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# Draft Development Manual

## Manual Respecting Procedures, Policies, Standards

City of Belleville

Approvals Section

Engineering and Development Services Department

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# Part A General

## A.1 Acronyms

Provided below is a table of terms and their associated acronyms found throughout this Development Manual:

<b>Acronym</b>	<b>Full Term</b>
<b>AACI</b>	Accredited Appraiser Canadian Institute
<b>AODA</b>	Accessibility of Ontarians with Disabilities Act
<b>ASTM</b>	American Society for Testing and Materials
<b>AWWA</b>	American Water Works Association
<b>CCTV</b>	Closed circuit television
<b>CN</b>	Canadian National
<b>CP</b>	Canadian Pacific
<b>CPTED</b>	Crime Prevention Through Environmental Design
<b>CSA</b>	Canadian Standards Association
<b>DBH</b>	Diameter at breast height
<b>DWG</b>	"Drawing" (proprietary native file format for AutoCAD)
<b>EA</b>	Environmental Assessment
<b>ECA</b>	Environmental Compliance Approval
<b>EIS</b>	Environmental Impact Study
<b>ESA</b>	Environmental Site Assessment
<b>FDC</b>	Foundation drain collector
<b>GFA</b>	Gross floor area
<b>IDF</b>	intensity-duration-frequency
<b>LID</b>	Low Impact Development
<b>LPAT</b>	Local Planning Appeal Tribunal
<b>MAFRA</b>	Ministry of Agriculture, Food and Rural Affairs

<b>Acronym</b>	<b>Full Term</b>
<b>MHSTCI</b>	Ministry of Heritage, Sport, Tourism and Culture Industries
<b>MNDMNRFP</b>	Ministry of Northern Development, Mines, Natural Resources and Forestry
<b>MOE</b>	Ministry of Energy
<b>MECP</b>	Ministry of the Environment, Conservation and Parks
<b>MOL</b>	Ministry of Labour
<b>MTO</b>	Ministry of Transportation Ontario
<b>NEB</b>	National Energy Board
<b>NHHFRP</b>	Natural Heritage and Historic Features Restoration Plan
<b>NPS</b>	Nominal pipe size
<b>OLS</b>	Ontario Land Surveyor
<b>OPSD</b>	Ontario Provincial Standard Drawing
<b>OPSS</b>	Ontario Provincial Standards Specification
<b>OTM</b>	Ontario Traffic Manual
<b>PDF</b>	Portable document format
<b>PVC</b>	Polyvinyl Chloride
<b>QCA</b>	Quinte Conservation Authority
<b>ROW</b>	Right-of-way
<b>RPP</b>	Registered Professional Planner
<b>RSC</b>	Record of Site Condition
<b>RSO</b>	Revised Statutes of Ontario
<b>SPMDD</b>	Standard proctor maximum dry density
<b>SWM</b>	Stormwater management
<b>TAC</b>	Transportation Association of Canada
<b>TIS</b>	Traffic Impact Study

<b>Acronym</b>	<b>Full Term</b>
<b>TSSA</b>	Technical Standards and Safety Authority
<b>TV</b>	Television
<b>USB</b>	Universal serial bus
<b>UTM</b>	Universal Transverse Mercator
<b>WSIB</b>	Workplace Safety and Insurance Board

## A.2 About this Development Manual

The following design guidelines are intended to provide minimum design requirements for new developments within the City. The intent of this manual is to provide clear direction to Developers, Engineers and Planners, which will allow for efficient design and review process.

This document, together with various by-laws and the City's Official Plan and Loyalist (West) Secondary Plan, provide guidance and outline requirements and design standards for new subdivision and site plan development.

The standards are based on considerable technical background and design approaches with input from various City departments.

Note: these guidelines are considered a live document and may be updated or modified as required. For the latest version, please visit [www.belleville.ca](http://www.belleville.ca).

## A.3 How to Use the Development Manual

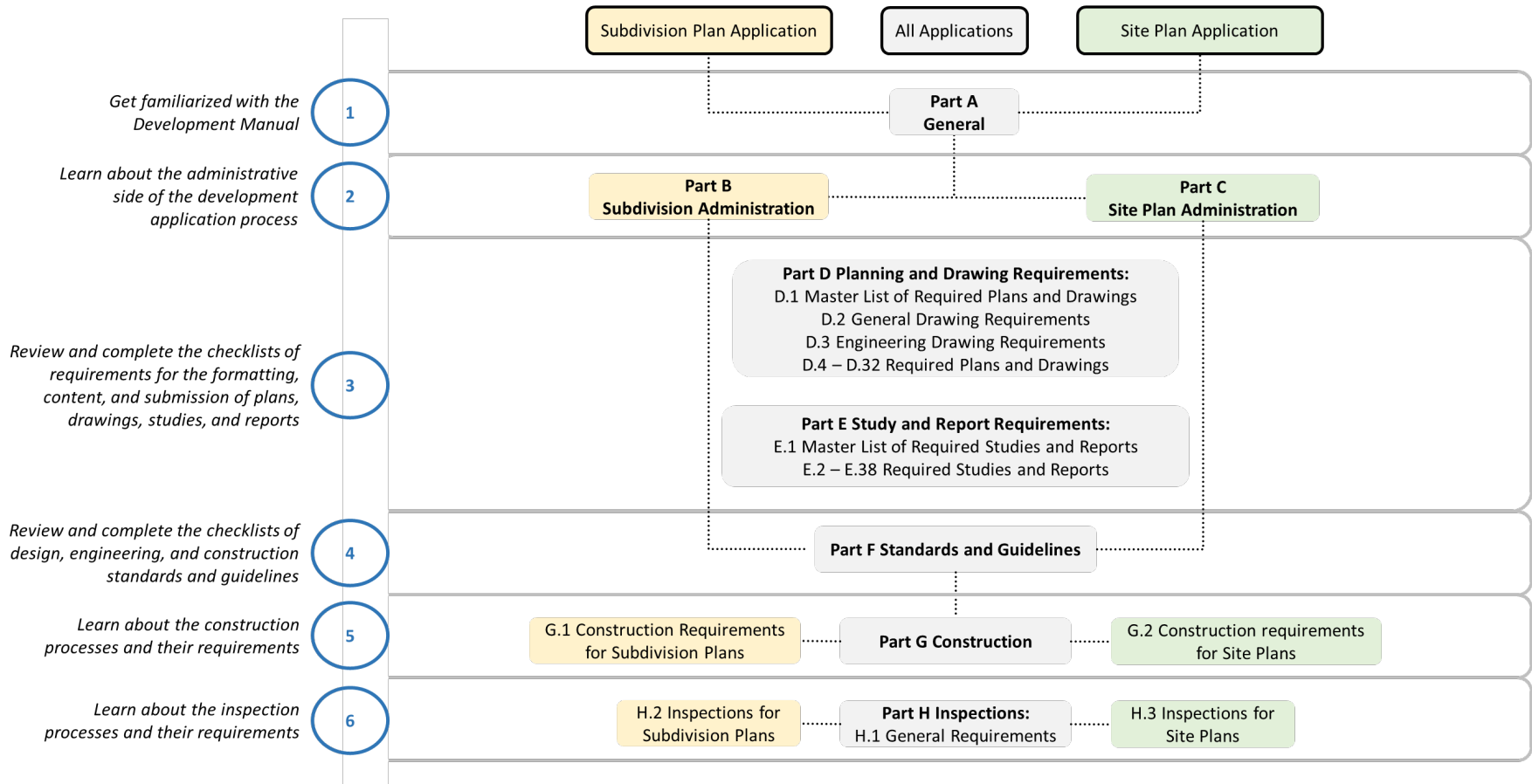
The Development Manual is broken down into eight parts:

- A. General** – Part A provides: a table of acronyms found throughout the development manual; information on how to use the development manual; the laws, manuals, standards, and guidelines that are applicable to development in the City of Belleville; and the responsibilities of the City of Belleville and various external agencies in the development process.
- B. Subdivision Administration** – Part B provides information on the application and approval processes for a subdivision plan.
- C. Site Plan Administration** – Part C provides information on the application and approval processes for a site plan.
- D. Plan and Drawing Requirements** – Part D includes a master list of all plans and drawings that may be required for development applications, and it provides the City’s plan and drawing requirements.
- E. Study and Report Requirements** – Part E includes a master list of all studies and reports that may be required for development applications, and it provides the City’s study and report requirements.
- F. Standards and Guidelines** – Part F provides standards and guidelines for design, construction, and engineering associated with development.
- G. Construction** – Part G provides information on the construction process and its requirements for subdivision plans, which pertains but is not limited to: the detailed work schedule; construction regulations, prerequisites and other requirements; the pre-construction meeting; requirements at completion of construction; and, defaults.
- H. Inspections** – Part H provides information on the inspection process for site plans and subdivision plans, respectively, as well as general requirements for inspections.

# A7 | How to Use the Development Manual

The figure below is a **flowchart** that depicts how to use this Development Manual:

## How to Use the Development Manual





## A.4 Applicable Laws, Manuals, and Guidelines

### A.4.1 The Planning Act & Approval Authority

#### A.4.1.1 Subdivision Plans

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- 1) Plans of Subdivision are processed and approved under Section 51 of the Planning Act, RSO 1990. Process and circulation requirements are identified in O. Reg. 544/06 of the Planning Act. The Corporation of the City of Belleville (the City) is the delegated approval authority for draft plans of subdivision. Where land intended to be subdivided requires an amendment to the Official Plan or the Zoning By-law, prior or concurrent applications will require approval through the City's Policy Planning or Approvals Sections.

#### A.4.1.2 Site Plans

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- 1) Site plan control is applied pursuant to Section 41 of the Planning Act. The City's Official Plan contains detailed site plan control policies that have been implemented by the City of Belleville Site Plan Control Area By-law No. 2004-93. Reference should be made to these documents for details on the basis of the application of site plan control in Belleville.

### A.4.2 The City of Belleville Official Plan

- 1) The Official Plan sets out the goals and objectives for the City of Belleville as a whole, where its purpose is to inform the public of the City's general land use planning goals, objectives, and policies in both the short- and long-term.
- 2) One objective of this Manual is to inform development in a way that aligns with the City's Official Plan.

### A.4.3 Municipal By-laws

- 1) The following municipal by-laws and policies are applicable to development in the City of Belleville:
  - a) Belleville Zoning By-law\* (By-law 10245);
  - b) Sidney Zoning By-law\* (By-law 2076-80);
  - c) Thurlow Zoning By-law\* (By-law 3014);
  - d) Site Plan Control By-law (By-law 2004-93, as amended);

- e) Subdivision Administration Policy (2012);
- f) Development Charges By-law (By-law 2021-18);
- g) Parkland Dedication Policy (By-law 12524);
- h) Site Alteration and Fill By-law<sup>1</sup>;
- i) Municipal Tree Canopy and Natural Vegetation Policy, April 2019;
- j) Sign By-law (By-law 2006-55, as amended);
- k) Sewer Use By-law (By-law 2002-12); and,
- l) Driveway Control By-law (By-law 2001-129).

*\* The City of Belleville is currently undertaking a Consolidated Zoning By-law to replace the three existing Zoning By-laws referenced above. Once Council enacts the Consolidated Zoning By-law, it will replace the three existing Zoning By-laws.*

#### **A.4.4 Parkland and Recreation Master Plan**

- 1) The City of Belleville has a Parkland and Recreation Master Plan, which guides municipal investment to enhance the City’s public park system, including land acquisition, development and redevelopment, community use, and funding over the next 10 years. The Parkland and Recreation Master Plan is to be consulted during the application processes for site plans and plans of subdivision in the City of Belleville.

#### **A.4.5 Site Plan Guidelines – Procedures, Policies, Standards**

- 1) Section 8.13 of the City of Belleville Official Plan provides that the City may establish documents that set out procedural guidelines or municipal standards to assist land developers in effectively dealing with matters subject of the Official Plan. This Manual is prepared pursuant to this section.
- 2) The purpose of this Manual is to assist the development industry in understanding the City’s procedures and standards to obtain site plan approval. This manual defines the City’s:
  - a) procedural policies respecting applications for site plan approval;
  - b) design criteria and engineering and planning standards; and,

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<sup>1</sup> The Site Alteration and Fill By-law was not yet enacted, when this Development Manual was completed.

- c) standard administrative policies and mechanisms.
- 3) The provisions set out in this Manual are intended to provide comprehensive direction on all the City's key requirements respecting site plan approval.
- 4) However, due to the complexity and the variety of development projects, not all issues or circumstances that will arise are included in this Manual.
- 5) Further, Council and staff may determine during the process of administering any application for site plan approval that departure from the stated standards or procedures would be warranted to address a unique problem.
- 6) This Manual will not be interpreted so rigidly as to prevent necessary departures.

#### **A.4.6 Development Guidelines**

- 1) Development Guidelines have been adopted as an overarching document that provides for the implementation through this Manual. Such guidelines must be read in conjunction with this Manual and applied as designated by Council.

#### **A.4.7 Ontario Building Code**

- 1) The OBC, regulated under the Building Code Act, is the legislative framework that governs the construction, renovation, and change-of-use of a building in Ontario. Refer to Section C.3.5 of this Manual for further information on the OBC.

## **A.5 Responsibilities**

### **A.5.1 Responsibilities of the City of Belleville**

#### **A.5.1.1 Assistance**

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- 1) City staff and staff of external agencies are available to provide assistance and advice upon request respecting many aspects of site plan design and subdivision design. The Manager of Approvals can provide assistance identifying where information can be obtained that will assist in resolving issues respecting the design of a subdivision or site plan.
- 2) Designers are strongly encouraged to obtain input and assistance at the beginning of a design assignment to ensure the submission is in full conformity with the provisions of this Manual and all other standards and requirements that may apply.

#### **A.5.1.2 Timing**

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- 1) The amount of time it will require to process the application is largely in the hands of the applicant – the more complete and thorough the application is prepared, the faster the review and the more timely the decision.
- 2) Factors that can enable a plan to be approved more quickly or take additional time include:
  - a) whether subdivision plans or site plans have been prepared in conformity with this Manual;
  - b) whether the application is complete;
  - c) whether there are a large number of applications preceding the submission; and,
  - d) the size and/or complexity of the development (such that extensive review by outside agencies is required or additional reports or submissions may be required).

#### **A.5.1.3 Engineering and Development Services Department**

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- 1) The City's Engineering and Development Services Department provides a range of services in support of development. Its responsibilities include:
  - a) land use (policy) planning – preparing land use plans and development policies to guide the development of the community;
  - b) development approvals – processing applications for development approval; and,

- c) building permits – processing of building permit applications.
- 2) The Engineering and Development Services Department Approvals Section is responsible for processing applications for development approval. The key responsibilities in this respect include:
  - a) facilitating pre-consultation meetings;
  - b) receiving and processing applications for development approval;
  - c) reviewing all drawings with respect to conformity with applicable planning and urban design standards;
  - d) facilitating resolution of conflicts of outstanding issues respecting any aspect of a development application;
  - e) granting development approval; and,
  - f) preparing development agreements and providing administrative support to meeting conditions of development approval, which includes:
    - I) receiving and processing reductions in letters of credit;
    - II) processing all land transfers and payments of fees; and,
    - III) facilitating inspection of the requisite works when completed to verify conformity with the approved development.
- 3) The Engineering and Development Services Department Building Section is responsible for processing applications for building permits, sign permits, and septic permits.

#### **A.5.1.4 Environmental Services**

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- 1) The City of Belleville’s Environmental Services is responsible for municipal services, which include:
  - a) sanitary sewers and all related appurtenances including waste water treatment and sanitary sewerage network;
  - b) water supply and distribution system, and all related appurtenances;
  - c) storm drainage system (network of storm sewers and appurtenances); and,
  - d) review and approval of linear services where an extension within the municipal ROW is proposed. Most applications that previously required an ECA issued by the MECP are now issued by Environmental Services. If confirmation that the proposed services will require an ECA the applicant is encouraged to reach out to Environmental Services.

#### **A.5.1.5 Transportation and Operations Services**

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- 1) The City of Belleville Transportation and Operations Services is responsible for municipal services, which include:

- a) the transportation system, including roads and streets, bridges, traffic signalization and control systems, and entrance control;
- b) the public transit system;
- c) sidewalks and walkways;
- d) street lighting;
- e) the waste management collection system;
- f) landscaping, urban forestry and public spaces;
- g) community connectivity (trails), all green infrastructure, and sustainability;
- h) ditching and ditches in both urban and rural rights-of-way (ROW); and,
- i) assisting in review of a development project where the site is adjacent to or would impact on a community facility.

#### **A.5.1.6 Other City Departments**

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- 1) Belleville Fire and Emergency Services may be circulated to review and comment on development projects in relation to their areas of expertise. The Recreation, Culture and Community Services Department will review recreational programming or facilities under their mandate within parkland or public spaces.

### **A.5.2 Responsibilities of Other Agencies**

- 1) In addition to the City of Belleville, other agencies may require the submission of engineering or planning documents or drawings for approvals, permits, or the provision of services, in support of a development project.
- 2) While City staff can assist as required, developers and their consultants are solely responsible for obtaining all necessary external agency approvals and making arrangements for the provision of non-municipal services, directly with the external agency.

#### **A.5.2.1 Agencies from Whom Approvals May Be Required**

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Agencies that may be involved in granting approvals are the following:

- 1) MECP:
  - a) issues certificates to permit installation of municipal underground services (sewers and water mains), where applicable if such installations do not fall under the approval authority of the City's Environmental Services Department's Consolidated Linear Infrastructure ECA.
  - b) approves waste reduction plans pertaining to major demolition projects; and,

- c) issues approvals pursuant to the Ontario Water Resources Act for private sewage disposal systems that have a design capacity exceeding 10,000 litres per day.

2) MTO:

- a) issues Entrance Permits for construction, change of ownership, upgrades or changes (including paving, design modification, etc.) to an entrance or roadway accessing a provincial highway;
- b) issues Building and Land Use Permits to place, erect or alter any above or below ground structure, fence, berm, gasoline pump, tree, shrub, hedge, chip wagon/fruit and vegetable stands or land use of any kind upon or within:
  - I) 45 metres of any limit of a provincial highway system;
  - II) 180-metre radius of an intersecting road of a Provincial Highway; and,
  - III) 395-metre radius of an intersecting road of a controlled access highway;
- c) issues Building and Land Use Permits for:
  - I) any land use or part that lies within 800 metres of a provincial highway system that causes persons to congregate in large numbers, and
  - II) placing, erecting or altering any power line, pole line or other transmission within 400 metres of any limit of a controlled-access highway;
- d) issues Sign Permits for placement of signs on private property or in a field within 400 metres of a provincial highway ROW, subject to restrictions on the type of signage and required setbacks (note that billboard signs are not permitted within 400 metres of a freeway or staged freeway); and,
- e) issues Encroachment Permits for any installation or works upon, under or within the limits of a provincial highway ROW.
- f) The proponent is strongly encouraged to visit the MTO website for more information regarding MTO required permits at <http://www.hcms.mto.gov.on.ca>.

3) QCA:

- a) The City is required to circulate the local conservation authority on all site plans and subdivision plans within their area of jurisdiction. QCA may also review and comment on site plan and subdivision plan applications, respectively, with respect to potential environmental impacts. These include the following:

- I) Mandated by the Province:
    - (i) Natural Hazards (floodplain management, hazardous slopes, unstable soils or bedrock, and erosion), and
    - (ii) Ontario Regulation 319/09 QCA: Regulation of Development Interference with Wetlands and Alterations to Shorelines and Watercourse (under section 28 of the Conservation Authorities Act);
  - II) Additional Review Services:
    - (i) Natural Heritage; and,
    - (ii) Stormwater (water quantity only);
  - III) QCA Review, which includes:
    - (i) Reviewing development applications to determine if and where an environmental impact has potential to occur;
    - (ii) Providing written comments and recommendations (including conditions of approval) to the City;
    - (iii) Advising the City of the Conservation Authorities Act Section 28 regulations and other applicable legislation for which the QCA has responsibility;
    - (iv) Identifying the need for, and the adequacy of, technical reports and proposing mitigation measures for applications; and,
    - (v) Assisting in the preparation of terms of reference for studies and reports for plan review applications.
- 4) Others:
- a) Approvals or review of plans from other agencies may be required for various facilities to be placed on a site, depending on the design of the site and nature of the land use. Examples would include the:
    - I) TSSA;
    - II) Electrical Safety Authority;
    - III) MOL; and,
    - IV) MNDMNR.
  - b) The NEB has stipulated that no development (including installing fencing) or work (including grading or excavation) may be undertaken on or within 30 metres of a pipeline ROW without first obtaining written approval from the pipeline company for such works. The NEB has established minimum response standards for pipeline companies.



### **A.5.2.2 Agencies from Whom Services May Be Required**

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- 1) Among agencies from whom services or assistance may need to be obtained are the following:
  - a) Elexicon Energy – provides electrical distribution network to most of the urban portion of the City of Belleville.
  - b) Hydro One – provides electrical distribution network to the rural and some of the urban areas of the City of Belleville.
  - c) Cogeco Cable – provides cable television distribution network to the urban and many rural areas of the City of Belleville.
  - d) Enbridge Gas Inc. – provides natural gas distribution services to most of the urban area and some rural areas of the City of Belleville.
  - e) Bell Canada – provides telephone transmission network throughout the City of Belleville.
  - f) Canada Post – provides mailing and shipping services throughout the City of Belleville.
  - g) Canadian National (CN) Rail and Candian Pacific (CP) Rail – provide rail transportation services through the City of Belleville.

# Part B Subdivision Administration

## B.1 Purpose of Subdivision Control

- 1) Plans of Subdivision are required where lands proposed to be subdivided into two or more lots with the creation of a public ROW. Subdivision approval is required to ensure that:
  - a) The land is suitable for its proposed new use;
  - b) The proposal conforms to provincial legislation and polices, regional and local official plans, and community plans (if applicable);
  - c) The timing for the consideration for the proposed subdivision is in accordance with the City of Belleville growth management strategy;
  - d) The City is protected from developments which are inappropriate and may put an undue strain on City facilities, services, or finances;
  - e) The City's and other agency's requirements (e.g. street widening, roadway improvement, drainage, servicing, etc.) are implemented;
  - f) The availability of municipal services and other amenities to prospective residents of the subdivision;
  - g) The proposed plan of subdivision is consistent with all relevant Council policies; and,
  - h) The subdivision is consistent with other City documents and plans such as Transportation Master Plan, Parkland and Recreation Master Plan, Infrastructure Phasing Strategy, Community Plans, and others.
- 2) During the Subdivision Approval process, the City will review and coordinate the following:
  - a) Overall subdivision design;
  - b) Effect on surrounding neighborhood and land uses;
  - c) Lot sizes;
  - d) Parkland and public spaces requirements;
  - e) Roadway and emergency access geometry;
  - f) Sidewalk and pedestrian access requirement;
  - g) Sanitary sewer, storm sewer, and water services;
  - h) SWM;
  - i) Utility services and street lighting;
  - j) General grading;
  - k) Streetscape plan;
  - l) Heritage features; and,
  - m) Environmental features.

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- 3) The various departments within the City to which all applications for site plan approval or draft plan of subdivision approval are circulated and/or that are involved in their development processes are:
  - a) Policy Planning Section;
  - b) Approvals Section – includes Development Engineering;
  - c) Transportation and Operations Services;
  - d) Environmental Services;
  - e) Recreation Culture and Community Services Department;
  - f) Building Section;
  - g) Fire and Emergency Services Department;
  - h) Police Department;
  - i) Finance Department; and,
  - j) Economic and Strategic Initiatives Department.
- 4) The various external agencies that may be involved in the subdivision process include:
  - a) QCA;
  - b) Elexicon Energy;
  - c) Hydro One Networks Inc.;
  - d) Bell Canada;
  - e) Cogeco Cable;
  - f) Canada Post;
  - g) Hastings Prince Edward Public Health Unit;
  - h) MFDMNRF;
  - i) MTO;
  - j) MECP;
  - k) OMAFRA;
  - l) MHSTCI;
  - m) Hastings and Prince Edward District School Board, and Algonquin and Lakeshore Catholic District School Board;
  - n) Enbridge Gas Inc.;
  - o) Enbridge Gas Inc. Pipelines, Trans Northern Pipelines Inc., and TransCanada Pipelines Inc.;
  - p) Heritage Belleville;
  - q) CN Rail and CP Rail; and,
  - r) County of Hastings, Township of Tyendinaga, Municipality of Centre Hastings, City of Quinte West, and Mohawks of the Bay of Quinte.

## B.2 Draft Subdivision Plan Application Process

### B.2.1 Pre-Consultation Meeting (Prior To Formal Application)

- 1) Pre-consultation meetings occur between the applicant and relevant City staff from various departments prior to a formal planning application being submitted to the City to identify all the requirements of a complete application and to facilitate streamlined approvals. The applicant should contact the planning section with any inquiries and to schedule a pre-consultation meeting at [planning@belleville.ca](mailto:planning@belleville.ca).
- 2) The purpose of the pre-consultation meeting is to:
  - a) evaluate site context, site conditions, existing natural heritage features, design opportunities, and challenges;
  - b) confirm the City's Official Plan policies with regard to the proposed development
  - c) identify key issues;
  - d) identify plans, studies, reports, and other information required in support of a complete application;
  - e) confirm whether there are existing master drainage plans already in place for the sub-watershed;
  - f) discuss the applicant's schedule / timing;
  - g) review pertinent planning documents;
  - h) discuss special circulation requirements;
  - i) discuss interrelationships with abutting lands;
  - j) assist in the completion of the application;
  - k) discuss proposed zoning of the lands;
  - l) assess the need for any Municipal Class EAs;
  - m) determine the need for further pre-consultation meetings with affected agencies; and,
  - n) determine the need for permits from various agencies.
- 3) For the meeting, the developer will have a concept plan prepared for the planned subdivision, setting out the developer's preferred street and lot configurations, provisions for parkland, and proposed densities.
- 4) Invitees to the initial pre-consultation meeting, in addition to the developer, would typically include:
  - a) the Manager of Approvals;
  - b) the development engineer and/or planner;

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- c) the Manager of Policy Planning;
  - d) the Manager of Engineering;
  - e) the Manager of Operations, Planning and Development;
  - f) the Supervisor of Parks and Open Spaces;
  - g) the Chief Building Official;
  - h) a representative from the City's Environmental Services (water division);
  - i) a representative from the City's Transportation and Operations Services (transit services; city-wide green infrastructure and sustainability);
  - j) a representative from the City's Recreation, Culture and Community Services Department;
  - k) a representative from QCA; and,
  - l) any other person who the Manager of Approvals believes can provide critical input.
- 5) To assist the participants at a pre-consultation meeting, a pre-consultation checklist will be used to guide discussions on matters that may affect an application for the approval of a plan of subdivision. The checklist will also address the requirements for other approvals such as a zoning by-law amendment or an Official Plan amendment.

### B.2.2 Application Preparation and Submission

- 1) The required plans, drawings, studies, and reports for a subdivision plan application will be submitted as dictated by the City through pre-consultation.

#### Checklist of Subdivision Application Submission Package Requirements:

Place a checkmark (✓) in the applicable boxes below.

- 2) The subdivision application submission package includes:
- two (2) fully completed and signed (original signatures required) copies of the application form;
  - seven (7) printed copies of the proposed plan of subdivision prepared in accordance with the requirements of Sections D.2 and D.4 of this Manual;
  - one (1) USB flash drive or email with web download link containing digital copies of the proposed plan of subdivision in PDF format, prepared in accordance with the requirements of Sections D.2 and , D.4 of this Manual; and,
  - five (5) copies of each plan, report or study, as identified at the pre-consultation meeting, prepared in support of the proposed plan of subdivision.

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- 3) After the subdivision application submission package is compiled:
  - The required application fee is provided to the City, and
  - The application submission package is submitted to the Manager of Approvals for approval.
- 4) Until the Manager of Approvals has received all of the information set out in Section B.2.2 of this Manual, including the holding of a pre-consultation meeting, the Manager of Approvals may refuse to accept or further consider the application for approval of a draft plan of subdivision.
- 5) Within thirty (30) days of the receipt of an application for approval of a draft plan of subdivision and the required fee, the Manager of Approvals will notify the applicant whether the application is complete.

### B.2.2.1 Draft Subdivision Plan Approval Process

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### B.2.3 Application Review and Circulation

- 1) Within fifteen (15) days of the date the Manager of Approvals gives notice to the developer that the application for approval of a draft plan of subdivision is complete, the Manager of Approvals will provide notice of the application to key City staff and affected agencies for review and comment.

### B.2.4 Staff Report for Draft Approval

- 1) Upon completing review of the application and obtaining comments from key City staff and affected agencies, the Manager of Approvals will prepare a staff recommendation report to the City's Planning Advisory Committee summarizing whether the application should be endorsed (whether the plan should be granted draft approval).
- 2) A copy of the staff report will be made available to the developer and the public in advance of the meeting in accordance with City policy.
- 3) In consideration of the staff report and any additional input received, the Planning Advisory Committee will make a recommendation to City Council on whether the application should receive the City's endorsement. Where the recommendation is in the affirmative, the recommendation would also include proposed conditions of draft approval.

## B.2.5 Draft Plan Approval

- 1) Upon consideration of the recommendation of the Planning Advisory Committee, where City Council is of the opinion that the proposed plan of subdivision is in keeping with sound planning and is in the public interest, Council will give approval to the proposed plan, commonly referred to as “draft approval”.
- 2) Draft approval will come into effect upon the expiry of the appeal period following the decision of City Council. It should be noted that the general public does not have appeal rights under the provisions of the Planning Act.
- 3) Draft approval of a proposed plan of subdivision is typically granted for three (3) years, during which time it is expected that the developer will proceed expeditiously to satisfy all of the conditions of draft approval, thereby enabling final approval to the plan of subdivision to be granted.

### B.2.5.1 “Redline” Draft Plan Approval

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- 1) The Manager of Approvals will “redline” the proposed plan if and as necessary in accordance with the decision of Council to modify the plan or conditions of draft approval as necessary, or as requested by the developer under Section B.2.8 prior to final approval of the plan, in accordance with the provisions of the Planning Act.

## B.2.6 Conditions of Draft Approval

- 1) “Draft approval” constitutes the City’s approval of the proposed plan of subdivision, subject to conditions. The conditions must be met or satisfied before the City can grant final approval.
- 2) The City may impose such conditions to the approval of a draft plan of subdivision that in the opinion of the City are reasonable, having regard to the nature of the subdivision. These conditions may include requirements:
  - a) That land be dedicated or other requirements met for park or other public recreational purposes guided by the Parkland and Recreation Master Plan (developable land);
  - b) That such highways, including recreational and multi-use and recreational trails<sup>2</sup>, pedestrian pathways, bicycle pathways and public transit rights of way, be dedicated as the City considers necessary;

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<sup>2</sup> Multi-use trails are part of the multimodal system and rights-of-way, and recreational trails are part of parkland.



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- c) That such land be dedicated for commuter parking lots, transit stations and related infrastructure for the use of the general public using highways, as the City considers necessary;
  - d) When the proposed subdivision abuts on an existing highway, that sufficient land, other than land occupied by buildings or structures, be dedicated to provide for the widening of the highway to such width as the City considers necessary; and,
  - e) That the developer enter into one or more agreements with the City dealing with such matters as the City may consider necessary, including the provision of municipal or other services.
- 3) Conditions of draft approval will vary depending on issues specific to each subdivision development. In all cases however, draft approval will include a condition that the developer enter into a subdivision agreement with the City prior to final approval being granted.

### B.2.7 Extensions to Draft Plan Approval

- 1) If the developer does not fulfill the conditions of draft approval within the specified time frame, the developer may make application to the Manager of Approvals for an extension to draft approval. The Manager of Approvals may:
  - a) Grant a maximum six (6) month extension where it is considered an emergency; or
  - b) Grant an extension of longer duration with the concurrence of Council.
- 2) The City is not obligated to grant an extension under a variety of circumstances, therefore, developers are strongly encouraged to pursue final approval within the allocated time to avoid losing the opportunity to develop.
- 3) Where a draft approved subdivision plan is to be undertaken in stages and at least one stage has been registered, those portions of the draft plan not yet registered will be granted an extension automatically, subject to the provisions as set out in the conditions of draft approval.

### B.2.8 Modifications to Draft Approval

- 1) Where the developer wishes to modify the draft plan prior to final approval, the developer will forward a request for modification to the Manager of Approvals.

#### Checklist of Requirements for Modifications to Draft Approval:

Place a checkmark (✓) in the applicable boxes below.

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- 2) The request to the Manager of Approvals for modifications to draft approval includes:
  - a letter signed by the developer (or their agent) requesting the modification;
  - a brief outlining the reason for requesting a modification;
  - five (5) printed copies of the revised draft plan of subdivision;
  - four (4) printed copies of the proposed plan of subdivision as above, reduced to 8.5 inches by 11 inches with scale revised as appropriate; and,
  - one (1) USB flash drive or email with web download link containing digital copies of the revised draft plan of subdivision in PDF format.
- 3) The Manager of Approvals retains the right to initiate a modification to draft approval at any stage up to the granting of final approval.
- 4) The procedure used to process a proposed modification to draft approval depends upon whether the proposed modification is major or minor in nature, and the complexity of the modification being sought.
- 5) Minor modifications, usually technical in nature, are addressed by the Manager of Approvals. Major modifications are usually related to design, and are referred to and considered by Council.
- 6) The Manager of Approvals will make the determination of what is a minor or major modification on a case-by-case basis. As a minimum, consideration will be given to how the modifications could impact neighbouring properties and residents.

### B.2.9 Pre-Servicing and Model Home Agreement

#### B.2.9.1 Pre-Grading Agreement

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- 1) A pre-grading agreement, by comparison to the standard pre-servicing agreement, is much less complex to process in advance of the finalization and registration of a subdivision agreement and the plan of subdivision.
- 2) A copy of the City's standard form pre-grading agreement can be obtained from the Manager of Approvals. This standard form agreement will be modified by the Manager of Approvals to reflect the specific requirements of each development to which the agreement will apply.
- 3) Urban trees identified will not be removed, and they will be identified as such in the Pre-Grading Agreement.
- 4) If the developer chooses to proceed with a Pre-Servicing Agreement, the City will require developers to submit an application form to initiate the City to begin drafting an agreement. All required documents and pertinent information will need to be submitted with the application to allow the City to efficiently draft the

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agreement. The application form can be requested from the Administrative Assistant for the Approvals Section.

- 5) The applicant should contact the Approvals Section with respect to this process.

### **B.2.9.1.1 Engineering Design Drawings and Other Submissions**

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- 1) The developer is responsible for ensuring all the necessary submissions are made to the Manager of Approvals to enable the pre-grading agreement to be finalized.

#### **Checklist of Submissions for a Pre-Grading Agreement:**

Place a checkmark (✓) in the applicable boxes below.

- 2) The applicant prepares all engineering design drawing submissions based on the following steps:
  - Step 1:
    - Step 1.A.:
      - The developer initiates preparation of the following reports:
        - Geotechnical Report (Section E.6 of this Manual);
        - Detailed SWM Design Report (Section E.11 of this Manual);and,
      - Preliminary Functional Site Servicing Report (E.12 of this Manual).
    - Step 1.B.:
      - The developer submits the following reports to the Manager of Approvals for review and acceptance:
        - three (3) copies of the Geotechnical Report, and
        - three (3) copies of the Detailed SWM Design Report.
    - Step 1.C. (if required by the conditions of draft approval):
      - The developer initiates preparation of the following:
        - Tree Inventory and Preservation Plan (Section D.23 of this Manual);
        - Phase II ESA (Section E.4 of this Manual); and,
        - EIS identifying natural heritage features (Section E.5 of this Manual).
  - Step 2:
    - Step 2.A.:
      - The consulting engineer prepares the first submission of required engineering and design drawings, which includes a:
        - cover sheet;

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- Grading and Drainage Plan (Section D.8 of this Manual); and,
  - Detail Plan and General Notes (Section D.18 of this Manual).
  - The Grading and Drainage Plan reflects any recommendations and requirements that have arisen from the Archaeological Assessment, the Phase II ESA, the EIS identifying natural heritage features, and the approved Tree Inventory and Preservation Plan.
- Step 2.B. – The consulting engineer submits four (4) copies of the first submission of required engineering design drawings, where all submissions include a USB set of submission.
- Step 3:
  - Step 3.A.:
    - The consulting engineer confirms that City staff has reviewed the first submission and provided written comments to the consulting engineer.
    - The consulting engineer confirms whether a second submission is required.
- Step 4:
  - Step 4.A. The consulting engineer prepares the second submission, which addresses comments received from the first submission.
  - Step 4.B. – The consulting engineer resubmits four (4) copies of the second submission to the Manager of Approvals.
- Step 5:
  - Step 5.A. – The consulting engineer confirms that City staff has reviewed and approved the second or subsequent submission.
  - Step 5. B. – The consulting engineer confirms that the Manager of Approvals has provided written direction to prepare and provide the final submission.
- Step 6:
  - The consulting engineer provides the final submission, which includes:
    - seven (7) complete sets of the engineering design drawings;
    - one (1) complete set of the engineering design drawings in 11 inches by 17 inches format; and,
    - one (1) USB flash drive or email with web download link containing digital copies of the engineering design drawings in DWG and PDF formats.

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### **B.2.9.2 Standard Pre-Servicing Agreement**

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- 1) A standard pre-servicing agreement is, by comparison to the pre-grading agreement, a more complex document to process in advance of the finalization and registration of a subdivision agreement and the plan of subdivision.
- 2) A copy of the City's standard pre-servicing agreement can be obtained from the Manager of Approvals. This standard form pre-servicing agreement will be modified by the Manager of Approvals to reflect the specific requirements of each development to which the agreement will apply.
- 3) The applicant should contact the Approvals Section with respect to this process.

#### **B.2.9.2.1 Engineering Drawing Standards and Content**

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- 1) The procedures set out in Section D.4 of this Manual respecting the process of preparing the engineering design drawings will apply to the process of preparing the engineering design drawings and schedules necessary to finalize a standard pre-servicing agreement with necessary modifications to reflect context.

#### **B.2.9.2.2 Securities Pursuant to a Pre-Servicing Agreement**

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- 1) Refer to Section B.2.11.2.2 of this Manual for information on securities pursuant to a pre-servicing agreement.

#### **B.2.9.2.3 Insurance**

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- 1) Insurance certificates will be deposited with the City in accordance with the standards and provisions set out in Section B.2.11.3 of this Manual.

#### **B.2.9.2.4 Construction Procedures**

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- 1) The provisions of Section G.1 of this Manual will apply to the construction of the works provided for under a pre-servicing agreement, with necessary changes to reflect context.

### **B.2.9.3 Model Home Agreement**

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#### **B.2.9.3.1 Application for a Model Home Agreement**

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- 1) A developer who wishes to construct model homes in advance of the execution of a subdivision agreement and the registration of the plan may submit an application to the City to enter into a Model Home Agreement.

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- 2) The application will be made to the Manager of Approvals. In the application, the developer will indicate which lots are proposed for model homes. The application form can be obtained from the Approvals Section.
- 3) The City is under no obligation to approve an application to construct model homes in advance of the registration of the plan. An application may be rejected where the City is of the opinion that the erection of model homes would not be in the public interest, or in the best interests of the developer.
- 4) Where the City does concur with an application for model homes, the model home agreement would permit the developer to construct up to eight (8) model home units for each subdivision or phase in advance of the completion of the underground services and registration of the plan, to be used as sales models.
- 5) Construction of model homes will be at the developer's sole risk, and should for any reason final approval of the plan not be granted or other issues arise that render the model homes unusable, the developer will be fully responsible for the costs of removal of the model homes or the pursuit of other remedies that may be available.

### **B.2.9.3.2 Prerequisites for a Model Home Agreement**

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- 1) To be eligible for a model home agreement, the developer must also apply for a standard pre-servicing agreement. The developer should make application for a model home agreement at the same time as submitting an application for a standard pre-servicing agreement.
- 2) The model home agreement application will be considered simultaneously with the consideration of the standard pre-servicing agreement.

### **B.2.9.3.3 Requirements for Model Homes**

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#### **Checklist of Requirements for Model Homes:**

Place a checkmark (✓) in the applicable boxes below.

- 1) The following requirements are met to become eligible for a model home agreement:
  - The developer applies for a standard pre-servicing agreement.
  - The developer selects the lots upon which model homes are proposed, where the lots' locations consider the following:
    - Access – access to the lots should not require extended travel through the subdivision where construction will be taking place;

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- Nature of exterior lighting – exterior lighting should be limited to only that required for security, or otherwise directed away from any lands upon which homes are or will be located;
  - Use of flags or banners – flags and banners should only be used where there would be no adverse impact upon adjoining lands;
  - Parking areas – temporary parking areas should be located so as not to have any adverse impact upon adjoining lands.
  - The developer confirms that the City has approved the proposed lots for the model homes.
- 2) The following requirements are applied to model homes under a model homes agreement:
- The developer receives a Certificate of Preliminary Grading issued by the City, which is applicable to the subdivision or phase within which the model homes would be constructed.
  - The developer obtains building permits from the Chief Building Official for the model homes. Sanitary sewer, watermain, and storm sewer do not have to be constructed to the lot.
  - The developer posts security acceptable to the City Treasurer with the City for each model home, in the amount of \$10,000 for each model home, to be returned upon full execution of the subdivision agreement.
  - Prior to model home occupancy:
    - the subdivision plan is registered;
    - municipal underground services (sanitary sewer, watermain, storm sewer) are provided to the lots; and,
    - the provisions set out in Section C.3.5.1.1 of this Manual are met.

### **B.2.9.4 Pre-Servicing and Model Home Agreement Fees**

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- 1) Refer to Section B.2.11.1.5 of this Manual for information on pre-servicing and model home agreement fees.

## **B.2.10 Subdivision Agreement**

- 1) Following lapse of the appeal period, the subdivision agreement may be prepared by the City's Approvals Section. The applicant should contact the Approvals Section with respect to this process.

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### **B.2.10.1 Background**

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- 1) Prior to obtaining final approval of the draft approved subdivision plan, the developer will be required to enter into a subdivision agreement with the City.
  - a) The subdivision agreement will be drafted by the Manager of Approvals, with input from the consulting engineer primarily in the form of engineering design drawings and schedules that relate to those drawings.
    - l) Documentation may be required from others depending on the nature of the conditions of draft approval. The developer is responsible for ensuring all documents, drawings, studies, and reports are provided to the Manager of Approvals to enable the subdivision agreement to be prepared.
  - b) As the developer is solely responsible for ensuring all conditions of draft approval are met, it rests with the developer to initiate the process to have the subdivision agreement prepared. The application form can be obtained from the Administrative Assistant for the Approvals Section.
    - l) To initiate the process, the developer will submit an application to the Manager of Approvals.

### **B.2.10.2 Preparation of the Subdivision Agreement**

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- 1) A copy of the City's standard form subdivision agreement can be obtained from the Engineering and Development Services Department.
- 2) The Manager of Approvals will modify this standard form agreement as required to reflect the specific requirements of each subdivision to which the agreement will apply.

#### **B.2.10.2.1 Finalizing Agreement**

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- 1) The approved engineering drawings will be a key component of the subdivision agreement. The approved engineering design drawings will be referenced in a schedule to the subdivision agreement, and a copy of those engineering design drawings will be retained and stored in the Engineering and Development Services Department for reference.
- 2) Along with the approved engineering drawings, the developer will be required to submit the following documents to the Manager of Approvals in advance of finalizing the subdivision agreement:
  - a) Final Subdivision Plan (M-Plan);



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- b) Letter from the developer's lawyer – confirms legal name of the owner and the legal name(s) of all mortgagee(s), along with a current copy of any Service Ontario Parcel Register(s) for the property in question; and,
- c) Letter from the consulting engineer – outlines who the developer intends to use during the construction phase, and confirming that they have received a copy of the agreement and understand the obligations and duties of the consulting engineer under the agreement during construction.

### **B.2.10.3 Execution and Registration of Subdivision Agreement**

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#### **B.2.10.3.1 Executing the Subdivision Agreement**

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- 1) The process for executing the subdivision agreement is as follows:
  - a) The Manager of Approvals will finalize the final draft of the subdivision agreement for execution.
  - b) The Manager of Approvals delivers six (6) copies of the final draft of the subdivision agreement to the developer for execution by the owner and by the mortgagee(s).
  - c) The developer delivers the six (6) copies of the agreement, fully signed by the Owner and the mortgagee(s), along with required securities, all cash payments owing to the City pursuant to the agreement, and Certificates of Insurance.
  - d) Manager of Approvals verifies with the City Treasurer that:
    - I) all taxes and other charges against the lands have been paid;
    - II) security (if in the form of a letter of credit) is satisfactory (refer to Section B.2.11.2.1.3 for more information on letters of credit); and,
    - III) the cash payments are in accordance with the agreement.
  - e) The Manager of Approvals prepares a report to Council respecting the subdivision agreement and the granting of final approval to the plan. The six (6) copies of the agreement are delivered to the City Clerk. The Manager of Approvals obtains the approval of City Council to grant final approval to the plan. City council adopts a by-law to authorize the Mayor and Clerk to execute the subdivision agreement.
  - f) The Mayor and Clerk execute the subdivision agreement, and return five (5) copies of the subdivision agreement to the Manager of Approvals. The sixth copy of the subdivision agreement is retained by the City Clerk as an official record.

### B.2.10.3.2 Registering the M-Plan and Subdivision Agreement

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- 1) The process for registering the M-Plan and the subdivision agreement is as follows:
  - a) The Manager of Approvals signs three (3) Mylar copies of the M-Plan and four (4) paper copies of the M-Plan and delivers all signed paper of the M-Plan, and one (1) copy of the fully executed subdivision agreement to the City Solicitor.
  - b) The City Solicitor will coordinate with the developer's lawyer to have them register the M-Plan and immediately following will register the subdivision agreement against the subdivision lands in the land registry office.
  - c) The City Solicitor, after registering the M-Plan and the subdivision agreement, will provide a written report to the Manager of Approvals outlining the registration details.
- 2) Following the receipt of notice from the City Solicitor of the registration of the M-Plan and the subdivision agreement, the Manager of Approvals will retain one (1) signed copy of the subdivision agreement, and circulate remaining signed copies to the City Clerk, the consulting engineer, and the developer.

## B.2.11 Fees, Securities, and Insurance for Subdivision Plans

### B.2.11.1 Fees

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#### B.2.11.1.1 Cost Estimate

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- 1) The City requires a complete detailed cost estimate for all works to complete the installation of all services and complete the subdivision in accordance with the terms of the subdivision agreement.
- 2) The City will use the Cost Estimate to calculate the fees and securities required.

#### Checklist of Requirements for the Cost Estimate:

Place a checkmark (✓) in the applicable boxes below.

- 3) The Cost Estimate is laid out in the following format:
  - For "Section 1: Underground Services":
    - This section includes, but is not limited to, all works associated with storm sewers and sanitary sewers (e.g., house connections, sewers, excavation, etc.);

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- Costs associated with Section 1 are shown as a sub-total; and
  - The consultant calculates the Underground Maintenance Security and Underground Service Inspection Fee as 15% and 5%, respectively, of the sub-total for this section.
- For “Section 2: Water Servicing”:
  - This section includes, but is not limited to, all works associated with the installation of the water works (e.g., house connections, gate valves, water main, hydrants, connection to external water main, etc.);
  - The construction water fee is shown as a line item within the Water Servicing section of the Scheduled Works Cost Estimate prepared by a Professional Engineer;
  - Construction water is calculated by:
    - the current monthly flat water rate (found on the City’s website) multiplied by three months, which equals the quarterly amount, and
    - the quarterly amount multiplied by the fee for the number of new services in the subdivision, which equals the construction fee;
  - Costs associated with section 2 are shown as a sub-total; and
    - the consultant calculates the Water Servicing Maintenance Security and Water Servicing Inspection Fee as 15% and 5%, respectively, of the sub-total for this section.
- For “Section 3: Aboveground Services”:
  - This section includes, but is not limited to, all works associated with the installation of the aboveground services (e.g., granular A, granular B, subdrain, curb and gutter, maintenance holes, catch basins, oil-grit separators (OGS Units), base course and top course asphalt, swales, sidewalk, signage, silt fence, utility works, etc.);
  - Costs associated with Section 3 are shown as a sub-total; and
    - the consultant calculates the Aboveground Maintenance Security and Aboveground Inspection Fee as 15% and 5%, respectively, of the sub-total for this section.

### **B.2.11.1.2 Engineering Fees**

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- 1) As mentioned above, the City applies a 5% fee to review reports from the consulting engineer, inspecting the works, and general administration of related processes, during the construction phase of the subdivision development. The fee will be applied by the City at the time of execution of the subdivision agreement.

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### **B.2.11.1.3 Cash-in-Lieu**

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#### **B.2.11.1.3.1 Stormwater Management Facilities**

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- 1) Where development applications constitute either redevelopment or infill, cash-in-lieu of SWM facilities may be requested at the discretion of the City, according to the QCA formula.
- 2) Funds collected as cash-in-lieu of SWM facilities will be used by the City for retrofit programs and SWM facilities at existing storm pipe outfalls.
- 3) The applicability of this policy to the proposed subdivision development should be discussed at the pre-consultation meeting.

#### **B.2.11.1.3.2 Parkland Dedication**

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- 1) If the City wishes to accept cash-in-lieu of parkland as a condition of approval of a proposed plan of subdivision, the cash-in-lieu payment will be made at the time of execution of the subdivision agreement.
- 2) The value of the cash-in-lieu contribution will be based on 5% of the value of the land within the subdivision.
- 3) If the City and developer disagree on the value of the land for the cash-in-lieu contribution, the developer, at its own cost, may provide an independent appraisal of the land value. The City will require such appraisal to be prepared by an appraiser with an AACI designation.

#### **B.2.11.1.4 Perpetual Maintenance Fees**

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- 1) The City does not support Entrance Features as part of a Plan of Subdivision due to the ongoing maintenance and costs required once assumed by the City. Entrance Features may be acceptable where they are part of a condominium development and are designed to be perpetually maintained as a common element by the condominium corporation.

#### **B.2.11.1.5 Pre-Servicing and Model Home Agreement Fees**

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- 1) The City is entitled to establish fees for the processing of applications for the approval of subdivision plans, provided those fees are designed to meet only the anticipated cost to the City in the processing of such application.
- 2) The City will apply the following fees in respect of a pre-servicing and model home agreements and construction of the approved works:
  - a) Fee respecting Pre-Servicing Agreement Preparation: The City will apply a fee for preparation of the pre-servicing agreement and review of

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- engineering design drawing. This preparation fee will be applied by the City at the time of application for preparation of the pre-servicing agreement.
- b) Fee respecting Pre-Servicing Agreement Administration: Once the pre-servicing agreement has been executed, the City will be required to undertake a number of processes set out in the agreement. This administration fee will be applied by the City at the time of execution of the pre-servicing agreement.
  - c) Fee respecting Inspection of Construction: The City will apply a fee of 3% of the Works Cost Estimate to be applied against the City's expenses in reviewing reports from the consulting engineer, inspecting the works, and general administration of related processes, during the construction undertaken pursuant to the pre-servicing agreement. This inspection fee will be applied by the City at the time of execution of the pre-servicing agreement.
  - d) Fee respecting Model Home Agreement Preparation: The City will apply a fee for preparation of the model home agreement. The preparation fee will be applied by the City at the time of application for preparation of the model home agreement.
- 3) Fees are defined in the City's fees by-law, which is updated from time to time. Information can be obtained by contacting the Approvals Section, or visiting the City's website at [www.belleville.ca](http://www.belleville.ca).

### **B.2.11.2 Securities**

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#### **B.2.11.2.1 Security Requirements**

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- 1) The City will require the developer to post securities with the City as a stipulation of the subdivision agreement.
- 2) The purpose of the security is to ensure the City will have at its disposal the financial resources necessary to complete the obligations of the developer under the subdivision agreement should the developer, for whatever reason, default on their obligations.
  - a) The City currently accepts two (2) forms of security pursuant to a subdivision agreement: cash, and letter of credit (refer to Section B.2.11.2.1.3 of this Manual for information on letters of credit).
  - b) Further to a resolution of Council, staff is proceeding to implement changes to the subdivision agreement template in order to accept a third form of security called Surety Bonds (Pay-on-demand bonds). Refer to Section B.2.11.2.1.4 of this Manual for information on Surety Bonds.

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### B.2.11.2.1.1 Amount of Security Required

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- 1) The required security will be determined based on the following requirements:
  - a) Public Infrastructure – 100% of the Works Cost Estimate.
  - b) Preliminary Grading and Drainage (or in the case of pre-servicing, this is pursuant to a pre-grading agreement for a standard pre-servicing agreement):
    - I) \$10,000 for plans of up to 20 lots;
    - II) \$15,000 for plans of 20 lots to 40 lots;
    - III) \$20,000 for plans of 40 lots to 70 lots;
    - IV) \$25,000 for plans of 70 lots to 100 lots; and,
    - V) \$30,000 for plans of 100 lots or more.
  - c) Final Grading of Lots - \$1,000 per lot.

### B.2.11.2.1.2 Security Reductions

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- 1) Security reductions for Public Infrastructure and for Preliminary Grading and Drainage will be processed at four (4) milestones:
  - a) At the time of issuance of the Preliminary Certificate of Completion of Underground Services;
  - b) At the time of issuance of the Certificate of Completion of Works;
  - c) At the time of issuance of the Certificate of Assumption; and,
  - d) At one other occasion at the choice of the developer.
- 2) The developer will be responsible for applying to the Manager of Approvals for a reduction in security. Along with the application, the developer will submit a revised Works Cost Estimate to complete the remaining works, and a construction lien sub-search conducted by the developer's lawyer advising on the status of construction liens and confirming that the period for registering a lien in respect of the work for which the reduction in security would apply has passed, or a statutory declaration of accounts paid, both satisfactory to the City's solicitor.
- 3) The revised Works Cost Estimate in support of the security reduction will include, in addition to the estimated cost to complete the remaining works:
  - a) 5% contingency;
  - b) 5% engineering allowance; and,
  - c) 15% maintenance holdback.
- 4) Security reductions for Final Grading of Lots will be processed in accordance with the following procedures:

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- a) At the time of issuance of the Preliminary Certificate of Completion of Underground Services, \$1,000 for each lot for which a Certificate of Final Lot Grading has been issued.
- b) At the time of issuance of the Certificate of Completion of Works, \$1,000 for each lot for which a Certificate of Final Lot Grading has been issued.
- c) At the time of issuance of the Certificate of Assumption, \$1,000 for each lot for which a Certificate of Final Lot Grading has been issued.
- d) If after the Certificate of Assumption has been issued there are lots remaining for which a Certificate of Final Lot Grading has not been issued, the remaining Final Grading of Lots security will be returned after all of the remaining lots and blocks in the subdivision have been issued a Certificate of Final Lot Grading.

### B.2.11.2.1.3 Letters of Credit

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- 1) Where a letter of credit is employed, the letter must meet with the approval of the City Treasurer. To be accepted, the letter must meet four critical tests:
  - a) The letter must be issued by a chartered bank operating in Canada;
  - b) The letter must be irrevocable;
  - c) The letter must renew automatically without notice; and,
  - d) The letter must be honoured by the surety without question.
- 2) A letter of credit must have an initial term of no less than one (1) year.

### B.2.11.2.1.4 Surety Bonds (Pay-on-demand bonds)

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- 1) [This section reserved for implementation details when available.]

### B.2.11.2.2 Securities Pursuant to a Pre-Servicing Agreement

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- 1) The City will require the developer to post securities with the City as a stipulation of a pre-servicing agreement. The purpose of the security is to ensure the City will have at its disposal the financial resources necessary to complete the obligations of the developer under the pre-servicing agreement should the developer, for whatever reason, default on their obligations.
- 2) Acceptable forms of security are certified cheque or letter of credit.
- 3) Required securities will be provided to the City prior to the City executing the pre-servicing agreement, and will be retained throughout the period of construction.
- 4) The security will be returned to the developer upon the execution of a subdivision agreement by the City, provided security given the City pursuant to the subdivision

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agreement is sufficient to cover the remaining obligations of the developer under the pre-servicing agreement.

### B.2.11.3 Insurance

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#### Checklist of Requirements for Obtaining Policies of Insurance:

Place a checkmark (✓) in the applicable boxes below.

- 1) The developer:
  - obtains, at its own expense, its own policies of insurance (as specified in Section B.2.11.3.1 of this Manual) including the cost of deductibles, in a form and with limits and deductibles acceptable to the City;
  - maintains such policies of insurance in force, until a Certificate of Assumption is issued by the City;
  
- 2) The developer:
  - obtains policies of insurance (as specified in Section B.2.11.3.1 of this Manual) from the contractor engaged to construct the services for the subdivision, in a form and with limits and deductibles acceptable to the City, and
  - maintains such policies, until a Certificate of Completion of Works is issued by the City.

#### B.2.11.3.1 Required Insurance Coverage

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##### Checklist of Requirements for Policies of Insurance:

Place a checkmark (✓) in the applicable boxes below.

- 1) All policies of insurance described in Section B.2.11.3, above, include the following:
  - Commercial General Liability Insurance:
    - Provides coverage in an amount of not less than \$5,000,000 per occurrence, including but not limited to blanket contractual liability, products liability, completed operations liability, owners/contractors protective liability, non-owned automobile liability.
    - Does not include any exclusions or limitations to the following:
      - Shoring;
      - Storage;
      - Handling and use of explosives;
      - Underpinning;



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- Raising or demolition of any building or structure;
- Pile driving;
- Caisson work; and,
- Collapse of any structure or subsidence of any property or structure from any cause.
- The developer's policy:
  - insures the developer and includes all contractors, agents, sub-trades, and subcontractors employed or used by the developer while engaged in any activity associated with servicing the subdivision; and
  - names the City as an additional insured and contain cross-liability and severability of interest provisions.
- The contractor's policy:
  - insures the developer and includes all contractors, agents, sub-trades, and subcontractors employed or used by the contractor while engaged in any activity associated with servicing the subdivision; and,
  - names the City as an additional insured and contain cross-liability and severability of interest provisions.
- Automobile Liability Insurance, being a Standard Owners Form Automobile Insurance policy, including third party liability coverage in an amount of \$5,000,000 per occurrence, to cover all licensed vehicles owned and/or leased, as may be used in conjunction with the work of servicing the subdivision.
- Any other form of insurance coverage(s) in such amounts and deductible levels, or increased limits of the aforementioned coverage(s) as the City may require, taking into consideration the nature of the work to be done to service the subdivision, and industry standards.

## **B.2.12 Completion and Assumption of Services**

### **B.2.12.1 Acceptance of Services**

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- 1) The subdivision agreement provides for the approval of the works at various stages of construction through the issuance of certificates. These certificates will verify approval of the works so noted in the certificate.
- 2) The developer is responsible for applying to the Manager of Approvals for issuance of these certificates.

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- 3) Upon receipt of an application for a certificate, the Manager of Approvals will arrange for City staff to inspect the works completed to date to determine the suitability of issuing the requested certificate.
- 4) If, after the inspection, it is determined that all prerequisites have been met for issuance of the certificate, the Manager of Approvals will prepare the appropriate certificate and forward a copy to the developer. With respect to the Certificate of Assumption, the Manager of Approvals will first forward a report to City Council respecting the City's assumption of the services; if Council agrees, it will adopt an assumption by-law following which the Manager of Approvals will issue the Certificate of Assumption.
- 5) If, after the inspection, it is determined that all prerequisites have not been met for issuance of the certificate, the Manager of Approvals will forward a written summary of the deficiencies to the developer.
- 6) An explanation of the certificates issued is outlined in the subsequent subsections.

### **B.2.12.1.1 Preliminary Certificate of Completion of Underground Services**

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- 1) This certificate is issued by the City upon completion of:
  - a) Construction of all underground infrastructure, with roads built to base course asphalt; and,
  - b) Preliminary grading of all of the subdivision lands.

#### **Checklist of Requirements for Issuance of the Preliminary Certification of Completion of Underground Services:**

Place a checkmark (✓) in the applicable boxes below.

- 2) To be issued the Preliminary Certification of Completion of Underground Services, the following requirements are met:
  - Municipal water, storm sewer, and sanitary sewer infrastructure are fully installed as per the approved engineering design drawings, and all testing of the underground works are completed and accepted by the City.
  - All joint trench utilities are fully installed and backfilled unless waived by the Manager of Approvals.
  - The water system is disinfected, flushed and verified as acceptable by Environmental Services staff.
  - Flow ratings are completed on all hydrants.
  - All valves including curb stops are set to final grade and are fully operable.

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- All maintenance holes are benched, cleaned, and adjusted to finished grade, with the exception of maintenance holes located in the roadway which are at the current road grade.
- All maintenance hole steps and safety platforms are in place.
- If applicable, all pump facilities are fully operative.
- All catch basin frames and grates are installed at current road grade, except that all other storm inlets and outlets must be installed to grade with grates and headwalls in place, with any required pedestrian railing.
- All designated swales and receiving channels are rough graded and at grade.
- All erosion and sedimentation control measures are in place.
- All SWM ponds are in place and functional to the satisfaction of the City and QCA.
- Security fencing around SWM ponds is in place, where such fencing is required.
- Documentation confirming that all sewers are flushed, and the entire sanitary and storm systems, including roadside catch basins and oil-grit separators (OGS Units), are free and clear of dirt and debris, as confirmed with CCTV inspection.
- The roadways are constructed to the base course of asphalt, except where such requirement is waived by the Manager of Approvals.
- All traffic and street name signs are installed.
- Boulevards are rough graded to promote positive drainage.
- A Certificate of Preliminary Grading is issued by the municipal engineer, confirming that the preliminary grading of all lands in the subdivision is in conformity with the Grading and Drainage Plan.
- (If applicable) A report on well abandonment is received, which would confirm the decommissioning and sealing of well to be abandoned.
- A “Certificate of Compliance” is issued by the consulting engineer to the City for approval confirming that:
  - All works have been substantially completed in accordance with the City’s requirements and in accordance with the approved engineering design drawings; and,
  - All requirements for the issuance of a Preliminary Certificate of Completion of Underground Services have been provided or achieved.

**B.2.12.1.2 Certificate of Completion of Works**

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- 1) The Certificate of Completion of Works is issued by the City upon substantial completion of all the remaining works. Final lot grading of all lots and blocks in the Plan is not required to be complete before this certificate can be issued.
- 2) Issuance of this certificate marks the commencement of the Maintenance Period.

**Checklist of Requirements for Issuance of the Certificate of Completion of Works:**

Place a checkmark (✓) in the applicable boxes below.

- 3) To be issued the Certificate of Completion of Works, the following requirements are met:
  - The “Final Report on Condition of Existing Municipal Services” which will include CCTV inspection of the underground sewer works must be complete and accepted by the City.
  - All sewers must be flushed for a second time.
  - All curbs and gutters, islands, and final lift of asphalt on all roadways must be complete.
  - All required public sidewalks, multi-purpose trails and walkways must be installed.
  - The street lighting system must be in place and energized.
  - All required fencing must be installed.
  - Any required noise attenuation barriers must be installed.
  - Grading and seeding/sodding as required of any parkland provided are complete, and such works are established and in a state acceptable to the City, along with any other development requirements for parkland set out in the subdivision agreement.
  - All valve boxes must have received their final adjustment and all valve boxes must be confirmed as clean and deemed operative.
  - All landscaped areas including boulevards must be seeded / sodded as required.
  - All street tree planting must be complete.
  - All deficiencies identified by the consulting engineer and/or through the City’s final inspection must be rectified.
  - As-built drawings in DWG (geodetic) and shapefile (GIS) formats must be complete and provided to the Manager of Approvals.
  - A “Certificate of Compliance” will be issued by the consulting engineer to the City for approval confirming that:

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- All works have been substantially completed in accordance with the City's requirements and in accordance with the approved engineering design drawings; and,
- All requirements for the issuance of a Certificate of Completion of Works have been provided or achieved.

### **B.2.12.2 Interim Service Levels by City of Belleville**

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- 1) Until the Preliminary Certificate of Completion of Underground Services is issued, the developer is responsible for the provision of all services in the subdivision development, to the standards and the requirements of the City.
- 2) However, during this period, the City may use the services installed, but this use will not be deemed an assumption of responsibility for the service nor a commitment by the City to offer maintenance services that is otherwise the responsibility of the developer.
- 3) Examples of services remaining the responsibility of the developer during this period include winter road maintenance, street/dust sweeping, and garbage collection. If the developer fails to provide such services to the standards required by the City, the City may provide such services and recover the costs for doing so from the developer.
- 4) Upon issuance of a Preliminary Certificate of Completion of Underground Services, Transportation and Operations Services and Environmental Services will provide the following levels of service:
  - a) Operation of the water distribution and sewer collection systems, subject to the maintenance provisions set out in the agreement;
  - b) Attend to winter maintenance of the road system; and,
  - c) Commence solid waste collection services.
- 5) Upon issuance of a Certificate of Completion of Works, the City will undertake general maintenance of the works for which the certificate was issued, save and except for remedial work that is deemed beyond normal wear and tear. More specifically, Transportation and Operations Services and Environmental Services will:
  - a) Undertake normal maintenance of the underground distribution and collection systems including the related aboveground infrastructure including the street light system;
  - b) Provide normal summer and winter maintenance of the road system (excluding street sweeping and cleaning which will remain the responsibility of the developer) and provide solid waste collection; and,

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- c) Attend to grass cutting and similar maintenance of parks, SWM facilities, and trees on public lands.

