



TOWNSHIP OF

PUSLINCH

EST. 1850

MUNICIPAL DEVELOPMENT STANDARDS

SEPTEMBER 2019

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Record of Revisions

Revision	Date	Remarks

1.0 INTRODUCTION

These development standards have been prepared as a reference guide to assist with land development applications within the Township of Puslinch (Township).

This document provides an overview of development application processes within the Township, summarizes submission requirements and describes standards for design and construction of Municipal infrastructure.

It is intended that these standards will provide consistency in the documentation received in support of development applications and in developments constructed in the Township, in order to facilitate and add efficiency to the approval process.

For items not specifically covered herein, the Ontario Provincial Standards Specifications (OPSS) and Ontario Provincial Standard Drawings (OPSD) shall be used. Additional design guidelines and manuals by the Ministry of Environment, Conservation and Parks (MECP), Ministry of Transportation (MTO) or other recognized authority should also be referenced.

The guidelines and standards that follow should be adhered to wherever possible. Any deviations to these standards shall only be made through consultation with the Township.

These standards are subject to revision and it is the responsibility of the proponent to ensure that the most current version of the standard is being referenced.

2.0 GENERAL

2.1 Planning Process

In the Township, development applications for Subdivisions, Condominiums, County Official Plan Amendments and Land Severances (consents) are overseen by the County of Wellington (County). Application guidelines are available through the County website (www.wellington.ca) or by contacting the County Planning and Development Department.

The Township directly oversees development applications for Site Plan Approval, Zoning Bylaw Amendments and Minor Variances. Additional information is available through the Township website (www.puslinch.ca).

A general overview of the application process for each type of development application is provided below.

2.2 General Submission Requirements

2.2.1 Pre-Consultation Meeting

Applicants are encouraged to attend a pre-consultation meeting prior to the submission of a development application. This meeting assists applicants in determining the requirements for the submission of a complete application and gives staff the opportunity to identify key planning issues that will require further attention.

The applicant shall submit any available drawings and a summary of the proposed development one week prior to the pre-consultation meeting. Meetings are held at the Township Office the first Thursday of every month. Please contact the Township to schedule the pre-consultation.

2.2.2 Application Requirements

A complete application shall be submitted to the Township. The application must be accompanied by the reports, studies, plans and supporting information requested through pre-consultation and/or as listed in the relevant checklists provided in *Appendix A*. Incomplete applications may be returned to the applicant. Further details regarding supporting information requirements are provided in Section 2.2.3 below.

Each application must be accompanied by the required administration fee. Please contact the Township to determine the fee as well as any applicable disbursements or third-party fees.

Submissions shall consist of a maximum of seven hard copies and one complete digital copy.

2.2.3 Supporting Information

The applicant will be required to submit a number of background reports or studies to identify and address any issues and impacts that may occur as a result of the proposed development and to demonstrate to the satisfaction of the Township and any other review agencies that the proposed use can be adequately supported by the site.

Requirements for supporting information will be confirmed through the pre-consultation process. Requirements will vary depending on the nature of the site and proposed development, however a comprehensive list of studies which may be requested is provided in Section 13.15 of the Wellington County Official Plan, available through the County website (www.wellington.ca).

A Functional Servicing Report or Detailed Servicing Report will be required for most applications. The servicing report will describe:

- The existing conditions of the site and the nature of the proposed development;
- How the site will be provided with water and wastewater servicing;
- How stormwater management for the development will be provided;
- Grading and drainage considerations for the site;
- Geotechnical/hydrogeological considerations to support the proposed design;
- Transportation considerations including site access and impacts or changes to off-site infrastructure; and
- Other site-specific constraints that the Township or review agencies may identify during its review of the planning application.

Engineering Plans required to support the application will generally include:

- A cover page showing the name of the development, a key map, and a list of

drawings which make up a complete set;

- A Site Plan generally showing the existing and proposed above ground infrastructure and services including but not limited to buildings, curbs and parking areas, fire routes and fire protection infrastructure, sidewalks, catchbasins, potable water well;
- A Grading and Servicing Plan generally showing the existing and proposed underground infrastructure and services including but not limited to storm sewers, water and sanitary lines, stormwater facilities and site grading;
- An Erosion and Sediment Control Plan showing sediment and erosion control measures proposed to mitigate the effect of the construction on surrounding areas and infrastructure;
- A Landscaping Plan showing all existing and proposed plantings;
- A Photometric Plan showing proposed lighting design details and photometric data; and
- Additional plans (if requested by the Township) such as plan and profile drawings, stormwater management facility plans and utility plans.

Additional information regarding preparation of Stormwater Management Reports, Hydrogeological Reports, Nitrate Impact Assessments, and Tree Enhancement/Preservation Plans are provided in other sections of this document. The County Official Plan, available through the County website (www.wellington.ca), details considerations for preparation of various impact studies including a Planning Impact Assessment, Environmental Impact Assessment, Traffic Impact Assessment, Heritage Impact Assessment and Agricultural Impact Assessment. Grand River Conservation Authority and Conservation Halton have guidelines for preparation of Environmental Impact Assessments within their jurisdiction.

2.2.4 Township Review and Comments

The Township will review the application and supporting documentation to determine if the development is in accordance with current planning policies and design standards.

If required, the Township will circulate the application package to any outside review agencies (eg. Ministry of Transportation, County of Wellington, Conservation Authority, etc.) for comment.

The Township will provide the applicant with any comments arising through the review. All comments are to be addressed by the applicant and additional or revised documentation submitted. A letter summarizing the applicant's response to each of the review comments is required to accompany each re-submission. The documents will be re-submitted until the Township and review agencies are satisfied.

2.2.5 Council Approval

Development applications generally require approval by Council. Approval of Site plan applications may be delegated to staff.

Once the Township and reviewing agencies are satisfied with the application, staff will prepare a report to Council. The applicant will be provided notice of any decision made by Council concerning the application.

2.3 Zoning By-Law Amendment Application

Land use within the Township is governed by the Township zoning by-law. The zoning by-law specifies:

- How land may be used;
- Where buildings and other structures can be located;
- The types of buildings that are permitted and how they may be used;
- The lot size and dimensions, lot coverage, building height, and setbacks; and
- Requirements for landscaped areas, planting strips, buffers and parking.

If a proposed use is not permitted within the zoning of a property, or if the standards of that zone can't be met by a proposed development, an application for a zoning by-law amendment is required.

In general, the following are the steps required to obtain approval for a zoning by-law amendment application.

- Applicant submits application, including fee
- Township and review agencies review application for completeness
- Application deemed complete or additional information is requested
- Applicant erects sign on proposed lands
- Township issues Notice of Complete Application and holds Public Meeting
- Comprehensive review of proposal and submission revisions
- Staff report to Council and decision

2.4 Site Plan Approval Application

A Site Plan Control By-Law is in effect in the Township. A site plan approval application is required where the following activities are proposed:

- A new building or structure
- Building additions
- Major building renovations
- Construct or enlarge a parking lot

Certain types of development are exempt from Site Plan Control . Refer to the Site Plan Control By-Law for the full list of exemptions.

Site plan approval must be obtained prior to applying for a building permit. In general, the following are the steps required to obtain approval for a site plan application.

- Applicant submits application, including fee
- Comprehensive review of proposal and submission revisions
- Preparation of site plan agreement
- Final approval by Township staff (may be referred to Council in specific circumstances)

2.4.1 Site Plan Agreement

In most instances a site plan agreement must be executed and registered prior to final site plan approval being issued. The site plan agreement contains information regarding conditions of development and the developer's responsibilities, including but not limited to, financial matters, easements and land conveyances, timing, and requirements for maintenance of the proposed works.

Once the Township is satisfied with the detailed design for the development, the site plan agreement will be completed. The agreement will be prepared by the Township and the cost to prepare and register the agreement will be paid by the developer. A draft copy will be circulated to developer for review and comment. When the site plan agreement is finalized to the satisfaction of all parties, it will be prepared for signature.

Prior to signing of the agreement, the developer will be required to post securities to guarantee the satisfactory completion of the work and to guarantee payment to the Township of all inspection or other costs that the Township may incur in connection with the site plan application.

At a minimum, the security will be in the form of an unconditional irrevocable Letter of Credit for 50% of the site servicing and landscaping costs with additional allowance for Township review and site grading and drainage deposit. The estimated value of the construction costs shall be determined by the Developer's engineers and approved by the Township's consulting engineers.

The signed site plan agreement will be registered on the title of the lands at the cost of the applicant.

2.5 Plan of Subdivision Application

An application for a plan of subdivision/condominium is required for all residential developments where a property is proposed to be subdivided. Plan of subdivision/condominium applications

are overseen by the County. Further information related to the process is available through the County website (www.wellington.ca).

2.5.1 Draft Plan Approval

Following the submission of a complete application for plan of subdivision/condominium, the County will circulate the application to review agencies including the Township for comments. A public meeting will be held by the Township to allow the community an opportunity to provide input related to the proposed plan of subdivision/condominium.

The County will receive any written submissions, confer with any persons and agencies as necessary and consider the application. Based on input received, the County will then prepare conditions of draft plan approval that must be satisfied before the proposed plan of subdivision/condominium. The draft approval conditions may be circulated to the Township for endorsement prior to final draft approval being issued by the County.

