be payable to the City of Barrie; and
- Cost estimate to determine Letter of Credit requirements and fees.

4.8. **Site Plan Submissions**

The review and approval process of Site Plan Submissions is to ensure that the urban environment is developed in a suitable, manner. A [Site Plan Application](#) is required prior to development of any property that is located in a Site Plan Control Area. A brief description of this process is laid out below. For further information on this process please refer to the [Site Plan Application Manual](#).

A complete Site Plan Application submission shall be submitted by the Consultants to Planning and Building Services. The drawings and reports shall be in conformance with the City of Barrie DIS (as amended), and shall be distributed by Planning staff to required City departments. All comments will be sent to Planning staff that will consolidate all of the comments. Details on the submission requirement are available in the Site Plan Application Manual.

4.9. **“As-Built” Drawings**

The Consultant shall keep one set of the most recent signed drawings on site, solely for As-Built recording purposes. The Consultant shall record neatly, in red ink, any deviations from the above original signed drawings on the As-Built drawings as the work is performed. Deviations shall include changes, additions, deletions, and different site conditions encountered. All deviations shall be recorded, including (where applicable):

- a) Plan view deviations: curb and gutter, sidewalk, fences, retaining walls, driveways, watercourses, ditches, culverts, maintenance holes, catch basins, sewer mains, sewer laterals, watermains, valves, hydrants, water services, utility poles, utilities, trees, etc.; and
- b) Profile deviations: road centreline profile and elevations, sewer material, length, size and inverts, watermain size, elevation and depth, water service depth, ditch inverts, culvert size and inverts.

The As-Built drawings shall be kept in the field office, or in the Consultant’s possession if no field office was required as part of the Contract. The As-Built drawings shall be available for review immediately upon request by the Development Services Field Co-ordinator throughout the duration of construction. Failure to record changes in a timely manner may result in delays to security reductions.

The drawings must be legible and clean. The City will not consider As-Built drawing submissions in any form other than the form described above. Failure to deliver As-Built Drawings upon request will result in a delay to security reductions.

As-Built drawings shall meet the requirements of the City of Barrie Digital Information Submission Standard.

4.10. **“Record” Submission**

Record drawings are to accurately reflect, both graphically and numerically, the true conditions of the work completed. If items shown were modified from the approved design, then the Record submission should show all changes. Text and numerical information which accompanies the drawings must also be updated to reflect the changes.

Once construction has been completed, the Owner’s Consultant shall compile all As-Built field information using appropriate survey techniques. The information compiled must include both vertical and horizontal values.

All municipal infrastructure, including service connections, are to be shown on these plans. All service connection inverts at the property line must be shown in table form for each lot and block on its respective plan/profile drawing.

Record drawings shall be submitted to Development Services Field Co-Ordinator. Assumption requests will not be entertained until the Record information has been received and approved by Development Services.

Any changes following assumption and prior to the end of Guaranteed Maintenance Period must be submitted to the Manager of Development Services for approval, along with appropriate changes to Record drawings.

If any information from any submission is incorrect or incomplete, the City reserves the right to reject the submission and the Developers shall be required to resubmit the corrected submission prior to acceptance of the Assumption Package.

Detailed requirements for Record drawings and data are provided in Appendix H. Record drawings and data shall meet the requirements of the City of Barrie Digital Information Submission Standard.

4.11. **General Drawing Requirements for Subdivision**

All drawings shall include:

- Legend;
- Key Plans
- Reference to official geodetic control monument as outlined in section 4.11.1;
- Conform to the City of Barrie Drafting Standards/Templates; and,
- All drawings are to be stamped and signed by a Professional Engineer, Landscape Architect or other professional certified within the Province of Ontario as applicable.

4.11.1. ***Geodetic Control***

The City of Barrie requires that conventional integrated survey methods are used in conjunction with the City of Barrie’s 1st and 2nd order horizontal COSINE control monument network to establish horizontal UTM coordinates for hard copy and digital AutoCAD DWG file submissions. The City of Barrie also requires that conventional integrated survey methods are used in conjunction with the City of Barrie’s

1st and 2nd order horizontal and vertical COSINE control monument network, to establish vertical elevations and horizontal UTM coordinates for hard copy and digital AutoCAD DWG file submissions of Engineering design drawings.

Lower order GPS Real Time Kinematic (RTK) network survey methods will not be accepted to establish vertical elevations or horizontal UTM coordinates for Engineering design surveys.

All field surveys and related products are to be integrated into the Ontario Coordinates System, based on NAD83 (ORIGINAL) and elevations are to be based on CGVD1928. Vertical elevations must be established using conventional cadastral survey integration methods; such as running survey leveling loops both forwards and backwards from a vertical 1st or 2nd order COSINE control monument to tie in the project area.

Horizontal UTM coordinates must also be established using conventional cadastral integrated survey methods, such as total station, and must tie into two (2) horizontal 1st or 2nd order COSINE monuments by setting up on one of them and tying into the second monument to bring UTM coordinates into the project area. Two (2) horizontal and two (2) vertical controls shall be shown in the plans.

Before the detailed engineering survey is undertaken, the proposed survey monuments to be utilized and level loops and/or traverses to be used to establish vertical and horizontal points on the site must be submitted to the Engineering Department for approval.

Control Monument locations are available from the [City of Barrie website](#).

4.11.2. *Design Drawings for Subdivisions*

The drawings package to be submitted to Development Services for distribution to other departments shall include the following plans. Specific plan requirements are outlined in Appendix G.

4.12. *General Drawing Requirements for Site Plans*

Refer to the Site Plan Application Manual for Site Plan Application drawing requirements.

5 CONSTRUCTION

Following Engineering approvals, the Construction phase of development may commence. This process is outlined in Appendix C. The Developer is permitted to do Works on their Lands, conditional on the following:

- Site Alteration Permit and Pre-Servicing or Subdividers Agreement are in place;
- The Developer is to provide the City with a list of names and phone numbers of personnel responsible for the Works;
- The engineering conditions and engineering drawings must be approved by the Director of Engineering and circulated to Council for comment (two-week turnaround);
- The Developer must meet all Financial Requirements (securities, contributions, fees);
- MOECC, CA and other applicable agency approvals must be in place;
- Liability insurance in accordance with Schedule O of the Subdivision Agreement must be in place; and
- A Pre-construction meeting is held.

During the construction period of the Plan of Subdivision, the Consultants will be responsible for the following:

- No deviation from the approved drawings will be permitted unless approval through the Deviation Procedure is granted;
- All survey markers must be replaced by a registered Ontario Land Surveyor following disturbance or removal;
- Control monuments will be protected from damage during construction;
- All Roadways, within and adjacent to the Plan of Subdivision, must be kept free of soil and construction debris to the satisfaction of the Engineering Department;
- Sediment and Erosion Control in accordance with approved plans and the Site Alteration By-Law;
- The Consultant must provide direct supervision and oversee all Works related to the plan of subdivision. This will include the preparation of inspection reports, daily work record etc.; and
- Recording of the as-built data.

5.1. **Site Alteration Permit**

Site Alteration prior to the finalization of the agreement may be approved once a Site Alteration Permit has been obtained as per current Site Alteration By-Law (as amended). Prior to work commencing, a site alteration meeting must be held; this meeting shall include representatives from the following parties:

- City of Barrie Engineering Development Services Field Coordinator;
- City of Barrie Environment Services Department
- Consultant; and
- Contractor

5.2. **Pre-Servicing of Subdivisions**

Landowners may proceed with internal site servicing Works including, but not limited to, storm sewer and sanitary sewer, utilities, watermains, and roads prior to the registration of the agreement, permitting a Pre-Servicing Agreement has been entered into with the City.

In accordance with the Pre-Servicing Agreement, the Developer may be required to:

- Retain a Consultant to oversee the Pre-Servicing Works;
- Complete all Works in accordance with all City and provincial requirements, and the approved plans;
- Be responsible for the completion of any Works required as a result of subsequent changes to the approved plans;
- Obtain all necessary approvals from all regulatory authorities. Pre-servicing shall not proceed until such approvals are obtained and written confirmation is received from the City;
- Arrange for a Pre-Servicing meeting with the City;
- Provide a construction newsletter, including details on:
 - Limits of construction
 - Summary of proposed work
 - Construction commencement and completion dates
 - Access to private properties
 - Municipal service impacts (water, sanitary, garbage, transit)
 - Third party service impacts (hydro, gas, communications)
 - Public safety impacts
 - Consultant/Contract primary contact
 - City primary contact
- Provide proof of insurance, security, fees and contributions;
- Deliver a copy of the approved construction drawing in digital electronic format acceptable to the City; and
- Abide by all other requirements of the Pre-Servicing Agreement.

5.3. **Pre-Construction Meeting**

The Pre-Construction Meeting shall be initiated by the Developer and/or their Consultant prior to the commencement of any site Works. This meeting shall be held at a mutually convenient time at City Hall. The meeting shall include representatives from the following parties;

- Developer and/or their Representative.
- Contractor;
- City of Barrie Developmental Services Branch;
- City of Barrie Water Operations Branch;
- City of Barrie Parks Planning and Development;
- City of Barrie Roads, Parks and Fleet Department;
- City of Barrie ROWA;
- City of Barrie Planning and Building Services Department;
- Planning Services Agreement Officer;
- Utility Company(s) Representative
- Engineering Consultant;
- Landscape Architectural Consultant; and
- Geotechnical Consultant

Any other meetings that will be required throughout the Development Process shall include those parties that are required depending on the specific phase of the project. Site meetings are required bi-weekly once construction commences.

6 INSPECTIONS

The City of Barrie's Development Services Field Coordinators supervise the construction of all new subdivisions and site plans, ensuring that all infrastructure (both above and below ground) are constructed to City and provincial standards. Development Services Field Coordinators are responsible for:

- Overseeing the construction and maintenance requirements for new development subdivisions and site plans;
- Providing detailed site inspections for all municipal Works constructed; and
- Providing sign-off for release of securities.

In order to ensure all new infrastructure has been constructed to City and Provincial standards, the Field Coordinator shall conduct several detailed inspections over the course of the Works.

The City of Barrie's Parks Planning and Development file manager will provide supervision and sign off for all Landscape related elements

6.1. General Inspection

The construction of all infrastructure shall be subject to general inspection, which is the responsibility of the Developer / Consultant. The details and criteria for these inspections can be found in the following documents:

- Water – Section 5.4 of the City of Barrie Water Transmission and Distribution Policies and Design Guidelines
- Sanitary – Section 4 of the City of Barrie Sanitary Sewage Collection System Policies and Design Guidelines
- Storm Sewers – Section 6 of the City of Barrie Storm Drainage and Stormwater Management Policies and Design Guidelines.
- Roadways – Refer to the requirements of the City of Barrie's Transportation Design Manual. In addition, the following testing shall be completed for new roadways:
 - Air test;
 - Slump test;
 - Cylinders;
 - Compact test;
 - Materials samples;
 - Deflection tests of subgrade (under supervision of geotechnical engineer); and
 - Geotechnical engineer to submit report including test results and sign off that subgrade meets requirements.

6.2. Letter of Credit Reduction Inspections

Development Services

Under the conditions of the Development Agreement, Development Services Field Coordinators are permitted to provide a maximum of five (5) Letter of Credit reductions. These reductions are typically provided upon completion of underground and above ground infrastructure.