### B.2.12.3 Maintenance Period

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- 1) Once the Certificate of Completion of Works is issued, the Maintenance Period commences. The Maintenance Period runs for a minimum of one (1) year and expires on the day that a Certificate of Assumption is issued by the City.
- 2) During the Maintenance Period, the developer is responsible for the repair of any deficiencies, failures, or damage to services constructed pursuant to the subdivision agreement that are beyond what is considered normal wear and tear.
- 3) Where the subdivision development is being undertaken in phases, the maintenance period will be different for each phase, based upon the timing of issuance of the respective Certificates of Completion of Works applicable to each phase.
- 4) Note that the Tree Maintenance Period is not the same as the Maintenance Period as defined under this Section. Although the two maintenance periods are likely to run concurrently for a period of time, the Tree Maintenance Period will, in most instances, commence well before the Maintenance Period begins.

#### B.2.12.3.1 Certificate of Assumption

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- 1) The Certificate of Assumption is issued by the City upon expiration of the Maintenance Period, subject to conditions.

#### Checklist of Requirements for Issuance of the Certificate of Assumption:

Place a checkmark (✓) in the applicable boxes below.

- 2) To be issued the Certificate of Assumption, the following requirements are met:
  - All deficiencies identified in respect of any of the works are rectified to the satisfaction of the City.
  - Any temporary sales pavilions erected on the subdivision lands are removed.
  - A surveyor's certificate is provided to the City confirming the presence of all main survey bars establishing the location of roads, parks and public utility easements within the plan.
  - A "Certificate of Street Tree Compliance" is issued by the landscape architect/arborist to the City confirming all required street trees are in place, healthy and growing vigorously, and that all tree stakes have been removed.

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- A “Certificate of Final Inspection” is issued by the consulting engineer to the City for approval confirming that all works have been inspected and that no deficiencies have been found.
- Building permits are issued for minimum 50% of the lots within the subdivision (or applicable phase thereof).
- All deficiencies identified in respect to parkland assumption post final inspection are rectified to the satisfaction of the City.

## B.3 Final Subdivision Plan Approval Process

### B.3.1 Final Approval

- 1) After a Draft Plan of Subdivision approval has been granted by the City, the developer must satisfy each of the conditions of the draft approval. The City will require developers to submit a Subdivision Agreement Application Form with all required documents and pertinent information that will allow the City to efficiently draft the agreement (or pre-servicing agreement). The application form can be requested from the Administrative Assistant for the Approvals Section. The Subdivision/Pre-servicing Agreement will incorporate the conditions of draft approval, as well as other City requirements for construction. See Sections B.2.9 and B.2.10 of this Manual for more information on the Pre-servicing and Subdivision Agreement processes, respectively.
- 2) Once all City departments and external agencies (e.g., QCA, Canada Post, and/or utility companies, as applicable) have provided written correspondence that their respective conditions of approval have been satisfied, the City will grant final approval of the Plan of Subdivision. Staff will prepare a report to Council for a by-law to execute a Subdivision Agreement and grant final approval.
- 3) Once the engineering drawings are approved, the Mayor and Clerk will execute the Subdivision Agreement. Once the Agreement has been executed, and the necessary fees and securities have been posted, City staff will proceed to have the Agreement registered on title.

### B.3.2 Design Turnover

- 1) Once a Subdivision/Pre-Servicing Agreement has been executed, the Approvals staff will then turn-over the design to the Engineering Section, at which point:
  - a) a City Inspector will be assigned to the job, and
  - b) a pre-construction meeting will be scheduled with all applicable parties.

### B.3.3 Post-Approval during Construction

- 1) The City's Engineering Section reserves the right throughout the construction of the Subdivision to request additional plans, drawings, or information, including, but not limited to:
  - a) Detailed Dewatering Plans to the satisfaction of the City Engineer;
  - b) Traffic Control Plan modifications, as per OTM Book 7 and City standards;



## **41 | B.3 Final Subdivision Plan Approval Process**

- c) Excess Soil Management Plan, as per O. Reg. 406/19: On-Site and Excess Soil Management;
- d) Dust Control Plan; and,
- e) Noise Abatement Plan.

# Part C Site Plan Administration

### C.1 Purpose of Site Plan Control

- 1) Site plan control ensures all significant development within the City of Belleville is undertaken in accordance with sound engineering, planning, and accessibility principles defined by the City to promote functional, attractive, and barrier-free development while minimizing adverse impacts on surrounding land uses.
- 2) Site plan control protects both public and private interests by ensuring that development is designed and undertaken using contemporary solutions to issues that need to be addressed. These solutions will ensure that development will function well, and that off-site impacts will be appropriately addressed.
- 3) Site plan control is also used to ensure that all the key elements of a development project are maintained over the long term.
- 4) Site plan control ensures that the site is not altered by tree cutting, site grading and placement of fill until proper approvals from the City as per the Site Alteration and Fill By-law and Tree Protection By-law.

#### C.1.1 Application of Site Plan Control

- 1) Prior to obtaining a building permit for institutional, commercial, or industrial development, or major residential developments, the site plan is circulated to the City's Accessibility Coordinator for review, and must be approved by the Engineering and Development Services Department Approvals Section.
- 2) Certain classes of development are exempt from site plan approval; these exemptions are:
  - a) single-unit dwellings;
  - b) two-unit dwellings;
  - c) buildings and structures accessory to a single-unit dwelling or two-unit dwelling;
  - d) in some cases, residential buildings consisting of (10) or less units;
  - e) buildings and structures erected in support of a farming operation, which will mean an agricultural land use located within a rural or an agricultural zone as set out in the City's zoning by-law<sup>3</sup>; and,
  - f) all aspects of a licensed aggregate operation that fall under the jurisdiction of the MNDMNR.

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<sup>3</sup> On-farm diversified uses may still be subject to site plan control.

### **3 | C.1 Purpose of Site Plan Control**

- 3) Depending on the scale or nature of the development, conditions to the approval of a site plan may be applied. A typical condition would be execution of a site plan agreement. In such cases, the site plan will not be approved until such time as the conditions have been met.

## C.2 Draft Site Plan Application Process

### C.2.1.1 Pre-Consultation Meeting (Prior to Formal Application)

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- 1) Prior to submitting an application for site plan approval, developers and their consultants are strongly encouraged to contact the Manager of Approvals in the City's Engineering and Development Services Department to arrange a pre-consultation meeting. The application form can be found at: <https://www.belleville.ca/en/do-business/planning-applications-and-fees.aspx>
- 2) The purpose of a pre-consultation meeting is to identify and conduct a general overview of the key issues surrounding the proposed development to ensure the application, when submitted, will be as complete as possible.
- 3) The Manager of Approvals will coordinate participation by all key stakeholders in a pre-consultation meeting.

### C.2.1.2 Application Preparation and Submission

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- 1) The required plans, drawings, studies, and reports for a site plan application will be submitted as dictated by the City through pre-consultation.

#### Checklist for Preparing and Submitting a Site Plan Application for Approval:

Place a checkmark (✓) in the applicable boxes below.

- 2) The site plan approval application is prepared and submitted based on the following requirements:
  - The applicant completes the form to apply for a site plan approval.
  - The applicant remits the required fee.
  - The applicant submits the application for site plan approval to the Engineering and Development Services Department Approvals Section.
  - The application is accompanied by:
    - Four (4) hard copies of each of the required site plan application drawings;
    - Two (2) hard copies of any required report;
    - PDF copy of all drawings and reports; and,
    - One (1) hard copy of a Plan of Survey of the subject lands.
  - If applicable, where the site plan is to be circulated more extensively, the applicant submits a number of additional copies as specified by the Manager of Approvals.

## C.3 Site Plan Approval Process

### C.3.1 Application Review and Circulation

- 1) Upon acceptance of the application for site plan approval as complete, Approvals Section staff will review the site plan application with respect to conformity with:
  - a) the requirements of this Manual;
  - b) the zoning by-law; and,
  - c) any applicable urban design standards.
- 2) Once the application is determined to be in conformity with all applicable planning and urban design standards, the site plan will be circulated for review and comment.
- 3) Typically, the site plan application will be circulated to the:
  - a) Engineering and Development Services Department Engineering Section;
  - b) Chief Building Official;
  - c) Accessibility Coordinator; and,
- 4) Where the subject site is located within or adjacent to areas regulated by QCA, the site plan application will be circulated to QCA for review. (Note that an additional fee will be required.)
- 5) Other agencies to whom the site plan application may be circulated for comment include:
  - a) MTO, where the site is near or adjacent to a Provincial Highway;
  - b) Recreation, Culture and Community Services Department, where the site has extensive areas of landscaping, or is adjacent to a trail system, open space, or a community facility, or is adjacent to a water course;
  - c) Police Department, where the site may benefit from an overview from a security perspective (typically large scale commercial or institutional developments);
  - d) MECP, where the site is suspected or known to be contaminated;
  - e) CN or CP Rail, where the site is adjacent to or in close proximity to a rail line; and,
  - f) Any other agency who may have an interest in the matter.
- 6) Once all comments from circulated agencies have been received, the Manager of Approvals will notify the applicant of the comments on the preliminary site plan. QCA will forward any comments directly to the applicant.

## 6 | C.3 Site Plan Approval Process

- 7) If revisions are required, the applicant will modify the site plan application as necessary and resubmit the revised plans in PDF form copy to the Approvals Section. Hardcopies on resubmissions are only required upon request.
- 8) The plans must show the date of the revisions.
- 9) Prior to modifying and resubmitting the plans, the applicant may wish to discuss required revisions with the appropriate City staff; the applicant will arrange such meetings directly.

### C.3.2 Conditional Approval and Final Approval

- 1) Site Plan Approval authority is delegated to Staff, as set out in By-law 2004-93.
- 2) Once the Manager of Approvals is satisfied that the site plan is ready for approval, the Manager of Approvals may issue:
  - a) a final approval where there are no conditions, or
  - b) a conditional approval where there are conditions.
- 3) A conditional approval will mean that final approval will not be issued until any conditions specified in the conditional approval have been satisfactorily addressed.
- 4) A final approval or a conditional approval will be valid for two (2) years from the date of issuance, but the approval may provide for an earlier lapsing of approval.
- 5) Typically, an approval will stipulate that upon receipt of requisite number of plans, and if applicable upon satisfaction of any conditions, the site plan will be stamped approved by the Engineering and Development Services Department Approvals Section.
- 6) Approval of the site plan and its components represents the City's acceptance of the plans for development purposes, but will not be construed as the City's approval of the engineering components of the project. Ownership of the engineering design and responsibility for the adequacy of the engineering design will rest with the owner of the development and the consulting engineers who undertook the design.

#### C.3.2.1 Conditions to Site Plan Approval

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- 1) The Manager of Approvals will attach conditions to the approval of the majority of site plans; the most common conditions include:
  - a) execution of a site plan agreement;
  - b) provision of road widening; and,
  - c) payment of various charges and securities.

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- 2) Where a conditional approval has been granted, final approval will not be granted until such time as all of the conditions have been addressed to the satisfaction of the Manager of Approvals.
- 3) Typically, the Manager of Approvals will require the owner to execute a site plan agreement as a condition to the granting of final approval, where a proposed development:
  - a) would result in significant change to a site;
  - b) includes significant elements which must be maintained over the longer term;
  - c) requires works be undertaken on the City's road allowance; or,
  - d) includes elements that will ensure the suitability of the development.
- 4) Where execution of a site plan agreement is required, the applicant must submit an Application for Site Plan Agreement along with the required fee to the Approvals Section.
- 5) Applicants are encouraged to submit such an application as soon as it is confirmed by the Manager of Approvals that a site plan agreement will be required. This will enable Approvals Section staff to prepare a draft site plan agreement to be presented to the applicant at the same time as the conditional approval is issued.
- 6) City staff will prepare the site plan agreement generally in accordance with the policies set out in Section C.3.3 of this Manual.
- 7) Upon execution of the site plan agreement by the owner and the City, the City typically will register the agreement against title to the subject lands. Where a site plan undertaking is determined as sufficient, registration will not be required.
- 8) Pursuant to a site plan agreement, it is typical that a security deposit will be required to ensure the requisite works are completed. Refer to Section C.3.4.2.1 of this Manual for policies on acceptable forms of security. This security deposit will be required prior to the Manager of Approvals stamping the site plans as approved.

### **Checklist of Additional Requirements to Accompany the Site Plan Agreement Application:**

Place a checkmark (✓) in the applicable boxes below.

- 9) Along with the Application for Site Plan Agreement, the applicant submits the following:
  - The required application fee;
  - Seven (7) full scale sets of prints of the plans (revised if necessary to reflect all required modifications);



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- ❑ Four (4) sets of reduced plans in ledger size (11 inches by 17 inches), which are to be included in the site plan agreement;
- ❑ Legal documentation as to the current owner and legal description of lands; and,
- ❑ PDF copy of all drawings included in the approved drawing set.

### C.3.2.1.1 Land Transfers to the City of Belleville

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#### C.3.2.1.1.1 General

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- 1) A condition may be attached to the approval of a site plan that requires certain lands be conveyed to the City at nominal cost. Such conveyances typically will be for:
  - a) road widening and sight triangles;
  - b) easements for drainage;
  - c) easements for services;
  - d) walkways, recreational and multi-use trails;
  - e) parkland;
  - f) one-foot reserves; and,
  - g) All required land transfers will be illustrated on the site plan drawings.
- 2) When conveyance of land is required, typically such requirement will be defined in the site plan agreement, and the transfer will be undertaken during the development of the site but prior to issuance of a certificate of compliance.
- 3) The owner is responsible for preparing and submitting all necessary surveys and deeds for transferring ownership of any land dedication to the City.
- 4) The owner is responsible for obtaining any partial discharges relating to the transfer.
- 5) All legal and surveying costs related to the transfer of land to the City will be borne by the Owner.
- 6) The Manager of Approvals will invoice the owner for any legal expenses incurred by the City in processing land transfers.

#### C.3.2.1.1.2 Road Widening

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- 1) The City's Official Plan establishes policies respecting the provision of road widening on existing roads as a condition of the approval of a site plan. This policy provides for road widening as follows:
  - a) Arterial roads – maximum 5 metres from each side, to a maximum road allowance width of 30 metres.

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- b) Collector roads – maximum 4 metres from each side, to a maximum road allowance width of 26 metres.
  - c) Local roads – maximum 3 metres from each side, to a maximum road allowance width of 20 metres.
  - d) Turning lanes – where justified pursuant to a traffic study, the maximum dedication for road widening purposes above any other road dedication required is 3.5 metres, only for the length of the necessary turning lane(s).
  - e) Bus layover – where required along any arterial, collector or local road, the maximum dedication for road widening purposes above any other road dedication required is 3.5 metres to a maximum length of 25 metres.
  - f) Sight triangle – Where required abutting an arterial, collector or local road, the maximum dedication abutting:
    - I) the arterial or collector road is 9 metres, and
    - II) abutting the local road is 5 metres.
- 2) Between two arterial roads or an arterial road and a collector road, the maximum dedication abutting both roads may be 18 metres.
  - 3) Where road widening in accordance with the foregoing is required as a condition to the approval of a site plan, the road widening will be provided at no cost to the City. The owner will bear all survey and legal costs in connection with the required transfer.
  - 4) Where the City requires road widening in excess of that provided for in the Official Plan, the City may acquire the said lands as a condition to the approval of the site plan but will reimburse the owner for the lands in excess of that provided for in the Official Plan at appraised value (by an appraiser with an AACI designation).

### C.3.2.1.1.3 Land for Other Purposes

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- 1) The City may identify lands required for other purposes as conditions to approval of a site plan. Examples may include:
  - a) City sewers or water mains located on a property without an easement;
  - b) drainage systems (pipes, swales) that require City control;
  - c) access control requirements that necessitate a one foot reserve being created;
  - d) public walkways, multi-use trails, and recreational trails through the site to address pedestrian needs; and,
  - e) parkland (refer to Section C.3.2.1.3 of this Manual for details on policy).
- 2) Where the lands to be conveyed under this section service only the subject services that address the needs of other lands such that the lands required exceed the size needed to meet the needs of just the subject lands, the cost to the City will

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be prorated on the basis of the extent to which all lands, including the subject land, benefit. Costs will be based on the analysis of a qualified appraiser (an AACI designation).

### C.3.2.1.2 Provision of Sidewalks

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#### C.3.2.1.2.1 Public Sidewalk Required

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- 1) To enhance community connectivity, the City may require installation of a public sidewalk, multi-use trail, and/or recreational trail as a condition to the approval of a site plan for commercial, institutional or multiple residential developments, across the eligible frontage of the subject property.
- 2) Such provisions will not apply to industrial development unless otherwise required by the City's Director of Engineering and Development Services.
- 3) For purposes of this policy, eligible frontage will mean street frontage of the subject lands, as may be defined by the Engineering and Development Services Department, where:
  - a) there is no existing public sidewalk adjacent to the subject property; and,
  - b) the abutting street is designated either an arterial or a collector street in the City's Official Plan; or,
  - c) the street is designated a local street but is either:
    - I) a transit route;
    - II) a school route or other pedestrian corridor that services the pedestrian needs within and/or beyond the immediate neighbourhood; or,
    - III) a route that requires a sidewalk to reduce a hazard to pedestrians.

#### C.3.2.1.2.2 Alternative Arrangements Cash-in-lieu or Deferred Payment

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- 1) Where the Engineering and Development Services Department determines that it would not be appropriate to build a public sidewalk at the current time, but where a public sidewalk is likely to be constructed no later than ten (10) years from the current date, a cash-in-lieu payment may be required as an alternative to requiring the developer to build the sidewalk.
- 2) The payment will be calculated at 75% of the current tendered price for new public sidewalk construction as defined by the Transportation and Operations services.
- 3) Where the above circumstances apply, but where a public sidewalk is not likely to be constructed within the next ten (10) years, a clause may be inserted into the site plan agreement stipulating that at such time as the City requires a public

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sidewalk, the owner will agree to pay 100% of the cost of such sidewalk as applicable at that time.

- 4) Notwithstanding the foregoing, where a sidewalk is required to be provided on a local street as defined in the Official Plan, the developer will be responsible for only 50% of the applicable cost of such sidewalk.
- 5) Where the City has assumed responsibility for 50% of the cost of a sidewalk under this section, the City may obtain reimbursement for such costs from a development that might be undertaken on the other side of the local street.

### C.3.2.1.2.3 Exceptions

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- 1) Where the application for site plan approval provides for:
  - a) phased development, the eligible frontage will be limited to only those frontages adjacent to the applicable phase (considering the scale and scope of the phase);
  - b) redevelopment of an existing building where there would be no substantial increase in floor area or usability of the existing floor space (i.e., a use not having greater traffic generating characteristics than the previous use), there will be no eligible frontage; and,
  - c) development of lands at very low intensity.
- 2) Where the cost of constructing a public sidewalk relative to the cost of the development would be prohibitive, the developer may request the Director of Development Services to provide for partial exemption from the provisions of this policy. The Director may:
  - I) grant a partial exemption;
  - II) provide for alternative means of achieving the objectives of this policy; or,
  - III) reject the application and require the policy be applied without variation.
    - (i) This policy will not apply to minor development where the value of proposed construction is \$50,000 or less; the applicant may be required to provide verification of the estimated cost of building.
- 3) The developer will have the option of requesting the City build the public sidewalk, in which case the developer will make a cash payment at the time of execution of the site plan agreement at 100% of the estimated cost of building the sidewalk according to the current tendered cost for public sidewalks as defined by Transportation and Operations Services, plus an allowance for design, layout and contract administration.

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### C.3.2.1.3 Parkland Dedication

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- 4) Pursuant to Section 42 of the Planning Act, as amended, the City adopted By-law 12524 to establish standards for the conveyance of land or cash-in-lieu of land pursuant to the development or redevelopment of land (refer to Section B.2.11.1.3.2 of this Manual for details on cash-in-lieu for parkland dedication).
- 5) The By-law defines the following standards:
  - a) Commercial land – 2%;
  - b) Industrial land – nil; and,
  - c) All other land – 5%.
- 6) The provisions of this By-law do not apply to lands being subdivided pursuant to Section 50 of the Planning Act.
- 7) Typically, cash-in-lieu of land will be required for developments subject to this by-law, although the City does retain the right to require the conveyance of land.
- 8) Where cash-in-lieu is required, the Manager of Approvals will define the charge that will apply. This charge will be based either on:
  - a) the value of the land that may have been subject of an arm’s length transfer that may have occurred recently, or
  - b) the general land values that are known to be applicable in the City of Belleville.
- 9) The owner will have the right to provide to the Manager of Approvals a current appraisal of the lands completed by an AACI-certified appraiser, in which the case value set out therein will apply.
- 10) Payment of a cash-in-lieu charge will be a condition to the approval of a site plan, and normally would be paid at the time of execution of the site plan agreement.

Example:	Lot area – 1.25 hectares Proposed use – commercial land use Land value – \$150,000 per hectare Cash-in-lieu of parkland = lot area X land value X rate = 1.25 X \$150,000 X 2% = \$187,500 X 2% = \$3,750
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- 11) Where a property is subject of a redevelopment (where there was a previous development on the subject lands) and where no payment for parkland had previously been made, the charge will be pro-rated based on the relative size

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(GFA) difference between the previous and proposed use, based on the proposed land use.

Example: Lot area – 1.25 hectares

Proposed use – commercial land use

Previous development – 7,000 square metres GFA

Proposed development – 10,000 square metres GFA

Land value – \$150,000 per hectare

Cash-in-lieu of parkland

$$\begin{aligned} &= \text{lot area} \times [(\text{proposed development} - \text{previous development}) / \text{previous development}] \times \text{land value} \times \text{rate} \\ &= 1.25 \times [(10,000 - 7,000) / 7,000] \times \$150,000 \times 2\% \\ &= \$93,750 \times 2\% \\ &= \$1,607 \end{aligned}$$

- 12) No payment from the City to the owner will apply where the proposed use is smaller or less intense than the previous use.
- 13) Where the redevelopment consists of an addition to an existing building, the policy will only apply where the addition would increase the GFA by more than 5%.
- 14) Where the redevelopment applies to a property for which parkland dedication (either land dedication or cash-in-lieu payment) was applied in the past, no charge will apply.

#### C.3.2.1.4 Stormwater Management

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##### C.3.2.1.4.1 Management of Stormwater Quality and Quantity

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- 1) All developments will bear responsibility for managing quantity issues respecting stormwater runoff on site.
- 2) Please review recommendations 124 through 128 set by the Parkland and Recreation Master Plan.
- 3) For sites one (1) hectare or more in size, the City will require developments to address stormwater quality issues. Two options exist on the means to address stormwater quality issues:
  - a) Development of on-site SWM facilities such as a retention pond designed to address stormwater quality issues.
  - b) Subject to acceptance by the City as an option, a cash payment to the City in lieu of constructing stormwater quality facilities on-site, to be used by the City to develop stormwater quality management facilities for a large area, typically at the outlet of stormwater systems on the Bay of Quinte or adjacent to the receiving river or stream.

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- 4) For sites less than one (1) hectare in size, the City may require on-site facilities to address issues of stormwater contamination (generally containment) where the potential might exist. Examples would include automotive fuel sales establishments and sites where liquid chemicals are to be stored.

### C.3.2.1.4.2 Cash-in-lieu for Stormwater Quality

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- 1) Where cash-in-lieu of on-site stormwater quality management is to be applied, the required charge will be calculated as follows:

$\{\$10,000 + \$10,000 (\% \text{ impervious})\} \times \text{Total Area (hectares) of the subject lands}$

% impervious = % of redeveloped area that is impervious, including parking areas, driveways, rooftops, and sidewalks, employing the following factors:

- hard surfaced parking area Factor 1.0
- rooftops, concrete sidewalks Factor 1.0
- gravelled parking areas – Factor 0.6
- landscaped space (grass, natural areas) – Factor 0

Example: 1.5 hectare site:

- 25% landscaped area – 0.375 hectares
- 40% paved parking area – 0.6 hectares
- 20% building coverage – 0.3 hectares
- 10% gravelled area – 0.15 hectares
- 5% concrete sidewalks – 0.075 hectares

impervious cover:

$$= 0.375 \times 0 + 0.6 \times 1 + 0.3 \times 1 + 0.15 \times 0.6 + 0.075 \times 1 = 1.065$$

% impervious:

$$= 1.065 / 1.5$$

$$= 71\%$$

Cash-in-lieu payment:

$$= \{\$10,000 + (\$10,000 \times 71\%)\} \times 1.5$$

$$= \{\$10,000 + \$7,100\} \times 1.5$$

$$= \$25,650$$

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- 2) Solutions that involve both construction of on-site facilities and a cash-in-lieu payment may be explored, where suitable.
- 3) Where a site is proposed to be redeveloped that was previously used in such fashion that there would have been a negative impact on the quality of stormwater runoff, the Manager of Approvals may agree to reduce the cash-in-lieu payment up to 100% based on the degree of improvement in the quality of the runoff.
- 4) The determination of the amount of the reduction will be based on the following factors:
  - a) The impact of the previous use on the quality of stormwater runoff – former industrial sites where there were extensive areas of outside storage of materials that potentially could impact the quality of stormwater runoff versus the quality of runoff that will exist with the new use.
  - b) The size or area of the site from which potential adverse impact on stormwater runoff could have been impacted versus the area subject to development for the new use.
- 5) For example, a lot which was extensively used for outdoor storage of materials such as wood or metal without any quality treatment facilities on-site being redeveloped for a residential use with extensive areas of open space and no areas of outside storage would qualify for a significant reduction in the cash-in-lieu charge. The reduction would be negotiated with the Manager of Approvals.

### C.3.2.1.5 Joint Service Laterals

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- 1) City Council has adopted a policy respecting the use of joint service laterals. A copy of the policy can be obtained from Environmental Services.
- 2) Where applicable, the design of services for a site will be undertaken in accordance with this policy.

### C.3.2.1.6 Special Studies

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- 1) The City may require the applicant to undertake and submit specific studies or reports for review and approval prior to completing the review of the site plan application or the granting of site plan approval.
- 2) Such studies or reports will only be requested or required where there is a significant issue identified or problem anticipated that will need to be fully assessed in order to ascertain the suitability of granting site plan approval.



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### C.3.2.1.6.1 Types of Studies that May Be Required

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- 1) The types of studies that the City may require to be undertaken in support of an application for site plan approval include the following:
  - a) Traffic Impact Study (refer to Section E.13 of this Manual) to determine the need for turning lanes, to define the best location and design for access driveways, to determine the appropriate traffic control measures;
  - b) Acoustics (Noise and/or Vibration) Study (refer to Section E.9 of this Manual) to determine the best design for the site layout or mitigative measures to reduce impact on adjacent sensitive land uses;
  - c) Phase I or II ESA (refer to Sections E.3 and E.4, respectively, of this Manual) to determine the presence and nature of soil contamination, along with phase III remediation studies, if required, to define the preferred method of site cleanup (a RSC may be required in accordance with O. Reg. 153/04);
  - d) EIS (refer to Section E.5 of this Manual) with regard to natural features to provide guidance on appropriate site design, addressing such issues as flood lines or environmentally sensitive areas;
  - e) Preliminary SWM Study (refer to Section E.10 of this Manual);
  - f) Site Servicing Study (refer to Section E.8 of this Manual) to ascertain site servicing capacity;
  - g) Geotechnical Reports or Hydrogeological Studies (refer to Sections E.5 and E.7, respectively, of this Manual);
  - h) Shadow impact analysis (refer to Section E.18 of this Manual); and,
  - i) Any other analysis that may be required to address a unique or special circumstance.

## C.3.3 Site Plan Agreement

### C.3.3.1 Standard Site Plan Agreement

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- 1) As set out in Section C.3.2.1 of this Manual, it is common that the City will require execution of a site plan agreement for all but minor developments.
- 2) Typically, a site plan agreement will be required when the proposed development results in:
  - a) an alteration to a site configuration or layout;
  - b) a change in the nature of off-site impacts of a property;

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- c) a change in the nature of on-site servicing; or,
  - d) off-site works (i.e., a new driveway installation, new services) being required.
- 3) For most developments, consent of any mortgagee or lessees will not be required for site plan agreements, but the City reserves the right to require the site plan agreement to be executed by the registered owner and all registered mortgagees and lessees. This will only be required for very large developments where the value of off-site or on-site work is substantial.
- 4) The City will register the fully executed site plan agreement against title to the subject lands.

### C.3.3.2 Site Plan Undertaking

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- 1) For small developments where the site works to be undertaken are less significant, as an alternative to execution of the standard site plan agreement, the Manager of Approvals may elect to use the site plan undertaking.
- 2) Typically, the site plan undertaking will only be used when:
- a) the development to be undertaken is relatively minor, such as an addition to an existing building which is less than 5% of the total GFA;
  - b) the required site improvements generally will not exceed an estimated value of \$10,000; and,
  - c) no off-site works are required.

### C.3.3.3 Notes in the Site Plan Agreement

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#### Checklist of Requirements for Notes to be Referenced in the Site Plan Agreement:

Place a checkmark (✓) in the applicable boxes below.

- 3) The site plan agreement references the notes outlined below, modified to suit the circumstance:
- City of Belleville Notes:
    - Notwithstanding the following General Notes, underground and aboveground work is done in accordance with current City plans, standards and specifications.
    - The owner covenants and agrees not to make a material change or cause a material change to be made to a plan, specification, document or other information, on the basis of which this drawing was approved by the City, without notifying, filing details with and obtaining the written authorization of the City.

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- All sanitary sewer, storm sewer and watermain on private property is done in accordance with the OBC.
- No blasting is permitted on the City ROW.
- The existing sewer connection, which is to be used, is exposed at the property line by the contractor.
  - The City Public Works yard is called to rod the lateral to the main sewer and approve of its use before the connection is completed from the street line to the building.
- Existing sewer connections, which are not to be used, are capped off with a mechanical cap at the property line to prevent infiltration into the main sewer.
- The reinstatement of asphalt roadways, concrete sidewalks, and curbs on the City road allowance is done by the City of Belleville at the owner's expense.
- Existing driveways, which are not to be used, are removed. Any curb cuts, which are to be replaced, are constructed of full height curb and gutter to City standards.
- Existing subdrains along the curb, which are disturbed, are restored to their original condition.
- Any work done on QCA property is carried out to their satisfaction
  - Contact is made with QCA to arrange inspections.
  - A copy of the Conservation requirements and approval is provided to the City.
- The top of curbs abutting City sidewalks are kept level with the sidewalks for a distance of 0.3 metres from the sidewalk.
- The property is graded so that surface drainage is directed away from the buildings.
- All trees, shrubs, and other landscaping features, both existing and proposed, are kept a minimum of 1 metre clear of the centreline of swales.
- The location of trees are subject to the following separation distances:
  - street lights: 3 metres;
  - sidewalks: 1 metre;
  - property line: 1 metre;
  - curbs: 1.5 metres to back of curb;
  - driveways: 1 metre;
  - intersection: 9 metres (at the projection of the sight triangle);
  - electric transformers: 3 metres from the access hatch side;

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- hydrants: 1.5 metres; and,
- water/sewer lines: 2 metres.
- The owner and/or contractor is required to obtain a 'Road Cut Permit' from the City of Belleville, before commencing any work on the City road allowance.
- The new driveway is to be constructed so that it does not block the drainage in the ditch or along the edge of the road.
- Before a culvert is installed and/or extended in a driveway, the owner is to sign a City work order for the installation of the proposed culvert by the City and pay the full cost to the City.
  - If a cleanout is required: Before the culvert is extended and the cleanout is installed in the portion of the driveway on the road allowance, the owner is to sign a City work order for the installation by the City of the culvert and the catch basin cleanout and pay the full cost to the City.
- The depth of cover over the proposed sanitary building sewer should be checked. Wherever the cover is 1.5 metres or less, it is to be insulated with 100-millimetre thick by 1.2-metre wide insulation placed in two (2) layers with staggered joints, and to be Styrofoam Brand HI Type IV.
- The existing manhole is to be re-benched, as directed by the City's Director of Engineering and Public Works.
- Storm and sanitary sewer mains are to be field tested after construction in accordance with OPSS.MUNI 410, and the method of testing is to be approved by the City.
- Environmental Services Notes (for work on the municipal ROW)
  - Notwithstanding the following General Notes, all watermain and water service installations are to be completed in accordance with the current Environmental Services standards and specifications.
  - All watermain and hydrant installation work is to be completed in accordance with current Environmental Services standards and specifications.
  - The minimum cover for all watermains and water services is to be a minimum of 1.8 metres.
  - Where a watermain crosses over or under other utilities, a minimum vertical clearance of 0.3 metres is to be provided.
  - Where a watermain crosses under a sewer, a minimum vertical clearance of 0.5 metres is required.

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- ❑ The minimum horizontal separation between the water service and any other sewer lateral is to be 0.6 metres.
- ❑ Hydrants and curb stops are to be located no closer than 1.2 metres from driveways, poles, transformers, secondary pedestals, manholes, and any other aboveground appurtenance.
- ❑ Curb stops are to be located on the City road allowance 150 millimetres from the property line.
- ❑ The minimum size for a new water service is to be 20 millimetres in diameter for copper or polyethylene.
- ❑ Service pipe material is to be either Type K soft copper to AWWA C80089, or CSA B137 M1989 polyethylene pressure tubing PE 2406 DR 9.0 PC 160 AWWA C90188, complete with stainless steel inserts as recommended by manufacturer. Galvanized pipe and/or fittings are not to be installed on any part of a water service from the main stop up to and including the water meter assembly.
- ❑ All new water service installations are to be inspected and tested as per the current Environmental Services standards and specifications.
- ❑ No water service pipe is to have a capacity that is less than the peak demand flow.
- ❑ The following procedure is to be followed for any water system interruption:
  - ❑ When a portion of the watermain system must be isolated in order that work be performed, the staff of the City of Belleville are to carry out all deactivating procedures on the watermain. Notification to all effected customers is to be made forty-eight (48) hours in advance of the shutdown. The contractor is not to be invoiced for this work during normal working hours. Maximum allowable time for which service may be interrupted to customers is four (4) hours for any one occurrence. The contractor is to note that the City of Belleville does not guarantee a 100% shutdown on existing valves, and the contractor is to be prepared to have additional water pumps, fittings, etc., on site, as required to carry out the work. Having the least possible interruption to supply may require working outside of regular hours. The contractor will not be allowed extra payment or compensation for work carried out under irregular hours.
- ❑ When a tapping valve and sleeve connection is required, it is to be done in accordance with the requirements of Environmental Services.

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The tap is to be done by Environmental Services at the owner's expense.

- Any existing water services to the site that are not required are to be disconnected at the main, in accordance with the requirements of Environmental Services at the owner's expense.

### C.3.4 Fees and Securities for Site Plans

#### C.3.4.1 Fees

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##### C.3.4.1.1 Summary of Fees and Charges Payable Prior to Obtaining Site Plan Approval

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- 1) Where off-site works are to be undertaken on City lands, a fee calculated at 5% of the estimated cost of all off-site works will be levied at the time of execution of the site plan agreement to cover the City's expenses in reviewing and inspecting all city services and works completed off the site on City property.
- 2) The City may require payment of cash-in-lieu of the installation of a public sidewalk across the frontage of the subject lands, payable at the time of execution of a site plan agreement. Refer to Section C.3.2.1.2 of this Manual for information on when the charge would apply and the manner of calculation of the charge.
- 3) The City may require payment of cash-in-lieu of parkland, payable at the time of execution of a site plan agreement. Refer to Section C.3.2.1.3 of this Manual for information on the manner of calculation of the legal fee to cover the City's expense for registering the agreement on title of the subject property.
- 4) The City may require payment of cash-in-lieu of the development of on-site facilities for the management of stormwater quality, for developments on sites greater than 1 hectare in size, payable at the time of execution of a site plan agreement. Refer to Section C.3.2.1.4 of this Manual for information on the manner of calculation of the charge.

##### C.3.4.1.2 Summary of Fees and Charges Payable After Obtaining Site Plan Approval

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- 1) A building permit fee will be payable at the time of obtaining any necessary building permits. Refer to Section C.3.5 of this Manual for more information.
- 2) Development charges may be applicable to the proposed development, payable at the time of obtaining a building permit.

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- 3) The City may require payment of legal fees that may be borne by the City to effect the conditions of site plan approval (i.e., the costs of registration of land transactions), to be paid prior to issuance of a certificate of compliance under the site plan agreement. The Manager of Approvals will invoice the owner for legal charges.
- 4) The City may require payment of service charges that may apply to Environmental Services or Transportation and Operations Services to facilitate the needs of the proposed development, to be paid prior to issuance of a certificate of compliance under the site plan agreement.

### C.3.4.2 Securities

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#### C.3.4.2.1 Acceptable Forms of Security

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- 1) When the City requires that a security deposit be posted pursuant to the provisions of a site plan agreement, the City will accept the following forms of security:
  - a) Letter of Credit (refer to Section B.2.11.2.1.3 of this Manual for information on Letters of Credit);
  - b) Certified Cheque; and/or,
  - c) Surety Bonds (Pay-on-demand bonds) when implemented (refer to Section B.2.11.2.1.4 of this Manual for information on Surety Bonds).
- 2) The City will not accept the following forms of security:
  - a) letter of guarantee;
  - b) letter of credit from a bank not located in Canada;
  - c) letter of credit issued by a trust company, insurance company, or similar institution;
  - d) promissory note;
  - e) stocks, bonds or other similar negotiable securities; and,
  - f) land.
- 3) For a letter of credit to be acceptable to the City, the letter will:
  - a) be issued by a Canadian chartered bank acceptable to the City Treasurer;
  - b) be irrevocable;
  - c) contain an automatic renewal clause, necessitating minimum thirty (30) days' notice to the City should the surety elect to not renew or cancel the letter; and,
  - d) allow for partial or total draws without justification having to be given by the City.

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### C.3.4.2.2 Amount of Security Required

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- 1) The City will require the owner to provide security for on-site and off-site works required pursuant to the site plan agreement. The security deposit will be provided prior to the City executing the site plan agreement.
- 2) The amount of security required will be determined based on the following policies:
  - a) On-site security:
    - I) 50% of the value of all of the on-site works (landscaping, fencing, sidewalks and walkways, parking areas, driveways, retaining walls, site services including drainage works and SWM ponds) but excluding the building.
    - II) The applicant will submit a detailed cost estimate for all work to be constructed on the site as per the approved site plans, such estimate to be approved by the City.
    - III) On-site security will be held until the City is satisfied that all the work required on the site is complete and all the conditions of the site plan agreement have been complied with as determined by the City. Refer to Sections C.3.4.2.3 and C.3.4.2.4 of this Manual for policies regarding early reduction and return of the security deposit, respectively.
  - b) Off-site security:
    - I) 100% of the value of all of the off-site works (service lateral installation, roadway reinstatement, sidewalk installation, access installation, service extensions, turning lane construction, traffic control upgrades, drainage works, landscaping).
    - II) The City will estimate the cost to construct the works off of the site as per the approved site plans.
    - III) Off-site security will be held until the City is satisfied that all the work required off the site is complete and all the conditions of the site plan agreement have been complied with as determined by the City. Refer to Sections C.3.4.2.3 and C.3.4.2.4 of this Manual for policies regarding early reduction and return of the security deposit, respectively.
    - IV) A two-year maintenance period for the work off the site will be required, and 15% of the security deposit for off-site works will be retained by the City during this time.
- 3) There will be no requirement for security for any project that is undertaken by or on behalf of the City of Belleville.



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- 4) For any project to be undertaken on behalf of the County of Hastings or any government organization to which the Council of the City of Belleville has appointed members to the governing body, Council at its discretion may agree to waive the requirement for a security deposit, on proviso that the head of the organization provides to the City a written statement confirming that sufficient funds have been set aside to fully complete all works associated with the project, and certifying that the project will be completed in its entirety in accordance with the approved plans. A site plan agreement will be required for such projects in accordance with standard procedures.
- 5) Projects undertaken by the Provincial or Federal Government, or any agencies hereof, will be subject to the standard procedures set out in the manual respecting the provision of a security deposit.

### **C.3.4.2.3 Early Reduction of Security**

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- 1) If the security required for one of the following two categories exceeds \$15,000, the owner may make a request in writing to the Manager of Approvals for an early reduction in security for that category only. The two categories are as follows:
  - a) off-site works, and
  - b) on-site works.
- 2) Only one request for an early reduction in security will be processed for each category.
- 3) The amount of security retained by the City for the category subject of the request for early reduction will be the greater of:
  - a) 50% of the original value of the security deposit for that category, or
  - b) the estimated cost to complete all remaining works for that category.
- 4) The Manager of Approvals, prior to processing a request for early reduction, may require the developer to submit an itemized list setting out the nature and estimated cost of completing all remaining works in that category.
- 5) The Manager of Approvals is under no obligation to provide an early reduction of security for any category where adequate information on the nature of remaining works to be completed remains outstanding.

Example: On-site works – estimated \$250,000 cost  
Off-site works – estimated \$50,000 cost

Required Security Deposit:  
 $(\$250,000 \times 0.5) + (\$50,000 \times 1)$   
= \$175,000

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Early reduction of off-site security:

40% of off-site works remain to be completed

= \$50,000 X 40%

= \$20,000

However, maximum early reduction is 50%, therefore off-site security can only be reduced to \$25,000

Early reduction of on-site security:

40% of on-site works remain to be completed

= \$125,000 X 40%

= \$50,000

However, maximum early reduction is 50%, therefore on-site security can only be reduced to \$62,500

Upon satisfactory completion of off-site works, off-sites security can be returned with a 15% hold-back for the Maintenance Period

Required Maintenance Security

= \$50,000 X 15%

= \$7,500

### C.3.4.2.4 Return of Security

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- 1) Subject to the policies set out in this Section, security will only be returned upon:
  - a) a written request for return of the security being issued to the Manager of Approvals, and
  - b) receipt of as-built drawings acceptable to the City for the works subject of the request for reduction or return, and
  - c) acceptance by the City that the works have been completed in substantial conformity with the requirements of the approved site plan and the provisions of the site plan agreement.
- 2) With regard to security for on-site works, once all works have been completed and the provisions of Section C.3.4.2.4 1) have been met, the remaining security for on-site works will be returned.
- 3) With regard to security for off-site works, once all works have been completed and the provisions of Section C.3.4.2.4 1) have been met, the remaining security for off-site works will be returned with the exception of 15% of the off-site security which will be retained by the City for two years. This will be referred to as the maintenance security.
- 4) The City may use this maintenance security to rectify any deficiency or oversight in completion of the off-site works by the developer during a two-year maintenance period.

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- 5) At the expiry of the two-year maintenance period, the maintenance security will be returned upon written request of the owner to the Manager of Approvals.

### C.3.5 Ontario Building Code

#### C.3.5.1 Building Permits

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- 1) A building permit can be obtained from the Engineering and Development Services Department Building Section when:
  - a) the site plan agreement has been fully executed;
  - b) required securities have been posted;
  - c) any special requirements specified in the site plan agreement have been completed
  - d) required building plans have been approved; and,
  - e) necessary fees have been paid.
- 2) All in-ground services will be installed in accordance with the provisions of the OBC and the requirements of the Engineering and Development Services Department.
- 3) Building permits are required for sanitary sewers and storm sewers.
- 4) The Building Section of the Engineering and Development Services Department is responsible for:
  - a) the approval and the inspection of sanitary and storm sewers, and
  - b) all plumbing (water and sewers) inside the building.
- 5) The Building Section of the Engineering and Development Services Department issues permits for private waste disposal systems designed for 10,000 litres per day or less.
- 6) The Building Section of the Engineering and Development Services Department will require a complete set of drawings for the proposed buildings and structures, which may be prepared with imperial or metric measures.
- 7) Environmental Services is responsible for approving and inspecting water mains.

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### C.3.5.1.1 Release of Building Permits: Requirements for Building Permits and Occupancy

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#### Checklist of Requirements for Building Permit Eligibility:

Place a checkmark (✓) in the applicable boxes below.

- 1) The developer meets the following conditions prior to applying to the Chief Building Official for the building permit:
  - A Certificate of Preliminary Grading is issued by the municipal engineer.
  - A “Certified Lot Grading Plan” is provided to the Chief Building Official.
  - A lot grading deposit in the amount of \$1,500 is provided to the Chief Building Official.
  - Sanitary sewer, water main, and storm sewer servicing the lot are installed, connected, and functional.
  - Roadways leading to the lot are constructed to minimum granular “B”.

#### Checklist of Requirements for Occupancy Permit Eligibility:

Place a checkmark (✓) in the applicable boxes below.

- 2) Houses constructed in the subdivision are entitled to a final inspection or an occupancy permit only after:
  - All private utilities (gas, telephone, cable TV, hydro) are available to the lot and the house is connected;
  - The requirements of Canada Post for the provision of community mail boxes are met;
  - Street name signs and municipal addresses (911 numbers) are available for the lot;
  - The City, at its expense, installs a water meter in the house;
  - The dwelling is completed in accordance with the plans and specifications submitted with the building permit application to the satisfaction of the Chief Building Official; and,
  - A Certificate of Final Lot Grading is issued by the City.

### C.3.5.2 Ministry of the Environment and Labour Approvals

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- 1) A Certificate of Approval issued by the MECP may be required before installation of certain in-ground services is permitted.
- 2) Environmental Services staff should be contacted where municipal services are being installed to determine if they are subject to an ECA.

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- 3) MECP staff should be contacted for assistance in determining in which instances such approvals will be required.
- 4) MOL approval is required for many projects. Developers must contact the MOL directly for information on requirements.

### C.3.5.3 Conditional Permits

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- 1) The Chief Building Official, at their option and with the concurrence of the Manager of Approvals, may issue a conditional permit prior to final approval of the site plan or full execution of the site plan agreement.

#### Checklist of Requirements for Issuance of a Conditional Permit:

Place a checkmark (✓) in the applicable boxes below.

- 2) The Manager of Approvals may consent to issue a conditional permit, when the following are satisfied:
  - The project is in full conformity with applicable zoning;
  - It has been verified the site can be fully serviced;
  - The location of the building has been confirmed as being acceptable;
  - The geodetic elevation of the building has been confirmed as being acceptable;
  - The building location will not be affected by any required land transfers to the City;
  - Soil contamination issues do not exist; and,
  - Geotechnical or hydrogeological studies are not required, or they have been completed and no outstanding issues apply.

### C.3.5.4 Electrical Safety Authority and the Technical Standards and Safety Authority

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- 1) All electrical installations and modifications are subject to inspection by the Electrical Safety Authority. Developers are required to contact the Electrical Safety Authority directly to secure the necessary permits and arrange for the necessary inspections.
- 2) Certain installations such as gasoline tanks are subject to regulations established and administered by the TSSA. Developers are required to contact the TSSA directly to secure the necessary permits and approvals, and to arrange for necessary inspections.

## C.3.6 Commencement of Work

### C.3.6.1 General Policy

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- 1) Subject to the exceptions noted below, work will not commence until the site plan has been approved and any conditions relating to such approval have been met, as required, as applicable:
  - a) clearing;
  - b) grubbing;
  - c) stripping (removal of topsoil); and,
  - d) and the depositing of fill.
- 2) Site alteration, tree cutting, and placement of fill must receive proper approvals from the City as applicable.
- 3) Where it is required as a condition to the approval of a site plan that a site plan agreement be entered into and securities deposited, then until such time as the site plan agreement has been executed and returned, and any securities required there-under have been deposited with the Manager of Approvals:
  - a) no site plans will be stamped as approved;
  - b) no building permit will be issued; and,
  - c) no road cut permit will be issued or work permitted to be done on City lands.

### C.3.6.2 Exceptions

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- 1) The Manager of Approvals may authorize the Chief Building Official to issue a conditional permit in advance of the stamping of site plans as approved or the execution of a site plan agreement where there is reasonable justification, such as:
  - a) a delay in obtaining final site plan comments from an external agency where such comments will address issues that are not germane to the proposed building;
  - b) a delay in obtaining certain plans related to the development that are not germane to the proposed building (i.e., a landscape plan).
- 2) The Manager of Approvals may authorize the issuance of a conditional permit in advance of site plan approval if:
  - a) the location of the building subject of the conditional permit has been confirmed;
  - b) the geodetic elevation of the building subject of the conditional permit has been confirmed;

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- c) it has been confirmed that the building location will not be impacted by any required land transfers to the City;
  - d) it has been confirmed that soil contamination issues do not exist;
  - e) the means by which the site will be serviced has been confirmed; and
  - f) it has been determined that no geo-technical or hydro-geological issues are likely to exist;
- 3) The decision whether to issue a conditional permit rests with the Chief Building Official. The Chief Building Official will process applications for conditional permits in accordance with the policies set out in Section C.3.5.3 of this Manual.
- 4) Where a conditional permit has been issued by the Chief Building Official, Transportation and Operations Services may issue a road cut permit where:
- a) all security deposits required by the site plan agreement have been received;
  - b) the Manager of Approvals confirms in writing that they are satisfied that it would be appropriate to issue a road cut permit;
  - c) the development engineer is satisfied that the engineering plans for services and works to be undertaken on the road allowance are acceptable; and,
  - d) the contractor selected to do the work has met all prerequisites for acceptance by the Director of Engineering and Development Services to carry out work on the public road allowance (including the provision of insurance, a WSIB certificate, etc.).
- 5) Note that the Engineering and Development Services Department may require a site servicing plan be prepared separate from all other site plans to facilitate the approval process in advance of securing a signed site plan agreement.

## C.4 Completion of Development

- 1) The developer will complete the development project in accordance with:
  - a) the provisions of the approved site plan;
  - b) the provisions of the site plan agreement (if applicable);
  - c) the requirements pursuant to issuance of the building permit;
  - d) stipulations and procedures established by the City of Belleville; and,
  - e) applicable by-laws of the City of Belleville.
- 2) As development proceeds, reduction in the security deposit may be possible; refer to Section C.3.4.2 of this Manual for policies on security reduction and return.
- 3) Where a site plan agreement has been executed, upon completion of all requisite works, the developer will submit to the Manager of Approvals:
  - a) as-built drawings prepared by a consulting professional engineer or OLS and a certificate that the site has been developed in accordance with the approved grading and drainage plan, and
  - b) a request for issuance of a certificate of compliance and return of the security deposit.
- 4) Upon receipt of such request, provided the as-built drawings and certificate have been received, the Manager of Approvals will arrange for inspection of the site to verify conformity with the provisions of the site plan agreement.
- 5) Provided all requisite works have been completed and the grading of the site is certified as being completed substantially in accordance with the provisions of the site plan agreement, the Manager of Approvals will issue a certificate of compliance and arrange for return or reduction (as the case may be) of the security deposit.
- 6) Where the site plan agreement is registered, the owner is encouraged to register the certificate of compliance against title to the subject lands.



# Part D Plan and Drawing Requirements

## 2 | D.1 Master List of Required Plans and Drawings

# D.1 Master List of Required Plans and Drawings

The table below indicates the plans or drawings that may be needed to complete a development application, however those that would be required will be confirmed at the pre-consultation meeting.

<b>Plan or Drawing</b>	<b>Requirements</b>
Proposed Plan of Subdivision	Section D.2
Site Plan	Section D.3
Engineering Drawing Requirements	Section D.4
Plan of Survey	Section D.5
Existing Conditions and Removal Plan	Section D.6
General Service Plan	Section D.7
Grading and Drainage Plan	Section D.8
Composite Utility Plan	Section D.9
Lighting Plan	Section D.10
Stormwater Management Plan	Section D.11
Landscape Plan	Section D.12
Landscaping Plan	Section D.13
Natural Heritage and Historic Features Restoration Plan	Section D.14
Erosion and Sediment Control Plan	Section D.15
Phasing and Staging Plan	Section D.16
Plan and Profile Drawings	Section D.17
Detail Plan	Section D.18
Storm Drainage/Sanitary Drainage Area Plans	Section D.19
Park Development Plan	Section D.20
Parkland Dedication Plan	Section D.21
Traffic Marking and Sign Plan	Section D.22
Tree Inventory and Preservation Plan	Section D.23
Individual Lot Grading Plan	Section D.24
Certified Lot Grading Plan	Section D.25

**3 | D.1 Master List of Required Plans and Drawings**

<b>Plan or Drawing</b>	<b>Requirements</b>
As-Built Drawing	Section D.26
Floor Plan	Section D.27
Elevation Drawing	Section D.28
Cross-Section Drawing	Section D.29
Perspective Drawing	Section D.30

## D.2 Proposed Plan of Subdivision

### Checklist of Requirements for the Proposed Plan of Subdivision:

Place a checkmark (✓) in the applicable boxes below.

- 1) The Proposed Plan of Subdivision submitted at the time of application includes the following:
  - Scale of 1:1,000 horizontal, or a scale acceptable to the City, drawn to scale;
  - The boundaries of the land proposed to be subdivided, certified by an OLS;
  - The locations, widths, and names (may be preliminary) of the proposed highways within the proposed subdivision and of existing highways on which the proposed subdivision abuts;
  - On a small key plan, on a scale of not less than 1:10,000, include:
    - all of the land adjacent to the proposed subdivision that is owned by the applicant or in which the applicant has an interest;
    - every subdivision adjacent to the proposed subdivision; and,
    - the relationship of the boundaries of the land to be subdivided to the boundaries of the lot or other original grant of which the land forms the whole or part;
  - The purpose for which the proposed lots are to be used;
  - The existing uses of all adjoining lands;
  - The approximate dimensions and layout of the proposed lots, including a table setting out estimated sizes for all lots;
  - Natural and artificial features such as buildings or other structures or installations, railways, highways, watercourses, drainage ditches, wetlands and wooded areas within or adjacent to the land proposed to be subdivided;
  - The availability and nature of domestic water supplies;
  - The nature and porosity of the soil;
  - Existing contours or elevations on the lands and on adjoining lands as required to determine the grade of the highways and the drainage of the land proposed to be subdivided;
  - The municipal services available or to be available to the land proposed to be subdivided; and,
  - The nature and extent of any restrictions affecting the land proposed to be subdivided, including restrictive covenants or easements.

## D.2.1 General Drawing Requirements for Subdivision Plan Applications

### Checklist of Requirements for All Drawings for Subdivision Plan Applications:

Place a checkmark (✓) in the applicable boxes below.

- 1) All drawings include the following:
  - Dimensions in metric units (unless otherwise required by the City);
  - A legend;
  - A reference to a geodetic control monument that is acceptable to the City;
  - Existing information shown in the background or with a light line weight;
  - Proposed information shown in bold or with a heavy line weight;
  - A North arrow;
  - A horizontal and/or vertical scale;
  - A title block that details:
    - names of the developer and consultants;
    - drawing name and number; and,
    - date of drawing and revision dates; and,
  - A stamp and signature of a professional engineer (or other professional as appropriate in context with the information illustrated).

### Checklist of Requirements for Drawings Submitted Digitally:

Place a checkmark (✓) in the applicable boxes below.

- 2) The digital drawings:
  - are produced in PDF format;
  - are provided on a USB flash drive labeled as to its contents; and,
  - have the following Geodetic Control standards:
    - Map Projection: UTM, and,
    - Horizontal Datum: NAD83 Zone 17 North.

### Checklist of Requirements for Survey Control Maps:

Place a checkmark (✓) in the applicable boxes below.

- 3) Survey Control Maps contain the following information for each control point:
  - UTM Northing and UTM Easting;
  - Marker type and ID;
  - Elevation; and,
  - Description, where appropriate.

## D.3 Site Plan

### D.3.1 General Drawing Requirements for Site Plan Applications

#### Checklist of General Requirements for Site Plan Application Drawings:

Place a checkmark (✓) in the applicable boxes below.

- 1) Site Plan application drawings meet the following requirements:
  - The Site Plan drawings are prepared in accordance with:
    - the Engineering Standards & Guidelines of Section F.2, and
    - the Landscape Plan Guidelines of Section D.12.
  - The required information is illustrated on the site plan drawing(s).
    - The information provided on the drawing(s) is legible and complete.
    - If appropriate, the required information is provided on one or more plans. Plans or drawings that are difficult to interpret due to too much information or poor setup will be rejected and not processed.
    - If appropriate, plans are combined into one drawing (for example, site grading and drainage may be combined with site servicing).
  - The Site Plan drawings are:
    - drawn at the same scale (the preferred scales are 1:200 or 1:250), and
    - drawn to scale.
  - The Site Plan drawings are presented on drawing paper of a maximum size of 610 millimetres by 915 millimetres (24 inches by 36 inches), with white background.
  - All Site Plan drawings contain the following elements:
    - Metric dimensions;
    - Drawings are based on a Plan of Survey prepared by an OLS;
      - Drawings reflect information contained in the Plan of Survey;
    - A complete legal description;
    - A title block showing the name of the firm or the person that prepared the plans;
    - A revision block showing the date and nature of all revisions to the original;
    - A North arrow oriented toward the top of the plan;
    - An OBC Matrix for any buildings or additions proposed on the site;
    - Geodetic data and location and geodetic elevation of bench marks; and,

## 7 | D.3 Site Plan

- Notes as required by Section C.3.3.3 of this Manual.
- 2) The City may require the submission of the following drawings in support of an application for site plan approval:
  - a) Floor plans – typically for multi-unit residential or institutional developments containing dwelling units (refer to Section D.27 of this Manual)
  - b) Elevation drawings – typically for developments exceeding 5,000 square metres of GFA (refer to Section D.27 of this Manual)
  - c) Cross-section drawings – typically for multi-residential apartment or other multi storey developments (refer to Section D.29 of this Manual)
  - d) Perspective renderings – typically for commercial developments exceeding 10,000 square metres of GFA (refer to Section D.30 of this Manual)

### D.3.2 Existing Conditions

#### Checklist of Requirements to Illustrate the Existing Conditions for the Site Plan:

Place a checkmark (✓) in the applicable boxes below.

- 1) The Site Plan clearly illustrates, labels and/or locates the following for the existing conditions:
  - Property dimensions, including:
    - boundary dimensions, property lines, total area of property, proposed division of the property;
    - location of all existing buildings and structures and description of each; and,
    - location and width of existing driveways at the edge of road and the street (property) line;
  - Streets and ROW, including:
    - both sides of all streets abutting the site, street widenings, curbs, sidewalks, one foot reserves, easements, ROW, and
    - locations of driveways on the opposite side of the street relative to the location of driveways for the proposed development;
  - All existing utilities on and adjacent to the site, including water and sewer mains (material, size, etc.) on streets abutting the subject property; and,
  - Natural features, including:
    - existing trees, water courses (natural or man-made), steep slopes, rock out-croppings, wetlands;
    - items of significant cultural heritage;

## 8 | D.3 Site Plan

- geodetic spot elevations at intervals no greater than 15 metres over the entire site;
- geodetic spot elevations along the property boundary and on the adjacent property a minimum of 3 metres from the property boundary at maximum 15-metre intervals of sufficient detail to permit determination of drainage patterns; and,
- spot elevations at the centre line of adjacent roads and at the back of the sidewalk at 15-metre intervals.

### D.3.3 Proposed Development

#### Checklist of Requirements to Illustrate the Proposed Development for the Site Plan:

Place a checkmark (✓) in the applicable boxes below.

- 1) The Site Plan clearly illustrates, labels and/or locates the following for the proposed development:
  - Building and structures, including:
    - overall building dimensions;
    - dimensions from building to all sides of the property, and distances between buildings or structures where more than one building or structure is proposed;
    - type of building, number of floors and building height;
    - all accessory buildings and structures including sign columns, retaining walls, garbage disposal facilities<sup>4</sup>; and,
    - building and structures of water meter;
  - Parking facilities, including:
    - type of parking (surface, underground, garage, deck, carport);
    - total number of spaces, dimensions, parking angle;
    - all loading bays and ramps including dimensions; and
    - surface material (type and thickness) and curbing type;
  - Driveways, roads, land, and easements, including:
    - dimensions;
    - surface and base material (type and thickness) and type of curbing;

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<sup>4</sup> For large residential projects and commercial, industrial and institutional developments, garbage enclosures will be shown on the site plan.



## 9 | D.3 Site Plan

- ramps, traffic circulation, traffic signs, curbing;
- locations where the City requires easements or land dedications for proposed road widening, daylight triangles or other purposes;
- width of the proposed driveways, including any curb returns, the separation between the driveways and the distances to the side lot lines, at the edge of the road;
- width of the proposed driveways at the street line and at the road edge; and,
- separation between driveways along the road edge and the distance to the projected lateral property line at the road edge;
- All existing and proposed sidewalks, walkways, including dimensions of same.
- Services, including:
  - sanitary sewers, storm sewers, oil-grit separators (OGS Units), and catch basins (on and off site), culverts, water lines, ditches and swales, electrical system (including transformer pad);
  - size, grades, type and class for all pipes;
  - top and invert elevations of all manholes, catch basins and oil-grit separators (OGS Units);
  - top and invert elevations of the inspection manhole;
  - invert elevations for driveway culverts as required;
  - SWM facilities as required (for quantity and quality where cash-in-lieu is not to be applied – refer to Section C.3.2.1.4 of this Manual for details); and,
  - telecommunication systems;
- Grades, including:
  - first floor building elevation;
  - proposed finished ground grades (use spot elevations) sufficient to show all surface drainage, including elevations and cross-sections of ditches and swales;
  - all surface drainage including roofs, parking lots and landscaped areas; and,
  - plans to show all surface drainage patterns (use of arrows permissible);
- Landscaping, including:
  - all elements identified in Section D.12.2, excluding those in Section D.12.2.2;
  - existing trees and shrubs to be retained by type, size and location;
  - all existing trees and shrubs to be removed;

## 10 | D.3 Site Plan

- type, size, spacing or number, and location of all new plantings;
- where substantial landscaping is proposed, a plant materials list noting the size, quantity, standard botanical name and common name of all plantings;
- location and details for all planters indicating size and type of construction;
- location and dimensions of all sidewalks and walkways and specify construction;
- location and dimensions of all fences, trellises, garden walls, benches, and similar structures, and include details specifying type of materials;
- location and dimensions of all patios, sun decks, and similar facilities, and specify in detail as to construction;
- location and dimensions of all earth berms or similar features; and,
- location and details of all exterior lighting facilities;
- Architectural drawings, including:
  - building elevations showing all sides of the proposed building(s), including all elements of the roof structure such as chimneys, ventilation housings, etc.;
  - floor plans with dimensions showing all areas to which pedestrians have access;
  - all signs with dimensions and location; and,
  - details of exterior building materials;
- Signage intended for the property;
- For commercial buildings, include:
  - GFA of all floors, and area of ground floor measured from outside walls, in chart form;
  - where more than one type of commercial use is to be accommodated, GFA for each type of use;
  - total area of the lot, excluding the road allowance, any road widening, or any portion of the lot not included with the commercial zone within which the lot is located; and,
  - total amount of site covered by building(s) and total amount of site reserved for landscaping purposes;
- For a multi-unit residential development, include:
  - total number of dwelling units by type (i.e., one- or two- bedroom) for each floor;
  - total floor area for each dwelling unit by type;
  - lot area per suite; and,

## 11 | D.3 Site Plan

- total amount of site reserved for landscaping purposes, in chart form; and,
- Legal survey of entire property showing any proposed land dedication or easements to the City.

### D.3.4 Design Specifications

#### Checklist of Requirements for Design Specifications for the Site Plan:

Place a checkmark (✓) in the applicable boxes below.

- 1) The site plan includes all design sheets and reports respecting:
  - SWM, and
  - Sanitary sewage for very large projects, or where there is a known or suspected issue with capacity of the sanitary sewer system.

## D.4 Engineering Drawing Requirements

### Checklist of Standard Engineering Drawing Requirements:

Place a checkmark (✓) in the applicable boxes below.

- 1) Each engineering drawing shows the following:
  - Name of subdivision;
  - Name of developer;
  - Name of company and/or person preparing the drawing;
  - Lot numbering and blocks will match the approved draft Plan of Subdivision;
  - Title block depicting the date, date of recent revisions, and scale in metric units;
  - “Approved” street names; and,
  - Stamp and signature of a professional engineer.
  