2.5.2 Detailed Design Review and Comments

As a condition of draft plan approval, the developer shall provide the Township with a detailed design submission which includes the material in the Subdivision Detailed Design Submission Checklist in *Appendix A*, and any additional requirements identified in the draft plan conditions and Township comments.

The Township will review and provide comments to be addressed by the developer in subsequent detailed design submissions.

2.5.3 Development Agreement

Among the conditions of draft plan approval will be a requirement to enter into a development agreement with the Township. The development agreement contains information regarding conditions of development and the developer's responsibilities, including but not limited to, financial matters, easements and land conveyances, timing and staging, and requirements for design and construction of roads and servicing.

Once the Township is satisfied with the detailed design for the development, the development agreement will be completed. The agreement will be prepared by the Township and the cost to prepare and register the agreement will be paid by the developer. A draft copy will be circulated to developer for review and comment. When the development agreement is finalized to the satisfaction of all parties, it will be prepared for signature.

Prior to signing of the agreement, the developer will be required to post securities to guarantee the satisfactory completion of the work and to guarantee payment to the Township of all inspection or other costs that the Township may incur in connection with the development.

At a minimum, the security will be in the form of an unconditional irrevocable Letter of Credit for 100% of the site servicing and landscaping costs with additional allowance for Township review. The estimated value of the construction costs shall be determined by the Developer's engineers and approved by the Township's consulting engineers.

The signed development agreement will be registered on the title of the subdivision lands at the cost of the applicant.

2.5.4 As-Constructed Drawings

Following completion of the work, the developer will provide final “as constructed” drawings in hard copy and digital format (PDF and AutoCAD).

2.6 Development Charges

The Township has in effect a Development Charges By-Law which enables the Township to collect development charges for new development and re-development. Development charges are fees collected from the developer at the time of building permit to help pay for the cost of infrastructure required to provide municipal services to new development. These include capital costs related to transportation, fire protection, parks and recreation and administrative studies.

The development charges payable are in accordance with the most current version of the Township’s Development Charge Background Study and Development Charges By-Law.

2.7 Site Alteration Permit

A by-law prohibiting and regulating the placing or dumping of fill, the removal of soil and the alteration of the grade of land in the Township is in effect. Under this By-law, site alteration activities may require a Site Alteration Permit and the entering into of a Site Alteration Agreement. Additional information is available through the Township website (www.puslinch.ca).

2.8 Source Water Protection

Source water protection plans are in effect in Wellington County. Planning applications submitted to the County or Township will be screened to assess any risks from the proposed activity.

If a property is not within a vulnerable area or if the activity does not trigger a Prohibition or Risk Management Plan policy, the application will proceed as normal. Vulnerable area mapping and additional information is available through the Wellington Source Water Protection website (www.wellingtonwater.ca).

If a property is located within a vulnerable area, applicants will be asked to fill out a short *Source Water Protection Screening Application Form*. The application will then be screened to assess if the proposed activities pose a risk to drinking water quality or quantity. The Risk Management Official will determine whether a notice or Risk Management Plan is required.

2.9 Erosion and Sediment Control Guidelines

Sediment and erosion control measures must be implemented on all construction sites to limit the effect of the proposed construction on the surrounding areas and infrastructure. A site-specific Erosion and Sediment Control Plan must be prepared to support any site plan or subdivision/condominium application and submitted for review.

Erosion and sediment control design shall be in accordance with the most current version of the *Erosion and Sediment Control Guideline for Urban Construction*, prepared by the Greater Golden Horseshoe Area Conservation Authorities and available for download from the Grand River Conservation Authority website (www.grandriver.ca).

2.10 Puslinch Design Guidelines

The Township has developed design guidelines intended to develop and enhance streetscapes and improve the quality of site and building design within key corridors in the Township.

The design guidelines are intended to be applied to commercial, industrial and institutional development and re-development within the Township. The guidelines primarily apply to two geographic areas including the Highway 6 North Industrial Corridor and the Brock Road / Highway 6 South Corridor, from Guelph to Morriston.

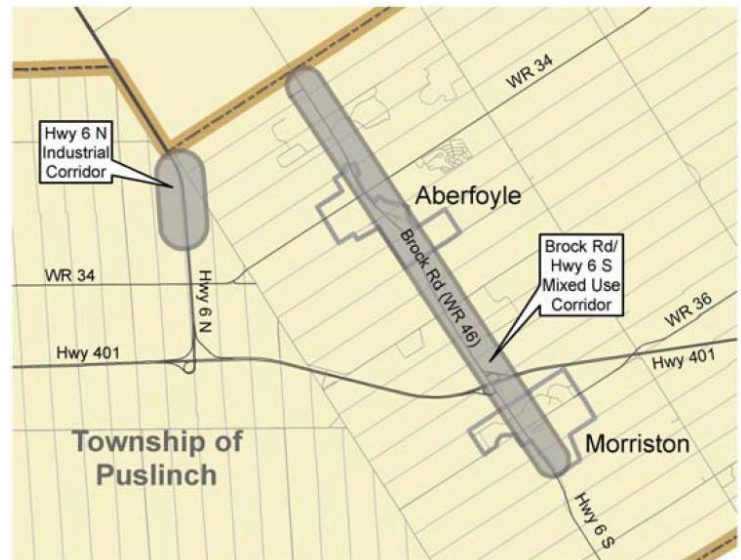


Figure 1. Design Guideline Priority Areas

All development proposals within the priority areas, as highlighted in Figure 1, are required to comply with the design guidelines. Additional information is available through the Township website (www.puslinch.ca).

Additional design considerations also apply for industrial properties visible from Provincial highways and arterial streets. Refer to the Puslinch Zoning By-law for further information.

2.11 Approvals

Depending on the nature of the development, additional external agency permits or approvals may be required. These may include, but are not limited to:

- Conservation Authority
- Ministry of Environment, Conservation and Parks (MECP)
- Ministry of Transportation (MTO)
- County of Wellington
- Ministry of Natural Resources (MNR)
- Department of Fisheries and Oceans (DFO)
- Railway

It is the developer's responsibility to identify and obtain all required approvals and permits. The developer shall submit to the Township a copy of all permits or approvals required from other agencies.

2.12 Accessibility

The Township of Puslinch is committed to providing a barrier-free environment. Development applications within the Township shall incorporate accessibility requirements outlined in the Accessibility for Ontarians with Disabilities Act (AODA). For developments where infrastructure is to be assumed by the Township, the latest revision of the County of Wellington Facility Accessibility Design Manual (FADM) shall also apply.

2.13 Asset Maintenance Trust Funds

The Township has adopted an asset maintenance trust program to ensure sufficient funds are available to the Municipality to undertake inspection and maintenance of assets which are constructed through new development and assumed by the Township. Assets requiring contribution include Gateway features, Stormwater Management and Fire Protection infrastructure. In some instances, a portion of extraordinary asset costs such as decorative streetlighting may be requested.

Asset maintenance trust funds are initiated through a lump sum contribution made by the developer at the time of the development agreement. The lump sum contribution amount is based on the present value of all inspection and maintenance costs associated with the asset(s) over a 20-year service life at an interest rate of 5%. The calculation shall be completed by the Engineer for the developer and the amounts shall be reviewed and accepted by the Township.

2.14 Asset Management Data

The developer is required to submit electronically, in a form that is consistent with the Township's asset registry, data that reflects the characteristics of all assets that would become the ownership responsibilities of the Township including replacement costs of such asset.

3.0 ROADS

3.1 General

In general, road design and construction shall be in accordance with the most current version of the Ontario Provincial Standard Specifications (OPSS) and Ontario Provincial Standard Drawings (OPSD).

Roadway and driveway entrance design may be subject to approval by the Township, County or Ministry of Transportation.

3.2 Road Sections

Standard road sections are shown on drawings STD-101 and STD-102 in *Appendix B*. Standard drawing STD-101 will generally apply to rural roads located outside of urban centres and standard drawing STD-102 will generally apply in urban centres and hamlets.

3.3 Geometric Standards

Road geometrics, such as horizontal and vertical sight distances and curve values, shall be designed in accordance with the latest revision of the Transportation Association of Canada's (TAC) Geometric Design Guide for Canadian Roads Part 1 and Part 2.

3.4 Concrete Curb and Sidewalk

Concrete sidewalks will be provided on one side of local residential streets and two sides of collector residential streets. Requirements for sidewalk on all other streets will be reviewed on a development specific basis. Sidewalk shall be in accordance with the latest revision of OPSD 310.010.

Concrete curb and gutter (for urban cross sections) shall be barrier curb in accordance with OPSD 600.040. Mountable curb in accordance with the latest revision of OPSD 600.100 will also be accepted for local residential streets.

Concrete curb and sidewalks must be designed to comply with the requirements of the Accessibility for Ontarians with Disabilities Act (AODA). For developments where infrastructure is to be assumed by the Township, the latest revision of the County of Wellington Facility Accessibility Design Manual (FADM) shall also apply.

3.5 Driveway Entrances

Curb depressions for driveways shall be formed in accordance with latest revision of OPSD 351.010. If the final driveway location is not known at the time of curb construction, the driveway may be mechanically cut to the satisfaction of the Township.

Driveway ramps between curb and property line (and sidewalk as applicable) shall be constructed with minimum 300mm granular B, 150mm granular A and 50mm HL3 asphalt.