Completion of the Subdivision and Site Plan Inspection Checklist (Appendix K) is required for consideration for Letter of Credit reductions. Inspection should be arranged with the Development Services Field Coordinator. Prior to any inspection, the following items must be completed:

- Video inspection of all underground infrastructure;
- Consultant letter stating that all Works conform to Provincial and Municipal design, construction and testing standards;
- Sign-off from City of Barrie Roads, Parks and Fleet and Environmental Services Departments (as required); and
- Note: Sign-off from Water Operations of the Environmental Services Department would include the passing of pressure tests and tracer wire testing.

Within three (3) business days of the inspection, the Consultant shall provide to the Development Service Field Coordinator a complete list of deficiencies identified.

Parks Planning and Development

Under the conditions of the Development Agreement, Parks Planning and Development's file manager is permitted to provide a maximum of five (5) Letter of Credit reductions. These reductions are typically provided upon completion of park blocks, storm water facility planting, streetscape planting, OS/EP fencing and acoustic fencing/entrance features.

Completion of a Parks Subdivision Inspection Form (Appendix L) prior to a field inspection by staff is required for consideration for Letter of Credit reductions. Inspection should be arranged with the Parks Planning and Development's file manager a minimum of two (2) weeks prior to any inspection, the following items must be completed:

- All field/site works must be substantially completed;
- Staff reserve the right to stop or cancel inspections if works are found to be incomplete or inconsistent with the inspection report.
- Inspections for tree/vegetation health assessment must be completed following leaf flush up and until September 15th of each calendar year. Inspections by staff must be completed no later than October 1st of any calendar year.
- Hardscape elements such as fencing, pathways and associated features will not be inspected during winter months when visibility is obscured by snow accumulation.
- Inspections are only valid for the calendar year in which they are performed.

Within three (3) business days of the inspection, the Consultant shall provide to the Parks Planning and Development's file manager a complete list of deficiencies identified.

6.3. Assumption Inspection

Upon 75% occupancy, the Developer may request Assumption by the City of Barrie. Refer to Section 7 of this document for details on this process. As a requirement of Assumption, a detailed inspection shall be completed.

Completion of the Subdivision and Site Plan Inspection Checklist (Appendix K) is required for consideration of Assumption. Inspection should be arranged with the Development Services Field Coordinator. Prior to any inspection, the following items must be completed.

- Consultant's letter stating that all Works conform to provincial and municipal design, construction and testing standards;
- Sign-off from City of Barrie Water Operations, including passing of pressure tests and tracer wire testing;
- All sewers to be flushed;
- Clean-up and repair of all roadways on which obstructions or mud and dust are created, or which are damaged by the installation and maintenance of any Works. Clean-up must be completed 24 hours prior to inspection;
- All curbs to meet City standards;
- All issues identified during one-off inspections must have been addressed; and
- Video inspection of all underground infrastructure.

Inspections shall include but not be limited to the following items:

- Review of base asphalt;
- Service inspections; and
- Once MH and curbs are approved, top course may be laid (prior to October 31st).

Within three (3) business days of the inspection, the Consultant shall provide to the Development Service Field Coordinator a complete list of deficiencies identified.

6.4. **End of Guaranteed Maintenance Period Inspection**

Completion of the Subdivision and Site Plan Inspection Checklist (Appendix K) is required for consideration of End of Guaranteed Maintenance Period. Inspection should be arranged with the Development Services Field Coordinator. Prior to any inspection, the following items must be completed.

- Consultant's letter stating that all Works conform to provincial and municipal design, construction and testing standards;
- Sign-off from City of Barrie Water Operations, including passing of pressure tests and tracer wire testing;
- All sewers to be flushed;
- Clean-up and repair of all roadways on which obstructions or mud and dust are created, or which are damaged by the installation and maintenance of any Works. Clean-up must be completed 24 hours prior to inspection; and
- All issues identified during inspections must have been addressed, and if necessary confirmed via CCTV inspection.

If the Developer fails to comply, the City shall be entitled to arrange for the necessary work to be undertaken at the Developer's expense, and to draw upon any security provided under the Agreement to the extent necessary to pay such costs.

7 ASSUMPTION/ACCEPTANCE

7.1. Assumption - Plans of Subdivisions

The purpose of this section is to provide an overview of The City of Barrie's Subdivision Plan Assumption process. The intent is to allow this document to be used as a practical guide by the Development Industry and Consultants in initiating the formal subdivision assumption process, and ultimately obtaining Council approval and assumption of the subdivision. Any questions regarding the process can be directed to the Manager of Development Services.

Under the terms of the subdivision agreement, when all Works are constructed and inspected in accordance with the City's requirements, the Developer may request that the City assume the maintenance obligations of the public infrastructure, namely the roads, open space systems including parks, creeks, and stormwater management facilities.

The Development Services Branch shall co-ordinate the formal clearance of all relevant City departments having inspection requirements the completed subdivision Works. Securities will be reduced in accordance with the Agreement.

Refer to Appendix A for a visual representation of the process.

7.1.1. *Inspection and Repair*

Requirements for this phase of the Assumption process can be found in Section 6 of this document.

7.1.2. *Assumption Requirements*

- Letter of Application for Assumption;
- A pre-assumption inspection with the Development Services Field Coordinator and Parks Planning must be completed, identifying any and all deficiencies (Letter of Application must reference inspection date and attendance). A listing of typical deficiencies can be found in Appendix I;
- Subdivision Assumption Departmental sign-off signed by representatives of Engineering Department, Parks Planning and Development, Environmental Services Department, Corporate Asset Management, Facilities, Transit and Parking, Planning and Building Services, and Legislative and Court Services;
- Acceptance letter from Alectra Utilities;
- List of outstanding work and associated cost estimates;
- Documents that support compliance with the Construction Lien Act, which would include publication certificates from the Daily Commercial News, clearance certificates from the Workplace Safety and Insurance Board, and statutory declarations from the owner/applicant and general contractor advising that all amounts owing to the contractor/subcontractor have been paid;
- Letter of Credit reduction request letter and supporting spreadsheet;
- Civil Engineer's certification that all Works have been completed and are in compliance with the approved plans;
- Acoustical Engineer's certification that all Works have been completed and are in compliance with the approved plans;

- Electrical Engineer’s certification that all street lighting Works have been completed and are in compliance with the approved plans;
- Record drawings and reports in accordance with the City of Barrie Digital Information Submission Standards;
- Fulfill requirements of the Assumption Protocol for Storm Systems and SWM Ponds as set out in the City of Barrie’s [Stormwater Infrastructure Design Standard](#);
- An assumption plan (letter size) of the development including internal and surrounding street names, lot numbers and block numbers;
- Certification Letter from an Ontario Land Surveyor (c/w drawing) confirming that all standard iron bars have been replaced, reset, found and/or verified; and
- Final inspection video of both the storm and sanitary sewer.

Note: All complete and endorsed assumption requests which are received in writing prior to the date of August 1 may be eligible for Assumption within that year.

Once all requirements have been received by the City, a memorandum to Council shall be submitted to advise Council of the request for Assumption. Following a two (2) week comment period, should no comments be received, the Assumption By-law shall be created for Council approval.

7.2. **Acceptance - Site Plans**

Prior to acceptance of the Site Plan Works, the following protocol shall be followed:

- The Consultant shall arrange an acceptance inspection with the City’s Field Coordinator. Inspections will not be completed when there is snow cover.
- The Consultant shall submit a pre-acceptance package to Development Services containing the following (package must be endorsed by the Development Services Field Coordinator prior to submission):
- Acceptance Request Letter that includes the date of the pre-acceptance inspection, inspection attendees, a summary of the associated financial reduction request, and a checklist confirming the inclusion of the below documents;
- Certification Letter from the Consultant advising that all Works have been constructed in accordance with the approved plans and current City Standards;
- A detailed list of all outstanding Works and deficiencies and associated costs to rectify;
- Financial spreadsheet supporting the associated reduction request;
- Provide Record Drawings (as-built) in accordance with the City of Barrie DIS (as amended)
- One (1) hard copy and one (1) digital pdf copy of the final Stormwater Management Report, complete with associated electronic files;
- Documents that support compliance with the Construction Lien Act which include publication certificates from the Daily Commercial News, clearance certificates from the Work Place Safety Insurance Board and Statutory Declarations from both the owner and general contractor advising that all amounts owing to the contractor/subcontractor have been paid. Stormwater Quality Control Structures Inspection Report including installation details and manufactures inspection certificate and recommended maintenance schedule;
- Confirmation from owner that maintenance plan has been established; and

- Confirmation that the sewer systems has been cleaned and flushed to remove all debris from the sewers. A video inspection of all storm and sanitary sewers shall be completed, if applicable. The Developer will provide a digital and hard copy of the video report for City records.

In addition to these requirements, Parks Planning acceptance requirements must be fulfilled.

7.2.1. *Start of Guaranteed Maintenance Period*

Start of Guaranteed Maintenance Period begins when all of the above documents have been received, and all outstanding Works and deficiencies have been corrected and accepted by the City. As per the Site Plan Agreement, the Letter of Credit may be reduced to a maximum of 90% (10% holdback for Guaranteed Maintenance period).

7.2.2. *End of Guaranteed Maintenance Period Requirements*

The Consultant shall arrange an end of Guaranteed Maintenance Period inspection with the City's Field Coordinator, Parks representative and Operations staff. The Consultant shall provide an "End of Guaranteed Maintenance Period Request Letter" that includes the date of the end of Guaranteed Maintenance Period inspection, inspection attendees, confirmation that there are no outstanding deficiencies, and a request to release all financial securities and deposits.

8 GUARANTEED MAINTENANCE PERIOD

The two-(2) year Guaranteed Maintenance Period will begin at the time that the Assumption By-law is passed for Plans of Subdivisions or Acceptance is issued for Site Plans.

8.1. Developer Obligations During Guaranteed Maintenance Period

In accordance with the Agreement, the Developers obligations during the Guaranteed Maintenance Period are:

- Maintain and keep in a proper state of repair and operation all of the Municipal Works constructed, planted, installed or provided by the Developer;
- Repair in a permanent manner satisfactory to the City, any and all damage to the work during the Guaranteed Maintenance Period. Any deficiencies or defects noted during the Guaranteed Maintenance Period are the responsibility of the Developer, and all complaints and concerns will be deferred to the Consultant for resolution. A list of typical deficiencies can be found in Appendix I;
- Maintain all underground and surface Works in working order and in good repair for the period, and ensure that storm sewer system, and appurtenances are in a satisfactory working condition and are free from debris, silt etc. Should the efficiency of the storm sewer become reduced due to building activity, the Developer shall be responsible for any cleaning, flushing, etc. necessary to restore the storm sewer to full capacity for the duration of building activity;
- Ensure that all subdivision streets will be swept once a week or more frequently as conditions warrant during construction. If on-site building activity warrants, the streets may need to be scraped before they can be swept, and cleaning may be required on a daily basis. The Developer will also ensure that abutting streets affected by the Subdivision activity are also cleaned when they are impacted. City staff will inspect the road condition on a periodic basis and/or on a complaint basis. If it is determined by the City that the Developer is not adhering to the street sweeping requirements, a work order to the Developer by the City to clean the streets. The Developer will have 48 hours to comply with the work order. Should the City deem it necessary to respond to a cleanup of the subdivision streets and/or abutting streets after having notified the Developer, this work will be invoiced to the Developer;
- Be responsible for the cost of the pavement marking for the initial painting after the placement of base asphalt and again when surface asphalt is placed;
- Shall maintain, or cause to be maintained, all surface and landscaping Works (including boulevards adjacent to open spaces and parks, and street trees) and every part thereof in acceptable order and in good repair;
- Ensure all storm water management facilities must be inspected within 24 hours after each significant rainfall event (>25 mm) and an inspection report shall be sent to Development Services Staff for review; and
- Maintain securities as may be satisfactory to the City as a guarantee for the performance and maintenance of the Works.