- 2) All engineering drawings are:
  - Prepared digitally;
  - Printed on standard sized sheets that are 600 millimetres by 800 millimetres (24 inches by 36 inches); and,
  - Complete, legible, and concise as to materials, methods, and details of construction.

### D.4.1 Engineering Submissions

#### D.4.1.1 Engineering Design Package, First Submission

#### Checklist of Plan and Drawing Requirements for the Engineering Design Package (First Submission):

Place a checkmark (✓) in the applicable boxes below.

- 1) The engineering design package (first submission) includes the following items:
  - Cover sheet;
  - Existing Conditions and Removal Plan (refer to Section D.6 of this Manual);
  - General Service Plan (refer to Section D.7 of this Manual);
  - Grading and Drainage Plan (refer to Section D.8 of this Manual);
  - Composite Utility Plan (refer to Section D.9 of this Manual);
  - Landscaping Plan (refer to Section D.13 of this Manual);
  - Erosion and Sediment Control Plan (refer to Section D.14 of this Manual);
  - Phasing and Staging Plan (refer to Section D.16 of this Manual);

## 13 | D.4 Engineering Drawing Requirements

- Plan and Profile Drawings (refer to Section D.17 of this Manual);
- Detail Plan and General Notes (refer to Section D.18 of this Manual);
- Storm Drainage / Sanitary Drainage Area Plans (refer to Section D.19 of this Manual);
- Park Development Plan (refer to Section D.20 of this Manual);
- Parkland Dedication Plan, if applicable (refer to Section D.21 of this Manual);
- Traffic Marking and Sign Plan (refer to Section D.22 of this Manual); and,
- Tree Inventory and Preservation Plan (refer to Section D.23 of this Manual).

### Checklist of Engineering Design Package Submission Requirements (First Submission):

Place a checkmark (✓) in the applicable boxes below.

- 2) The engineering design package (first submission) includes:
  - four (4) complete sets of engineering design drawings, where the paper size of the drawings ARCH D (i.e., 24 inches by 36 inches);
  - Four (4) complete copies of all requisite reports and studies, as determined during the pre-consultation meeting (including the Detailed SWM Design Report; refer to Section E.11 of this Manual);
  - One (1) electronic copy of the submission on a USB flash drive;
- 3) After the engineering design package (first submission) is prepared:
  - The consulting engineer submits the requisite number of plans from the set of engineering drawings to:
    - Elexicon Energy or Hydro One, depending on the service jurisdiction;
    - Cogeco Cable TV;
    - Bell Canada;
    - Enbridge Gas Inc.; and,
    - Canada Post; and,
  - A request is made for comments to be forwarded to the consulting engineer and Manager of Approvals.

## 14 | D.4 Engineering Drawing Requirements

### D.4.1.2 Engineering Design Package, Second and Subsequent Submissions

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- 1) The consulting engineer will prepare the second and any subsequent submissions, which will be a revision of the previous submission based on comments from the City.

#### Checklist of Second or Subsequent Submission Package Requirements:

Place a checkmark (✓) in the applicable boxes below.

- 2) The engineering design package (second and subsequent submission) includes:
  - A letter to the Manager of Approvals outlining any additional changes that have been made to the drawings in response to comments from the previous submission;
  - Four (4) complete sets of engineering design drawings, where the paper size of the drawings ARCH D (i.e., 24 inches by 36 inches);
  - Four (4) complete copies of all requisite reports and studies, as determined during the pre-consultation meeting (including the Detailed SWM Design Report); and,
  - One (1) electronic copy of the submission on a USB flash drive.
- 3) After the engineering design package (second and subsequent submission) is prepared:
  - The consulting engineer submits drawings and/or additional information as per the direction provided in the previous submission to:
    - Elexicon or Hydro One;
    - Cogeco Cable TV;
    - Bell Canada;
    - Enbridge Inc.; and,
    - Canada Post.
  - A request is made for comments to be forwarded to the consulting engineer and Manager of Approvals.
- 4) Note: A submission will not be required to any of the foregoing, where:
  - a) there were no adverse comments on the previous draft, and
  - b) no changes have been made to the plans that affect the utility company.

## **15 | D.4 Engineering Drawing Requirements**

- 5) Once the second or any subsequent submission has been fully reviewed, the Manager of Approvals will provide the consulting engineer with a letter outlining:
  - a) A summary of comments with direction to prepare a further submission;
  - b) Minor modifications that can be reflected in the final submission, thereby authorizing the consulting engineer to complete the final submission; or,
  - c) The City's approval, thereby authorizing the consulting engineer to complete the final submission.

### **D.4.1.3 Environmental Services or Ministry of the Environment, Conservation, and Parks Environmental Compliance Approval**

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- 1) Once the Approvals Section has reviewed the design for the sanitary sewers and SWM systems, which may be following first or any subsequent submission, but prior to the final submission, the consulting engineer is encouraged to prepare and submit all necessary applications for Environmental Compliance Approval to the City's Environmental Services Department or MECP directly. Please contact Environmental Services to determine the appropriate approval authority.
- 2) Upon completing the applications, the consulting engineer will deliver the applicable forms to the Manager of Approvals, who will obtain the appropriate signatures. The Approvals Section will return the signed applications to the consulting engineer when they are to be forwarded to the MECP.
- 3) The consulting engineer is responsible for submitting any required applications for ECA to the MECP and paying any requisite fees.
- 4) While awaiting receipt of the ECA, the consulting engineer is encouraged to complete the next (or, if applicable, the final) submission.
- 5) Construction of the services cannot commence until such time as the ECA are received.

### **D.4.1.4 Form 1**

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- 1) Please consult the City's Environmental Services Department for a copy of Form 1 and how to complete it.

## 16 | D.4 Engineering Drawing Requirements

### D.4.1.5 Engineering Design Package, Final Submission

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- 1) Once the City has approved the second, or if applicable, subsequent, submission, the consulting engineer will prepare and deliver to the Manager of Approvals the final submission.

#### Checklist of Final Submission Package Requirements:

Place a checkmark (✓) in the applicable boxes below.

- 2) The engineering design package (final submission) includes:
  - One (1) copy of each application for an ECA from the MECP;
  - one (1) copy of Form 1, to the satisfaction of the City;
  - Four (4) complete sets of engineering design drawings;
  - One (1) complete set of engineering design drawings in 11 inches by 17 inches format;
  - One (1) complete set of sanitary and storm sewer design sheets;
  - One (1) USB flash drive or email with web download link containing digital copies of all engineering drawings in DWG and PDF formats;
  - One (1) final set of all schedules, with all costing schedules updated if and as necessary; and,
  - one (1) copy of a Form 1 (Watermain Approval).
- 3) The consulting engineer will ensure that the developer proceeds with preparation of the reference plans (R-Plans) necessary to describe all easements that are to be conveyed, as set out in the schedules. As soon as such plans are prepared, copies should be provided to the Manager of Approvals for review and approval.
- 4) Should there be other conditions of draft approval for which the developer must submit information to the Manager of Approvals, the consulting engineer will provide or facilitate the provision of such information in a timely manner, thereby enabling the Manager to complete the drafting of the subdivision agreement.

### D.4.2 As-Built Drawing Submissions

#### Checklist of Requirements for As-Built Drawing Submissions:

Place a checkmark (✓) in the applicable boxes below.

- 1) Upon completion of the construction of the services:
  - The consulting engineer obtains the as-built field information and revises the original drawings accordingly.



## 17 | D.4 Engineering Drawing Requirements

- The as-built drawings accurately reflect, both graphically and numerically, the true conditions of the work described.
    - If items described in the drawings are constructed in variance to the designs illustrated in the approved proposed construction drawings, then the “As Recorded” submissions are revised to accurately reflect how the work in question was actually recorded and built.
  - The consulting engineer submits two (2) draft sets of as-built drawings to the Manager of Approval for review and approval.
- 2) Once the City approves the as-built drawings:
- The consulting engineer submits:
    - two (2) complete sets of approved as-built drawings to the Manager of Approvals, and
    - a digital copy submission of the drawings in PDF, DWG, and shapefile (GIS) formats.

## D.5 Plan of Survey

- 1) Requirements for plans of survey will be provided separately upon request.

## D.6 Existing Conditions and Removal Plan

### Checklist of Requirements for the Existing Conditions and Removal Plan:

Place a checkmark (✓) in the applicable boxes below.

- 1) The Existing Conditions and Removal Plan includes the following:
  - Illustrates the existing conditions on the lands (structures, trees of significance, defined tree protection zones and protective measures, drainage courses, natural heritage features and conditions, ponds, well heads, septic beds, etc.);
  - Identifies all features (buildings, foundations, fences, trees and woodlots, other structures) to be removed, and features to be retained; and,
  - Identifies any significant features on adjoining lands (buildings, vegetation, drainage courses, natural heritage features and conditions, etc.) which will require consideration in the design and construction of the development.

## D.7 General Service Plan

### Checklist of Requirements for the General Service Plan:

Place a checkmark (✓) in the applicable boxes below.

- 1) The General Service Plan includes the following:
  - Drawn at a scale of 1:1,000;
  - General overall scope of the project and the geographic relationship to surrounding lands;
  - Existing utility services and roads within and around the development
  - Proposed storm, sanitary collection systems, and water distribution systems (mains only), including:
    - Pipe diameters;
    - Valve sizes and locations;
    - Hydrants;
    - Maintenance holes (numbered in sequence);
    - Sanitary Structure Data Table; and,
    - Storm Structure Data Table.
  - Direction of flow in sewers;
  - Existing and proposed easements;
  - Location of test pits or boreholes from the soils report;
  - Legend of symbols (OPSS.MUNI 100)
  - Minimum of two (2) benchmarks with locations near or within the project boundaries;
    - Benchmarks are taken from the top nut of fire hydrants;
  - Reference index showing the coverage of all plan and profile drawings and their corresponding drawing numbers within the set;
  - Phase limits; and,
  - Buffer zones required for slope stability, environmental hazard areas (i.e. stream protection), and trees to be retained.

## D.8 Grading and Drainage Plan

### D.8.1 Grading and Drainage Plan Requirements for Subdivision Plans

#### Checklist of Requirements for the Grading and Drainage Plan (Subdivision Plans):

Place a checkmark (✓) in the applicable boxes below.

- 1) The Grading and Drainage Plan for subdivision plans includes the following:
  - Drawn at a maximum scale of 1:500;
  - The final grade control for all lots and blocks in the subdivision (including blocks to be used for park purposes, as identified in the Parkland Dedication Plan) sufficient to assess impact of post development surface drainage within and adjacent to the development;
  - A key plan and legend using standard symbols;
  - A list bearing the description, location, and elevation of a minimum of two (2) benchmarks (using geodetic datum) to be used in establishing vertical control;
  - Existing ground contours or elevations in and adjacent to the development (established by field survey);
  - The limits of cut and fill required in pre-grading;
  - Existing vegetation limits, specifically trees and other vegetation to be preserved, and what measures are to be used for preservation;
  - Existing ditches, swales, and watercourses in and adjacent to the development;
  - Property lines, building locations, and driveway locations;
  - Proposed grades at each property corner and at the building platform plus any other grades required conveying the intent of the plan;
  - The proposed direction of surface runoff using arrows, including flow paths for major and minor storm events;
  - Road centerline elevations calculated at the projected lot line extension or at regular chainage intervals (20-metre minimum), whichever is less;
  - Control point road grades (beginning of vertical curve, end of vertical curve, sag, crest, etc.);

## 22 | D.8 Grading and Drainage Plan

- Location and inlet elevation of all existing and proposed storm drainage inlets;
  - All structures are numbered (roadside inlets may be shown in table form);
- Miscellaneous lot grading types and drainage patterns;
- Proposed swales and ditches including typical cross sections and gradients (in %);
- Slope limits resulting from cut or fill operations;
- Typical grading details and specifications;
- Existing and proposed easements;
- Culverts including invert, diameter, and length;
- Details of all structures required for slope stability where maximum slopes cannot be achieved;
- The location of the discharge point of sump pump outlets;
- The location of all proposed discharge points for rainwater leaders;
- Location and pertinent details of all sedimentation and erosion control measures; and,
- Block(s) of land to be dedicated for park purposes, which include details on:
  - Rough grading and erosion control;
  - Rough grading and erosion control for proposed multi-purpose trail corridors;
  - Proposed vegetation protection measures where required;
  - Final grades;
  - Details of drainage works;
  - natural heritage features, pre and post construction; and,
  - Park seeding and sodding details, including preparation, watering, and required maintenance.

### D.8.2 Grading and Drainage Plan Requirements for Site Plans

#### Checklist of Requirements for the Grading and Drainage Plan (Site Plans):

Place a checkmark (✓) in the applicable boxes below.

- 1) The Grading and Drainage Plan for site plans includes the following:
  - Provides for all surface drainage including:
    - roofs;
    - parking lots, driveways, loading areas and outside storage areas;

## 23 | D.8 Grading and Drainage Plan

- landscaped areas;
- natural heritage features; and,
- drainage that enters the land from other lands;
- Designed by a professional engineer (the only exceptions are for minor systems or systems that are not complex in nature); and,
- All elevations refer to a City benchmark and are in geodetic metric datum.

## D.9 Composite Utility Plan

### Checklist of Requirements for the Composite Utility Plan:

Place a checkmark (✓) in the applicable boxes below.

- 1) The Composite Utility Plan includes the following:
  - Drawn to a maximum scale of 1:1,000;
  - Legend using standard symbols;
  - Street lighting photometric design plan, including:
    - streetlight specifications and connection details for all proposed streetlights, including wiring location, duct requirements, electrical source and fuse pedestal locations;
    - luminaire mechanical and electrical details;
    - pole construction and installation details;
    - overall layout and dimensional locations of all poles and luminaries along road allowances (locations will be reviewed to avoid conflicts with street trees, driveways, services and other street furniture); and,
    - light level calculations to confirm that the roadway and intersection lighting levels meet the City's standards;
  - Location of transformers;
  - Electrical distribution systems;
  - Typical utility trench details, duct locations;
  - Location of all existing utilities adjacent to the subdivision;
  - The location of utility structures and street furniture required for hydro, telephone, cable TV, gas, and Canada Post, in and adjacent to the subdivision;
  - Existing and proposed utilities (hydro, telephone, cable TV, gas, and streetlight circuitry) including those in common trench (in schematic form); and,
  - Specific duct and trench cross-section details for road crossings.



## D.10 Lighting Plan

- 1) The Developer is responsible for the design of all municipal street lighting within the subdivision. The electrical design must be undertaken by a qualified Electrical Engineer.
- 2) The City has selected Phillips as the standard for LED streetlights. A Phillips CityTouch Control Node should be specified for all streetlights within the subdivision.

### Checklist of Requirements for the Lighting Plan:

Place a checkmark (✓) in the applicable boxes below.

- 3) The Lighting Plan includes the following:
  - Drawn to a maximum scale of 1:1,000;
  - Legend using standard symbols;
  - Street lighting photometric design plan, including:
    - streetlight specifications and connection details for all proposed streetlights, including wiring location, duct requirements, electrical source and fuse pedestal locations;
    - luminaire mechanical and electrical details;
    - pole construction and installation details;
    - overall layout and dimensional locations of all poles and luminaries along road allowances (locations will be reviewed to avoid conflicts with street trees, driveways, services and other street furniture); and,
    - light level calculations to confirm that the roadway and intersection lighting levels meet the City's standards;
  - Location of transformers; and,
  - Electrical distribution systems.

## D.11 Stormwater Management Plan

- 1) It is the policy of the City to encourage and promote programs that:
  - a) Control and, to the extent practical, eliminate water, soil, noise, and air pollution to safeguard the natural and human environment.
  - b) Protect and improve surface water quality, wherever possible.
  - c) Protect groundwater quality and quantity
  - d) Provide SWM facilities that are efficient, and minimize life cycle costs.
  - e) Maintain the natural hydrologic cycle and function of the watersheds through a range of mechanisms through implementation of LID SWM practices and principles.
  - f) Prevent increased risk of flooding and stream erosion.
  - g) Use the treatment train approach to reduce runoff volume and to treat stormwater runoff on-site through the use of source, conveyance and end-of-pipe controls.
- 2) The following represents a general overview of the guiding principles and parameters for the design of SWM and drainage systems in the City of Belleville:
  - a) All newly developing or re-developing areas must assess their potential impacts on local and regional flooding and mitigate accordingly.  
All stormwater system designs for water quality treatment shall be in accordance with the most current MECP SWM Manual and shall use the treatment train approach.
  - b) Enhanced water quality treatment shall be provided as defined by the MECP SWM Manual.
  - c) Design shall consider the entire uncontrolled drainage area and external flows.
  - d) Minor Systems shall be sized to capture and convey the 5-year storm.
  - e) Major Systems shall be sized to capture and convey the Regulatory Storm to a safe outlet without flooding adjacent properties and should provide a minimum of 300 millimetres of freeboard from the maximum water surface elevation of the major system flow path to the minimum opening of structures.
  - f) Hydraulic Grade Line in the storm sewer for the 100-year storm is a minimum of 300 millimetres below the basement elevation i.e., the underside of basement slab elevation.
  - g) Drainage from Public Lands shall be contained within the Public ownership, and shall not discharge into private drainage systems.

## 27 | D.11 Stormwater Management Plan

### Checklist of Requirements for the Stormwater Management Plan:

Place a checkmark (✓) in the applicable boxes below.

- 3) Prior to the development of the SWM Plan:
  - the site designer consults with the development engineer to confirm which parameters must be employed.
  
- 4) The SWM Plan clearly labels and illustrates the following:
  - Stormwater inlets and outlets, emergency spillways, safety benches;
  - Access roadways for cleanout and maintenance; and,
  - Active pool and permanent pool elevations.

## D.12 Landscape Plan

### D.12.1 General

- 1) The City of Belleville seeks excellence in the design and implementation of landscape works that maintain and enhance the quality of life. These will be based on high- quality urban design principles and standards that ensure new developments are safe, attractive and environmentally sensitive. Landscape works unify the variety of elements included in a new development with its environment. Landscape works integrate the built environment with the natural environment, enhance the visual character of neighbourhood streetscapes and contribute to the long-term success of new developments. The submission of a landscape plan is required in conjunction with all applications for site plans and subdivision plans in the City of Belleville.
- 2) The following are guidelines for landscape works within new and existing developments. These guidelines should be applied subject to such adjustments as may be deemed reasonable and appropriate due to the proximity of site servicing requirements, setback requirements and in accordance with the associated Subdivision Agreement and Site Plan Agreement, Letter of Undertaking, Council resolution, or other such direction.
- 3) The City of Belleville seeks excellence in the design and implementation of subdivision and site plan landscaping. Proposals which exceed the minimum submission requirements are encouraged.

#### D.12.1.1 Purpose of Landscape Plan Guidelines

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- 1) The intent of the guidelines is to:
  - a) assist developers in the preparation of landscape plans as one of the requirements for Subdivision and/or Site Plan submissions to the Engineering and Development Services Department;
  - b) outline requirements for the provision of landscape plan submissions in development proposals for site plans and subdivisions in the City of Belleville;
  - c) establish objectives and performance standards for landscape works;
  - d) ensure that landscape plans are more uniform and the approval process is more efficient;
  - e) enhance communication between developers, consultants and the City of Belleville;

## 29 | D.12 Landscape Plan

- f) implement excellence in landscape plans for subdivision and site plan development;
- g) encourage landscape designs that support and complement the overall design intention and aesthetic qualities of a proposed development;
- h) encourage landscape designs that support and enhance the existing and planned context of adjacent cultural and natural landscape features;
- i) foster a sense of civic identity and pride;
- j) enhance proposed developments in terms of aesthetics, pedestrian safety and accessibility, and screening of operational elements of the development (stacking lanes, driveways, parking, utilities, services, garbage enclosures);
- k) enhance and protect existing natural heritage features and landscapes of historic significance, and provide new ones where possible; and,
- l) promote energy conservation and efficiency (provision of sun and wind protection, etc.).

### D.12.1.2 Requirements for Landscape Plans

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- 1) The developer is required to engage the services of an accredited professional landscape architectural consultant who is a member in good standing of The Ontario Association of Landscape Architects to prepare the landscape plan for submission to the Planning and Development Department and facilitate the landscape plan approval process. The use of an alternate professional for site plan applications must obtain prior approval by the City of Belleville.
- 2) The planning, design, and documentation of landscape work will be such that all by-laws, legislation, applicable codes, regulations and standards, including those set out within these guidelines, are met during the planning, implementation and maintenance phases and upon completion of the landscape works.
- 3) The developer will be responsible for ensuring that its consultants, agents and contractors for the work comply with all by-laws, legislation, applicable codes, regulations and standards including those set out within these guidelines.
- 4) All submissions will include a cover letter outlining the submission content and advising of specific changes to the plan(s), if applicable.
- 5) All landscape plans should be submitted to the City of Belleville Engineering and Development Services Department for circulation, review, and approval.
- 6) The landscape architect is required to undertake a minimum of one (1) site visit prior to initiating the design of the landscape plan, in order that they become familiar with the existing conditions of the site and the opportunities and constraints the site may present.

## 30 | D.12 Landscape Plan

- 7) The potential for retaining existing site elements should be thoroughly examined during the initial site planning. Preliminary planning and subsequent design development will include and be based on the findings of a review of the existing site elements.
- 8) Developers and their landscape architect are encouraged to review their development proposal and the associated landscape plans with the Approvals Section of the Engineering and Development Services Department to discuss any site-specific issues prior to submitting their landscape plans for review.
- 9) All landscape plans for site plan and subdivision development proposals require approval by the City of Belleville Engineering and Development Services Department prior to implementation.
- 10) The approved landscape plan will form part of the Subdivision Agreement or Site Plan Agreement or Letter of Undertaking and should be read in conjunction with the associated Agreement.
- 11) In addition to the requirements of the Subdivision Agreement or Site Plan Agreement and the associated appendices, applicants, developers, contractors and/or builders are required to comply with these guidelines throughout the design and the development approval process.

### D.12.2 Checklists for Landscape Plan Submissions

#### D.12.2.1 General Requirements/Required Elements

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##### Checklist of General Drawing Requirements for Landscape Plans (Subdivision Plans):

Place a checkmark (✓) in the applicable boxes below.

- 1) The Landscape Plan submission meets the following general requirements:
  - The Landscape Plan reflects the requirements of the associated Subdivision Agreement or Site Plan Agreement;
  - The Landscape Plan accurately reflects the most recent or approved Subdivision Plan or Site Plan and Site Servicing and/or Engineering Plan;
  - The Landscape Plan meets the general requirements contained in:
    - Section D.2 for subdivision submissions, or
    - Section D.3 for site plan submissions;
  - The Landscape Plan provides the architectural consultant's name (including address and telephone number) and professional seal with initials/signature; and,

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- The Landscape Plan includes a Legend, if abbreviations or symbols are used.

### D.12.2.2 Drawing Submission Format for Subdivision Applications

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#### Checklist of Drawing Submission Format Requirements for Landscape Plans (Subdivision Plans):

Place a checkmark (✓) in the applicable boxes below.

- 1) The Landscape Plan submission for a subdivision plan application includes the following:
  - Seven (7) full-sized (ARCH D, i.e., 24 inches by 36 inches) paper copies; and,
  - One (1) digital copy in PDF format.

### D.12.2.3 Drawing Submission Format for Site Plan Applications

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#### Checklist of Drawing Submission Requirements for Landscape Plans (Site Plans):

Place a checkmark (✓) in the applicable boxes below.

- 1) The Landscape Plan submission for a site plan application includes the following:
  - Four (4) full-sized (ARCH D, i.e., 24 inches by 36 inches) paper copies for the initial submission, unless otherwise indicated; and,
  - A Landscape Cost Estimate (to be used for Letter of Credit purposes).
    - The Landscape Cost Estimate meets the formatting and information requirements outlined in Appendix D to this Manual.

### D.12.2.4 Existing Landscape

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#### Checklist of Requirements to Illustrate the Existing Landscape for the Landscape Plan:

Place a checkmark (✓) in the applicable boxes below.

- 1) The Landscape Plan Illustrates the location of all existing natural features to remain by clearly labeling and/or locating the following:
  - The location of all existing natural features to remain, including any vegetation, top of bank, watercourse features, valley lands, etc.
  - All existing street trees abutting the proposed development within the adjacent road ROW, and if they are to remain, be removed, or be replaced (refer to Section D.12.2.10 of this Manual); and,

## 32 | D.12 Landscape Plan

- The location of:
  - all adjoining property lines;
  - underground servicing;
  - above ground utilities;
  - roadways;
  - buildings;
  - surface and subsurface drainage; and,
  - existing features.

### D.12.2.5 Proposed Landscape

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- 1) Typically, landscape plans will be designed to incorporate trees and other landscape features such as fencing that have a visual impact upon the character of a development. While minor landscape detailing is strongly encouraged (i.e., planting beds), details of such features will not be required to be illustrated in landscape plans except where critical to the perception of a proposed development.

#### Checklist of Requirements to Illustrate the Proposed Landscape for the Landscape Plan:

Place a checkmark (✓) in the applicable boxes below.

- 2) The Landscape Plan clearly illustrates, labels and/or locates the following for the proposed landscape:
  - Limit of work, including separate phases of the landscape development, if applicable;
  - All boundaries/property lines and limits of the proposed development, including type and locations of easements, proposed widening (if applicable), daylight triangles, reserves, etc.;
  - All hard-surfaced circulation areas and surface treatments including reference to associated construction details including roadways, entrances, loading areas, parking areas, curbing (including depressed areas), driveways, walkways, patios, terraces etc.;
  - Boulevards and swales;
  - Illustrated and labelled sidewalk locations;
  - Clearly labelled lots, including:
    - lot and block numbers;
    - street Names; and,
    - designations consistent with the registered plans.



### 33 | D.12 Landscape Plan

- Municipal address numbering, wherever possible;
- Grading information sufficient to ascertain the location of grade changes that require distinct treatment by planting or provision of retaining elements. This may include existing and proposed elevations at property lines, tree preservation areas (or at the base of specific trees to remain) with spot elevations, as well as steps, ramps, retaining walls (including top and bottom of wall elevations), slopes, swales, berms, etc.;
- Existing and proposed:
  - building envelopes and overhangs;
  - doorways;
  - stairwells; and,
  - underground garages, if applicable;
- All proposed plant material, including:
  - proposed street trees;
  - planting beds;
  - sodded and/or seeded areas; and,
  - boulevard areas (to be labelled “Area to be fine graded, top-soiled and sodded”) (refer to Section F.1.1 of this Manual);
- The location, type (privacy, decorative, acoustic, living wall), height, and material of all fences, screen walls, and retaining walls, where their labels include a reference (at each location) to the applicable structural detail associated with each;
- Detailed product information, including product reference number, name of supplier, finish proposed, and any other relevant information, is provided for decorative metal fencing, if included;
- Above- and below-ground utilities including but not limited to lighting (freestanding such as street lights, and wall mounted), catch basins, oil-grit separators (OGS Units), manholes, fire hydrants, valve chambers, cable, bell, gas, hydro transformer boxes, community mailboxes, stop signs, etc.;
- Garbage collection facilities;
- Street furniture (such as benches, garbage receptacles, bicycle racks, etc.) if applicable, including reference to associated structural details;
- Snow storage areas;
- Adjacent bus bays, stops or shelters;
- Any significant landscape features included in the proposal (including reference to associated details);
- Edge management/restoration areas (refer to Section D.12.2.9 of this Manual);

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- Tree preservation and protection areas (refer to Sections D.12.2.10 and D.23 of this Manual);
- Landscape buffers (refer to Section F.1.1 of this Manual);
- All fence locations and descriptions (refer to Section F.1.1 of this Manual);
- Pillars and/or entry feature gateways (refer to Section F.1.1 of this Manual);
- SWM ponds (refer to Sections F.1.1 and F.1.4 of this Manual);
- Any additional special features;
- All applicable construction details; and,
- City of Belleville Zoning Table and Notes as applicable.

### D.12.2.6 Construction Details

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#### Checklist of Requirements to Illustrate Construction Details for the Landscape Plan:

Place a checkmark (✓) in the applicable boxes below.

- 1) The Landscape Plan includes construction details necessary to accurately convey the design intent of any landscape elements, with appropriate cross-references to landscape plan(s), elevations, cross-sections including, but not limited to:
  - Surface treatments for special paving materials (walkways, patios, terraces, pedestrian crossing areas, etc.);
  - Type and height of all structures, such as fences (chain link, acoustic, privacy and decorative), pillars, screens, decks, steps, proposed pools or ponds, guard rails, handrails, planters, pergolas, etc.;
  - Site furniture and amenities, such as benches, bollards, bicycle racks, garbage containers, tree grates, signage, etc. including detailed product information, if applicable (product reference number, manufacturer, finish proposed, warranty information and any other relevant information); and
  - Retaining walls, as shown with top and bottom of wall spot elevations
    - The structural design of any retaining wall over 0.6 metres in height is provided on the approved Site Grading/Engineering Plan and to be approved by the consulting engineer and City of Belleville Engineering and Development Services Department.
    - Retaining walls are illustrated on the associated landscape plans and reference the approved engineering drawing(s).
    - The developer's consulting engineer is aware that they are responsible for the inspection of all retaining walls during construction and certification.

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### D.12.2.7 Plant List and Planting Details

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- 1) For subdivision plan applications, landscape plans are required to indicate the location of all proposed plant material and planting beds as per the requirements of the Subdivision Agreement, including the quantity and species of the proposed plant material.

#### Checklist of Requirements to Illustrate Planting Details for the Landscape Plan:

Place a checkmark (✓) in the applicable boxes below.

- 2) The Landscape Plan includes:
  - A plant list that:
    - is organized according to type (deciduous, coniferous, shrubs, groundcovers, vines, perennials, seed mix, etc.);
    - includes index/key, botanical species name, common species name, variety, size (caliper, height, spread) quantity, spacing, condition, general remarks, etc.; and,
    - includes City of Belleville Canadian landscape Standards for coniferous trees, deciduous trees, and shrubs (including staking, guying, installation, etc.).

### D.12.2.8 Stormwater Management Facility Blocks

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- 1) The provision of a detailed landscape plan for proposed SWM facility blocks may be included as a condition of a subdivision agreement.

#### Checklist of Requirements for SWM Facility Block Landscape Plan:

Place a checkmark (✓) in the applicable boxes below.

- 2) The SWM Facility Block Landscape Plan:
  - is in accordance with the recommendations of the SWM Planning and Design Manual (MECP, 2003, or as amended);
  - details the rehabilitative and other appropriate native seed mixes, including species with botanical names, percentage composition and application methods and rates; and,
  - is included in the overall approved subdivision landscape plan package.

### D.12.2.9 Edge Management and Restoration Plan

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- 1) The provision of a detailed landscape plan will be provided for proposed edge management and/or restoration areas, if required as a condition of a subdivision

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agreement. Typically, this is required for all woodland areas where an existing edge will be disturbed by grading or construction.

- 2) Review and approval of these plans will include consideration by QCA and the MNDMNR, where required.
- 3) The approved Edge Management/Restoration Plan will be included as an integral part of the overall approved subdivision landscape plan package.

### Checklist of Requirements for the Edge Management and/or Restoration Plan of the Landscape Plan:

Place a checkmark (✓) in the applicable boxes below.

- 4) The Edge Management and/or Restoration Plan of the Landscape Plan meets the following requirements:
  - Required tree removal measures are indicated in a way that is acceptable to the City.
  - With respect to land that is considered or identified to be a park block within a site plan:
    - A report is provided to identify:
      - the existing species, and
      - species to be removed.
  - Before site plan approval, comments or species identified by the City are included and remain as part of the site plan agreement.
  - The Edge Management and/or Restoration plan includes an Edge Management Plant List, which provides:
    - a mix of plantings that includes a variety of native trees, shrubs, and seeded areas, and
    - details of seed mixes, including species, percentage composition and application methods and rates.

#### **D.12.2.10 Tree Inventory and Preservation Plan (if applicable)**

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- 1) Subdivision and Site Plan Development proposals on lands which have existing trees and vegetation must provide a Tree Inventory and Preservation Plan (refer to Section D.23 of this Manual) where requested by the City.

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### Checklist of Requirements for the Tree Inventory and Preservation Plan:

Place a checkmark (✓) in the applicable boxes below.

- 2) The Tree Inventory and Preservation Plan meets the following requirements:
- The Tree Inventory and Preservation Plan accurately locates and describes existing vegetation to be retained or removed, including:
    - All trees to remain, by:
      - illustrating the extent of canopy (surveyed dripline), and
      - specifying them by species, diameter, condition and elevation at the base;
    - Groups of shrubs to remain (such as hedgerows), which may be illustrated together;
    - Existing trees within 3 metres of the property line and for existing street trees within the adjacent public ROW;
    - The dimensions, extent, and type of protection measures for existing vegetation to be retained, by referencing:
      - construction details of recommended tree protection, and
      - preservation measures such as protective barriers and fencing; and,
  - Vegetation remains undisturbed until the Tree Preservation Plan and/or landscape plan is approved by the Planning and Development Department.

#### D.12.2.11 Required Notes for Site Plans

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- 1) The following notes are required to be included on all landscape plans submitted for review and approval as part of a Site Plan Development application:
- a) General Notes for Site Development (refer to Appendix A);
  - b) Standard Utility Clearances for Streetscape Planting (refer to Appendix B); and,
  - c) Tree Preservation and Clearing Notes.

#### D.12.2.12 Required Notes for Subdivision Plans

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- 1) The following notes, where applicable, are required to be included on all landscape plans submitted for review and approval as part of a Subdivision Development application:
- a) General Notes for Subdivision Development (refer to Appendix E);
  - b) General Sidewalk Notes (Refer to Appendix E);
  - c) General Planting Notes (Refer to Appendix E);

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- d) Plant Material Standards (Refer to Appendix F);
- e) Standard Utility Clearances For Streetscape Planting (Refer to Appendix B);
- f) Planting Inspection Notes (Refer to Appendix G);
- g) Buffer Planting Notes (if applicable, refer to Appendix H);
- h) General Fencing Notes (Refer to Appendix I);
- i) Tree Preservation and Clearing Notes;
- j) Grading and Drainage Plan (refer to D.8.1 of this Manual);
- k) Landscaping Plan (refer to D.13 of this Manual); and,
- l) The location of trees are subject to the following separation distances:
  - I) street lights: 3 metres;
  - II) sidewalks: 1 metre;
  - III) property line: 1 metre;
  - IV) curbs: 1.5 metres to back of curb;
  - V) driveways: 1 metre;
  - VI) intersection: 9 metres (at the projection of the sight triangle);
  - VII) electric transformers: 3 metres from the access hatch side;
  - VIII) hydrants: 1.5 metres; and,
  - IX) water/sewer lines: 2 metres.

### D.12.3 Additional Details

#### D.12.3.1 General Notes

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- A General Notes for Site Development
- B Standard Utility Clearances for Streetscape Planting (applicable for Subdivision Development Proposals, as well)
- C Accessibility Parking Proposed and Retrofit 413 (January, 2009)
- D Landscape Works Cost Estimate Requirements for Site Plan Development Proposals

#### D.12.3.2 Notes – Subdivision Development Proposals

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- E General Notes for Subdivision Development
- E General Sidewalk Notes
- E General Planting Notes

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- F Landscape Standards and Specifications G Planting Inspection Notes
- H Buffer Planting Notes
- I General Fencing Notes (General/Inspections; Footings; General Construction and Materials; Layout; Wood Fence Stain)

### **D.12.3.3 City of Belleville Standard Details**

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#### **D.12.3.3.1 Planting Details**

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- J Deciduous Tree Planting Detail (September, 2012)
- K Coniferous Tree Planting Detail (February, 2004)
- L Shrub Planting Detail (July, 2003)

#### **D.12.3.3.2 Fencing Details**

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- M 1,800-millimetre Acoustic Fence Standard 506 (July, 2011)
- N Wood Acoustic Fence Notes 506.10 (July, 2011)
- O 1,000-millimetre Decorative Fence Standard
- P 1,200-millimetre height Black Vinyl Coated Chain Link Fence 506.30 (July, 2011)
- Q 1,200-millimetre height Black Vinyl Coated Chain Link Fence Gate (March, 2005)
- R 1,800-millimetre height Black Vinyl Coated Chain Link Fence 506.40 (July, 2011)
- S 1,800-millimetre height Black Vinyl Coated Chain Link Fence Gate (March, 2005)

#### **D.12.3.4 Recommended Tree Species**

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- T Recommended Tree Species for Use in Development Plan Proposals (2012)

#### **D.12.3.5 Information for Distribution to Residents**

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- U Do's and Don'ts Flyer for Distribution to Residents

## D.13 Landscaping Plan

- 1) The developer may wish to achieve a specific character for the development in part by the nature of landscaping on public lands, and the City may wish to require the developer to pursue specific urban design objectives. The Landscaping Plan will ensure defined objectives are achieved.

### Checklist of Requirements for the Landscaping Plan:

Place a checkmark (✓) in the applicable boxes below.

- 2) The Landscaping Plan includes the following:
  - Scaled to suit;
  - Walkway fencing design specifications;
  - Boundary or other fencing locations and design specifications;
  - Proposed street tree and other tree plantings with specifications (species, size, location, etc.) and planting details;
  - Tree preservation (location, protective measures, etc.) from the Tree Inventory and Preservation Plan (refer to Section D.23 of this Manual);
  - Areas identified as natural heritage features and landscapes of historic significance; and,
  - Entrance features and street furniture.
- 3) In the case of a subdivision application, depending on the complexity of the proposed development, the landscaping plan may be combined with the Tree Inventory and Preservation Plan. Refer to Section D.23 of this Manual for its drawing requirements.



## D.14 Natural Heritage and Historic Features Restoration Plan

- 1) The NHHFRP identifies and provides, through a plan, how these living environment comprised of both natural and man-made features are to be managed. Natural heritage and historic features refer to steep slopes, flood-prone areas, woodlands, other facets of the local ecology and significant cultural identities.
- 2) Natural heritage and historic features warrant protection because of their many essential functions, including:
  - a) Preserving and protecting natural storm water drainage channels such as streams and swales;
  - b) Maintaining the natural environmental processes and balances, including ensuring adequate groundwater and high water quality;
  - c) Providing an important aesthetic relief from built-up areas;
  - d) Preserving areas of scenic beauty;
  - e) Preserving lands that are not naturally suited for development;
  - f) Providing land for active and passive recreation, both presently and in the distant future;
  - g) Preserving habitats for birds, fish and wildlife;
  - h) Retaining area for farms and woodlots; and,
  - i) Providing cultural diversity.

### Checklist of Requirements for the Natural and Historic Features Restoration Plan:

Place a checkmark (✓) in the applicable boxes below.

- 3) The NHHFRP meets the following requirements:
  - It provides understanding as to how natural heritage and historic features will be preserved through recommendations and techniques designed to help conserve the natural environment for future generations to enjoy, particularly with respect to the following:
    - Natural storm water drainage channels such as streams and swales are preserved and protected;
    - The natural environmental processes and balances, including ensuring adequate groundwater and high water quality, are maintained;
    - Important aesthetic relief from built-up areas is provided;
    - Areas of scenic beauty are preserved;

## 42 | D.14 Natural Heritage and Historic Features Restoration Plan

- Lands that are not naturally suited for development are preserved;
- Land is provided for active and passive recreation, both presently and in the distant future;
- Habitats for birds, fish and wildlife are preserved;
- Areas for farms and woodlots are maintained; and,
- Cultural diversity is provided.

## D.15 Erosion and Sediment Control Plan

### Checklist of Requirements for the Erosion and Sediment Control Plan:

Place a checkmark (✓) in the applicable boxes below.

- 1) The Erosion and Sediment Control Plan contains the following:
  - Details as to location and type of all measures to control erosion and the transport of sediment from the lands onto other lands or municipal road allowance;
  - Details as to the maintenance of such measures, including specifications as to when such measures can be removed;
  - At a minimum, recommendations and protection measures pertaining to:
    - Construction scheduling;
    - Minimizing soil exposure and re-establishment or vegetative cover;
    - On-site sediment and erosion techniques;
    - Site supervision;
    - Monitoring and maintenance;
    - Special considerations (i.e. in-stream construction/crossings, fisheries timing constraints);
    - The drawings in Section 200 of the OPSD, which may assist in the erosion and sediment control specifications;
    - Location and protection measures of topsoil stockpile;
    - Location of temporary drainage swales and sediment ponds; and,
    - Site access and mud tracking control.

## D.16 Phasing and Staging Plan

### Checklist of Requirements for the Phasing and Staging Plan:

Place a checkmark (✓) in the applicable box below.

- 1) The Phasing and Staging Plan includes the following:
  - Sets out limits as to each phase and each stage of the development.

## D.17 Plan and Profile Drawings

### Checklist of Requirements for the Plan and Profile Drawings:

Place a checkmark (✓) in the applicable boxes below.

- 1) The Plan portion of the Plan and Profile Drawings includes the following:
  - Scale 1:250 horizontal, 1:50 vertical;
  - Horizontal control data for the road centerline, including:
    - P.I. station chainage;
    - Length of tangent;
    - Degree of curve;
    - Curve length;
    - Beginning of curve chainage; and,
    - End of curve chainage;
  - All existing services with original plan referenced;
  - Cross reference numbers of adjoining plans and match lines;
  - All municipal services to be constructed including service laterals with locations dimensioned to property lines;
  - Pipe diameters and pipe material (symbols and notes may be used to depict size, type and material of standard building service laterals);
  - Watermain fitting details including elbows and thrust blocks;
  - Utility structures, such as storm and sanitary maintenance holes, valve chambers, etc. with corresponding identifier (number or letter symbol matching design sheets);
  - Catch basin locations and connection details such as:
    - Slope, invert, and
    - Top of grate elevations (may be shown in table form);
  - Streetscape locations, such as:
    - Utility pedestals;
    - Community mailboxes;
    - Streetlights; and,
    - Fire hydrants;
  - All traffic control devices including pavement markings and signs; and,
  - Facilities to address public transit (bus bays, etc.).
  
- 2) The Profile portion of the Plan and Profile Drawings includes the following:
  - Profile of the existing grade and proposed road grade along the centerline of pavement projected directly below the plan view;

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- Vertical control data, including:
  - points of intersection;
  - tangents of gradients;
  - K-Factors; and,
  - Super-elevation details as necessary;
- Bedrock elevations at sufficient intervals to determine road construction requirements and to determine estimated rock excavation quantities for the construction of underground services;
- Test pit locations and critical bore hole results;
- Station chainage along the centerline of the road – maximum spacing 20.0 metres plus those for establishing vertical control;
- Pipe lengths measured from center of manhole to center of manhole;
- All proposed and existing pipes showing the:
  - length;
  - inside diameter;
  - gradient;
  - invert elevations at maintenance holes (sanitary and storm);
  - depth of cover (water);
  - type of pipe material; and,
  - bedding requirements including specification numbers and reference to detail drawings;
- Storm and sanitary maintenance holes, valve chambers, etc., including:
  - Invert elevations;
  - Type (i.e. OPSD type) of structure, frame, and cover;
  - Size (barrel diameter or inside diameter);
  - Chainage and offset from centerline;
  - Top of grate elevations and invert elevations;
  - Identifier number or letter symbol (matching design sheets); and,
  - Details of drop structures, safety platforms, etc.;
- Proposed and existing water mains with:
  - type of pipe material;
  - bedding requirements; and,
  - depth of cover;
- Cross-reference to detail drawings elsewhere in the set for sewer maintenance holes or special watermain details;
- All pipe clearance details at crossing of pipes;
- Insulation details (if necessary); and,
- Water main fitting details including elbows, thrust blocks, etc.

## D.18 Detail Plan

### Checklist of Requirements for the Detail Plan:

Place a checkmark (✓) in the applicable boxes below.

- 1) The Detail Plan includes the following:
  - Scaled to suit;
  - Road cross section, curb and sidewalk details, subdrain detail (mandatory);
  - Details of special chambers, such as metering chambers;
  - Details of special structures, which might include storm sewer inlets and outlets or retaining walls;
  - Details of special drainage features, including the design of any stormwater retention/detention ponds;
  - Pumping station details; and,
  - General notes as required.

## D.19 Storm Drainage/Sanitary Drainage Area Plans

### Checklist of Requirements for the Storm Drainage/Sanitary Drainage Area Plans:

Place a checkmark (✓) in the applicable boxes below.

- 1) The Storm Drainage/Sanitary Drainage Area Plans include the following:
  - Scaled to suit;
  - Separate drainage area plans for storm and sanitary drainage calculations, with a key plan and a legend;
  - Existing and proposed sewers and maintenance holes, identifying and labelling:
    - manhole numbers, and sewer sizes and direction of flow;
    - sub-area boundaries on each plan, referenced to the corresponding design sheet; and,
    - the area in hectares of each sub-area to be shown;
  - The storm drainage plan showing the extent of drainage areas outside the subdivision development supported by existing ground contours
  - Storm drainage sub-areas that identify the runoff coefficient
  - Sanitary sub-areas that identify the use of the property (i.e. residential or commercial) and the population density or equivalent

### D.19.1 Storm Drainage Plan

#### D.19.1.1 External Drainage Plan

### Checklist of Requirements for the External Drainage Plan of the Storm Drainage Plan:

Place a checkmark (✓) in the applicable boxes below.

- 1) The External drainage plan will be prepared and submitted at the Functional Servicing Report stage and prior to the commencement of the detailed storm sewer design.
- 2) The External Drainage Plan includes the following:
  - Scaled to fit a full-sized (ARCH D, i.e., 24 inches by 36 inches) sheet;
  - Nature of the drainage of the lands surrounding the development site;
  - All external drainage areas that are contributory to the drainage system for the development;



## 49 | D.19 Storm Drainage/Sanitary Drainage Area Plans

- The external drainage areas divided into smaller tributary areas;
  - The area and the location to which the tributary area is considered in the design;
- All existing contours used to justify the limits of the external drainage area; and,
- In lieu of precise information on development on the whole or any part of a watershed area, the latest zoning by-law and Official Plans issued by the Planning Department is used for all external areas in the design and to determine the specific areas to which these values apply.

### D.19.1.2 Internal Drainage Plan

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#### Checklist of Requirements for the Internal Drainage Plan of the Storm Drainage Plan:

Place a checkmark (✓) in the applicable boxes below.

- 1) The Internal Drainage Plan includes the following:
  - Scale of 1:1,000;
  - All streets, lots, blocks, and other lands within the development;
  - The proposed storm sewer system, including all maintenance structures (as the tributary points in the design) numbered consecutively from the outlet;
  - The contributing area for each maintenance structure, clearly outlined;
    - To maintain consistency in the design, the proposed grading of the lots are considered in determining the tributary area to each maintenance structure;
    - The area, in hectares, of each contributing area (to the nearest tenth) and the runoff co-efficient used are shown in a circle located within the contributing area;
      - The areas and the coefficients are separately indicated on the plan, in cases where areas of different runoff coefficients may be tributary to the same maintenance structure;
  - In the case of large areas under single ownership or blocks requiring future site plan agreements, the design is prepared on the basis of the whole area being contributory to one maintenance structure in the abutting storm sewer, unless more than one private storm connection is necessary to serve the property. In this case, the appropriate area tributary to each connection is clearly shown and taken into account in the storm sewer design; and,
  - The length, size, and grade of each section of storm sewer.

## D.19.2 Sanitary Drainage Area Plan

### Checklist of Requirements for the Sanitary Drainage Area Plan:

Place a checkmark (✓) in the applicable boxes below.

- 1) The Sanitary Drainage Area Plan includes the following:
  - Scaled to fit a full-sized (ARCH D, i.e., 24 inches by 36 inches) sheet;
  - The tributary areas used in the evaluation of design flows;
  - The land use, area, population density (or number of units), and the design flow in litres per second.
  - For each area included on the design sheet, the following are specified:
    - The maintenance hole numbers;
    - The size and grades of sewers; and,
    - The plan number of the plan and profile details for each section of the sanitary sewer.

#### D.19.2.1 External Sewer Shed Limits and Drainage Areas

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- 1) Designs must accommodate future development, draft plan approved, or otherwise as directed by the City of Belleville Engineering and Development Department, that will contribute to the capacity of the proposed development. When a design abuts an undeveloped or draft plan approved area, the external Sewer shed must be identified and designed for.

## **D.20 Park Development Plan**

- 1) Refer to the Parkland and Recreation Master Plan for requirements on the Park Development Plan.

## D.21 Parkland Dedication Plan

### Checklist of Requirements for the Parkland Dedication Plan:

Place a checkmark (✓) in the applicable boxes below.

- 1) The Parkland Dedication Plan meets the following requirements:
  - The developer engages the services of a landscape architect or other qualified parks planner to prepare the Parkland Dedication Plan for the lands to be dedicated as parkland, to set out the ultimate design for the park.
  - The Parkland Dedication Plan accounts for recommendations outlined in the Parkland and Recreation Master Plan, to the satisfaction of the manager of Transportation and Operations Services.
  - The Parkland Dedication Plan includes the following:
    - Good sight lines provided in and through the park from the abutting streets;
    - A sufficient number of trees planted to achieve at least 40% mature tree canopy cover within the active parkland;
    - The park is accessible, with the selection of site furnishings, hardware, and fixtures based on ease of use for a wide range of capabilities and age groups;
    - The park is accessible for the City's maintenance equipment;
    - Fencing and parkland delineation markings;
      - Where fencing is not to be installed, the developer establishes above and below-ground markers as defined by the City.
  - The Parkland Dedication Plan is submitted to the City as a component of the first submission for City approval.

## D.22 Traffic Marking and Sign Plan

- 1) Prior to working in an existing ROW, a traffic control plan shall be provided by the Contractor as per the requirements of Ontario Health and Safety Act (O. Reg. 213/91 as amended by O. Reg. 88/13 or latest) and MTO Book 7 - Temporary conditions and approved by the City of Belleville.

### Checklist of Requirements for the Traffic Marking and Sign Plan:

Place a checkmark (✓) in the applicable boxes below.

- 2) The Traffic Marking and Sign Plan includes the following:
  - Lane markings for all streets;
  - Traffic signal design and details (with signal wiring plan); and,
  - Traffic signage details.
  
- 3) The Traffic Marking and Sign Plan meets the following drawing requirements:
  - It is prepared by a professional engineer;
  - It has a written verification that all works will be conducted within the MOL, OPSS, OPSD, and the MTO Standards;
  - It details full plan coverage of the work area that is drawn to scale and shows:
    - property lines;
    - utility locations;
    - proposed areas of removals (show all physical infrastructure to be removed including bushes and trees);
    - planned restoration; and,
    - construction staging plan, complete with appropriate signage according to MTO Book 7 - Temporary Conditions;
  - It shows typical cross sections drawn to scale showing:
    - widths of lanes, including temporary pavement markings;
    - location of temporary traffic barriers & barricades, including offset distances;
    - depth, location and size; and,
    - offset distances to 1:1 side slopes; and,
  - It shows:
    - the exact/specific location of any road section or intersection affected;
    - the type of closure required (e.g. sidewalk, bike path, one lane, two lanes, full closures, etc.), and the expected duration of the closure;
    - how the closure relates to stages/phasing of the project;

## 54 | D.22 Traffic Marking and Sign Plan

- How the closure relates to stages of adjacent work areas; and,
- How the closure protects the safe movement of pedestrians and traffic on the ROW, or accessing/egressing the ROW, including but not limited to:
  - bus stops;
  - sidewalks;
  - school bus stops;
  - illumination;
  - edge drop offs;
  - how the work accommodates traffic signal operations, storm/sanitary sewer installations, and winter maintenance; and,
  - how notification is planned to coordinate with the City, other agencies and/or the public.

## D.23 Tree Inventory and Preservation Plan

- 1) Requirements for the preparation of Tree Inventory and Preservation Plan measures are determined at the Subdivision Agreement phase by the City of Belleville Engineering and Development Services Department and Transportation and Operations Services, in consultation with the requirements of QCA.
- 2) Where trees and vegetation are approved for removal, appropriate compensation measures in the form of rehabilitation and enhancement to the impacted area may be required. Acceptable replacement and enhancement plantings will be determined in consultation with the City, and through the review and approval of landscape submissions for development. Compensation may include:
  - a) replacement tree planting, reforestation and/or naturalization within the limits of the proposed development;
  - b) a cash-in-lieu of contribution made to the City for tree planting, reforestation and/or naturalization within the limits of the proposed development; and,
  - c) a cash-in-lieu of contribution made to the City for tree planting, reforestation, and/or naturalization on an alternate site within the City.
- 3) The Tree Inventory and Preservation Plan will be prepared by a qualified landscape architect or arborist and is typically submitted as a component of a complete application.

### Checklist of Requirements for the Tree Inventory and Preservation Plan:

Place a checkmark (✓) in the applicable boxes below.

- 4) The Tree Inventory and Preservation Plan:
  - Is prepared by a qualified landscape architect or arborist;
  - Is scaled to suit;
  - Shows property lines and site boundaries;
  - Identifies features intersecting or outside the development that may affect on-site vegetation;
  - Identifies the extent of crown of all existing trees and/or groups of trees;
  - Identifies all trees, including those on adjacent properties with canopies extending into the site, by:
    - Location (tag number);
    - Size (caliper at DBH);
    - Species (common and botanical);

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- Condition (excellent, fair, poor, dead/dying); and,
- Recommendation (remain, relocate, remove);
- Identifies trees to be removed;
- Highlights and labels tree protection fences and tree protection zones;
- Identifies the location and type of tree protection measures, including temporary protective fencing and/or additional measures;
- Identifies the surveyed dripline location of all existing trees to be retained, relocated or removed, including hazard trees; and,
- Indicates the existing and proposed grades at the base of trees that are to remain.



## D.24 Individual Lot Grading Plan

### Checklist of Requirements for Individual Lot Grading Plans:

Place a checkmark (✓) in the applicable boxes below.

- 1) The Individual Lot Grading Plan includes the following:
  - Scaled to:
    - 1:500 for single-unit dwelling areas; and
    - 1:200 for multi-unit dwelling areas;
  - All lots and blocks within the subdivision, which are numbered in accordance with the plan proposed for registration;
  - Existing contours at a maximum of:
    - 0.5-metre intervals within the subdivision limits, and
    - 10-metre intervals beyond the subdivision limits;
  - Proposed centerline road elevations at 20-metre stations:
    - along all roads within and abutting the subdivision, and
    - at all points of grade changes;
  - Proposed and existing elevations for all lot corners;
  - Proposed elevations at intermediate points of grade change;
    - (On larger blocks), a proposed elevation at 20-metre intervals on along the frontage of the block and at reasonable intervals along the sides and rear of the block to clearly illustrate the grading of the block in relation to the surrounding lands and house type;
  - Specified lot grade at a location 6 metres minimum from the street line;
    - The specified rear house grade (for “split” type drainage patterns);
    - The specified minimum basement floor elevation for each lot and the grades around the building;
  - The direction of the surface water runoff from the rear of all lots, indicated by means of an arrow pointing in the direction of the runoff;
  - All swales, other than the normal side yard swales, along with the invert elevation of the swale at regular intervals (i.e. have a minimum width of 3 metres, are centered over the as-built swale, and a minimum slope of 2% without a subdrain or 1% with a subdrain);
  - All rear yard catch basins along with the rim elevation of the catch basin grate and the invert elevation of the outlet pipe;

## 58 | D.24 Individual Lot Grading Plan

- All above-ground infrastructure, including but not limited to curbs, sidewalks, catch basins, oil-grit separators (OGS Units), valves, hydrants, fencing, entry gates, plantings and easements;
  - Easements on the lot grading plans;
- A minimum 1-metre clearance of driveways from all utilities;
  - Proposed driveway alignments are also shown on the Composite Utility Plan (refer to Section D.9 of this Manual), where possible, to provide optimum streetscapes, utility coordination, street tree planting opportunities, and on-street parking spaces.
- All 3:1 slopes required (terracing), with the intermediate grade specified;
- Existing elevations on adjacent lands approximately 30 metres from the subdivision limit to enable assessment of the grading between the subdivision and the adjacent areas. The interval of those elevations are dependent upon the degree of development of the adjoining lands with the developed areas requiring the most information;
- Makes note of the OPSD applicable to the grading of the development. (The City of Belleville reserves the right to refuse any house design which is incompatible with the lot grading design specified for a lot);
- The grading along the limit of the subdivision is carefully controlled to avoid disturbance to the adjoining areas;
  - A 0.6-metre strip, as indicated on the approved Lot Grading Plan, is left undisturbed along the boundary of the subdivision, next to adjacent properties;
  - Temporary fencing is installed along the inside of the 0.6-metre undisturbed barrier strip and maintained for the duration of the contract until such time as sodding takes place
    - The location of this fencing is indicated on the Individual Lot Grading Plan.
- All semi-detached lots indicated with “SD” on all drawings;
- All townhouses indicated with a “TH” on all drawings;
- Proposed locations for:
  - building envelopes;
  - envelopes for private sewage disposal systems; and,
  - private water supply systems for rural estate developments;
- All culverts, which identify culvert diameter, gauge, minimum length, and type;
- Typical sections for all proposed drainage courses;

## 59 | D.24 Individual Lot Grading Plan

- All lots or blocks on which a foundation control certificate is required, as identified by means of an asterisk, to verify critical engineering elevations for flood protection or other structural requirements;
- Any watercourse running through, or abutting the subject property, the regulatory flood line, with elevations indicated; and,
- The extent, top elevation, flow depth, and static ponding depth of the 100-year major flow inundation.

## D.25 Certified Lot Grading Plan

- 1) The Certified Lot Grading Plan will be prepared by the consulting engineer, or following issuance of a Certificate of Assumption by the consulting engineer or another professional engineer.

### Checklist of Requirements for the Certified Lot Grading Plan:

Place a checkmark (✓) in the applicable boxes below.

- 2) The Certified Lot Grading Plan includes the following:
  - The proposed finished elevation of the lands at each corner of the lot;
  - The proposed finished elevation of the lands at the front and rear of the proposed building;
  - The proposed finished elevations of the underside of the footings and the proposed finished height of the foundation of the proposed building;
  - The proposed finished elevation of any retaining wall, the proposed elevation of any walk-out onto these lands from the basement of the proposed building, and the proposed elevation of any basement window openings;
  - The proposed finished elevation and slope of any driveway and the proposed location of any swale or rear yard catch basin;
  - Any abrupt changes in the proposed finished elevation of the lands; and,
  - The signature and seal of the engineer who prepared the plan.

## D.26 “As-Built” Drawing

### Checklist of Requirements for “As-Built” Drawings:

Place a checkmark (✓) in the applicable boxes below.

- 1) An as-built drawing includes the following:
  - Pipe location, lengths and grade;
  - Inverts of all gravity sewers at the maintenance holes;
  - Location and inverts of all gravity sewer laterals at the property line;
  - Top of watermain elevation;
  - Pipe materials and class, connection details;
  - Top of grate, inlet and manhole elevations;
  - Location of manholes, ditch inlets, catch basins, oil-grit separators (OGS Units), and all applicable invert elevations;
  - Tie-ins to all water valves including curb stops (at all non-standard locations) from the two nearest property corners or two permanent structures;
  - Tie-ins to all maintenance holes (at all non-standard locations) from the two nearest property corners or two permanent structures;
  - Swale grades;
  - Lot corners, side yard elevations, centerline road grades and all other pertinent elevations to the final design;
  - Individual lot servicing sheets referenced to street addresses; and,
  - Items of significant cultural heritage.

## **D.27 Floor Plan**

- 1) Requirements for floor plans will be provided separately upon request.

## D.28 Elevation Drawing

- 1) Requirements for elevation drawings will be provided separately upon request.

## **D.29 Cross-Section Drawing**

- 1) Requirements for cross-section drawings will be provided separately upon request.



## **D.30 Perspective Drawing**

- 1) Requirements for perspective drawings will be provided separately upon request.

# Part E Study and Report Requirements

## 2 | E.1 Master List of Required Studies and Reports

### E.1 Master List of Required Studies and Reports

The table below indicates the studies and reports that may be needed to complete a development application, however those that would be required will be confirmed at the pre-consultation meeting. Please note that some studies require specialized technical expertise that may not be available among City Staff. In some cases, it will be necessary for Staff to have studies independently peer reviewed. The cost for peer reviews is also the responsibility of the applicant.

<b>Study or Report</b>	<b>Requirements</b>
Planning Report	Section E.2
Phase I Environmental Site Assessment	Section E.3
Phase II Environmental Site Assessment and/or Site Remediation Plan	Section E.4
Environmental Impact Study	Section E.5
Geotechnical Report	Section E.5
Hydrogeological Study	Section E.7
Site Servicing Study	Section E.8
Acoustics (Noise and/or Vibration) Study	Section E.9
Preliminary Stormwater Management Study	Section E.10
Detailed Stormwater Management Design Report	Section E.11
Preliminary Functional Site Servicing Report	Section E.12
Traffic Impact Study	Section E.13
Landscaping Report	Section E.14
Tree Inventory and Preservation Report	Section E.15
Report on Condition of Existing Municipal Services	Section E.16
Final Report on Condition of Existing Municipal Services	Section E.17
Shadow Impact Analysis	Section E.18
Noise Impact Study	Section E.19
Economic Impact Study	Section E.20

### 3 | E.1 Master List of Required Studies and Reports

Study or Report	Requirements
Market Study	Section E.21
Greenspace/Trail Needs Assessment	Section E.22
Ecological Site Assessment	Section E.23
Mineral Aggregate Resource Study	Section E.24
Soil, Environmental Audit, Record of Site Condition	Section E.25
Slope Stability Study	Section E.26
Energy Assessment Report	Section E.27
Air Quality Report	Section E.28
Section 59 Notice from the Risk Management Official	Section E.29
Sub-watershed Study	Section E.30
Parking Demand Analysis	Section E.31
Transportation Needs Assessment	Section E.32
First Nations Consultation and/or Métis Consultation Strategy	Section E.33
Streetscape Design Study	Section E.34
Heritage Impact Assessment	Section E.35
Archaeological Study	Section E.36

## E.2 Planning Report

### Checklist of Requirements for Planning Reports:

Place a checkmark (✓) in the applicable boxes below.

- 1) The Planning Report meets the following requirements:
  - It is completed by a Registered Professional Planner.
  - It provides an overview of the proposed development and identifies key planning issues that should be considered in the evaluation of the application.
  
- 2) The Planning Report addresses the following:
  - Conformity with the in-force Provincial Policy Statement;
  - Conformity with the City's Official Plan (or applicable secondary plans);
  - Conformity with the Parkland and Recreation Master Plan and community connectivity;
  - Important design considerations in the proposed subdivision or site plan;
  - Need for the development (as per Official Plan policies);
  - Environmental issues that need to be considered;
  - Anticipated servicing and access issues; and,
  - Any other important planning issues or considerations such as land use compatibility and mitigation of impacts.

## E.3 Phase I Environmental Site Assessment

### Checklist of Requirements for Phase I Environmental Site Assessments:

Place a checkmark (✓) in the applicable boxes below.

- 1) The Phase I ESA meets the following requirements:
  - It is conducted by, or under the supervision of, a qualified person (refer to Ontario Environmental Protection Act and its regulations for guidance as to who would constitute a qualified person);
  - It is undertaken in accordance with the regulations of the Ontario Environmental Protection Act; and,
  - It determines the likelihood that one or more contaminants have affected the land or water in or under the subdivision land.
  
- 2) If the Phase I ESA indicates a need for further investigation, the developer will undertake a Phase II ESA and, if necessary, prepare a site remediation plan. Prior to final approval, a Record of Site Condition may also need to be prepared and filed by the developer in the Environmental Site Registry.

## E.4 Phase II Environmental Site Assessment and/or Site Remediation Plan

### Checklist of Requirements for Phase II Environmental Site Assessments and/or Remediation Plans:

Place a checkmark (✓) in the applicable boxes below.

- 1) The Phase II ESA and/or Site Remediation Plan meet(s) the following requirements:
  - They are prepared by a qualified person.
  - They are undertaken where recommended by a Phase I ESA. The most common reason for such a requirement relates to the potential for soil contamination due to historic land uses, but can arise for other reasons. Phase II ESAs determine the location and concentration of one or more contaminants in the land or water on or under the subdivision lands.
  - The site remediation plan outlines mitigative measures or actions to resolve the constraint.
  - If required, a Record of Site Condition is prepared and filed by the developer in the Environmental Site Registry.

## E.5 Environmental Impact Study

- 1) Requirements for environmental impact studies will be provided separately upon request.



## E.6 Geotechnical Report

### Checklist of Requirements for Geotechnical Reports:

Place a checkmark (✓) in the applicable boxes below.