An entrance is prohibited in any location where the clear vision is less than 150 metres in each direction from which traffic may approach on a Township road or at the discretion of the Township. Driveways which open upon or cross a day lighting area will not be permitted.

An Entrance Permit must be obtained from the Township or County (as applicable) before work commences within the limits of the road allowance.

3.6 Daylight Triangles

A daylight triangle may be required by the Township at intersection corners. Daylight triangles, if required, are to be part of the Municipal right-of-way. The requirement for daylight triangles will be confirmed during the road design.

3.7 Boulevard Restoration

All boulevards shall be graded, top soiled with a minimum depth of 150mm and sodded.

3.8 Community Mailboxes

The developer is responsible for constructing community mailboxes within residential developments. Community mailboxes will be placed in a central location accepted by the Township and Canada Post Corporation. All details associated with the community mailbox shall be identified on the Engineering Drawings.

3.9 Testing and Inspection

A qualified geotechnical firm shall be engaged by the developer to undertake insitu verification testing of all granular materials used within the Municipal right of way during construction. Copies of all test results shall be submitted to the Township.

3.10 Traffic and Street Signs

The developer is responsible for erecting all traffic, street name, and lot identification (911 address) signs within a development.

3.11 Summary of Roadway Design Criteria

Minimum Grade	0.5%
Maximum Grade	6%
Boulevard Minimum Grade	2%
Boulevard Maximum Grade	5%
Crown a) Subgrade	3%
b) Finished Surface	2%
Pavement Width	Varies - see std. drawings
Width of Shoulder	Varies - see std. drawings
Width of Shoulder Rounding	0.6 m
Shoulder Grade	4%
Granular Base*	Varies - see std. drawings
Compaction requirements	100% SPMDD
Pavement Structure	Varies - see std. drawings
Sidewalk width	1.5 m
Sidewalk slope	2% minimum 4% maximum
Minimum Depth of Ditch from Road Centreline	1.0 m
Side Slope	3:1
Back Slope	3:1
Cul-de-sac Pavement Radius	15 m
Cul-de-sac - Bulb Right-of-way Radius	20 m

Minimum Pavement Radius at Intersection	9 m
Subdrain	As recommended by Geotechnical Engineer
Minimum dia. Culvert (with end sections)	
For Centreline Culverts	500 mm
For Driveways	400 mm

* Granular road base may have to be increased based on results of geotechnical report or conditions encountered in the field.

4.0 STORMWATER MANAGEMENT

4.1 Stormwater Management Objectives

Any development or redevelopment within the Township is required to include stormwater management controls which are designed, constructed and maintained in such a way as to meet the following stormwater management objectives:

- The potential for flood damage, health hazards or loss of life will not be increased.
- Prevent undesirable geomorphic change to watercourses.
- Minimize the impacts of development or redevelopment on the existing groundwater and base flow characteristics of the subject property and surrounding lands.
- Minimize the impacts of development or redevelopment on water quality.
- Minimize the inconvenience caused by surface ponding and flooding.

Additional stormwater management objectives may be identified based on site-specific requirements.

Where the subject property is located within an area regulated by a Conservation Authority or the Ministry of Transportation, the stormwater management policies and guidelines of that organization will govern. The County will review and provide input into stormwater management controls for developments which front to a County Road.

4.2 Subwatershed Studies

The Township is located within several different subwatershed catchments. Subwatershed studies have been prepared for several of these including, but not limited to, the Mill Creek, Hanlon Creek, Torrance Creek, Eramosa River & Blue Springs Creek subwatersheds.

Actions and policies of the subwatershed studies, such as impervious cover limits and stormwater management objectives, shall be considered in the site and stormwater management design for any development proposal falling within the jurisdiction of a particular study. Copies of the subwatershed study may be obtained digitally through the Conservation Authority.

4.3 References

In general, stormwater management facilities are to be designed in accordance with the Ministry of Environment (MOE) Stormwater Management Planning and Design (SWMPD) Manual (2003), or the most current version thereof.

4.4 Runoff Quality Control

Stormwater quality control measures will be provided to achieve, as a minimum, the Enhanced level of protection (i.e. 80% TSS removal) as described in the MOE SWMPD manual.

The use of multiple quality control measures in series to achieve treatment requirements is encouraged.

Runoff quality control measures will be designed to achieve the enhanced level of protection.

The Township supports the use of oil/grit separator (OGS) units for stormwater quality treatment as part of a treatment train approach.

4.5 Runoff Quantity Control

Post-development peak runoff rates will be controlled to pre-development peak runoff rates, for the 2, 5, 10, 25, 50, 100-year return period.

4.6 Design Storm Events

Design storm events (2, 5, 10, 25, 50, 100-year) are to use a 3-hour duration Chicago Storm distribution based on the City of Guelph Intensity Duration Frequency (IDF) curves.

The Regional Storm for the Township is Hurricane Hazel (1954). Rainfall data is available in the MTO Drainage Management Manual (1997), or the most current version thereof.

- Storm sewers shall be designed to convey the 5-year design storm event without surcharging.
- Driveway culverts, ditches, and trunk storm sewers shall be designed to convey the 10-year design storm event.
- Road crossing culverts shall be designed to convey the 25-year design storm event.
- Major drainage systems, including stormwater management facilities, shall be designed for the greater of the 100-year or regional design storm events.

4.7 Stormwater Outlet

Stormwater drainage systems shall discharge to Municipal storm sewer system where feasible. In cases where this is not possible, stormwater drainage systems may discharge to natural watercourses, subject to approval by the Township, Conservation Authority and other regulatory agencies as necessary.

4.8 Water Budget

An annual water budget shall be prepared for the development site as described in the MOE SWMPD Manual.

Infiltration facilities shall be designed to ensure that under post-development conditions, infiltration volumes match the pre-development condition.

4.9 Low Impact Development (LID)

The Township encourages the use of low impact development best management practices.

Low impact development best management practices shall be designed in accordance with the MOE SWMPD Manual, and the TRCA/CVC Low Impact Development Stormwater Management Planning and Design Guide (2010).

4.10 Hydrologic Modeling

Hydrologic Modeling, using hydrologic modeling software is required for all proposed developments.

4.11 Monitoring and Maintenance

The storm water management report shall include an operational, monitoring and maintenance plan to verify that the proposed storm water management facility is operating as designed. Inspection of storm water management systems should occur on average four times per year during the first two years of operation, or in accordance with the latest version of the Storm Water Management Planning and Design Manual – Ontario.

4.12 Storm Sewer Design

4.12.1 General

Storm sewers shall be designed using the Rational Method.

For storm sewers which will be owned by the Township, a storm sewer design sheet shall be submitted in Microsoft Excel format.

4.12.2 Rainfall Intensity

Rainfall intensity used shall be as per the City of Guelph IDF curves.

4.12.3 Inlet Time (Time of Concentration)

The inlet time used in the design of storm sewers shall be calculated using the Bransby-Williams Formula for catchment with a runoff coefficient greater than 0.4, and the Airport Formula for catchments with a runoff coefficient of 0.4 or less.

The minimum inlet time shall be 10 minutes.

4.12.4 Runoff Coefficients

Runoff coefficients for the design of storm sewers shall be those used in the MTO Drainage Management Manual (1997), or the most current version thereof.

4.12.5 Storm Sewer Design Criteria

Storm Sewer Mains	
Minimum pipe diameter	300 mm
Minimum slope	0.5%, or 1.0% for first reach
Minimum depth of cover on uninsulated storm sewer	1.2 m
Minimum flow velocity	0.75 m/s
Maximum flow velocity	4.5 m/s
Minimum catch basins lead diameter	250 mm (single) 300 mm (double)
Minimum driveway culvert diameter	400 mm
Minimum road culvert diameter	500 mm
Minimum foundation drain pipe diameter	150 mm
Minimum foundation drain grade	1.0%
Side yard/rear yard swales minimum slopes	2.0%
Road ditches, minimum slope	0.7%, or 0.5% for distances less than 100m

4.12.6 Pipe Capacity and Roughness

Storm sewer capacity shall be determined using the Manning’s formula on the basis of a pipe flowing full.

The design value of Manning’s “n” coefficient shall be:

Concrete, PVC, HDPE Pipe = 0.013

Corrugated Steel Pipe (CSP) = 0.024

4.12.7 Pipe Materials

375mm diameter or less:

- DR 35 PVC pipe
- Concrete – CSA A257.2 (reinforced)

450mm or greater:

- Concrete – CSA A257.2 (reinforced)

Culverts:

- Galvanized CSP, minimum 1.6mm thick
- High Density Polyethylene (HDPE)

4.12.8 Bedding and Backfill

As per latest revision of OPSD 802.03 and 803.04.

4.12.9 Inspection, Testing and Flushing of Sewers

All sewers and maintenance holes must be flushed and cleaned prior to testing. A mandrel test shall be performed on all flexible pipe in accordance with the latest OPSS.MUNI 410 standard.

Sewer video inspection (CCTV) is required to show that the new, as well as existing downstream sewers (as applicable) are clean, undamaged and operating properly. Sewer video will be required for all newly constructed sewers and existing downstream sewers, to the next downstream maintenance hole.