After the first unit in the Plan has been occupied, the Developer shall:

- Notify the City to commence garbage pick-up;
- Control dust from vacant lots and construction sites; and

- Except for lots used as part of an approved stormwater detention system or containing approved sediment control measures, the Developer shall maintain all vacant lots in accordance with the then current property standards By-law by keeping the lots free from all tall grass, weeds, debris, and litter, and graded in such a way to prevent the ponding of water.
- Maintain all landscape elements in accordance with approved plans including but not limited to monitoring programs, watering, good horticultural practices, replacements and repairs as required.

8.2. **Municipal Obligations During Guaranteed Maintenance Period**

After the first unit in the Plan has been occupied, the City shall:

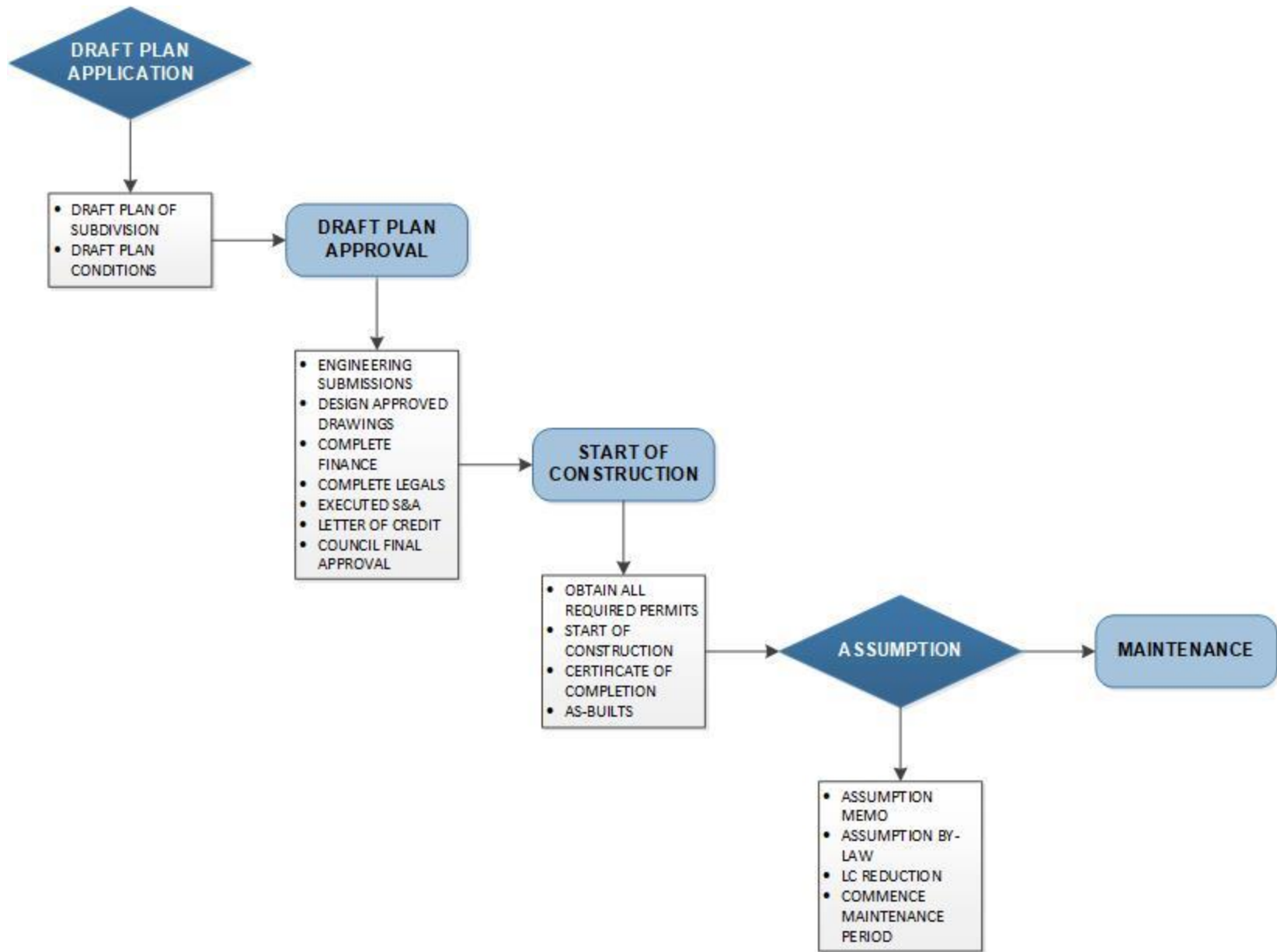
- Respond and carry out emergency repairs on an as needed basis at the Owner's expense, and the Developer will be notified of these repairs within 24 hours;
- Be responsible for the operation of all water valves and hydrants; and
- Be responsible for the collection of garbage.

APPENDIX A

SUBDIVISION APPLICATION PROCESS

DRAFT PLAN APPROVAL TO ASSUMPTION





APPENDIX B

SUBDIVISION APPLICATION PROCESS

DRAFT PLAN APPROVAL TO START OF CONSTRUCTION





DRAFT PLAN APPROVAL

Engineering Submission Complete?

Engineering Submission is distributed to internal departments for review and comment

Engineering Kickoff Meeting

Engineering File Manager advises Owner

Submission held pending further information

Engineering Comments are submitted to Owner/ Consultant

Consultant Submit Engineering drawings, reports, etc., to: Engineering Department Other applicable agencies

Consultant Fulfills requirements of Complete submission

Consultant Makes Revisions per comments

Engineering Technical Meeting is Arranged if required

Revision Required

Engineering Prepares engineering conditions Submits MOE ECA Application Arranges for approval of the drawings by Director
Deliverable – DESIGN APPROVED DRAWINGS

LEGAL Blocks and lots Required easements and reserves Corner lot restrictions No dealings

Engineering Prepares Memo and Conditions for Council Approval

Consultant Request for Pre-Servicing

Legal Services Prepares Agreement Deliverable – COMPLETED LEGAL AGREEMENTS

Engineering Financial Requirements include Securities Cash Contributions Permits
Deliverable – COMPLETED FINANCIAL DOCUMENTS

Final Design Data Submission

Engineering Development Services calls for Pre-Construction Meeting to include: Development Services Water Operations Design & Construction Parks Planning Building Services Legal Services

Developer Request to Start Construction

Legal Services Registration of Agreement Deliverable – S.A. Letter of Credit

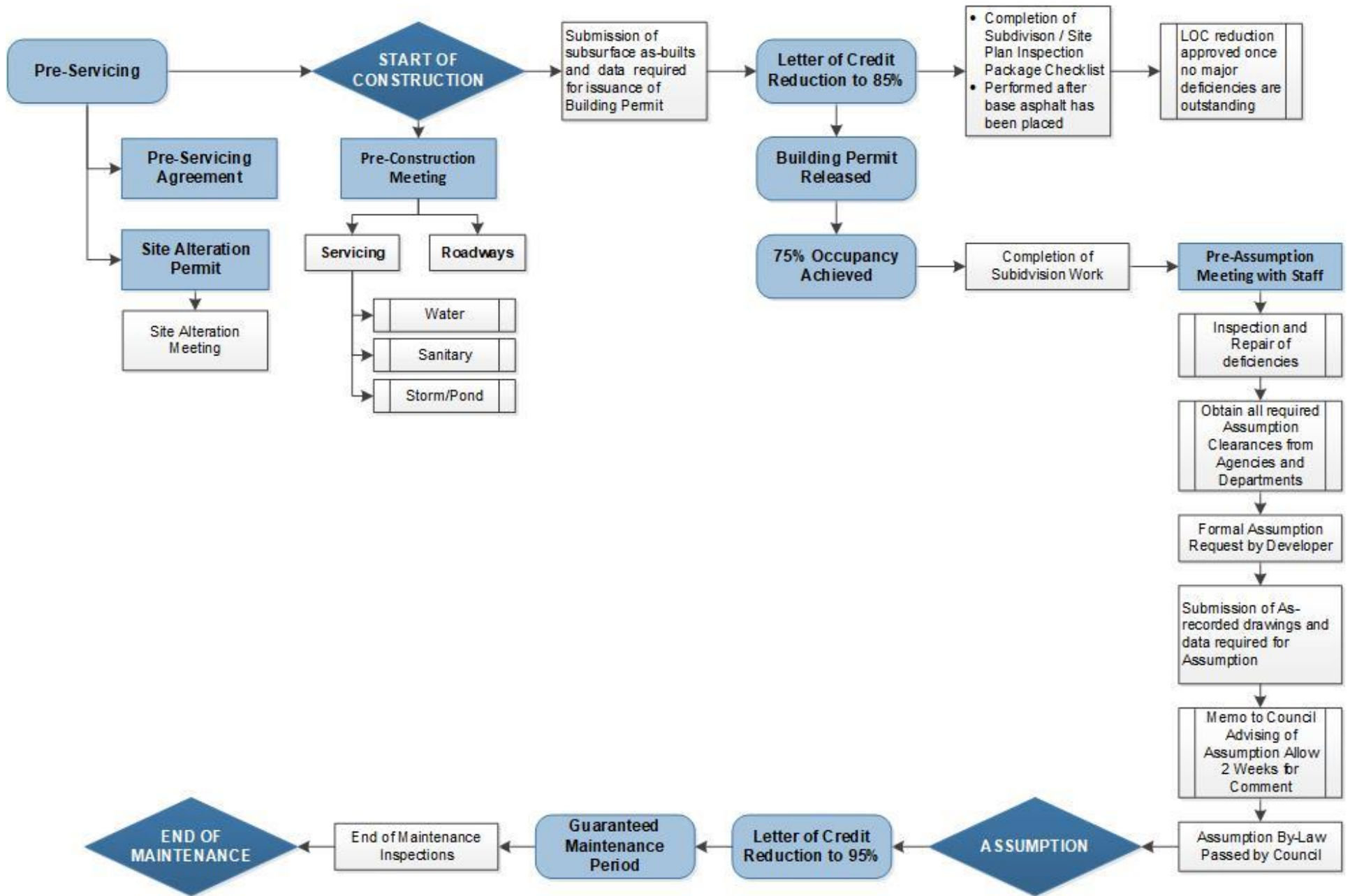


START OF CONSTRUCTION

SUBDIVISION APPLICATION PROCESS

START OF CONSTRUCTION TO ASSUMPTION





ENGINEERING SUBMISSION
REQUIREMENTS



Submission Requirements								
Submission Requirements	Plans of Subdivision				Site Plan			
	Hard Copy - Paper	Hard Copy - Mylar	Digital: AutoCAD**	Digital: PDF**	Hard Copy - Paper	Hard Copy - Mylar	Digital: AutoCAD**	Digital: PDF**
First Submission								
Reports	2				2			
Engineering Drawings	2				2			
Draft 51M	2				2			
Parks Drawings	2				2			
Traffic Drawings	2				2			
Second and Subsequent Submission								
Reports	*				2			
Engineering Drawings	2				2			
Draft 51M	2							
Parks Drawings	2				2			
Traffic Drawings	2				2			
Final Approval Submission								
Reports	*							
Engineering Drawings	1	1	X		1			
Draft 51M & Draft 51R Plans	1				1			
Parks Drawings	1	1	X		1			
Traffic Drawings	1	1	X		1			
DIS Submission**			X	X			X	X
As Recorded Submission								
Reports	1			X	1			X
Engineering Drawings	1	1	X	X	1		X	X
Parks Drawings	1	1	X	X	1		X	X
Traffic Drawings	1	1	X	X	1		X	X
DIS Submission**			X	X			X	X

*If required

** Conformance with the City of Barrie Digital Information Submission Standard is required.

APPENDIX E

ENGINEERING REPORT
SUBMISSION REQUIREMENTS



Engineering Reports/Assessments		
Report Title	Plan of Subdivision	Site Plan
Geotechnical Investigation and Soils Report	X	X
Water Distribution Report	X	X
Stormwater Management (SWM) Report	X	X
Functional Servicing Report	X	X
Hydrogeological/Hydrology Study	*	*
Wellhead Protection Area – Risk Assessment Report	*	*
Noise Impact Study	*	*
Traffic Impact Study (TIS)	*	*
Environmental Evaluation Report	*	*
Agricultural Assessment	*	*
Archaeological Study	*	*
Tree Preservation Plan/Inventory	*	*

*As required

All submissions shall be in conformance with the requirements of City of Barrie Digital Information Submission Standard.