- 1) The Geotechnical Report meets the following requirements:
  - It is prepared by a professional engineer.
  - It examines:
    - subsurface conditions (geological or geomorphologic conditions that could impact land development) and assesses the impact on construction of services and buildings within the proposed plan of subdivision;
    - Soil type(s) and soil bearing capacity;
    - depth and type of bedrock;
    - roadway design recommendation(s);
    - foundation design;
    - dewatering;
    - excavation and shoring;
    - backfill and compaction;
    - lateral earth pressures;
    - floor slabs;
    - subdrainage; and,
    - buried utilities.
  - It shows locations of boreholes and test pits along with findings tied to geodetic datum.
  - It provides pavement design and groundwater levels.
  - It identifies and recommends any special needs or approaches with regard to the construction of public services and buildings to address constraints or problematic conditions.
  - Where bedrock removal will be necessary to service the development, it addresses options and provides recommendations.

## E.7 Hydrogeological Study

- 1) A Hydrogeological Study would typically only be required where a proposed subdivision plan will use private or communal services, or where a development on full services will be constructed adjacent to an existing development that relies upon private on-site services. A copy of the City’s standard Terms of Reference for Hydrogeological Studies can be requested from the Approvals Section.

### Checklist of Requirements for Hydrogeological Studies:

Place a checkmark (✓) in the applicable boxes below.

- 2) The Hydrogeological Study meets the following requirements:
  - It is prepared by a qualified hydrogeologist.
  - It addresses:
    - the quantity and quality of ground water resources;
    - the potential draw down or impact of the development on ground water resources; and,
    - the expected rate of flow to be experienced in wells.

## E.8 Site Servicing Study

### Checklist of Requirements for Site Servicing Studies:

Place a checkmark (✓) in the applicable boxes below.

- 1) The Site Servicing Study meets the following requirements:
  - It is prepared by a professional engineer.
  - It outlines the following:
    - Proposed servicing layout for the subdivision plan (sanitary sewer, storm sewer, water main, SWM facilities, roadway dimensions, etc.);
    - Other lands that will be serviced through the subject lands, including recommended oversizing of services to accommodate future development lands;
    - Servicing capacity calculations;
    - Detailed analysis of fire flows required for the development; and,
    - Confirmation of available uncommitted reserve capacity within the City's water and sewage treatment systems.

## E.9 Acoustics (Noise and/or Vibration) Study

- 1) An Acoustics (Noise and/or Vibration) Study will be required for any subdivision or site plan proposed adjacent or in close proximity to a major source of noise, such as a railway line or yard, expressway or major arterial road, or industrial activity. Such studies normally would include a vibration analysis, where warranted.

### Checklist of Requirements for Acoustics (Noise and/or Vibration) Studies:

Place a checkmark (✓) in the applicable boxes below.

- 2) The Acoustics (Noise and/or Vibration) Study meets the following requirements:
  - It is prepared by a qualified acoustics engineer.
  - It is compliant with guidelines set by the MECP.

## E.10 Preliminary Stormwater Management Study

### Checklist of Requirements for Stormwater Management Studies:

Place a checkmark (✓) in the applicable boxes below.

- 1) The SWM Study meets the following requirements:
  - It is prepared by a professional engineer.
  - It specifies whether a master drainage plan exists for the catchment area within which the subdivision will be located;
  - It assesses, on a preliminary basis, pre- and post–development flows, accounting for other lands that both impact and will be impacted by the subject lands; and,
  - It confirms the need for on-site facilities to manage stormwater runoff or, otherwise, outlines the anticipated strategy for managing stormwater runoff.

## E.11 Detailed Stormwater Management Design Report

### Checklist of Requirements for Detailed Stormwater Management Design Reports:

Place a checkmark (✓) in the applicable boxes below.

- 1) The Detailed SWM Design Report meets the following requirements:
  - It is prepared by a professional engineer in accordance with the SWM Planning and Design Manual (MECP, 2003 or as amended).
  - It outlines:
    - Pre- and post-development stormwater runoff;
    - Techniques used to control storm runoff to allowable runoff rate and to provide any necessary quality control;
    - Method and volume of stormwater storage;
    - A site plan that shows the stormwater runoff coefficient(s);
    - The proposed methods of stormwater storage, including the following:
      - orifice controls;
      - on-site storage areas including volume and top water elevation; and,
    - Maximum ponding depth at catch basins and storage area.

## E.12 Preliminary Functional Site Servicing Report

- 1) A Functional Servicing Report determines the overall impact of a large scale land development proposal on the water and wastewater service capacities. It also determines the required improvements to the municipal servicing infrastructure, and any mitigation measures to minimize negative impacts. The report should include sufficient details for City staff to determine the financial and infrastructure implications of servicing the proposed development. The submission should include reports and design calculations relating to the designs and upgrades of the municipal services. The report should be based on established municipal engineering design principals, applicable guidelines (e.g., MECF), regulations and by-laws and infrastructure information available from the City.

### Checklist of Requirements for Preliminary Functional Site Servicing Reports:

Place a checkmark (✓) in the applicable boxes below.

- 2) The Preliminary Functional Site Servicing Report, at minimum, meets the following requirements:
  - It is prepared by a professional engineer;
  - It includes a location map and description of the subject property;
  - It outlines the existing servicing infrastructure that will be employed to service the proposed development;
  - It identifies the nature of new service infrastructure that will be required to service the development;
  - It confirms that service capacity exists to accommodate the proposed subdivision development and provides net impact due to the proposed change in land use or development and need for expansion and upgrades;
  - It determines the required improvements to the municipal servicing;
  - It assesses fire flows as required for the proposed development;
  - It includes peak flow calculations;
  - It includes a hydrant flow test:
    - to confirm boundary conditions, and
    - that it meets City standards;
  - Includes proposed development phasing plan and water distribution plan; and,
  - Identifies and demonstrates expected SWM plan.

## 15 | E.12 Preliminary Functional Site Servicing Report

- 3) If the posed development is revised, the study/report must reflect the revisions by an updated report or letter from a professional engineer indicating that the recommendations and conclusions are the same.
- 4) Please note the following:
  - a) A peer review may be required. The cost of the peer review will be borne by the applicant.
  - b) The requirements of this study may vary depending on the nature of the proposal. This will be determined through the pre-consultation process and in consultation with any applicable external agencies.
- 5) The application will be considered incomplete and returned to the applicant, if the:
  - a) submitted study is incomplete;
  - b) is authored by an unqualified individual; or,
  - c) does not contain adequate analysis.



## E.13 Traffic Impact Study

- 1) The type of TIS will depend on the location, size, and operation of the proposed development. The table below identifies triggers for determining which type of TIS is required:

Trigger	No Assessment	Transportation Brief	Traffic Impact Study
<b>Safety and Operational Concerns</b>	-	-	Required
<b>Drive-through Facility or regional destination</b>	-	-	Required
<b>Volume of Site Generated Traffic</b>	0-25 vph	25-150 vph	>150 vph
<b>Volume of Site Generated Traffic</b>	0-25 vph	25-150 vph	>150 vph

- 2) The safety and operational concerns that may require a TIS report, regardless of the vehicle trips generated by the development, include:
- a) Operating speed of the adjacent roadway exceeds 80 kilometres per hour;
  - b) Sight distances are limited;
  - c) Existing traffic experiences significant delays, long queues, or is approaching the roadway capacity;
  - d) Site access within 200 metres of a signalized intersection;
  - e) Proposed land use is significantly different from existing land use; and,
  - f) High percentage of truck traffic.
- 3) A TIS may be required where any subdivision borders a collector or an arterial road.
- 4) The City has created a standard TIS Terms of Reference that can be requested from the Approvals Section.

## 17 | E.13 Traffic Impact Study

### Checklist of Requirements for Traffic Impact Studies:

Place a checkmark (✓) in the applicable boxes below.

- 5) The TIS meets the following requirements:
- It is prepared by a qualified traffic engineer.
  - It details a traffic impact analysis based on projected traffic flows for the subdivision and other development lands in the area.
  - It identifies needs for:
    - traffic control devices;
    - turning lanes; and, storage lanes in peak conditions.

## E.14 Landscaping Report

### Checklist of Requirements for Landscaping Reports:

Place a checkmark (✓) in the applicable boxes below.

- 1) The Landscaping Report meets the following requirements:
  - It is prepared by a qualified landscape architect.
  - It outlines:
    - the approach to be taken to landscape public lands (boulevards, landscape islands in roadways, public parks and walkways, SWM ponds, etc.); and,
    - entrance features, lighting, fencing, retaining walls, and other similar “man-made” features.

## E.15 Tree Inventory and Preservation Report

- 1) A Tree Inventory and Preservation Report will be required where the subject land is treed.

### Checklist of Requirements for Traffic Impact Studies:

Place a checkmark (✓) in the applicable boxes below.

- 2) The Tree Inventory and Preservation Report meets the following requirements:
  - It is prepared by a qualified landscape architect or arborist.
  - It provides an inventory of all trees and woodlots on the subject lands.
  - It identifies:
    - any endangered tree species, trees of significant value based on species, age, size or other factors, or woodlots that should be preserved;
    - trees of significance that are to be removed; and,
    - trees of significance that should be retained or relocated on-site.
  - It includes a plan to reinstate the tree canopy removed.

## **E.16 Report on Condition of Existing Municipal Services**

- 1) Refer to Section G.1.2 of this Manual for details.

## **E.17 Final Report on Condition of Existing Municipal Services**

- 1) Refer to Section G.1.13.2 of this Manual for details.

## E.18 Shadow Impact Analysis

- 1) A Shadow Impact Analysis is a technical document that consists of text and supporting diagrams to provide evidence of how shadows cast by a proposed development during several times/dates throughout the year could impact adjacent properties, streets and public spaces, and to what extent.
- 2) Such a study may be required to evaluate whether a proposal could cause undue shadow impacts on public parks and open spaces, private amenity areas, and surrounding streets. Where impacts are predicted, the study should also include recommendations to mitigate and minimize such impacts.

### Checklist of Requirements for a Shadow Impact Analysis:

Place a checkmark (✓) in the applicable boxes below.

- 3) A shadow Impact Analysis meets the following requirements:
  - It is prepared by a registered architect, professional engineer, a RPP, or a qualified consultant with experience in this field.
  - Its associated reports and drawings are stamped, signed, and dated by a qualified professional who is licensed in the Province of Ontario.

## **E.19 Noise Impact Study**

- 1) Requirements for Noise Impact Studies will be provided separately upon request.



## **E.20 Economic Impact Study**

- 1) Requirements for Economic Impact Studies will be provided separately upon request.

## **E.21 Market Study**

- 1) Requirements for Market Studies will be provided separately upon request.

## **E.22 Greenspace/Trail Needs Assessment**

- 1) Requirements for Greenspace/Trail Needs Assessments will be provided separately upon request.

## **E.23 Ecological Site Assessment**

- 1) Requirements for Ecological Site Assessments will be provided separately upon request.

## **E.24 Mineral Aggregate Resource Study**

- 1) Requirements for Mineral Aggregate Resource Studies will be provided separately upon request.

## **E.25 Soil, Environmental Audit, Record of Site Condition**

- 1) Requirements for Soil, Environmental Audit, and Record of Site Conditions will be provided separately upon request.

## **E.26 Slope Stability Study**

- 1) Requirements for Slope Stability Studies will be provided separately upon request.

## **E.27 Energy Assessment Report**

- 1) Requirements for Energy Assessment Reports will be provided separately upon request.



## **E.28 Air Quality Report**

- 1) Requirements for Air Quality Reports will be provided separately upon request.

## **E.29 Section 59 Notice from the Risk Management Official**

- 1) Requirements for Section 59 Notices from the Risk Management Official will be provided separately upon request.

## **E.30 Sub-watershed Study**

- 1) Requirements for Sub-watershed Studies will be provided separately upon request.

## **E.31 Parking Demand Analysis**

- 1) Requirements for Parking Demand Analyses will be provided separately upon request.

## **E.32 Transportation Needs Assessment**

- 1) Requirements for Transportation Needs Assessments will be provided separately upon request.

## **E.33 First Nations Consultation and/or Métis Consultation Strategy**

- 1) Requirements for First Nations Consultation and/or Métis Consultation Strategies will be provided separately upon request.

## **E.34 Streetscape Design Study**

- 1) Requirements for Streetscape Design Studies will be provided separately upon request.

## **E.35 Heritage Impact Assessment**

- 1) Requirements for Heritage Impact Assessments will be provided separately upon request.



## **E.36 Archeological Study**

- 1) Requirements for an Archaeological Study will be provided separately upon request.

# Part F Standards and Guidelines

## F.1 Design Standards and Guidelines

### F.1.1 Landscape Design

#### F.1.1.1 Landscape Design for All Applications

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- 1) The developer must adhere to the following standards and specifications. The developer's landscape architectural consultant will be required to provide certification to the City that these requirements have been fulfilled, which may be required to provide results of random soil testing.

##### F.1.1.1.1 Plant Material Standards

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###### Checklist of Plant Material Standards:

Place a checkmark (✓) in the applicable boxes below.

- 1) The landscape design meets the following requirements for plant material:
  - All plant material conforms to the most recent version of "The Canadian Landscape Standard, the Guide for Landscape Construction Across Canada".
  - All sod conforms to the Canadian Nursery Sod Growers Specifications and in accordance with OPSS.MUNI 802 and 803.
  - Seeding conforms to OPSS.MUNI 804.
  - The developer's landscape architect assures that the quality of all plant material meets with the contract specifications and City standards.

##### F.1.1.1.1.1 All trees

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###### Checklist of Standards for All Trees:

Place a checkmark (✓) in the applicable boxes below.

- 1) All trees:
  - are undamaged and disease-free;
  - have a reasonably straight trunk, free of any decay, sunscald, wounds or mechanical damage;
  - possess a straight single central leader, with no multiple competing stems; and,
  - possess root balls that must be firm and securely wrapped, with little or no movement at the trunk and no girdling roots.

### 3 | F.1 Design Standards and Guidelines

#### F.1.1.1.1.2 Deciduous trees and Coniferous Trees

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##### **Checklist of Standards for Deciduous Trees:**

Place a checkmark (✓) in the applicable boxes below.

- 1) Deciduous trees are:
  - are a minimum 60-millimetre caliper at DBH, 3,000-millimetre to 3,500-millimetre height (60-millimetre to 75-millimetre caliper should be wire basket or balled and burlapped);
  - are specified with a minimum 1,500-millimetre branching height clearance from grade at the time of planting, with an ultimate requirement of a minimum 2,500 millimetre branching height;
  - have a balanced canopy with uniform branching all around and characteristic of the growth habit of the species; and,
  - have three or more main stems originating from a common base at ground level, if they are clump form or multi-stem trees.
- 2) Species that require Spring installation will not be accepted for Fall planting.

##### **Checklist of Standards for Coniferous Trees:**

Place a checkmark (✓) in the applicable boxes below.

- 3) Coniferous trees are:
  - 1,800 millimetres in height, and
  - evenly branched all around.

#### F.1.1.1.1.3 Shrubs, Groundcovers, and Perennials

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##### **Checklist of Standards for Shrubs, Groundcovers, and Perennials:**

Place a checkmark (✓) in the applicable boxes below.

- 1) Shrubs:
  - are a minimum of 60 centimetres in height, and
  - display their natural form and a minimum of four (4) canes.
- 2) Groundcovers:
  - have healthy tops and size proportionate to root requirements.
- 3) Perennials:
  - have healthy and vigorous vegetative and root growth.

## 4 | F.1 Design Standards and Guidelines

### F.1.1.1.2 Tree Pits

---

#### Checklist of Standards for Tree Pits:

Place a checkmark (✓) in the applicable boxes below.

- 1) Tree pits meet the following requirements:
  - They are prepared in accordance with:
    - the requirements of the latest edition of the Canadian Landscape Standard, and
    - any associated soils report recommendations.
  - They are a minimum of twice the width of the root ball and not be deeper than the overall height of the root ball.
  - Trees in tree pits are:
    - installed with the root ball 75 millimetres above grade, and
    - placed so that the main lateral branches are oriented away from the roadway.
  - Their sub-grade surface is loosened to a depth of 25 millimetres.
  - Their sub-grade surface is free of:
    - vegetation and other debris, and
    - stones over 20 millimetres in diameter.
  - No tree pits are left open overnight.
  - Their backfill material consists of a mixture of the approved topsoil (50%) and the indigenous soil (50%), free from rocks and/or debris.

### F.1.1.1.3 Planting Bed Preparation

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#### Checklist of Standards for Planting Bed Preparation:

Place a checkmark (✓) in the applicable boxes below.

- 1) Planting beds are prepared to the following requirements:
  - Areas of planting soil are fine graded to a uniform surface in accordance with OPSS.MUNI 206 or the latest edition of The Canadian Landscape Standard.
  - Sodded and/or seeded areas are provided with a minimum of 150-millimetre planting soil depth.
  - Shrub beds are continuous and provided with a minimum of 300-millimetre planting soil depth.

## 5 | F.1 Design Standards and Guidelines

### F.1.1.1.4 Excavated Soil

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#### Checklist of Standards for Excavated Soil:

Place a checkmark (✓) in the applicable boxes below.

- 1) Excavated soil meets the following requirements:
  - It is fertile, friable, natural loam that is free from any subsoil, clay lumps, stones, roots over 50 millimetres in diameter, and any foreign objects.
  - It is reasonably free of weeds/weed seeds.
  - It is cultivated to remove any large clods or extraneous material.
- 2) In locations with poor quality excavated soil or lack of sufficient parent soil, excavated soil may be amended to meet planting soil requirements (Section F.1.1.1.5 of this Manual) and as per the soils report recommendations or supplemented with additional imported planting soil.

### F.1.1.1.5 Planting Soil

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#### Checklist of Standards for Planting Soil:

Place a checkmark (✓) in the applicable boxes below.

- 1) Planting soil meets the following requirements:
  - It contains no less than 4% minimum of organic matter for clay loams and no less than 2% minimum organic matter for sandy loam, with an acidity value ranging from pH 6.5 to pH 7.5 and capable of sustaining vigorous plant growth.
  - Planting soil for deciduous and coniferous trees conforms to OPSS.MUNI 802 and is prepared in accordance with the City of Belleville Standard Planting Details for Deciduous and Coniferous Trees.
  - Planting soil for shrub beds is prepared by evenly mixing 50% sandy top soil, 25% well-rotted horse manure, and 500 grams of bonemeal (or nursery grade triple mix).
  - Any required additional imported planting soil is screened prior to delivery.

## 6 | F.1 Design Standards and Guidelines

### F.1.1.1.6 Backfilling: Tree Pits and Shrub Beds

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#### Checklist of Standards for Backfilling Tree Pits and Shrub Beds:

Place a checkmark (✓) in the applicable boxes below.

- 1) Backfilling tree pits and shrub beds must meet the following requirements:
  - Tree pits and shrub beds will be backfilled with excavated soil wherever possible.
  - Backfilling will occur in tamped 150-millimetre lifts for shrub bed and tree planting to remove all air pockets, and to ensure root ball is stable.
  - Planting holes will be watered thoroughly when two-thirds full.
  - Backfill will continue to top of root ball and will not fill around the trunk or above the root flare.
  - Backfill material consists of a mixture of the approved topsoil (50%) and the indigenous soil (50%), free from rocks and/or debris.

### F.1.1.1.7 Crime Prevention Through Environmental Design

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- 1) Development concepts will be reviewed for compliance with CPTED principles. Please refer to principles of CPTED at <https://cptedcanada.com/cpted-principles/>.

#### Checklist of CPTED Requirements for the Landscape Design:

Place a checkmark (✓) in the applicable boxes below.

- 2) Environmental design:
  - does not interfere with the safety of pedestrians or vehicular traffic;
  - does not create areas that are hidden from public view; and,
  - provides clear sightlines, sight triangles, and views of signage.

### F.1.1.1.8 Additional Resources

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#### Checklist of Policies, Standards, and Guidelines to Reference when Preparing the Landscape Plan:

Place a checkmark (✓) in the applicable boxes below.

- 1) The preparation of proposed landscape plans considers the most recent editions (or as amended) policies, standards and guidelines of the documents referenced below:
  - [Tree Protection Requirements for New Development](#) (Town of Whitby, 2020)
  - Accessibility Standards\* (Town of Whitby, June, 2005)
  - Lighting Guidelines\* (Town of Whitby, November, 2009)

## 7 | F.1 Design Standards and Guidelines

- Heritage District Conservation Plan\* (Town of Whitby, July 30, 2007)
- Design Criteria and Engineering Standards\* (Town of Whitby, July, 2011)
- [Stormwater Management Planning and Design Manual](#) (MECP, 2003)
- [Design of Public Spaces Ontario Regulation 413/12](#)

\* Documents are available from the Town of Whitby directly, on request. Please see the Town of Whitby's website for details.

### F.1.1.2 Landscape Design for Subdivision Plans

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- 1) The following sections provide landscape design requirements specific to Subdivision Plans. In addition to the information and requirements found within this Section F.1.1.2, refer to Section F.1.1.1 above for additional requirements for landscape design.

#### F.1.1.2.1 Street Trees

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#### Checklist of Policies, Standards, and Guidelines to Reference when Preparing the Landscape Plan:

Place a checkmark (✓) in the applicable boxes below.

- 1) Street trees in a subdivision meet the following requirements:
  - Street trees are located on the boulevards in accordance with the Engineering Guidelines.
  - Street Trees are spaced in accordance with:
    - the latest edition of The Canadian Landscape Standard;
    - the growth habits of the particular species; and,
    - the following guidelines:
      - Generally, one (1) tree per 10 linear metres is provided;
      - Small flowering trees are spaced 5 to 7 metres apart;
      - Large shade trees are spaced 7 to 12 metres apart;
      - A minimum of one (1) tree is provided for every frontage considered for planting, unless site conditions determine otherwise;
      - A minimum of two (2) trees is provided for every flankage considered for planting, unless site conditions determine otherwise;
      - Open frontages, service lanes, parks and open space/woodlot frontages are provided with a minimum of one (1) tree per 10 linear metres, unless otherwise identified as a required "buffer" planting area;



## 8 | F.1 Design Standards and Guidelines

- Species biodiversity and the use of at least 50% native species are required, unless otherwise approved by the City;
  - Groupings of the same species are confined to provide a maximum of five (5) to eight (8) trees of the same species in one area (monoculture arrangements are not acceptable for street trees);
  - There is a minimum of 2.5 metres between adjacent driveways for boulevard trees;
  - There are no trees within a drainage swale; and,
  - There are no trees planted in municipal boulevards that are less than 1.5 metres wide.
- 2) Trees may be required to be planted at closer intervals, of a higher caliper, and in greater quantities, if a desired effect or specific purpose is identified by the City of Belleville (such as buffer planting areas, etc.).

### F.1.1.2.2 Plant Material

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#### Checklist of Requirements for Plant Material for a Subdivision:

Place a checkmark (✓) in the applicable boxes below.

- 1) Plant material for a subdivision meets the following requirements:
- A mix of plantings is provided that includes a variety of ecologically appropriate native species including deciduous and coniferous trees, shrubs, aquatic, sub-aquatic and seed species that conform to the following minimum standards outlined in Appendix F;
  - It is native and arranged to reflect natural plant associations;
  - It suits the site conditions (slope, drainage, aspect, soil conditions, etc.) and is considerate of low maintenance;
  - Deciduous trees are a mix of 60-millimetre caliper, minimum;
  - Coniferous trees vary in height, where a minimum height of 1,800 millimetres is provided for at least 50% of the proposed conifers;
  - Deciduous shrub size is a minimum of 300 millimetres in height;
  - Coniferous shrubs have a 450-millimetre spread and are provided with potted material; and,
  - aquatic species consist of native, non-invasive species and include emergent and marginal perennials and submergent aquatics.

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### Checklist of Requirements for Plant Material Layout for a Subdivision:

Place a checkmark (✓) in the applicable boxes below.

- 2) Plant material layout meets the following requirements:
  - Trees and shrubs are planted above the five-year water level;
  - No shrubs are proposed below the permanent pool elevation;
  - Plant material will be provided in sufficient quantities to screen and discourage public access to these areas;
  - Shrubs will be planted in continuous, mulched planting beds with spacing appropriate to the ultimate size and form of the selected plant species; and,
  - Spacing of shrubs will be included on the SWM Facility Block Plant List.
  - Spreading or suckering vegetation are set back from private property and roadway ROW a minimum of 3 metres.
  
- 3) Bio-engineering measures may be proposed, where appropriate.

#### F.1.1.2.2.1 Plant Material in Edge Management and/or Restoration Areas

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### Checklist of Requirements for Plant Material in Edge Management and/or Restoration Areas in a Subdivision:

Place a checkmark (✓) in the applicable boxes below.

- 1) Plant material in edge management and/or restoration areas meet the following requirements:
  - Plant material in edge management and/or restoration areas is in sufficient quantities to screen and discourage public access to these areas.
  - Shrubs are planted in continuous mulched planting beds, with spacing appropriate to the ultimate size and form of the selected plant species and included on the associated Edge Management Plant List.
  - Plant material conforms to the minimum standards outlined in Appendix F.
  - Plant material is native and arranged to reflect natural plant associations.

## 10 | F.1 Design Standards and Guidelines

### F.1.1.2.3 Buffer Planting

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#### Checklist of Requirements for Buffer Planting for a Subdivision:

Place a checkmark (✓) in the applicable boxes below.

- 1) Buffer planting meets the following requirements:
  - Landscape buffer planting consists of:
    - berming and planting consisting of “densely arranged”<sup>5</sup> deciduous and coniferous trees only (i.e. no shrubs, unless indicated by the Engineering and Development Services Department), or
    - all of the following:
      - Planting is a mix of “densely arranged” deciduous and coniferous trees with a minimum of 50% coniferous trees;
      - Spacing is in accordance with the growth habits of the particular species, and with consideration of on-site conditions;
      - Deciduous trees are spaced at +/- 6 metres apart, depending on species and effect desired; and,
      - Coniferous trees are spaced 4 to 8 metres apart, depending on species and effect desired.
- 2) A mixed species buffer that includes coniferous and deciduous shrubs together with trees may be considered for buffer planting in those areas that require additional screening.
- 3) Arrangements of groupings of trees are preferred to more formal linear planting arrangements within buffer areas.

### F.1.1.2.4 Fencing

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#### Checklist of Requirements for Fencing in a Subdivision:

Place a checkmark (✓) in the applicable boxes below.

- 1) Fencing in a subdivision meets the following guidelines:
    - It is located in accordance with:
      - the requirements of the associated Subdivision Agreement, and
      - the requirements of the applicable zoning by-law.
- 

<sup>5</sup> “Densely arranged” is defined as a more closely arranged spacing between trees than the typical 10 linear metre apart spacing required in a typical boulevard streetscape planting

## 11 | F.1 Design Standards and Guidelines

- Acoustic fencing is located in accordance with the requirements of the Acoustics (Noise and/or Vibration) Study for the associated Subdivision Agreement, as applicable.
  - Perimeter black vinyl chain link fencing at a minimum 1,200-millimetre height is required around all City of Belleville Parkland and Open Space, unless otherwise indicated by the City.
  - School Boards generally require 1,800-millimetre height black vinyl chain link fences around all property line edges adjacent to residential properties.
- 2) Corner lots in subdivisions are generally not required to be fenced, unless otherwise indicated by the City.

### F.1.1.2.5 Pillars and/or Entry Feature Gateways

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- 1) The use of masonry pillars and gateways is discouraged within subdivision developments in the City of Belleville, and they are not permitted within the public ROW.

#### Checklist of Requirements for Pillars and/or Entry Feature Gateways in a Subdivision:

Place a checkmark (✓) in the applicable box below.

- 2) In the event that a developer chooses to implement gateway entry features:
- the private lots supporting the structures are sized to accommodate any proposed structures and/or landscaping.

### F.1.1.2.6 Stormwater Management Facility Blocks

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#### F.1.1.2.6.1 Seeding in Stormwater Management Facility Blocks

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#### Checklist of Requirements for Seeding in Stormwater Management Facility Blocks in a Subdivision:

Place a checkmark (✓) in the applicable boxes below.

- 1) Seeding in SWM facility blocks meets the following requirements:
- All SWM facility blocks are top soiled, fine graded and hydro-seeded as a minimum.
  - Seeding is provided in any wet meadow areas and any areas not seasonally flooded.
- 2) Sodding is typically not appropriate in SWM facility areas.
- 3) Terra-seeding may be required by the City of Belleville as an application method.

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### F.1.1.2.6.2 Recreational Trails in Stormwater Management Facility Blocks

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- 1) SWM facility blocks are generally not intended for recreational purposes. Trail connections through a facility will only be permitted by Transportation and Operations Services when they are part of a larger overall planned recreational trail network, and will not be permitted to “loop” around the facility.
- 2) If a trail through a SWM facility block is proposed, it will be brought to the attention of Transportation and Operations Services staff at the early stages (draft plan review) to ensure that the block is sized appropriately to accommodate an area that is safe for pedestrian use.

#### **Checklist of Requirements for Recreational Trails in Stormwater Management Facility Blocks in a Subdivision:**

Place a checkmark (✓) in the applicable box below.

- 3) Recreational trails in SWM facility blocks meet the following requirement:
  - Where recreational trails are provided within SWM facility blocks, they are designed and located in accordance with Transportation and Operations Services, Environmental Services, and Design of Public Spaces, O. Reg. 413/12.

### F.1.1.3 Landscape Design for Site Plans

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- 1) The following sections provide landscape design requirements specific to Site Plans. In addition to the information and requirements found within this Section F.1.1.3, refer to Section F.1.1.1 above for additional requirements for landscape design.

#### **F.1.1.3.1 General**

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- 1) Typically, landscaping of the site will be required for all developments subject to site plan approval. Exceptions will apply to industrial developments that do not have exposure to public streets.
- 2) Vegetation may be required to be planted at closer intervals, with larger sized stock, and/or in greater quantities at the discretion of the City.
- 3) Wherever possible, species native to southeast Ontario are encouraged to be used; refer to the Recommended Tree Species listing in the attached Appendix M.
- 4) Refer to the City of Belleville Development Guidelines, in addition to the Landscape Guidelines section (Section D.12) of this Manual.

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- 5) Refer to Section F.1.1.3.3 of this Manual for additional design standards of plant materials for site plans.

### Checklist of General Requirements for Landscaping in a Site Plan Development:

Place a checkmark (✓) in the applicable boxes below.

- 6) Landscaping for a site plan development meets the following requirements:
- It conforms to the Plant Material Standards outlined in Section F.1.1.1.1 and Appendix F of this Manual.
  - It is provided, as appropriate, to provide separation and buffering between incompatible lands uses.
  - It focuses on flankage and primary street frontages (between building faces and the street), main site and building entries, at corners facing intersections, those areas adjacent to residential neighbourhoods, and those areas adjacent to proposed and existing buildings.
  - It unifies the appearance of the proposed development.
  - It softens the dominant building mass.
  - It contributes to the creation of a pedestrian-scaled environment.
  - It complements the adjacent streetscape.
  - It provides boulevard tree plantings within the boulevard across the full frontage of the subject property.
  - It provides a minimum 3-metre width planted landscape strip adjacent to all public roads, residential zones or residential use, and parkland/open space, or as otherwise required in the relevant zoning by-law.
  - It provides pedestrian amenities appropriate to the site and at building entrances, which could include planter boxes, seating, bicycle racks, fencing, garbage receptacles, etc.
  - It provides appropriate lighting.
  - It provides perimeter and acoustic fencing adjacent to City and/or regional roadways with an upgraded design treatment (such as masonry pillars, decorative metal fencing, upgraded detailing, etc.), where:
    - all proposed fencing is in accordance with the applicable zoning by-law, and,
    - all proposed fencing and/or pillars are installed on private property.
  - It provides acoustic fencing in accordance with the requirements set out in the approved Acoustics (Noise and/or Vibration) Study.
  - It provides screening of loading and service areas from adjacent residential streets and adjacent residential properties, where the screening meets the

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design (e.g., specific height and/or width) and location requirements as determined by the City.

- It meets specific planting, fencing and/or berming requirements in areas of parking, utility meters, waste disposal, loading, and/or above ground utilities.
- If the property being developed has environmental issues, it includes trees that are very hardy and tolerant, in order to increase the survival rate of the trees.

### F.1.1.3.2 Trees

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- 1) Tree planting on streets is permissible, subject to approval of the specific location of each tree by the City's Transportation and Operations Services.
- 2) Contact the City for a list of acceptable trees.

#### Checklist of Requirements for Trees in a Site Plan Development:

Place a checkmark (✓) in the applicable boxes below.

- 3) Trees for a site plan development meet the following requirements:
  - Trees and shrubs are planted throughout the property except:
    - within site triangle areas to protect visibility (trees with high canopies and shrubs that do not exceed 0.5 metres in height are exceptions);
    - within 1 metre of the centreline of a swale; and,
    - beneath overhanging hydro, telephone or cable services.
  - All trees to be retained are protected during construction through construction fencing erected beyond the drip line of trees, or through other acceptable means.
  - Trees have high branching characteristics.
  - Small flowering deciduous shade trees are planted 5 to 7 metres apart.
  - The minimum size to be planted will be 60-millimetre caliper and minimum 3 metres in height in the case of deciduous trees, and 1.8 to 2 metres in height in the case of coniferous trees.
  - Coniferous trees are planted 4 to 8 metres apart.

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### F.1.1.3.3 Plant Material

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#### Checklist of Requirements for Plant Material in a Site Plan Development:

Place a checkmark (✓) in the applicable boxes below.

- 1) Plant material in a site plan development meets the following requirements:
  - Plantings consisting of species native to this climatic region are encouraged. For decorative landscaping, the type and species of plants can be the owner's preference.
  - Shrubs are grouped in large continuous beds with a minimum double row of each species.
  - Proposed plantings use a diverse variety of deciduous and coniferous plant species that provide year-round interest.

### F.1.1.3.4 Buffering Planting

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#### Checklist of Requirements for Buffer Planting in a Site Plan Development:

Place a checkmark (✓) in the applicable boxes below.

- 1) Buffer planting in a site plan development meets the following requirements:
  - If required by the City, buffer planting consists of a vegetative screen or "edge" treatment to ground level.
    - Buffers of this type are provided through mixed groupings of comprehensively designed coniferous and deciduous shrub and tree species.
    - Buffers are used only in locations where a low branching structure is desirable, and no conflict exists with visibility, pedestrian safety or services. Such a location may be adjacent to long stretches of fencing where a visual break is desirable for aesthetic reasons, or adjacent to a railway corridor, or parking lot.
    - Provision of a "living wall" is considered, where such buffer treatment may be desirable.
  - Where buffer plantings are required (i.e., to buffer a residential use from a commercial use), coniferous trees are used.
    - Plantings are large enough to provide an effective screen.
      - Typically trees are a minimum of 1.8 to 2 metres in height.
      - Where deciduous trees are included in a buffer to provide upper-canopy screening, trees with 60-millimetre caliper of minimum 3 to 3.5 metres height are employed.



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### F.1.1.3.5 Fencing

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#### Checklist of Requirements for Buffer Planting in a Site Plan Development:

Place a checkmark (✓) in the applicable boxes below.

- 1) Fencing in a site plan development meets the following requirements:
  - For any sites that abut municipally-owned parklands, a 1.5-metre high chain-link fence is erected to the specifications of the City's Transportation and Operations Services.
  - It consists of 9-gauge galvanized 1.5-inch wire mesh with 4-inch corner posts, 1.75-inch top railing, wire straight out bottom of fence. 2-inch posts may be used, as long as 9-gauge galvanized steel mesh is maintained.
  - The fence follows the contours of the land.
  - For sites that abut a municipally-owned walkway, the above standards apply, except that the height of the fence is 1.8 metres.
  - Where screening is required, a solid barrier fence of a minimum of 1.8 metres in height is provided.
    - Fencing is made from pressure-treated pine or western red cedar (or other material suitable for outdoor use such as metal, stone, stucco), provided the fence creates a solid visual barrier.
    - Where appropriate, plantings are supplemented to complement the effectiveness of the fence.
  - Where noise attenuation is required, typically a fence design prepared by an acoustics engineer will be required. A technical report on the effectiveness of the fence with regard to noise attenuation should accompany the site plan application.

### F.1.1.3.6 Private Sidewalks and Walkways

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- 1) Sidewalks and walkways should be hard surfaced. For walkways that are anticipated to handle only limited pedestrian traffic, limestone screenings or other similar material that discourages vegetation may be used.
- 2) Sidewalks and walkways should have a minimum width of 1.5 metres, except where abutting parking spaces, in which case the minimum width should be 1.8 metres. In front of commercial establishments or other uses where large congregations of people are likely from time to time, the width of sidewalks will be increased to a minimum of 3 metres or more where needed for safety.

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- 3) No sidewalk or walkway should exceed a 1-in-12 grade. Trails provided on-site for recreational purposes may be designed with higher gradients, but alternatives for those in wheelchairs should be provided if possible.
- 4) Ramps should be employed rather than steps wherever possible. Managing a grade change through use of steps and ramps will be acceptable, subject to compliance with AODA and regulations thereunder.
- 5) Barrier-free access will be provided from accessible parking spaces to the main entrances of buildings.

### F.1.1.3.7 Pedestrian Walkways

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- 1) Refer to Section F.1.1.3.6 of this Manual for additional design and construction standards of private sidewalks and walkways for site plans.

#### Checklist of Requirements for Pedestrian Walkways for a Site Plan Development:

Place a checkmark (✓) in the applicable boxes below.

- 2) Pedestrian walkways:
  - provide accessible, direct, safe, continuous and clearly defined access from public sidewalks, parking areas and transit stops to building entrances (refer to Design of Public Spaces O. Reg. 413/12);
  - separate pedestrian circulation from vehicular traffic, wherever possible;
  - provide specialty paving that:
    - complements and enhances the architectural style and façade treatments of proposed and/or existing buildings;
    - defines arrival and entry areas;
    - highlights roadway crossing areas; and,
    - helps to define amenity spaces;
  - provide connections between adjacent properties to support and facilitate circulation between sites (if applicable); and,
  - provide a minimum 2.1-metre overhead clearance and 1.5-metre clear passage:
    - outside of car overhangs, vegetation, signage, bicycle racks, benches, between bollards, etc. along any façade with a customer entrance or adjacent to parking areas, and
    - between the main entrance and the public sidewalk.

## 18 | F.1 Design Standards and Guidelines

### F.1.1.3.8 Parking Areas

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- 1) Refer to Section F.1.7.1 of this Manual for additional design and construction standards of parking areas for site plan developments.

#### Checklist of Requirements for the Landscape Design of Parking Areas for a Site Plan Development:

Place a checkmark (✓) in the applicable boxes below.

- 2) Proposed landscaping within parking areas:
  - provides variety and interest through plant material species that include trees and continuous shrub beds;
  - separates parking spaces from internal driveways for traffic movement using hard and soft landscaping through a minimum 1.5-metre wide landscape strip;
  - minimizes the extent of paved surface devoted to parking areas through the use of curbed planting islands and walkway islands that separate and define large parking areas into smaller well-defined areas, while enhancing growing conditions for trees;
  - uses drought- and salt-resistant trees, shrubs, and grasses that do not block vehicular sight lines;
  - screens headlights from adjacent areas at the perimeter of the site, where necessary; and,
  - maximizes the extent of shade provided within parking area pedestrian walkways through tree planting.

### F.1.1.3.9 Design of Public Spaces Ontario Regulation 413/12

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- 1) Landscape plans will be reviewed for compliance with the Design of Public Spaces, O. Reg. 413/12. Proposed and/or redeveloped elements of public spaces that are included in these regulations are:
  - a) recreational trails and beach access routes;
  - b) outdoor eating areas for public use;
  - c) outdoor play spaces (such as playgrounds);
  - d) exterior paths of travel (such as walkways between buildings);
  - e) accessible on-and-off street parking; and,
  - f) service counters and waiting areas.

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### F.1.1.3.10 Miscellaneous Matters

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- 1) Under most circumstances, the Chief Building Official will require retaining walls exceeding one (1) metre in height to be designed by a professional engineer.
- 2) A building permit will be required for a retaining wall one (1) metre or more in height.
- 3) Any retaining wall exceeding 0.6 metres in height and located such that there would be a risk to the public will be protected with a barrier or installed with a railing, which will be shown on the site plan.
- 4) The landscaped strip between a parking area and the street line is to be grassed, but may consist of other finishing material such as paving stone where heavy pedestrian traffic is anticipated.
- 5) Where a fire route is required over a landscaped area, turf stone will be employed to provide safe access for vehicles.
- 6) For uses with drive-through operations, voice stations will be located away from sensitive land uses by a minimum of 20 metres. Where such separation is not possible, noise attenuation will be required (i.e., a noise barrier fence).

## F.1.2 Services

### F.1.2.1 Services Design for Subdivision Plans

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- 1) Refer to Part D of this Manual for further details on servicing requirements for subdivisions.

### F.1.2.2 Services Design for Site Plans

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#### F.1.2.2.1 General

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- 1) Typically, the City will require site services to be designed by a professional engineer. The only exceptions will be for minor systems or systems that are not complex in nature.
- 2) Typically, no blasting is permitted on the public road allowance. Blasting on private lands is regulated and permitted only with the approval of the Director of Engineering and Development Services.
- 3) Before commencing any work on a City road allowance, the contractor will obtain a 'Road Cut Permit' from the Transportation and Operations Services (refer to Section F.1.2.2.3 of this Manual).

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### Checklist of General Requirements for Services Design of a Site Plan Development:

Place a checkmark (✓) in the applicable boxes below.

- 4) Services design for site plan developments meets the following requirements:
- They are designed by a professional engineer, unless otherwise approved by the City for minor systems or systems that are not complex in nature.
  - All in-ground services are installed in accordance with the provisions of the OBC on private lands and the requirements of the Engineering and Development Services and Environmental Services Departments on public lands

#### **F.1.2.2.2 Approved Contractors**

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- 1) All contractors engaged by the developer to carry out work on the City's road allowance will be approved by the Engineering and Development Services Department.
- 2) Typically, contractors obtain pre-approval through application to the Transportation and Operations Services and by providing proof of insurance, a WSIB clearance certificate, financial security, etc. Contractors must contact the Transportation and Operations Services to obtain pre-approval.

#### **F.1.2.2.3 Road Cut Permits**

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- 1) Prior to undertaking any work on the public road allowance, the contractor will make application through Transportation and Operations Services for a Road Cut Permit.
- 2) No Road Cut Permit will be issued to any contractor who has not been approved by Transportation and Operations Services.
- 3) The developer is responsible for restoration of all concrete works (curbs and sidewalks) and landscaping impacted by works carried out on the road allowance pursuant to a Road Cut Permit (i.e., installation of service laterals or installation of a driveway). The developer can make arrangements with Transportation and Operations Services to carry out such works, subject to payment of the applicable charge.

#### **F.1.2.2.4 Transportation and Operations Services will carry out all asphalt road restoration except where policies of the City provide an option**

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### for the developer to undertake such work. Sewer (Sanitary and Storm) Services

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#### Checklist of Requirements for Sewer (Sanitary and Storm) Services Design for a Site Plan Development:

Place a checkmark (✓) in the applicable boxes below.

- 1) Sewer (sanitary and storm) services design for a site plan development meets the following requirements:
- 2) Where new sewer service laterals are required, prior to initiating any work, the developer:
  - applies through Transportation and Operations Services for a Road Cut Permit;
  - obtains the necessary building permit from the Engineering and Development Services Department Building Section; and,
  - contacts Environmental Services to determine all other requirements.
- 3) Regarding the cover over sanitary sewers:
  - The depth of cover over sanitary sewers is monitored.
  - Where the over-cover is 1.5 metres or less, the sanitary sewer is insulated with 100-millimetre thick by 1.2-metre wide insulation placed in two (2) layers with staggered joints, to be Styrofoam Brand HI Type IV.
  - With respect to sanitary sewers, as set out in the City's Sewer Use by-law, for commercial and industrial buildings, a 1.2-metre diameter pre-cast concrete inspection manhole, if not already existing, is constructed on the sanitary sewer service.
  - The inspection manhole is located on private property adjacent to the street line, readily accessible by City staff at all times for purposes of monitoring the discharge of sewage into the sanitary system.

#### F.1.2.2.5 Water Services

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#### Checklist of Requirements for Water Services Design for a Site Plan Development:

Place a checkmark (✓) in the applicable boxes below.

- 1) Water services design for a site plan development meets the following requirements:
  - Where a new water service lateral is required, prior to initiating any work, the developer:

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- applies through Transportation and Operations Services for a Road Cut Permit, and
- arranges with Environmental Services to have the main tapped. (Note: tapping the main and operation of all valves will be the responsibility of Environmental Services.)
- Upon approval of a Road Cut Permit, the developer's contractor:
  - lays the necessary pipe subject to the requirements and direction of Environmental Services, and
  - arranges for Environmental Services to carry out the tapping of the main.
- Unused or abandoned water laterals are capped at the main, in accordance with the requirements of Environmental Services.
- The developer makes all arrangements with Environmental Services for:
  - installing the water service;
  - connecting to the main;
  - installing the meter;
  - all inspections;
  - leakage tests;
  - bacteriological testing; and,
  - Environmental Services customer initiation.
- No water service pipe has a capacity less than peak demand flow.
- All watermain and hydrant installation work<sup>6</sup> is done in accordance with current plans, standards, and specifications defined by Environmental Services.
- The minimum cover of all watermains is 1,830 millimetres.
- Domestic water lines are separated and valved from any sprinkler line intended for landscape maintenance a minimum of 9 metres from the building.
- Section 7.6.2 of the OBC is applied with respect to the requirements for and the installation of backflow prevention devices on potable water systems. Assistance in determining the nature of City requirements can be obtained from the Chief Building Official.

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<sup>6</sup> Hydrants located on private lands are to be maintained in accordance with the requirements of the Engineering and Development Services Department Building section by the owner.

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- Section 3.2.5.7 of the OBC is applied, which requires that an adequate water supply for firefighting is provided to every building.
- Any hydrants are located to facilitate unobstructed access by fire fighting vehicles.
  - Where necessary, on-site hydrants are protected from being hit by vehicles through use of concrete filled steel bollards.
- Standpipe connections located on buildings are fully accessible from a fire route, and will be unobstructed.

### F.1.2.2.6 Landscaping and Finishing of Boulevards

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#### Checklist of Requirements for the Landscaping and Finishing of Boulevards in a Site Plan Development:

Place a checkmark (✓) in the applicable boxes below.

- 1) Landscaping and finishing of boulevards meet the following requirements:
  - The developer finishes all boulevard areas (the lands between the lot line and the curb-line of the street or edge of the travelled street public sidewalk if one exists) with 150 millimetres of topsoil and sod to the requirements of the Engineering and Development Services Department Approvals Section.
  - The lands are graded and levelled to blend with the grades on the subject lands and the curb or edge of the travelled road or ditch.
  - Any existing driveways that are not to be used are removed, topsoiled, and sodded.
  - Any curb cuts that are to be replaced are constructed of full height curb and gutter to City specifications.
  - Any subdrains along the curb that are disturbed are restored to their original condition.
  - New driveways are constructed so that they do not block the drainage in the ditch or along the edge of the road.
  - Before a culvert is installed and/or extended in a driveway, the owner:
    - signs a City work order obtained from Transportation and Operations Services for installation of the proposed culvert by the City, and
    - pays the full cost to the City.
  - If the culvert exceeds 16 metres in length, a cleanout is done.



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### F.1.2.2.7 Public Sidewalks

---

#### Checklist of Requirements for Public Sidewalks for a Site Plan Development:

Place a checkmark (✓) in the applicable boxes below.

- 1) Public sidewalks for a site plan development meet the following requirements:
  - Design plans for public sidewalks are to the City's specifications and requirements of the Engineering and Development Services Department Approvals Section.
  - The top of curbs abutting City sidewalks are kept level with the sidewalk for a minimum distance of 0.3 metres from the sidewalk.

## F.1.3 Grading and Drainage

### F.1.3.1 Lot Grading Design for Subdivisions

---

#### Checklist of Requirements for Lot Grading Design of a Subdivision:

Place a checkmark (✓) in the applicable boxes below.

- 1) Lot grading design for a subdivision meets the following requirements:
  - Lot drainage is self-contained within the subdivision limits.
  - All commercial, industrial, institutional, park, and high-density site drainage is self-contained. (Drainage over lands abutting the subdivision will only be permitted in exceptional cases at the discretion of the Manager of Engineering and with the written permission of the abutting landowners.)
  - The lot grading design provides for the temporary drainage of all blocks of land within the subdivision that are intended for further development under Site Plan Agreements.
  - All existing drainage runoff entering the development from adjacent is accommodated by the grading and drainage design.

#### F.1.3.1.1 Grading

---

#### Checklist of Requirements for Grading in a Subdivision:

Place a checkmark (✓) in the applicable boxes below.

- 1) Grading of a subdivision meets the following requirements:
  - The maximum lot surface grade for rear yards is 6%.
  - A slope of 3:1 (3 horizontal to 1 vertical) is used to take up any additional grade difference.

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- The maximum grade differential does not exceed 15%, including 3:1 slopes.
- All boulevard areas are graded with a constant slope from the curb to the street limit (minimum slope of 2%, maximum slope of 6%).
- All water boxes, maintenance hole covers, and valve boxes, etc. are set flush with the finished sod surface.
- The specified lot grade is calculated in accordance with the Lot Grading Detail Sections.
- All lot surfaces are constructed to a minimum grade 2%.
- The front yards of all residential lots are graded to drain toward the street.
- The grade of any front walkway does not exceed 8%.

### F.1.3.1.2 Swales

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#### Checklist of Requirements for Swales in a Subdivision:

Place a checkmark (✓) in the applicable boxes below.

- 1) Swales in a subdivision meet the following requirements:
  - For a rear yard swale:
    - the minimum depth is 200 millimetres, and
    - the maximum depth is 500 millimetres.
  - For a side yard swale:
    - the minimum depth is 200 millimetres, and
    - the Maximum depth is 500 millimetres.
  - Maximum side slope on any swale is 3:1 (that is no steeper than 3:1).
  - The maximum change of direction of any swale is 45 degrees.
  - The maximum flow allowance to any side yard swale is from 4 rear yard or 0.1 hectares, whichever is less.
  - The maximum area contributing to a rear yard swale that may be discharged directly onto a road allowance is that of 4 rear yards or 0.1 hectares, whichever is less. (At the discretion of the Manager of Engineering, rear yard catch basins may be required where sidewalk icing may occur.)
  - The maximum length of a rear yard swale between outlets is 90 metres with a maximum of eight (8) rear yards contributing, whichever is less.
  - All swales have a minimum longitudinal slope of 2%.
  - All drainage swales are located on one side of the common lot line between adjacent lots and not along the property line, where the maximum distance from the centerline of a swale (at any point) to the nearest property line does not exceed 1.5 metres.
  - Easements for rear yard catch basins and storm sewer systems:

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- have a minimum width of 5 metres;
  - are off-set from the side lot line with 1.8m on one side and 3.2m on the other;
  - are centered over the as-built rear yard swale; and,
  - are a minimum slope of 2% without a subdrain or 1% with a subdrain.
- A 0.6-metre wide path sloping 2% away from the house is constructed along one side of the building to allow proper access to rear yards.

### F.1.3.1.3 Driveways

---

#### Checklist of Requirements for Driveways in a Subdivision:

Place a checkmark (✓) in the applicable boxes below.

- 1) Driveways in a subdivision meet the following requirements:
  - Driveways are not used as outlets for any swales.
  - Driveways have appropriate clearances from all above-ground and underground utilities.
  - Driveway grades do not exceed 8%. This maximum grade is not recommended and should be employed only in exceptional cases.
  - Driveways do not slope downward from the street line to the house and have a minimum grade of 2% positive drainage away from the building.
  - All driveways will have a minimum grade of 2% positive drainage away from any proposed building.
- 2) In preparing grading plans for house sitings, the engineer or architect:
  - establishes maximum driveway grades which, allowing a 100-millimetre construction tolerance for foundation control, ensure the City of Belleville's maximum and minimum grades are met.

### F.1.3.2 Grading and Drainage Design for Site Plans

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#### F.1.3.2.1 Grading

---

#### Checklist of Requirements for Grading Design for a Site Plan Development:

Place a checkmark (✓) in the applicable boxes below.

- 1) Grading of a site plan development meets the following requirements:
  - The proposed elevation of property line abutting the street line is 2% higher than the curb (if there is a curb) or 0.25 metres higher than the centre line of the road.

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- The surface grade for landscaped space is 2%.
  - Where infeasible, the minimum recommended grade is 1%.
- The maximum landscaped slope on the site:
  - over a very short distance is 50%, and
  - for an extended distance is 25%.
- The surface grade for a parking area is 1%.
  - Where infeasible, the minimum recommended grade is no less than 0.5%.
- The maximum slope on a parking area or driveway is 5%.
- As required by the OBC, the grading plan for the subject property is designed so as to direct water away from buildings.

### F.1.3.2.2 Drainage

---

#### Checklist of Requirements for Drainage Design for a Site Plan Development:

Place a checkmark (✓) in the applicable boxes below.

- 1) Drainage design for a site plan development meets the following requirements:
  - The grade in swales is 2%.
    - Where infeasible, the minimum recommended grade is 1% with a 150-millimetre subdrain.
  - The minimum depth of a swale is 200 millimetres.
    - Where necessary, a swale of a minimum 1% grade with a subdrain is provided.
  - All stormwater on a site will be directed to on-site catch basins, oil-grit separators (OGS Units), swales, or to a City maintained storm system.
  - All swales will be sodded or be lined with gravel/riprap as appropriate to prevent erosion.
  - During construction, outlets of all swales will be controlled with filter cloth and straw bales, or such other methods as appropriate, to prevent erosion onto adjoining lands or into other drainage systems.
  - The maximum slope for all swales is 3%.

## F.1.4 Stormwater Management

### F.1.4.1 Stormwater Management Policies and Design Guidelines

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- 1) This section describes the SWM policies and design guidelines regarding environmental protection and flood and erosion control. This section provides

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guidance on the design of SWM facilities as they may be applied to traditional urban design, urban design concepts employing principles of LID and redevelopment as infill. The SWM guidelines to be applied to proposed site plans are dependent upon the drainage area associated with the proposed development.

- 2) Prior to preparing a SWM Plan (Section D.11 of this Manual) for any development or designing a stormwater system for a site, the site designer is strongly encouraged to confirm with the development engineer the parameters that should be employed. This is due to the range of capabilities and variations of storm systems throughout the City to manage stormwater runoff.

### F.1.4.1.1.1 Environmental Protection Guidelines

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- 1) Water Quality and Erosion Control:
  - a) All new SWM facilities will provide as a minimum the Enhanced level of protection as specified in the SWM Planning and Design Manual (MECP, 2003). This may not apply to infill developments and the redevelopment of one or more properties if the applicant can demonstrate to the satisfaction of the Director of the MECP that it is impractical to achieve the Enhanced level of protection.
  - b) Unless otherwise directed by the City or the QCA, developments greater than or equal to 5 hectares in drainage area will require erosion control measures to be implemented whereby the 25-millimetre 4-hour Chicago storm will be stored and released over a minimum 24-hour period. Proposed developments less than 5 hectares may require erosion control measures, depending upon the type of protection provided in any downstream facilities and the potential for downstream erosion. The erosion control requirements for proposed development sites less than 5 hectares will be confirmed with the City and the QCA.
- 2) Quantity Control:
  - a) Post-to-pre quantity control will be provided, unless otherwise directed by the City or the QCA.
- 3) Receiving Watercourses:
  - a) It will be a general requirement that all watercourses remain in their natural state and that base flow and velocity be maintained. Any alterations required must take into consideration the form and function of the watercourse, including requirements to convey water and sediment, and the provision of aquatic habitats.
- 4) Wetlands:

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- a) As per regulations made under the Conservation Authorities Act, proposed development within a wetland is not permitted. Development within a portion of the adjacent buffer area may be permitted subject to an approved Environmental Impact Study.

### F.1.4.2 SWM Design

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#### 1) Stormwater Quantity:

- a) The design standards for each site will be based on the capacity of the receiving system, and on-site retention may be required to properly manage peak post development flows. The developer's consulting engineer may be required to conduct an assessment of the receiving system to determine available capacity.
- b) Typically, SWM systems should be designed to the same standard as the receiving system (i.e., if the storm sewer on the street is designed to handle a 1-in-5 year storm, the same standard should be used on the site). However, where the receiving system is nearing capacity, the Engineering and Development Services Department Approvals Section may stipulate that the on-site system should be designed to achieve pre-development flows.
- c) Design sheets should be submitted with the site plans and subdivision plans to enable an assessment of stormwater runoff to be undertaken.
- d) On-site detention systems that the City will accept include:
  - I) parking lot detention to a maximum depth of 0.3 metres;
  - II) rooftop detention subject to acceptance by the Chief Building Official; and,
  - III) detention ponds.

#### 1) Stormwater Quality:

- a) For sites in excess of one (1) hectare in size, the City will require developments to address stormwater quality issues. Refer to Section C.3.2.1.4 of this Manual for details on the City's policy.
- b) Where cash-in-lieu is to be provided, payment will be due at the time of execution of the site plan agreement.
- c) Where on-site facilities for the treatment of quality of stormwater runoff is to be provided, details on the facilities will be provided as part of the site plans submitted for approval. Stormwater quality facilities may be consolidated with stormwater quantity control measures.
- d) For developments with potential for contaminating stormwater runoff (i.e., gas stations, automobile service garages), use of systems to remove grit

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and other contaminants from entering the stormwater system (i.e., stormceptor, vortechinics) will be required.

### F.1.5 Lighting

#### F.1.5.1 On-Site Lighting for Site Plans

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##### Checklist of Requirements for On-Site Lighting for a Site Plan Development:

Place a checkmark (✓) in the applicable boxes below.

- 1) On-site lighting design for a site plan development meets the following requirements:
  - It is designed to promote public safety and security by providing lighting in public use areas such as pedestrian corridors, parking areas, and building entrances.
  - Lighting located on adjoining lots or on public streets is not relied upon for providing sufficient lighting on a lot.
  - It is designed to not impinge on adjacent lands.
  - It is directed away from nearby properties to mitigate light pollution and prevent excessive glare.
  - It does not detract or interfere with traffic control measures on site and on adjoining streets.
  - It is in scale with the pedestrian environment and blends in with surrounding buildings and site landscaping.
  - For large parking lots, lights are mounted on tall poles.
  - For small parking areas and pedestrian ways, lighting is pedestrian-scaled (e.g., they are located on shorter poles or mounted on an adjacent building).
  - Its underground wiring is installed to light standards, wherever possible.
  - Multi-purpose poles are used rather than single purpose poles, where possible.

#### F.1.5.2 Streetlighting Design for Subdivisions

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##### Checklist of Requirements for Streetlighting Design for a Subdivision:

Place a checkmark (✓) in the applicable boxes below.

- 1) Streetlighting design for subdivisions meets the following requirements:

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- Poles and luminaries are laid out on both sides of the roadway in a staggered pattern (exceptions will be on divided median roadways and at intersections).
- All lighting fixtures are located on municipal road allowances.
- Light levels along different roads and at intersections and other facilities (e.g., parks, walkways) in the subdivision meet those that are indicated by the City.
- Additional pedestrian-scale lighting is provided in areas with a high volume of pedestrian activity, such as key intersections, transit stops, multi-purpose trail crossings, mid-block pedestrian crossing, and community mailbox locations.
- Low level pedestrian-scale lighting is provided, where appropriate, along walkways where concern about glare from higher poles exists.
- All light standards must include Philips CityTouch Connector Nodes.

### F.1.6 Signage

#### Checklist of Requirements for Signage in Plans and Drawings:

Place a checkmark (✓) in the applicable boxes below.

- 1) The following signs are shown on the General Service Plan, Plan/Profile Drawings, and the Composite Utility Plan(s):
  - street names;
  - traffic control;
  - parkland; and,
  - trail.

#### F.1.6.1 Signage for Subdivision Plans

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##### F.1.6.1.1 Street Name Signs and Other Signs

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#### Checklist of Requirements for Street Name Signs and Other Signs:

Place a checkmark (✓) in the applicable boxes below.

- 1) Street name signs meet the following requirements:
  - All lettering is white upper case, on green reflectorized background.
  - Abbreviations for Ave. (Avenue), Blvd. (Boulevard), Cr. (Crescent), Ct. (Court), Dr. (Drive), Pl. (Place), Rd. (Road), St. (Street), are 2.5 inches (65 millimetres) in height and lettering for the street name



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- The North, South, East or West designation is 4 inches (100 millimetres) in height.
  - Their lettering has the correct spacing, in order for the message to be legible and aesthetically correct.
  - They are fastened to a 75-millimetre galvanized steel post 3.65 metres in length, minimum 10-gauge and embedded 1.2 metres into 20 Mpa concrete to prevent rotation of the posts.
- 2) Other signs meet the following requirements:
- STOP signs are reflectorized with high intensity scotch lite.
  - Regulatory signs are reflectorized and of shape and colour as recommended by the Canadian Government Specification Board and approved by the Manual of Uniform Traffic Control Devices of Canada.
  - Warning signs are composed of black lettering on yellow reflectorized background of standardized shape, as approved by the Canadian Government Specification Board.

### F.1.6.1.2 Temporary Street Name Signs

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#### Checklist of Requirements for Temporary Street Name Signs:

Place a checkmark (✓) in the applicable boxes below.

- 1) Temporary street name signs meet the following requirements:
- They consist of a painted and legible sign on wood backing, fastened securely on a post 2.1 metres above ground level.
  - They are double-signed to be visible from both directions.

### F.1.6.1.3 Traffic Control Signs

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- 1) All traffic control signs will be purchased and installed by the developer , after the placement of the base course asphalt, as approved by the Municipal Engineer and at the developer's expense.

#### Checklist of Requirements for Traffic Control Signs:

Place a checkmark (✓) in the applicable boxes below.

- 2) Traffic control signs meet the following requirements:
- They are mounted on a 100-millimetre by 100-millimetre pressure-treated wooden post.
  - They are made of a minimum H34 aluminum with the following thickness:
    - For metal gauge signs under 600 millimetres: 64 millimetres; and,

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- For metal gauge signs over 600 millimetres: 81 millimetres.
- They have a minimum reflectivity that conforms to the latest requirements of the ASTM Specification D4956-90 for Type III materials.

### F.1.6.2 Signage for Site Plans

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#### F.1.6.2.1 Promotional Signage

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- 1) The City of Belleville has a Sign by-law that specifies the nature of signage permitted on properties within the City. Copies of the City's Sign by-law can be obtained from the City's Engineering and Development Services Department.
- 2) Most signs (the exceptions apply principally to very small signs) require issuance of a permit from the Building Section, before the sign can be installed.

#### F.1.6.2.2 Site Signage

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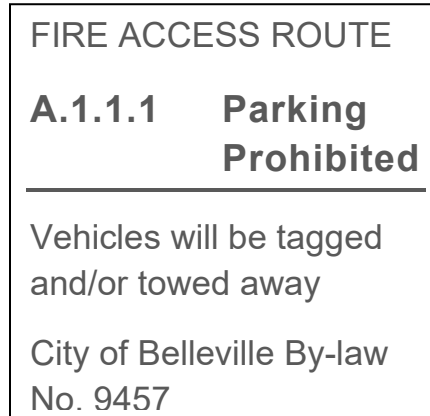
##### Checklist of Requirements for Site Signage for a Site Plan Development:

Place a checkmark (✓) in the applicable boxes below.

- 1) Site signage for a site plan meets the following requirements:
  - All parking spaces established for disabled persons are signed using the Provincially regulated symbol.
    - Each space is signed separately.
  - Signage is a minimum of 300 millimetres by 600 millimetres erected 1.5 metres high at the end of the parking space.
    - Where appropriate, painted signage and colour distinction are placed on the parking surface to supplement the vertical signs.
  - Parking areas containing spaces designed for small vehicles are signed accordingly, using either a vertical sign or a sign painted on the parking lot surface.
  - Fire routes designated by the City's Fire Department are signed as per the requirements of the City's Fire Route By-law at the owner's expense. Such signs:
    - are permanently installed and legible;
    - have minimum dimensions of 300 millimetres by 450 millimetres;

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- are placed at intervals of not more than 30 metres along a fire route; and,
- display information using red on white that is reflective, as illustrated herein.



### F.1.7 Parking

#### F.1.7.1 Parking Areas for Site Plans

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##### F.1.7.1.1 Parking Lot Surface

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#### Checklist of Requirements for Parking Lot Surfaces for a Site Plan Development:

Place a checkmark (✓) in the applicable boxes below.

- 1) Parking lot surfaces for a site plan development meet the following requirements:
  - The parking lot is composed of a hard-surfaced material that is asphalt, concrete, or concrete pavers.
  - Areas that are not to be hard-surfaced are constructed of gravel with:
    - sufficient strength to support the weight of vehicles, and
    - appropriate cover to prohibit the creation of dust by wind.
  - The following parking areas are hard-surfaced:
    - multiple residential developments – tenants and visitor parking areas;
    - commercial and institutional developments – customer, tenant, and staff parking areas; and,
    - industrial developments – visitor parking areas, and parking areas that face directly onto a public street unless screened from view.