4.13 Maintenance Holes

Design criteria for maintenance holes:

- The minimum maintenance hole size is 1200mm diameter.
- Maintenance holes shall be precast concrete as per the latest revision of OPSD 701.010 to OPSD 701.15.
- The maximum spacing between maintenance holes shall be 100 m.
- Flow direction changes through a maintenance hole greater than 90° will not be permitted.
- Maintenance holes are to be benched to the spring line of the outlet pipe as per the latest revision of OPSD 701.021.
- The minimum invert drops between the inlet and outlet pipes in a maintenance hole are:

Direction	Minimum Drop
Straight Through	Pipe slope
Up to 45°	0.03 m
46° to 90°	0.06 m

- An external drop structure as per the latest revision of OPSD 1003.01 shall be provided where inlet and outlet differ by more than 0.61 m.
- Frame and cover: as per the latest revision of OPSD 401.010.

- Safety grates are required for maintenance holes with depths greater than 5.0 m, per the latest revision of OPSD 404.02. Safety grates are to be installed at the midpoint of the maintenance hole.
- Precast concrete adjustment units as per the latest revision of OPSD 704.010. Maximum 300 mm adjustment unit allowance.

4.14 Catch basins

Design criteria for catch basins:

- Catch basins shall be precast concrete as per the latest revision of OPSD 705.010 to OPSD 705.040.
- Maximum spacing between catch basins: 75 m.
- The sump depth of each catch basin shall be 600 mm, regardless of structure or outlet size.
- Frame and cover: as per the latest revision of OPSD 400.020.
- Precast concrete adjustment units as per the latest revision of OPSD 704.010. Maximum 300 mm adjustment unit allowance.

5.0 LOT GRADING

General requirements for lot grading and drainage are as follows:

- Lot specific grading plans shall be submitted with the application for building permit for the house or structure that is to be built on a lot. If applicable, the grading plan(s) shall conform to the approved grading plan for the subdivision.
- Plans shall be drawn at a minimum scale of 1:500 and shall include a north arrow, benchmark information, title block, list of revisions and lot number or Municipal address.
- Plan shall be prepared and stamped by a Professional Engineer or Ontario Land Surveyor.
- The envelope for all proposed buildings and structures must be clearly shown, including outbuildings and pools. Setback distances shall be in accordance with the Township Zoning Bylaw.
- The location of the water well, septic system and tile field shall be clearly shown. Minimum separation distances shall be as required by Part 8 of the Ontario Building Code.
- Regional flood and fill lines shall be depicted on lot grading plans to the satisfaction of the Conservation Authority.
- Overland flow routes shall be indicated on the plan using arrows. Surface water shall be directed away from the septic tile field.

- Finish grade elevations and details shall be provided for all lot corners, high points, changes in grades, building corners, retaining walls, ditch and swale bottoms.
- The underside of footing, basement floor elevation, top of foundation and garage floor elevations shall be shown on the plan.
- The top of foundation elevation shall be a minimum of 150mm higher than the proposed grade adjacent to the building.
- The seasonal high groundwater elevation shall be shown on the plan. A minimum separation of 0.5m between the underside of footing and the seasonal high groundwater elevation is required. Any deviation from this minimum due to site specific conditions is to be supported by additional documentation and recommendations prepared by a geotechnical engineer or hydrogeologist.
- Maximum embankment slopes shall be 3:1. Where grades steeper than 3:1 are proposed a retaining wall is required.
- Yard surfaces and swales shall have a minimum grade of 2%. Side-yard swales shall have a minimum depth of 150mm.
- Topsoil from all cut areas will be stockpiled for redistribution. Minimum depth of topsoil to be placed on seeded areas shall be 150mm.
- The method for stabilizing/restoring disturbed ground areas shall be identified on the plan.
- Grading on adjacent lands will require written consent from the property owner. A copy of this letter shall be submitted to the Township.

6.0 FIRE PROTECTION

6.1 Fire Routes

Access routes for emergency vehicles must be provided where required by the Ontario Building Code (OBC), latest edition.

6.2 Fire Water Storage

All buildings requiring on-site water supply for firefighting, as per Appendix A of the OBC, will be provided with fire water storage. The fire water storage volume will be determined using the formula and minimum flow rate/duration criteria provided within the OBC, however the Chief Building Official or Township Fire Prevention Officer may require more or less storage at their discretion. The required fire water storage volume for the site will be confirmed at the time of building permit application.

Fire water storage shall be provided through installation of pre-cast concrete tanks, or approved alternative. Where necessary and as approved by the Township, multiple tanks may be provided and connected in series as per Figure 8.1. Fire tanks within subdivisions and large site developments are to be spaced at a maximum spacing of 150 m from each other, and the distance from the dry hydrant to any portion of a building perimeter that is required by the OBC to face a street shall not exceed 90 m. The location of the proposed fire tank(s) shall be clearly shown on the site plan submitted for the development.

General requirements for fire water storage tanks are as follows:

1. Fire water storage tanks shall satisfy the requirements of National Fire Protection Agency (NFPA) 22 and NFPA 1141.
2. Any tank located within a right of way or paved parking area shall be rated for truck loading per the bridge design code (CL-625-ONT).
3. The tank shall be installed on 300 mm of granular bedding compacted to 100% SPMDD.
4. The top of the tank shall be installed below the frost line, minimum of 1.3 meters OR the tank shall be insulated with minimum 50 mm rigid insulation.
5. The bottom of the tank must not be more than 4.6 m below ground level.
6. The dry hydrant shall be installed a minimum of 30 m from any building and within 1.8 m of the edge of driveway. The dry hydrant fitting shall be installed 900 mm above finish ground using 152 mm diameter stainless steel pipe with National Hose (NH) thread pattern, female connection and cap facing towards the fire truck location.
 - e.g. Kocheck 6NH
7. The access riser shall be sealed with lockable aluminum access hatch.
8. The tank shall be equipped with aluminum ladder or maintenance hole rungs for access.
9. The tank shall be provided with a 150 mm diameter stainless steel vent pipe, complete with rodent and insect screen.
10. Concrete: 35 Mpa at 28 days.
11. Reinforcement: As per manufacturer's specifications. Minimum reinforcement cover for the tank shall be 50mm.
12. Upon completion of the tank and fittings, it shall be filled with potable water by the developer before the building is occupied.
13. The tank shall be connected to the property water supply system with a backflow preventer and automatic float valve system to ensure the tank remains full.

14. Representatives from the fire department or Township building department shall be called for inspection at the following milestones:
 - Completion of granular base installation.
 - Prior to backfilling.
 - Completion of installation (perform pump test with fire pumper).
15. The Township is to be notified a minimum of 24 hours prior to each required inspection.
16. Inspections and Maintenance of water storage tanks will comply with NFPA 1142 section 8.7 including records of annual tests, quarterly inspections and maintenance submitted to the Puslinch Fire Department by the end of each calendar year.
17. A dry hydrant identification sign will be installed with each civic address sign. The sign is provided and installed free of charge by the Puslinch fire department.

7.0 WATER AND SEWAGE SERVICING

7.1 General

All development in the Township is currently serviced through private individual on site water wells and sewage disposal systems.

7.2 Sewage Disposal Systems

Small sewage systems, having a design flow rate of 10,000 L/d or less will be reviewed and approved by the Township under the Ontario Building Code.

Large sewage systems, having a design flow rate of more than 10,000 L/d are within the jurisdiction of the MECP and will not be reviewed by the Township.

7.3 Potable Water Supply

Potable water supply wells must be constructed by a licensed well contractor in strict accordance with the requirements of Ontario Regulation (O.Reg.) 903, as amended.

Wells will be sited to minimize the impact from any leaching beds or other potential sources of contamination and in accordance with the minimum separation distances identified within the regulation.

Existing wells on the property may be maintained provided they comply with the current standards set in O.Reg. 903. Existing wells which will not be used must be abandoned in accordance with O.Reg. 903.

7.4 Hydrogeological Study Report

A hydrogeological study will be required for most new development applications to demonstrate the suitability of the site for development of private services.

The hydrogeological study report will be prepared by a qualified professional (i.e. professional hydrogeologist or engineer) and will generally include details regarding the site setting, desktop geologic and hydrogeologic information, and results from a field investigation program established by the qualified professional to support the development including results from test pits, boreholes, sampling, pumping tests, monitoring wells and well surveys, as required.

The hydrogeological study report will review the availability and sustainability of adequate groundwater supplies with respect to both quantity and quality, including any potential interference to existing water users or sensitive receptors (eg. wetlands, watercourses).

In addition, the hydrogeological study report will support the septic system design and stormwater management design and must provide sufficient details with respect to soil profiles and percolation rates.

7.5 Nitrate Impact Assessment

For some development applications, nitrate impact assessment will be required to demonstrate, to the satisfaction of the Township, that the proposed development will not adversely impact groundwater quality with respect to neighbouring property use and/or the natural environment.

Nitrate impact assessment will generally be required for the following types of applications:

- Zoning by-law amendments
- Plan of subdivision/condominiums
- Severance applications, with the exception of severance for the purpose of establishing four or fewer single detached dwellings
- Expansions of existing uses that will increase the need for water and/or sewage disposal

Nitrate impact assessment will follow MOECC Procedure D-5-4 (Individual On-Site Sewage Systems: Water Quality Impact Risk Assessment). The nitrate impact assessment may be stand alone or may be incorporated into the hydrogeological study report.

8.0 UTILITIES AND STREETLIGHTING

8.1 Utilities

The Developer is responsible for the design and installation of all utilities including hydro, gas, telephone, cable and other communications (as available).