DRAWING SUBMISSION
CHECKLIST



Engineering Drawings		
Drawing Title	Plan of Subdivision	Site Plan
Title Sheet	X	X
Erosion and Sedimentation Control plan	X	X
Lot Grading plans	X	X
General Plan of Services	X	X
Sanitary Drainage Plans	X	
External Sanitary Drainage Plan	X	
Storm Drainage Plans	X	X
External Storm Drainage Plan	X	
Stormwater Management Pond plan	X	*
Stormwater Pond Planting Plan(s)	X	*
Plan and Profile Drawings	X	*
Detail Sheet (s)	X	X
General Notes	X	X
Streetlight Plan and Photometrics	X	X
Signal Wiring Plan and Signalized Intersection Plan	X	X
Composite Utility Plan	X	
Watermain Swabbing	X	
Pavement Marking and Signage Plan	X	X
Parking Plan	X	
Existing Conditions and Removal plans	X	X
Construction Staging plan	X	X
Community Information Map	X	X
Parks Drawings *		
Park Development Plan		
Tree Preservation and Edge Management Plans (as required)	X	X
Streetscape Plan(s)	X	X
Fencing Plan(s)	X	X
Traffic drawings		X
Signal Wiring Plan	*	*
Signalized Intersection Plan	*	*

*If required

All submissions shall be in conformance with the requirements of City of Barrie Digital Information Submission Standard

APPENDIX G

DESIGN DRAWING
REQUIREMENTS



Title Sheet

The Title Sheet shall be in accordance with G200A, and shall include, but not be limited to the following:

- Name of the Development;
- Name and address of the Developer;
- Name and address of the Consulting Engineer;
- All applicable reference numbers;
- Key Plan indicating the location of the proposed development and the proposed new street alignment;
- Index to each drawing constituting the complete set indicating drawing number and title; and
- Submission description and date submitted i.e. 1st Submission, 2nd Submission, etc.

General Notes Sheet

This sheet shall be in accordance with Provincial and Municipal engineering manuals, guidelines and standards, and shall include, but not be limited to the following:

- General design criteria that apply to all sheets. The pertinent notes for the project can be extracted from the design sheet under the following headings: Drawings, Measurement, General, Roads, Sanitary Sewers, Sanitary Service Laterals, Storm Sewer, Watermains, and Water Services;
- Special warnings from utility companies and government agencies (i.e. existing structures, buried services, shoring requirements); and
- General City policies and by-laws which apply to the construction activity (i.e. hours of work, mu tracking, fire permits, construction access, etc.).

General Servicing Plan

To a scale of 1:1,000, unless otherwise approved by the City, showing the following:

- Roads, blocks, lots and their numbers;
- Sanitary and storm sewers including pipe material, length, diameter, slope, and direction of flow and SWM facilities (where applicable);
- Fire hydrants and valves including City assigned ID;s, watermains and services including pipe material, class, length, diameter, slope, and direction of flow;
- Maintenance holes (including the size and City assigned ID's) and catch basins;
- Culverts;
- Easements;
- Existing street and infrastructure surrounding the development and their relation to the proposed Work; and
- Location and description of all available benchmarks.

Sanitary Drainage Area Plan

To a scale of 1:1,000, unless otherwise approved by the City, showing the following:

- Proposed sanitary sewers, maintenance holes and appurtenances, indicating grade, pipe size, length of each section of pipe, and direction of flow;
- Street names;
- Service laterals;
- Drainage areas within the development and the limits of outside areas within the development and the limits of outside areas draining into the proposed system;
- If large external drainage areas affect the development, a separate External Drainage Area Plan is to be produced;
- Catchment area in hectares, direction of flow and section population or population density shall be indicated on all drainage areas;
- Easements; and
- Sanitary Sewer design sheets.

Storm Drainage Area

To a scale of 1:1,000, unless otherwise approved by the City, the Storm Drainage Plan is to be compatible with the Grading Plan and must indicate the following:

- Street names;
- The total area to be drained by the proposed storm sewers;
- Drainage patterns of adjacent lands and a breakdown of contributing external areas;
- The run-off coefficients and area of tributary areas internal and external to the development for each section of the storm sewers within the development;
- Direction of run-off (major overland flow);
- If large external drainage areas affect the development, a separate External Drainage Area Plan is to be produced;
- Existing contours (0.5 m intervals);
- Proposed storm sewers, maintenance holes, and appurtenances, indicating grade, pipe size, length of each section of pipe, and direction of flow;
- All infrastructure off of the right of way to be accepted by the City e.g.: rear lot catchbasins or swales, on lots, parks or blocks, required to accept storm runoff;
- Easements; and
- Storm Sewer design sheets.

Watermain Swabbing Drawings

- Consist of water mains, service laterals, hydrants, pumps and valves;
- Chlorination tail locations; and
- Swab insert and discharge locations.

General Grading Plan and Detailed Individual Lot Grading Plans

Grading plans for all lots and blocks are to be prepared in accordance with the City of Barrie Lot Grading Guideline and Site Alteration By-law. The design is to comply with City standards and specifications.

Plan and Profile Drawings

- All plan and profile drawings are to be drawn at scales of:
 - 1:500 horizontally; and
 - 1:50 vertically.
- Refer all datum to a bench mark of geodetic origin;
- Existing and proposed lot numbers and blocks;
- Existing and proposed curbs and gutter, road allowances, and street names and indicate it as such;
- Existing/proposed sidewalks, walkways, and trails;
- Sanitary, storm and watermain profiles shall be drawn so that each street and easement may be filed separately;
- Where two (2) or more sheets are required for one (1) street, match lines must be used and there are to be no overlaps or duplication of information;
- Where intersecting streets are shown on a plan and profile drawing, only the diameter of the pipe and direction of flow of the intersecting sewers are to be shown. This also applies to easements for which a separate plan and profile drawing has been drawn;
- Pavement designs for the particular roadway are to be indicated on the plan and profile drawing or on the General Notes Plan; and
- Detailed information from all the borehole logs is to be plotted on the profile and located on the plan. Borehole information should contain a borehole plot plus a brief description of soils and the water level; and
- Driveway approaches, sodded boulevards, and all other appurtenances.

Plan View

The following information and details are to be included:

- Key plan
- North arrow
- Street names;
- Block/lot number and frontage dimension;
- Block/lot type (single, semi, multiple);
- Easements;
- Reserves;
- Existing and proposed sewers, watermains, manholes (including ID's), and catchbasins;
- The class, material, slope, diameter, grade and inverts of the sewers are to be indicated on the plan view;
- Valve chambers;
- Hydrants and water valves (including ID's);
- Servicing locations for storm, sanitary and water;
- Road allowance and pavement dimensions;
- Road sections where clarification is required;
- Centerline chainage (every 20 m);
- Curb radii;
- Detail edge of pavement on large radius bends and cul-de-sacs

- Sidewalk; and
- Light standard and transformer locations.

Profile View

- Centerline chainage and elevations;
- Elevation at grade changes and provide the slope and length of each section;
- Vertical curve data on the top of the profile view;
- Existing and proposed watermain, sanitary or storm sewer, the diameter, length, material grade and class of pipe are to be shown;
- Existing and proposed maintenance hole information, the type, pipe inverts at entry and exit, catchbasin lateral inverts, drop structure details, safety platforms and elevations;
- Where possibility of a conflict with other services exists, connections are to be plotted on the profile (i.e. watermain) and minimum separation dimensions are to be included;
- Existing and proposed road profile. Any structural fill areas are to be hatched in;
- Vertical bends of watermain; and
- Detailed information from all the borehole logs is to be plotted on the profile and located on the plan. Borehole information should contain a borehole plot plus a brief description of soils and the water level.

Detail Sheet

These drawing sheets should comprise of all municipal, provincial, and site specific detailed drawings that pertain to the proposed design. Each detail shall be displayed at 8'x11' scale.

Streetlighting and Electrical Distribution Drawings

All streetlighting designs shall be carried out by a qualified electrical consultant, and shall be in accordance with the City of Barrie Right-of-Way Infrastructure Standard requirements.

Signal Wiring Plan and Signalized Intersection Plan

Should traffic signals be required, a separate Signal Wiring Plan; and Signalized Intersection Plan showing location of all poles and mounted hardware, hand wells, ducts/cables, the controller, and full turn lanes (storage and taper) are required. The plans shall be submitted at a scale of 1:500.

Composite Utility Plan

The Consultant is required to submit the Composite Utility Plan (CUP) showing road layout information, along with proposed underground and above ground infrastructure (appurtenances to the services, all street furniture including sidewalk, driveways, community mail box locations, telecommunications pedestals, utility structure/buildings, streetlight poles, conduits, ductwork, hydro vaults, gas valves and all utility crossings).

Pavement Marking and Signage Plan

To a scale of 1:1,000 or larger, showing the following:

- Proposed land uses (e.g. residential, commercial, parks etc.);
- Road layout, sidewalk, bicycle paths, bicycle lanes, boulevard pathways, entrances to parks, multi-use trails, and open space areas;
- Traffic control signs including stop bars and other painted lines;
- Signage for bicycle circulation, pedestrian routing;
- Storage and tapers for turn lanes;
- On-street parking (0.5 parking spaces per lot) and any traffic calming measures (if proposed/required); and
- Legend showing all line painting dimensions/information

Erosion and Sediment Control

Drawings are to be in accordance with the [Site Alteration By-Law](#).

Phasing Plan

If a phase within a plan of subdivision is to be developed in phases, a Phasing Plan showing current and future stages is to be prepared at a scale of 1:1,000 or larger. The City may request specific scales in order to create composite plans with other developments.

If this information can be clearly shown on the General Plan/Underground Services Plan, the two (2) drawings can be combined.

The Phasing Plan's function must be substantiated with an interim Stormwater Management and Transportation Report (and other reports as required by the City).

Provide a phasing and construction schedule that shows the works required to mitigate sediment contamination of affected creeks, adjacent lands, and storm sewer systems and how they are to be staged.

Park Development Plans

Where a development contains a Parkland dedication, including Village Squares, the developer's Landscape Architectural Consultant will provide conceptual designs, a master plan, working drawings and tender documents for park/open space design and development. The developer will be responsible for the construction of all parkland features and elements within one (1) year of issuance of the first building permit. The design process will include the following elements:

Conceptual Design

The Landscape Architectural Consultant will provide a minimum of three (3) conceptual design sketches for the development of the parkland and open space. The conceptual sketches will take into consideration municipal programming needs, site conditions, site circulation, facility fit, and general layout alternatives. The concepts will be reviewed by the Parks Planning and Development who will provide comments and direction for further refinement of the design. Based on City comments a final design alternative will be provided for consideration prior to moving on to the Master Planning phase.