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- The following parking areas may be gravelled:
  - Areas of outside storage within commercial and industrial developments, provided that they do not face a street or are otherwise appropriately screened; and,
  - Employee parking areas within industrial developments, provided that they do not face directly on a street or are otherwise appropriately screened.
- All driveways leading to a public street are hard-surfaced to the edge of street.
- On the road allowance, the driveway surface is 50 millimetres of HL3A with 150 millimetres of granular A.
  - For driveways designated as fire (truck) routes, a higher standard is used.
- Loading areas are hard-surfaced.

### F.1.7.1.2 Parking Layout

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- 1) The following parking standards and dimensions have been developed to represent the recommended best practise for surface, non-structured parking facilities.
- 2) Variations within structures can be developed in concert with the Manager of Approvals, in accordance with the applicable zoning bylaw.

Category	Requirement
Minimum width with parking angle less than 20 degrees	2.4 metres
Minimum length with parking angle less than 20 degrees	7.0 metres
Minimum width with parking angle greater than 20 degrees	2.4 metres
Minimum length with parking angle greater than 20 degrees	6.0 metres
Minimum aisle width in parking lots with parking angle 0 to 50 degrees	3.9 metres
Minimum aisle width in parking lots with parking angle 50 to 70 degrees	5.5 metres

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Minimum aisle width in parking lots with parking angle 70 to 90 degrees	7.0 metres
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- 3) All required parking spaces will be delineated on the asphalt parking area with line painting which will be maintained (redone) as needed.

### F.1.7.1.3 Curbing

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- 1) Cast-in-place curbing is preferred for high volume parking areas (i.e., retail shopping complexes or developments where vehicle turnover rates are high).
- 2) For less demanding environments (i.e., employee parking for an industrial use or lots where vehicle movements are more limited), pre-cast barrier curbs may be employed, provided they are pinned in place.

### Checklist of Requirements for Parking Lot Surfaces for a Site Plan Development:

Place a checkmark (✓) in the applicable box below.

- 3) Parking areas:
  - adjacent to street lines are provided with curbs.

### F.1.7.1.4 Loading Area Layout

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- 1) Loading areas should be located and designed so as to ensure delivery vehicles do not need to manoeuvre on public streets in order to access the loading area.
- 2) Exceptions to the foregoing will only be considered in the most extreme circumstances, particularly in the central business district where lot configurations do not afford options, but care should be exercised to ensure no such manoeuvring areas are created on collector or arterial streets.

### F.1.7.2 Accessible Parking Guidelines

---

- 1) The following guidelines outline requirements for off-street and on-street designated accessible parking within the City of Belleville.
- 2) These guidelines have been developed based on legislated responsibilities within the AODA, in consultation with our Belleville Accessibility Advisory Committee, and through review of relevant resources including The [GAATES Illustrated Technical Guide to the Design of Public Spaces](#) and various municipal best practices and design guidelines.

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### F.1.7.2.1 Signage for Off-Street and On-Street Parking Facilities

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#### F.1.7.2.1.1 Post Signs

---

##### **Checklist of Requirements for Post Signs:**

Place a checkmark (✓) in the applicable boxes below.

- 1) Post signs for off-street and on-street facilities meet the following requirements:
  - Regarding post signage for designated accessible parking:
    - In accordance with Section 11 of Regulation 581 of the Highway Traffic Act, all designated accessible parking spots must be distinctly indicated by erecting accessible parking permit signage (see Figure 1 and Figure 2 below):

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Figure 1: Standard post signage for designated accessible parking spots (source: O. Reg. 308/10, s.11)

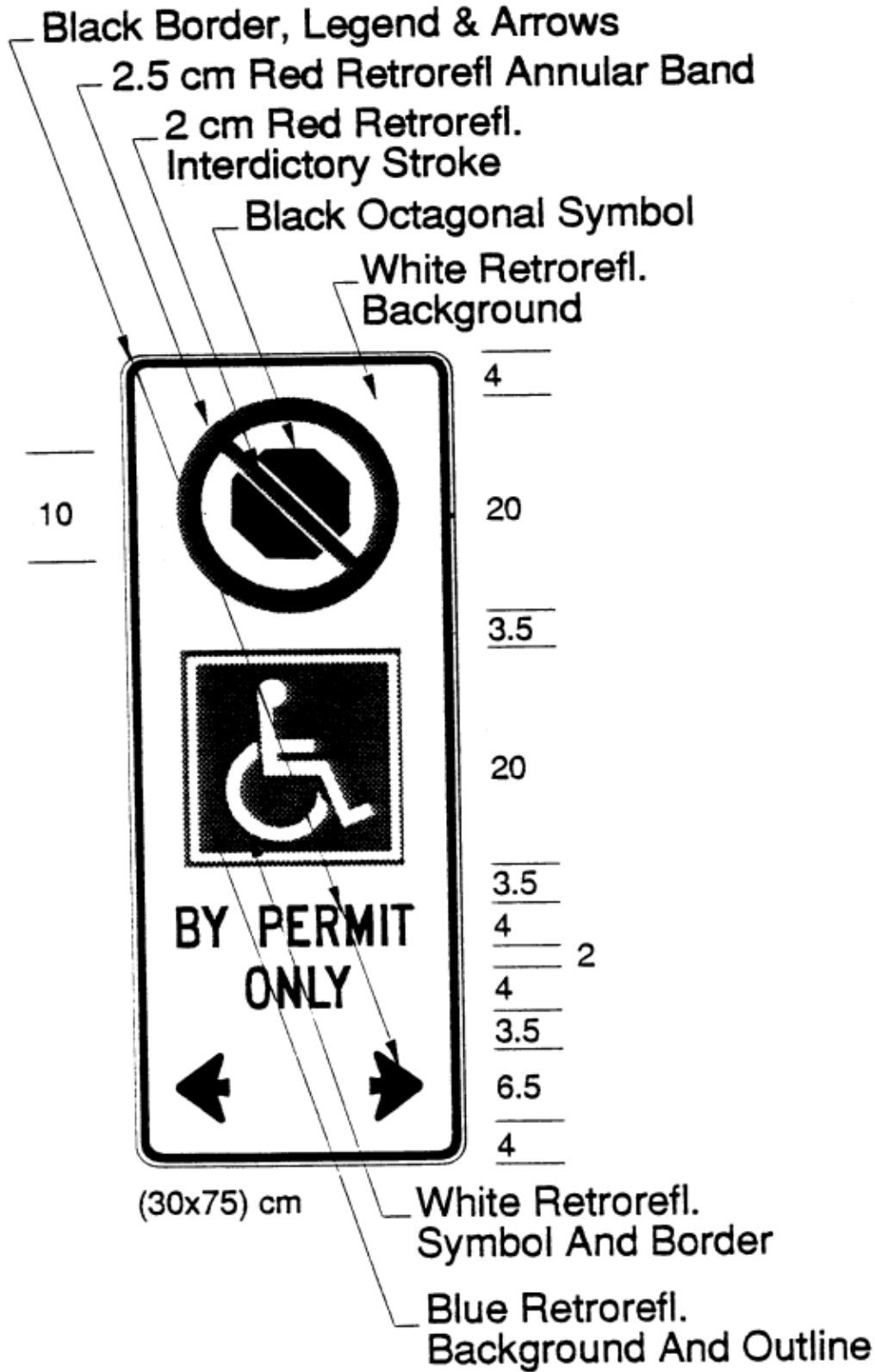


Figure 2: Post signage for designated parking spots that are located within a vehicle no-stopping zone (source: O. Reg. 308/10, s.13)



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- Post signage is installed:
  - at a height between 1,500 to 2,500 millimetres from ground level to the center of the sign;
  - to be centered in front of the parking space for perpendicular spots, or towards the front end of the parking space for parallel spots; and,
  - out of a direct path of travel and have a minimum head clearance of 2,100 millimetres from ground level.
- Type A accessible parking spots include additional signage that identifies the spot as “Van Accessible”<sup>7</sup> (see Figure 3 below):

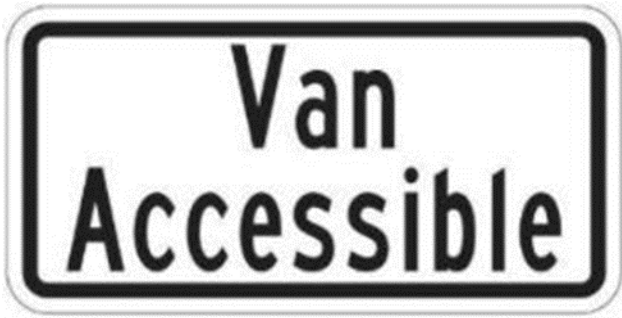


Figure 3: Additional signage required for Type A designated accessible parking spots to mark the spot as “Van Accessible”

- Additional “Van Accessible” signage is posted directly below the general accessible parking sign.

### F.1.7.2.1.2 Pavement Markings

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- 1) Pavement markings are encouraged for on-street designated accessible parking spots where possible and practicable, but they are not a requirement.
- 2) Pavement markings are not specified in the AODA or the Highway Traffic Act, therefore their requirements are based on best practices.

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<sup>7</sup> Having a “Van Accessible” sign for Type A spots is a requirement, however there are no design specifications in the AODA. These requirements are, therefore, based on best practices.

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### Checklist of Requirements for Pavement Markings Associated with Parking:

Place a checkmark (✓) in the applicable boxes below.

- 3) Pavement markings for both on- and off-street facilities meet the following requirements:
- All designated off-street accessible parking spots feature pavement markings that consist of the symbol of access inside a painted square (see Figure 4 below):



Figure 4: Example of pavement marking used to identify a designated accessible parking spot

- The pavement parking:
  - is a painted square:
    - that is, at minimum, 1,525 millimetres by 1,525 millimetres, and
    - with a solid blue fill and a yellow outline;
  - includes a yellow painted symbol of access inside the square; and,
  - is located within the lines that mark an individual parking spot, and towards the open end of the spot.

#### F.1.7.2.2 Off-Street Accessible Parking

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F.1.7.2.2.1 Off-street accessible parking requirements apply to outdoor, indoor, multi-level, and underground off-street parking facilities. Design

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#### Checklist of Requirements for the Design of Off-Street Accessible Parking:

Place a checkmark (✓) in the applicable boxes below.

- 1) Accessible parking spaces must:

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- Be located in an area where people with disabilities can easily access a building or facility via curb ramps, depressed curbs or other means;
- Be hard surfaced and level;
- Have authorized signage indicating that it is an accessible parking space, compliant with Section 11 of Ontario Regulation 58 1 made under the Highway Traffic Act; and
- Have an access aisle that is:
  - a minimum of 1.5 metres wide;
  - as long as the adjacent parking spaces; and
  - marked with high tonal contrast diagonal lines to indicate that parking is prohibited within the aisle space.

### F.1.7.2.2.1.1 DIMENSIONS

- 1) A type A accessible parking space is a large accessible parking space that is van accessible, while a Type B accessible parking space is a standard accessible parking space.

#### **Checklist of Requirements for Off-Street Accessible Parking Dimensions:**

Place a checkmark (✓) in the applicable boxes below.

- 2) Off-street Type A accessible parking space dimensions meet the following requirements:
  - They have a minimum width of 3,400 millimetres.
  - They have a minimum length of 6,000<sup>8</sup> millimetres.

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<sup>8</sup> The length of a Type A (van-accessible) accessible parking space is not specified in AODA, therefore this length is based on common best practice.

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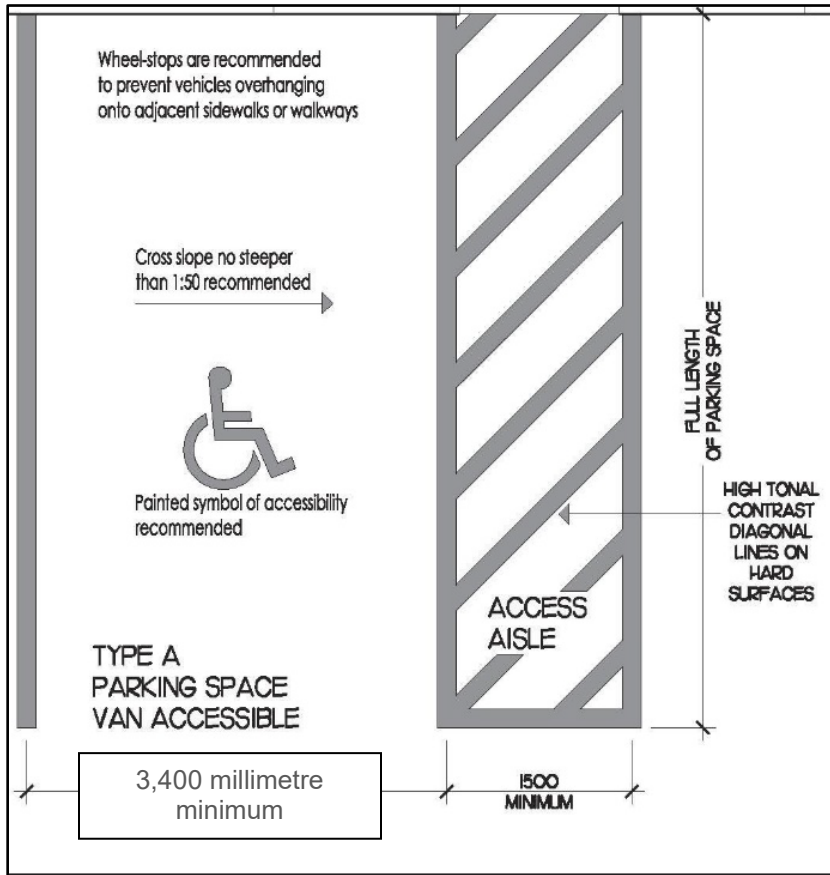


Figure 5: A Type A accessible parking spot (source: gaates.org/DOPS)

- 3) Off-street Type B accessible parking space dimensions meet the following requirements:
- They have a minimum width of 2,700 millimetres.
  - They have a minimum length of 6,000<sup>9</sup> millimetres.

<sup>9</sup> The length of a Type B accessible parking space is not specified in AODA, therefore this length is based on common best practice.

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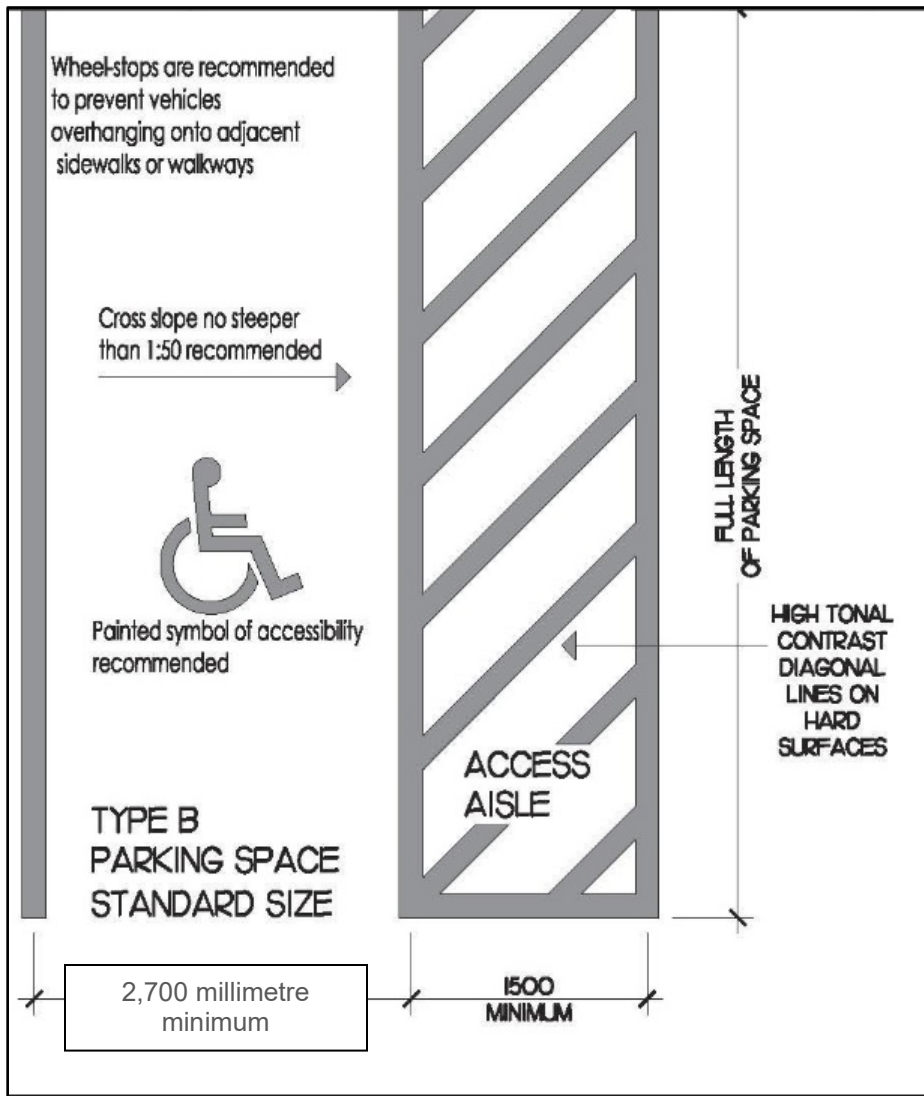


Figure 6: A Type B accessible parking spot (source: gaates.org/DOPS)

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### F.1.7.2.2.1.2 ACCESS AISLES

- 1) An access aisle is the void space beside an accessible parking spot that allows a person with disability to easily and safely get in and out of their vehicle. For example, see Figure 7 below:

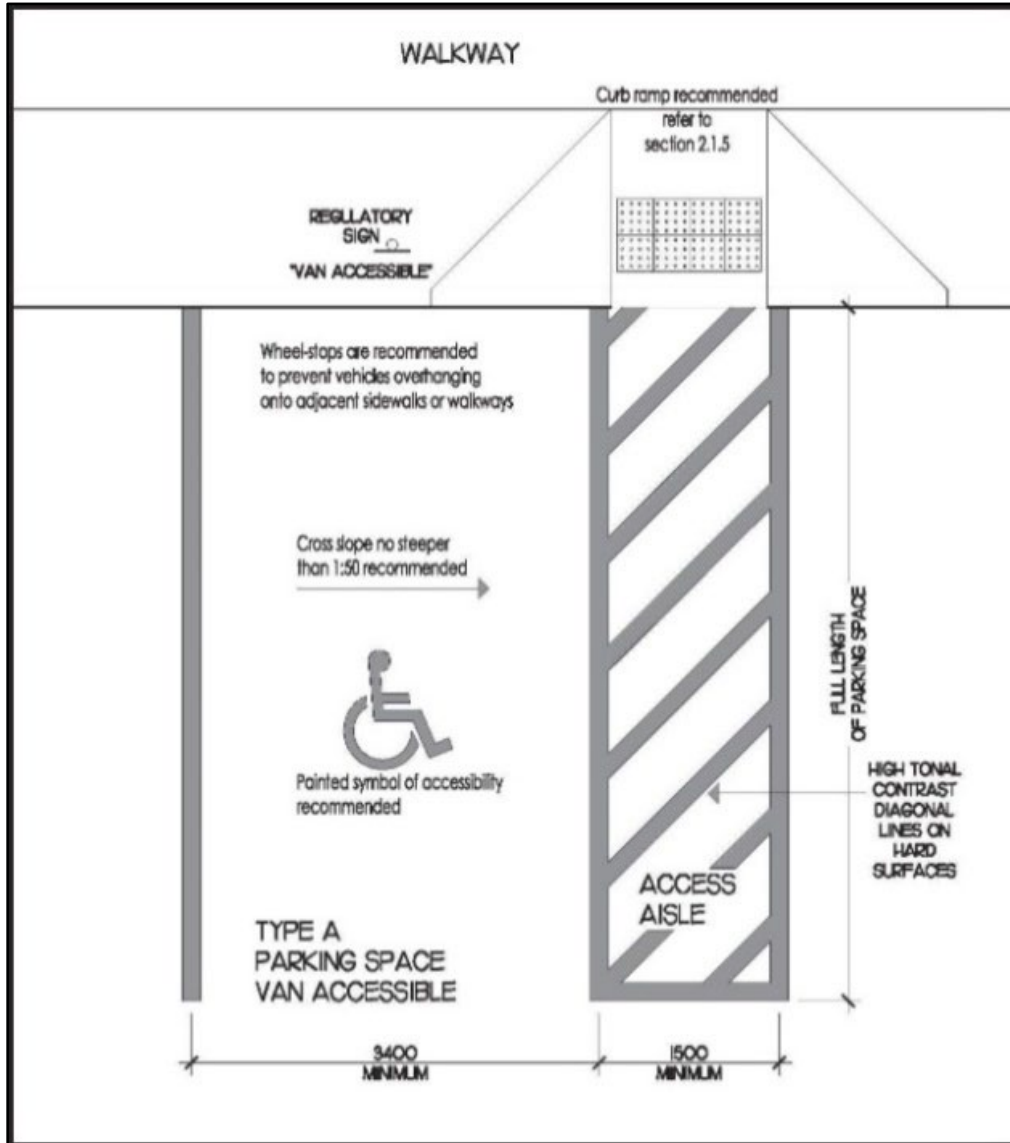


Figure 7: Example of a Type A off-street accessible parking spot, complete with an access aisle and barrier-free access to the sidewalk (source: gaates.org/DOPS)

- 2) An access aisle may be shared by two adjacent accessible parking spots.
- 3) It is strongly encouraged that access aisles are placed on both sides of an accessible parking spot. This universal design practice acknowledges that persons with disabilities may be the drivers and/or passengers of the vehicle, and it increases the safety, ease, and inclusive use of the space.

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### Checklist of Requirements for Access Aisles:

Place a checkmark (✓) in the applicable boxes below.

- 4) Access aisles for off-street accessible parking spots meet the following requirements:
  - They are provided for each accessible parking spot, regardless of the type of spot.
  - They are a minimum of 1,500 millimetres wide.
  - They extend the full length of the parking space.
  - They are marked with yellow, high tonal contrast diagonal lines to indicate no parking in them.
  - When accessible parking spots and access aisles are located perpendicular to a sidewalk or curbed path of travel, a curb cut is included where the access aisle meets the sidewalk.

#### F.1.7.2.2.1.3 WHEEL STOPS

- 1) Wheel stops are not specified in the AODA, however they are a pedestrian safety measure that may ensure that a clear path of travel is maintained.

### Checklist of Requirements for Wheel Stops:

Place a checkmark (✓) in the applicable box below.

- 2) If a designated accessible parking spot is located perpendicular to a path of travel that does feature a standard curb:
  - a wheel stop is included 200 millimetres before the parking space meets the path of travel.

#### F.1.7.2.2.2 Location

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##### F.1.7.2.2.2.1 GENERAL LOCATION REQUIREMENTS

### Checklist of Requirements for General Location:

Place a checkmark (✓) in the applicable boxes below.

- 1) When determining the placement of designated accessible parking spots within an off-street parking facility, the location meets the following requirements:
  - It is firm, flat, and stable, with slip-resistant surfacing.
  - It is less than a 2% running slope.
  - It is less than a 2% cross slope.

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- Regarding minimum headroom clearance:
  - It is 2,900 millimetres around any accessible parking spot to allow for use by larger vehicles, including covered parking lots.
  - Where necessary, it is reduced to no less than 2,300 millimetres along the path of travel routes to and from the parking spot.
- It is a safe and barrier-free path of travel from the accessible parking spot to the sidewalk and/or building entrance.
- It considers:
  - the location of:
    - dropped curbs or curb ramps;
    - sidewalks and crosswalks; and,
    - the accessible building entrance; and,
  - pedestrian safety within traffic areas.
- It does not require a person to travel through traffic lanes or behind parked cars.
- It is in close proximity (e.g., within 30 metres) of an accessible building entrance.
- It is protected from the weather, where possible.
- It offers additional security and safety, such as adequate lighting.
- It offers comparative maintenance.

### F.1.7.2.2.2.2 LOCATION REQUIREMENTS FOR MULTIPLE OFF-STREET FACILITIES

- 1) Depending on the location and layout of the various off-street parking facilities, it may not be appropriate to place any designated accessible parking spots in a lot that does not meet the general location requirements outlined in the above section of this Manual. In such cases, the required number of designated accessible parking spots for that lot may be distributed among the other parking facilities in a manner that provides the highest level of accessibility.

#### **Checklist of Requirements for the Location of Multiple Off-Street Facilities:**

Place a checkmark (✓) in the applicable boxes below.

- 2) If there is more than one off-street parking facility serving a site, the following location requirements must be met:
  - The accessible parking spots are distributed among the facilities in a manner that provides equivalent or greater accessibility in terms of:
    - distance;



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- path of travel; and,
- ease of access to an accessible entrance.

### F.1.7.2.2.2.3 SAFE AND ACCESSIBLE PATH OF TRAVEL ROUTES

#### Checklist of Requirements for the Safe and Accessible Path of Travel Routes:

Place a checkmark (✓) in the applicable boxes below.

- 1) Safe and accessible path of travel routes meet the following requirements:
  - Where possible, designated accessible parking spots are placed perpendicular to a barrier-free sidewalk, path of travel, or building entrance.
  - Where the above is not possible, a defined path of travel route that provides a safe and accessible means of travelling to and from accessible parking spots and the nearest barrier-free sidewalk, path of travel, or building entrance is provided (see Figure 8 and Figure 9 below for examples):

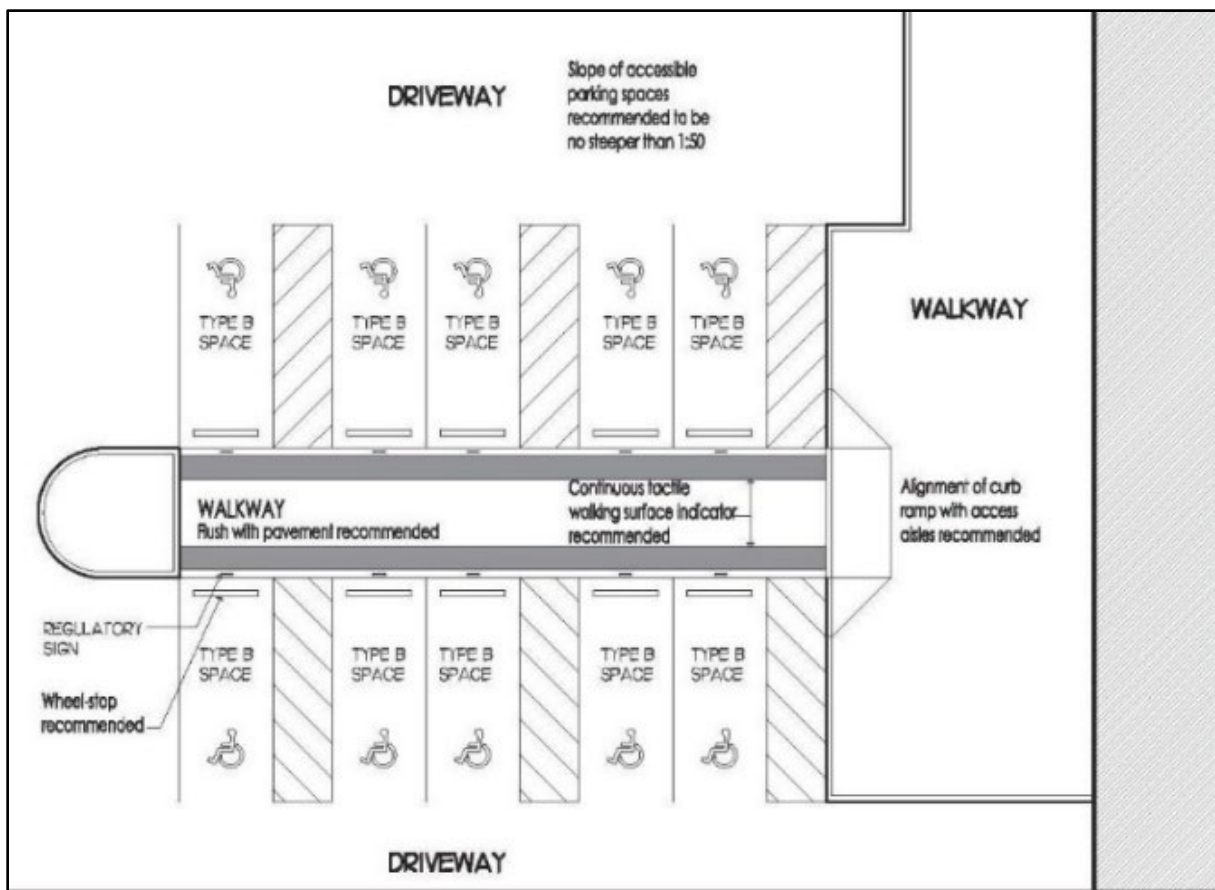


Figure 8: Since these designated accessible parking spots are located away from the sidewalk, there is an on-grade path of travel between the spots that leads to a curb ramp for sidewalk access. This provides an accessible and safe route for people to travel from the parking spots to the sidewalk (source: gaates.org/DOPS)



Figure 9: An on-grade path of travel route delineated with yellow horizontal pavement markings provides clear indication of a safe and accessible route from designated accessible parking spots to the nearest sidewalk or building entrance.

- The path of travel route is identified in yellow, high tonal contrast pavement markings and includes appropriate signage, to both facilitate a safe and barrier-free path of travel and prevent people from walking through traffic lanes and behind parked vehicles.

#### F.1.7.2.2.3 Minimum Number and Type

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- 2) The required number and type of designated accessible parking spots is calculated based on the total number of spots in the parking area, always rounding up to the nearest whole number.
- 3) If more than one off-street parking facility is provided to serve a site, the number and type of designated accessible parking spots must be calculated according to the number of parking spots in each individual parking facility.
- 4) Where there are 12 to 25 parking spaces in an off-street parking facility, it is strongly encouraged that the developer includes, at minimum, one Type A and one Type B accessible parking space.
- 5) Additionally, the developer should consider the type of facility the parking area serves and, where appropriate, is encouraged to increase the minimum number of required accessible parking spaces.

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### Checklist of Requirements for the Minimum Number and Type of Off-Street Accessible Parking Spots:

Place a checkmark (✓) in the applicable boxes below.

- 6) The requirements for the minimum number and type of off-street accessible parking spots are the following:
- For off-street parking facilities of 12 or fewer parking spaces, one (1) accessible parking space that meets the requirements of a Type A parking space is provided.
  - For off-street parking facilities with more than 12 parking spaces:
    - Where an even number of accessible parking spaces is required, those parking spaces are evenly divided between Type A and Type B spaces.
    - Where an odd number of accessible parking spaces is required, those spaces are evenly divided between Type A and Type B parking spaces, with the additional parking space (i.e. the odd-numbered space) being either a Type A or a Type B space.
  - For off-street parking facilities with 13 to 100 parking spaces, 4% of the total number of parking spaces, rounded up to the nearest whole number, are accessible parking spaces.
    - Where only one (1) parking space is required, that space meets the requirements of a Type A parking space.
  - For off-street parking facilities with 101 to 200 parking spaces, one accessible parking space plus an additional 3% of accessible parking spaces, rounded up to the nearest whole number, are provided.
  - For off-street parking facilities with 201 to 1,000 parking spaces, two accessible parking spaces plus an additional 2% of accessible parking spaces, rounded up to the nearest whole number, are provided.
  - For off-street parking facilities with greater than 1,000 parking spaces, 11 parking spaces plus 1% of the number of parking spaces, rounded up to the nearest whole number, are provided.
- 7) Provided below is a quick reference table that summarizes the required number of accessible parking spaces, based on the number of parking spaces that is provided in an off-street parking facility. The information in the table is based on legislated requirements, outlined above in this section of the Manual, and is sourced directly from the Design of Public Spaces Standard of the Integrated Accessibility Standards Regulation, within the AODA.

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<b>Total Spaces in the Parking Area</b>	<b>Required Type A Spaces</b>	<b>Required Type B Spaces</b>
<b>1 to 12</b>	1	0
<b>13 to 25</b>	1	0
<b>26 to 50</b>	1	1
<b>51 to 75</b>	1	2 (see note)
<b>76 to 100</b>	2	2
<b>101 to 133</b>	2	3 (see note)
<b>134 to 166</b>	3	3
<b>167 to 250</b>	3	4 (see note)
<b>251 to 300</b>	4	4
<b>301 to 350</b>	4	5 (see note)
<b>351 to 400</b>	5	5
<b>401 to 450</b>	5	6 (see note)
<b>451 to 500</b>	6	6
<b>501 to 550</b>	6	7 (see note)
<b>551 to 600</b>	7	7
<b>601 to 650</b>	7	8 (see note)
<b>651 to 700</b>	8	8
<b>701 to 750</b>	8	9 (see note)
<b>751 to 800</b>	9	9
<b>801 to 850</b>	9	10 (see note)
<b>851 to 900</b>	10	10
<b>901 to 950</b>	10	11 (see note)
<b>951 to 1000</b>	11	11
<b>1001 and over</b>	11 spaces plus 1% of the total number of spaces (rounded up to the next whole number), to be divided	

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Total Spaces in the Parking Area	Required Type A Spaces	Required Type B Spaces
	equally between Types A and B. If an odd number of spaces is required, the extra space may be Type B.	
<b>Note: Where an uneven number of accessible parking spaces are required, the extra Type B space may be changed to a Type A space.</b>		

### F.1.7.2.2.4 Exceptions

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- 1) Off-street parking facilities exempted from designated accessible parking requirements include:
  - a) Lots not intended for public use (e.g., a private driveway);
  - b) Facilities that are used exclusively for parking buses, delivery vehicles, law enforcement vehicles, medical transportation vehicles, or impounded vehicles; and,
  - c) Lots where existing physical or natural characteristics prevent you from meeting the requirements. In such cases, the Developer must provide sufficient rationale and proof, to the satisfaction of the City, to demonstrate why the Developer cannot comply with the requirements.

### F.1.7.2.3 On-Street Accessible Parking

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#### F.1.7.2.3.1 Application

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- 1) Requirements for on-street designated accessible parking apply to areas of controlled and distinctly indicated on-street parking within the City of Belleville.

##### F.1.7.2.3.1.1 EXCEPTIONS

- 1) On-street parking within residential areas where there are no indicated or painted parking spots is exempt from designated accessible parking requirements.
- 2) Parking facilities associated with multi-unit residential buildings are subject to the standard AODA and Ontario Human Rights Code requirements.

#### F.1.7.2.3.2 Consultation Requirement

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- 1) When designing on-street parking facilities within the City of Belleville, the developer must consult the Belleville Accessibility Advisory for direction on the required number, design, and placement of on-street designated accessible parking spots.

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- 2) Consultations with Belleville Accessibility Advisory Committee are facilitated through the City's Accessibility Coordinator by:
  - a) email at [accessibility@belleville.ca](mailto:accessibility@belleville.ca), or
  - b) calling City Hall at 613-968-6481.
- 3) Consultations may be completed in-person or remotely by submitting materials for review by the Committee and discussing the results by phone or email. Where appropriate, consultations can be included as part of the Application for Site Plan Approval process.

### F.1.7.2.3.2.1 PREPARING FOR YOUR CONSULTATION

- 1) Whether completing your consultation in person or remotely, prior to consultation, certain materials will need to be prepared.

#### **Checklist of Requirements for Pre-Consultation Materials that Relate to Accessible Parking:**

Place a checkmark (✓) in the applicable boxes below.

- 2) With respect to accessible parking, materials that must be prepared for a pre-consultation are:
  - site plan drawings that clearly show:
    - the location of all proposed on-street parking facilities that are part of the development project, including proposed designated on-street accessible parking spots;
    - the location of accessible building entrances;
    - barrier-free access points to any sidewalks, paths of travel, and building entrances; and,
    - Any streetscape, sidewalk, and landscaping features and amenities (trees, gardens, signage, benches, etc.);
  - drawings that clearly show the proposed design of designated on-street accessible parking spots, including the:
    - width;
    - length;
    - access aisles;
    - barrier-free access points to sidewalks, paths of travel, and building entrances; and,
    - the design and placement of post and pavement signage and that will indicate the designated accessible parking spots.
  - a Rationale to support the proposed number of designated on-street accessible parking spots;

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- relevant information about other on-street parking facilities that are within the same area as the development project and proposed on-street parking spaces; and,
- any additional information to support the safe and accessible use of the proposed on-street parking facilities (adjacent traffic, lighting, safety, etc.).

### F.1.7.2.3.3 On-Street Accessible Parking Design Considerations

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- 1) Based on consultation with the City's Accessibility Advisory Committee and review of relevant legislation and industry resources, some basic recommendations are provided for the developer's consideration, as the proposed on-street parking facilities are developed.

#### F.1.7.2.3.3.1 LOCAL CONSIDERATIONS

- 1) Designated on-street accessible parking spots are placed at the ends of a row of on-street parking, as there cannot be vehicles parked both in front and behind the spot. This placement is to:
  - a) facilitate a higher level of safety and accessibility, and
  - b) provide an easier means to provide access to a dropped curb or curb ramp.

#### Checklist of Requirements for On-Street Accessible Parking Location:

Place a checkmark (✓) in the applicable boxes below.

- 2) With respect to the location of on-street accessible parking, considerations include:
  - the characteristics of adjacent traffic;
  - the design of curbs and sidewalks;
  - the location of dropped curbs or curb ramps;
  - the location of street furniture;
  - the location of streetscape and landscaping features, such as trees; and,
  - space constraints.
- 3) With respect to designated on-street accessible parking spots, they are:
  - placed at the ends of a row of on-street parking.

#### F.1.7.2.3.3.2 DESIGN CONSIDERATIONS

- 1) If only one designated accessible parking spot, it should meet the dimensions of a Type A space. If there is more than one designated accessible parking spot, the remaining spots can be Type B spaces.

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### Checklist of Requirements for On-Street Accessible Parking Design:

Place a checkmark (✓) in the applicable boxes below.

- 2) With respect to the design of on-street accessible parking, considerations include the following:
- If there is only one designated accessible parking spot, it meets the dimensions of a Type A space.
  - Access aisles:
    - are included along the sides and at the rear of a designated accessible parking spot, to facilitate a safe space for people to enter and exit their vehicle, as well as for the unloading or transferring of mobility or assistive devices;
    - are, at minimum, 1,200 millimetres wide;
    - run the length and width of the parking space; and,
    - are marked with high tonal contrast diagonal lines.



Figure 10: An example of on-street designated accessible parking where there are access aisle spaces on both sides and the front and back of the spot. (source: gaates.org/DOPS)

- If space does not permit an access aisle on both sides of the designated accessible parking spot, priority is given to placing an access aisle on the side that is adjacent to traffic, provided that there is sufficient space on the



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curb side that passengers exiting or entering the vehicle are not interfering with a clear path of travel.

- A curb ramp is included and located:
  - near the space, and
  - at the front or back end of the space, depending on location, to facilitate safe and accessible access to a sidewalk, path of travel, or building entrance.

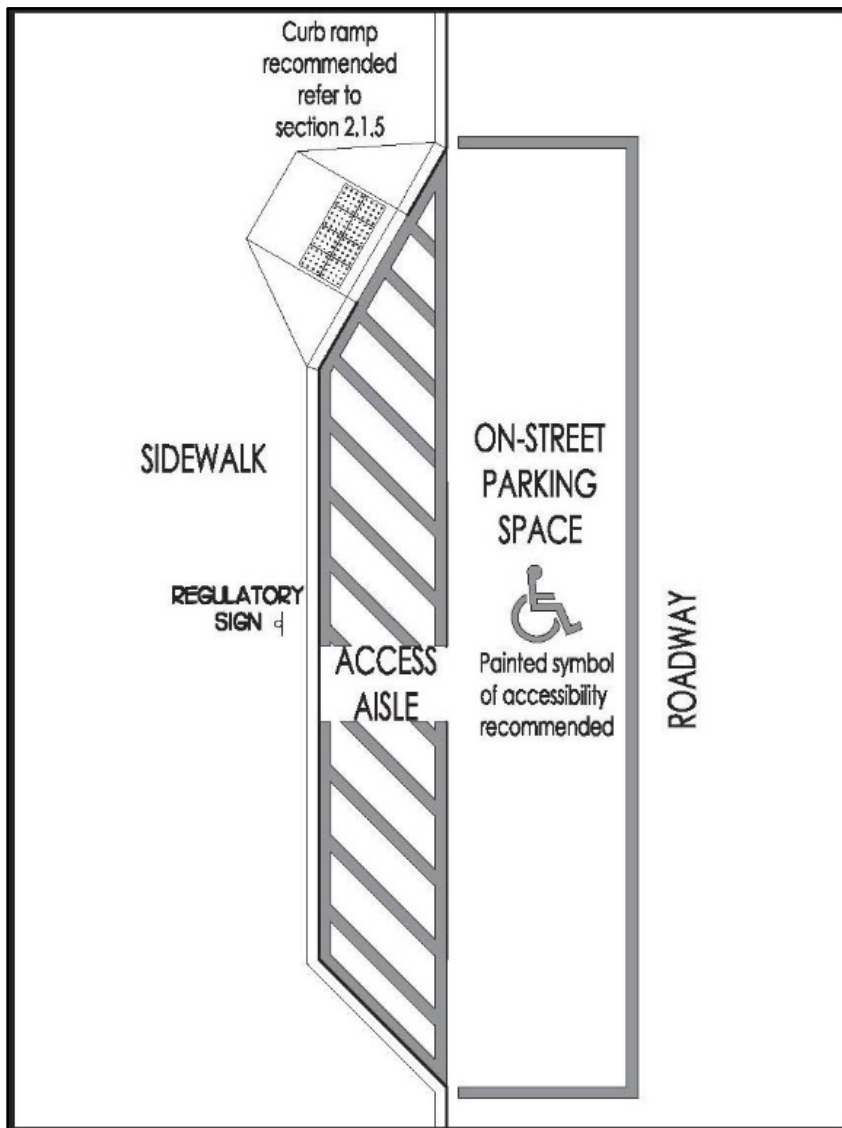


Figure 11: An example of an on-street designated accessible parking spot with an on-grade access aisle running the length of the spot and a curb ramp to the sidewalk at the front of the spot. (source: gaates.org/DOPS)

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- Post signage is:
  - not in a direct path of travel, and
  - placed towards the front end of the parking spot, so that it will not interfere with people entering or exiting their vehicles.
- Where possible, the on-street designated accessible parking spot is located in an area where the curb, sidewalk, or path of travel is recessed, so that vehicles can park out of the direct line of traffic.
- When designing recessed curb areas, there is space for an access aisle on the curb side of the vehicle, so that people may get in and out of their vehicle without interfering on the clearance for the path of travel route.

### F.1.7.2.4 Passenger Pick-up and Drop-off Zones

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- 1) If a new parking facility is being built or redeveloped for a site that is or will be accessed by the public, a loading zone is included to serve as a safe and accessible passenger pick-up and drop-off area.

#### F.1.7.2.4.1 Background

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- 1) Belleville Transit operates a door-to-door service called the [Mobility Bus](#). This public transportation option can be accessed by persons with disabilities who may experience challenges to using the City's fixed-route public transportation service.
- 2) Safe and accessible passenger pick-up and drop-off zones are also helpful for families with kids, older adults, people travelling with caregivers, companions, or support persons, and for people travelling by taxi.

#### F.1.7.2.4.2 Loading Zone Requirements

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##### F.1.7.2.4.2.1 DIMENSIONS

#### Checklist of Requirements for On-Street Accessible Parking Design:

Place a checkmark (✓) in the applicable boxes below.

- 1) Loading zones meet the following requirements:
  - With respect to their dimensions:
    - their designated space for a passenger pick-up and drop-off area is, at minimum, 7,925 millimetres long and at minimum 3,050 millimetres wide;
    - their headroom clearance:
      - around the loading zone is a minimum of 3,555 millimetres from the ground, and

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- along the path of travel to and from the building entrance is a minimum of 2,300 millimetres from the ground; and,
  - they have a minimum clear radius of 200 millimetres all around the loading zone, including both sides and the front and back ends, to provide safe areas for boarding, disembarking, and use of lifts for the driver and passenger(s).
- With respect to their location, they are:
  - within 30 metres of:
    - a barrier-free entrance, and
    - any main entrance that is accessible;
  - located where there is a barrier-free path of travel from the loading zone to the barrier-free entrance, including consideration of where there is a curb cut, if necessary;
  - adjacent to the sidewalk or path of travel, so that a vehicle can pull up parallel to it; and,
  - away from high traffic areas.
- With respect to post signage that indicates the area for the loading zone:
  - it is, at minimum, 300 millimetres wide by 600 millimetres high;
  - it is posted at a height between 1,500 millimetres to 2,500 millimetres from ground level to the center of the sign;
  - it has a reflective surface that is fade- and weather-resistant;
  - it has a white background with black lettering;
  - it includes a white symbol of access inside a blue square;
  - it includes a universal symbol for no parking and/or no stopping; and,
  - it includes lettering that identifies the area as an “Accessible Passenger Loading Zone”.
- With respect to their design:
  - they are located near or provide a canopy or other shelter feature to offer protection from the elements, when possible;
  - they have a full dropped curb along them, so that a vehicle could pull up parallel to it for barrier-free boarding, disembarking, and path of travel

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access all along the side of the vehicle to the accessible entrance (see Figure 12 below);

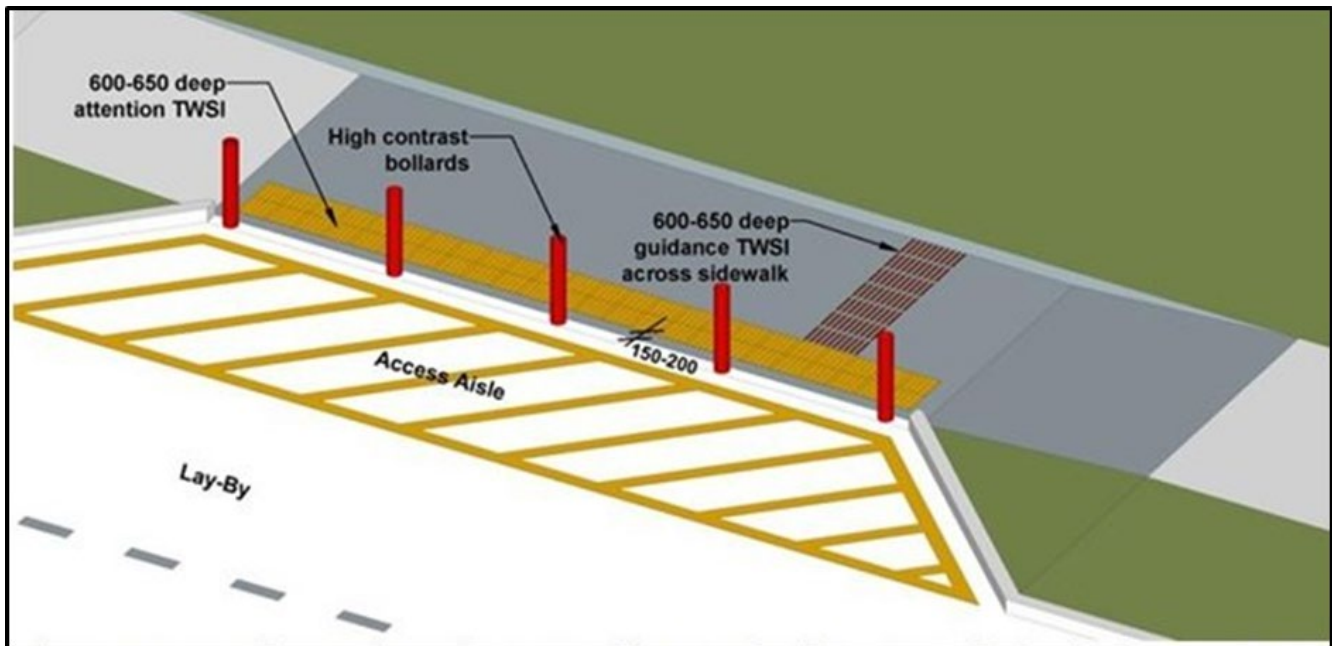


Figure 12: An accessible passenger drop-off and pick-up area with a dropped curb and a tactile walking surface indicator running the full length of the loading zone area. The curb is also recessed, allowing for an access aisle to be painted on the pavement. This allows room for ease and safe loading that is both out of traffic areas and out of any direct paths of travel. (source: [clearingourpath.ca](http://clearingourpath.ca))

- if a full dropped curb along the loading zone is used:
  - a tactile walking surface indicator is included to provide sensory indication that the curb is ending and there is a traffic area ahead, and
  - there is space out of a direct path of travel for people to board, disembark, and use a lift;
- they have an access aisle on the pavement within a recessed area of the sidewalk that is parallel to the sidewalk and runs the full length of the loading zone (see Figure 13 below); and,

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- If an access aisle is provided on the pavement parallel to the sidewalk, there is a dropped curb or curb ramp to provide barrier-free access to the sidewalk.

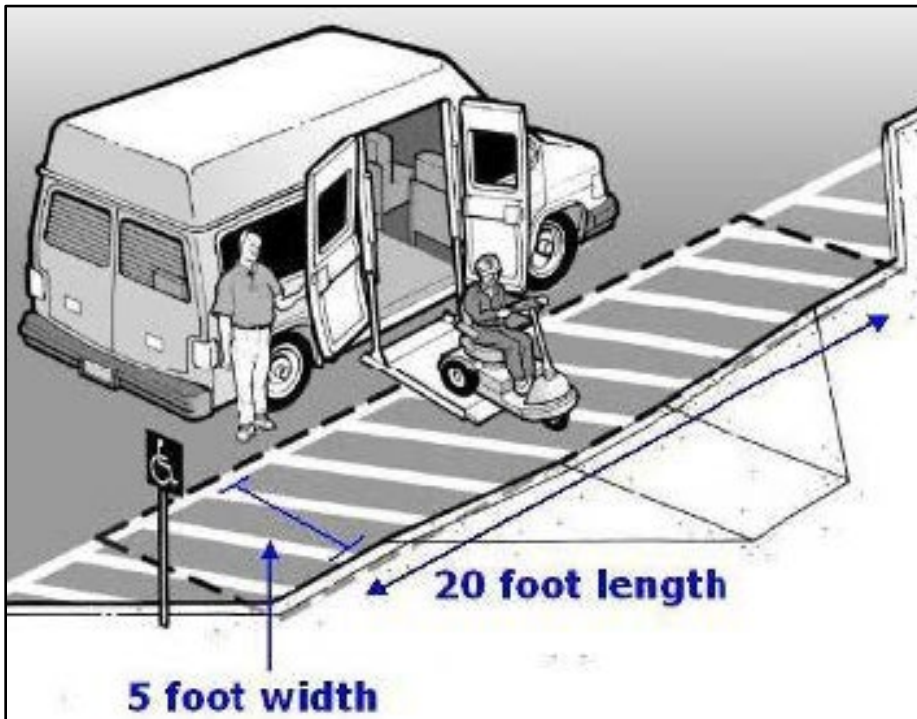


Figure 13: An accessible passenger drop-off and pick-up area with a recessed curb allowing for an access aisle on the pavement. There is a curb ramp in the middle of the access aisle to provide barrier-free access to the sidewalk and path of travel to the building entrance. (source: ada.gov)

## F.1.8 Vehicle Access for Site Plans

### F.1.8.1 Number and Location of Driveways

#### Checklist of Requirements for the Number and Location of Driveways for a Site Plan Development:

Place a checkmark (✓) in the applicable box below.

- 1) Except as may otherwise be prohibited by the City's Driveway Control By-law 2001-129:
  - driveways are designed in accordance with the policies set out in this section.

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- 2) The following exceptions and qualifications will apply as necessary and where appropriate:
- a) Provincial Highways – All entrances onto provincial highways will be subject to the approval of MTO. Refer to Section A.5.2.1 of this Manual for additional information.
  - b) Controlled Access – Certain arterial roads may be designated for controlled access by the City, in which instances the above standards would not apply. Consult the City’s Driveway Control By-law for further information.
  - c) One-way Access – Different standards will apply for one (1) way accesses or two (2) way accesses to streets with a centre barrier. In such instances, consult the City’s development engineer for assistance in determining acceptable standards.
  - d) Unusual Conditions – Circumstances will exist from time to time where these standards cannot be achieved due to narrow frontages, physical limitations, or locations of existing driveways on adjoining lots or those on the opposite side of the street. In such instances, these standards will be considered guidelines and accesses will be located in accordance with sound planning and engineering standards. Any reduction to these standards will only be considered where absolutely necessary and with the approval of the Director of Engineering and Development Services.
  - e) Hazardous Conditions – Periodically, accesses in accordance with these standards may not be advisable as a hazard may be created. In such instances, the City may elect to apply different standards in order to achieve public safety or to ensure safe and effective movement of traffic on adjoining roads.
  - f) Driveway Conflict – Access driveways should be located so as to not create a conflict with driveways on the opposite side of the street. The illustrations below set out acceptable and unacceptable access driveway locations.
  - g) Utility Conflicts – Driveways should be located if possible to avoid conflict with existing utility poles and hydrants. Should avoidance not be possible, relocation of poles and hydrants would be at the expense of the owner. Similarly, street trees should be avoided if possible; removal of the same will be at the owner’s expense, and new street trees will be planted to replace those lost. It is the responsibility of the owner to contact all private utilities to ensure that the proposed driveway will not create conflicts with existing private services (gas, hydro, etc.).

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- 3) The development engineer and the Manager of Approvals can assist in ascertaining the applicability of the above exceptions and qualifications.
- 4) The City, at its option, may require the developer to engage the services of an engineering consultant with expertise in traffic engineering to conduct a study into access location and/or design where the City is concerned about:
  - a) access design and location, or where the applicant believes special consideration should be given to alternative standards, and
  - b) the impact of turning movements on the capacity of the street to advance through traffic (to assess the need for turning lanes).

### F.1.8.2 Design of Driveways

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- 1) An amendment to the Driveway Control By-law may be required for any proposed driveway that is not in compliance with the provisions of this by-law. Application for an amendment will be submitted through the City's Engineering and Development Services Department Approvals Section.
- 2) For any business where a drive-through service lane is to be provided, the lane will be designed with sufficient length to meet peak demand, thereby avoiding traffic from backing up onto adjoining streets. The City may require submission of a traffic planning analysis to verify what length the service lane should be.

#### Checklist of Requirements for the Design of Driveways for a Site Plan Development:

Place a checkmark (✓) in the applicable boxes below.

- 3) The design of driveways meets the following requirements:
  - Detailed design of driveways and vehicle accesses is in accordance with the City's Driveway Control By-law 2001-129.
  - The minimum width for:
    - two-way traffic is 6.4 metres, and
    - one-way traffic is 3.9 metres.
  - For any business where a drive-through service lane is provided, the lane is designed with sufficient length to meet peak demand.
    - If the City requires the submission of a traffic planning analysis to verify the length of the drive-through service lane, the service lane is a length that is approved by the City.

### F.1.8.3 Curbing of Driveways

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#### Checklist of Requirements for the Curbing of Driveways for a Site Plan Development:

Place a checkmark (✓) in the applicable boxes below.

- 1) Curbing of driveways meets the following requirements:
  - Where a barrier curb on the edge of a travelled road exists in the location of an approved access driveway, the developer applies to Transportation and Operations Services for a curb cut. (Note that this permit is in addition to obtaining a Road Cut Permit – refer to Section F.1.2.2.3 of this Manual.)
  - The top of curbs abutting City sidewalks are kept level with the sidewalks for a distance of 0.3 metres from the sidewalk.
- 2) Transportation and Operations Services will remove the necessary curb to accommodate installation of the approved access driveway.

## F.1.9 Fire Access for Site Plans

### F.1.9.1 General

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- 1) The City's Chief Building Official may designate any driveway as a fire route.

#### Checklist of Requirements for Fire Access for a Site Plan Development:

Place a checkmark (✓) in the applicable box below.

- 2) Fire routes:
  - are signed as a Fire Route (refer to Section F.1.6 of this Manual for signage design standards).

### F.1.9.2 Section 3.2.5 of the Ontario Building Code

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- 1) Section 3.2.5 of the OBC sets out specifications respecting fire access routes. Certain key requirements of the OBC respecting the design and location of fire routes are set out below for reference; for complete design standards, refer to Section 3.2.5 of the OBC.



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### Checklist of Requirements for Fire Access Routes for a Site Plan Development:

Place a checkmark (✓) in the applicable boxes below.

- 2) A fire route in the City of Belleville is designed in accordance with the following standards:
- A fire route:
    - has a clear width of not less than 6 metres (except as provided for in Section F.1.7.1.2 of this Manual);
    - has a centreline radius not less than 12 metres;
    - has an overhead clearance not less than 5 metres;
    - has a change in gradient not more than 1 in 12.5 over a distance of 15 metres;
    - is designed to support the expected loads imposed by firefighting equipment and be surfaced with concrete, asphalt or other material designed to permit accessibility under all climatic conditions;
    - has turnaround facilities for any dead-end portion of the fire route of 90 metres (dead-end fire routes are strongly discouraged); and,
    - is connected to a public street.
  - For buildings that are more than three (3) storeys in height or more than 600 square metres GFA, a fire route is provided to both:
    - the principal entrance, and
    - each building face as defined in Section 3.2.5.4 of the OBC.
  - The fire route is located such that the principle entrance and every access opening required by the OBC are not less than 3 metres and not more than 15 metres from the closest portion of the fire route.

### F.1.10 Garbage Enclosures for Site Plans

#### Checklist of Requirements for Garbage Enclosures for a Site Plan Development:

Place a checkmark (✓) in the applicable boxes below.

- 1) Garbage enclosures for a site plan meet the following requirements:
- They are located away from sensitive land uses and preferably outside the view from adjoining streets.
    - Where visible from an adjoining street, extensive planting areas are established to provide a strong visual screen or barrier.
  - They are accessible for waste removal and are not blocked by parking spaces or other impediments.

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- Where feasible, they are combined with a loading area.
- All external waste bins are screened and/or with solid fencing.
  - Screening is not open lattice.
  - Screening structures are of sufficient height and width to block view of the enclosure.
  - Where appropriate, planting materials are used to soften the impact of garbage enclosures on the site design.

## F.2 Engineering and Construction Standards and Guidelines

- 1) Please refer to the Environmental Services Water Distribution’s “Manual of Standard Specification”. This document can be requested by emailing ENV-AC@belleville.ca.

### F.2.1 Roads

#### F.2.1.1 Engineering Standards and Guidelines

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##### F.2.1.1.1 General

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##### Checklist of General Requirements for Roads:

Place a checkmark (✓) in the applicable boxes below.

- 1) Roads meet the following general requirements:
  - All roadways in new developments are classified according to the City of Belleville’s Official Plan, expected traffic volume, and intended use of the roadway.
  - The proposed classification of all streets in the development will be confirmed with the City of Belleville prior to the commencement of the design:
    - For predominantly residential areas, four classifications are noted, as follows: Arterial, Collector, Local, and Laneways. These classifications are defined in the City of Belleville’s Official Plan.
    - For industrial areas, the streets are classified Local or Collector dependent upon the length of the street, traffic volume expected, and volume of truck traffic expected.
    - Arterial roadways are sub-classified as divided or undivided.

**F.2.1.1.2 Geometric Standards**

2) Geometric standards for residential streets (urban):

<b>Geometric Detail</b>	<b>Local</b>	<b>Collector</b>	<b>Arterial</b>
Minimum ROW Width (metres)	17 to 20	20 to 30	26 to 36
Minimum Design Speed (kilometres per hour)	50	50	70 to 80
Minimum Safe Stopping Sight Distance (metres)	65	65	110 to 140
Minimum Sag Curve	12	12	12 to 16

a) Geometric standards for residential streets (urban), K value:

<b>Geometric Detail</b>	<b>Local</b>	<b>Collector</b>	<b>Arterial</b>
Minimum Crest Curve K Value	8	8	23 to 36
*Minimum Sag Curve Parameter in Illuminated K Value	5	5	n/a
Minimum Curve Radius (metres)	N/A	N/A	n/a
Pavement Width (Face to Face of Curbs in metres)	8.5	10	Minimum 3.5 per lane
Pavement Crossfall	2	2	2
Minimum Grade (%)	0.5	0.5	0.5
Maximum Grade (%)	6	6	6
Intersection Angle (degrees)	70 to 90	80 to 90	80 to 90
Minimum Tangent Length at Intersections (metres)	30	50	75
Minimum Tangent Length between Reverse Curbs (metres)	30	50	120

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### 3) Geometric standards for industrial streets:

<b>Geometric Detail</b>	<b>Local</b>	<b>Collector</b>	<b>Arterial</b>
Minimum ROW Width (metres)	17 to 20	20 to 30	26 to 36
Minimum Design Speed (kilometres per hour)	50	50	N/A
Minimum Safe Stopping Sight Distance (metres)	65	85	N/A
Minimum Sag Curve	8	18	N/A

#### a) Geometric standards for industrial streets, K value:

<b>Geometric Detail</b>	<b>Local</b>	<b>Collector</b>	<b>Arterial</b>
Minimum Crest Curve K Value	8	15	N/A
*Minimum Sag Curve Parameter in Illuminated K Value	n/a	n/a	N/A
Minimum Curve Radius (metres)	90	130	N/A
Pavement Width (Face to Face of Curbs in metres)	10	10	N/A
Pavement Crossfall	2	2	N/A
Minimum Grade (%)	0.5	0.5	N/A
Maximum Grade (%)	6	6	N/A
Intersection Angle (degrees)	70 to 90	80 to 90	N/A
Minimum Tangent Length at Intersections (metres)	30	60	N/A
Minimum Tangent Length between Reverse Curbs (metres)	30	60	N/A

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### Checklist of Requirements for Geometric Standards of Roads:

Place a checkmark (✓) in the applicable boxes below.

- 4) If the street is:
- a residential street in an urban area, it meets the geometric standards set out in Section F.2.1.1.2 2) of this Manual.
  - an industrial street, it meets the geometric standards set out in Section F.2.1.1.2 3) of this Manual.

### F.2.1.1.3 Road Pavement Design

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- 1) The minimum pavement design for all streets in new developments will be detailed on the City of Belleville Standard Drawings.
- 2) A qualified geotechnical consultant will be retained by the developer to sample, test, and design a suitable pavement section.
- 3) The consulting engineer will be responsible for approving the source of supply and quality of all materials supplied by the developer and his contractor. Testing and approval of all granular materials at the designated pits and subsequent in-situ verification tests will be performed by the consulting engineer and will be submitted to the City of Belleville.

### Checklist of Requirements for Road Pavement Design:

Place a checkmark (✓) in the applicable boxes below.

- 4) Road pavement design meets the following requirements:
- Soil sampling is carried out in the presence of the geotechnical consultant at intervals not exceeding 60 metres along the centerline of the road.
  - The composition and design thickness of the pavement section is determined using sound engineering principles and considering:
    - Mechanical Sieve Analysis of the Subgrade Soil;
    - Frost Susceptibility;
    - Drainage; and,
    - Traffic Volumes.
  - Pavement design is no less than the minimum current and corresponding OPSS/OPSD for the particular road classification.
  - Asphalt and concrete designs and materials are to conform to OPSS guidelines.

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- Prior to the placement of concrete and asphalt pavement, the consulting engineer submits concrete and pavement mix designs for all mixes to the Manager of Approvals.

### Checklist of Requirements for the Submission of City of Belleville Standard Drawings associated with Road Pavement Design:

Place a checkmark (✓) in the applicable box below.

- 5) The submission of the City of Belleville Standard Drawings associated with road pavement design meets the following requirement:
  - An electronic (PDF) copy or three (3) printed copies of all test results and proposed road designs are submitted with the engineering drawings.

#### F.2.1.1.4 Traffic Calming

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- 1) The primary functions of Traffic Calming measures are to reduce speeds, deter non-residential traffic from the area, and reduce the incidence of collisions, thereby increasing safety for all users within the ROW. In addition, well-designed and landscaped Traffic Calming measures can enhance a neighbourhood's appearance and the quality of life for its residents.
- 2) The City of Belleville Traffic Calming Policy approved by the City Council encourages developers to incorporate traffic calming measures in new plans of development. For new subdivisions, some traffic calming measures that can be incorporated are curb extensions, raised crosswalks, median islands, and roundabouts.

#### F.2.1.1.5 Roundabouts

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- 1) Roundabouts are encouraged as an alternative to full signalization or the use of all-way stops for traffic control where:
  - a) Two collector roads intersect, or
  - b) Where local streets intersect with collector roads.
- 2) A typical roundabout design standard can be obtained from the Manager of Approvals.