Utilities shall be installed underground within the road allowance, in accordance with the typical cross sections attached as *Appendix B*. All materials and installation shall be in accordance with current OPSS standards and the requirements of the respective utility company.

A Composite Utility Plan (CUP) shall be provided to the Township for review and approval. The CUP shall indicate the location of all underground and aboveground services, utilities, driveways, street lighting, signs and landscaping to be installed within the Municipal right-of-way. Sign-off of the CUP by each utility company represented by the plan is to be provided with the submission.

The Developer will be required to provide evidence to the Township that it has entered into an agreement for provision of utilities in accordance with terms of the development agreement.

8.2 Lighting

Site Plans

As part of the site plan process, applicants will be required to submit a lighting design prepared by a qualified lighting design professional. The lighting design will limit the impacts of excess and unnecessary external lighting and consisting of a lighting plan showing photometric data (in lux) and detailed specifications including lamp type, fixture type, lumens rating, wattage and colour. Site lighting design shall be in accordance with minimum levels IES RP-8-18 Standard Practice for Design and Maintenance of Roadway and Parking Facility Lighting and IES-RP-33-14 Lighting for Exterior Environments.

Average light level shall not exceed 1 lux on adjacent properties (including road way). Light fixtures should be positioned across a site so as to give a uniform distribution of light over the relevant area. Fixtures shall be 'full-cut off' type such that light is focused down preventing light trespass. Light fixture designs which cannot meet these standards, such as those with sag lenses or wall mount lights that shine horizontally, are prohibited.

Street Lighting

All developments shall be provided with adequate street and sidewalk lighting in accordance with the latest version of the Illuminating Engineering Society of North America (IESNA) standard practice for Roadway Lighting (ANSI/IESNA RP-8) and the requirements of the Electrical Safety Authority (ESA).

The lighting design is to be prepared by a Professional Engineer experienced in roadway lighting and submitted to the Township for review and approval. The street lighting design submission is to include street lighting layout and electrical drawings showing the location of poles, loadcentre(s) and luminaires, standard drawings and specifications for materials and installation, and a photometric distribution diagram indicating the average maintained illumination levels and uniformity rating in comparison to IESNA minimum requirements. Fixtures will be LED with spill control and Correlated Color Temperature (CCT) of 3000K or less. A minimum clearance of 1.5 m shall be required from the centre of the streetlight to the edge of a driveway and a minimum clearance of 3.0 m shall be required from the center of the streetlight to the center of street trees.

Lighting poles shall be installed as shown on the typical cross sections attached as *Appendix B*, with consideration to suitable clearances from driveways, structures and trees. Lighting materials and suppliers will be reviewed with the Township prior to installation. The Township may require

a stocking of spare poles, lights and accessories be provided. Fixtures shall be ‘full-cut off’ type such that light is focused down preventing light trespass. Light fixture designs which cannot meet these standards, such as those with sag lenses or wall mount lights that shine horizontally, are prohibited.

9.0 PARKLAND AND LANDSCAPING

9.1 Parks and Recreational Areas

The Township will require the conveyance of lands for park or other recreational purposes, at the rates identified within cash-in-lieu of parkland by-law, for all developments, redevelopment, or plans of subdivision.

Suitable municipal parkland shall be:

- of appropriate size and configuration to effectively utilize municipal resources and facilitate meaningful recreation activities adjacent to established parks, schools, or storm water management ponds;
- within easy walking distance of the residential area served;
- located near the highest density residential areas; redevelopment or plans of subdivision.
- of adequate street frontage to provide for visibility and safety;
- level, regularly shaped and not susceptible to major flooding, poor drainage, or other environmental or physical conditions, which would interfere with their development or use for public recreation.

Alternately, the Township may require cash-in-lieu of parkland, to be used towards future acquisition or development of parkland within the Township.

Undevelopable Open Space lands (e.g., storm water management ponds, woodlots, valley lands, floodplains, hazard lands, etc.) will not be accepted as parkland dedication. However, the Township may choose to assume these lands through voluntary dedication or easement.

All Park or Recreational Areas dedicated to the Township shall be graded and seeded so that they are suitable for recreational use. The requirements for fencing or other features will be reviewed on a case by case basis.

The Township may further, in accordance with The Planning Act, require dedication of land for pedestrian pathways, bicycle pathways and public transit rights of way as a condition of plan of subdivision approval.

9.2 Site Landscaping

Objectives

1. To encourage landscape design that is compatible with the character of the surrounding rural or urban landscape.
2. To improve the aesthetic quality of a development and screen less attractive elements from view.
3. To protect and enhance the quality of natural heritage features found on and adjacent to proposed development sites.

Plant Materials

- Native trees and shrubs should mostly be used in landscape plantings, particularly where development is proposed in close proximity to woodlands and wetlands. However, in urban areas and on other sites where planting conditions are difficult some non-native species that are not considered invasive may be utilized.
- Along all-weather roads an average of one tree is to be planted for every 10 meters of road frontage. Street trees are not to be planted within the road allowance but are to be provided on private property close to the road allowance.
- Trees are also to be planted in and/or around parking areas and along the perimeter of development properties in locations that enhance the appearance and functions of buildings and structures.

List of Recommended Trees

DECIDUOUS TREES

Red Maple (<i>Acer rubrum</i>)	American Hophornbeam (<i>Ostrya virginiana</i>)
Silver Maple (<i>Acer saccharium</i>)	London Planetree (<i>Plantanus x acerifolia</i>)*
Sugar Maple (<i>Acer saccharum</i>)	Sycamore (<i>Plantanus occidentalis</i>)
Downy Serviceberry (<i>Amelanchier arborea</i>)	Largetooth Aspen (<i>Populus grandidentata</i>)
Allegheny Serviceberry (<i>Amelanchier laevis</i>)	Pin Cherry (<i>Prunus pensylvanica</i>)
White Birch (<i>Betula papyrifera</i>)	Black Cherry (<i>Prunus serotina</i>)
Blue Beech (<i>Carpinus caroliniana</i>)	Bur Oak (<i>Quercus macrocarpa</i>)
Bitternut Hickory (<i>Carya cordiformis</i>)	Red Oak (<i>Quercus rubra</i>)
Shagbark Hickory (<i>Carya ovata</i>)	American Mountain Ash (<i>Sorbus Americana</i>)
Hackberry (<i>Celtis occidentalis</i>)	Showy Mountain Ash (<i>Sorbus decora</i>)
Black Walnut (<i>Juglans nigra</i>)	Basswood (<i>Tilia Americana</i>)

*Non-invasive introduced species

- Minimum acceptable size for deciduous trees is 60mm, 3 to 3.5m in height and for coniferous trees 1.5m in height.

CONIFEROUS TREES

Balsam Fir (*Abies balsamea*)
 Red Cedar (*Juniperous virginiana*)
 European Larch (*Larix decidua*)*
 Tamarack (*Larix laricina*)
 Norway Spruce (*Picea abies*)*
 White Spruce (*Picea glauca*)

Colorado Blue Spruce (*Picea pungens ‘Glauca’*)*
 Red Pine (*Pinus resinosa*)
 White Pine (*Pinus strobus*)
 White Cedar (*Thuja occidentalis*)
 Eastern Hemlock (*Tsuga canadensis*)
 Austrian Pine (*Pinus nigra*)*

*Non-invasive introduced species

- For ecological restoration and/or enhancement projects bare root tree seedlings that are 15 to 60cm in height may be utilized.

Shrubs and Ground Covers

- Use shrubs and ground covers in large masses for lower maintenance and seasonal planting. Place special emphasis on early spring and fall colours.
- Use shrubs to define and control pedestrian circulation and to screen undesirable views.
- Minimum acceptable sizes for shrubs are 60 to 100cm in height.
- For ecological restoration and/or enhancement projects bare root shrub seedlings 20 to 60cm in height may be utilized.

List of Recommended Shrubs and Groundcovers

DECIDUOUS SHRUBS

Alternate-leaved Dogwood (*Cornus alternifolia*)
 Grey Dogwood (*Cornus racemosa*)
 Red-osier Dogwood (*Cornus sericea*)
 Winterberry (*Ilex verticillata*)
 Ninebark (*Physocarpus opulifolius*)
 Chokecherry (*Prunus virginiana*)
 Fragrant Sumac (*Rhus aromatica*)
 Staghorn Sumac (*Rhus typhina*)
 Smooth Wild Rose (*Rosa blanda*)
 Pussy Willow (*Salix discolor*)
 American Elderberry (*Sambucus canadensis*)
 Red Elderberry (*Sambucus pubens*)
 Meadowsweet (*Spiraea alba*)
 Narrow-leaved meadowsweet (*Spiraea alba*)
 Nannyberry (*Viburnum lentago*)
 American Highbush Cranberry (*Viburnum trilobum*)

*Non-invasive introduced species

EVERGREEN SHRUBS

Junipers (*Juniperus sp.*)
 Mugo Pine (*Pinus mugo*)*
 Ground Hemlock (*Taxus canadensis*)

PERENNIALS

New England Aster (*Aster novae-angliae*)
 Purple Cone Flower (*Echinacea purpurea*)
 Canada Wild Rye (*Elymus Canadensis*)
 Creeping Red Fescue (*Festuca rubra*)
 Daylily (*Hemerocallis sp.*)*
 Perennial Ryegrass (*Lolium perenne*)*
 Wild Bergamot (*Monarda fistulosa*)
 Kentucky Bluegrass (*Poa pratensis*)*
 Black-Eyed Susan (*Rudbeckia hirta*)
 Autumn Joy Sedum (*Sedum sp.*)*
 Little Bluestem (*Schizachyrium scoparium*)
 Indian Grass (*Sorghastrum nutans*)

Landscape Buffers

- Buffers may be needed to screen undesirable views along roads or property boundaries. Buffers may consist of architectural screening, landscaping, berming or a combination of these materials.
- Where landscaping is used to create the buffer, planting is to consist of trees and/or shrubs, with a minimum of 50% coniferous (evergreen) plant material. Site-specific circumstances may warrant dense, continuous coniferous planting.
- Where berming is used to create the buffer, the berm must be a minimum of one meter high and have maximum side slopes of 3:1. It must be seeded with an appropriate native groundcover and planted with a mixture of shrubs and coniferous trees.
- Refer to the Township zoning by-law for minimum buffer requirements.