Master Plan

Based on the approved final Conceptual Design alternative, the Consultant will develop an overall Master Plan to further refine the design concept. The Master Plan process is intended to further refine the conceptual design to ensure that the design elements of the park will work together within the site. The Master Plan will include but not be limited to the following:

- Preliminary grading including basic landforms, overland flow, drainage and accommodation of facilities;
- Preliminary layout of parks elements including connections to other infrastructure such as trails, sidewalks, setback requirements and other landscape features. The layout will also have to take into consideration any related site restrictions such as tree preservation, servicing requirements, and facility setback limitations;
- The Master Plan process will also provide a preliminary layout for site servicing requirements such as fencing, garbage receptacles, irrigations, water service, electrical servicing, morality lighting, and site furnishings.

The Master Plan is not intended to serve as a presentation or construction document. It is a detailed form/fit exercise for proof of concept and site specific layout. The Master Plan will be reviewed by Parks Planning and Development.

Working Drawings

When the Master Plan has been endorsed by Parks Planning and Development, the Landscape Architectural Consultant may proceed with the detailed design to provide detailed set of working drawings which will include, but not be limited to the following:

- Existing Conditions/Removals;
- Grading;
- Layout;
- Fencing;
- Playground Installation/Equipment;
- Electrical/Serviceing;
- Water and Sanitary;
- Planting and Naturalization;
- Details and Specifications;
- Detailed Cost Estimate; and
- Tender Documents.

The requirement for playground installation/equipment will occur in direct consultation with Parks Planning and Development staff, relating to layout, selection of equipment, theme, and color selection and installation methodology.

Streetscape Plan(s)

Streetscape Plan(s) may include, but are not limited to the following:

- Location of all proposed trees or vegetation relating to the development;
- Restoration, naturalization, indent planting, parkland development and storm water facility;

- Planting key and planting list including common names, botanical names, caliper/container sizes and quantities;
- Include all relevant City of Barrie Standard Drawings; and
- Plans to include notation to install trees to match field conditions to the satisfaction of the Director of Engineering, whether shown or not.
- Boulevard street tree installations;
- Reverse lot frontage planting indents;
- Walkway connections between municipal road right of ways and parkland and/or open space and environmentally protected lands;
- Restoration and naturalization works;
- Restitution and remedial planting requirements including woodlot, water course and works within the development limit as required;
- Vehicle and pedestrian controls to parkland, open space and environmentally protected lands; and
- Entrance features and site identification which may be combined with the Fencing Plan(s).

Tree Preservation Plan/Edge Management Plan

Landscape Architectural Consultant or Registered Urban Forester submitted as part of the Draft Plan approval process.

For the issuance of a Site Alteration Permit, the tree preservation fencing must be shown on the approved site alteration drawing(s).

- Designed to City standards and specifications;
- Identification of significant species and/or endangered species;
- Identification of opportunities for preservation;
- An edge management plan which is to include surveyed canopy and stem locations;
- Identification of all boundary trees including surveyed stem and canopy limits for all trees (including those outside the development limit) which may be impacted by the development;
- Appropriate cross references to the required tree inventory required as part of the Tree Protection Manual;
- Established limits of preservation and building envelope buffers including a minimum 5 m buffer between building envelope and limit of preservation, defined as the edge of canopy;
- Placement of required signage and related details;
- Location of preservation fencing;
- Overall site removals; and
- All related standards and details for the issuance of a tree removal permit in accordance with the Tree Protection Manual.

Stormwater Planting Plan(s)

Stormwater Planting Plan(s) may include, but are not limited to the following:

- Show the location of all proposed trees or vegetation relating to the storm water facility;

- Reflect the requirements of the storm drainage and stormwater management policies and design guidelines;
- All plans will have a density planting chart, planting key, and planting list including common names, botanical names, caliper/container sizes and quantities;
- Specify the location of each tree and groupings or masses of shrubs and other plant material; and
- Include all relevant City of Barrie Standard Drawings.

Fencing Plan(s)

To a scale of 1:1,000 or larger, showing the following:

- Included as part of the Streetscape Planting submission in accordance with current City of Barrie standards;
- Acoustic fencing including masonry columns, entrance features/walls, acoustic returns and acoustic gates;
- Reverse lot, privacy fencing;
- Commercial to residential fencing;
- Parkland/open space and walkways chain link fencing;
- Stormwater management facilities fencing submissions are to be made as part of the Engineering submission package or drawing set; and
- Privacy fencing.

Where fencing is required above and beyond that of the City of Barrie Standards, such as a specialized or modified acoustic fencing height, the new custom fence design must be endorsed/stamped by a structural engineer and included as part of the Fencing submission, and shall include all associated fencing components.

AS-RECORDED DRAWINGS



Record Drawings

The Record drawings for all municipal infrastructure shall incorporate all revisions noted in the As-Built drawings, as well as information obtained during the Record field survey. The Record drawings shall include a check of the following items and incorporation of the necessary revisions:

- Pipe type, class and bedding, percent grade, pipe size, and length;
- Invert elevations – sewer at maintenance holes, at plugs for future extensions;
- Top of pipe and/or invert elevations – watermains, where necessary (i.e. where watermain has been varied from normal depth requirements) in filed, to avoid conflict with other buried services;
- Obvert of watermain and sanitary sewer at centerline of creek crossing;
- Service connections at street line – sanitary, storm and water;
- Label Record Drawings (shown in revisions column with date), and on cover sheet;
- Registered Plan Number is to be shown on plan view of each drawing including general plans;
- Lot and block numbers shall be in conformity with the registered plan;
- Street names shall be in conformity with the registered plan or as approved by the City; and
- Benchmark.

Sanitary Sewers

- Locate service tie connections at the main line sewer along the mainline sewer from each downstream maintenance hole.

Storm Service and Catchbasin

- Location of service and catchbasin lead tie connections at the main line sewer are to be dimensioned along the mainline sewer from each downstream maintenance hole;
- Location of services at street line are to be dimensioned from the lot corners and the elevation of the service invert at street line is to be recorded;
- Catchbasin locations are to be dimensioned as a distance along the storm sewer from the downstream maintenance hole and the elevation of the catchbasin rim and lead invert recorded; and
- Location of “third pipe” tie-ins and headers are to be dimensioned from the catchbasins.

Watermain Valves, Tees and Appurtenances and Water Services

- Location of watermain valve box and valve chambers are to be dimensioned up or down the road from the nearest maintenance hole, and an offset distance from the centerline of the road or back of curb;
- Water service curb stops are to be dimensioned along the alignment of the watermain from the nearest valve and curb stops, and boxes are to be dimensioned from lot corners;
- Record watermain obvert elevation at 20 m intervals;
- The drawings shall incorporate information shown on the Infrastructure Standards for Water Transmission and Distribution Systems. In addition, the manufacturer, make and model of the following must be provided:
 - Pipe (mains, services & fire hydrant leads);

- Joint restraints;
 - Fire hydrants;
- Valves;
- Curb stops;
- Main stops; and
- Saddles.

Where watermains are not within road allowances or near sewers, ties to property corner shall be used.

Note: Original design information (inverts, grades, etc.) are to be removed from the drawing and replaced by the Record information.

Record Landscape and Park Drawings

The Record drawings shall consist of the original approved Streetscape/Landscape Drawing(s) which have been updated and plotted to show existing site conditions of field works, and shall incorporate any approved revisions or changes to field and site conditions. The Record drawings shall include, but not be limited to the following:

- General tree, shrub and vegetation installations including seeding and naturalization for indents, Storm Water Facilities, Naturalization and Restoration Areas;
- Boulevard street tree locations, species, common name, size and installation date;
- Location of all park water services including irrigation heads, irrigation lines, shut off valves, control boxes, backflow devices, meters and yard hydrants;
- Storm drainage infrastructure and devices within Open Space, Environmentally Protected Lands and Parkland including catch basins, maintenance holes, and pipes including invert elevations;
- Electrical servicing including power sources, conduits, wiring, poles, fixtures, panels, and other related devices with Open Space, Environmentally Protected Lands and Parkland; and
- Park Design Drawings shall confirm all existing infrastructure and park design elements including layout, grading, planting, placement of playground equipment, amenities, and standards used.

Record Field Survey

The -Record revisions shall be based upon an Record survey of all the development services, and shall include a field check of the following items:

- Property lines;
- Centreline of roadways and edges of pavement;
- Location of maintenance holes for utilities;
- Location of catchbasins;
- Location of hydrants;
- Location of valve chambers and valve boxes;
- Location of streetlights;
- Maintenance hole inverts and lid elevations;
- Pipe inverts;
- Distance and grade between maintenance holes;
- Special maintenance hole details;

- Catchbasin inverts;
- Road centerline elevations at 20 m intervals; and
- Location, lid, and invert elevations for all rear yard and lot catchbasins.

APPENDIX I

TYPICAL DEFICIENCIES



TYPICAL DEFICIENCIES	
Items	Deficiencies
Sidewalks	<ul style="list-style-type: none"> • Cracks • Heaving • Marks in the surface of the concrete e.g.: names, footprints, scratches etc as per <u>OPS 351.07.09</u> • 2001Amending O.Reg 239/02)
Boulevards	<ul style="list-style-type: none"> • Dead grass • Stones/ rocks in the boulevards • Settlement • Non-compliance with the Boulevard Garden Policy
Streetscape	<ul style="list-style-type: none"> • non-caliper size compliance for boulevard trees • unapproved substitutions • damaged trunks/stems • poor form and/or branching heights • crooked or leaning street trees • significant pruning within crown compromising crown form
Curb and gutter	<ul style="list-style-type: none"> • Cracks • Heaving • Gouges deeper than 1 inch in the face of the curb
Driveway ramps	<ul style="list-style-type: none"> • Difference in the top of the driveway ramp and the sidewalk or curb greater than 2 cm
Fencing	<ul style="list-style-type: none"> • non-compliant gauge of material for chain link fencing, posts and rails • use of soft aluminum ties • improper setting of post footing elevation below grade • incomplete fastening practices with joist hangers • gaps below fencing which exceed tolerances as per standards
Base asphalt & surface asphalt	<ul style="list-style-type: none"> • Cracks in the asphalt such as progressive edge cracking, alligator and bleeding • Grass/ weeds growing at the edge of the asphalt between the curb and asphalt • Dips in the asphalt • Rutting
Sanitary pipes & Storm pipes	<ul style="list-style-type: none"> • As per NASSCO's Pipeline Assessment & Certification Program • Cracks • Fractures • Sags • Broken pipes • Deformed pipes • Joint offsets or separation
Watermains	<ul style="list-style-type: none"> • Cracks • Fractures • Leaks • Valve boxes broken • Wrong number of turns on valve boxes, hydrants etc.