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### Checklist of Requirements for Roundabouts in a Subdivision:

Place a checkmark (✓) in the applicable boxes below.

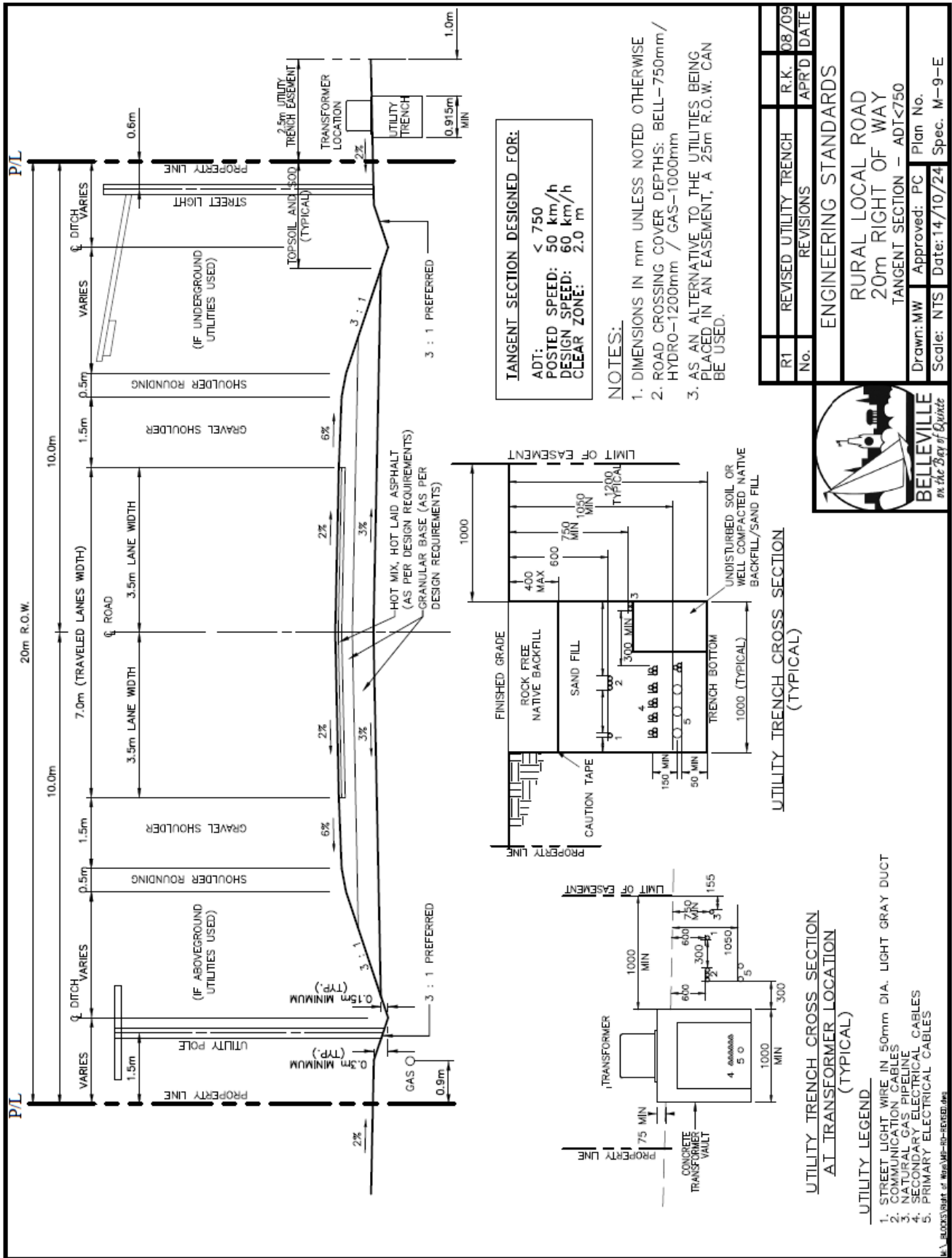
- 3) Roundabouts meet the following requirements:
- Mixing different traffic control treatments within close proximity along a road corridor is avoided, where possible.
    - Where possible, roundabouts are not used in close proximity to a downstream signalized intersection to avoid the possibility of queues blocking the roundabout.
  - Where roundabouts are proposed, the subdivision design ensures that sufficient land is set aside for the required ROW in road corridors. The amount of land required for the ROW for roundabouts generally is greater than required for standard signalized intersections, depending on the number of approach and turn lanes required if the intersection was signalized.
  - The following design standards are applied to roundabouts:
    - Roundabouts are designed to accommodate a range of vehicles, with particular attention to transit and emergency vehicle requirements.
    - In designing roundabouts, pedestrian crossings 7.5 metres in advance of the roundabout entry are provided.
    - Special design consideration is given when locating roundabouts in areas with high levels of elderly, disabled, or visually impaired pedestrian activity.
    - Roundabouts are designed by a professional engineer with expertise in the design of roundabouts.
    - Where use of a roundabout is being entertained, an initial screening is undertaken by the City and the developer prior to undertaking a detailed intersection control study to determine the feasibility of the roundabout.

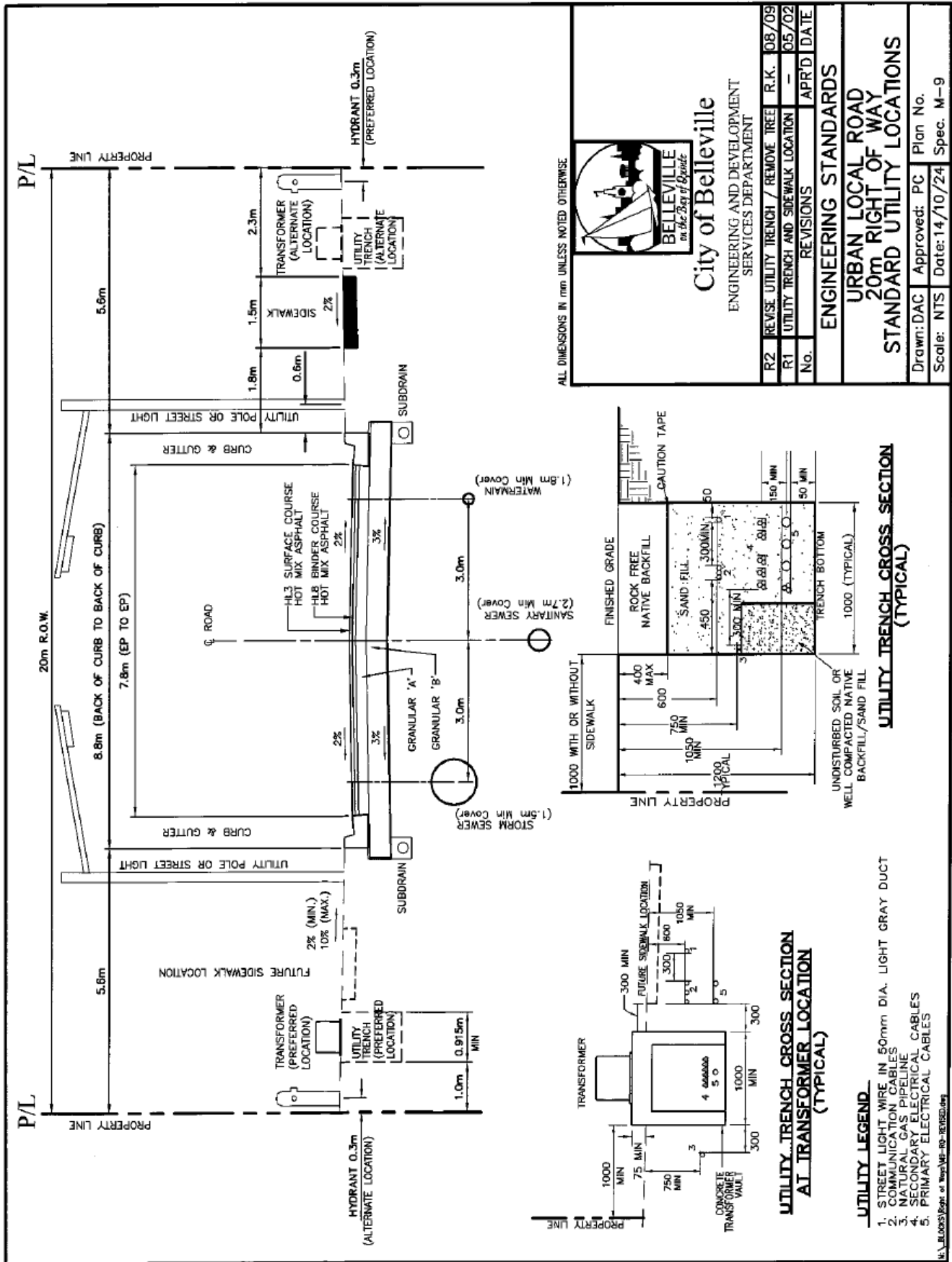
#### **F.2.1.1.6 Road Allowance Cross Section**

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- 1) The typical road allowance cross-section will be as specified by the City of Belleville. Details will be provided for any approved special provisions required due to unique physical conditions on the site or for existing or future design conditions such as retaining walls, slope protection, culverts, bridges or special crossfall conditions.
- 2) Typical 20m ROWs for rural and urban local roads are provided below. Additional road allowances can be obtained from the Approvals Section.







### F.2.1.1.7 Road Subdrains

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#### Checklist of Requirements for Road Subdrains:

Place a checkmark (✓) in the applicable boxes below.

- 1) Road subdrains meet the following requirements:
  - The subdrain is:
    - 100 millimetres in diameter;
    - perforated;
    - wrapped in filter cloth; and,
    - made of corrugated plastic.
  - It runs continuously along both sides of the roads with curb and gutter.
  - It connects to the storm sewer system at a grade matching the proposed road grade.

### F.2.1.1.8 Intersection Visibility

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- 1) Standards and guidelines for intersection visibility can be provided upon request.

### F.2.1.1.9 Curb and Gutter

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#### Checklist of Requirements for Curbs and Gutters:

Place a checkmark (✓) in the applicable box below.

- 1) Curbs and gutters meet the following requirement:
  - Curbs and gutters in new developments conform to the City of Belleville's standards, which can be obtained from the Approvals Section.

### F.2.1.1.10 Boulevards

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#### Checklist of Requirements for Boulevards:

Place a checkmark (✓) in the applicable boxes below.

- 1) Boulevards meet the following requirements:
  - The grade of the boulevard is constant from the back of curb to the ROW limit or sidewalk.
  - All debris and construction materials are removed from the boulevard area upon completion of the initial stage of road construction.
    - The boulevards are maintained in a clear state.
  - For all boulevard areas, prior to sodding, 150 millimetres in depth of clean, weed free topsoil is placed.

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- Number 1 nursery sod is used for all boulevard areas.
- For boulevards where trees will be planted, as identified on the Landscaping Plan or Tree Inventory and Preservation Plan, the approved topsoil is installed to a depth of 450 millimetres per the requirements of 300 millimetres, which is the requirement of both the Turf Institute and the Canadian Landscape Standard.

### F.2.1.1.11 Sidewalks

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- 1) The location requirements for sidewalks in new subdivisions will be confirmed with the Manager of Approvals prior to commencing the detailed design.

#### Checklist of Requirements for Sidewalks:

Place a checkmark (✓) in the applicable boxes below.

- 2) Sidewalks in a subdivision meet the following requirements:
  - They are on one side of:
    - all arterial and collector roadways, with a 3-metre multi-use trail on the opposite side, and
    - local streets, unless they are warranted on both sides.
  - They conform in details and dimensions to the current OPSD and are installed at locations as shown on the typical road cross-sections.
    - At minimum, they meet the standard width of 1.5 metres.
  - The sidewalks are increased in thickness at all commercial, industrial, and apartment entranceways to 200 millimetres, as shown in the current OPSD.
  - In cases where the sidewalk has been constructed prior to the establishment of an entrance, the existing sidewalk is removed and replaced with a thickened sidewalk section.

### F.2.1.1.12 Walkways

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- 1) Walkways are employed to link different streets within a neighbourhood where no convenient road link exists, and also to allow for underground servicing and emergency vehicle access, where required.

#### Checklist of Requirements for Walkways:

Place a checkmark (✓) in the applicable boxes below.

- 2) Walkways meet the following requirements:
  - Blocks created in the subdivision plan for walkways, including those for emergency access, are a minimum of 6 metres in width.

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- Walkways are constructed of concrete to City specifications, usually 1.5 metres in width, with topsoil and sod on either side.
- Where emergency vehicle access is required:
  - a 4-metre wide emergency vehicle carriageway is constructed on the walkway, consisting of:
    - the 1.5-metre wide concrete walkway, and
    - an additional 1.25-metre wide asphalt paved driving surface on both sides of the walkway.
  - At the property line at both street frontages of the walkway, two gates with a vehicle locking barrier will be installed.
- A 1.2-metre high galvanized chain link fence is provided along the property lines on both sides of the walkway (exception: where the adjoining lot is a park, a fence is usually not required).

### F.2.1.1.13 Multi-Use Trails

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- 1) Multi-use trails are employed to connect parks and other open spaces within subdivision road allowances, provide connections to other neighbourhoods within the City, and provide maintenance vehicle access routes through parklands, if warranted.

#### Checklist of Requirements for Multi-Use Trails:

Place a checkmark (✓) in the applicable boxes below.

- 2) Multi-use trails meet the following requirements:
  - Multi-use trails are constructed of asphalt.
    - If another material is used, it is to City specifications.
  - The minimum width of a multi-use trail is 3 metres.
    - Where a multi-use trail provides vehicular access and/or is meant to have underground utilities, a greater width is provided that meets City specifications.
  - Multi-use trails are completely separated from the roadway by a grass or paved boulevard.

#### **F.2.1.1.14 Pavement Markings**

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##### **Checklist of Requirements for Pavement Markings:**

Place a checkmark (✓) in the applicable box below.

- 1) All pavement markings are:
  - in accordance with the OTM.

#### **F.2.1.1.15 Tapers, Lane Widths, and Storage Length**

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##### **Checklist of Requirements for Tapers, Lane Widths, and Storage Length:**

Place a checkmark (✓) in the applicable box below.

- 1) Tapers, lane widths, and storage length are:
  - in accordance with the TAC manual.

#### **F.2.1.1.16 Transit Stops and Shelters**

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- 1) Most arterial and collector roads are served by City transit service. The locations for transit stops and shelters should be identified early in the planning of a subdivision that will be served by transit, preferably at the pre-consultation meeting.
- 2) Consideration should be given to the establishment of bus bays along arterial and major collector roads at bus stops to ensure that the continuous and safe flow of traffic is not impeded by buses.

##### **Checklist of Requirements for Transit Stops and Shelters:**

Place a checkmark (✓) in the applicable boxes below.

- 3) Transit stops and shelters meet the following requirements:
  - They are integrated with surrounding land uses such as parks, trails, community facilities.
  - They are as close as possible to intersections.
  - Street furniture (e.g., waste receptacles and benches) are consolidated at transit stops to maximize their use and create an attractive streetscape.

#### **F.2.1.1.17 Electrical Specifications for Signals**

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- 1) For standards and guidelines on electrical specifications for signals, please contact Transportation and Operations Services by emailing [construction@belleville.ca](mailto:construction@belleville.ca).

**F.2.1.1.18 Culs-de-Sac and Turning Bulbs**

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- 1) The use of culs-de-sac should be minimized in the design of subdivisions and should only be considered for use to accommodate parcel fabric or natural features.

**Checklist of Requirements for Culs-de-Sac and Turning Bulbs:**

Place a checkmark (✓) in the applicable boxes below.

- 2) Culs-de-sac and turning bulbs meet the following requirements:
  - Permanent culs-de-sac are constructed in accordance with the details provided in the standard drawings and OPSDs.
  - The following design criteria will be applied for culs-de-sac:
    - Maximum length of a cul-de-sac will be 100 metres;
    - Minimum grades of 0.5% will be maintained along the flow line of all gutters around the cul-de-sac;
    - Minimum pavement radius of 13 metres; and,
    - ROW radius will be 19 metres.

**Checklist of Requirements for Standard Drawings for Culs-de-Sac and Turning Bulbs:**

Place a checkmark (✓) in the applicable boxes below.

- 3) Standard drawings for culs-de-sac, bulbs, and intersections meet the following requirements:
  - All culs-de-sac, bulbs, and intersections are detailed at a scale larger than the road plan.
  - The details show gutter, crown, and other grades sufficient to determine that the road will properly drain and will be used as a basis for layout.

**F.2.1.1.19 Location of Utilities**

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- 1) Composite Utility Plans will be submitted to the Manager of Approvals for approval as per Section D.9 of the Design Criteria.

**Checklist of Requirements for the Location of Utilities:**

Place a checkmark (✓) in the applicable boxes below.

- 2) The location of utilities meets the following requirements:
  - All non-municipal utilities are in a joint utility trench, unless otherwise approved.

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- The location of utilities within the road allowance is per the City of Belleville's Standard Drawings.
- All utility wiring is constructed underground.
- Hydro transformers are housed in suitable enclosures and mounted on transformer pads installed at the final surface of ground.
- Bell Telephone junction and Cable TV boxes are mounted at the surface in approved standard enclosures.
- Consideration is given for locating transformers and switch boxes in the least visible location, to the limit the impact on the streetscape.

### F.2.1.1.20 Emergency Access

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#### Checklist of Requirements for Emergency Access:

Place a checkmark (✓) in the applicable boxes below.

- 1) Emergency access points meet the following requirements:
  - Emergency access entrances are avoided, wherever possible.
  - Where an emergency access is required to meet the requirements of local emergency services, the design:
    - meets the requirements of the City of Belleville, and
    - is approved by the Manager of Approvals.

### F.2.1.1.21 Intersections

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- 1) Refer to the latest edition of the "Geometric Design Guide for Canadian Roads and Streets" issued by the TAC, section 2.3.2.3 Vertical Alignment and Cross Slope for requirements regarding intersection drainage and intersection cross falls.

#### Checklist of Requirements for Intersections:

Place a checkmark (✓) in the applicable boxes below.

- 2) Intersections meet the following requirements:
  - Spacing between street intersections is established on the basis of providing safe stopping, turning, and crossing sight distances in accordance with the stipulated design speed.
  - An angle of 90 degrees is used for two intersecting streets, unless otherwise agreed upon by the City.
  - No intersection has an intersecting angle of less than 70 degrees for two intersecting streets.



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- Where feasibly, a three-way 'T' junction intersection is used on a local or collector road, to promote both traffic and pedestrian safety.
- No intersection has more than four (4) access points.
- Gradients on through-streets at intersections have a continuous profile.
  - The maximum grade at an intersection is 5%.
  - The minimum grade at an intersection is 0.5%.

### F.2.1.1.22 On-Street Parking

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- 1) The developer is encouraged to contact the City of Belleville's Department of Corporate Services, when a development is proposed to either create new or alter existing on-street parking spaces.

### F.2.1.1.23 Driveways

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- 2) The developer is responsible for the grading and provision of hard surface of the entire length of all driveways from garage to curb, as per the City of Belleville's standards.

#### Checklist of General Requirements for Driveways:

Place a checkmark (✓) in the applicable boxes below.

- 3) Driveways meet the following requirements:
  - Driveways are:
    - made of a hard surface for its entire length (from garage to curb), and
    - in accordance with the City of Belleville's standards.
  - The minimum consolidated depth requirements for the granular base and asphalt driveways will conform to the current OPSD.
  - Driveways are located on the low (downhill) side of the lot.

#### Checklist of Requirements for Driveway Grades:

Place a checkmark (✓) in the applicable boxes below.

- 4) The grade of the driveway meets the following requirements:
  - The maximum permissible design grade for any driveway is 8% (this maximum grade is not recommended and should be employed only in exceptional cases where physical conditions prohibit the use of lesser grades).
  - Driveway widths and locations conform to the latest revised City of Belleville Driveway Controls By-law and Zoning By-law.
  - Minimum design grade for any driveway is 2%.

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- The driveway drains toward the street.
- The driveways does not drain toward the dwelling or garage.
- For sites that are industrial, commercial, and high density residential requiring site plan approval, a break in grade for driveways occurs at the street line to provide positive drainage from property line to the roadway, while keeping all flows from these properties contained within the property itself.

### Checklist of Requirements for Driveway Depressions:

Place a checkmark (✓) in the applicable boxes below.

- 5) The depression of the driveway meets the following requirements:
- The width and location of the curb depressions and gutter for single detached residential driveways are per the current OPSS/OPSD.
  - For apartment, commercial, and industrial driveways:
    - The width and location of their driveway depressions are:
      - designed to accommodate the anticipated vehicular traffic without causing undue interference with the traffic flow on the street, and
      - detailed on the engineering drawings.
    - They are provided with barrier curbs constructed to blend into the roadway curb and gutter.

### F.2.1.1.24 Entrance Features

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- 1) The City does not support Entrance Features as part of a Plan of Subdivision due to the ongoing maintenance and costs required once assumed by the City. Entrance Features may be acceptable where they are part of a condominium development and are designed to be perpetually maintained as a common element by the condominium corporation.
- 2) The design proposal will require approval from the City.
- 3) The City reserves the right to remove all or any element of the entrance feature at its discretion.

### Checklist of Requirements to Develop Entrance Features for a Subdivision:

Place a checkmark (✓) in the applicable boxes below.

- 4) To be granted approval for an entrance feature for a subdivision, the Owner must meet the following requirements:
- The owner submits a design proposal of the entrance feature(s) for approval by the City.

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- The owner receives written approval for the entrance feature(s) from the City.
- The owner enters into an agreement with the City for the construction and maintenance of the entrance feature(s) within the Subdivision Agreement.
- The owner maintains the entrance feature, indemnifying the City for all claims until the development has been assumed or as otherwise specified in the Agreement.
- The owner provides a payment for perpetual maintenance fees and securities in accordance with the Subdivision Agreement.

### Checklist of Requirements for Entrance Features of a Subdivision:

Place a checkmark (✓) in the applicable boxes below.

- 5) Entrance features of a subdivision meet the following requirements:
- They are located within the public road allowance in center median islands only or on a separate block adjacent to daylighting triangles.
  - They are designed to maintain proper sight distances and turning movements at driveway accesses and intersections.
  - Tree plantings that complement entrance features meet the landscaping guidelines set out in Section D.12 of this Manual.

#### F.2.1.1.25 Streetscape and Landscaping

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- 1) Streetscape and landscaping guidelines are outlined in Section D.12 of this Manual.

#### F.2.1.2 Construction Standards and Guidelines

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##### F.2.1.2.1 Clearing and Grubbing

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- 1) The timing of this work will be as per the subdivision agreement.

### Checklist of Requirements for Clearing and Grubbing during Construction:

Place a checkmark (✓) in the applicable boxes below.

- 2) Clearing and grubbing during construction meet the following requirements:
- The road allowance is cleared of all trees and shrubs that are not to be included in final landscaping, and of all other obstructions for such widths as are required for the proper installation of roads, services, and other works.

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- Rough grading is done to bring the traveled portion of the road to the necessary grade and in conformity with the cross section shown on the drawings.
  - Rough grading of all lots and easements is performed prior to the placement of granular materials in the roadways.
- The sub-grade for all roads is properly shaped and compacted to 95% Standard Proctor Density, prior to any application of granular base course materials.
- In all cases, topsoil is stripped for the complete width of the road allowance and stock piled at locations approved by the Manager of Approvals.
- All erosion and sediment control, as outlined on the Erosion and Sediment Control Plan, is in place and functioning before any clearing, grubbing or earth work operations start.
- For any excess fill removed to a disposal site classified as “swamp, ravine, floodplain or lake”, the developer receives prior written permission from QCA.

### F.2.1.2.2 Sub-Grade

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#### Checklist of Requirements for Sub-Grades during Construction:

Place a checkmark (✓) in the applicable boxes below.

- 1) Sub-grades during construction meet the following requirements:
  - The sub-grade for all roads is properly shaped and compacted to 95% SPMDD prior to any application of granular base course materials.
  - The finished sub-grade is proof-rolled in the presence of the geotechnical consultant and certified as being acceptable.
  - The geotechnical consultant provides a certificate indicating that the sub-grade has been inspected and is suitable for the placement of the granular materials.

### F.2.1.2.3 Granular Base

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#### Checklist of Requirements for Granular Base during Construction:

Place a checkmark (✓) in the applicable boxes below.

- 1) Granular bases during construction meet the following requirements:
  - The sub-grade for all roads is properly shaped and compacted to 100% SPMDD prior to any application of hot mix asphalt.

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- The finished granular base is proof-rolled in the presence of the geotechnical consultant and certified as being acceptable.
- The geotechnical consultant provides a certificate indicating that the granular base has been inspected and is suitable for the placement of the hot mix asphalt.

### F.2.1.2.4 Asphalt Compaction Requirements

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- 1) Adequate spacing between driveways must be provided for snow storage within the boulevard adjacent to all driveways to the satisfaction of the City. The City may request an additional snow storage review/study to address any areas where spacing appears inadequate in order to finalize engineering drawings, or alternately to accompany any Plot Plan as part of the Building Permit Application process.

#### Checklist of Requirements for Asphalt Compaction during Construction

Place a checkmark (✓) in the applicable box below.

- 2) Asphalt compaction during construction meets the following requirement:
  - Asphalt compaction is as per OPSS.MUNI 310.

### F.2.1.2.5 Snow Clearing and Winter Maintenance

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#### Checklist of Requirements for Snow Clearing and Winter Maintenance during Construction

Place a checkmark (✓) in the applicable box below.

- 1) The developer:
  - carries out snow clearing and summer maintenance so that the roads and adjacent roadways are kept in a condition considered acceptable to the Manager of Transportation and Operations Services.

### F.2.1.2.6 Other Requirements

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#### Checklist of Other Requirements:

Place a checkmark (✓) in the applicable boxes below.

- 1) The following other requirements for construction must be met:
  - Whenever it is necessary to cut through an existing City of Belleville road, the developer's contractor:
    - obtains a Road Occupancy Permit;

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- properly compacts the backfill material; and,
- restores the surface pavement to its original conditions immediately upon completion of backfilling operations.
- Before making detours, permission is obtained from the Manager of Transportation and Operations Services.
- Where the road is not part of the City of Belleville’s road system, approval from the appropriate road authority is obtained.
  - The developer or their contractor notifies the Fire and Police Departments, School Boards, Ambulance Service, City of Belleville Transportation and Operations Services, and Transit Authorities.
- All assumed asphalt roads from builders/developers are sprayed by Reclamite Rejuvenator before the City accepts ownership.
- All work is done in accordance with ordinances and by-laws of the City of Belleville.

### F.2.2 Watermains and Appurtenances

- 1) Please Refer to City of Belleville Environmental Services Manual of Standard Specifications.
- 2) The developer’s engineer will be responsible for obtaining a set of the most standard specifications from Environmental Services.

### F.2.3 Sanitary Sewers

#### F.2.3.1 Engineering Standards and Guidelines

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##### F.2.3.1.1 Design Flow

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##### F.2.3.1.1.1 Population Density

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- 1) Below is the persons-per-unit assumption to be used for a proposed development, if these numbers are known and are not established in any other City document or site-specific study:

Type of Housing	Persons per Unit
Single-unit dwelling	3
Multi-unit dwelling (e.g., townhouse, apartment)	2.5

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- 2) Below are population densities by type of housing, if the lands are zoned for a specific residential use and detailed information is not available: Below is the population density assumption to be used for a proposed development, if these numbers are not established in any other City document or site-specific study:

Type of Housing	Density
Single-unit dwelling	50 persons per hectare
Multi-unit dwelling (e.g., townhouse, apartment)	115 units per hectare

### Checklist of Requirements for Population Density:

*Place a checkmark (✓) in the applicable boxes below.*

- 3) Under the following conditions, population density is met:
- If the number and type of housing unit within a proposed development are known, the population density meets the requirements set in Section F.2.3.1.1.1 1) of this Manual.
  - If the lands are zoned for a specific residential use and detailed information is not available, the population density meets the requirements set in Section F.2.3.1.1.1 2) of this Manual.

### F.2.3.1.1.2 Peak Domestic Flow

---

- 1) Design flow is calculated as follows:

$$Q_d = \frac{PqM}{86.4} + IA$$

Where:

$Q_d$  = peak domestic sewage flow (including extraneous flow) in litres per second

$P$  = design population / 1000

$q$  = average daily per capita domestic flow in litres per person per day

$I$  = peak extraneous flow in litres per second per hectare

$A$  = gross tributary area in hectares

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2) Harmon Peaking Factor (M) is calculated as follows:

$$M = 1 + \frac{14}{4 + \sqrt{P}}$$

**Where:**

P = design population / 1000

**Given:**

Per capita Sewage Flow = 350 litres per person per day

Extraneous Flow (I) = 0.28 litres per second per day

3) Flows for new high-density residential development where there will be greater than 115 units per hectare, the following criteria applies:

$Q_d$  = 6.58 litres per second per hectare (including infiltration)

4) Flows for commercial and industrial development are calculated using the following criteria:

5)  $Q_c$  = 1.05 litres per second per hectare (including infiltration). Actual flow monitoring data (covering at least 2 years) at the subject site or a similar site observed locally can be used.

1. Actual Historical water use data at the subject site or a similar site (covering at least 2 years) of the facility or other similar facilities can also be used to calculate average or peak daily flows per unit. A minimum peaking factor of 2.0 shall be used in the design when utilizing calculated average flows per unit.
1. Where flow monitoring and/ or historical water use data is not available, the unit values for institutional and commercial flows per unit listed in Table 1 can be used. The designer shall use professional judgement to select appropriate flow rate within the range.



**Table 1 - Common Sewage Flowrates for Commercial and Institutional Uses**

Description	Unit Sewage Flow (L/d)	Flow Unit Per
Shopping Centre (floor area in m <sup>2</sup> )	2.5 – 5.0	Total floor area in m <sup>2</sup>
Hospitals	900 – 1,800	Bed
Schools	70 - 140	Student
Travel Trailer Parks	340	Space (without water hook-ups)
	800	Space (with individual. water hook-ups)
Campgrounds	225 - 570	Campsite
Mobile Home Park	1,000	Parking space
Motels	150 - 200	Bed space
Hotels	225	Bed space

6) Flows for new trunk sewer systems of design areas greater than 50.0 hectares are calculated using the following criteria:

$$Q = 0.84 \text{ litres per second per hectare (including infiltration)}$$

**Checklist of Requirements for Peak Domestic Flow of Sanitary Sewers:**

Place a checkmark (✓) in the applicable boxes below.

- 7) Peak domestic flow of sanitary sewers meets the following requirements:
- Design flow is calculated using the equations outlined in Section F.2.3.1.1.2 1) and 2) of this Manual.
  - For lands to be developed into apartments where there will be greater than 50 units per acre, the peak domestic flow meets the criterion outlined in Section F.2.3.1.1.2 3) of this Manual.
  - For new and existing commercial and industrial development, the peak domestic flow meets the criterion outlined in Section F.2.3.1.1.2 4) of this Manual.
  - For new trunk sewer systems of design areas greater than 50 hectares, the peak domestic flow meets the criterion outlined in Section F.2.3.1.1.2 6) of this Manual.

**F.2.3.1.2 Location of Pipe**

**Checklist of Requirements for the Location of Sanitary Sewer Pipes:**

Place a checkmark (✓) in the applicable box below.

- 1) The sanitary sewer is:

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- located in accordance with the City of Belleville’s standard cross-section drawings, which can be found on the City’s website.

### F.2.3.1.3 Capacity of Pipe

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2) Manning’s Formula is used to calculate sewer capacity:

$$Q = \frac{1}{n} A \cdot R^{2/3} \cdot S^{1/2}$$

Where:

- Q = Flow capacity of the sewer (cubed metres per second)
- R = Hydraulic radius of pipe (metres)
- S = Slope of pipe (metres per metre)
- n = Manning’s roughness coefficient
- A = Area (square metres)

#### Checklist of Requirements for the Capacity of Sanitary Sewer Pipes:

Place a checkmark (✓) in the applicable box below.

- 3) The capacity of a sanitary sewer pipe is:
- calculated using Manning’s Formula, as outlined in Section F.2.3.1.3 2) of this Manual.

### F.2.3.1.4 Roughness Coefficient

---

#### Checklist of Requirements for the Roughness Coefficient of Sanitary Sewer Pipes:

Place a checkmark (✓) in the applicable box below.

- 1) All concrete and Non-Pressure PVC pipes:
- use a roughness coefficient of 0.013.

### F.2.3.1.5 Velocity and Grade

---

#### Checklist of Velocity and Grade of Sanitary Sewers:

Place a checkmark (✓) in the applicable boxes below.

- 2) The velocity and grade of sanitary sewers meet the following requirements:

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- All sewers are designed with grades that achieve a minimum sewage flow velocity (when flowing full) of 0.6 metres per second.
  - In cases where the flow depth in the sewer, under peak flow, is not 0.3 of the diameter or greater, the actual peak flow velocity is calculated using hydraulic elements chart and the slope increased to achieve adequate flushing velocities.
  - In certain circumstances, such as where increased slopes would require deepening of extensive sections of the sewage collection system or in the addition of a pumping station, peak sewage flow velocities of less than 0.6 metres per second are used, if approval is received from the City of Belleville.
- Velocities in sanitary sewer systems are not greater than 3 metres per second.
  - Higher velocities are avoided, unless special precautions are taken to protect against pipe displacement and pipe erosion.

### F.2.3.1.6 Material Specifications

---

#### Checklist of Material Specifications for Sanitary Sewers:

Place a checkmark (✓) in the applicable boxes below.

- 1) The material specifications for sanitary sewer pipes meet the following requirements:
  - Sanitary sewer pipes, including private drain connections, are rigid or flexible.
  - Sanitary sewer pipes are not ribbed or corrugated.
  - Materials include concrete and PVC and conform to:
    - OPSS.MUNI 1820 – Material Specifications for Circular and Elliptical Concrete Pipe, and
    - OPSS.MUNI 1841 – Material Specifications for PVC Pipe Products.
  - The mainline PVC sewer:
    - is used up to 375 millimetres;
    - has a dimension ratio (DR) 35; and,
    - is green in colour.
  - PVC or reinforced concrete pipes are used for 450-millimetre diameter sanitary sewers.
  - Mainline reinforced concrete sewer pipes are used for pipes greater than 450 millimetres.
    - They are a minimum class of 65-D, conforming to OPSS.MUNI 1820.

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- On private property, materials for sanitary building sewers and private sewers comply with Part 7 of the OBC.
- The class and type of pipe are shown on all of the profile drawings.

### F.2.3.1.7 Minimum Pipe Slope

---

#### Checklist for Minimum Pipe Slope:

Place a checkmark (✓) in the applicable boxes below.

- 1) The pipe slope meets the following requirements:
  - The most upstream section(s) of sanitary have a minimum grade of 0.7%.
  - The minimum grades for the remainder of the downstream sections of sanitary sewer follow the MECP criteria, outlined below:

<b>Nominal Sewer Size in millimetres or Nominal Pipe Size (NPS)</b>	<b>Minimum Slope in metres per 100 metres</b>
200 millimetres (NPS-8)	0.40
250 millimetres (NPS-10)	0.28
300 millimetres (NPS-12)	0.22
350 millimetres (NPS-14)	0.17
375 millimetres (NPS-15)	0.15
400 millimetres (NPS-16)	0.14
450 millimetres (NPS-18)	0.12
525 millimetres (NPS-21)	0.10
600 millimetres (NPS-24)	0.08
675 millimetres (NPS-27)	0.067
750 millimetres (NPS-30)	0.058
825 millimetres (NPS-33)	0.052
900 millimetres (NPS-36)	0.046
975 millimetres (NPS-39)	0.041
1050 millimetres (NPS-42)	0.037

### F.2.3.1.8 Minimum Pipe Diameter

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#### Checklist of Requirements for the Minimum Pipe Diameter of Sanitary Sewers:

Place a checkmark (✓) in the applicable box below.

- 1) The sanitary sewer:
  - has a minimum diameter of 200 millimetres.

### F.2.3.1.9 Minimum Depth of Pipe

---

#### Checklist of Requirements for the Minimum Pipe Depth of Sanitary Sewers:

Place a checkmark (✓) in the applicable boxes below.

- 1) The pipe depth meets the following minimum requirements:
  - The depth is measured from the final centerline of the finished road elevation to the top of the sanitary sewer.
  - Sewers are sufficiently deep to receive sewage from basements and to prevent freezing and damage due to frost.
    - Insulation is provided for sewers that cannot be placed at a depth sufficient to prevent freezing.
    - As per the City of Belleville's standard, wherever possible, sanitary sewers have a minimum of 3 metres cover.
  - To allow for gravity drainage from basements, sewer inverts are at least 0.9 to 1.5 metres below basement floor levels.
- 2) For buildings substantially below street level, it may be more economical to pump into the sewer rather than deepen the sewer to accommodate a limited number of low-lying properties.

### F.2.3.1.10 Parallel Installation and Crossing Clearances

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#### Checklist for Parallel Installation and Crossing Clearances of Sanitary Sewers:

Place a checkmark (✓) in the applicable boxes below.

- 1) The parallel installation and crossing clearances of sanitary sewers meet the following requirements:
  - Sanitary sewers and sanitary maintenance holes are designed and placed with at least 2.5-metre clear horizontal separation from watermain.
  - Sanitary service laterals are designed and placed with a minimum 2.5-metre clear horizontal separation and 0.5-metre clear vertical separation from any water service lateral.

**F.2.3.1.11 Maintenance Structures**

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**F.2.3.1.11.1 Spacing of Maintenance Holes**

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**Checklist of Requirements for the Spacing of Maintenance Holes of Sanitary Sewers:**

Place a checkmark (✓) in the applicable boxes below.

- 1) Maintenance holes are spaced to meet the following requirements:
  - Maintenance structures conform to the current OPSD.
  - Maintenance structures are installed at the end of each line, at all changes in grade, size, or alignment, at all intersections, and at maximum distances using the following criteria:

<b>Sewer Size (millimetres)</b>	<b>Maintenance Hole Spacing (metres)</b>
200 to 450	120
500mm and greater	140

- The type and size of maintenance structure are specified on the profile.
  - A detail of the benching is shown on the plan portion of the engineering drawing, for cases when the benching differs from the normal.
- All maintenance structure chamber openings will be located on the upstream side of the maintenance structure.
- The maximum change in the direction of flow in any sanitary sewer maintenance structure is 90 degrees.
  - There is no change of flow direction at acute interior angles, because it is not permitted.

**F.2.3.1.11.2 Drop Structures**

---

**Checklist of Requirements for the Drop of Maintenance Structures for Sanitary Sewers:**

Place a checkmark (✓) in the applicable boxes below.

- 1) The drop of maintenance structures for sanitary sewers meets the following requirements:
  - Whenever feasible, sewer systems are designed to avoid the use of drop structures.

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- A drop structure is provided, if the design of the sewer system is such that the difference in elevation between the maintenance structure inlet and outlet exceeds 0.6 metres.
- The drop is no more than 0.6 metres, only if the design of the sewer cannot be modified to reduce the drop or modified to accommodate a drop structure.

### F.2.3.1.11.3 Maintenance Hole Safety Landings

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#### Checklist of Requirements for Maintenance Hole Safety Landings of Maintenance Structures for Sanitary Sewers:

Place a checkmark (✓) in the applicable boxes below.

- 1) Safety platforms are required in all maintenance holes when the invert to the top of the maintenance hole exceeds 5 metres in depth.
  - Safety platforms are not be more than 5 metres apart as per OPSD 404.020.

### F.2.3.1.12 Easement Requirements

---

#### Checklist of Requirements for Easements of Sanitary Sewers:

Place a checkmark (✓) in the applicable boxes below.

- 1) The easements for sanitary sewers meet the following requirements:
  - The easement for sanitary sewer mains installed outside of municipal property has a minimum width of 5 metres.
    - The easement width is confirmed with the City of Belleville and considers size, depth, and future maintenance of the pipe.
  - The locations of sanitary sewers within easements, or where deemed necessary by the City of Belleville, are indicated with marker sign and post.
    - The contractor supplies and installs marker posts.
    - The location and spacing is determined by the City of Belleville and shown on the contract drawings.
    - All costs associated with the installation of marker signs and posts are paid by the contractor.

### F.2.3.1.13 Sanitary Service Laterals

---

#### Checklist of Requirements for Sanitary Services Laterals:

Place a checkmark (✓) in the applicable boxes below.

- 1) The sanitary services laterals meet the following requirements:

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- New sanitary laterals are 125-millimetre diameter PVC SDR 28, or as otherwise specified.
- Sanitary laterals are green in colour.
- Connections are installed using a prefabricated “T” at 45 vertical degrees for each connection.

### F.2.3.1.13.1 Velocity and Grade

---

#### Checklist of Requirements for Velocity and Grade of Sanitary Service Laterals:

Place a checkmark (✓) in the applicable boxes below.

- 1) The velocity and grade of sanitary service laterals meet the following requirements:
  - The minimum low flow of velocity is 0.6 metres per second.
  - The minimum grade is 2%.

### F.2.3.1.14 Forcemains

---

#### Checklist of Requirements for Forcemains for Sanitary Sewers:

Place a checkmark (✓) in the applicable boxes below.

- 1) Forcemains for sanitary sewers meet the following requirements:
  - At design pumping rates, a desired cleansing velocity (of at least 0.9 metres per second) is maintained.
    - The minimum force main diameter for raw wastewater is 100 millimetres.
  - An air relief valve is present at high points in the forcemain to prevent air locking.
    - If necessary, vacuum relief valves are incorporated to relieve negative pressures on force mains.
    - The force main configuration and head conditions are evaluated as to the need for and placement of vacuum relief valves.
  - Fittings and isolation valves are made of stainless steel.
  - Forcemain design includes transient analysis and considers the provision for water hammer relief.
  - Forcemain enters the gravity sewer system at a point that is not more than 200 millimetres above the flow line of the receiving maintenance hole.
  - Pipe and joints are equal to water main strength materials that are suitable for design conditions.



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- The forcemain, reaction block, and station piping are designed to withstand water hammer pressures and associated cyclic reversal or stresses that are expected with the cycling of wastewater lift stations.
- The need for surge protection chambers is evaluated.
- Forcemain pipe materials are approved by the municipal engineer.
- The construction of forcemains near streams or water works structures and at watermain crossings meets all applicable requirements.
- Friction losses through forcemains are based on the Hazen-Williams formula or other methods that are acceptable to the City.
  - When the Hazen-Williams formula is used, the following 'C' factor is used, regardless of the pipe material<sup>10</sup>:

<b>Pipe Diameter (millimetres)</b>	<b>'C' Factor</b>
100 to 150	100
200 to 250	110
300 to 600	120
Greater than 600	130

- If the forcemain is constructed of material that may cause it to be confused with potable watermains, it is appropriately identified.
- Tracer wire is:
  - installed on all forcemains;
  - brought to the surface using 50-millimetre diameter valve boxes; and,
  - spaced at 300-metre intervals along the forcemain.
- Forcemains are tested to ensure there is no leakage as per OPSS.MUNI 412.

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<sup>10</sup> When initially installed, forcemains may have a significantly higher 'C' factor.

## F.2.4 Stormwater Management and Drainage

### F.2.4.1 Engineering Standards and Guidelines

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#### F.2.4.1.1 Introduction

---

- 1) SWM is required to address both quantity (downstream flooding) and quality control measures (surface water impact on water quality, especially on the Bay of Quinte).
- 2) The QCA provides SWM review services for the City for all development proposals. The QCA reviews drainage impacts from major storm events such as the 1:100 year flood and the design of all SWM facilities (i.e. stormwater retention and detention ponds).
- 3) City staff reviews the stormwater drainage requirements for minor 5-year flood events, including storm sewer pipe distribution and design, pipe sizing, catch basins, grading, and swales.
- 4) All development applications on lands greater than one hectare in size are subject to:
  - a) The QCA SWM guidelines, as applicable;
  - b) Bay of Quinte Remedial Action Plan guidelines; and,
  - c) The 2003 MECP guidelines respecting SWM.

#### F.2.4.1.2 Watershed Area

---

##### Checklist of Requirements for Watershed Areas:

Place a checkmark (✓) in the applicable boxes below.

- 1) The watershed area meets the following requirements:
  - It is determined from contour plans.
  - It includes:
    - all areas that naturally drain into the system;
    - any fringe areas that are not accommodated in adjacent storm drainage systems; and,
    - other areas that may become tributary by reason of regarding.
  - The developer confirms the above information with QCA prior to the start of design of the internal servicing of the site.

**F.2.4.1.3 Minor Systems**

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**F.2.4.1.3.1 Storm Sewers**

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**Checklist of Requirements for Storm Sewers:**

Place a checkmark (✓) in the applicable boxes below.

- 1) Storm sewers must meet the following requirements:
  - Storm sewers are provided on all roads with curb and gutter.
  - Storm sewer systems with a drainage area less than or equal to 50 hectares are designed to convey the 1:5 year (minimum) design storm using the Rational Method and the City’s IDF regression equation for rainfall intensity, unless otherwise approved or directed by the City.
  - Storm sewer systems with a drainage area greater than 50 hectares are designed using an approved computer program and verified with the Rational Method.
    - The storm sewer design is based on the larger of the two flows calculated using the computer model and the Rational Method.
    - Under no circumstances is the storm system designed in a surcharged condition.
  - The maximum inlet time for the first pipe of a storm sewer system is 15 minutes.
  - The runoff coefficient is calculated in accordance with the following table:

<b>Land Type</b>	<b>Runoff Coefficient</b>
Asphalt, Concrete, Roof Areas	0.90
Grassed areas, Parkland	0.20
Commercial	0.75
Light industrial	0.45
Institutional	0.60
Residential, Single-unit dwelling	0.45

Land Type	Runoff Coefficient
Residential, Multi-unit dwelling (e.g., rowhouse, townhouse, apartment)	0.60

- Pipe Capacity and Size:
  - The storm sewer capacity is calculated using Manning’s equation, assuming the pipe is flowing full.
  - The minimum size for a storm sewer within a street is 300 millimetres in diameter.
  - There is no decrease of pipe size from a larger size upstream to a smaller size downstream, regardless of the increase in grade.
- Flow Velocity:
  - Manning’s Formula is used to determine the velocity of all storm sewers. Flow in pipes is always sub-critical; adjustments to the design and/or diameter are made to satisfy the criteria below:
    - The minimum acceptable velocity is 0.75 metres per second.
    - The maximum acceptable velocity is 4.60 metres per second.
- Minimum Grades:
  - Regardless of flow velocities obtained, the minimum design grades for pipe storm sewers satisfy the requirements in the table below:

Sewer Size (millimetres)	Minimum Slope (percent)
300 to 375	0.50
450 to 525	0.30
600 to 1,050	0.20
1,200 and greater	0.15

- The grade of the first leg of any storm sewer, regardless of size, is 1%.
- Alignment:
  - All storm sewers are laid in a straight line between maintenance structures, unless radial pipe has been approved.
  - The maximum change in direction of flow in maintenance structures for sewer sizes of a 1,050-millimetre diameter or larger is 45 degrees.
- Depth of Sewer:

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- The minimum depth of storm sewer is 1.5 metres.
- Under certain conditions where sufficient cover is not feasible, insulated pipes are used, if first reviewed and approved by the City.
- Location:
  - The storm sewer is located in accordance with the City of Belleville's standard cross-section drawings, which can be found on the City's website.
  - Any relocation from the standard location is approved by the Manager of Engineering.
- Pipe Crossing and Clearance:
  - All pipe crossings are per current OPSD and the requirements of the operating authority (i.e. Bell, Gas, and Cable).
  - A minimum clearance of 0.5 metres between the obvert of the sanitary sewer and the invert of the storm sewer is provided, if the sanitary sewer connections are required to go under the storm sewer.
  - The minimum clearance from a sewer to a watermain is 2.5 metres horizontally and 0.5 metres vertically.
- Maintenance Holes:
  - Maintenance holes are provided at each top end or dead end of a sewer line, change in alignment, grade, material, and at all junctions, except where a radius pipe of a minimum of 1,200 millimetres is used.
  - Maintenance hole spacing is in accordance with the requirements in the table below:

<b>Sewer Size (millimetres)</b>	<b>Maintenance Hole Spacing (metres)</b>
300 to 450	120
500 and greater	140

- Maintenance holes are located at a minimum of 1.5-metre clearance away from the face of a curb and/or any other service.
- The maximum change in direction for:
  - pipes that are 900 millimetres or smaller is 90 degrees, and
  - pipes that are larger than 900 millimetres is 45 degrees.
- The minimum allowances for hydraulic losses incurred at maintenance holes are as follows:

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Change in Direction (degrees)	Minimum Required Drops (millimetres)
0	30
Greater than 0 to 45	80
Greater than 45 to 90	150

- Where the difference in elevation between the obvert of the inlet and outlet pipes exceed 0.6 metres, a drop structure is designed in accordance with current City standards.
  - Obverts of inlet pipes are not lower than obverts of outlet pipes.

### F.2.4.1.3.2 Catch Basins

#### Checklist of Requirements for Catch Basins:

Place a checkmark (✓) in the applicable boxes below.

- 1) Catch basins meet the following requirements:
  - They are located:
    - upstream of pedestrian crossings;
    - at street intersections to avoid driveways, sidewalks, and walkways;
    - to outlet into maintenance holes, where possible; and,
    - at low points approaching intersections where drainage is mostly from one direction.
  - Capacity Design:
    - Double catch basins are installed at the low point of any road where drainage is collected from two or more directions.
    - The maximum length of gutter contributing to each side of the double catch basin is 75% of the maximum spacing for the approaching road gradient.
    - With a standard asphalt pavement width of 7.9 metres and a normal 2% crossfall to either side of the centerline, the distance between the high point and the first downstream catch basin is a maximum of 90 metres, with subsequent spacing that meets requirements set out in the table below:

Road Gradient (%)	Maximum Spacing (metres)

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0.35 to 0.59	45
0.6 to 5	75
5.1 to 6	60

- Where changes in gradient occur, the average gradient is determined by the maximum spacing.
- If the areas draining to the gutter from behind the curb are either much less or much greater than a typical subdivision, then the catch basin spacing is adjusted to take into consideration the amount of drainage reaching the gutter.
  - If the asphalt pavement width varies from the standard width, then the catch basin spacing is adjusted.
- The maximum drainage area for any catch basin is:
  - 2,000 square metres of paved area, or
  - 5,000 square metres of grassed area.
- Additional catch basins may be required at road intersections, elbows, and cul-de-sacs to facilitate satisfactory drainage.
- Catch Basin Outlet Pipes:
  - Single Catch basin: 300 millimetres
  - Double Catch basin: 375 millimetres
  - In a location where two or more catch basins are connected to each other, the following criteria apply:
    - If the most upstream catch basin is a single catch basin, the outlet pipe from this catch basin has a minimum diameter of 300 millimetres with the remainder of the downstream outlet pipes to have a minimum diameter of 375 millimetres.
    - If the most upstream catch basin is a double catch basin, the outlet from this catch basin has a minimum diameter of 375 millimetres, along with the remainder of the downstream outlet pipes.
- Rear Yard Swale Catch Basins:
  - If a catch basin is located in a rear yard, its outlet pipe to the storm sewer main is located along a side property line, wherever possible.
  - Catch basin outlet pipes or storm sewers located on lots are offset 0.7 metres from the lot line with a 5-metre easement centred on the pipe.
  - If the City determines that the depth of the pipe warrants a wider easement, the width of the easement is increased to the City's approval.

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2) Refer to City of Belleville specification M-147 on the City's website.

### F.2.4.1.3.3 Foundation Drains

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#### Checklist of Requirements for Fountain Drains:

Place a checkmark (✓) in the applicable box below.

- 1) Foundation drains are:
  - connected to a storm sewer, where present, and not to a sanitary sewer.

### F.2.4.1.3.4 Lot Grading

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- 1) Lot grading specifications can be found in Section F.2.6 of this Manual.

### F.2.4.1.3.5 Outlet Treatment

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- 1) Outlet treatment is only required on sites that are larger than one hectare, and treatment must be achieved on the subject property.

### F.2.4.1.3.6 Swales

---

#### Checklist of Requirements for Swales:

Place a checkmark (✓) in the applicable boxes below.

- 1) Swales meet the following requirements:
  - Proposed swale elevations are shown at all 'break' points and at the corners of lots.
  - If at all possible, the minimum grade for swales is 2%.
    - If this grade is not possible, a subdrain, which is connected to the outlet catch basin, is put in under the swale and then a grade of 1% is allowable.
  - No more than eight (8) "normal" size lots drain into a rear yard swale before it outlets into a catch basin.
    - No more than two (2) rear yards can drain out to the curb over a sidewalk.
    - No more than six (6) rear yards can drain out to the curb where there is no sidewalk.

### F.2.4.1.4 Major Systems

---

#### Checklist of General Requirements for Major Systems:

Place a checkmark (✓) in the applicable box below.



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- 1) The major system:
  - safely conveys flow in excess of the minor system including the 100-year storm, via streets, open channels, storm sewers, walkways, and approved drainage easements, to a safe outlet without flooding private property.

### F.2.4.1.4.1 Drainage Area

---

#### Checklist of Requirements for Drainage Areas:

Place a checkmark (✓) in the applicable box below.

- 1) As determined by suitable topographic mapping, site survey, and drainage plans, the drainage area:
  - includes all upstream drainage areas for the interim and ultimate conditions, including any external area tributary to the system.

### F.2.4.1.4.2 External Drainage

---

#### Checklist of Requirements for External Drainage:

Place a checkmark (✓) in the applicable box below.

- 1) External drainage of major systems meets the following requirement:
  - All external tributary areas not accounted for in adjacent storm drainage areas, as well as other areas that may become tributary due to re-grading, are included in the site drainage plans.

### F.2.4.1.4.3 Lot Grading and Drainage

---

#### Checklist of Requirements for Lot Grading and Drainage:

Place a checkmark (✓) in the applicable boxes below.

- 1) Lot grading and drainage of major systems meet the following requirements:
  - The minimum lot grading around houses and buildings is 2%.
  - The minimum grade for side lot swales and rear lot swales is 2%.
  - All grading design is completed in accordance with the governing guidelines.

### F.2.4.1.4.4 Overland Flow Routes

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#### Checklist of Requirements for Overland Flow Routes:

Place a checkmark (✓) in the applicable boxes below.

- 1) Overland flow routes meet the following requirements:

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- They safely convey runoff from the 100-year storm (in excess of the design capacity of the minor system), and
- They are within the road ROW or easements to the nearest major open channel.

### F.2.4.1.4.5 Roughness Coefficients

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#### 1) Manning’s Roughness Coefficients – for Channel Routing:

Location	Cover	Manning’s “n”
General	Wood	0.080 to 0.120
Over bank	Meadows	0.055 to 0.070
Over bank	Lawns	0.035 to 0.050
Over bank	Natural	0.030 to 0.080
Over bank	Grass	0.030 to 0.050
Over bank	Natural Rock	0.030
Over bank	Armour Stone	0.025
Channel	Concrete / Asphalt	0.015
Channel	Articulated Block, e.g. Terrafix	0.020
Channel	Gabions	0.025
Channel	Wood	0.015
Channel	Corrugated Steel Pipe, 3 inches by 1 inch	0.024
Channel	Structural Plate Corrugated Steel Pipe – 6 inches by 2 inches	0.032

#### 2) Manning’s Roughness Coefficients – for Overland Flow:

Cover	Manning’s “n”
Impervious Areas	0.013

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<b>Cover</b>	<b>Manning’s “n”</b>
Woods, with light underbrush	0.400
Woods, with dense underbrush	0.800
Lawn, short grass	0.150
Lawn, dense grass	0.240
Agriculture	0.050 to 0.170

**Checklist of Requirements for Roughness Coefficients of Major Systems:**

Place a checkmark (✓) in the applicable box below.

- 3) The roughness coefficients of major systems meet:
- the requirements outlined in the table in Section F.2.4.1.4.5(1) of this Manual for channel routing, and
  - the requirements outlined in the table in Section F.2.4.1.4.5(2) of this Manual for overland flow.

**F.2.4.1.4.6 Roads**

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- 1) Road grading must direct flows from the ROW to a safe outlet at specified low points. Outlets can be walkways or open sections of road leading to open spaces or river valleys. Roads may be used for major system overland flow conveyance during the 100-year storm subject to the following depth constraints:
- 2) Maximum Allowable Flow Depth for Centerline of Roads:

<b>Location</b>	<b>Maximum Ponding Depth</b>
Local Roads	0.02 metres above crown of road
Collector and Industrial Roads	0.01 metres above crown of road
Arterial Roads	Single lane to remain open

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### F.2.4.1.4.7 Channels

---

#### Checklist of Requirements for Channels of Major Systems:

Place a checkmark (✓) in the applicable boxes below.

- 1) Channels must meet the following requirements:
  - Overland flow channels are designed to convey the regulatory storm peak flow without flooding adjacent private properties.
  - Appropriate stabilization is provided to protect against velocity conditions experienced during the regulatory storm.
    - Calculations for the required stabilization of channels are provided to the City for their review and approval.
    - The developer receives receive approval of the calculations by the City.
  - The maximum velocities for sod-lined channels are:
    - 1.5 metres per second during 1:5 year storms, and
    - 2.5 metres per second during Regulatory storms.
- 2) Channels expected to experience higher flow velocities than 1.5 or 2.5 metres per second must be stabilized using other measures approved by the City, such as soil reinforcement or stone lining. Calculations using the Maximum Permissible Tractive Force method (MTO Drainage Management Manual, Section 5) will be provided to the City and QCA for review.

### F.2.4.1.4.8 Conveyance of Flow from Road to SWM Facility or Channel

---

#### Checklist of Requirements for the Conveyance of Overland Flows of Major Systems:

Place a checkmark (✓) in the applicable boxes below.

- 1) The conveyance of overland flows meets the following requirements:
  - Overland flows during the regulatory storm are safely conveyed from the road allowance to a SWM facility or open channel without flooding adjacent private properties.
  - If necessary, overland flows are routed over the curb and boulevard, provided that:
    - sufficient hydraulic capacity exists using the broad-crested weir equation, and
    - the flow route from the boulevard into the SWM facility or open channel is stabilized to prevent slope erosion.
  - Overland flow is contained within publicly owned lands.

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- Overland flow is captured and piped at the major system low point(s) on the roadway, unless it has been demonstrated that the flow can be conveyed by other means to the satisfaction of the City.
- The inlet grates required to capture the major system flow have sufficient hydraulic capacity, assuming 50% bar area and blockage of opening.

### F.2.4.1.4.9 Outfall Channels

---

#### Checklist of Requirements for Outfall Channels of Major Systems:

Place a checkmark (✓) in the applicable boxes below.

- 1) The following general principles are applied when designing storm sewer or FDC outfalls to a natural watercourse:
  - Headwall designs conform to OPSD Pipes 900 millimetres in diameter or greater are complemented by armor stone wing walls.
  - Headwall grates, as per OPSD, are specified for all headwalls.
  - Outfall inverts are located at or above the 1:2 year storm flood level in the receiving watercourse.
  - Headwalls are protected by a 1,200-millimetre height black vinyl chain link fence, and the posts are cored into the concrete headwall and/or armor stone wing walls.
  - All exposed concrete faces and surface treatment conform to City Standards
  - The developer receives permits from the QCA for all outfalls to a watercourse.

#### Checklist of Requirements for the Hydraulics of Outfall Channels of Major Systems:

Place a checkmark (✓) in the applicable boxes below.

- 2) The following hydraulic considerations are incorporated into all outfall channel designs:
  - To minimize erosion, the outfall channels are:
    - extended from the headwall to the natural watercourse;
    - designed, where possible, such that their flows are tangential to the flow in the natural watercourse at the confluence; and,
    - tied into the natural watercourse at or above the natural water level in the watercourse.
  - There is no discharge onto steep slopes.
  - Outfall channels are designed to withstand the erosive forces experienced under the design storm event.

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- Calculations using the Maximum Permissible Tractive Force method (MTO Drainage Management Manual, Section 5) are provided to the City and QCA for review.
- The developer receives approval of the calculations from both the City and QCA.
- Tailwater impacts of the natural watercourse are accounted for in the design of the outfall channel, control structures, and upstream storm sewer/FDC systems.

### **F.2.4.1.5 Developments Greater than or Equal to 1 Hectare**

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- 1) Proposed developments with drainage areas greater than or equal to 1 hectare will require the design of water quality/erosion and quantity control facilities (wet pond, wetland, etc.).

### **F.2.4.1.6 Source and Conveyance Controls**

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- 1) The following source and conveyance controls are acceptable for use within the City:
  - a) Roof leaders directed to pervious areas;
  - b) Rooftop storage;
  - c) Green roofs;
  - d) Parking lot storage;
  - e) LID features;
  - f) Permeable pavements;
  - g) Rainfall investing;
  - h) Oil / Grit separators;
  - i) Underground storage;
  - j) Infiltration trenches;
  - k) Soakaway pits;
  - l) Grassed swales;
  - m) Vegetated filter strips;
  - n) Natural channels;
  - o) Sand filters; and,
  - p) Roadside ditches.
- 2) With the exception of the municipal-specific guidelines identified in the sections below, the guidelines for the design of source and conveyance controls will be in accordance with the governing guidelines that are currently documented in the SWM Planning and Design Manual (MECP, 2003) as a minimum requirement.

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### F.2.4.1.6.1 Grassed Swales

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#### Checklist of Requirements for Grassed Swales:

Place a checkmark (✓) in the applicable boxes below.

- 1) Grassed swales meet the following requirements:
  - Grassed swales are not used for extended detention of water on residential lots.
  - Grassed swales promote infiltration but are:
    - free-flowing; and,
    - designed primarily to convey runoff from the lot without any ponding with a minimum slope of 2%.
  - Where a subdrain is installed under a swale, the grassed swale has a minimum slope of 1%.

### F.2.4.1.7 End-of-Pipe Controls

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#### Checklist of Requirements for End-of-Pipe Controls:

Place a checkmark (✓) in the applicable box below.

- 1) End-of-pipe control facilities meet the following requirements:
  - They provide the required quantity and quality control in accordance with the governing guidelines that are currently documented in the SWM Planning and Design Manual (MECP, 2003), unless otherwise specified below by the City.

### F.2.4.1.8 Stormwater Management Facilities

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#### F.2.4.1.8.1 General

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#### Checklist of General Requirements for Stormwater Management Facilities:

Place a checkmark (✓) in the applicable boxes below.

- 1) SWM facilities meet the following general requirements:
  - The number of inlets / forebays are limited to one (1), where possible.
  - Wherever possible, pond inlet inverts from storm sewers are not lower than the maximum extended detention level, in order to prevent surcharging of storm sewers upstream.

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- A 3-metre (minimum width) gravel access road is provided around the perimeter of wetlands and wet ponds to access them for maintenance.
  - The gravel access road:
    - is constructed with 150 millimetres of Granular B and 200 millimetres of Granular A material;
    - has a maximum longitudinal gradient will be 10:1; and,
    - is a minimum of 4 metres wide inside the fencing, where fencing is used.
- Where pedestrian access areas are used, the maximum longitudinal gradient is 6:1.
- Notwithstanding other provisions included in this Manual, handrails or fencing are incorporated into the design of headwalls at the discretion of the City, due to water depth and/or steepness of bank slopes.
- In all cases, SWM facilities have regard for approved watershed, sub-watershed, and Master Drainage Plans.
- Areas subject to the collection of contaminants or spills are fitted with oil/grit separators to the satisfaction of the City.
- New plantings are included for all ponds and forebays.
  - Plantings are located within the area extending between the permanent pool elevation and the property line for wet ponds, wetlands, and forebays.
  - Plantings for dry ponds are located within the area commencing at a point that is 3 metres from the bottom level of the pond and extending to the property line.
- Native and non-invasive trees, shrubs, ground covers (including grassed areas) and aquatic plants are included in a low maintenance landscape design, which has regard for the ecology of the site and the eco-region.
- Trees are planted at a minimum rate of one (1) tree (minimum 50 millimetres caliper) per 50 square metres.
- The density of shrub plantings for safety purposes vary, depending on the degree of slope of the bank.
- Wherever pedestrian access is located in close proximity to the SWM facility, dense shrub plantings will be placed adjacent to the pedestrian path to discourage access to the facility.
- All fenced and non-fenced SWM facilities include signage so that access is restricted to the general public.
  - The number, location, size, design/branding, and wording of such signs are as directed by the City.



### F.2.4.1.8.2 Wet Ponds

---

#### Checklist of Requirements for SWM Wet Ponds:

Place a checkmark (✓) in the applicable boxes below.