Tree Maintenance

- Subsequent to planting the agency or company planting trees shall be responsible for all maintenance, including pruning and replacement, if necessary. The maintenance period will be in accordance with the Subdivision Agreement.

9.3 Tree Management

Objectives

1. To accurately inventory and describe woodland communities over 0.4 ha (1 acre) in size, smaller tree clusters and isolated trees that are established on a proposed development property or immediately adjacent to it.
2. To retain and protect significant woodlands identified by the County as Greenlands and Core Greenlands from potential development impacts. The 2017 Growth Plan for the Greater Golden Horseshoe applies to all of Wellington County and it incorporates policies of the Greenbelt Plan for Key Natural Heritage features, including significant woodlands. As a consequence, these policies supercede the County's policies for the Greenlands System and they stipulate that development and site alteration is not permitted in significant woodlands or the required minimum 30m wide vegetation protection zone that is measured from the woodland dripline.
3. To retain and protect good quality native trees that are greater than 10 cm in diameter at breast height (dbh) wherever possible.

9.3.1 Standards for Draft Plan of Subdivision, Rezoning and Consent Applications

A General Vegetation Overview (GVO) will be required where woodlands, small tree clusters and/or isolated trees occur on or immediately adjacent to a development property that is proposed to be subdivided or rezoned. The GVO may be incorporated into a more comprehensive Environmental Impact Assessment (EIA) where other natural heritage concerns need to be

addressed. Vegetation communities should be identified using Ecological Land Classification (ELC) procedures and delineated on an air photomap. For each woodland community found in the study area the following data should be recorded.

- Vegetation type as per ELC
- Stand composition (%)
- Overstory canopy coverage (%) and/or basal area (m²/ha)
- Average height (m) of dominant and codominant trees
- Average DBH (cm) of dominant and codominant trees
- Stand health (identify any significant insect and disease pests and environmental damage)
- Community age (in years or record as regeneration, young, immature, mature or over mature)
- Major species in understory (up to 5 species of trees and/or shrubs)
- Major groundflora species (up to 5 species)
- Topography (flat, undulating/gently sloping, rolling/moderately sloping, strongly rolling, hilly/steep)
- Soil depth (deep, moderately deep, shallow)
- Soil drainage (rapid, well, imperfect, poor)
- Soil texture (sand, silt, clay, loam, organic)

For isolated trees over 10 cm DBH and small tree clusters record the species, DBH and condition rating as excellent, good, fair, poor, very poor and dead.

For each vegetation community, isolated tree and tree cluster that is inventoried an assessment and recommendation is required as to whether it is worthy of preservation and should be retained, or is of low ecological value and should be removed. Alternatively, it may be necessary to identify some vegetation communities and/or individual trees for further study at the detailed grading and design stage. In addition, forest and tree maintenance needs should be identified along with appropriate protection measures (eg. buffers, drainage swales, hazard tree removal, tree protection fencing etc.)

9.3.2 Standards for Site Plan Applications and Draft Plans of Subdivision Subject to Further Tree Study

Where tree cover is found on proposed development properties subject to Site Plan Approval, as well as on Draft Plans of Subdivision subject to further study, a Tree Preservation/Enhancement Plan will be required. This plan should be derived concurrently with the Lot Grading Control Plan, which must also show all other required services (water, sewage, hydro etc), and be illustrated at a scale of approximately 1:500. Submission requirements include the following information.

- The true dimensions and bearings of the subject property and/or subdivided lots.
- The accurate location of all trees 10 cm DBH and greater, including their driplines, that occur as isolated individuals, tree clusters or along woodland edges.
- The proposed building envelope and type of building must be accurately shown on each lot, including the entrance driveway and all required services.
- The Lot Grading Plan must identify the original surveyed grades and proposed future grades, cut and fill areas, future surface drainage and any potential disruption to groundwater.
- For trees that may potentially be impacted by proposed development, data must be recorded on the species, size and condition of each tree along with an appropriate tree management recommendation (eg. save, remove, prune, fertilize, transplant etc.) A Tree Management Plan must be submitted with the Lot Grading Plan and where feasible it may be superimposed on the Grading Plan. Depending upon the type of proposed development, the number of trees to be inventoried, the ecological sensitivity of affected treed areas and the presence of potential hazard trees, it may be necessary to attach numbered tree tags to trees located in potential impact areas.
- The species size and quantity of any compensatory plantings required along new woodland edges, as well as requirements for any further ecological enhancement work.
- The location and type of proposed tree protection measures must be identified on the Tree Management Plan including the need for any required setbacks from tree driplines, the installation of protective fencing (eg. orange construction fence or paige wire farm fence with or without attached filter cloth), wooden hoarding or other erosion control measures (eg. the use of straw bales, mulch mats etc.)
- After all approved tree removal and pruning work has been completed all recommended tree protection measures are to be installed prior to the initiation of site grading. The consulting forester, arborist or landscape architect who is responsible for the supervision of the tree management work will be required to submit a Tree Maintenance Report to the Township that documents compliance with

the approved Tree Preservation/Enhancement Plan and also identifies any deviations that occurred and the reasons for those changes.

9.3.3 County of Wellington Tree By-Law

The County regulates the destruction or injuring of trees through the "Conservation and Sustainable Use of Woodlands By-law". An approval/permit may be required in certain situations where tree removal is proposed as part of a development application. The applicant should consult with the County prior to any tree removals.

APPENDIX A: SUBMISSION CHECKLISTS



Zoning By-law Amendment Application Pre-Consultation Checklist

General Information:

Site Address or Legal Description: _____

Name of Applicant or Representative: _____

Contact email address: _____

Description of Proposed Development: _____

Date of Pre-Consultation: _____

Submission Requirements:

This checklist outlines the information required to be provided with the application. To ensure your application is complete, please include the following:

Required

Yes No

- | | | |
|--------------------------|--------------------------|---|
| <input type="checkbox"/> | <input type="checkbox"/> | Source Water Protection Screening Form |
| <input type="checkbox"/> | <input type="checkbox"/> | Completed application form and required application fee |
| <input type="checkbox"/> | <input type="checkbox"/> | Planning Impact Assessment |
| <input type="checkbox"/> | <input type="checkbox"/> | Functional Servicing Report |

Yes No

- | | | |
|--------------------------|--------------------------|---|
| <input type="checkbox"/> | <input type="checkbox"/> | Water and Wastewater Servicing |
| <input type="checkbox"/> | <input type="checkbox"/> | Stormwater Management |
| <input type="checkbox"/> | <input type="checkbox"/> | Geotechnical and Hydrogeological (<i>may be stand alone report</i>) |
| <input type="checkbox"/> | <input type="checkbox"/> | Site Grading |



Other Reports/Studies as requested through pre-consultation

Yes No

- | | | |
|--------------------------|--------------------------|---|
| <input type="checkbox"/> | <input type="checkbox"/> | Environmental Impact Assessment |
| <input type="checkbox"/> | <input type="checkbox"/> | General Vegetation Overview (<i>may be combined with Environmental Impact Assessment</i>) |
| <input type="checkbox"/> | <input type="checkbox"/> | Traffic Impact Assessment |
| <input type="checkbox"/> | <input type="checkbox"/> | Heritage Impact Assessment |
| <input type="checkbox"/> | <input type="checkbox"/> | Agricultural Impact Assessment |
| <input type="checkbox"/> | <input type="checkbox"/> | Archaeological Assessment |
| <input type="checkbox"/> | <input type="checkbox"/> | Noise Impact Assessment |
| <input type="checkbox"/> | <input type="checkbox"/> | Nitrate Impact Assessment (<i>may be combined with servicing/hydrogeological report</i>) |
| <input type="checkbox"/> | <input type="checkbox"/> | Other: |

Plans

- | | | |
|--------------------------|--------------------------|----------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | Site Plan |
| <input type="checkbox"/> | <input type="checkbox"/> | Grading and Servicing Plan |
| <input type="checkbox"/> | <input type="checkbox"/> | Other: |

Township of Puslinch

Applicant or Representative

Name

Name

Signature

Signature

A copy of the completed checklist will be provided to the applicant following the pre-consultation meeting.