APPENDIX J

DEVELOPMENT SERVICES
SUBDIVISION REVIEW CHECKLIST



**DEVELOPMENT SERVICES
SUBMISSION REVIEW CHECKLIST**

Subdivision Name: _____

File No.: _____

Date: _____

A - General Submission Requirements	DWG	DWG	DWG	DWG	DWG	DWG	DWG	DWG	DWG
All reports required by the Draft Plan Conditions have been provided									
Traffic Impact Study has been provided									
Pedestrian Circulation Plan has been provided									
Transportation Management Plan has been provided									
Lot and Block grading plans and Park Grading plans are provided									
Erosion and Sediment Control Plans are provided									
Make MOECC ECA Application									
Apply for other agency approvals (CA, MNRF)									
Check geotechnical re: trench, dewatering (PTTW application)									
Watermain drawings reviewed by Water Operations Branch									
B - Drafting Requirements - All Drawings	DWG	DWG	DWG	DWG	DWG	DWG	DWG	DWG	DWG
Geodetic Benchmark and Horizontal Control Monuments Shown (data)									
Complete title block information									
Drawing stamped by Professional Engineer, Landscape Architect, or other									
Key Plan									
City Stamp									
Title Plan									
Plan - Profile 1:500 H, 1:50 V									
Show north arrow									
Show centreline chainage, typically chainage should start at westerly and southerly limits. Where feasible, street intersection should be used as zero chainage									

**DEVELOPMENT SERVICES
SUBMISSION REVIEW CHECKLIST**

Subdivision Name: _____

File No.: _____

Date: _____

Show chainage and names of intersecting streets									
Show road limits and widths									
Show limits of work									
Show street name clear of road allowance where possible									
Show lot numbers									
Show plan location of any easements									
C - Roadways	DWG No . _____	DWG No . _____	DWG No . _____	DWG No . _____	DWG No . _____	DWG No . _____	DWG No . _____	DWG No . _____	DWG No . _____
Show existing and proposed centreline profiles									
Show beginning and end of horizontal curves and curve data									
Show all vertical curves, ensure they meet geometric design standards									
Check road widths and crossfalls, boulevard crossfalls, ditch side slopes									
Show road widths, tapers, etc. including position in ROW									
Sight triangles and 0.3m reserves are shown on the drawings									
Check curb radius at intersections, display radius									
Check radius of cul-de-sacs									
Show plan - profile of intersecting streets									
Traffic Calming measures conform to the Traffic Management Plan									
Center medians are provided (where required)									
Provide cross-section									
Check geotechnical report and City Standards re: road subbase, base and asphalt									
Show year of top lift asphalt placement where applicable									

**DEVELOPMENT SERVICES
SUBMISSION REVIEW CHECKLIST**

Subdivision Name: _____

File No.: _____

Date: _____

Show curb, identify depressions and terminations									
Ensure sub-drains shown in cross section									
Show ditch and boulevard treatment									
Show sidewalks, width and material, removals (as required)									
Show driveway locations									
Double driveways are shown at all angle bends, cul-de-sacs and intersections									
Driveways are clear of all street hardware and catchbasins									
Construction accesses have been shown on the construction drawings									
Show clearing and grubbing requirements									
Check warrants for guide rail									
Appropriate pavement markings are shown on the drawings									
D - Stormwater	DWG	DWG	DWG	DWG	DWG	DWG	DWG	DWG	DWG
Stormwater Management System conforms to the Master Plan									
Accepted external stormwater drainage area plans are provided									
Show Sewer Drainage Arrows									
Stormwater Management Pond facilities, included signage and planting, are provided									
Show existing and proposed storm sewer in plan and profile									
Storm drainage plan and storm design sheets, sewer size									
Check overland flow route									
Provide grading plans showing elevation at centreline, curb line, top of curb, sidewalk, P/L, etc.									
Check sewer materials, pipe class, length, depth, size and slope									

**DEVELOPMENT SERVICES
SUBMISSION REVIEW CHECKLIST**

Subdivision Name: _____

File No.: _____

Date: _____

Show sewer trench in cross section (bedding, cover, backfill)									
Show maintenance holes, check spacing, check identifier, size, station and numbering									
Check maintenance hole drops									
M.H. Safety Platforms									
Show all C.B.'s and connections to sewer, check spacing									
Show details of catch basins, maintenance holes, frames and grates, benching, ladder rungs									
Check sewer separation from watermain									
Check conflicts with other utilities									
Check Service Lateral Location & Size									
Show culvert size, gauge and gradient									
Rear lot catchbasins and outlet pipes are shown on drawings									
Show profile of ditch inverts where applicable									
E - Sanitary	DWG	DWG	DWG	DWG	DWG	DWG	DWG	DWG	DWG
Sanitary System conforms to the Master Plan									
Accepted external sanitary sewer area plans are provided									
Show drainage arrows									
Sanitary forcemains are identified									
Show existing and proposed sanitary sewer in plan and profile									
Show sanitary drainage plan and sanitary design sheets, check sewer size									
Check sewer location, materials, pipe class, length, size and slope									
Show sewer trench in cross section (bedding, cover, backfill)									

**DEVELOPMENT SERVICES
SUBMISSION REVIEW CHECKLIST**

Subdivision Name: _____

File No.: _____

Date: _____

Check sewer separation from watermain									
Check conflicts with other utilities									
Show sanitary laterals, location, inverts at property line, and size									
Show typical details of service connections, maintenance holes, frames and grates, benching, ladder rungs									
Show maintenance holes, size, location, check spacing, check identifier, M.H. drops, M.H. safety platform, M.H. Numbering									
Check sewer grades, drops thru maintenance holes									
F - Watermains	DWG	DWG	DWG	DWG	DWG	DWG	DWG	DWG	DWG
Water Transmission and Distribution System conforms to the Master Plan									
Show existing and proposed watermain in plan and profile									
Check watermain location per standards									
Check watermain materials, pipe class, size, depth									
Show watermain trench in cross section (bedding, cover, backfill)									
Check watermain separation from sewers									
Check conflicts with other utilities									
Show valves, check identifier, location, spacing and station									
Show hydrants, check spacing, check identifier, offset, station and flange elevation									
Show typical details for hydrants, valves, services									
Check watermain restraint requirement									
Check watermain bend angle and station									
Check watermain reducers (size and station)									
Check main caps or plugs									

**DEVELOPMENT SERVICES
SUBMISSION REVIEW CHECKLIST**

Subdivision Name: _____

File No.: _____

Date: _____

Show watermain services, location and size									
Identify Curb Stop									
G - Street and Traffic Signs/Markings, Traffic Signals	DWG	DWG	DWG	DWG	DWG	DWG	DWG	DWG	DWG
Provide existing sign table for tendering, proposed sign table for construction									
Provide pavement marking plan, review with Traffic Section									
Arrangements for construction sign									
Show existing traffic signals, controllers and ducts									
Show proposed traffic signals, controllers and ducts									
Stop signs and street name signs are shown on the drawings									
Underground traffic signal (ducts, electrical manholes, etc) are shown on the drawings									
H - Miscellaneous	DWG	DWG	DWG	DWG	DWG	DWG	DWG	DWG	DWG
Check for bike routes									
Bicycle paths and signage are shown on the drawings									
Transit shelters and laybys are provided (where required)									
Check with Transit re: bus pad requirements									
Check streetlighting, show proposed works as required									
Show telephone, cable TV, hydro and gas (existing and proposed) in plan and as required in profile									
Show erosion control features									
Retaining wall cross-sections and details are provided									
Show trees, fencing and landscaping features, including details									

APPENDIX K

SUBDIVISION AND SITE PLAN
INSPECTION CHECKLIST



**DEVELOPMENT SERVICES
INSPECTION CHECKLIST**

Subdivision Name: _____

Developer: _____

Phase: _____

Consultant: _____

File No.: _____

Date: _____

A – Sanitary Sewerage	Item Certified	Date Installed	Comments
Note: The following Sanitary certification must be received and reviewed by the City of Barrie prior to asphalt paving.			
Sewer Main Alignment			
Sewer Main Grade			
Sewer Installation:			
Bedding Material Tested			
Bedding Material Compaction			
Trench Backfill Compaction			
Pipe Materials Checked			
Infiltration Testing			
Report Submitted			
Exfiltration Testing			
Report Submitted			
Mandrel Test			
Report Submitted			
Pipes & Maintenance holes Cleaned Of Debris			
CCTV Inspection:			
Inspection Reports as per NASSCO			
CCTV Video; Coded to PACP			
Maintenance Holes:			
Structural Condition			
Benching			
Steps			
Safety Grates			
Drop Structures			
Adjustment Units			
Frame & Grate			
Inspection Reports as per NASSCO			
Sanitary Services:			
Lateral Drawings Submitted			
Ends Marked and Capped			
Inspection Reports as per NASSCO			
B - Storm Sewerage	Item Certified	Date Installed	Comments
Note: The following Storm certification must be received and reviewed by the City of Barrie prior to asphalt paving.			

Sewer Main Alignment			
Sewer Main Grade			
Sewer Installation:			
Bedding Material Tested			
Bedding Material Compaction			
Trench Backfill Compaction			
Pipe Materials Checked			
Infiltration Testing			
Report Submitted			
Exfiltration Testing			
Report Submitted			
Mandrel Test			
Report Submitted			
Pipes & Manholes Cleaned Of Debris			
CCTV Inspection:			
Inspection Reports as per NASSCO			
CCTV Video; Coded to PACP			
Maintenance Holes:			
Structural Condition			
Benching			
Steps			
Safety Grates			
Drop Structures			
Adjustment Units			
Frame & Grate			
Inspection Reports as per NASSCO			
Catchbasins / Ditch Inlets:			
Structural Condition			
Lead Parging/Trimming			
Adjustment Units			
Frame & Grate			
Clean of Debris and Sediment			
Headwalls:			
Dimensions			
Concrete Testing (poured in place)			
Handrail (if applicable)			
Storm Services:			
Ends Marked & Capped			

Major Storm Routes (Overland Flow)			
Ditches / Swales:			
Alignment			
Grade			
Surface Treatment			
Detention Pond Facilities:			
Clean Of Debris and Sediment			
Outfall / Inlet Structures Condition			
Fencing and Gate Condition			
Low Flow Channel Treatment			
Access Road Condition			
Signage Installed			
Provide Bathymetric Survey			
Compliance with ECA			
Boulevard Grading			
Detention Pond Facilities:			
Subdrains			
Culverts:			
Culvert Grade and Alignment			
Bedding Material Tested			
Bedding Material Compaction			
Trench Backfill Compaction			
Pipe Materials Checked			
C – Water Distribution Systems	Item Certified	Date Installed	Comments
Note: The following Water certification must be received and reviewed by the City of Barrie prior to asphalt paving.			
Watermain Alignment			
Watermain Profile & Cover			
Water Material check list			
Watermain Installation:			
Bedding Material Tested			
Bedding Material Compaction			
Trench Backfill Compaction			
Testing: (prior to issuance of building permits)			
Swabbing			
Pressure Testing			
Potability			
Condition Assessment Report:			
Visual inspection?			