- 1) SWM wet ponds meet the following requirements:
  - They are designed to limit the maximum depth of water to 3.3 metres above the lowest point of the stormwater basin.
  - They have an additional 0.3-metre freeboard above the maximum peak flow flood level.
  - The maximum depth of their extended detention zone does not exceed 1.3 metres above the permanent pool elevation.
  - The maximum peak flow attenuation zone does not exceed 2.1 metres above the permanent pool elevation.
  - Their permanent pool depth ranges between a minimum depth of 0.9 metres to a maximum depth of 1.2 metres.
  - Their maximum bank slope is 5:1 between the bottom of the pond and the edge of the pond at the freeboard elevation.
  - The minimum horizontal distance between their permanent pool elevation and freeboard is 3 metres.

### F.2.4.1.8.3 Dry Ponds

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#### Checklist of Requirements for SWM Dry Ponds:

Place a checkmark (✓) in the applicable boxes below.

- 1) SWM dry ponds meet the following requirements:
  - They are designed to limit the maximum depth of water to 1.8 metres above the lowest point of the stormwater basin.
  - They have an additional 0.3-metre freeboard above the maximum peak flow flood level.
  - The maximum depth of their extended detention zone does not exceed 1 metre above the permanent pool elevation.
  - Their maximum bank slope is 5:1 between the bottom of the dry pond and the edge of the dry pond at the freeboard elevation.
  - The minimum allowable gradient on the bottom of their basin is 1% and the maximum allowable gradient is 5%.
  - The minimum horizontal distance between the bottom of the dry pond and the limit of maximum detention is 3 metres.

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### F.2.4.1.8.4 Wetlands

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#### Checklist of Requirements for SWM Wetlands:

Place a checkmark (✓) in the applicable boxes below.

- 1) SWM Wetlands meet the following requirements:
  - They are designed to limit the maximum depth of water to 2.1 metres above the lowest point of the stormwater basin excluding micropools.
  - They have an additional 0.3-metre freeboard above the maximum peak flow flood level.
  - The maximum depth of their extended detention zone does not exceed 1 metre above the permanent pool elevation.
  - Their maximum peak flow attenuation zone does not exceed 1.8 metres above the permanent pool elevation.
  - The permanent pool depth ranges between a minimum depth of 0.15 metres to a maximum depth of 0.3 metres.
  - Their maximum bank slope is 5:1 between the bottom of the pond and the edge of the pond at the freeboard elevation.
  - The minimum horizontal distance between their permanent pool elevation and the freeboard is 3 metres.
  - Micropools do not exceed:
    - an additional maximum depth of 0.3 metres below the permanent pool level, and
    - do not exceed 5% of the total wetland permanent pool surface area.

### F.2.4.1.8.5 Forebays

---

#### Checklist of Requirements for SWM Forebays:

Place a checkmark (✓) in the applicable boxes below.

- 1) Forebays meet the following requirements:
  - They are included in all of the above mentioned SWM facilities.
  - Their permanent pool depth ranges between a minimum depth of 0.9 metres to a maximum depth of 1.2 metres, in which a maximum depth of 0.5 metres is used for sediment accumulation.
  - They do not exceed:
    - 33% of the total wet pond surface area, and
    - 20% of the wetland permanent pool surface area.

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- All other aspects regarding the design of forebays conform to the above wet ponds standards outlined in Section F.2.4.1.8.2 of this Manual.
- Excluding maintenance access routes, all accesses to forebays are discouraged through shrub plantings.

### F.2.4.1.8.6 Fencing

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#### Checklist of Requirements for SWM Fencing:

Place a checkmark (✓) in the applicable boxes below.

- 1) Fencing of SWM facilities meets the following requirements:
  - Where fencing is used, a 1.8-metre high chain-link fence is constructed in accordance with City specifications.
  - A minimum of two (2) vehicle access gates are provided for each enclosed pond.
- 2) Irrespective of these guidelines, the final decision as to whether a SWM facility is to be fenced or not rests with the City of Belleville.

### F.2.4.1.8.7 Maintenance and Inspection Controls

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- 1) An operation and maintenance manual will be prepared that identifies on-going operation protocol and maintenance issues including, but not limited to, the following:
  - a) The procedure for draining the forebay during required maintenance;
  - b) The method for sediment removal from the forebay;
  - c) The annual sediment loading rate and the estimated sediment accumulation in the facility;
  - d) The sediment clean-out frequency;
  - e) The inspection procedures and frequency of inspections;
  - f) A description of the pond features and pond operating characteristics; and,
  - g) A monitoring program plan for periodic water quality sampling for SWM works.

## F.2.5 Street Lighting

### F.2.5.1 Engineering Standards and Guidelines

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#### F.2.5.1.1 General

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- 1) Street lighting is intended to create safe and attractive streetscapes. Lighting can also have a significant impact upon the character of neighbourhoods. The design and location of lighting should consider sustainability. Factors to take into consideration include:
  - a) Energy efficiency;
  - b) Directional lighting that reduces wasted energy and glare onto adjoining lands;
  - c) Induction lighting;
  - d) Solar power; and,
  - e) Street reflectors and sensors (to help regulate brightness and when lights turn on and off).
- 2) Full cut-off luminaires are the preferred fixture type.
- 3) Semi cut-off luminaries are permitted as a continuation of existing street lighting of this type on extensions of existing roads.

#### Checklist of Requirements for Street Lighting:

Place a checkmark (✓) in the applicable boxes below.

- 4) Street lighting meets the following general requirements:
  - Street lighting is provided using the minimum luminaire wattage and pole height that achieves the desired level of lighting, at a reasonable luminaire spacing of approximately 35 to 45 metres.
  - The luminaire attaches to a light pole that provides the physical illumination.
  - The luminaire is either a semi cut-off or full cut-off, based on the percentage of emitted up-light, although a full cut-off is used, where possible.
  - All light standards shall include Philips CityTouch Connector Nodes.
  - All components of street lighting systems for roadways in the City are CSA-approved and meet the requirements of the Ontario Electrical Safety Code and the Electrical Safety Authority.
  - With respect to the Electrical Safety Authority certificate:
    - The developer's engineer makes the necessary arrangements to obtain an Electrical Safety Authority certificate.

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- An Electrical Safety Authority certificate is obtained by the developer prior to the street lighting systems being energized.
- Streetlights are energized prior to the first occupancy of any development.

### F.2.5.1.2 Lighting of Through-Block Pedestrian Walkways

---

#### Checklist of Requirements for Lighting of Through-Block Pedestrian Walkways:

Place a checkmark (✓) in the applicable box below.

- 1) For new through-block pedestrian walkways:
  - Lighting requirements are full cut-off, 'shoe box' style luminaires (Group C) mounted at 4.6 metres above finished grade on approved lighting poles.

### F.2.5.1.3 Location

---

- 1) Refer to the City of Belleville's standard urban and rural ROW drawings for streetlight location on the City's website.

#### Checklist of Requirements for the Location of Street Lighting:

Place a checkmark (✓) in the applicable boxes below.

- 2) The location of street lights meet the following requirements:
  - Street lights are subject to a 3-metre separation from street trees.
  - Light poles are located no more than 40 metres apart.

### F.2.5.1.4 Equipment Selection

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- 1) The lighting employed in the lighting design will be consistent with the standards set out in this Manual. Substitutions of approved equipment will not be accepted unless approved by the City.
- 2) Full cut-off luminaires will always be considered for collector roads and will be utilized if they are determined to be practical in terms of pole spacing and/or other site conditions
- 3) A list of approved roadway lighting equipment, lighting fixtures, and luminaires can be requested from Transportation and Operations Services or by emailing [construction@belleville.ca](mailto:construction@belleville.ca).

#### Checklist of Requirements for Equipment Selection for Street Lighting:

Place a checkmark (✓) in the applicable boxes below.

- 4) Equipment selected for street lighting meets the following requirements:

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- Semi cut-off luminaires are only installed as a continuation of existing luminaire fixtures on existing road extensions.
- Full cut-off luminaires are used for all new local roads.
- Semi cut-off luminaires are used where marker type lighting is required due to the inherent 'beacon effect' of this fixture, making the intersection more identifiable to motorists.
- Full cut-off luminaires are used for marker lights for community mailbox locations.

### F.2.5.1.5 Installation

---

#### Checklist of Requirements for the Installation of Street Lighting:

Place a checkmark (✓) in the applicable boxes below.

- 1) The installation of street lighting meets the following requirements:
  - The electrical consultant:
    - performs inspections of the streetlight system during installation and provides inspection reports documenting the inspections;
    - provides a letter to the City certifying that the streetlight system has been installed per their design and inspected and passed by the ESA; and,
    - includes a copy of the ESA inspection report with this letter.
  - When the system installation is complete and has been certified by the consultant, the developer:
    - submits a written request to the City to energize the lights. Streetlights will not be energized without written approval of the City of Belleville;
    - arranges with the local distribution company for the connection of all lighting systems; and,
    - provides easements wherever they are required.

## F.2.6 Lot Grading and Drainage

### F.2.6.1 Engineering Standards and Guidelines

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#### F.2.6.1.1 Rear Yard Catch Basins

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##### Checklist of Requirements for Rear Yard Catch Basins:

Place a checkmark (✓) in the applicable boxes below.

- 1) Rear yard catch basins meet the following requirements:
  - Rear yard catch basins and outlet pipes are located such that the catch basin is located entirely on one lot and the outlet pipe is located on the same lot at a minimum 0.35-metre offset from property line.
  - The centre of the catch basin is located 0.7 metre from property lines.
  - Rear yard catch basin easements:
    - are a minimum of 5 metres wide with 1.8 metres on one side and 3.2m on the other side of the lot line, and
    - have a minimum slope of 2% without a subdrain or 1% with a subdrain.
  - Any variation in the rear yard catch basin easement, if required, is approved by the Manager of Engineering.

##### F.2.6.1.1.1 Retaining walls (not covered by the Ontario Building Code)

---

##### Checklist of Requirements for Retaining Walls:

Place a checkmark (✓) in the applicable boxes below.

- 1) Retaining walls meet the following requirements:
  - They are avoided, where possible.
    - If retaining walls are required, their design considers the use of grading solutions.
  - They are maintained and replaced by the owner on whose land the wall is constructed.
  - They do not encroach upon the City's ROW.

**F.2.6.1.2 Approval and Certification**

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**F.2.6.1.2.1 Building Permit Application**

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- 1) Prior to applying for a building permit, individual site plans for each lot or group of lots will be prepared based on approved grading plans and will be submitted to the consulting engineer for approval.

**Checklist of Requirements for All Individual Lot Grading Plans Required for the Building Permit Application:**

Place a checkmark (✓) in the applicable boxes below.

- 2) All Individual Lot Grading Plans required for a building permit application include the following:
- Lot and plan identification including dimensioned property limits;
  - House location including setbacks to all property lines;
  - Finished floor, basement top of foundation wall, and underside of footing elevations and driveway sill grades;
  - Lot grades at all corners and at intermediate locations as required to define grading of the lot;
  - Location and elevation of all drainage swales;
  - All exterior entrances, decks, and risers including the proposed grades at same;
  - All yard catch basins with rim elevations;
  - Driveway location and percent grade;
  - Rear yard percent grade;
  - All 3:1 slopes;
  - Existing and/or proposed major plantings (i.e. trees to be retained) and lot grades at same;
  - Retaining walls, fencing, and all above ground utilities; and,
  - Easements.
- 3) Individual Lot Grading Plans for rural estate developments must also meet the following requirements, in addition to those set out above:
- They show the proposed location of:
    - any private sewage disposal system;
    - any private water supply system; and,
    - driveway entrance culverts including size, length, location, and driveway grades.



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- 4) To obtain a building permit for a lot, the developer:
- requests the consulting engineer to review the site plan for each lot and certify that the plan conforms to the approved grading plans and City of Belleville Grading Standards and Guidelines;
  - receives approval and certification from the consulting engineer for:
    - the site plan(s) for each lot, and
    - the rear lot catch basins, to confirm that they are installed according to plan; and,
  - forwards the approved and certified site plans to the Building and Planning Department of the City of Belleville.

### F.2.6.1.3 Area Rough Grading

---

#### Checklist of Requirements for Area Rough Grading:

Place a checkmark (✓) in the applicable boxes below.

- 1) Where earth cuts and fills in excess of 0.5 metres are required:
- area rough grading is performed in conjunction with the road construction and prior to the placement of the base course asphalt; and,
  - An area rough grading plan identifies all areas where the depth of fill sections and cut sections are in excess of 0.5 metres.

### F.2.6.2 Construction Standards and Guidelines

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#### Checklist of Requirements for Lot Grading and Drainage during Construction:

Place a checkmark (✓) in the applicable boxes below.

- 1) Prior to the commencement of rough lot grading and drainage during construction, the following requirements are met:
- The developer enforces an erosion control program to the satisfaction of the City of Belleville Engineering and Development Services Department, and any other applicable agencies.
  - All erosion and sediment control as outlined on the Erosion and Sediment Control Plan are in place and functioning before any clearing, grubbing or earthwork operations begin.
  - Before placing imported fill material on registered lots where private sewage disposal systems are required, the consulting engineer certifies in writing to the local health unit and the City of Belleville Engineering and Development Services Department the following: "That the imported fill material placed on Registered lots meets or exceeds the original ground's capability to support a

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private sewage disposal system as required by the City of Belleville Building Department.”

### F.2.7 Parkland

#### F.2.7.1 Engineering Standards and Guidelines

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##### F.2.7.1.1 General

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- 1) Parks are an essential component of the urban area. They provide opportunities for both residents and visitors to explore other aspects of daily life and to have social, educational, and recreational experiences in a designated outdoor setting.
- 2) The City will take parkland or cash-in-lieu of parkland in accordance with the Planning Act and the policies of the City’s Official Plan.

##### F.2.7.1.2 Parkland Types and Characteristics

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- 1) The Parkland and Recreation Master Plan will be the guiding document in the establishment of parkland.
- 2) Within new subdivision plans, parks may be created to provide different functions, including parks that accommodate:
  - a) Active recreational activities such as sports fields and other similar recreation facilities;
  - b) Passive recreational activities such as informal green space, children’s playgrounds, squares, gardens and walkways; and,
  - c) Woodlots and tree stands that warrant preservation.

##### F.2.7.1.3 Location Criteria for Parks

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- 1) Location of parks will be determined at the pre-consultation meeting and through the draft plan process.

##### F.2.7.1.3.1 Grading and Drainage for Parks

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- 1) Please refer to Section D.8.1 of this Manual for details on grading and drainage for parks.

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### F.2.7.1.3.2 Park Servicing

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#### Checklist of Requirements for Park Servicing in a Subdivision:

Place a checkmark (✓) in the applicable boxes below.

- 1) Park servicing meets the following requirements:
  - The developer provides connections for a water service and an electrical service to the edge of the parkland.
    - The water service is 50 millimetres, unless a larger service is identified as being necessary due to functions planned for and/or the size of the proposed park. (Other utilities, dependant on location and size, may be required in the parkland and will be identified through consultation with the City.)
  - All parks and open space blocks have 9-1-1 signs that are constructed and assumed at the end of the phase 1 and before the start of phase 2, or when the park block is constructed in a specific phase, at the end of that phase.

### F.2.7.1.3.3 Topsoil and Seeding/Sodding

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- 1) Seeding will commonly be accepted, but the City may require sloping lands, peripheral areas, and lands adjacent to walkways and trails to be sodded.

#### Checklist of Requirements for Topsoil and Seeding/Sodding in Parkland:

Place a checkmark (✓) in the applicable boxes below.

- 2) Topsoil and seeding/sodding meet the following requirements:
  - The developer seeds and/or sods the parkland as required by the City.
  - All graded areas are:
    - covered with a minimum of 150 millimetres of approved, compacted, topsoil, and
    - sodded and fertilized in accordance with the specifications of the Canadian Landscape Standard.
  - All stones and debris are removed and disposed of prior to the sodding of any park.

### F.2.7.1.3.4 Tree Planting

---

- 1) The developer will be required to plant trees and preserve existing trees as confirmed in the Landscaping Plan (refer to Section D.13 of this Manual), which may be combined with the Tree Inventory and Preservation Plan (refer to Section D.23 of this Manual).

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### Checklist of Requirements for Topsoil and Seeding/Sodding:

Place a checkmark (✓) in the applicable boxes below.

- 2) Tree planting in parkland meets the following requirements:
  - Tree planting aligns with the approved Landscaping Plan/Tree Inventory and Preservation Plan.
  - Trees are provided along the edge of parks.

#### F.2.7.1.4 Parks Facilities

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- 1) The City may require the developer to construct facilities in the parkland beyond those set out above. Such facilities would be defined in the Parkland and Recreation Master Plan. Examples of the types of facilities that the City may require the developer to construct include:
  - a) Playground structures and equipment;
  - b) Sports fields;
  - c) Public washroom facilities;
  - d) In-ground irrigation systems;
  - e) Public gardens and squares;
  - f) Recreational trails for community connectivity; and,
  - g) Maintenance buildings.
- 2) The costs for such facilities will be borne by the City, and provisions for the payment of sufficient funds by the City to the developer to cover the costs of such facilities will be set out in the Subdivision Agreement.
- 3) The Park Development Plan (refer to Section D.20 of this Manual) will provide for the development of any facilities in the park.
- 4) The City is under no obligation to proceed to fully implement the Parkland Dedication Plan as a component of the subdivision development. The City, at its discretion, may elect to defer the construction of additional facilities until a future date, and construct such features at such time as it sees fit.

### Checklist of Requirements for Parks Facilities:

Place a checkmark (✓) in the applicable boxes below.

- 5) Parks facilities meet the following requirements:
  - There is a pedestrian system of walkways and multi-purpose or recreational trails, suitable for use by wheelchairs, which provide continuous, barrier-free access from the park facilities to the entry point to the park or parking lot.

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- The accessible route to park facilities is:
  - in accordance with AODA requirements, and
  - at a grade of no more than 5%.
- Play equipment proposed for parks:
  - includes components that are fully accessible and usable by persons with disabilities, and
  - is designed in accordance with the requirements and regulations of the AODA.

### **F.2.7.1.5 Maintenance**

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The City of Belleville may elect to undertake the cutting of grass at the request of the developer on all park areas sodded or seeded prior to the assumption of above-ground services for the subdivision in which the park is located, , provided, however, the Manager of Operations Planning and Development is satisfied with the condition of the park to enable maintenance, and concurs with the request. The cutting of such grass by the City of Belleville in no way relieves the developer from the obligation to establish and maintain the sod or seed, or to correct any deficiencies identified.

### **F.2.7.2 BELLEVILLE PARK CONSTRUCTION SPECIFICATIONS**

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#### **F.2.7.2.1 LANDSCAPE PLANTING, TREES, SHRUBS, PERENNIALS AND GROUNDCOVERS**

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##### **F.2.7.2.1.1 PART 1 - GENERAL**

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###### **F.2.7.2.1.1.1 DESCRIPTION**

.1 This Section specifies requirements for planting of trees, shrubs, groundcovers, perennials and other plants.

###### **F.2.7.2.1.1.2 RELATED SPECIFICATION**

.1 Canadian Landscape Standards, latest edition, published by the Canadian Society of Landscape Architects & the Canadian Nursery Landscape Association.

###### **F.2.7.2.1.1.3 QUALIFICATIONS OF CONTRACTOR**

.1 All work required under this Section shall be performed by a qualified landscape /horticultural contractor using workers experienced in this work. Trees and shrubs shall be planted by a contractor who is a member of Landscape Ontario Horticultural Trades Association.

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### **F.2.7.2.1.1.4 SOURCE QUALITY CONTROL**

.1 Plant Materials:

- a) Make arrangements for prior inspection and approval of plant stock by the Contract Administrator at the source of supply, at a time mutually agreed upon.
- b) Prior approval shall not invalidate rejection of stock on site, should it prove defective or damaged.
- c) All plant material shall be grown in climate conditions similar to those of the installation site.

### **F.2.7.2.1.1.5 MATERIAL DELIVERY, STORAGE, AND HANDLING**

.1 Labels manufactured, processed, or otherwise prepared materials which are packaged, to indicate manufacturer, contents, weight, and a detailed description of the material. If delivered in bulk, submit affidavits as specified for labels, certifying that the materials meet specified requirements.

.2 Store and protect fertilizer, limestone, bone meal, mulching material, and similar products to prevent damage from moisture.

.3 Co-ordinates the shipping of plants and the planting operations, to ensure minimum time lapse between digging and planting.

.4 Protect plant materials from abrasion, exposure, and extreme temperature change during transit.

.5 Shrubs and trees which cannot be planted immediately after delivery shall be heeled in, in a shaded area.

### **F.2.7.2.1.1.6 INTERMIM MAINTENANCE**

.1 The Contractor shall be responsible for interim maintenance of plant material immediately following installation of work and shall continue until preliminary acceptance has been granted, and such maintenance shall be considered part of the installation work.

.2 The Contractor must immediately replace all dead or dying plants during the guarantee period as required by Contract Administrator. Replacement of plants only at the end of the guarantee period will not be acceptable.

.3 This interim maintenance in regard to new planting shall consist of:

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- a) Pruning, watering, fertilizing, cultivating, weeding, mulching, tightening and repairing of guys, resetting plants to proper grades or upright position, restoration of planting saucer, furnishing and application of such sprays as are necessary to keep plants free of insects and diseases, and such turf maintenance as required at the direction of the Contract Administrator;
- b) Keeping soil within confines of planting saucer around trees, and keeping planting beds shallowly cultivated and free of weeds,
- c) Keeping tree guards and guy wires in proper repair;
- d) Adding commercial fertilizer 10-10-10 at the rate of 10 kg/100 m<sup>2</sup> according to the manufacturer's instructions at the end of the interim maintenance period.

### **F.2.7.2.1.1.7 ACCEPTANCE**

- .1 "Preliminary Acceptance" shall be given to all plant material showing well developed foliage, healthy growth and bud formation at the time of completion inspection. This acceptance shall include mulch, tree supports, wooden stakes and the planting mixture.
- .2 "Final Acceptance" shall be given to all plant material meeting conditions specified for Preliminary Acceptance, at year two prior at the end of the guarantee.

### **F.2.7.2.1.1.8 MAINTENANCE AFTER COMPLETION**

- .1 Tree and Shrub Maintenance:
  - a) The Contractor shall provide maintenance following Preliminary Acceptance and continue throughout the period of guarantee until Final Acceptance as specified in F.2.7.2.1.7.2 above. Maintenance requirements shall include all procedures consistent with proper horticultural practices to ensure normal, vigorous and healthy growth of all material planted under this contract. This includes adequate watering, pruning, cultivation and weed control as required, disease and insect pest control, re-staking and attention to supports.
  - b) The Contractor shall restore the site to original conditions from damage arising out of the maintenance operations.

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c) This work shall be performed to the satisfaction of the Contract Administrator and compensation shall be deemed to be included in the prices bid for various tender items.

.2 Weed and Grass Control:

a) All wood chip mulched areas shall be kept free of grass for the duration of the guarantee period.

### F.2.7.2.1.1.9 GUARANTEE

.1 The Contractor shall be required to guarantee all work and materials specified for twenty-four (24) months from the date of written Preliminary Acceptance of the work by the Contract Administrator or as specified otherwise.

.2 The Contract Administrator, or designate, shall conduct an inspection of plant materials during and at the end of the guarantee period.

.3 Plants shall be in a healthy growing condition at the end of the guarantee period.

Plants with dead or dying branches, which in the opinion of the Contract Administrator are sufficient to detract from the character and form of the plant, will not be accepted. A plant shall be assumed to be acceptable when it is structurally sound, when it is well furnished with living foliage, when it has normal color, when it shows adequate annual growth and formation of buds and when it is free from blight of any description.

.4 Replacements required at the end of the guarantee period shall be plants of the same species and size as shown in the plant list and on the Contract Drawings, furnished and planted as specified in the Contract Documents. The cost of replacement shall be the responsibility of the Contractor.

.5 Tree supports shall be removed at the end of the guarantee period provided that the plant material is showing well developed foliage, healthy growth, good bud formation and well anchored in the planting soil. Tree wrap shall be removed in the first spring after planting.

.6 The Contract Administrator reserves the right to extend Contractor's guarantee responsibilities for an additional one year period if, at the end of the initial guarantee period, leaf development and growth is not sufficient to ensure future survival. Further, the Contractor shall be required to maintain and guarantee any trees or shrubs replaced at the end of the initial guarantee period, for a period of one year.



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### **F.2.7.2.1.2 PART 2 - MATERIALS**

---

#### **F.2.7.2.1.2.1 GENERAL**

.1 Materials shall be typical of their respective kinds within the standards specified.

Materials shall be of uniform quality, and be subject to inspection, quality interpretation, and acceptance by the Contract Administrator and the Region's Landscape Architect.

#### **F.2.7.2.1.2.2 TOPSOIL**

.1 Topsoil shall be according to Section 5.1, Growing Medium, Canadian Landscape Standard, latest edition, or as otherwise identified in this specification standard.

.2 Imported topsoil shall be screened.

#### **F.2.7.2.1.2.3 FERTILIZER**

.1 Complete commercial slow release fertilizer with a maximum 35% water soluble nitrogen with the following percentages by weight of nitrogen, phosphorus, and potassium, in that order: 10-10-10, or as determined by soil tests.

#### **F.2.7.2.1.2.4 MULCH**

.1 Shall be a Cedar bark mulch supplied by Gro-Bark, Waterloo, Ontario, or approved equivalent.

#### **F.2.7.2.1.2.5 STRAW BALES**

.1 Shall be standard size in good, sound condition.

.2 Temporarily secure in place with wooden stakes.

#### **F.2.7.2.1.2.6 TIES**

.1 Use biodegradable materials such as folded burlap, stapled to stake with fence staples or roofing nails

#### **F.2.7.2.1.2.7 WOODEN STAKES**

.1 For tree supports, use new wooden stakes 50 mm x 50 mm x 2400 mm long. Steel T-bar stakes will not be permitted.

.2 For securing straw bales, use any wooden stakes (recommended size 25 mm x 50 mm, minimum 1200 mm long).

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### F.2.7.2.1.2.8 PLANTING MIXTURE

.1 Planting mixtures shall contain 6 parts topsoil, 2 parts sharp sand, and two part compost. A soil test may be requested from parks staff

### F.2.7.2.1.2.9 PLANT MATERIAL

.1 Quality and Source:

a) Comply with Canadian Nursery Stock Standards, latest edition, published by the Canadian Nursery Landscape Association, referring to size and development of plant material and root ball. Measure plants when branches are in their natural position. Height and spread dimensions refer to main body of plant and from branch tip to branch tip. Measure caliper 1200 mm above buttress root system. Use trees and shrubs of No. 1 grade.

b) Label each plant to type, grade, and size. Use trees and shrubs that are structurally sound, with strong fibrous root system free of disease, insects, defects, or injuries. Use trees with straight trunks except where specified otherwise, well and characteristically branched for species. Plants must have been transplanted or root pruned regularly, but not later than one growing season prior to arrival on site.

.2 Container Stock:

a) Container grown stock is acceptable if containers were large enough for root development. Trees and shrubs must have grown in container for minimum of one growing season, but not longer than two. Root system must be able to hold soil when removed from container. Plants that have been root bound are not acceptable. Container stock must have been fertilized with slow releasing fertilizer.

.3 Balled and Burlapped:

a) Coniferous and deciduous trees must be dug with large firm ball. Base size of root ball for trees on caliper taken at 150 mm above ground level. A tree with 75 mm requires root ball of 1 m diameter. Increase diameter of root ball by 250 mm with each increase of 25 mm. Root balls of proper size must include 75% of fibrous and feeder root system. Secure root balls with 5 oz. Hessian burlap, heavy twine, and rope. Frozen root balls will be permitted, provided they are sufficiently protected to prevent breakage. Protect root balls against sudden changes in temperature and exposure to heavy rainfall.

.4 Bare Root:

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a) Nursery grown, in dormant stage, not balled and burlapped or container grown. Root system must be large enough to support vigorous growth. The cutting of major roots and small poorly developed root systems are not Acceptable.

### F.2.7.2.1.3 PART 3 - EXECUTION

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#### F.2.7.2.1.3.1 EXAMINATION

.1 Examine the site before commencement of work, and inform the Contract Administrator if site conditions will not permit completion of work as specified in this Section.

.2 Ensure that subgrade preparation and drainage are satisfactory for continuing maintenance and growth of materials specified in this Section.

#### F.2.7.2.1.3.2 WORKMANSHIP

.1 Co-ordinate operations. Keep site clean and planting holes drained. Immediately remove soil or debris spilled onto pavement.

#### F.2.7.2.1.3.3 PREPARATION

.1 Subgrade for Planting Beds and Tree Pits:

a) Scarify to a depth of 150 mm below root ball. Loosen subgrade 500 mm around each root ball planting pit.

.2 Location of Trees:

a) Stake out all tree locations and planting beds, and obtain the Contract Administrator's approval before excavating. Cooperate with the Contract Administrator where minor adjustments to such locations are necessary. The proposed location of trees and plants on drawings is approximate only and may require adjustment due to site conditions.

b) The Contractor shall be responsible for locating all underground utilities and services prior to digging.

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### F.2.7.2.1.3.4 PLANTING TIME

.1 Provide the Contract Administrator with planting schedule. Extending planting operations over a long period, using a limited crew, will not be acceptable. .2 Balled and bur lapped material shall not be stored on the site in excess of forty-eight hours (48 hrs.) without permission from the Contract Administrator. If storage is necessary, the plant material shall be protected with soil or a similar material to prevent drying out and shall be kept moist until it is planted.

.3 Ensure that watering facilities are available.

.4 Plant only under conditions that are conducive to the health and best physical condition of plant material.

### F.2.7.2.1.3.5 INSTALLATION

.1 Plants and Trees:

a) Plant during suitable weather conditions, according to locally accepted practice and with the Contract Administrator's approval. Set plumb in the center of the pit and at the same relation to grade as originally shown, after settlement has taken place.

b) Plant trees and shrubs vertically and faced to give best appearance in relation to structures, roads, and walks.

c) Excavate planting holes in planting areas. Ensure that hole is wider and deeper than pot or root ball, allowing at least 150 mm of planting mixture under each plant. Remove all ropes, wires, etc. and cutaway and remove top one third of burlap and wire basket without damaging root ball. Set bare root plants so that their roots lie in their natural position. Constantly tamp planting mixture around root ball to eliminate air pockets. When two thirds of depth of planting pit has been backfilled, fill remaining space with water. After water has penetrated into soil, backfill to finish grade leaving a shallow saucer directly over the root ball, and slightly smaller in diameter than the excavation. Apply fertilizer at a rate of 10 kg/100 m<sup>2</sup>. Water trees and planting beds thoroughly immediately after planting.

d) Ensure that the top of the root ball is 150 mm above surrounding grade.

.2 Tree Wrapping:

a) Promptly after planting, wrap all tree trunks with burlap, applied spirally with overlap and extending from ground level to just above second branches.

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Tie wrapping with approved cord or twine to keep wrapping neat and snugly in place

b) Before applying wrapping, spray trunks with approved wettable powder of a long residual insecticide for borer protection.

.3 Tree Support:

a) After planting and wrapping, stake all trees in planting beds with sodded areas with biodegradable ties and two wooden stakes. Fasten ties with roofing nails or equivalent. Keep ties taut at all times without subjecting tree to undue strain.

.4 Pruning:

a) Prune only as necessary to remove dead and broken branches and to compensate for the loss of roots as a result of digging operations in the nursery. Preserve the natural form and character of plants and do not remove small twigs along tree trunks.

b) Pruning shall be performed in accordance with good arboricultural practices. Use only sharp, clean tools and make cuts flush without leaving stubs. Trace back to living tissue all cuts, bruises, and scars on the bark.

.5 Mulching:

a) Obtain the Contract Administrator's approval of planting before mulching material is applied. Loosen soil in planting beds and pits and remove all debris and weeds. Spread mulch to minimum acceptable thickness of 75 mm. Mulch material susceptible to blowing must be moistened and mixed with small amount of topsoil before applying. When mulch is applied in the fall, place immediately after planting. When mulch is applied in spring, wait until soil has warmed up.

### F.2.7.2.1.3.6 ADJUSTMENTS AND REPLACEMENTS

.1 At the time of arrival on site, preliminary acceptance at project completion, and again at termination of the guarantee period, materials and work of this Section will be inspected by the Contract Administrator, and adjustments and replacements shall be made under work of this Section in accordance with the following.

.2 Plant materials rejected upon arrival at the site shall be removed from the site within twenty-four hours (24 hrs.) of notification of same.

.3 Commencement of the guarantee period is predicated on acceptance of work of this Section with only minor deficiencies.

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.4 Adjustments and replacement work shall be performed as specified in this Section with materials of same size, variety, and quality of material replaced, unless authorized by the Contract Administrator.

.5 Replacement work shall be done under a guarantee of the same length and conditions as described in this specification. Guarantee period for replacement work shall date from the time of the Contract Administrator's approval of replacement work.

.6 Replace plant stock that is dead or not in a flourishing and satisfactory growing state, or does not meet specification requirements. Remove dead stock immediately. Replace stock at proper time during the next planting season.

.7 After settlement has occurred at planting pits; fill in to specified grade with planting Soil

### **F.2.7.3 F.2.7.2. 2 STRIPPING AND STORING TOPSOIL**

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#### **F.2.7.3.1.1 PART 1 - GENERAL**

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##### **F.2.7.3.1.1.1 DESCRIPTION**

.1 This Section specifies requirements for stripping and storing topsoil.

##### **F.2.7.3.1.1.2 RELATED SPECIFICATION**

.1 OPSS 201 - Construction Specification for Clearing, Close Cut Clearing Grubbing and Removal of Surface and Piled Boulders

.2 OPSS 206 - Construction Specification for Grading

.3 OPSS 802 - Construction Specification for Topsoil

.4 OPSS 805 - Construction Specification for Temporary Erosion and Sediment Control Measures

.5 Ontario Regulations 406/19 - On-site and Excess Soil Management

##### **F.2.7.3.1.1.3 BASIS OF PAYMENT**

.1 Payment for stripping and storing topsoil to be included in the unit price bid in the Form of Tender for the project.

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### F.2.7.3.1.2 PART 2 - PRODUCTS - Not applicable

### F.2.7.3.1.3 PART 3 - EXECUTION

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#### F.2.7.3.1.3.1 STRIPPING TOPSOIL

- .1 Clear and grub area prior to stripping topsoil.
- .2 Remove topsoil from areas indicated on Contract Drawings or as directed by the Contract Administrator.
- .3 Do not mix topsoil with subsoil or other materials.

#### F.2.7.3.1.3.2 STORING TOPSOIL

- .1 Stockpile the project topsoil in the areas approved by Contract Administrator
- .2 Do not place topsoil in or near dripline of tree stands, within three (3) metres of flood plains or in areas containing natural wildlife habitats.
- .3 Construct, any required, perimeter drainage ditches to intercept and divert run-off to adjacent bodies of water.
- .4 Provide temporary erosion control measures in accordance with OPSS 805.

## F.2.7.4 Construction Standards and Guidelines

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### Checklist of Requirements for the Construction of Parks Facilities:

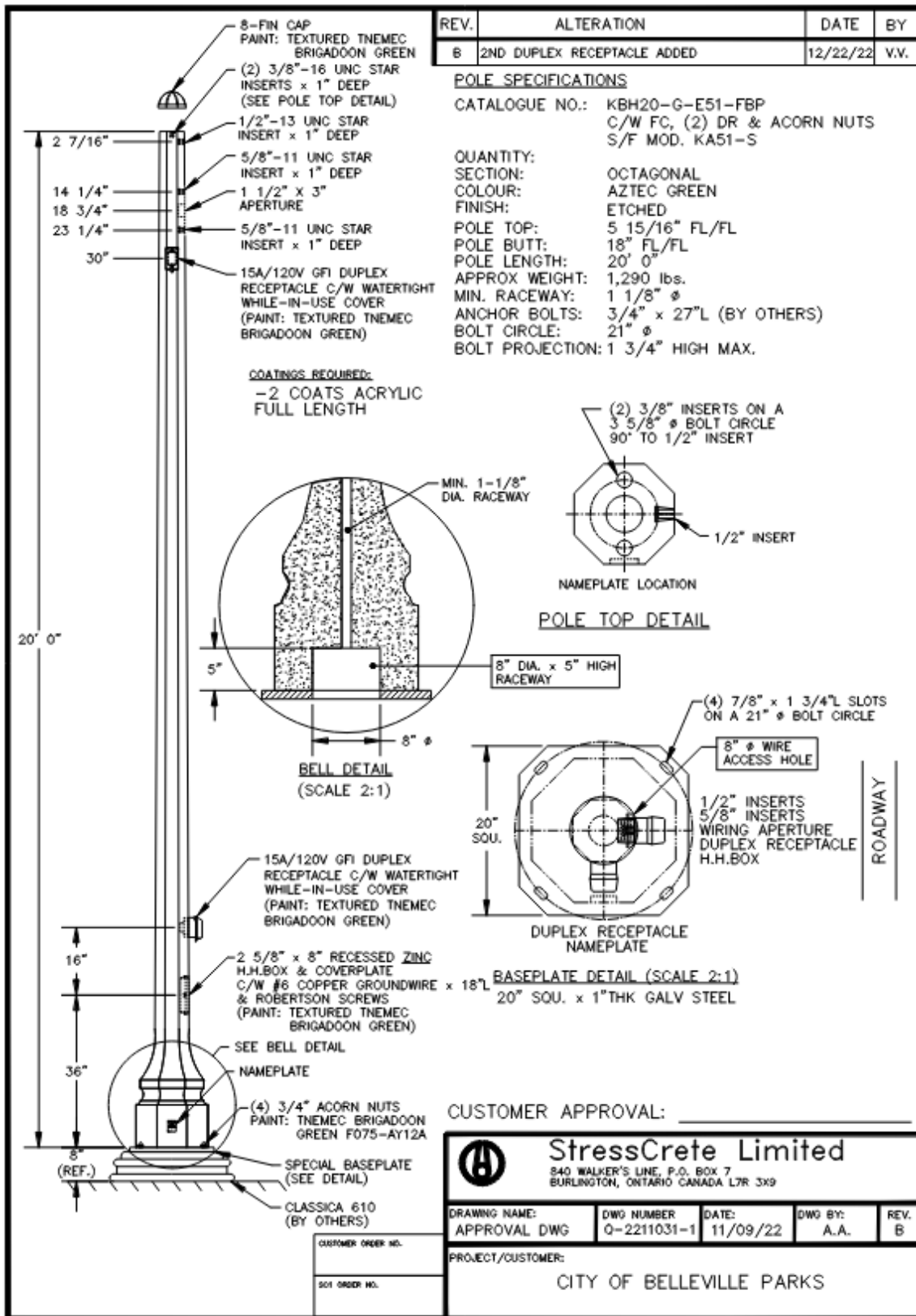
Place a checkmark (✓) in the applicable boxes below.

- 1) The construction of parks facilities meets the following requirements:
  - All park blocks and boulevards are graded and sodded in conjunction with lot grading and sodding for residential homes.
  - Parklands or other similarly designated areas are not used to bury stumps, boulders, or other construction material.

#### F.2.7.4.1.1 Recreational Trail Light Post Standard

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- All poles being utilized or included in tender documents and designs for trails (multiuse and recreational) be based on this standard
- No direct burial poles in Park or trail applications are permitted (see below)



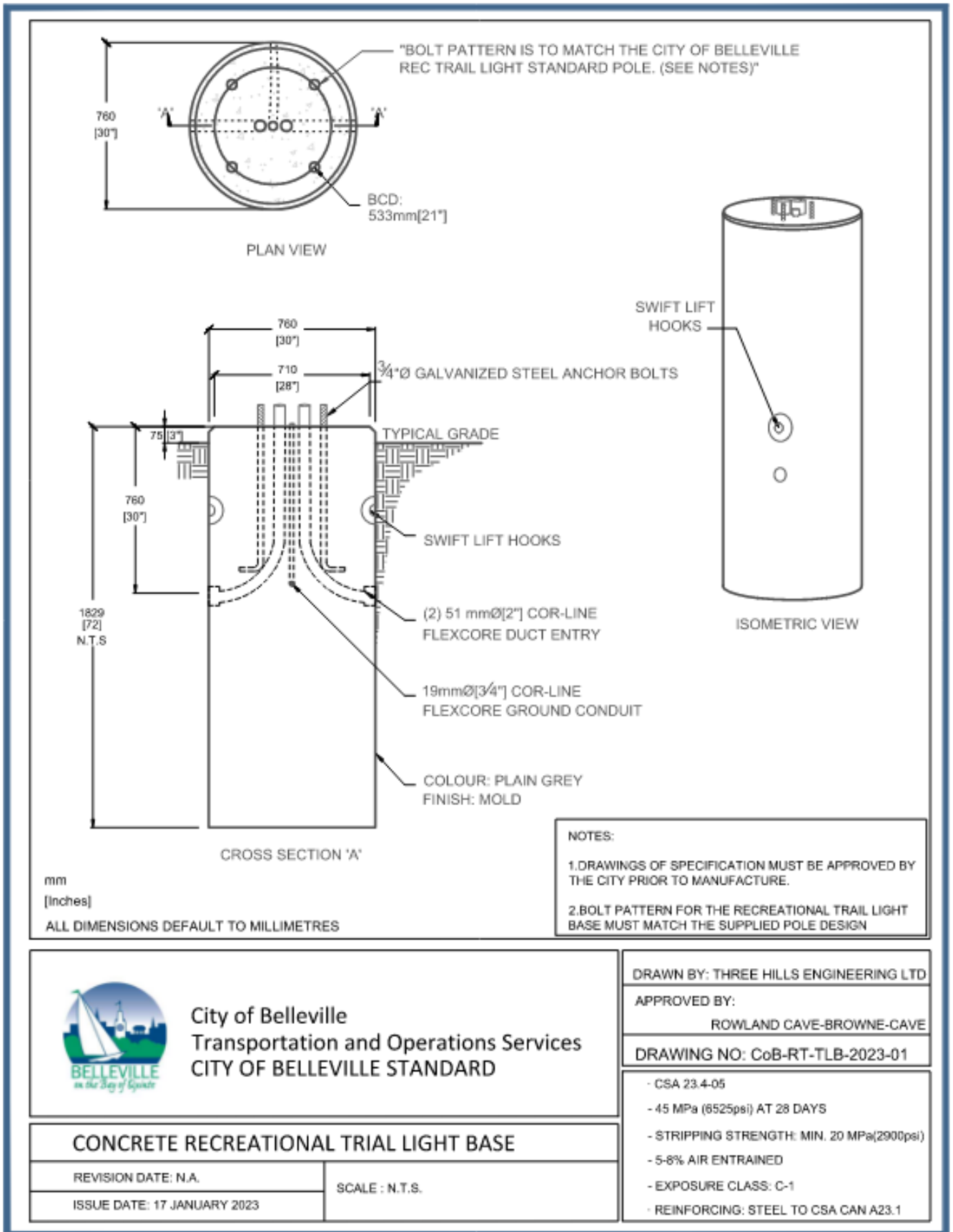


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### F.2.7.4.1.2 Recreational Trail – Trail Light Base

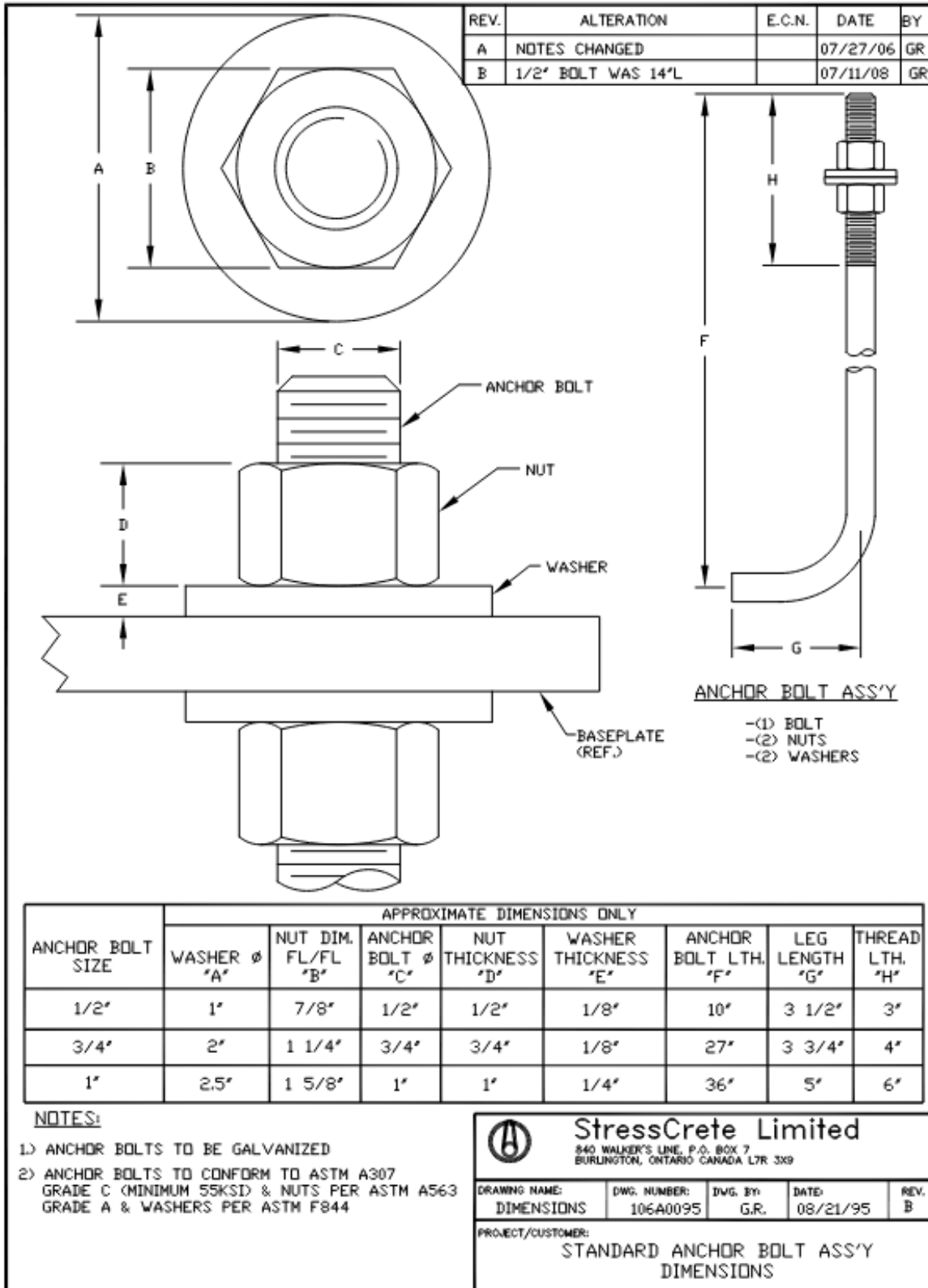
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- All trail poles are to be mounted on prefabricated or “pour in place” bases.
- Should the contractor identify the use of “pour in place” it shall meet or exceed the below drawing specifications
- The anchor bolts that shall be used in a “pour in place” base shall meet the Anchor Bolts specifications in Section F.2.7.2.4 below.



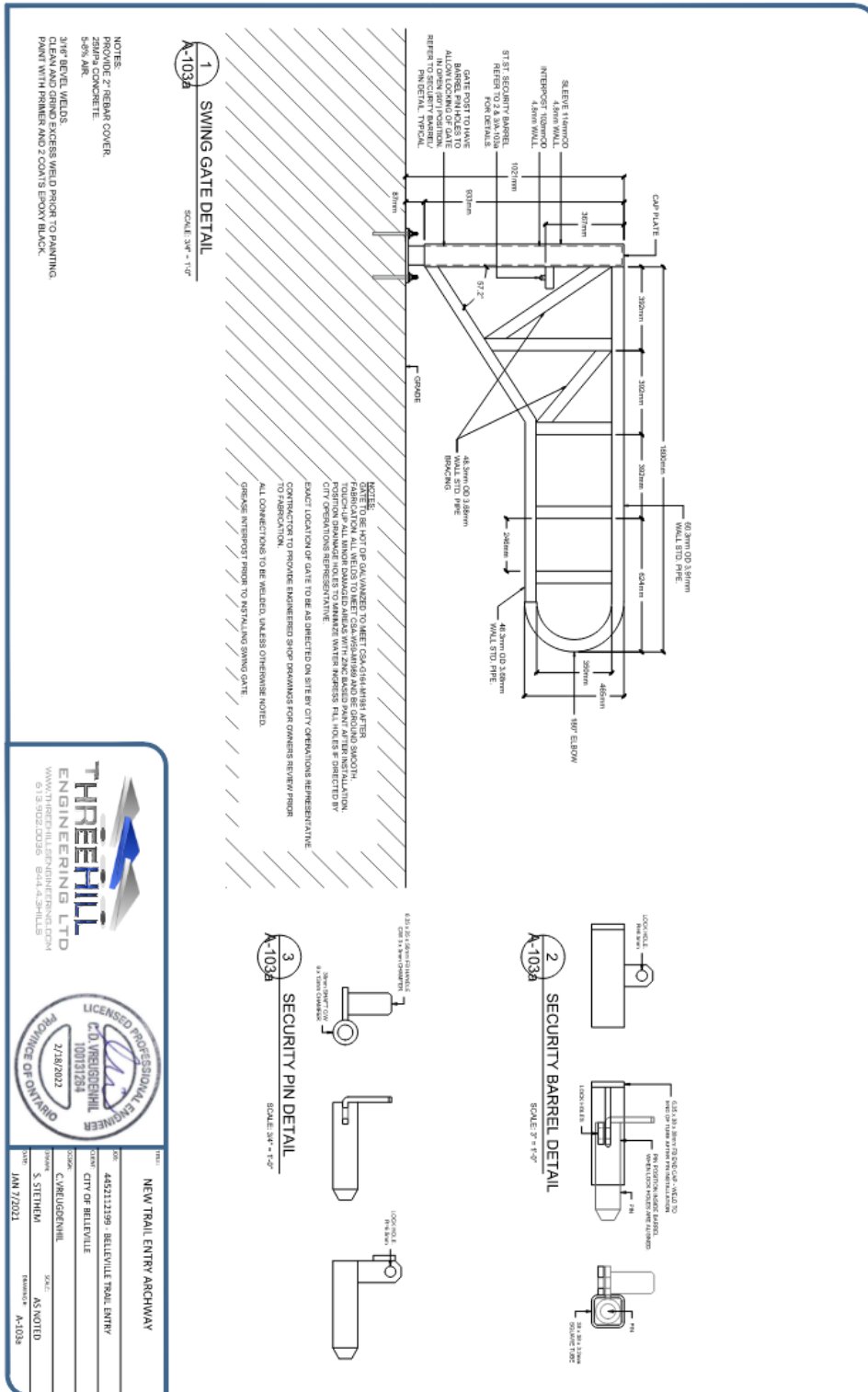
F.2.7.4.1.3 Anchor Bolts

- Anchor bolt specifications for use in “pour in place” concrete bases.



F.2.7.4.1.4 Trail Access Gates

- Gates are installed “chicane style” to force a slower movement through the access by bicycles or other trail users.



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2/19/2022  
PROVINCE OF ONTARIO

PROJECT: NEW TRAIL ENTRY ARCHWAY  
 ADDRESS: 4452112199 BELLEVILLE TRAIL ENTRY  
 CITY: CITY OF BELLEVILLE  
 DRAWN BY: C.M. UDOJENNE  
 SCALE: AS NOTED  
 DATE: JAN 7/2021



F.2.7.4.1.5 Trash Receptacle

REV.	ALTERATION	DATE	BY

(1) MOUNTING PADS C/W 1/2\"/>

**SPECIFICATIONS**

CATALOGUE NO. **KTR35-32-HD**

QUANTITY: **5**

PAINT: **TEXTURED FEDERAL GREEN**

**CUSTOMER APPROVAL & DATE:**

King Lumber • Stresscrete • Est. 1953

**S T R E S S C R E T E**

**G R O U P**

**PROJECT/CUSTOMER:** CITY OF BELLEVILLE FAIRVIEW

DRAWN BY: TASHI B.	ALT: SC1	CHECKED BY:	DATE: 08/10/15
DRAWING TYPE: APPROVAL/MFG. DWG.			REVISION:
DRAWING NUMBER: K07406-1			

CUSTOMER ORDER No: 112506

MFG. ORDER No: K07406

**NOTE:**

ALL STEEL COMPONENTS ARE GALVANIZED AND POWDER COATED



## F.2.8 Signage for Subdivision Plans

### F.2.8.1 Street Name Signs and Other Signs

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#### Checklist of Requirements for Street Name Signs and Other Signs:

Place a checkmark (✓) in the applicable boxes below.

- 1) Street name signs meet the following requirements:
  - They are purchased and installed by the developer as directed by the City of Belleville and at the owner's expense.
  - They are installed at all intersections and identify each street at the intersection.
  - They are visible from both directions, with the street name on both sides of the sign.
  - Whether temporary or permanent, they are:
    - installed upon the completion of the base course asphalt, and
    - maintained by the owner as identified in the subdivision agreement until final assumption by the City.

#### F.2.8.1.1 Temporary Street Name Signs

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- 1) To promote guidance of emergency vehicles within newly developed areas, while limiting potential losses due to ongoing construction activities, the developer may choose to install temporary street name signage in lieu of the formal signs.

#### Checklist of Requirements for Temporary Street Name Signs:

Place a checkmark (✓) in the applicable boxes below.

- 2) Temporary street name signs meet the following requirements:
  - They are erected on all street intersections in the subdivision, as soon as base course asphalt road construction is complete.
  - They are maintained until such time as all grading of roads and boulevards has been completed to the satisfaction of the Manager of Capital Infrastructure. House numbers will be allotted by the Chief Building Official for the City of Belleville.



### F.2.8.2 Traffic Control Signs

---

- 1) All traffic control signs will be purchased and installed by the developer, after the placement of the base course asphalt, as approved by the Municipal Engineer and at the developer's expense.

#### Checklist of Requirements for Traffic Control Signs:

Place a checkmark (✓) in the applicable boxes below.

- 2) Traffic control signs meet the following requirements:
  - They conform to the current revised standards of MTO and the Roads and Transportation Association Manual for Uniform Traffic Control Devices for Ontario.
  - Their location conforms with the Roads and Transportation Association Manual for Uniform Traffic Control Devices in Canada, the Manual of Uniform Traffic Control Devices for Ontario, or the Highway Traffic Act Regulations for Ontario.
  - They are mounted approximately at right angles to the direction of traffic.
    - If it is a parking control sign, it is installed at 45 degrees.
  - They face the traffic that they are intended to serve.
  - On curved alignments, the angle of placement will be determined by the course of the approaching traffic rather than by the roadway edge at the point where the sign is located. Signs for different purposes will not be placed closer together than 30 metres if it can be avoided.
  - Unless otherwise directed by municipal staff, they are:
    - erected upon completion of the placement of base course asphalt, and
    - maintained in a legible condition until the subdivision is formally accepted by the City of Belleville.

# Part G Construction

## G.1 Construction Requirements for Subdivision Plans

### Checklist of Construction Requirements for Subdivision Plans:

Place a checkmark (✓) in the applicable boxes below.

- 1) The developer must meet the following construction requirements:
  - Within six (6) months of the date of the subdivision agreement, the developer commences construction of the subdivision.
  - Within two (2) years of the date of the subdivision agreement, the developer completes construction of the subdivision.
  - The developer proceeds diligently with the construction of the services and completion of all other works, generally in the following order:
    - Erosion control measures;
    - Preliminary grading, storm sewers, sanitary sewers, storm and sanitary private drains, water mains and water service connections, and SWM ponds;
    - Roads, including base course asphalt, barricades and guide rails, traffic signs, and street lighting;
    - Curbs, gutters, and fencing;
    - Sidewalks, trails and walkways, tree planting and landscaping, and final lift of asphalt on road.

### G.1.1 Detailed Work Schedule

#### Checklist of Requirements for the Detailed Work Schedule for Constructing Subdivisions:

Place a checkmark (✓) in the applicable boxes below.

- 1) The Detailed Work Schedule meets the following requirements:
  - It is prepared by the consulting engineer.
  - It details the work schedule for all works associated with developing and constructing the subdivision (refer to Section G.1 above) and submits it to the Manager of Approvals for approval.
  - It is submitted prior to the scheduling of the requisite pre-construction meeting.
  - It sets out the order of work to be undertaken and the projected timing for the commencement and completion of each component.

### 3 | G.1 Construction Requirements for Subdivision Plans

- The consulting engineer receives a letter issued by the Manager of Approvals that confirms the municipal engineer’s approval of the Detailed Work Schedule.
- The consulting engineer communicates changes to the Detailed Work Schedule to the municipal engineer as soon as practical, so as to enable the City to adjust its staffing assignments accordingly (the City relies upon the approved Detailed Work Schedule in its planning and scheduling of its own activities and staff assignments).

#### G.1.2 Report on Condition of Existing Municipal Services

- 1) The City’s acceptance of the Report on Condition of Existing Municipal Services will be represented by the City’s sign-off on the report.

#### Checklist of Requirements for the Report on Condition of Existing Municipal Services for the Subdivision:

Place a checkmark (✓) in the applicable boxes below.

- 2) The Report on Condition of Existing Municipal Services meets the following requirements:
  - Prior to commencement of construction, the consulting engineer conducts an inspection of municipal services in vicinity of subdivision and all deficiencies will be noted in a “Report on Condition of Existing Municipal Services”.
    - The inspection of municipal services includes the following:
      - CCTV sewer inspection on the condition of existing sewers located within and outside of the subdivision lands, and
      - Condition of existing storm sewers and sanitary sewers where they will be crossed over or under by underground services proposed for the subdivision.
  - When the Report on Condition of Existing Municipal Services is complete:
    - the consulting engineer submits three (3) copies of the “Report on Condition of Existing Municipal Services” to the Manager of Approvals, for review and acceptance by the City; and
    - The consulting engineer receives one (1) copy of the report that is signed by the Manager of Approvals.

## 4 | G.1 Construction Requirements for Subdivision Plans

### G.1.3 Construction Prerequisites

#### Checklist of Construction Prerequisites for Subdivisions:

Place a checkmark (✓) in the applicable boxes below.

- 1) To begin constructing the services for the subdivision, the following prerequisite is met:
  - The developer receives an “Authorization to Commence Work” that is issued by the municipal engineer, once the following requirements are in place or completed to the satisfaction of the City:
    - The Subdivision plan has received final approval and has been registered;
    - The Subdivision Agreement has been registered on title to the subdivision lands;
    - The City is in possession of the required security;
    - The City is in possession of the required certificates of insurance;
    - All required cash payments to the City have been made;
    - The consulting engineer has provided a letter to the City stating that they have received a copy of the subdivision agreement and that they understand the obligations and duties of the consulting engineer during construction of the subdivision development;
    - The City has approved the detailed work schedule;
    - The contract between the developer and the contractor contains the “prescribed clauses” (confirmation from the consulting engineer is acceptable);
    - Copies of the MECP ECA and Form 1 (refer to Section D.4.1.3) have been issued for all sanitary sewers, storm sewers, watermains, appurtenances, and SWM facilities to be constructed;
    - The developer has confirmed that service agreements are in place with all private utility companies and Canada Post for the provision of utility and postage services;
    - All necessary permits relating to the construction have been issued;
    - The developer has erected signs at each entrance for every road on the subdivision plan stating “Road not assumed by Municipality – Use at your own Risk”
    - The developer has erected project signs on the subject lands;
    - The developer has submitted and received approval from the City of Belleville of an erosion and sediment control plan; and,

## 5 | G.1 Construction Requirements for Subdivision Plans

- The City has received and accepted the “Report on Condition of Existing Municipal Services” (refer to Section G.1.2 of this Manual).

### G.1.4 Pre-Construction Meeting

- 1) The consulting engineer will arrange a pre-construction meeting prior to commencement of construction. The purpose of this meeting is to review and identify issues with the approved detailed work schedule, confirm the details of the approved erosion and sediment control plan, review the status of the City’s construction prerequisites, review the municipal engineer’s stipulations in respect of access, and ensure the developer’s and City’s needs and interests are fully addressed prior to construction.

#### Checklist of Requirements for the Pre-Construction Meeting for Subdivisions:

Place a checkmark (✓) in the applicable boxes below.

- 2) For the pre-construction meeting, the consulting engineer meets the following requirements:
  - The consulting engineer invites the following attendees to the meeting:
    - Consulting engineer;
    - Developer;
    - Contractor;
    - Development engineer;
    - Municipal engineer;
    - City inspector;
    - Manager of Approvals;
    - Manager of Engineering;
    - Chief Building Official;
    - One representative of Environmental Services (water division);
    - Two representatives of Transportation and Operations Services (i.e., one representative from Roads and ROW, one representative from Parks) and,
    - One representative from the QCA.
  - The consulting engineer reviews:
    - and identifies issues with the approved detailed work schedule;
    - the status of the City’s construction prerequisites; and,
    - the municipal engineer’s stipulations in respect of access.
  - The consulting engineer confirms the details of the approved Erosion and Sediment Control Plan.

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- The consulting engineer ensures the developer's and City's needs and interests are fully addressed prior to construction.
- The consulting engineer prepares and circulates meeting minutes from this meeting to all attendees within five (5) business days.

### G.1.5 Authorization to Commence Work

#### Checklist of Requirements to Receive Authorization to Commence Work for Subdivisions:

Place a checkmark (✓) in the applicable boxes below.

- 1) To receive a formal "Authorization to Commence Work" issued by the municipal engineer:
  - The consulting engineer provides formal notice to the municipal engineer at least seventy-two (72) hours in advance of when construction will commence for the subdivision or for a particular phase of the subdivision where phasing is being employed.
  - It is confirmed (in writing) and satisfied by the municipal engineer that:
    - the prerequisites (outlined in Section G.1.3 of this Manual) have been met, and
    - they have received the meeting minutes from the consulting engineer from the pre-construction meeting.

### G.1.6 Inspection and Testing of Work during Construction

- 1) Primary responsibility for inspections and testing of the works undertaken by the contractor rests with the consulting engineer.
- 2) The consulting engineer, through their own actions and through the use of qualified inspectors, will supervise and inspect the construction in accordance with the direction provided by the City. Testing will also be performed by the consulting engineer, as required by the City.
- 3) The City's inspectors operating under the direction of the municipal engineer will provide periodic and part-time inspection at pertinent intervals, but such inspections will not relieve the consulting engineer from any responsibility to ensure the construction is undertaken and completed in accordance with all City requirements.
- 4) Mandatory, part-time, and full-time inspection activities by the consulting engineer's inspector will be outlined in the Subdivision Agreement.

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- 5) The municipal engineer may request that the consulting engineer arrange site meetings for the purpose of:
  - a) monitoring progress of the work;
  - b) discussing matters of mutual interest; or,
  - c) resolving any on-site difficulties.

### G.1.7 Construction Regulations

#### G.1.7.1 Permits and Municipal Consent

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- 1) The developer, through the consulting engineer or the contractor, is responsible for obtaining all permits required for the construction of the subdivision, and pays any fees relating to such permits. Applications for permits will be made directly to the agency from which the permit is required.
- 2) A permit may be required from the QCA for work planned within an area regulated by the Authority. Areas subject to regulation can be identified by contacting QCA.
- 3) “Municipal Consent” will be required prior to any private utility company proceeding to install services. No work associated with installing private utilities may commence until a “Municipal Consent” has been issued.
- 4) The consulting engineer, on behalf of the individual private utility companies, will apply for the “Municipal Consent” through the Manager of Approvals at the appropriate time for processing.
- 5) A “Road Cut Permit” will be required prior to the contractor proceeding to carry out any work required on existing streets.
- 6) The contractor, or consulting engineer on behalf of the contractor, will apply for the “Road Cut Permit” through the Manager of Approvals at the appropriate time for processing.

### G.1.8 Other Construction Requirements

#### G.1.8.1 Construction Signage

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- 1) Prior to commencement of construction, the developer will erect “Project Signs” on the subdivision lands in locations that comply with the City’s sign by-law and are acceptable to the municipal engineer.
- 2) Project signs will be maintained by the developer throughout the construction process and should be removed at the time the City issues a Certificate of Assumption. No sign permit will be required for such signs, but the method of installation will be subject to the approval of the Chief Building Official.



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- 3) Prior to commencement of construction, the developer will erect signs at all road entrances to the subdivision stating: “Road Not Assumed by Municipality – Use at Own Risk”.
- 4) These signs will be maintained until the City issues a Certificate of Assumption. No sign permit will be required for such signs, but the method of installation will be subject to the approval of the Chief Building Official.

### G.1.8.2 Street Name and Regulatory Traffic Signs

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- 1) The developer will use street names that are approved by the City. All street names must be acceptable for the purposes of 911.
- 2) The developer will be responsible for the acquisition and placement of street signs and regulatory traffic signs required by the City, in accordance with the specifications of the municipal engineer.
- 3) Street signs and regulatory traffic signs should be erected as soon as possible, but they need to be in place before a Preliminary Certificate of Completion of Underground Services is issued.