Site Plan Approval Application Pre-Consultation Checklist

General Information:

Site Address or Legal Description: _____

Name of Applicant or Representative: _____

Contact email address: _____

Description of Proposed Development: _____

Date of Pre-Consultation: _____

Submission Requirements:

This checklist outlines the information required to be provided with the application. To ensure your application is complete, please include the following:

Required

Yes No

- | | | |
|--------------------------|--------------------------|---|
| <input type="checkbox"/> | <input type="checkbox"/> | Source Water Protection Screening Form |
| <input type="checkbox"/> | <input type="checkbox"/> | Completed application form and required application fee |
| <input type="checkbox"/> | <input type="checkbox"/> | Planning Impact Assessment |
| <input type="checkbox"/> | <input type="checkbox"/> | Functional Servicing Report |

Yes No

- | | | |
|--------------------------|--------------------------|--|
| <input type="checkbox"/> | <input type="checkbox"/> | Water and Wastewater Servicing |
| <input type="checkbox"/> | <input type="checkbox"/> | Stormwater Management |
| <input type="checkbox"/> | <input type="checkbox"/> | Geotechnical and Hydrogeological <i>(may be standalone report)</i> |
| <input type="checkbox"/> | <input type="checkbox"/> | Site Grading |



- Other Reports/Studies as requested through pre-consultation

Yes No

- | | | |
|--------------------------|--------------------------|--|
| <input type="checkbox"/> | <input type="checkbox"/> | Environmental Impact Assessment |
| <input type="checkbox"/> | <input type="checkbox"/> | Tree Management Plan <i>(may be combined with Environmental Impact Assessment)</i> |
| <input type="checkbox"/> | <input type="checkbox"/> | Traffic Impact Assessment |
| <input type="checkbox"/> | <input type="checkbox"/> | Heritage Impact Assessment |
| <input type="checkbox"/> | <input type="checkbox"/> | Agricultural Impact Assessment |
| <input type="checkbox"/> | <input type="checkbox"/> | Archaeological Assessment |
| <input type="checkbox"/> | <input type="checkbox"/> | Noise Impact Assessment |
| <input type="checkbox"/> | <input type="checkbox"/> | Nitrate Impact Assessment <i>(may be combined with servicing/hydrogeological report)</i> |
| <input type="checkbox"/> | <input type="checkbox"/> | Other: |

- Itemized construction cost estimate, including 15% for engineering and contingencies
- Legal survey of the property
- Spills Management Plan

Plans

- Site Plan
- Grading and Servicing Plan
- Erosion and Sediment Control Plan
- Landscaping Plan
- Photometric Plan
- Other:



Township of Puslinch
7404 Wellington Road 34
Puslinch, ON N0B 2J0
T: (519) 763-1226
www.puslinch.ca

Township of Puslinch

Applicant or Representative

Name

Name

Signature

Signature

A copy of the completed checklist will be provided to the applicant following the pre-consultation meeting.



Subdivision Detailed Design Submission Pre-Consultation Checklist

General Information:

Site Address or Legal Description:

Name of Applicant or Representative:

Contact email address:

Description of Proposed Development:

Date of Pre-Consultation:

Submission Requirements:

This checklist outlines the information required to be provided with the application. To ensure your application is complete, please include the following:

Required

Yes No

- | | | |
|--------------------------|--------------------------|---|
| <input type="checkbox"/> | <input type="checkbox"/> | Source Water Protection Screening Form |
| <input type="checkbox"/> | <input type="checkbox"/> | Completed application form and required application fee |
| <input type="checkbox"/> | <input type="checkbox"/> | Planning Impact Assessment |
| <input type="checkbox"/> | <input type="checkbox"/> | Detailed Servicing Report |
| <input type="checkbox"/> | <input type="checkbox"/> | Stormwater Management Report |
| <input type="checkbox"/> | <input type="checkbox"/> | Geotechnical and Hydrogeological Study |
| <input type="checkbox"/> | <input type="checkbox"/> | Other Reports/Studies as requested through pre-consultation |

Yes No

- | | | |
|--------------------------|--------------------------|---|
| <input type="checkbox"/> | <input type="checkbox"/> | Environmental Impact Assessment |
| <input type="checkbox"/> | <input type="checkbox"/> | General Vegetation Overview (<i>may be combined with Environmental Impact Assessment</i>) |
| <input type="checkbox"/> | <input type="checkbox"/> | Traffic Impact Assessment |



- Heritage Impact Assessment
- Agricultural Impact Assessment
- Archaeological Assessment
- Noise Impact Assessment
- Nitrate Impact Assessment (*may be combined with servicing/hydrogeological report*)
- Other:

- Itemized construction cost estimate, including 15% for engineering and contingencies
- Legal survey of the property
- Storm Sewer Design Sheet (Microsoft Excel format)

Plans

- General Arrangement Plan
- Grading Plan
- Plan and Profile Drawings for all Roads and Services
- Stormwater Management Facility Plans
- Erosion and Sediment Control Plan
- Landscaping Plan
- Photometric Plan
- Composite Utility Plan
- Other:



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Applicant or Representative

Name

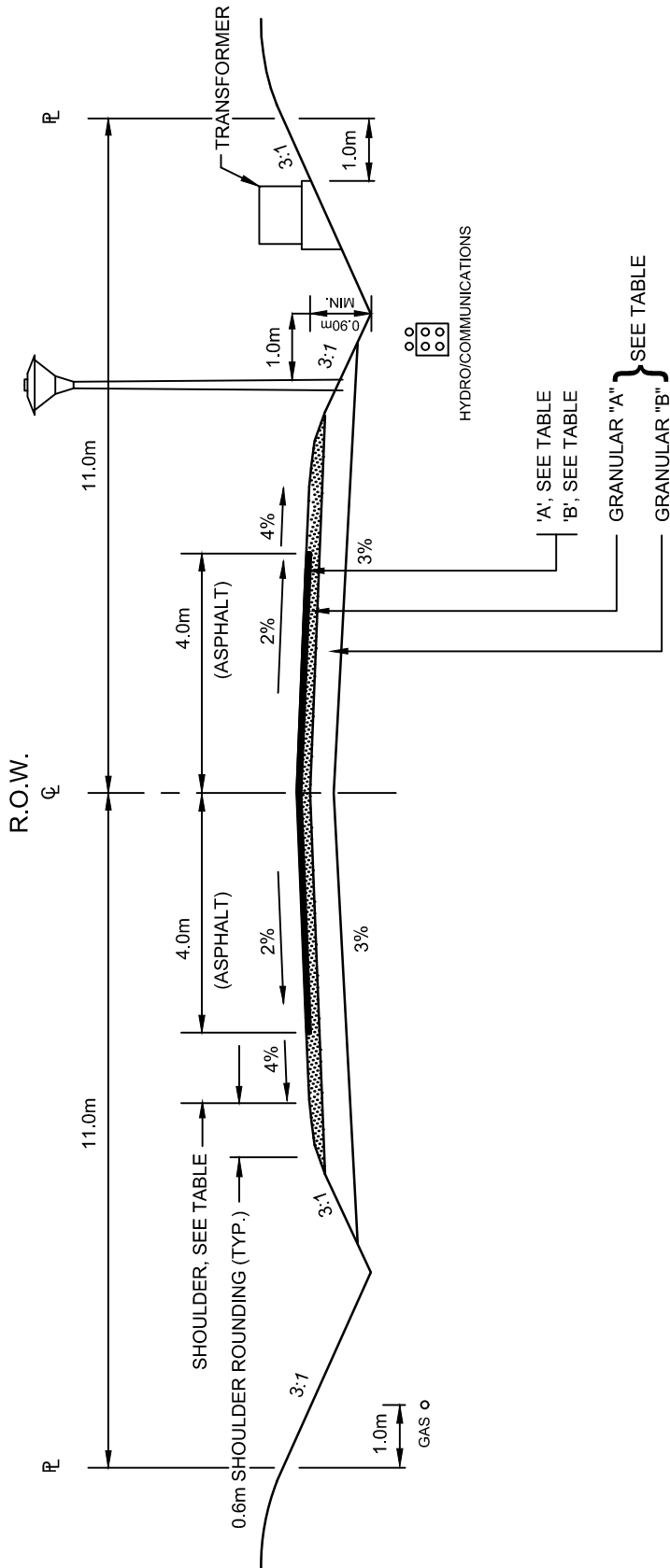
Name

Signature

Signature

A copy of the completed checklist will be provided to the applicant following the pre-consultation meeting.