Advanced Leakage Detection (Sahara)?			
Acoustic Emission Testing Periods			
(CPP)?			
Remote Field Eddy Current / Transformer Coupling (CPP)?			
Water Services:			
Curb Stop Condition			
Water Service Box Elevation (surface)			
Water Service Box Location			
Curb Stops Staked			
Curb Stops Operational			
Fire Hydrants:			
Condition			
Flange Elevation			
Watermain Valves:			
Valve Box Condition			
Valves Operational			
D - Roads	Item Certified	Date Installed	Comments
Note: Subgrade/Granular Materials items certification must be received and reviewed by the City of Barrie prior to asphalt paving.			
Subgrade: (see note below)			
Elevation and Crossfall Checked			
Proof Roll			
Granular Materials: (see note below)			
Materials Tested (sieve analysis)			
Elevations and Crossfalls Checked			
Compaction Testing			
Asphalt Paving:			
Materials Testing (Marshall or SuperPave Mix Designs Submitted)			
Asphalt Depths (GPR Report)			
Compaction Testing			
Pavement Condition Assessment Report:			
Semi-Automated Distress Survey (ASTM 6433)			
Automated Longitudinal Profile and International Roughness Index (IRI)			
Automated Transverse Profile with mean and max rut depths for each wheel path			
Curbs:			
Materials Testing (strength, air, slump)			
Condition			
Driveway Depression Locations			

Alignment			
Grade:			
Maintenance Hole Frames & Grates			
Set to Proper Elevation:			
Watermain Valves Boxes			
Set To Proper Elevation:			
Pavement Markings			
Guiderails / Guideposts			
Street Name Signs			
Shoulders (if applicable)			
Streetlights:			
Locations Checked			
Energized			
Lighting Levels as per Luminance Design			
Bridges:			
>3 m Bridge Inspection Report (OSIM standards)			
<3 m Bridge Inspection Report (Condition and compliance to bridge design and safety requirements)			
E - Boulevards	Item Certified	Date Installed	Comments
Sidewalks:			
Granular Base			
Grade			
Alignment			
Width			
Concrete Depths			
Materials Testing (strength, air, slump)			
Surface Condition			
Compliance with AODA regulations			
Boulevard Treatment:			
Grading/Crossfall			
Topsoil Depth			
Sod Placement			
Surface Condition			
Topsoil Testing Report			
Driveway Aprons:			
Location			
Width			
Grading			
Granular Base Material & Depth			

Asphalt Depths			
Surface Condition			
Bike Paths / Routes:			
Location			
Width			
Grading			
Granular Base Material & Depth			
Asphalt Depths			
Surface Condition			
Walkways:			
Location			
Width			
Grading			
Granular Base Material & Depth			
Asphalt Depths			
Surface Condition			
Fencing			
Bollards			
Utilities & Services: (restoration of disturbed areas)			
Hydro			
Telephone			
Gas			
Cable TV			
Canada Post			

APPENDIX L

PARKS PLANNING AND
DEVELOPMENT

SUBDIVISION INSPECTION REPORT FORMS



**PARKS PLANNING AND DEVELOPMENT
SUBDIVISION INSPECTION REPORT FORM**

DEVELOPMENT _____	PHASE _____	D12- _____
LEGAL DESCRIPTION _____		
DEVELOPER ADDRESS _____	CONTACT No. _____	
	EMAIL _____	
CONSULTING FIRM ADDRESS _____	CONTACT No. _____	
	CELL No. _____	
	EMAIL _____	
INSPECTOR _____	INSPECTION DATE: _____	
INSPECTION FOR	LETTER OF CREDIT REDUCTION	ASSUMPTION
		<i>END OF GENERAL MAINTENANCE</i>

STREET TREE REPORT

CHART DEFINITIONS:

1. No. – Municipal street address, use block number only when there is no municipal address
2. STREET NAME – Locations are based on the street frontage identification
3. LOC –Location reference, S = Side Lot, F = Frontage
4. T# -- For identifying multiple trees on single lots. Frontage – Count starts from the left corner property line facing the residence and side yard count starts at the frontage and progresses towards the rear lot line
5. SPECIES – Common name only (*indicate if no tree present*)
6. SS – The rated assessment of both the mulch and saucer at the base of the tree.
7. TI – The rated assessment of the trunk for any defects, wounds, damage, straightness and caliper.
8. CV – The rated assessment of the canopy health, form, condition and vigor.
9. COMMENTS – Identify specific conditions relating to ratings or deficiencies.
10. ✓ – Action or Status – B = Boulevard Policy, R = Replace, S = Straighten, W = Extend Warranty, X = Reject

RATED ASSESSMENT

(-) = Acceptable, D = Disease, M = Maintenance Required, N = Not Acceptable, W = Wound

No.	STREETNAME	LO	T#	SPECIES	SS	TI	CV	COMMENTS	✓

GENERAL INSPECTION REPORT

CHART DEFINITIONS:

1. LOCATION – Numerical listing, ranges or specific directions to locate a specific element within the development
2. REF – Reference to the specific category of inspection as follows:
 - E – Encroachments, F – Fencing/Columns/Entry Features, I – Indents, N – Naturalization/SWMF Planting
 - O – Other (*please specify*), P – Preservation
3. ITEM DESCRIPTION – Brief description of item to be corrected or problem
4. SCHEDULED – Target date for completion of works
5. ✓ – Action or Status – B = Boulevard Policy, C = Complete, M = Maintenance, R = Replace, X = Reject.

LOCATION	REF	ITEM DESCRIPTION	SCHEDULED	✓

City Use Only

Inspection Date: _____ *Inspector:* _____ *Attendee:* _____
Valid Until Date: _____ *Inspector:* _____ *Attendee:* _____

<input type="checkbox"/> <i>Reject Inspection Report</i>	<i>Initial</i> _____	<i>Date</i> _____
<input type="checkbox"/> <i>Follow Up Inspection Required</i>	<i>Initial</i> _____	<i>Date</i> _____
<input type="checkbox"/> <i>Inspection Report Accepted</i>	<i>Initial</i> _____	<i>Date</i> _____

Notes:

APPENDIX M

**HEWITTS AND SALEM
SECONDARY PLAN LANDS**
COMPLETE ENGINEERING SUBMISSION GUIDE



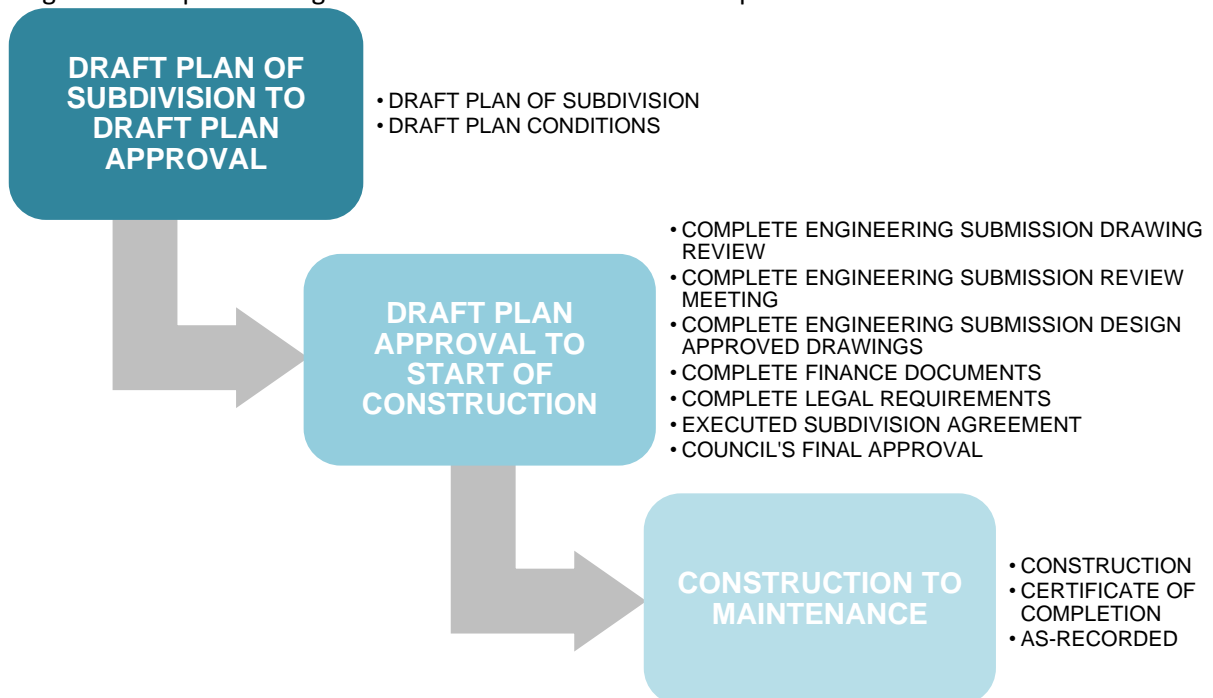
Complete Submission Procedure for Hewitts and Salem Secondary Plan Lands Subdivision Applications

The use of this procedure is anticipated to streamline and expedite the engineering approvals process and it fully relies on the consulting team to have designs prepared and certified in accordance with the criteria and standards of the City of Barrie.

The procedure is as follows:

- Ahead of scheduling a complete submission meeting with the City of Barrie, one full complete submission package shall be submitted for review to Development Services. The requirements of the complete submission package are as stated in the Complete Submission Requirement section of this document.
- Prior to the first engineering review meeting, the complete submission will be distributed to the appropriate internal parties for review and to provide comments.
- The first engineering review meeting shall be attended by representation as stated in the Engineering Review Meeting section of this appendix.
- Once the complete submission meeting is finished, the design exceptions will be decided upon (approved or rejected), the drawings shall be marked up and the City of Barrie will be able to assess if it needs to recommend the MOECC applications (as required).
- The City of Barrie reserves the right to conduct any further review required of the Drawings and all further red-line changes shall be combined in the Drawings.
- Once the Subdivision Agreement has been implemented, the Consultant shall submit one complete set of original Drawings for endorsement by the City of Barrie.
- All other Drawing Submissions shall be in accordance with the City of Barrie Digital Standard (DIS) (as amended).

The figure below provides a general overview of the submission process.



Complete Engineering Submission

Prior to an Engineering Submission, the owner/applicant submits a proposed draft plan to the City. Once the Draft Plan has been approved then the Complete Engineering Submission Process may begin with the City of Barrie for development.

Complete Engineering Submission Requirements

The Consultant is required to provide the following information to the City prior to the First Engineering Review Meeting:

- Four (4) complete sets of Construction Drawings; these include engineering drawings, parks drawings, traffic drawings etc.
- Two (2) sets of reduced half size drawings.
- Two (2) bound copies of all supporting documents.
 - Geotechnical Investigation and Soils Report
 - Water Distribution Report
 - Stormwater Management (SWM) Report
 - Hydrogeological/Hydrology Study*
 - Noise Impact Study*
 - Traffic Impact Study*
 - Archaeological Study and Clearance Letter*
 - Wellhead Assessment Area – Risk Assessment Report*
 - Environmental Site Assessment*
 - Copies of design sheets (sanitary, storm and overland flow)
 - Accepted Erosion Sediment Control Plan/Report
 - Landscape Master Plan
 - Sanitary Pumping Station/Forcemain Report*
 - Slope Stability Report(s)*
 - Commercial Needs Study*
 - Woodlot Management Plan*
 - Water Supply Analysis

*if Required

- Approvals from any applicable External Authorities (i.e. Conservation Authority, Ministry of Environment, Ministry of Transportation).
- A letter from each consultant certifying that their design is in accordance with the City of Barrie's Design Criteria or contains specific exceptions to the Design Criteria.
- All drawings and reports are to bear the seal, date and signature of the Licensed Professional Engineer, Landscape Architect, or other professional, under whose direction they were prepared.

Coordination of all construction drawings is to be done by the consultant on behalf of the Owner/Developer.

All applicable reports shall be submitted in accordance with the City of Barrie requirements.

The Consultant (Engineering, Landscaping, and Electrical) shall provide a certificate that states that all designs have been prepared in accordance with City Standards, criteria, specifications and policies. The

certificate should also list any exceptions that have occurred and include the appropriate deviation memo.

All exceptions shall be reviewed with the Construction Drawings, and shall include a deviation memo and will be circulated to the appropriate departments for complete review.

All Consultant submissions (including supporting documents) shall include all required submissions as outlined in the City of Barrie Digital Information Submission Standard.

Engineering Submission Review Meeting

Representation for the following City Departments and Branches required to attend the First Engineering Review:

- Engineering Department
- Planning and Building Services Department
- Roads, Parks and Fleet Department
- Parks Planning and Development
- Traffic and Parking Services Branch
- Environmental Services Department
- Water Operations Branch
- Transit and Parking Department

Please note that the Engineering Department will be the main coordinating party for the City of Barrie.