### G.1.8.3 Erosion and Sediment Control Plan

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- 1) Prior to commencing construction, the developer will prepare an Erosion and Sediment Control Plan (refer to Section D.15 of this Manual) for the approval of the municipal engineer and the QCA, in accordance with the specifications outlined in the “Guidelines on Erosion and Sediment Control for Urban Construction Sites” prepared by the MNMNR.

#### Checklist of Requirements Associated with the Erosion and Sediment Control Plan:

Place a checkmark (✓) in the applicable boxes below.

- 2) The developer must:
  - install all erosion and sediment control measures set out in the approved Erosion and Sediment Control Plan prior to construction commencing;
  - maintain all erosion and sediment control measures throughout the construction process until all disturbed areas have been re-vegetated;
  - inspect and maintain all erosion and sediment control measures after each rainfall to the satisfaction of the municipal engineer;
  - provide suitable temporary mulch and seed cover within seven (7) days of the completion of a particular phase of construction for any disturbed area not scheduled for further construction within the next forty-five (45) days; and,

## **9 | G.1 Construction Requirements for Subdivision Plans**

- re-vegetate all disturbed areas with permanent cover immediately following completion of construction.

### **G.1.8.4 Ponding of Water**

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- 1) The developer will be required to prevent or eliminate the ponding of surface water, which, in the opinion of the Medical Officer of Health, may be favourable to the breeding of mosquitoes. This requirement would apply between the beginning of June through to the end of September, but no work of this nature would be required from October to May.
- 2) This provision will not apply to required SWM ponds.

### **G.1.8.5 Sweeping and Cleaning of Streets**

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- 1) The developer will be responsible for putting in place procedures and regulations for contractors on the subdivision lands to prevent earth and debris from being tracked or deposited on streets outside of the subdivision lands. Such provisions are included in the subdivision agreement.
- 2) The developer will ensure that all trucks making deliveries to, or taking materials from the subdivision will be adequately covered and not unreasonably loaded so as to scatter refuse, rubbish or debris on streets.
- 3) The developer will ensure that once building permits are issued, streets in front of and leading to lots for which building permits have been issued are kept clear of earth, debris, and building materials.

### **G.1.8.6 Winter Road Maintenance**

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- 1) Prior to the laying of the base course of asphalt, the developer will be responsible for maintaining the roads such that all maintenance holes, catch basins, oil-grit separators (OGS Units), valve boxes, etc., are at grade to allow the developer to carry out proper snow removal during winter months and to maintain safe vehicular access.
- 2) Until the City issues a Preliminary Certificate of Completion of Underground Services, snow clearing will be the responsibility of developer, which will be done to the satisfaction of the City.

### **G.1.8.7 Damage to or Relocation of Existing Services**

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- 1) The developer will pay for the costs of repairing any damage to any existing services and/or roads and the cost of relocating any existing services, caused by the development of the subdivision, to the satisfaction of the municipal engineer.

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- 2) The developer will ensure that all public roads used for access to the subdivision during any construction are maintained in a condition equal to that existing at the date construction began.
- 3) If abutting roads are damaged, the developer will restore the road immediately to its prior condition.
- 4) Where private property is damaged due to activities associated with constructing the subdivision, the developer will be responsible for repairing or otherwise reinstating the damaged lawns at its expense to the satisfaction of the municipal engineer.

### **G.1.8.8 Use of Abutting Roads during Construction**

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- 1) The developer will not close any existing public street in support of the construction of the subdivision without first obtaining the written approval of the municipal engineer.
- 2) The municipal engineer may attach conditions to any closure and the developer will abide by any conditions established by the municipal engineer.

### **G.1.8.9 Weed and Dust Control**

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- 1) The developer will be responsible for controlling weeds on the subdivision lands to the satisfaction of City, and to cut all weeds and grass and other growth on the subdivision lands during construction in accordance with the requirements of the City and/or Provincial legislation.
- 2) The developer will place topsoil and seed all areas of the subdivision not immediately planned for development purposes in order to control dust and weeds.
- 3) In areas where existing, complete or partially complete phases of a development abut new phases or construction the, developer will maintain these lands in a manner so as to eliminate or minimize weed growth and the productions of weed seeds.

## **G.1.9 Grading and Drainage Work**

- 1) The developer is responsible for the grading of the subdivision lands, and to that effect, the developer will ensure:
  - a) The contractor grades the lands in conformity with the approved Grading and Drainage Plan (refer to Section D.8 of this Manual); and,

## **11 | G.1 Construction Requirements for Subdivision Plans**

- b) All purchasers of lots understand their obligation to grade their lots in conformity with the approved Grading and Drainage Plan.
- 2) The developer, when selling a lot, will reserve the right for the developer and/or the City to enter onto the lot to correct any drainage problem that may arise due to non-conformity with the approved Grading and Drainage Plan.

### **G.1.9.1 Undertaking Grading Works**

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- 1) The developer will not commence construction of the grading and drainage works on the subdivision lands until:
  - a) the municipal engineer has issued an "Authorization to Commence Work", and
  - b) the Erosion and Sediment Control Plan has been approved.
- 2) The developer will institute a grade control program designed to the satisfaction of the municipal engineer during construction to ensure that all proposed development on the subdivision lands conforms to the approved Grading and Drainage Plan.
- 3) Grading of the subdivision lands must be done in accordance with the Detailed Work Schedule, but the municipal engineer can over-ride this schedule and direct certain grading work be done in advance of any other work in order to prevent or avoid a flooding issue or potential drainage problems from arising.
- 4) In the event of a drainage problem occurring during construction or anytime up to the date the Certificate of Assumption is issued by the City, the developer agrees to correct the drainage problem to the satisfaction of the municipal engineer.
- 5) If the municipal engineer believes that grading of the lands is not progressing in compliance with the approved Grading and Drainage Plan, they have the authority to issue an "Order to Comply" specifying what corrections the developer is required to make to resolve the shortcoming. The developer will be obligated to abide by the directives of the municipal engineer.

### **G.1.9.2 Certificate of Preliminary Grading**

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- 1) Preliminary grading of the subdivision will include clearing and grubbing, the stripping (and stockpiling) of topsoil, the construction of all major swales, and installation of surface drainage systems needed to ensure the lands drain in generally in accordance with the approved Grading and Drainage Plan.

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- 2) Upon completion of preliminary grading of the subdivision lands in accordance with the Grading and Drainage Plan, the developer will deliver to the Manager of Approvals:
  - a) a plan prepared by the consulting engineer or an Ontario Land Surveyor (OLS) showing as-constructed elevations and grades for all major swales and surface drainage systems; and,
  - b) a certificate signed by the consulting engineer certifying that the preliminary grading has been completed in general conformity with the approved Grading and Drainage Plan.
- 3) The Manager of Approvals will provide the documents to the municipal engineer for review and acceptance. Provided the municipal engineer is satisfied that the preliminary grading and drainage work has been completed satisfactorily, the municipal engineer will issue a Certificate of Preliminary Grading.
- 4) The following standards will be applied by the City in determination as to whether a Certificate of Preliminary Grading can be issued.
  - a) Swales must be sodded in areas where erosion could readily occur.
  - b) All swales must be graded to within 75 millimetres of final grade.
  - c) Corners of lots must be graded to within 75 millimetres of final grade.
  - d) All ditch inlets must be installed to the satisfaction of the consulting engineer.

### G.1.9.3 Certificate of Final Lot Grading

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- 1) Prior to any development occurring on any lot (building permit being issued), a “Certified Lot Grading Plan” (refer to Section D.25 of this Manual) must be prepared and submitted to the Chief Building Official.
- 2) The owner of each lot in the subdivision is responsible for preparing a “Certified Lot Grading Plan” for approval and competing final lot grading in conformity with the approved “Certified Lot Grading Plan”.
- 3) Upon completion of the final lot grading in accordance with the approved “Certified Lot Grading Plan, the consulting engineer will submit to the municipal engineer:
  - a) a survey drawing of the lot showing the final grades; and,
  - b) a certificate signed and sealed by the engineer certifying that the final grades are in conformity with the approved Grading and Drainage Plan.
- 4) Once the municipal engineer is satisfied that the final grading of the lot is in conformity with the Grading and Drainage Plan, they will issue a Certificate of Final Lot Grading and provide copies to the:
  - a) Chief Building Official;
  - b) Consulting engineer or professional engineer who prepared the plan;

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- c) Manager of Approvals;
- d) Development engineer; and,
- e) Developer.

### G.1.10 Construction of Private Utilities

- 1) The developer will be responsible for making arrangements with all private utility companies and Canada Post to have their services installed in the subdivision in accordance with the approved Composite Utility Plan (refer to Section D.9 of this Manual).
- 2) The required utilities will include:
  - a) Natural gas;
  - b) Hydroelectric;
  - c) Telephone;
  - d) Cable TV; and,
  - e) Canada post (community mailboxes).
- 3) All private utilities will be located underground excluding service boxes and similar appurtenances, and community mailboxes.
- 4) The developer will enter into any servicing agreements, prior to construction beginning, and pay any fees required by utility companies and Canada Post for the installation of any of the utilities, to the satisfaction of the City and the utility company.
- 5) The developer will grant all easements required by the private utility companies to satisfy their requirements; the developer will ensure all easement requirements are reflected in the final draft of the subdivision agreement.
- 6) In the event of any conflict with existing utility facilities or easements, the developer will be responsible for relocation of such facilities or easements.

### G.1.11 Adverse Conditions Found On Site

#### G.1.11.1 Decommissioning of Existing Wells

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- 1) The developer is responsible for determining if any abandoned wells exist on the subdivision lands.
- 2) If abandoned wells are found on the lands, the developer will decommission and permanently cap them in accordance with current provincial legislation, regulations, and standards. The developer will file the necessary documents with the MECP and City indicating proper decommissioning has occurred.

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- 3) Prior to the issuance of Preliminary Certificate of Completion of Underground Services, the developer will provide to the City a copy of the contractor's well abandonment record for each well that is decommissioned.
- 4) In the event an existing well on the lands is to be kept in service, the developer will acknowledge that the City accepts no responsibility for the well, and would make no assertion about the quantity or quality of water available in the well.
- 5) During construction of the subdivision, the developer will accept all responsibility for protecting the well and the underlying aquifer from any construction or development activity.

### **G.1.11.2 Contamination and Archaeological Finds**

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- 1) The developer will report any contamination encountered or archaeological finds uncovered during construction or anything suspected as such, to the municipal engineer.
- 2) In the event that potential contamination is found, the developer will engage the services of a geotechnical engineer to investigate the potential contamination. If necessary, a Phase II ESA (refer to Section E.4 of this Manual) will be prepared complete with recommendation for addressing the problem in accordance with the "Guidelines for Use at Contaminated Sites in Ontario" (MECP).
- 3) The geotechnical engineer will provide a copy of the report to the City summarizing the results of the site assessment and restoration activities. The City reserves the right, if contamination is found, to require a Record of Site Condition be prepared and filed in the Environmental Site Registry.
- 4) If the site is free of contamination, the geotechnical engineer will provide a certification to this effect to the City.
- 5) In the event of an archaeological find, the City may require the developer to engage a qualified archaeologist to assess the find and provide recommendations on how to deal with the matter. The report will be provided to the developer and to the Manager of Approvals. The developer will proceed in accordance with the direction of the City.

### **G.1.12 Revisions to Approved Drawings**

- 1) The City is not responsible for any errors in the design of the services as set out in the approved engineering design drawings that become evident during the construction of the subdivision.

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- 2) Further, the City is not responsible in any way for errors on the part of the contractor during the construction of the services for the subdivision which may or may not be related to errors inherent in the engineering design drawings.
- 3) Where the consulting engineer becomes aware of any situation where a revision to the approved engineering design drawings is warranted, the consulting engineer will advise the municipal engineer forthwith, and if necessary issue a “Stop Work Order” to the contractor pending the necessary revision being processed and approved.
- 4) The municipal engineer will have the same rights in such a circumstance.
- 5) Where a revision is necessary, the consulting engineer will prepare a revised engineering design drawing incorporating the change, and submit three (3) copies of the revised drawing to the Manager of Approvals for circulation and review.
- 6) Once the City has approved the revised drawing, the Manager of Approvals will notify the consulting engineer in writing, and the consulting engineer will ensure the contractor proceeds on the basis of the revised engineering design drawing.
- 7) All costs associated with revisions to engineering design drawings will be the responsibility of the developer.

### **G.1.13 Requirements at Completion of Construction**

#### **G.1.13.1 As-Built Drawings**

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- 1) The consulting engineer will submit two (2) draft sets of as-built drawings to the Manager of Approval for review and approval.
- 2) Once the City has approved the as-built drawings, the consulting engineer will submit two (2) complete sets of approved as-built drawings to the Manager of Approvals. Refer to Section D.26 of this Manual for as-built drawing requirements.

#### **G.1.13.2 Final Report on Condition of Existing Municipal Services**

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- 1) Following the completion of the construction of all services and prior to making an application for a Certificate of Completion of Works, the consulting engineer will conduct a follow-up inspection of pre-existing municipal services in vicinity of subdivision, and will produce a “Final Report on Condition of Existing Municipal Services” which will include a comparison to the “Report on Condition of Existing Municipal Services” prepared before construction began.
- 2) This inspection will include a CCTV. sewer inspection on the condition of the existing sewers located within and outside of the subdivision lands and the



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condition of existing storm sewers and sanitary sewers where they were crossed over or under by underground services for the subdivision.

- 3) When complete, the consulting engineer will submit three (3) copies of the “Final Report on Condition of Existing Municipal Services” to the Manager of Approvals, for review and acceptance by the City.
- 4) The City’s acceptance will be represented by the City’s sign-off on the report. The Manager of Approvals will return one (1) signed report to the consulting engineer.
- 5) Where the report identifies damage to or excessive deterioration to existing municipal services, the developer will be responsible for repairing the service to the same condition that it was in prior to the commencement of construction. This work must be completed to the satisfaction of the municipal engineer before a Certificate of Completion of Works can be issued.

### G.1.14 Default

#### G.1.14.1 General Provisions

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- 1) The developer is responsible for ensuring that the contractor and the consulting engineer perform their responsibilities as set out in the subdivision agreement in a professional and competent manner; failure of either to perform their respective duties and roles as set out in the subdivision agreement will constitute a default.
- 2) The municipal engineer and the City’s inspectors will be entitled to enter onto the subdivision lands to inspect the work of the contractor at any time, and to verify the work being performed by the consulting engineer.
- 3) The City can initiate any of the default options or remedies available to the City, if, in the opinion of the municipal engineer, the developer is not ensuring that:
  - a) work required by the subdivision agreement is progressing within the time limits specified, or in order that it should be completed;
  - b) work is being performed properly, or that appropriate materials that meet the City’s engineering standards are being used;
  - c) required work is being addressed;
  - d) anything that the municipal engineer specifies as being defective or unsuitable is being replaced or repaired;
  - e) obligations assigned to them under the subdivision agreement are being met;
  - f) work is being performed under the supervision of the consulting engineer;
  - g) the consulting engineer is performing all obligations assigned to them under the provisions of the subdivision agreement; and/or,

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- h) the project is proceeding in full compliance with the subdivision agreement.
- 4) The default options and remedies available to the municipal engineer include:
  - a) issuing an “Order to Comply” to which the developer will be obligated to comply;
  - b) issuing a “Stop Work Order” to which the contractor will be required to stop all work, and this Order would continue until such time as the issue of concern has been resolved; and,
  - c) following the giving of written notice to the developer, entering the subdivision lands to undertake whatever action is warranted to resolve the concern or to complete the project correctly; where the municipal engineer believes there is an emergency, entry and work may be done without prior notice to the developer, but will be notified as soon as can be accommodated.
- 5) Further, the City may refuse to issue building permits until matters in default are resolved to the City’s satisfaction.
- 6) All work associated with the City’s actions in response to a default would be at the expense of the developer. To cover the City’s costs, the City may use all or any part of the security to pay for the costs incurred by the City.

## G.2 Construction Requirements for Site Plans

- 1) The construction requirements for subdivisions also apply to site plans, as the case may be to the development and works proposed in the site plan.
- 2) Refer to Section G.1 of this Manual for details on construction requirements.

# Part H Inspections

# H.1 General Requirements

- 1) It is the responsibility of the developer/applicant/consultant to contact the Engineering and Development Services Department to request any inspection that requires a Manager from Transportation and Operations Services to attend.
- 2) All requests should identify the site plan or subdivision development by its Approvals Section development file number (B-75-xxx or ER-xxx) and are required to include the following information:
  - a) the purpose of the inspection;
  - b) the proposed date and time of the inspection;
  - c) the expected duration of the inspection;
  - d) who will be attending the inspection; and,
  - e) where the inspection is to take place (by lot number and/or street address).
- 3) Inspection requests are subject to time of year and weather conditions.
- 4) Plant material is required to be inspected while in full leaf.
- 5) It is the responsibility of the developer to provide any contractor or other such sub-consultant with a copy of the approved landscape plan for use on site.
- 6) The developer's landscape architect is required to submit a detailed written Inspection Report to the Engineering and Development Services Department within ten (10) days of any Site Plan or Subdivision Development inspection.

## H.2 Inspections for Subdivision Plans

### H.2.1 General Inspection and Testing

#### H.2.1.1 Lot Grading Inspection and Certification

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##### Checklist of Requirements for Lot Grading Inspection and Certification:

Place a checkmark (✓) in the applicable boxes below.

- 1) Upon completion of the final lot grading in accordance with the approved Certified Lot Grading Plan (refer to Section D.25 of this Manual for its requirements):
  - the consulting engineer submits to the municipal engineer:
    - a survey drawing of the lot showing the final grades; and,
    - a certificate signed and sealed by the engineer, certifying that the final grades are in conformity with the approved Grading and Drainage Plan.
  - The municipal engineer meets on site with the consulting engineer to inspect and determine if the final lot grading is in conformity with the Grading and Drainage Plan.
    - If the municipal engineer identifies any discrepancies with the conformity of the final lot grading, the municipal engineer provides a list to the consulting engineer to address.
  - Once the municipal engineer is satisfied that the final grading of the lot is in conformity with the Grading and Drainage Plan, they:
    - issue a Certificate of Final Lot Grading, and
    - provide copies to the:
      - Chief Building Official;
      - consulting engineer or professional engineer who prepared the plan;
      - Manager of Approvals;
      - development engineer; and,
      - developer.

## 4 | H.2 Inspections for Subdivision Plans

### H.2.1.2 Erosion and Sediment Control Inspection

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#### Checklist of Requirements for Lot Grading Inspection and Certification:

Place a checkmark (✓) in the applicable boxes below.

- 1) Upon completion of the installation of the Erosion and Sediment Control Plan (refer to Section D.15 of this Manual for its requirements):
  - the consulting engineer requests an inspection with the municipal engineer for acceptance prior to any clearing, grubbing or earth work operations start; and,
  - the Erosion and Sediment Control Plan is actively maintained and adhered to throughout the duration of the construction.
  
- 2) The consulting engineer and other City staff may contact the municipal engineer at any time during the construction to request that the Erosion and Sediment Control Plan be addressed to better meet the general conditions of the site.

## 5 | H.2 Inspections for Subdivision Plans

### H.2.1.3 Lot Grading and Erosion Control Inspection Form

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1) Below is an image of the Lot Grading and Erosion Control Inspection Form:

#### Lot Grading and Erosion Control Inspection Form

**Subdivision & Lot #:** \_\_\_\_\_  
**Inspection:** \_\_\_\_\_  
**Date:** \_\_\_\_\_  
**Attendees:** \_\_\_\_\_

#### **Checklist of Requirements Associated with the Erosion and Sediment Control Plan:**

- Installed all erosion and sediment control measures set out in the approved Erosion and Sediment Control Plan prior to construction commencing;
- Maintain all erosion and sediment control measures throughout the construction process until all disturbed areas have been re-vegetated;
- Inspect and maintain all erosion and sediment control measures after each rainfall to the satisfaction of the municipal engineer and City staff;
- Provided suitable temporary mulch and seed cover within seven (7) days of the completion of a particular phase of construction for any disturbed area not scheduled for further construction within the next forty-five (45) days; and,
- Re-vegetate all disturbed areas with permanent cover immediately following completion of construction.

#### **Checklist of Requirements for Lot Grading and Drainage during Construction:**

Prior to the commencement of rough lot grading and drainage during construction, the following requirements are met:

- The developer enforces an erosion control program to the satisfaction of the City of Belleville Engineering & Development Services Department, and any other applicable agencies.
- All erosion and sediment control as outlined on the Erosion and Sediment Control Plan are in place and functioning before any clearing, grubbing or earthwork operations begin.  
Before placing imported fill material on registered lots where private sewage disposal systems are required, the consulting engineer certifies in writing to the local health unit and the City of Belleville Engineering & Development Services Department the following:
  - "That the imported fill material placed on Registered lots meets or exceeds the original ground's capability to support a private sewage disposal system as required by the City of Belleville Building Department."

#### **Checklist of Requirements for the Verification of the Lot Grading Plan:**

- The finished elevation of the lands at each corner of the lot match the Lot Grading Plan
- The finished elevation of the lands at the front and rear of the building match the Lot Grading Plan;
- The finished elevation and drainage of the lands is in conformance to the Lot Grading Plan;
- The finished elevation of any retaining wall, the finished elevation of any walk-out onto these lands from the basement of the finished building, and the finished elevation of any basement window openings match the Lot Grading Plan;
- The finished elevation and slope of any driveway and the finished location and slope of any swale or rear yard catch basin match the Lot Grading Plan;
- Any abrupt changes in the finished elevation of the lands are noted and are accepted to the satisfaction of the City and;
- The final as-constructed Lot Grading Plan has a signature and seal of the engineer who prepared the plan.

#### **Notes:**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Signature Consulting Engineer:** \_\_\_\_\_

**Signature City Staff:** \_\_\_\_\_

2) The requirements for this form are provided in the following section (Inspection Checklist).

### H.2.1.4 Inspection Checklist

---

1) Prior to commencing construction, the developer will have prepared an Erosion and Sediment Control Plan (refer to Section D.13 of this Manual) for the approval of the municipal engineer and the QCA, in accordance with the specifications outlined in the "Guidelines on Erosion and Sediment Control for Urban Construction Sites" prepared by the MNDMNRF.



## 6 | H.2 Inspections for Subdivision Plans

### Checklist of Requirements Associated with the Erosion and Sediment Control Plan:

Place a checkmark (✓) in the applicable boxes below.

2) The developer:

- installs all erosion and sediment control measures set out in the approved Erosion and Sediment Control Plan prior to construction commencing;
- maintain all erosion and sediment control measures throughout the construction process until all disturbed areas have been re-vegetated;
- inspect and maintain all erosion and sediment control measures after each rainfall to the satisfaction of the municipal engineer and City staff;
- provide suitable temporary mulch and seed cover within seven (7) days of the completion of a particular phase of construction for any disturbed area not scheduled for further construction within the next forty-five (45) days; and,
- re-vegetate all disturbed areas with permanent cover immediately following completion of construction.

### Checklist of Requirements for Lot Grading and Drainage during Construction:

Place a checkmark (✓) in the applicable boxes below.

3) Prior to the commencement of rough lot grading and drainage during construction, the following requirements are met:

- The developer enforces an erosion control program to the satisfaction of the City of Belleville Engineering and Development Services Department, and any other applicable agencies;
- All erosion and sediment control as outlined on the Erosion and Sediment Control Plan are in place and functioning before any clearing, grubbing or earthwork operations begin; and,
- Before placing imported fill material on registered lots where private sewage disposal systems are required, the consulting engineer certifies in writing to the local health unit and the City of Belleville Engineering and Development Services Department the following: "That the imported fill material placed on Registered lots meets or exceeds the original ground's capability to support a private sewage disposal system as required by the City of Belleville Building Department."

## 7 | H.2 Inspections for Subdivision Plans

### Checklist of Requirements for the Verification of the Lot Grading Plan:

Place a checkmark (✓) in the applicable boxes below.

- 4) An inspection is completed with City staff and the consulting engineer to verify the final lot grading is in conformance to the Lot Grading Plan includes the following:
- The finished elevation of the lands at each corner of the lot match the Lot Grading Plan;
  - The finished elevation of the lands at the front and rear of the building match the Lot Grading Plan;
  - The finished elevation and drainage of the lands is in conformance to the Lot Grading Plan;
  - The finished elevation of any retaining wall, the finished elevation of any walk-out onto these lands from the basement of the finished building, and the finished elevation of any basement window openings match the Lot Grading Plan;
  - The finished elevation and slope of any driveway and the finished location and slope of any swale or rear yard catch basin match the Lot Grading Plan;
  - Any abrupt changes in the finished elevation of the lands are noted and are accepted to the satisfaction of the City and;
  - The final as-constructed Lot Grading Plan has a signature and seal of the engineer who prepared the plan.

## H.2.2 Landscape Design Installation and Inspection

### H.2.2.1 Subdivision Development Street Tree Installation

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- 1) Trees within subdivision developments will be planted in accordance with the following requirements:
  - a) prior to the final top asphalt on city or regional roadways;
  - b) after buildings on pertinent lots or blocks are completed;
  - c) after lots or blocks, including boulevards are graded and sodded;
  - d) after curbs are complete; and,
  - e) after utility location stake-outs have been completed.
- 2) Prior to any trees delivered to site, an on-site “street tree locate” meeting must be held with the developer’s landscape architect, the landscape contractor, and a

## 8 | H.2 Inspections for Subdivision Plans

manager from Transportation and Operations Services to review planting locations, species and requirements for street tree planting.

- a) The “street tree locate” meeting will confirm individual locations for all street trees in accordance with the approved landscape plan and on-site conditions.
  - b) Tree locations will be marked with a painted ‘dot’ on the curb or sidewalk by the developer’s landscape architect.
  - c) Prior to planting, the City of Belleville reserves the right to adjust the quantity, location, and species of trees based on on-site conditions such as available space, above ground utilities, intersection visibility, driveways, etc.
- 3) The developer’s landscape architect and the City of Belleville reserve the right to investigate, inspect and reject any plant material, tree or procedure that does not meet minimum requirements.
- a) Any damaged trees, including trees damaged during shipment or installation will be replaced or treated in accordance with proper horticultural standards as directed by the developer’s landscape architect
  - b) Approval does not impair the right of inspection and rejection during progress of the work
  - c) Any trees showing signs of distress will be treated or replaced immediately, as directed
  - d) Defects and deficiencies will include but not be limited to dieback, disease, lack of vigour in 50% or greater amount of the crown, improper installation, etc.
- 4) It is the responsibility of the developer’s landscape architect to ensure that trees are installed under ideal seasonal conditions.
- 5) It is the responsibility of the developer’s landscape architect to provide a detailed record of all marked street tree locations within ten (10) working days of the Street Tree Locate to the Engineering and Development Services Department. This information should include:
- a) lot number;
  - b) municipal address;
  - c) location (front/flankage);
  - d) site conditions that may prevent street tree installation (light standard, hydrant, hydro transformer opening side, easement, underground servicing, etc.);
  - e) species and quantity as it appears on the approved landscape plan; and,
  - f) species and quantity as per the location.

## **9 | H.2 Inspections for Subdivision Plans**

### **H.2.2.2 Required Planting Inspections for Administration of Warranty Periods in Subdivisions**

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- 6) An Inspection for Completion is required after the installation of the street trees to initiate the required one-year warranty period. This inspection will include the City's Parks and Public Spaces Supervisor and the developer's landscape architect. The leaves must be on the trees for this inspection to occur.
- 7) It is the responsibility of the developer and/or their consultant to request an Inspection for Acceptance for Street Tree Planting by the City's Parks and Public Spaces Supervisor and the developer's landscape architect. This inspection is to occur prior to the expiry of the warranty period.
- 8) The following landscape planting works also require the inspections outlined in Section H.2.2.2:
  - a) SWM facility plantings;
  - b) edge management and/or restoration plantings and/or hazard trees;
  - c) buffer plantings;
  - d) parkland or other green infrastructure; and,
  - e) tree preservation and protection areas.

### **H.2.2.3 Subdivision Development Fencing Installation**

---

- 1) A fence initiation meeting is required on-site prior to any fencing installation works, and should include the developer, the developer's landscape architect, the fencing contractor and the City's Parks and Public Spaces Supervisor.
- 2) Prior to the fence initiation meeting, all property lines and 0.3-metre municipal reserves are required to be staked by a certified Ontario Land Surveyor (OLS), including grade information.
- 3) All required fencing will be installed prior to the final top asphalt on city or regional roadways.
- 4) No gates will be installed into parkland, open spaces, or other City lands without approval from Transportation and Operations Services.

### **H.2.2.4 Required Fencing Inspections for Administration of Warranty Periods in Subdivisions**

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- 1) It is the responsibility of the developer and/or their consultant to request an Inspection for Completion by a manager from Transportation and Operations Services. This inspection is to occur after the fence installation to initiate the required fencing warranty period (two years).

## **10 | H.2 Inspections for Subdivision Plans**

- 2) It is the responsibility of the developer and/or their consultant to request an Inspection for Acceptance by a manager from Transportation and Operations Services. This inspection is to occur prior to the expiry of the fencing warranty period.

## H.3 Inspections for Site Plans

### H.3.1 Site Plan Landscape Works Inspections

- 1) A site plan inspection is conducted by staff from the Approvals Section, upon request of the developer:
  - a) for any kind of security reduction, and
  - b) when there is an issue during development that may require an alteration to the approved plans.
- 2) Site Plan inspections will only be provided upon the full completion of the required landscape works, unless otherwise agreed to by the City.

# Part I Appendices

# Appendix A

## General Notes for Site Development



## **General Notes for Site Development**

- 1) All plant material will be maintained by the contractor or property owner immediately following planting until the date of acceptance, or until the end of the warranty period identified previously in Section H.2.2.2 of this Manual.
- 2) Maintenance will include all measures necessary to establish and maintain all plants in an acceptable, vigorous, and healthy condition including cultivating, weeding, watering when required, pruning and maintenance of all accessories.
- 3) The contractor/applicant will be responsible for the protection of all trees and shrubs from rodent and other damage. Protective collars will be installed prior to the application of shredded bark mulch. Collars will be flexible plastic composition, a minimum of 400 millimetres high and 200 millimetres in diameter.
- 4) The contractor/applicant will remove all burlap tree wrap, tags, ties, and two-inch (minimum) wooden rounded tree stakes prior to Inspection for Completion by the City of Belleville.
- 5) Boulevard area to be fine graded, top-soiled and sodded.
- 6) The applicant or their landscape architect should request an appointment with the City of Belleville Transportation and Operations Services for all inspections. Minimum five (5) business days' notice to the City is required for all inspection appointments.
- 7) At the time of Inspection for Completion of the installation, all planting beds and tree pits will be freshly cultivated, free of weeds, leaves, broken branches and debris.
- 8) Location of fences to be determined by the City of Belleville Engineering and Development Services Department.
- 9) Concrete footings for all fences are to be poured into sono-tubes for their full depth of 1,200 millimetres and chamfered at the top.

# Appendix B

## Standard Utility Clearances for Streetscape Planting

## Standard Utility Clearances for Streetscape Planting

- 1) These clearance requirements are considered guidelines for the planning of new streetscapes, and are required to be included on proposed Site Plan and Subdivision landscape plans. On-site adjustments of spacing and/or species may be required in the field to suit specific site conditions. Any adjustments will be approved by the City of Belleville prior to their implementation. New street trees will be planted to meet the following minimum clearance requirements:
  - a) 1 metre from driveways;
  - b) 1.5 metres from utility pedestals;
  - c) 1.5 metres from concrete base of any cabinets;
  - d) 2 metres from community mailboxes (no evergreens permitted);
  - e) 1.5 metres from fire hydrants;
  - f) 3 metres from the access hatch side of hydro transformers;
  - g) 5 metres from light standards for small or flowering trees;
  - h) 8 metres from light standards for large or shade trees;
  - i) 15 metres from stop signs or end of curb radii at intersections;
  - j) no planting of trees or shrubs within sight triangles at intersections;
  - k) no trees should be planted directly over any underground utilities, directly under any overhead utilities;
  - l) no trees will be planted upstream of light standards mounted with traffic signs;
  - m) the City of Belleville reserves the right to adjust the quantity of trees planted based on availability and space;
  - n) the contractor/applicant will be responsible for locating all existing underground and overhead utilities and services prior to any excavation; and,
  - o) all relevant utility agencies will be given required notice for stake outs prior to any excavation.

# Appendix C

## Accessibility Parking Proposed and Retrofit 413 (January 2009)

A sample graphic of a Proposed and Retrofitted Accessible Parking Space can be provided upon request. Please contact the Accessibility Coordinator of the City of Belleville Corporate Services.

# Appendix D

Landscape Works

Cost Estimate

Requirements for Site

Plan Development

Proposals

# Landscape Works Cost Estimate Requirements for Site Plan Development Proposals

City of Belleville

Cost Estimate: Landscape Works

Date:

Project Name: (Project Title, Address)

City File Number: (B-75-xxx) for site plan proposals; (ER-xxx) for subdivision proposals

Prepared by:

Item	Description	Condition	Qty.	Unit	Unit Cost	Total Estimated
<b>1.0</b>	<b>Planting Works</b>					
1.1	Deciduous Trees @ 60-millimetre caliper			each	\$	\$
1.2	Coniferous Trees @ 1.8-			each	\$	\$
1.3	Deciduous Shrubs			each	\$	\$
1.4	Coniferous Shrubs			each	\$	\$
1.5	Perennials			each	\$	\$
1.6	Grasses			each	\$	\$
1.7	Vines			each	\$	\$
1.8	Topsoil, Fine Grade and Sod			square metres	\$	\$
<b>1.9</b>	<b>Planting Works Sub-total:</b>					\$
<b>2.0</b>	<b>Site Features</b>					
2.1	Unit Paving			square metres	\$	\$
2.2	Concrete Paving			Square metres	\$	\$
2.3	Precast Concrete Patio Slabs			Square metres	\$	\$

Item	Description	Condition	Qty.	Unit	Unit Cost	Total Estimated
2.4	1,200-millimetre height Black Vinyl Chain Link			LM	\$	\$
2.5	1,800-millimetre height Cedar Acoustic Fencing (or as per associated noise			LM	\$	\$
2.6	1,000-millimetre height Decorative Metal Fencing			LM	\$	\$
2.7	Tree Protection Fencing			LM	\$	\$
2.8	Precast Concrete Pillars			each	\$	\$
<b>2.9</b>	<b>Site Features Sub-total:</b>					<b>\$</b>
<b>3.0</b>	<b>Site Furniture</b>					
3.1	Benches			each	\$	\$
3.2	Waste Receptacles			each	\$	\$
3.3	Bicycle Racks			each	\$	\$
3.4	Bollards			each	\$	\$
3.5	Trellis			each	\$	\$
3.6	Entry Signage			each	\$	\$
<b>3.7</b>	<b>Site Furniture Sub-total:</b>					<b>\$</b>
<b>4.0</b>	<b>Total Estimate Cost</b>					<b>\$</b>

- Qty. – Quantity
- LM – Linear metre
- Items indicated as “by others” are secured separately under Engineering/Builder works
- Examples of conditions (third column) are WB, PT, FG, B&B, etc.
- 13% HST not included
- 15% contingency not included



# Appendix E

## General Notes for Subdivision Development

## **General Notes for Subdivision Development:**

1) The following note will be placed on all landscape drawings:

“Any revisions to the approved landscape plans will be subject to the review and approval by the Engineering and Development Services Department, City of Belleville, prior to commencement of the landscape works”.

2) General Sidewalk Notes:

- a) All sidewalks to be constructed as per City of Belleville Standards.
- b) All sidewalks should be constructed with minimum slopes to ensure accessibility.
- c) All sidewalks to be a minimum width of 1,500 millimetres unless otherwise required.
- d) Cash in lieu of 1.5 metre concrete sidewalk to be clearly indicated on plans.

3) General Planting Notes:

- a) The contractor is responsible for locating all existing underground and overhead utilities and services. All relevant utility agencies will be given the required notice for stake-outs prior to any excavation.
- b) No trees should be planted under overhead wires or over underground services. All street-tree locations are required to be coordinated with above and below ground utilities.
- c) No trees to be planted in the following locations:
  - I) easements;
  - II) in between adjacent driveways unless otherwise approved by the City;
  - III) on property lines;
  - IV) in Hydro One corridors; and,
  - V) in swales.
- d) The City of Belleville reserves the right to adjust the quantity, location, and species of trees prior to planting based on on-site conditions such as available space, above ground utilities, intersection visibility, driveways, etc.
- e) A ‘Do’s and Don’ts’ door hanger, provided by the Engineering and Development Services Department is given to the affected home owner at the time of the street tree planting. This information is required to be distributed by the developer’s landscape architect or contractor.

- f) The contractor will be responsible for the protection of all trees and shrubs from rodent and other damage for the duration of the warranty, and in accordance with the associated City of Belleville tree planting standards. Tree wrap must be removed prior to inspection.
- g) Tree stakes must be removed at the end of the warranty period, before the City assumes responsibility for the trees.
- h) Protective collars will be installed prior to the application of shredded bark mulch. Collars should be flexible plastic composition, a minimum of 400 millimetres high and 200 millimetres in diameter.
- i) All mulch will be shredded bark. Wood chips will not be accepted. Mulch must not be placed against the trunk of the tree.
- j) All plant material will be maintained by the contractor immediately following planting until the date of acceptance by the City of Belleville.
- k) Maintenance should include all measures necessary to establish and maintain all plants in an acceptable, vigorous, and healthy condition including cultivating, weeding, watering when required, pruning and maintenance of all accessories.
- l) Corrective pruning will be completed in accordance with accepted horticultural practices, prior to inspections, and include the removal of any dead or broken branches, suckers at the trunk, and co-dominant leaders.
- m) Any leaning trees will be straightened prior to inspection for completion and/or acceptance.
- n) Boulevard area to be fine graded, top-soiled and sodded.

# Appendix F

## Landscape Standards and Specifications

## Landscape Standards and Specifications

- 1) The following standards and specifications will be adhered to. The landscape architect will be required to provide certification to the City that these requirements have been fulfilled, and may be required to provide results of random soil testing.
- 2) Plant Material Standards:
  - a) All plant material to conform to the most recent version of the Canadian Society of Landscape Architects & Nursery Trades Association "Canadian Landscape Standards".
  - b) All sod is to conform to the Canadian Nursery Sod Growers Specifications and in accordance with OPSS.MUNI 802 and 803 and any amendments made by the City.
  - c) Seeding is to conform to OPSS.MUNI 804.
  - d) The landscape architect is responsible for assuring the quality of all plant material meets with the Contract specifications and City of Belleville Standards.
  - e) All trees will be:
    - I) be undamaged and disease-free;
    - II) have a reasonably straight trunk, free of any decay, sunscald, wounds, or mechanical damage;
    - III) possess a straight single central leader, with no multiple competing stems; and,
    - IV) possess root balls that must be firm and securely wrapped, with little or no movement at the trunk and no girdling roots.
  - f) Deciduous trees will:
    - I) be a minimum 60-millimetre caliper, 3,000-millimetre to 3,500-millimetre height (60-millimetre to 75-millimetre caliper should be wire basket or B & B);
    - II) be specified with a minimum 1,500-millimetre branching height clearance from grade at the time of planting, with an ultimate requirement of a minimum 2,500-millimetre branching height;
    - III) have a balanced canopy with uniform branching all around and characteristic of the growth habit of the species;

- IV) have three or more main stems originating from a common base at ground level if they are clump form or multi-stem trees; and,
      - V) species requiring spring installation will not be accepted for fall planting.
    - g) Coniferous trees will:
      - I) be 1,800 millimetres in height, and
      - II) evenly branched all around.
    - h) Shrubs will:
      - I) be a minimum of 60 centimetres (600 millimetres) in height, and
      - II) display their natural form and a minimum of four (4) canes.
    - i) Groundcovers will:
      - I) have healthy tops and size proportionate to root requirements
- 3) Tree Pit Requirements:
  - a) Tree pits will be prepared in accordance with the requirements of the latest version of the Canadian Landscape Standard and any associated soils report recommendations.
  - b) Tree pits will be a minimum of twice the width of the root ball and not be deeper than the overall height of the root ball; trees will be installed with the root ball 75 millimetres above grade; trees will be placed so that the main lateral branches are oriented away from the roadway.
  - c) Sub-grade surface will be loosened to a depth of 25 millimetres.
  - d) Sub-grade surface will be free of vegetation and other debris and free of stones over 20 millimetres in diameter.
  - e) No tree pits will be left open overnight.
- 4) Planting Bed Preparation:
  - a) Areas where topsoil is to be placed will be fine graded to a uniform surface in accordance with OPSS.MUNI 206.
  - b) Sodded and/or seeded areas will be provided with a minimum of 150-millimetre planting soil depth.
  - c) Shrub beds will be continuous and provided with a minimum of 300-millimetre planting soil depth.

5) Excavated Soil Requirements:

- a) Excavated soil must be fertile, friable, natural loam, free from any subsoil, clay lumps, stones, roots over 50 millimetres in diameter, and any foreign objects, and will be reasonably free of weeds/weed seeds.
- b) Excavated soil will be cultivated to remove any large clods or extraneous material.
- c) In locations with poor quality excavated soil or lack of sufficient parent soil, excavated soil may be amended to meet planting soil requirements and as per the soils report recommendations or supplemented with additional imported planting soil.

6) Planting Soil Requirements:

- a) Topsoil will contain not less than 4% minimum of organic matter for clay loams and not less than 2% minimum organic matter for sandy loam, with an acidity value ranging from pH 6.5 to pH 7.5 and capable of sustaining vigorous plant growth.
- b) Planting soil for deciduous and coniferous trees will conform to OPSS.MUNI 802, and be provided in accordance with City of Belleville Standard Planting Details for Deciduous and Coniferous Trees.
- c) Planting soil for shrub beds will be prepared by evenly mixing 50% sandy top soil, 25% well-rotted horse manure with 500 grams of bonemeal (or nursery grade triple mix).
- d) Any required additional imported planting soil must be screened prior to delivery.

7) Backfilling Requirements:

- a) Tree pits and shrub beds will be backfilled with excavated soil wherever possible.
- b) Backfilling will occur in tamped 150-millimetre lifts for shrub bed and tree planting to remove all air pockets, and to ensure root ball is stable.
- c) Planting holes will be watered thoroughly when holes are 2/3 full.
- d) Backfill will continue to top of root ball and will not fill around the trunk or above the root flare.

# Appendix G

## Planting Inspection Notes



## Planting Inspection Notes

- 1) The developer's landscape architect should request an appointment with a manager from Transportation and Operations Services to stake out all tree locations on the site. Minimum five (5) business days' notice to the City is required for all inspection appointments.
- 2) Possible conflict between trees and streetlights and other utility furniture may be addressed upon this stakeout and adjusted accordingly.
- 3) Final buffer and/or tree planting locations to be verified and approved by the landscape architect and the City of Belleville Engineering and Development Services Department to ensure sight clearances from roads, and intersections.
- 4) After completion of the installation, an Inspection for Completion is required to establish a warranty period of two (2) years for all trees. This inspection is to be completed by the Engineering and Development Services Department and the developer's landscape architect at the request of the developer.
- 5) Prior to expiration of the warranty, an Inspection for Acceptance is required. This inspection is to be completed by the Engineering and Development Services Department and the developer's landscape architect at the request of the developer.
- 6) Prior to providing the Inspection for both Completion and for Acceptance, the following conditions will be in place:
  - a) All planting beds and tree pits will be freshly cultivated, free of weeds, leaves, broken branches and debris.
  - b) All tree wrap will be removed by the contractor.
  - c) All two-inch (minimum) round wooden stakes will be removed by the contractor prior to Inspection for Acceptance at the end of the warranty period.
  - d) Leaves will be on the tree.
- 7) If a tree dies prior to acceptance, it will be replaced by the developer's contractor. The replacement tree will have a new one-year warranty.
- 8) After acceptance by Transportation and Operations Services, the City of Belleville assumes responsibility for the trees. (B-75-xxx) for site plan proposals; (ER-xxx) for subdivision proposals.

# Appendix H

## Buffer Planting Notes

## **Buffer Planting Notes**

- 1) Final buffer planting locations to be verified and approved by the Engineering and Development Services Department and the developer's landscape architect.
- 2) Deciduous trees to be planted preferably 2 metres away from edge of sidewalks.
- 3) Coniferous trees to be planted preferably 3 metres away from edge of sidewalks.
- 4) Shrubs to be planted minimum 1.5 metres away from edge of sidewalks.
- 5) A minimum 2-metre wide mowing strip will be provided wherever possible adjacent to walkways provided through open space areas.

# Appendix I

## General Fencing Notes General / Inspections

## General Fencing Notes General / Inspections

- 1) All fencing will be provided in accordance with the fencing provisions included in the associated Subdivision Agreement.
- 2) Minimum five (5)-business days advance notice to the City is required for all inspection appointments, including fencing locates, unless otherwise noted.
- 3) The developer's landscape architect should request an appointment with Transportation and Operations Services to stake out all fence locations on the site.
- 4) Prior to the fencing locate, the developer or their agent(s) is required to provide Transportation and Operations Services with documentation from a land surveyor (who is a member of the OLS Association) that property lines have been accurately staked in sufficient quantity to ensure the accurate location of the fencing to be constructed. This documentation will be provided to Transportation and Operations Services a minimum of two (2) days in advance of the scheduled fencing locate.
- 5) Location of fence returns to buildings to be determined in the field by Transportation and Operations Services during the fencing locate meeting. Additional fence return locates require a minimum five (5) business days advance notice to Transportation and Operations Services.
- 6) After completion of the installation, an Inspection for Completion is required to establish the warranty period of two (2) years. Inspection is to be completed by Transportation and Operations Services, Parks and Public Spaces Supervisor, and the developer's landscape architect.
- 7) Footings:
  - a) All footings require an inspection by a manager from Transportation and Operations Services, Parks and Public Spaces Supervisor, and soils consultant (where required) with forty-eight (48) hours' notice (613-967-3275; [parkconstruction@belleville.ca](mailto:parkconstruction@belleville.ca)).
  - b) All footings to be chamfered at top.
  - c) Privacy Wood screen fences and gates will use 300-millimetre diameter concrete footings @ 20 Mpa to a minimum depth of 1,200 millimetres.
  - d) All decorative fencing to include concrete footings for all fence posts as per the approved detail.
- 8) General Construction and Materials:
  - a) Wood fence posts are to be constructed with No. 1 grade pressure treated wood, selected for good appearance. Members with heavy

knots and/or sap stain should be minimal and well distributed throughout the installation. Posts will be plumb within 5 millimetres per metre.

- b) All wood fence members will be tight fitted and nailed at regular intervals to eliminate all gaps and rattling. Gaps between infill members will not exceed 6 millimetres.
- c) All hardware to be galvanized.
- d) Sample of masonry or alternative fencing materials to be submitted to a manager from Transportation and Operation Services by fence contractor for review and approval prior to installation.
- e) Acoustic fences will be constructed:
  - I) at a minimum height of 1,800 millimetres (the height of the fence will be measured from the highest adjacent grade where there is a grade difference at each end of the fence);
  - II) with posts located on the residential private property flush to the property line; and,
  - III) with full fence boards set into notched groove of post.
- f) Privacy screen fences will be constructed:
  - I) at a maximum height of 1,800 millimetres;
  - II) with minimum 150-millimetre by 150-millimetre pressure-treated posts at a maximum spacing of 2,400 millimetres on centre, evenly spaced over the length of the fence, wherever possible;
  - III) with posts located on the residential private property flush to the property line, and in accordance with associated standards and approved construction detail; and,
  - IV) with panels constructed with No. 1 grade pressure treated wood, selected for good appearance; members with heavy knots and/or sap stain should be minimal and well distributed throughout the installation.
- g) Decorative fencing will be constructed:
  - I) at a maximum height of 1,000 millimetres;
  - II) with posts located on the residential private property flush to the property line, and in accordance with associated standards and the approved construction detail;
  - III) with black metal or an approved equivalent;

- IV) to conform to CSA Standards Z614-03 with no openings between 155 millimetres and 225 millimetres; and,
  - V) with gates, where permitted, where gates will open into private property only.
- h) H9 or 9-gauge chain link fencing will be constructed:
    - I) with posts centered on the property line, and
    - II) with fabric installed on the municipal side of the property line.
- 9) Layout:
- a) The location of fence returns to buildings will be determined in the field by the City of Belleville.
  - b) Gates in fence returns are to be constructed wherever rear yard access is not possible through the opposite side yard of the residence, as follows:
    - I) Wherever such gates are required, they will be in the same style as the surrounding fence, and will provide a reasonable width for a person to pass through; this width will be 107 centimetres (or 42 inches).
    - II) It is the developer's responsibility to ensure that gates built into an acoustic fence are constructed in the same manner as the acoustic fence to comply with the associated Acoustics (Noise and/or Vibration) Study.
  - c) Without prior permitted approval, gates are not permitted in divisional fences that are adjacent to walkways, open space areas, woodlots, trans-Canada pipeline or other pipeline corridors, hydro corridors, or other municipal properties.
  - d) All wood fencing provided in areas where a sloped-grade exists is required to be stepped versus sloped with a level and horizontal (zero gradient) top. The vertical distance of the slope should be divided evenly over the horizontal distance at the fence location. The bottom of the fence will follow the grade unless otherwise approved by the City of Belleville.
  - e) It is the responsibility of the developer to ensure that the above conditions are met in order for the subdivision to be assumed by the City of Belleville.

10) Wood Fence Stain:

- a) Prior to any stain application, the fence contractor is required to notify a manager from Transportation and Operations Services for review and approval.
- b) Stain will be applied in two (2) coats on clean dry wood using spray, brush or dipping methods to achieve full coverage of all exposed surfaces. Stain will be applied outdoors only in suitable weather conditions during which the temperature is between 5 degrees Celsius and 21 degrees Celsius for a period of 48 hours following applications. A second stain coat will be applied following the final fence inspection and acceptance, and prior to assumption of the subdivision.
- c) Stain will be applied on the exterior (municipal road side) face of fence only.
- d) Requirements for stain application on fence returns will be determined in consultation with a manager from Transportation and Operation Services.



# Appendix J

## Deciduous Tree Planting Detail (September 2012)

A sample graphic of a Deciduous Tree Planting Detail can be provided upon request. Please contact the City of Belleville Transportation and Operations Services.

# Appendix K

## Coniferous Tree Planting Detail (February 2004)

A sample graphic of a Coniferous Tree Planting Detail can be provided upon request. Please contact the City of Belleville Transportation and Operations Services.

# Appendix L

## Shrub Planting Detail (July 2003)

A sample graphic of a Shrub Tree Detail can be provided upon request. Please contact the City of Belleville Transportation & Operational Services Department.

A sample graphic of fencing standards can be provided upon request. Please contact the City of Belleville Approvals Section.

# Appendix M

## Recommended Tree Species for Use in Development Plan Proposals

## Recommended Tree Species for Use in Development Plan Proposals

City of Belleville Tree Species List for Parks, Open Spaces, Road Allowances, Edge Management/Restoration Areas, and SWM Ponds:

- 1) Our goal is to create and maintain a safe, healthy, diverse, and sustainable urban forest that reflects the needs of the community. Species selection is based on the following criteria:
  - a) Hardiness Zones (5b)
  - b) Soil chemistry
  - c) Tree inventory
  - d) Experience
- 2) The following is a list of recommended tree species for parks, open spaces, road allowances, edge management/restoration areas, and SWM ponds developed by the City of Belleville Transportation & Operational Services Department, and Engineering and Development Services Department. This list will assist developers in preparing landscape plans and City of Belleville staff in tree planting services.
- 3) Tree species diversity is a common measure of a community forest's overall health. A broader diversity of tree species will guard against the possibility of large-scale devastation by both native and introduced insects and diseases. Ideally, in community neighbourhoods, tree species diversity should conform to the 10-20-30 rule of acceptable diversity proposed by Santamour (1990), whereby:
  - a) no tree species exceeds 10% of the inventory;
  - b) no tree genus exceeds 20% of the inventory; and,
  - c) no tree family exceeds 30% of the inventory.
- 4) As a result, no monocultures are acceptable, and groupings of the same species will not exceed 8.
- 5) The use of native species is encouraged where site conditions are suitable to promote healthy growth. More information on native species is available from the Forest Gene Conservation Association, Ecoregion 6E (Lake Simcoe-Rideau) at [www.fgca.net](http://www.fgca.net).
- 6) Plant material proposed for SWM ponds will reference the species recommendations and associated planting zones within the Ontario MECP Stormwater Management Planning and Design Manual.
- 7) Tree Specifications:
  - a) Trees will be nursery grown in accordance with the Canadian Standards for Nursery Stock as published by the Canadian Nursery Landscape



Association (Latest Metric Edition) and under climatic conditions similar to those in the locality of the project for the past two years.

- I) The recommended caliper for deciduous trees is 30 millimetres to 60 millimetres and the recommended height for evergreen trees is 100 centimetres to 200 centimetres. Boulevard trees in new subdivision developments will be provided at 60-millimetre caliper, typical. Plant material utilized for edge management areas and SWM ponds will have a minimum 40-millimetre caliper for deciduous trees and a minimum 120-centimetre height for evergreen trees.
  - II) Trees will have one central leader. If the leader was headed, a new leader (with a live terminal bud) at least one-half the diameter of the pruning cut will be present.
  - III) Trees will be structurally sound, healthy, vigorous, well-branched and densely foliated when in leaf; free of disease and insects, eggs, or larvae; and will have healthy, well-developed root systems.
  - IV) A minimum of three structural roots reasonably distributed around the trunk (not clustered on one side) will be present in each tree. Root distribution will be uniform throughout the root ball, and growth will be appropriate for the species.
  - V) The root ball will be sized according to the caliper of the trunk, as per industry standards. The root collar will be visible above the soil line of the root ball.
  - VI) Root balls will be firmly wrapped with non-synthetic, biodegradable burlap and secured with heavy, non-synthetic, biodegradable twine.
- b) This list will be reviewed annually. For additional information, please contact the City of Belleville Transportation & Operational Services Department.

Species	Planting Location	Digging Time
Acer campestre	Nrb, Rb, P, Os, H	Spring, Fall
Acer X freemanii cultivars	Nrb, Rb, P, Os	Spring , Fall
Acer ginnala + cultivars (tree form)	Nrb*, Rb*, H*	Spring , Fall
Acer griseum	P*, Os*	Spring
Acer miyabei 'Morton'	Nrb*, Rb*, P*, Os*	Spring , Fall
Acer nigrum + cultivars	Nrb, Rb, P, Os, SWMP, EM/RA	Spring , Fall
Acer platanoides 'Columnare'	Nrb*	Spring , Fall
Acer platanoides 'Crimson King'	Nrb*, Rb*	Spring , Fall
Acer platanoides 'Deborah'	Nrb*, Rb*	Spring , Fall
Acer platanoides 'Emerald Lustre'	Nrb*, Rb*	Spring , Fall
Acer rubrum 🍁+ cultivars	P, Os, SWMP, EM/RA	Spring
Acer saccharinum 🍁+ cultivars	Nrb, Rb*, P, Os, SWMP, EM/RA	Spring
Acer saccharum 🍁+ cultivars	Nrb, Rb, P, Os, SWMP, EM/RA	Spring , Fall
Acer tataricum + cultivars	Nrb, Rb, H	Spring , Fall
Aesculus X carnea	Nrb*, Rb*, P, Os, (minimum of 5m from driveway)	Spring

Species	Planting Location	Digging Time
Aesculus glabra	Nrb*, Rb*, P, Os, (minimum of 5m from driveway)	Spring

**Note:** Pyramidal and Columnar tree forms will not be planted on residential boulevards.

Variegated species are not permitted.

Planting Location:

**Nrb:** Non-residential boulevard (park frontage, window boulevard, industrial boulevard, etc.)

**Rb:** Residential boulevard (species in italicized bold)

**P:** Parks

**Os:** Open spaces

**H:** Use under power lines

**SWMP:** Storm Water Management Pond

**EM/RA:** Edge Management/Restoration Areas

\* Limited use (Approval from Superintendent of Operations-Parks, or designate required) 🍁 Native Species

Species	Planting Location	Digging Time
Aesculus hippocastanum	Nrb*, Rb*, P, Os, (minimum of 5m from driveway)	Spring
Aesculus hippocastanum 'Baumanii'	Nrb*, Rb*, P, Os	Spring
Alnus incana 🍁	Nrb*, P, Os, (tree form on boulevards)	Spring
Amelanchier arborea 🍁+ cultivars	P, Os, EM/RA	Spring , Early Fall
Amelanchier canadensis + cultivars	Nrb, Rb, P, Os, H, EM/RA (tree form on boulevards)	Spring , Early Fall
Amelanchier grandiflora +cultivars	Nrb, Rb, P, Os, H, (tree form on boulevards)	Spring , Early Fall
Amelanchier laevis 🍁+ cultivars	Nrb, Rb, P, Os, H, (tree form on boulevards)	Spring , Early Fall
Betula alleghaniensis 🍁	SWMP, EM/RA	Spring
Betula nigra 'Riversii'	P*, Os*	Spring
Betula papyrifera 🍁	P*, Os*, SWMP, EM/RA	Spring
Carpinus betulus 'Fastigiata'	P, Os	Spring
Carpinus caroliniana 🍁	P, Os, SWMP, EM/RA	Spring
Carya cordiformis 🍁	P*, Os*, SWMP, EM/RA	Spring
Carya laciniosa	SWMP	Spring
Carya ovata 🍁	P*, Os*, SWMP, EM/RA	Spring

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Species	Planting Location	Digging Time
Catalpa speciosa	Nrb*, Rb*, P, Os, (minimum of 5m from driveway)	Spring , Fall
Celtis occidentalis 🍁 + cultivars	Nrb, Rb, P, Os, EM/RA	Spring, Early Fall
Cercidiphyllum japonicum	P*, Os*	Spring
Cercis canadensis	P*, Os*, EM/RA*	Spring , Early Fall
Cladrastis lutea	Nrb*, Rb*, P*, Os*	Spring
Cornus alternifolia 🍁	P*, Os*, EM/RA*	Spring
Cornus florida	P*, Os*	Spring
Corylus columna	Nrb, Rb, P, Os	Spring, Early Fall
Crataegus 🍁 spp.	SWMP	Spring
Crataegus crusgalli var. inermis	P*, Os*	Spring
Fagus grandifolia 🍁	P*, Os*, EM/RA	Spring
Fagus sylvatica + cultivars	P*, Os*	Spring
Ginkgo biloba + cultivars (male only)	Nrb, Rb, P, Os	Spring, Early Fall
Gleditsia triacanthos cultivars	Nrb, Rb, P, Os	Spring , Fall
Gymnocladus dioicus + cultivars	Nrb, Rb, P, Os	Spring , Early Fall

Species	Planting Location	Digging Time
Juglans nigra	Nrb*, Rb*, P, Os, (minimum of 5m from driveway)	Spring
Juglans cinerea 	P*, Os*, EM/RA	Spring

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\* Limited use (Approval from Superintendent of Operations-Parks, or designate required)  Native Species

Species	Planting Location	Digging Time
Liriodendron tulipifera	Nrb, Rb, P, Os	Spring
Liriodendron tulipifera 'Emerald City'	Nrb, Rb, P, Os	Spring
Liriodendron tulipifera 'Fastigiata'	P, Os	Spring
Magnolia acuminata	Nrb*, Rb*, P*, Os*	Spring
Malus 'Harvest Gold'	Nrb, Rb, P, Os, H, (minimum 4m from a driveway/sidewalk)	Spring , Fall
Malus 'Prairefire'	Nrb, Rb, P, Os, H, (minimum 4m from a driveway/sidewalk)	Spring , Fall
Malus 'Robinson'	Nrb, Rb, P, Os, H, (minimum 4m from a driveway/sidewalk)	Spring , Fall
Nyssa sylvatica	Nrb*, Rb*, P*, Os*	Spring
Ostrya virginiana 🍁	P*, Os*, SWMP, EM/RA	Spring
Phellodendron amurense 'Macho'	Nrb*, Rb*	Spring
Platanus X acerifolia	Nrb, Rb, P, Os	Spring, Early Fall
Platanus X acerifolia 'Exclamation'	Nrb, Rb, P, Os	Spring, Early Fall
Platanus X acerifolia 'Bloodgood'	Nrb, Rb, P, Os	Spring, Early Fall
Platanus occidentalis	Nrb, Rb, P, Os, SWMP	Spring, Early Fall
Populus balsamifera 🍁	P*, Os*, SWMP, EM/RA	Spring
Populus deltoides 🍁	P*, Os*, SWMP, EM/RA	Spring



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Species	Planting Location	Digging Time
Populus tremuloides 🍁	P*, Os*, SWMP, EM/RA	Spring
Prunus nigra 🍁	EM/RA	Spring
Prunus pennsylvanica 🍁	SWMP, EM/RA	Spring
Prunus serotina 🍁	SWMP, EM/RA	Spring
Pyrus calleryana + cultivars	P, Os	Spring
Pyrus calleryana 'Chanticleer'	Nrb, Rb, P, Os, H	Spring
Quercus alba 🍁	P*, Os*, SWMP, EM/RA	Spring
Quercus bicolor	P*, Os*, SWMP	Spring
Quercus macrocarpa 🍁	Nrb, Rb, P, Os, SWMP, EM/RA	Spring
Quercus muehlenbergii	Nrb*, Rb*, P, Os, SWMP, EM/RA*	Spring
Quercus palustris	SWMP	Spring
Quercus rubra 🍁	Nrb, Rb, P, Os, SWMP, EM/RA	Spring
Quercus robur	Nrb, Rb, P, Os	Spring
Quercus robur 'Fastigiata'	Nrb, P, Os	Spring
Quercus velutina 🍁	P*, Os*, SWMP*, EM/RA*	Spring

Species	Planting Location	Digging Time
Rhus typhina 🍁	EM/RA	Spring, Fall
Salix nigra 🍁	SWMP	Spring

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Species	Planting Location	Digging Time
Sassafras albidum	P*, Os*, SWMP*, EM/RA*	Spring
Sorbus thuringiaca 'Fastigiata'	Nrb, Rb, P, Os, (minimum 4m from a driveway/sidewalk)	Spring, Fall
Syringa reticulata + cultivars	Nrb, Rb, P, Os, H	Spring, Fall
Tilia americana 🍁 + cultivars	Nrb, Rb, P, Os, SWMP, EM/RA (minimum of 5m from driveway)	Spring, Fall
Tilia cordata + cultivars	Nrb, Rb, P, Os, (minimum of 5m from driveway)	Spring, Fall
Tilia cordata 'Summer Sprite'	Nrb, Rb, P, Os, H, (minimum of 5m from driveway)	Spring, Fall
Tilia tomentosa 'Sterling'	Nrb, Rb, P, Os, (minimum of 5m from driveway)	Spring, Fall
Ulmus americana 'Princeton'	Nrb*, Rb*, P, Os, SWMP	Spring, Fall
Viburnum lentago 🍁	Nrb*, P, Os, H* (tree form on boulevards)	Spring
Zelkova serrata + cultivars	Nrb, Rb, P, Os	Spring
EVERGREEN TREES:		
Abies balsamea 🍁	SWMP	Spring, Early Fall
Abies concolor	Nrb, P, Os	Spring, Early Fall
Juniperus virginiana 🍁	SWMP	Spring, Early Fall
Larix decidua	Nrb, P, Os	Spring, Early Fall

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\* Limited use (Approval from Superintendent of Operations-Parks, or designate required) 🍁 Native Species

Species	Planting Location	Digging Time
Larix laricina 🍁	Nrb, P, Os, SWMP	Spring, Early Fall
Metasequoia glyptostroboides	Nrb*, P*, Os*	Spring
Picea abies	Nrb, P, Os	Spring, Early Fall
Picea glauca 🍁	Nrb*, P, Os, SWMP, EM/RA	Spring, Early Fall
Picea mariana 🍁	SWMP	Spring, Early Fall
Picea pungens	Nrb, P, Os	Spring, Early Fall
Picea pungens 'glauca'	Nrb, P, Os	Spring, Early Fall
Pinus nigra	Nrb*, P*, Os*	Spring, Early Fall
Pinus strobus 🍁	Nrb, P, Os, SWMP, EM/RA	Spring, Early Fall
Pinus sylvestris	Nrb*, P*, Os*	Spring, Early Fall
Pseudotsuga menziesii	Nrb*, P*, Os*	Spring
Thuja occidentalis 🍁	Nrb, P, Os, SWMP, EM/RA	Spring, Early Fall
Tsuga canadensis 🍁	SWMP, EM/RA	Spring

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