APPENDIX B: STANDARD DRAWINGS



ROAD CLASS	'A'	'B'	GRAN 'A**	GRAN 'B**	SHOULDER
LOCAL RESIDENTIAL	35mm HL3	60mm HL4	150mm	300mm	1.0m
COLLECTOR RESIDENTIAL	35mm HL3	60mm HL4	150mm	400mm	1.5m
LOCAL INDUSTRIAL	50mm HL4	60mm HL8	150mm	450mm	1.5m
COLLECTOR INDUSTRIAL	50mm HL4	60mm HL8	200mm	450mm	2.0m

GRANULAR BASE TO BE CONFIRMED BY SOILS REPORT



TOWNSHIP OF PUSLINCH STANDARD DRAWING

TYPICAL RURAL CROSS-SECTION

DATE: SEPT. 2019

STD-101

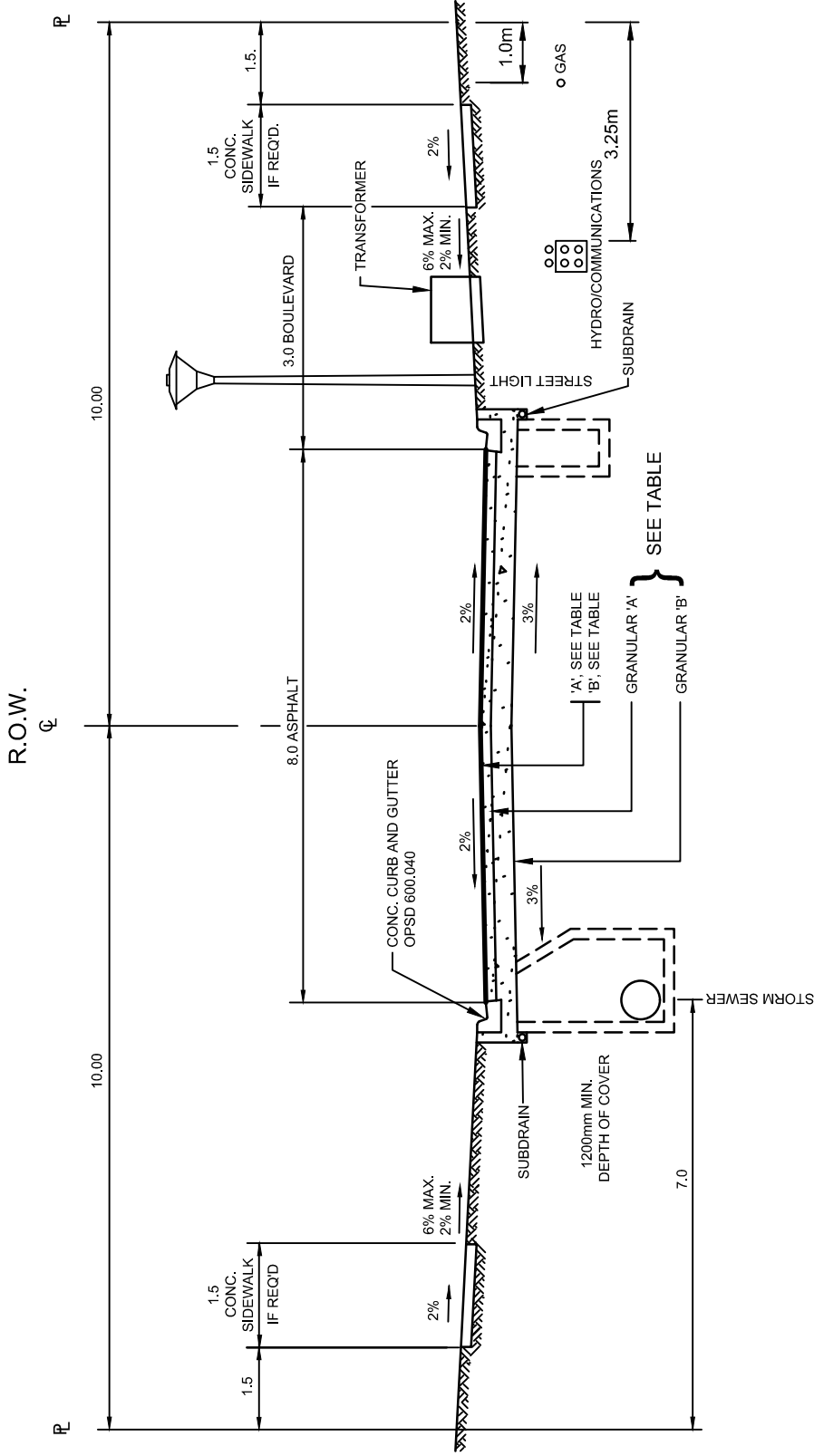


TOWNSHIP OF PUSLINCH STANDARD DRAWING

TYPICAL URBAN CROSS-SECTION

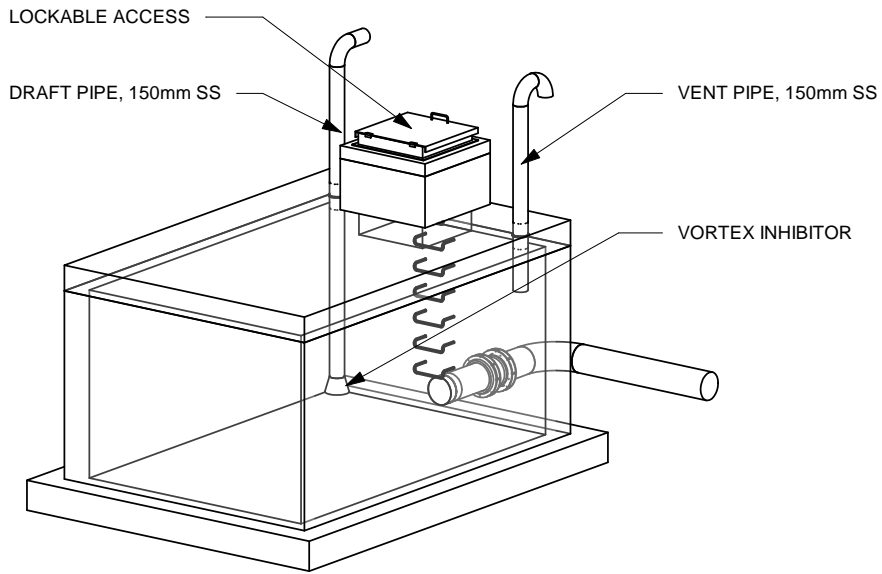
DATE: SEPT. 2019

STD-102



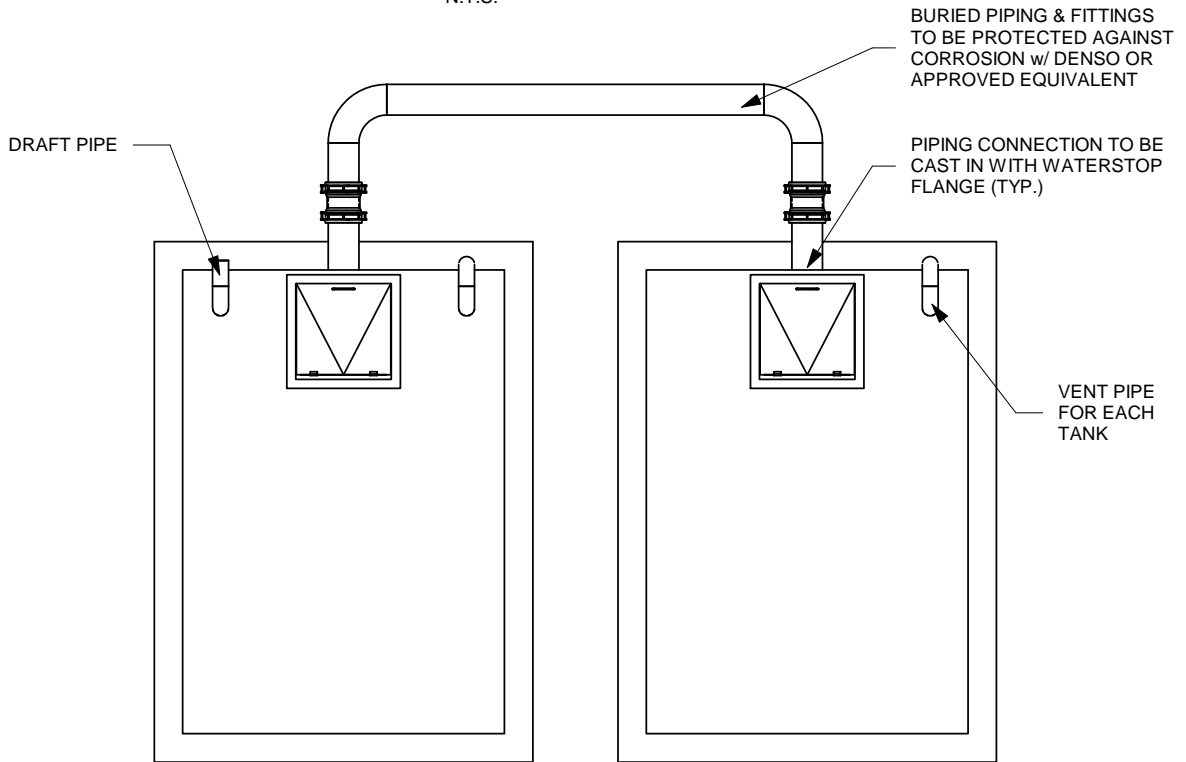
ROAD CLASS	'A'	'B'	GRAN 'A'	GRAN 'B'
RESIDENTIAL - LOCAL	35mm HL3	60mm HL4	150mm	300mm
RESIDENTIAL - COLLECTOR	35mm HL3	60mm HL4	150mm	400mm
INDUSTRIAL - LOCAL	50mm HL4	60mm HL8	150mm	450mm
INDUSTRIAL - COLLECTOR	50mm HL4	60mm HL8	200mm	450mm

GRANULAR BASE TO BE CONFIRMED BY SOILS REPORT



ISOMETRIC VIEW

N.T.S.



TYPICAL SERIES CONNECTION

N.T.S.



TOWNSHIP OF
PUSLINCH
EST. 1850

TOWNSHIP OF PUSLINCH STANDARD DRAWING

WATER STORAGE FOR FIRE PROTECTION

DATE: SEPT. 2019

STD-103