External consultants that are required to attend the First Engineering Review are:

- Consultant
- Landscape Architectural
- Electrical Consultant
- Owner and/or Representative
- Agency Reviewers
- Geotechnical Consultant*
- Transportation Consultant*
- Environmental Consultant*

*These consultants are only required if there are issues that involve them that need to be discussed and resolved.

Common Errors on Construction Drawings Submitted by Consultants

The following is a list of common errors and/or missing information that has been encountered on Construction Drawings that have been submitted. This list is meant as a guideline only and may or may not include more items.

Construction Drawings

- Show street names of proposed roads.
- Show construction access.

- Sanitary and storm outlets are required prior to City/MOECC approval.
- Letter of permission for external works.
- Sanitary, storm and water connections to park blocks.
- List of Consultant's exception list on General Notes Drawing (highlighted in a box).
- Identify all lots with single driveways on engineering drawings. Show dimensions and offsets from the lot lines and above ground services and utilities.
- Show double driveways (6m wide) on all single lots including road angle bends, intersections and cul-de-sac locations.
- Catchbasin's on roads to be away from driveway curb cut.
- Fire hydrants required on the property line and to meet minimum spacing requirements.
- Details required for all headwalls for storm inlet and outlet structures.
- Identify the limits of construction phase on the drawings and in the signing title box by the Director of Engineering.
- Composite Utility Plan should be completed but not be limited to showing the following:
 - Driveways
 - Telecommunications
 - Gas
 - Hydro/streetlighting
 - Super mail boxes
- Residential cul-de-sac.
- Show location of all privacy fencing.
- Fence details to meet City requirements.
- Show engineered fill (if required) on lots/blocks and parks.
- Provide details for retaining walls (site specific to show property line, guide rail, fence etc).
- Temporary farm fencing required on vacant land within the Plan of Subdivision being developed to prevent on-site dumping of debris.
- Show pavement markings, signs, bicycle paths etc. on Traffic Management Plans.
- No surcharging of storm sewers under any storm event.
- No surcharging of sanitary sewers under any storm event.
- Design sheets (sanitary, storm and overland flow) to be included on the engineering drawings.
- Maximum depth of swales 0.2m.
- Show interim noise attenuation measures at the limits of subdivisions.
- Storm water facility pond warning sign.
- Sidewalk policy.
- Watermain looping.
- Pipe installed greater than 6.0m depth (use concrete pipe).
- Sedimentation & Erosion Control drawings.
- Streetlight Drawings
- Locate streetlight poles on property lines.
- Locate transformers on the property lines.
- Show type of luminaire on the typical road x-section.
- Show illuminance design calculations.

- All revisions to streetlight pole relocation are to be circulated to Alectra and InnPower (or any other applicable hydro authorities).
- Provide walkway lighting as per City Standard.
- Residential (Black Pole, Heritage Luminaire); & Industrial (Cobra Head Luminaire).

Drawing Review Checklist

The following checklist provides a guideline for what information is required to be shown on drawings that are submitted as part of the Complete Submission Package.

Refer to City of Barrie DIS (as amended) for checklists related to this requirement

General

- Geodetic Benchmark and Horizontal Control Monumentation Shown (data).
- Chainage starts at Westerly and Southerly Limits.
- Plan & Profile 1:250 H, 1:50 V
- Street intersection point used as zero chainage (where possible).
- Show centerline chainage.
- Show beginning and end of horizontal curves and curve data.
- Show chainage and names of intersecting streets.
- Show existing and proposed centerline profiles.
- Show street name clear of road allowance (where possible).
- Show plan & profile of drainage easements.
- Show road widths.
- Provide cross – section.
- Show culvert size, gauge and gradient.
- Show North arrow.
- Show limits of work.
- Show Plan & Profile of intersecting streets.
- Show ROW limits.
- Complete title block information.
- Drawing stamped by a Professional Engineer.
- Title Drawing.
- Fence details are shown on the engineering drawings.
- Traffic calming measures conform to the Traffic Management Plan.
- All reports required by draft plan conditions have been provided.
- Construction access has been shown on the construction drawings.
- All details referenced in the project are included in the sets of drawings, including the City of Barrie Standard Drawings.

Roadways

- Check (and display) curb radius at intersections.
- Show all vertical curves to ensure they meet geometric design standards.
- Check radius of cul-de-sacs.

- Check that minimum and maximum road grades are met.
- Check road widths and crossfalls, boulevard crossfalls and ditch sideslopes.
- Show clearing and grubbing requirements.
- Check warrants for guide rail.
- Show ditch and boulevard treatment.
- Check Geotechnical Report and city standards (re: road subbase, base and asphalt).
- Show year of top lift asphalt placement (where applicable).
- Show curbs/curb & gutter, show curb cuts and curb termination.
- Show road widths, tapers etc. (including position within the ROW).
- The road geometrics conform to the City's design standard drawings.
- Stop signs and street name signs are shown on the drawings.
- Sight triangles and 0.3m reserves are shown on the drawings.
- Driveways are clear of all street hardware and catchbasins.
- Double driveways are shown at all angle bends, cul-de-sacs and intersections.
- Appropriate pavement markings are shown on the drawings.
- Centre medians are provided (where required).
- Transit shelters and laybys are provided (where required).
- Traffic signal underground (ducts, electrical manholes etc) are shown on the drawings.
- Construction and emergency access are shown on the drawings.
- Transportation Impact Study has been provided.
- Transportation Management Plan has been provided.
- Bicycle Path and signage.

Sanitary Sewers

- The sanitary sewers system conforms to the master plan.
- Accepted external sanitary sewer area plan(s).
- Sanitary Pumping Station Drawings & Details.
- Sanitary forcemains.
- Show existing and proposed sanitary sewer in Plan & Profile.
- Show typical details of service connections, maintenance holes, frames and grates, benching and Ladder rungs.
- MOECC Certificate of Approval Application.
- Check Geotechnical Report for dewatering requirements (i.e. if Permit to Take Water Application is required) and discharge agreement.
- Check sewer location, materials, pipe class and size.
- Show sanitary drainage plan and design sheets.
- Show sewer trench in cross section (bedding, cover and backfill).
- Show sanitary laterals and inverts at the property line.
- Check sewer grades and drops through maintenance holes.
- Check sewer separation from watermain.
- Check depth of sewer.

- Check for conflicts with other utilities.
- Show maintenance holes, check spacing and identifier.

Drainage and Storm Sewer

- The stormwater sewer system conforms to the master plan.
- Storm drainage plan, storm design sheets and sewer size.
- Accepted external storm sewer area plan(s).
- Show profile of ditch inverts where applicable.
- Show details of bedding, cover and backfill of pipes.
- Provide grading plans showing elevation at centerline, curb line, top of curb, sidewalk, property line, etc.
- Show existing and proposed storm sewer in Plan & Profile.
- Show details of catch basins, maintenance holes, frames and grates, benching and ladder rungs.
- MOECC Certificate of Approval Application.
- Apply for any other agency approvals (Conservation Authority, Ministry of Natural Resources and Forestry).
- Check Geotechnical Report for dewatering requirements (i.e. if Permit to Take Water Application is required).
- Check sewer location, materials and pipe class.
- Check sewer trench in cross section (bedding, cover, backfill).
- Show all catch basins, connections to sewer and check spacing.
- Show maintenance holes, check spacing and check identifier.
- Check sewer grades and drops through maintenance holes.
- Check sewer separation from watermain.
- Check depth of sewer.
- Check for conflicts with other utilities.
- Check overland flow route.
- Lot Grading Policies
- Storm water facility pond (include warning sign).
- All external areas have been shown and accounted for in the design.
- All swales are a maximum 0.2m depth.
- Rear Lot Catch Basin and outlet pipes are entirely located on one lot with the center of the catchbasin and catchbasin leads 0.6m minimum offset from the property line or tree preservation limit.
- A cross section is provided for retaining wall locations. All retaining walls are to be constructed on private property and should clearly identified (size, material, height) on the proposed development plan.

Watermains

- Watermain network and sizing conforms to the master plan.
- Show existing and proposed watermain in the plan & profile.
- Show typical details for hydrants, valves and services.
- MOECC Certificate of Approval

- Form 1 Approval
- Check Geotechnical Report for dewatering requirements (i.e. if Permit to Take Water Application is required).
- Check watermain location as per the City of Barrie Standards.
- Check watermain separation from sewers.
- Check watermain restraint requirement.
- Check watermain materials, pipe class, and size.
- Show watermain services. Must be below storm sewers to prevent freezing.
- Show watermain trench in cross section (bedding, cover, backfill).
- Show watermain depth of cover.
- Show hydrants, check spacing and check identifier.
- Show valves and check identifier.
- Check conflicts with other utilities.
- Have watermain drawings been reviewed by the City of Barrie Water Operations Branch.

Street and Traffic Signs/Marking, Roadway Illumination and Traffic Signals

- Provide existing sign table for tendering and proposed sign table for construction.
- Show existing signs with note on plan.
- Provide pavement marking plan and review with Traffic Branch.
- Arrangements for construction sign.
- Show existing and proposed traffic signals, controllers and ducts
- Pole and luminaire type conforms to the City of Barrie Guideline.
- Walkways illuminated to City of Barrie Guideline.
- Streetlight layout to be reviewed by Traffic Services Branch.
- Distance between transformer and other utilities

Utilities

- Show telephone (existing and proposed) in the plan & profile (as required).
- Show hydro (existing and proposed) in the plan & profile (as required).
- Show gas (existing and proposed) in the plan & profile (as required).
- Show cable television (existing and proposed) in the plan & profile (as required).

Sidewalks

- Show sidewalks (existing and proposed) and sidewalk removals (where required).
- Show sidewalk details.
- Check with transit in regards to bus pad requirements.

Miscellaneous

- Ensure sub-drains are shown in the cross section.
- Check for bike routes.
- Show erosion control features.
- Show trees and landscaping features.
- Lot & Block Grading & Park Grading Plans.
- Erosion & Sediment Control Plans.

APPENDIX N

DEVIATION FROM
ENGINEERING REQUIREMENTS

SAMPLE



DEVIATION DOCUMENTATION FROM
BARRIE DESIGN MANUALS AND STANDARDS

Date: _____

Completed by: _____ City Consultant Contractor

Reviewed by: _____ City Consultant Contractor

City of Barrie File No.: _____

City of Barrie Department: _____ Project Phase:: _____

Is a updated to the existing guideline and/or standard recommended? YES NO

*Attach to this document all related records, including proposed design,
specification and data, as related to this deviation form*

GENERAL INFORMATION

Location/Development: _____

Manual/BSD Category: _____ Manual/BSD: _____

(State all that require deviation)

Element of Standard to be Deviated:

Recommended Alternative(s): (Include rationale (ie, benefits of deviation, LCCA comparison, etc.)

Possible Disadvantages of Alternative:

SUMMARY OF CONSULTATION

(Attach comments from above, include individual who provided comment)

	Contacted		Comment Attached		Reviewer (Name and Initials Once Review is Completed)
	Yes	No	Yes	No	
Internal Stakeholders					
Road Operations					
Wastewater Operations					
Water Operations					
Traffic and Parking					
Planning and Building Services					
Infrastructure Planning					
Development Services					
Design & Construction (Design)					
Design & Construction (Construction)					
Policy and Standards (Corporate Asset Management)					
Accessibility Co-ordinator (Human Resources)					
External Stakeholders					
Developer					
Consultant					
Contractor					
Conservation Authority					
Ministry (Ontario)					
Ministry (Canada)					
Other					

Additional Comments:
